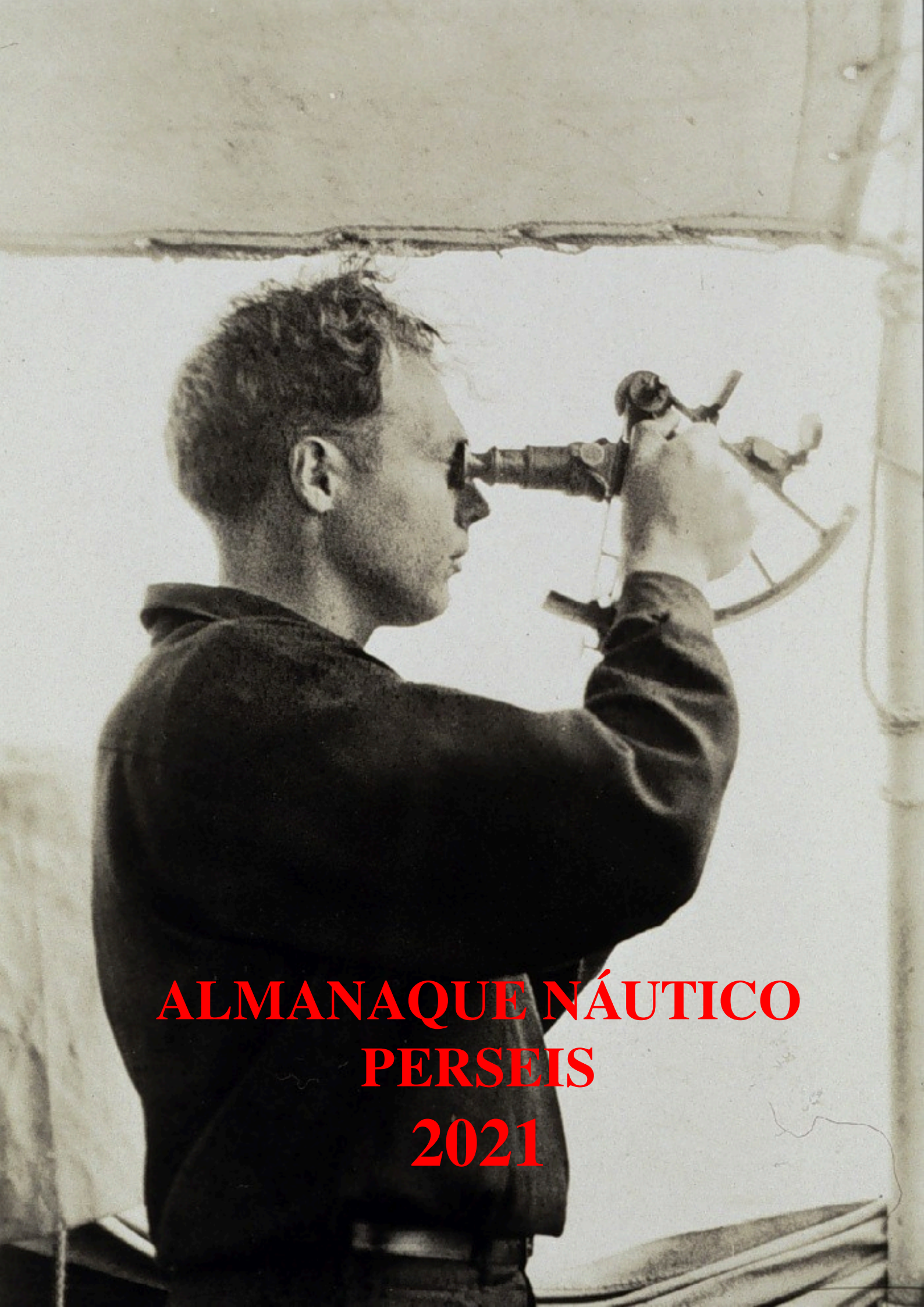


ALMANAQUE NÁUTICO PERSEIS 2021

ALMANAQUE NÁUTICO PERSEIS 2021

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`http://www.xente.mundo-r.com/perseis/`

Imagen de portada: *A man holding a sextant*. National Oceanic and Atmospheric Administration. Imágen de dominio público.

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Introducción

El Almanaque Náutico Perseis es un libro de validez anual que proporciona datos, efemérides astronómicas y tablas para la práctica de la navegación astronómica. La información se presentan en un formato similar al del Almanaque Náutico editado por el Real Observatorio de la Armada.

Su objetivo es didáctico: proporcionar información para la resolución de problemas y ejercicios de navegación astronómica así como familiarizarse con el uso del Almanaque Náutico del R.O.A.

El Almanaque está generado usando métodos matemáticos rigurosos y datos fiables, por lo que es de esperar que ofrezca una exactitud comparable a la de los almanaques oficiales.

Esta edición del Almanaque Náutico Perseis incluye páginas diarias con las efemérides tabuladas cada hora del punto Aries, el Sol, la Luna y de los cuatro planetas visibles a simple vista y útiles para la navegación astronómica: Venus, Marte, Júpiter y Saturno; además de datos útiles para la planificación de las observaciones. Incluye tablas anuales de la posición de 99 estrellas, tabuladas para el día 15 de cada mes; la hora de paso por el meridiano de Greenwich, para el día 1 de cada mes, de 50 estrellas seleccionadas; tabla anual para el cálculo de la latitud por observación de la altura de la estrella Polar; tabla del azimut de la estrella Polar y tablas de correcciones cuyos valores dependen de la fecha. Excepcionalmente se incluye una tabla de corrección por retardo y longitud, que es invariante con el año, con el único fin de mantener la numeración de las páginas como en al Almanaque Náutico del R.O.A.

En la sección *Fenómenos relevantes* se presenta información sobre fenómenos astronómicos del año que pueden ser de interés. Los datos y figuras relativas a los eclipses se deben a Fred Espenak.

Se mantiene el orden y numeración de páginas idéntico al Almanaque Náutico del R.O.A. porque, a veces, en la literatura didáctica española sobre navegación astronómica, se hace referencia a la tabla de una determinada página del Almanaque. Se recomienda la adquisición, al menos una vez, del Almanaque Náutico del Real Observatorio de la Armada, que incluye más tablas que pueden aplicarse para cualquier año, una extensa explicación de su uso, otros datos interesantes, tiene un precio asequible y además es el único permitido en los exámenes oficiales.

***Advertencia**: Este Almanaque se distribuye con la intención de que sea exacto y útil, pero sin ninguna garantía, por lo que no debe utilizarse en situaciones de navegación real o que pongan en riesgo vidas o bienes. Se declina cualquier responsabilidad por daños causados por el uso de este Almanaque.*

FENÓMENOS ASTRONÓMICOS RELEVANTES, 2021

Estaciones

Hemisferio N	*Inicio (hora UT)*	*Duración (días)*	*Hemisferio S*
Primavera	20 de marzo a las 09^h37^m	92.75	Otoño
Verano	21 de junio a las 03^h32^m	93.66	Invierno
Otoño	22 de septiembre a las 19^h21^m	89.85	Primavera
Invierno	21 de diciembre a las 15^h59^m	88.99	Verano

Órbita terrestre

Ápside	*Fecha (hora UT)*	*Distancia (ua)*
Perihelio	2 de enero a las 13^h50^m	0.983257
Afelio	5 de julio a las 22^h27^m	1.016729

Fases de la Luna (hora UT)

Luna Nueva	*Cuarto Creciente*	*Luna Llena*	*Cuarto Menguante*
			6 ene 09:37
13 ene 05:00	20 ene 21:02	28 ene 19:16	4 feb 17:37
11 feb 19:06	19 feb 18:47	27 feb 08:17	6 mar 01:30
13 mar 10:21	21 mar 14:40	28 mar 18:48	4 abr 10:02
12 abr 02:31	20 abr 06:59	27 abr 03:31	3 may 19:50
11 may 19:00	19 may 19:13	26 may 11:14	2 jun 07:24
10 jun 10:53	18 jun 03:54	24 jun 18:40	1 jul 21:11
10 jul 01:17	17 jul 10:11	24 jul 02:37	31 jul 13:16
8 ago 13:50	15 ago 15:20	22 ago 12:02	30 ago 07:13
7 sep 00:52	13 sep 20:39	20 sep 23:55	29 sep 01:57
6 oct 11:05	13 oct 03:25	20 oct 14:57	28 oct 20:05
4 nov 21:15	11 nov 12:46	19 nov 08:58	27 nov 12:28
4 dic 07:43	11 dic 01:36	19 dic 04:36	27 dic 02:24

Eclipses

I Eclipse total de Luna, el miércoles 26 de mayo.

II Eclipse anular de Sol, el jueves 10 de junio.

III Eclipse parcial de Luna, el viernes 19 de noviembre.

IV Eclipse total de Sol, el sábado 4 de diciembre.

FENÓMENOS ASTRONÓMICOS RELEVANTES, 2021

Inicio de las estaciones

El inicio de las estaciones astronómicas se produce cuando el Sol alcanza su altura máxima, solsticio de verano, mínima, solsticio de invierno o cuando la declinación del Sol es cero y la duración del día y la noche son iguales, equinoccios de primavera y de otoño. El la tabla de la página siguiente muestra el nombre de las estaciones del hemisferio norte y del hemisferio sur. En el siglo XXI, la fecha mas tardía de comienzo de las estaciones se produjo en 2003, la fecha más temprana será en 2096.

Órbita terrestre

Los puntos extremos de la órbita terrestre en función de su distancia al Sol reciben el nombre de Ápsides. El punto de mayor acercamiento anual de la Tierra al Sol se denomina perihelio y tiene lugar en los primeros días del año. El mayor acercamiento al Sol del siglo XXI fue el 5 de enero de 2020. El punto de mayor alejamiento anual es el apogeo y se produce en los primeros días de julio. El mayor alejamiento al Sol de este siglo fue el 4 de julio de 2019. Las distancias al Sol se miden en unidades astronómicas (ua).1 ua = 149 597 870.7 km.

Fases de la Luna

Los puntos culminantes de las fases de la Luna se producen cuando la longitud eclíptica geocéntrica del Sol y la Luna forman ángulos de 0° para la luna nueva, 90° para el cuarto creciente, 180° para la luna llena y de 270° para el cuarto menguante.

Eclipses

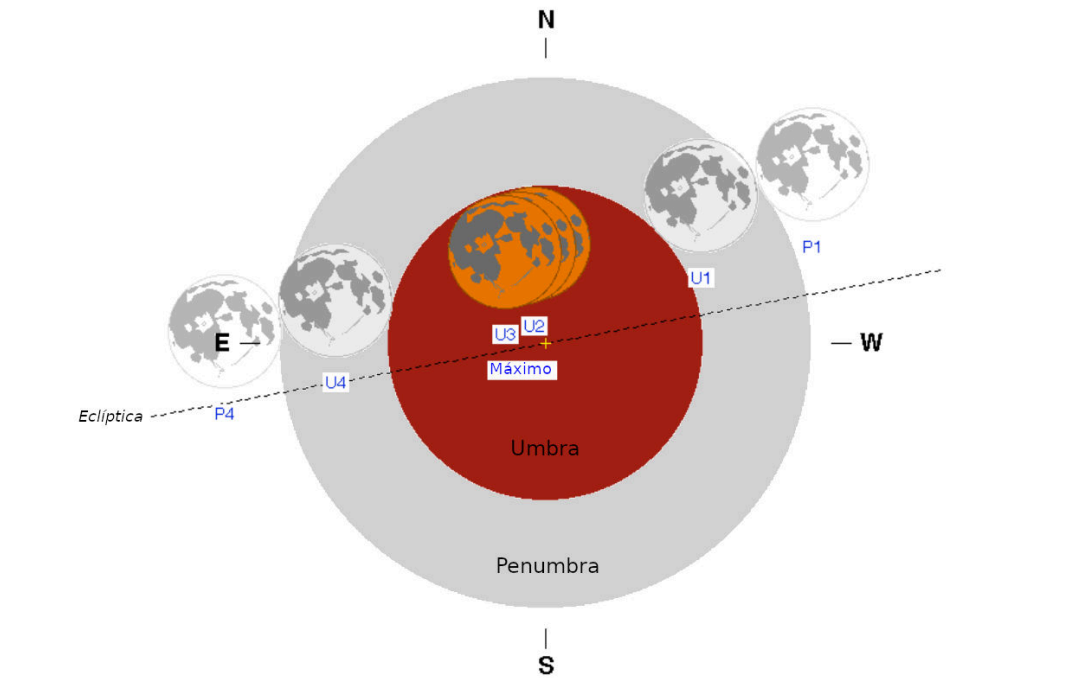
En astronomía, el término eclipse puede aplicarse a cualquier oscurecimiento, total o parcial, de la luz de un cuerpo celeste por otro. Pero el término está habitualmente restringido a un eclipse del Sol por la Luna (eclipse solar) o de la Luna por la Tierra (eclipse lunar), mientras que un eclipse del Sol por uno de los planetas interiores se denomina tránsito del planeta y un eclipse de una estrella o un planeta por la Luna, ocultación. En un año pueden suceder hasta siete eclipses.

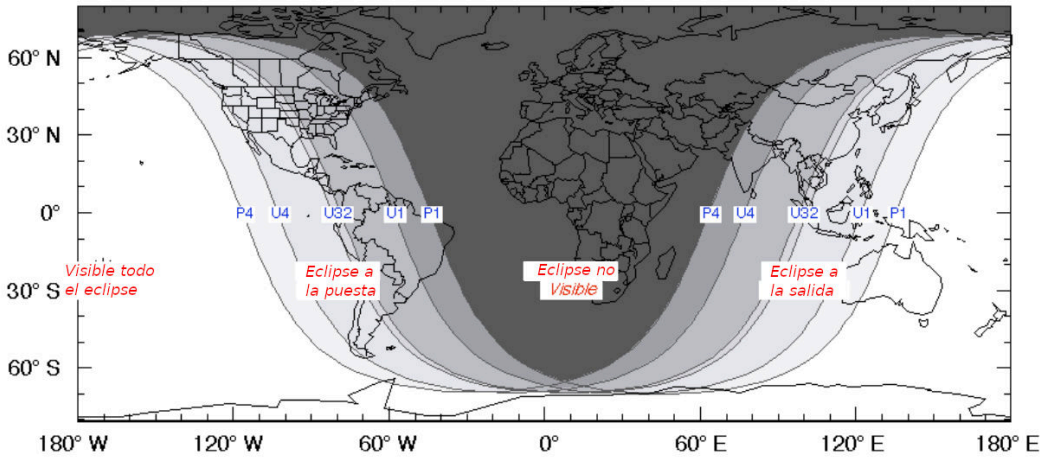
Los eclipses de Sol suceden cuando, en Luna nueva, esta se interpone entre el Sol y la Tierra. Pueden ser de tres tipos principales: eclipse total, cuando la Luna tapa toda la superficie del Sol, para lo que es necesario que el diámetro aparente de la Luna sea igual o mayor que el del Sol y el observador se encuentre en la zona de sombra producida por la Luna; eclipse anular, cuando se produce la situación anterior pero el diámetro aparente de la Luna es menor que el del Sol, por lo que queda visible el borde exterior de este; eclipse parcial, cuando la Luna tapa una parte del Sol al estar la sombra de la Luna fuera de la superficie terrestre. Los eclipses totales o anulares solo es posible verlos en una franja de terreno muy estrecha aunque muy larga y durante unos pocos minutos. Hacia el norte y hacia el sur de esa franja, el eclipse se ve como parcial en una gran zona denominada zona de penumbra, fuera de esa zona no se ve. El próximo eclipse total de Sol visible desde España será en 2027.

Los eclipses de Luna se producen cuando, en Luna llena, esta pasa por la sombra que produce la Tierra. Se distinguen tres tipos de eclipses de Luna: eclipse total, cuando toda la superficie de la Luna pasa por la *umbra* (sombra) de la Tierra; eclipse parcial, cuando solo una parte del disco lunar pasa por la umbra de la Tierra; eclipse penumbral, cuando la Luna penetra en la zona de penumbra creada por la Tierra, pero no llega a entrar en la umbra. La zona de penumbra es un círculo concéntrico con la umbra y de mayor tamaño que esta. Los eclipses totales de Luna son visibles desde cualquier parte del la Tierra en la que sea visible la Luna. Durante un eclipse total, la Luna adquiere un tono rojo oscuro debido a la luz que le llega difractada por la atmósfera terrestre.

Eclipse total de Luna, miércoles 26 de mayo

Este eclipse será visible en el Pacífico, Oceanía y la Antártida.
La fase penumbral durará 3^h02^m: el primer contacto con la penumbra será a las 08^h48^m UT (P1) y el último a las 13^h50^m UT (P4). La fase umbral será de 2^h07^m: el primer contacto exterior con la umbra será a las 09^h45^m (U1)y el último a las 12^h52^m (U4). La fase de eclipse total será de 15^m: desde las 11^h11^m (U2) hasta las 11^h26^m (U3).
El eclipse máximo tendrá lugar a las 11^h19^m.

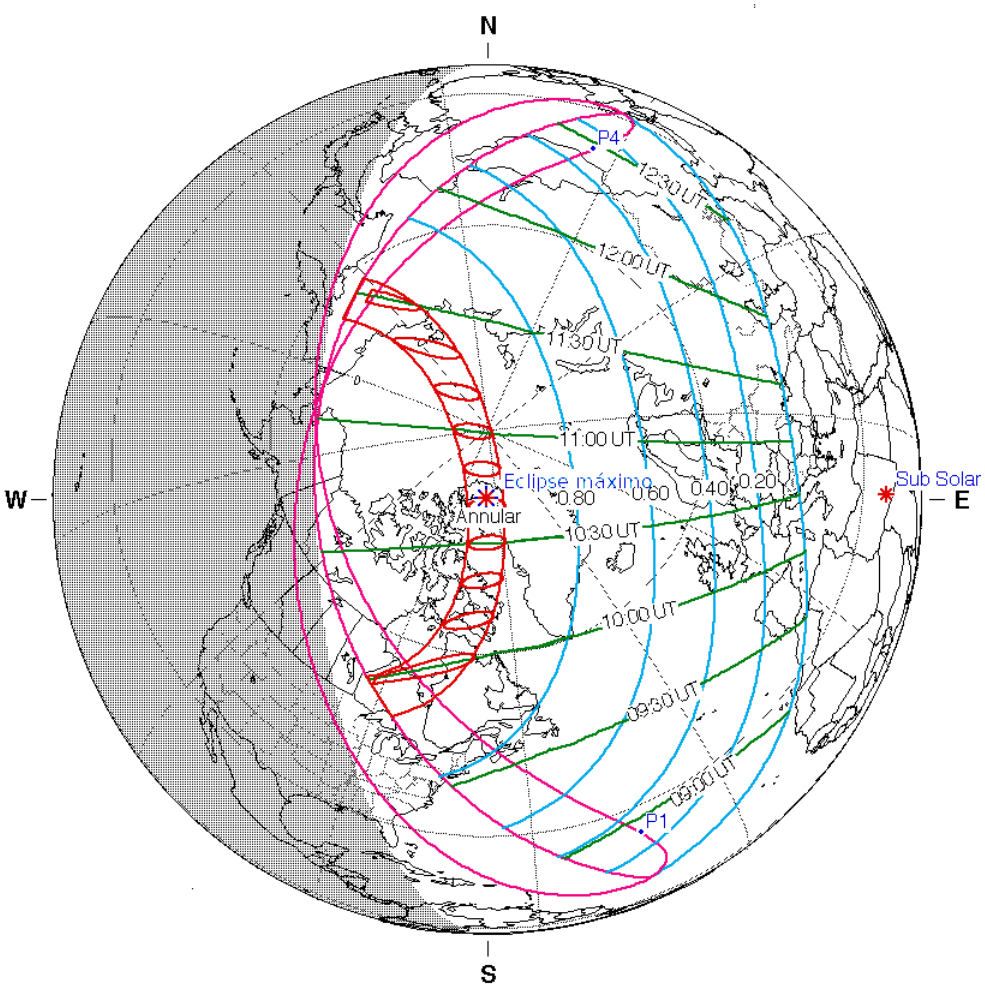




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Eclipse anular de Sol, jueves 10 de junio

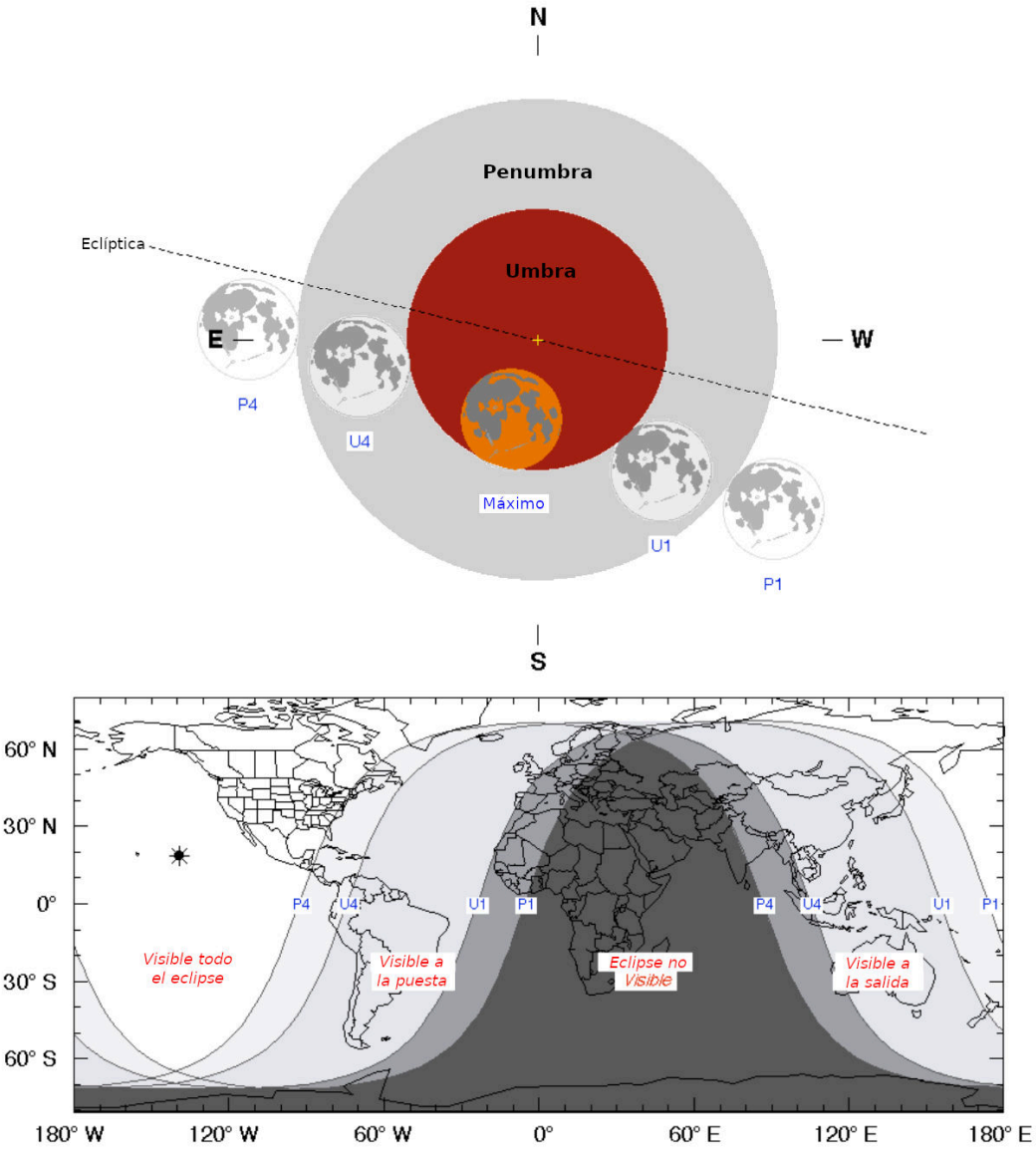
Este eclipse será visible desde Canadá, extremo noroccidental de Groenlandia, el Ártico hasta el extremo nororiental de Rusia y como parcial en Europa occidental y norte de Rusia.
La fase penumbral comenzará a la 08^h12^m UT (P1) y acabará a las 13^h11^m UT (P4). El primer contacto exterior con la umbra será a las 09^h50^m UT (U1) y el último a las 11^h34^m UT.
La fase central del eclipse dará comienzo a las 10^h01^m UT y durará hasta las 11^h23^m UT. El eclipse máximo se producirá a las 10^h42^m UT en la posición 80° 48′.9 N, 066° 48′.3 W durante 3^m51^s, el ancho de la franja será de unos 530 km.



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Eclipse parcial de Luna, viernes 19 de noviembre

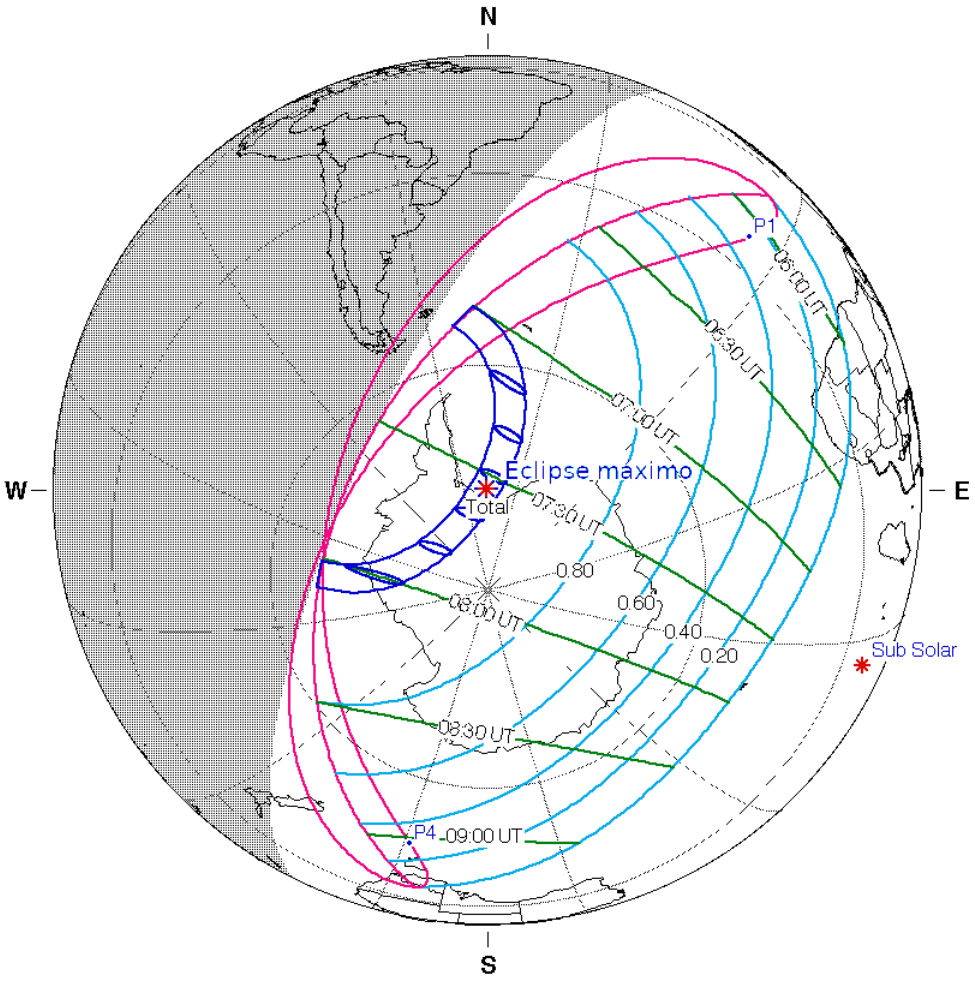
Este eclipse será visible completo en Norteamérica y el extremo oriental de Rusia. En Galicia podrán observarse los primeros instantes de contacto con la umbra a la puesta de la Luna.
La fase penumbral durará 6^h01^m: el primer contacto con la penumbra será a las 06^h02^m UT (P1) y el último a las 12^h47^m UT (P4). La fase umbral será de 3^h28^m: el primer contacto exterior con la umbra será a las 07^h18^m (U1)y el último a las 10^h47^m (U4).



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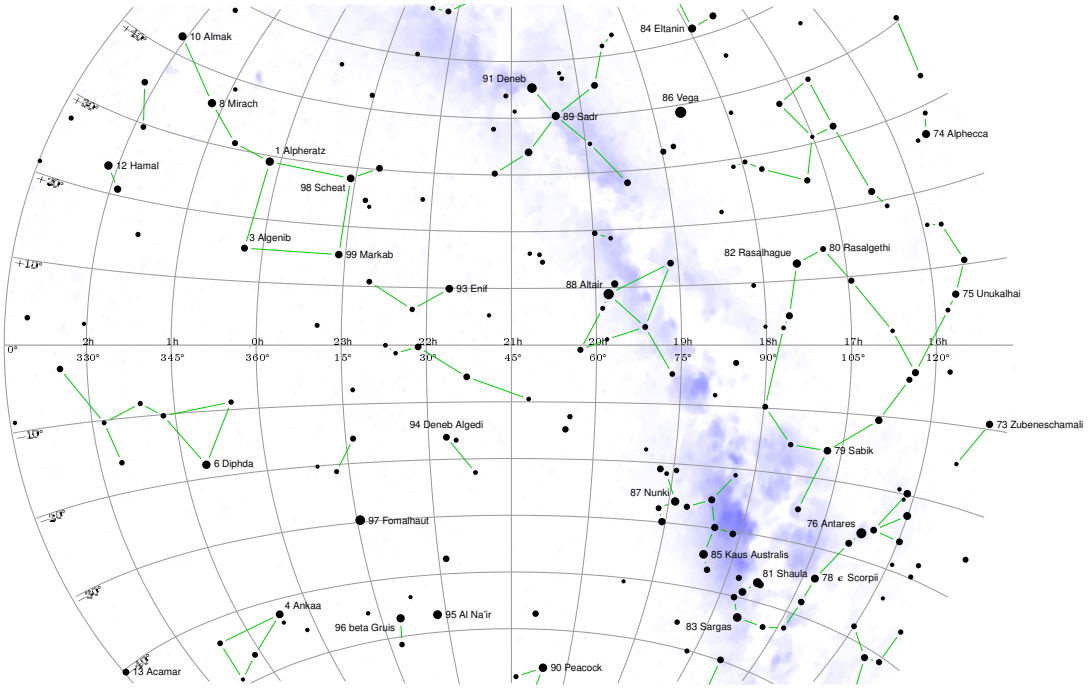
Eclipse total de Sol, sábado 4 de diciembre

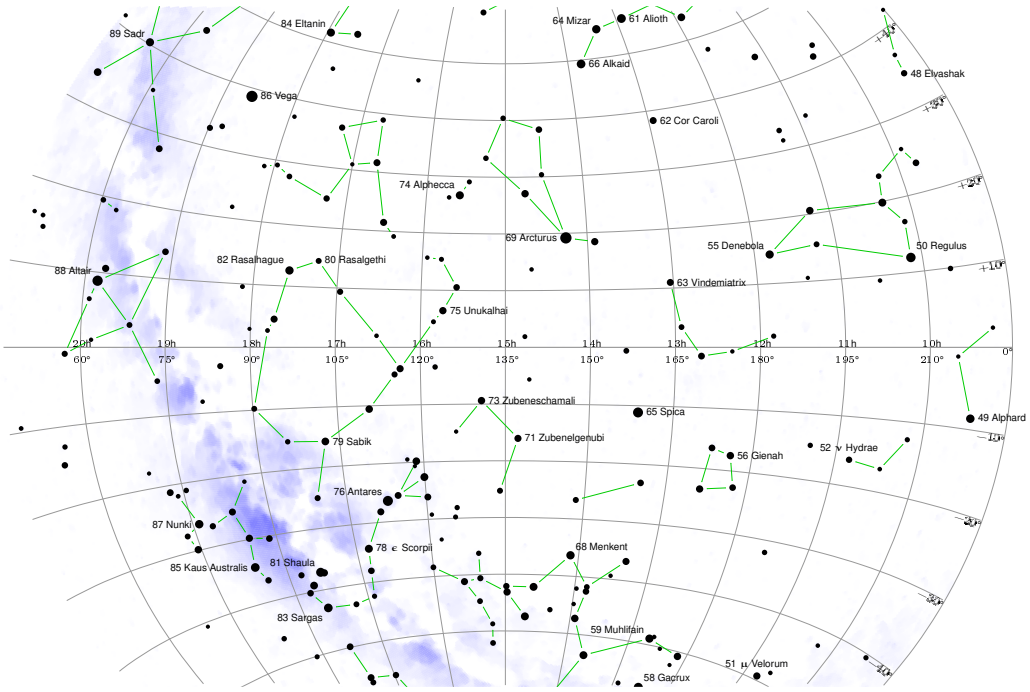
Este eclipse será visible desde la Antártida y como parcial en el extremo sur de África.
La fase penumbral comenzará a la 05^h29^m UT (P1) y acabará a las 09^h37^m UT (P4). El primer contacto exterior con la umbra será a las 07^h00^m UT (U1) y el último a las 08^h06^m UT.
La fase central del eclipse dará comienzo a las 07^h06^m UT y durará hasta las 08^h01^m UT. El eclipse máximo se producirá a las 07^h33^m UT en la posición 76° 46′.7 S, 046° 44′.9 W durante 1^m54^s, el ancho de la franja será de unos 420 km.



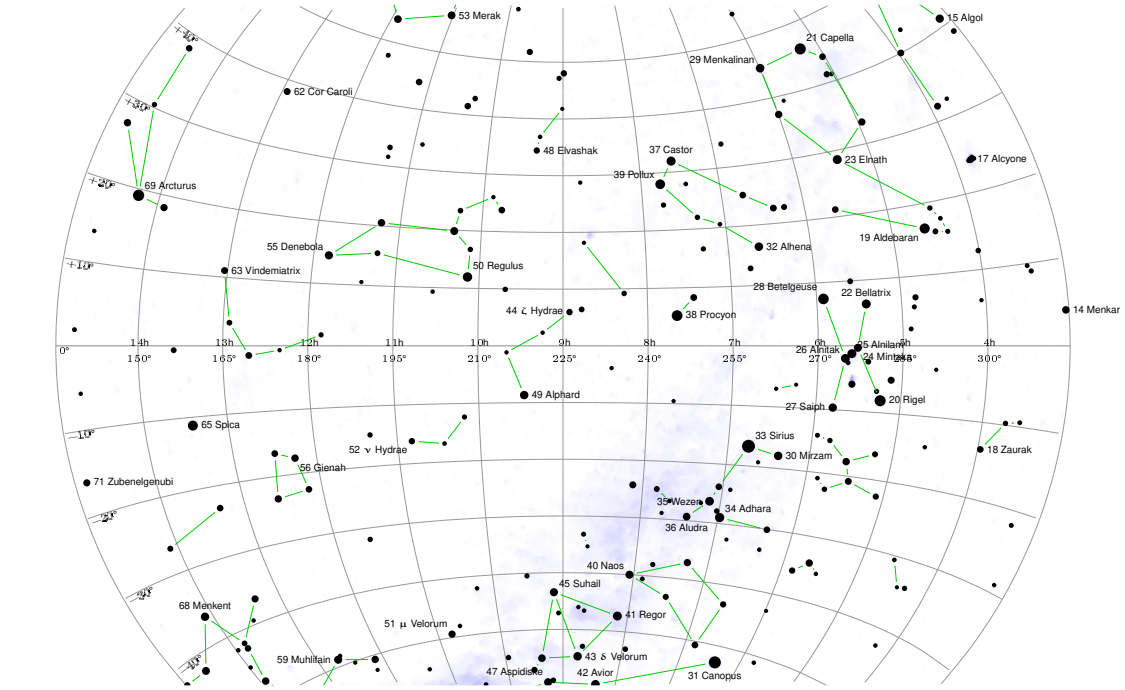
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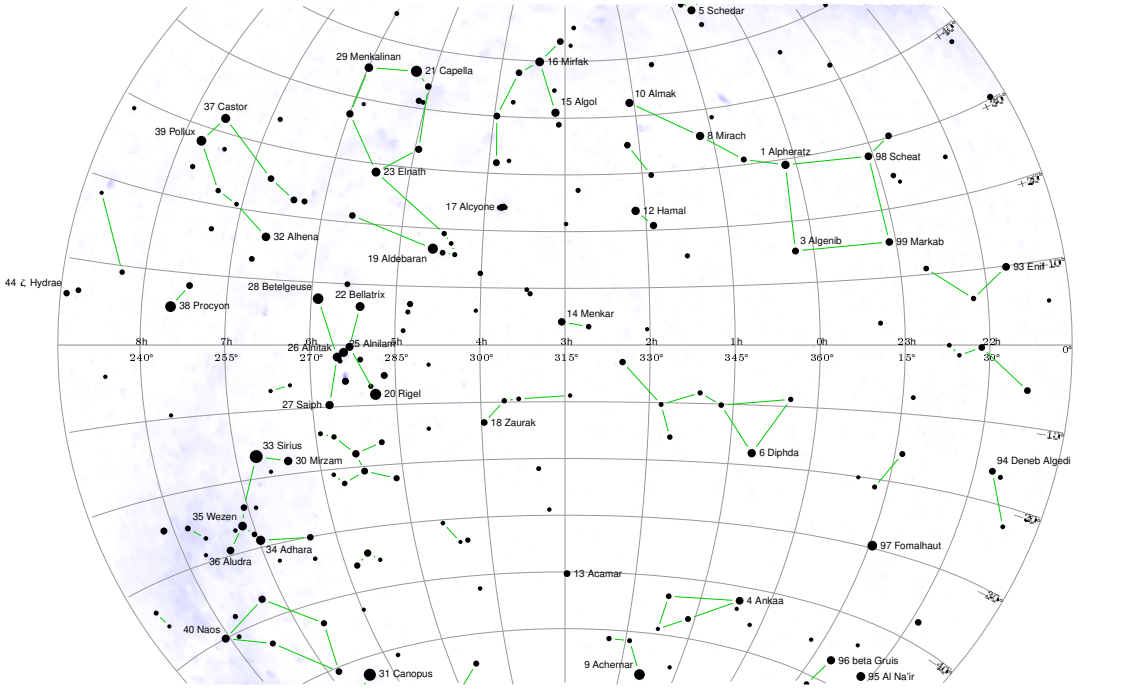
Mapas estelares





Mapas estelares





UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 17^{d}.3		PHE	4^{h}: 56′.8									
	PMG: 12^{h} 03^{m}.7				SD: 15′.5			12^{h}: 57′.0									
					PMG: 1^{h} 44^{m}			20^{h}: 57′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′								
0	179	08.5	−23	00.0	334	57.7		+23	01.4		**60 N**	7 09	8 05	9 02	17 32	91	10 59	17
1	194	08.2	−22	59.7	349	25.2	85	+22	55.8	56	**58**	7 02	7 54	8 45	17 48	87	42	21
2	209	07.9		59.5	3	52.7	85		50.1	57	**56**	6 56	44	31	18 01	83	28	25
3	224	07.6		59.3	18	20.2	85		44.3	58	**54**	50	35	19	13	80	16	27
4	239	07.3		59.1	32	47.7	85		38.3	60	**52**	44	28	8 08	23	78	10 05	30
5	254	07.0	−22	58.9	47	15.3	86	+22	32.3	60	**50**	6 39	7 20	7 58	18 32	76	9 56	31
6	269	06.7	−22	58.7	61	42.9	86	+22	26.0	63	**45**	6 28	7 05	7 38	18 52	71	9 36	35
7	284	06.4		58.5	76	10.6	87		19.7	63	**40**	18	6 51	22	19 07	68	19	39
8	299	06.1		58.3	90	38.2	86		13.2	65	**35**	08	40	7 08	21	65	9 05	41
9	314	05.8		58.1	105	05.9	87	+22	06.6	66	**30**	6 00	30	6 56	32	63	8 53	43
10	329	05.5		57.9	119	33.7	88	+21	59.9	67	**20**	5 44	6 11	35	19 52	58	32	47
11	344	05.3	−22	57.6	134	01.4	87	+21	53.1	68	**10 N**	5 28	5 54	6 17	20 09	55	8 14	50
12	359	05.0	−22	57.4	148	29.2	88	+21	46.1	70	**0**	5 11	5 37	6 00	20 25	52	7 57	53
13	14	04.7		57.2	162	57.1	89		39.0	71	**10 S**	4 53	20	5 43	40	49	40	55
14	29	04.4		57.0	177	24.9	88		31.8	72	**20**	31	5 00	24	20 57	46	21	59
15	44	04.1		56.8	191	52.8	89		24.4	74	**30**	4 02	4 35	5 03	21 17	41	7 00	62
16	59	03.8		56.6	206	20.8	90		17.0	74	**35**	3 44	20	4 50	28	39	6 47	65
17	74	03.5	−22	56.3	220	48.8	90	+21	09.4	76	**40**	3 21	4 02	4 35	21 41	36	6 33	67
18	89	03.2	−22	56.1	235	16.8	90	+21	01.7	77	**45**	2 51	3 40	4 17	21 56	33	6 15	70
19	104	02.9		55.9	249	44.8	90	+20	53.8	79	**50**	2 08	3 11	3 55	22 14	29	5 54	74
20	119	02.6		55.7	264	12.9	91		45.9	79	**52**	1 41	2 57	45	23	26	44	76
21	134	02.3		55.5	278	41.1	92		37.8	81	**54**	1 01	39	33	33	24	32	78
22	149	02.0		55.2	293	09.2	91		29.6	82	**56**	** **	2 18	19	44	21	19	81
23	164	01.7		55.0	307	37.5	93		21.3	83	**58**	** **	1 50	3 03	22 56	18	5 03	85
24	179	01.5	−22	54.8	322	05.7	92	+20	12.9	84	**60 S**	** **	1 07	2 43	23 11	13	4 45	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.0			Mag: +0.6		
	17^{h} 13^{m}.7		PMG: 10^{h} 36^{m}			PMG: 18^{h} 55^{m}			PMG: 13^{h} 36^{m}			PMG: 13^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	100	51.9	201	14.8	−22 26.0	75	47.3	+11 20.7	155	40.7	−20 00.7	156	54.3	−20 10.5
1	115	54.3	216	13.9	26.4	90	48.8	21.1	170	42.6	00.6	171	56.4	10.4
2	130	56.8	231	13.0	26.7	105	50.3	21.6	185	44.5	00.5	186	58.6	10.4
3	145	59.3	246	12.0	27.0	120	51.7	22.0	200	46.3	00.4	202	00.8	10.3
4	161	01.7	261	11.1	27.3	135	53.2	22.4	215	48.2	00.2	217	02.9	10.2
5	176	04.2	276	10.2	−22 27.6	150	54.6	+11 22.9	230	50.1	−20 00.1	232	05.1	−20 10.2
6	191	06.7	291	09.3	−22 28.0	165	56.1	+11 23.3	245	52.0	−20 00.0	247	07.3	−20 10.1
7	206	09.1	306	08.4	28.3	180	57.5	23.7	260	53.8	−19 59.8	262	09.4	10.1
8	221	11.6	321	07.5	28.6	195	59.0	24.2	275	55.7	59.7	277	11.6	10.0
9	236	14.1	336	06.6	28.9	211	00.4	24.6	290	57.6	59.6	292	13.8	09.9
10	251	16.5	351	05.7	29.2	226	01.9	25.0	305	59.4	59.5	307	16.0	09.9
11	266	19.0	6	04.8	−22 29.6	241	03.3	+11 25.5	321	01.3	−19 59.3	322	18.1	−20 09.8
12	281	21.4	21	03.9	−22 29.9	256	04.8	+11 25.9	336	03.2	−19 59.2	337	20.3	−20 09.7
13	296	23.9	36	03.0	30.2	271	06.2	26.3	351	05.1	59.1	352	22.5	09.7
14	311	26.4	51	02.1	30.5	286	07.7	26.8	6	06.9	58.9	7	24.6	09.6
15	326	28.8	66	01.1	30.8	301	09.1	27.2	21	08.8	58.8	22	26.8	09.6
16	341	31.3	81	00.2	31.1	316	10.6	27.7	36	10.7	58.7	37	29.0	09.5
17	356	33.8	95	59.3	−22 31.4	331	12.0	+11 28.1	51	12.5	−19 58.6	52	31.1	−20 09.4
18	11	36.2	110	58.4	−22 31.7	346	13.5	+11 28.5	66	14.4	−19 58.4	67	33.3	−20 09.4
19	26	38.7	125	57.5	32.0	1	14.9	29.0	81	16.3	58.3	82	35.5	09.3
20	41	41.2	140	56.6	32.3	16	16.3	29.4	96	18.2	58.2	97	37.6	09.3
21	56	43.6	155	55.7	32.6	31	17.8	29.8	111	20.0	58.0	112	39.8	09.2
22	71	46.1	170	54.8	32.9	46	19.2	30.3	126	21.9	57.9	127	42.0	09.1
23	86	48.6	185	53.9	33.2	61	20.7	30.7	141	23.8	57.8	142	44.1	09.1
24	101	51.0	200	52.9	−22 33.5	76	22.1	+11 31.1	156	25.6	−19 57.6	157	46.3	−20 09.0
Dif	—			−9	−3		+14	+4		+19	+1		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 04m.1				☽ LUNA Edad: 18d.3 SD: 15′.6 PMG: 2h 37m PHE 4h: 57′.3; 12h: 57′.4; 20h: 57′.6 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	01.5	−22	54.8	322	05.7	+20	12.9	**60 N**	15 07	16 03	17 00	19 03	93	11 16	11
1	194	01.2		54.6	336	34.0 93	+20	04.4 85	**58**	24	15	07	15	88	11 03	15
2	209	00.9		54.3	351	02.4 94	+19	55.7 87	**56**	38	24	13	24	86	10 53	18
3	224	00.6		54.1	5	30.7 93		47.0 87	**54**	15 50	33	19	33	83	43	21
4	239	00.3		53.9	19	59.2 95		38.1 89	**52**	16 01	41	24	41	80	35	23
5	254	00.0	−22	53.6	34	27.6 94	+19	29.1 90	**50**	16 10	16 48	17 29	19 48	78	10 27	26
6	268	59.7	−22	53.4	48	56.1 95	+19	20.0 91	**45**	16 30	17 04	17 41	20 03	73	10 11	30
7	283	59.4		53.2	63	24.7 96		10.8 92	**40**	16 46	17	17 51	15	69	9 58	34
8	298	59.1		53.0	77	53.3 96	+19	01.5 93	**35**	17 00	28	18 00	26	65	46	37
9	313	58.8		52.7	92	21.9 96	+18	52.0 95	**30**	12	38	08	35	63	36	40
10	328	58.6		52.5	106	50.6 97		42.5 95	**20**	33	17 57	24	20 50	58	19	44
11	343	58.3	−22	52.3	121	19.4 98	+18	32.8 97	**10 N**	17 51	18 14	18 40	21 04	54	9 04	47
12	358	58.0	−22	52.0	135	48.1 97	+18	23.1 97	**0**	18 08	18 30	18 56	21 17	50	8 50	51
13	13	57.7		51.8	150	16.9 98		13.2 99	**10 S**	25	18 48	19 15	29	46	35	55
14	28	57.4		51.6	164	45.8 99	+18	03.3 99	**20**	18 43	19 08	19 37	43	42	20	58
15	43	57.1		51.3	179	14.7 99	+17	53.2 101	**30**	19 05	32	20 05	21 58	37	8 02	63
16	58	56.8		51.1	193	43.7 100		43.1 101	**35**	18	19 47	23	22 07	35	7 52	65
17	73	56.5	−22	50.8	208	12.7 100	+17	32.8 103	**40**	19 32	20 05	20 46	22 17	31	7 40	68
18	88	56.2	−22	50.6	222	41.7 100	+17	22.4 104	**45**	19 50	20 27	21 15	22 29	28	7 25	73
19	103	56.0		50.4	237	10.8 101		12.0 104	**50**	20 11	20 55	21 58	43	23	08	77
20	118	55.7		50.1	251	39.9 101	+17	01.4 106	**52**	22	21 10	22 24	49	22	7 00	79
21	133	55.4		49.9	266	09.1 102	+16	50.8 106	**54**	34	27	23 02	22 57	18	6 50	82
22	148	55.1		49.6	280	38.3 102		40.0 108	**56**	20 47	21 47	** **	23 05	16	40	85
23	163	54.8		49.4	295	07.6 103		29.2 108	**58**	21 03	22 15	** **	14	13	28	88
24	178	54.5	−22	49.2	309	36.9 103	+16	18.2 110	**60 S**	21 22	22 56	** **	23 24	10	6 14	93

UT	ARIES PMG 17h 09m.8		VENUS Mag: −3.9 PMG: 10h 37m				MARTE Mag: −0.2 PMG: 18h 53m				JÚPITER Mag: −2.0 PMG: 13h 33m				SATURNO Mag: +0.6 PMG: 13h 27m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	101	51.0	200	52.9	−22	33.5	76	22.1	+11	31.1	156	25.6	−19	57.6	157	46.3	−20	09.0
1	116	53.5	215	52.0		33.8	91	23.6		31.6	171	27.5		57.5	172	48.5		09.0
2	131	55.9	230	51.1		34.1	106	25.0		32.0	186	29.4		57.4	187	50.6		08.9
3	146	58.4	245	50.2		34.4	121	26.4		32.5	201	31.3		57.3	202	52.8		08.8
4	162	00.9	260	49.3		34.7	136	27.9		32.9	216	33.1		57.1	217	55.0		08.8
5	177	03.3	275	48.4	−22	35.0	151	29.3	+11	33.3	231	35.0	−19	57.0	232	57.1	−20	08.7
6	192	05.8	290	47.5	−22	35.3	166	30.8	+11	33.8	246	36.9	−19	56.9	247	59.3	−20	08.6
7	207	08.3	305	46.6		35.6	181	32.2		34.2	261	38.7		56.7	263	01.5		08.6
8	222	10.7	320	45.6		35.9	196	33.6		34.6	276	40.6		56.6	278	03.6		08.5
9	237	13.2	335	44.7		36.2	211	35.1		35.1	291	42.5		56.5	293	05.8		08.5
10	252	15.7	350	43.8		36.5	226	36.5		35.5	306	44.4		56.4	308	08.0		08.4
11	267	18.1	5	42.9	−22	36.8	241	38.0	+11	35.9	321	46.2	−19	56.2	323	10.1	−20	08.3
12	282	20.6	20	42.0	−22	37.1	256	39.4	+11	36.4	336	48.1	−19	56.1	338	12.3	−20	08.3
13	297	23.1	35	41.1		37.3	271	40.8		36.8	351	50.0		56.0	353	14.5		08.2
14	312	25.5	50	40.1		37.6	286	42.3		37.3	6	51.8		55.8	8	16.6		08.2
15	327	28.0	65	39.2		37.9	301	43.7		37.7	21	53.7		55.7	23	18.8		08.1
16	342	30.4	80	38.3		38.2	316	45.1		38.1	36	55.6		55.6	38	21.0		08.0
17	357	32.9	95	37.4	−22	38.5	331	46.6	+11	38.6	51	57.5	−19	55.4	53	23.1	−20	08.0
18	12	35.4	110	36.5	−22	38.7	346	48.0	+11	39.0	66	59.3	−19	55.3	68	25.3	−20	07.9
19	27	37.8	125	35.6		39.0	1	49.4		39.4	82	01.2		55.2	83	27.5		07.8
20	42	40.3	140	34.6		39.3	16	50.9		39.9	97	03.1		55.1	98	29.6		07.8
21	57	42.8	155	33.7		39.6	31	52.3		40.3	112	04.9		54.9	113	31.8		07.7
22	72	45.2	170	32.8		39.8	46	53.7		40.8	127	06.8		54.8	128	34.0		07.7
23	87	47.7	185	31.9		40.1	61	55.2		41.2	142	08.7		54.7	143	36.1		07.6
24	102	50.2	200	31.0	−22	40.4	76	56.6	+11	41.6	157	10.5	−19	54.5	158	38.3	−20	07.5
Dif	—			−9		−3		+14		+4		+19		+1		+22		+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 19^{d}.3		PHE	4^{h}: 57′.7								
	PMG: 12^{h} 04^{m}.6				SD: 15′.7			12^{h}: 57′.9								
					PMG: 3^{h} 29^{m}			20^{h}: 58′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	54.5	−22	49.2	309	36.9	+16	18.2	**60 N**	7 09	8 05	9 01	20 36	93	11 27	8
1	193	54.2		48.9	324	06.2 103	+16	07.2 110	**58**	7 02	7 54	8 44	43	90	18	12
2	208	53.9		48.7	338	35.6 104	+15	56.1 111	**56**	6 55	44	30	50	86	11	15
3	223	53.7		48.4	353	05.0 104		44.9 112	**54**	49	35	18	20 56	83	11 04	18
4	238	53.4		48.2	7	34.5 105		33.6 113	**52**	44	27	8 08	21 01	80	10 58	20
5	253	53.1	−22	47.9	22	04.0 105	+15	22.2 114	**50**	6 39	7 20	7 58	21 06	78	10 53	22
6	268	52.8	−22	47.7	36	33.6 106	+15	10.7 115	**45**	6 28	7 05	7 38	21 16	73	10 41	27
7	283	52.5		47.4	51	03.2 106	+14	59.2 115	**40**	18	6 52	22	24	69	32	30
8	298	52.2		47.2	65	32.8 106		47.5 117	**35**	09	40	7 08	31	66	23	33
9	313	51.9		46.9	80	02.5 107		35.8 117	**30**	6 00	30	6 56	38	62	16	36
10	328	51.7		46.7	94	32.2 107		24.0 118	**20**	5 45	6 12	36	48	58	10 03	41
11	343	51.4	−22	46.4	109	02.0 108	+14	12.1 119	**10 N**	5 29	5 55	6 18	21 58	53	9 51	46
12	358	51.1	−22	46.2	123	31.8 108	+14	00.1 120	**0**	5 12	5 38	6 01	22 07	48	9 41	49
13	13	50.8		45.9	138	01.6 108	+13	48.0 121	**10 S**	4 54	21	5 44	15	45	30	53
14	28	50.5		45.7	152	31.5 109		35.9 121	**20**	32	5 01	25	25	40	18	58
15	43	50.2		45.4	167	01.4 109		23.7 122	**30**	4 04	4 37	5 04	35	36	9 05	63
16	58	49.9		45.2	181	31.4 110	+13	11.4 123	**35**	3 46	22	4 51	42	32	8 57	66
17	73	49.7	−22	44.9	196	01.4 110	+12	59.0 124	**40**	3 23	4 04	4 37	22 48	29	8 48	69
18	88	49.4	−22	44.6	210	31.4 110	+12	46.6 124	**45**	2 54	3 42	4 19	22 57	25	8 38	73
19	103	49.1		44.4	225	01.4 110		34.1 125	**50**	2 11	3 14	3 58	23 06	21	25	78
20	118	48.8		44.1	239	31.5 111		21.5 126	**52**	1 45	2 59	47	11	18	19	80
21	133	48.5		43.9	254	01.7 112	+12	08.9 126	**54**	1 07	42	35	15	16	12	83
22	148	48.2		43.6	268	31.8 111	+11	56.1 128	**56**	** **	2 22	22	21	13	8 05	86
23	163	48.0		43.3	283	02.0 112		43.4 127	**58**	** **	1 54	3 06	27	10	7 56	90
24	178	47.7	−22	43.1	297	32.3 113	+11	30.5 129	**60 S**	** **	1 13	2 47	23 34	7	7 47	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.0			Mag: +0.6		
	17^{h} 05^{m}.8		PMG: 10^{h} 39^{m}			PMG: 18^{h} 50^{m}			PMG: 13^{h} 30^{m}			PMG: 13^{h} 24^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	102	50.2	200	31.0	−22 40.4	76	56.6	+11 41.6	157	10.5	−19 54.5	158	38.3	−20 07.5
1	117	52.6	215	30.1	40.7	91	58.0	42.1	172	12.4	54.4	173	40.4	07.5
2	132	55.1	230	29.1	40.9	106	59.4	42.5	187	14.3	54.3	188	42.6	07.4
3	147	57.5	245	28.2	41.2	122	00.9	43.0	202	16.2	54.1	203	44.8	07.4
4	163	00.0	260	27.3	41.5	137	02.3	43.4	217	18.0	54.0	218	46.9	07.3
5	178	02.5	275	26.4	−22 41.7	152	03.7	+11 43.8	232	19.9	−19 53.9	233	49.1	−20 07.2
6	193	04.9	290	25.5	−22 42.0	167	05.2	+11 44.3	247	21.8	−19 53.7	248	51.3	−20 07.2
7	208	07.4	305	24.5	42.3	182	06.6	44.7	262	23.6	53.6	263	53.4	07.1
8	223	09.9	320	23.6	42.5	197	08.0	45.1	277	25.5	53.5	278	55.6	07.0
9	238	12.3	335	22.7	42.8	212	09.4	45.6	292	27.4	53.4	293	57.8	07.0
10	253	14.8	350	21.8	43.0	227	10.9	46.0	307	29.2	53.2	308	59.9	06.9
11	268	17.3	5	20.9	−22 43.3	242	12.3	+11 46.5	322	31.1	−19 53.1	324	02.1	−20 06.9
12	283	19.7	20	19.9	−22 43.6	257	13.7	+11 46.9	337	33.0	−19 53.0	339	04.3	−20 06.8
13	298	22.2	35	19.0	43.8	272	15.1	47.3	352	34.9	52.8	354	06.4	06.7
14	313	24.7	50	18.1	44.1	287	16.6	47.8	7	36.7	52.7	9	08.6	06.7
15	328	27.1	65	17.2	44.3	302	18.0	48.2	22	38.6	52.6	24	10.8	06.6
16	343	29.6	80	16.2	44.6	317	19.4	48.7	37	40.5	52.4	39	12.9	06.5
17	358	32.0	95	15.3	−22 44.8	332	20.8	+11 49.1	52	42.3	−19 52.3	54	15.1	−20 06.5
18	13	34.5	110	14.4	−22 45.1	347	22.2	+11 49.5	67	44.2	−19 52.2	69	17.3	−20 06.4
19	28	37.0	125	13.5	45.3	2	23.7	50.0	82	46.1	52.0	84	19.4	06.4
20	43	39.4	140	12.6	45.6	17	25.1	50.4	97	47.9	51.9	99	21.6	06.3
21	58	41.9	155	11.6	45.8	32	26.5	50.9	112	49.8	51.8	114	23.8	06.2
22	73	44.4	170	10.7	46.1	47	27.9	51.3	127	51.7	51.6	129	25.9	06.2
23	88	46.8	185	09.8	46.3	62	29.3	51.7	142	53.5	51.5	144	28.1	06.1
24	103	49.3	200	08.9	−22 46.6	77	30.8	+11 52.2	157	55.4	−19 51.4	159	30.3	−20 06.1
Dif	—		−9		−3	+14		+4	+19		+1	+22		+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 20ᵈ.3		PHE	4ʰ: 58′.2								
	PMG: 12ʰ 05ᵐ.0		SD: 15′.8			12ʰ: 58′.3								
			PMG: 4ʰ 18ᵐ			20ʰ: 58′.5								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	178 47.7	−22 43.1	297 32.3		+11 30.5		**60 N**	15 10	16 06	17 02	22 09	93	11 35	6
1	193 47.4	42.8	312 02.5	112	17.6	129	**58**	27	17	09	13	89	30	10
2	208 47.1	42.6	326 32.8	113	+11 04.6	130	**56**	40	27	15	16	86	26	12
3	223 46.8	42.3	341 03.2	114	+10 51.5	131	**54**	15 52	35	21	19	83	22	15
4	238 46.5	42.0	355 33.5	113	38.4	131	**52**	16 03	43	26	21	81	18	18
5	253 46.3	−22 41.8	10 03.9	114	+10 25.2	132	**50**	16 12	16 50	17 31	22 24	78	11 15	19
6	268 46.0	−22 41.5	24 34.3	114	+10 12.0	132	**45**	16 32	17 06	17 43	22 29	73	11 08	24
7	283 45.7	41.2	39 04.8	115	+9 58.7	133	**40**	16 48	18	17 52	33	70	11 02	28
8	298 45.4	41.0	53 35.2	114	45.4	133	**35**	17 02	30	18 01	37	66	10 56	32
9	313 45.1	40.7	68 05.7	115	32.0	134	**30**	14	40	10	40	63	52	34
10	328 44.9	40.4	82 36.2	115	18.5	135	**20**	34	17 58	25	46	57	44	39
11	343 44.6	−22 40.1	97 06.8	116	+9 05.0	135	**10 N**	17 52	18 15	18 41	22 51	52	10 37	44
12	358 44.3	−22 39.9	111 37.3	115	+8 51.4	136	**0**	18 09	18 31	18 57	22 55	49	10 30	48
13	13 44.0	39.6	126 07.9	116	37.8	136	**10 S**	26	18 49	19 16	23 00	44	23	53
14	28 43.7	39.3	140 38.5	116	24.1	137	**20**	18 44	19 08	19 37	05	39	16	57
15	43 43.4	39.0	155 09.2	117	+8 10.4	137	**30**	19 05	32	20 05	11	34	08	62
16	58 43.2	38.8	169 39.8	116	+7 56.6	138	**35**	18	19 47	23	14	31	10 03	65
17	73 42.9	−22 38.5	184 10.5	117	+7 42.8	138	**40**	19 32	20 05	20 45	23 17	28	9 57	69
18	88 42.6	−22 38.2	198 41.2	117	+7 28.9	139	**45**	19 49	20 26	21 15	23 22	23	9 51	73
19	103 42.3	37.9	213 11.9	117	15.0	139	**50**	20 11	20 54	21 57	27	19	43	78
20	118 42.0	37.7	227 42.6	117	+7 01.0	140	**52**	21	21 09	22 21	29	17	39	81
21	133 41.8	37.4	242 13.3	117	+6 47.0	140	**54**	33	25	22 57	31	15	35	83
22	148 41.5	37.1	256 44.1	118	33.0	140	**56**	20 46	21 46	** **	34	12	31	86
23	163 41.2	36.8	271 14.9	118	18.9	141	**58**	21 02	22 12	** **	37	10	26	89
24	178 40.9	−22 36.5	285 45.6	117	+6 04.8	141	**60 S**	21 21	22 51	** **	23 41	6	9 20	93

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.2		Mag: −2.0		Mag: +0.6	
	17ʰ 01ᵐ.9	PMG: 10ʰ 40ᵐ		PMG: 18ʰ 48ᵐ		PMG: 13ʰ 27ᵐ		PMG: 13ʰ 20ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	103 49.3	200 08.9	−22 46.6	77 30.8	+11 52.2	157 55.4	−19 51.4	159 30.3	−20 06.1
1	118 51.8	215 07.9	46.8	92 32.2	52.6	172 57.3	51.3	174 32.4	06.0
2	133 54.2	230 07.0	47.0	107 33.6	53.1	187 59.2	51.1	189 34.6	05.9
3	148 56.7	245 06.1	47.3	122 35.0	53.5	203 01.0	51.0	204 36.7	05.9
4	163 59.2	260 05.2	47.5	137 36.4	53.9	218 02.9	50.9	219 38.9	05.8
5	179 01.6	275 04.2	−22 47.7	152 37.8	+11 54.4	233 04.8	−19 50.7	234 41.1	−20 05.7
6	194 04.1	290 03.3	−22 48.0	167 39.3	+11 54.8	248 06.6	−19 50.6	249 43.2	−20 05.7
7	209 06.5	305 02.4	48.2	182 40.7	55.2	263 08.5	50.5	264 45.4	05.6
8	224 09.0	320 01.5	48.5	197 42.1	55.7	278 10.4	50.3	279 47.6	05.6
9	239 11.5	335 00.5	48.7	212 43.5	56.1	293 12.2	50.2	294 49.7	05.5
10	254 13.9	349 59.6	48.9	227 44.9	56.6	308 14.1	50.1	309 51.9	05.4
11	269 16.4	4 58.7	−22 49.1	242 46.3	+11 57.0	323 16.0	−19 49.9	324 54.1	−20 05.4
12	284 18.9	19 57.8	−22 49.4	257 47.7	+11 57.5	338 17.8	−19 49.8	339 56.2	−20 05.3
13	299 21.3	34 56.8	49.6	272 49.1	57.9	353 19.7	49.7	354 58.4	05.2
14	314 23.8	49 55.9	49.8	287 50.6	58.3	8 21.6	49.5	10 00.6	05.2
15	329 26.3	64 55.0	50.1	302 52.0	58.8	23 23.4	49.4	25 02.7	05.1
16	344 28.7	79 54.0	50.3	317 53.4	59.2	38 25.3	49.3	40 04.9	05.1
17	359 31.2	94 53.1	−22 50.5	332 54.8	+11 59.7	53 27.2	−19 49.1	55 07.0	−20 05.0
18	14 33.6	109 52.2	−22 50.7	347 56.2	+12 00.1	68 29.0	−19 49.0	70 09.2	−20 04.9
19	29 36.1	124 51.3	50.9	2 57.6	00.5	83 30.9	48.9	85 11.4	04.9
20	44 38.6	139 50.3	51.2	17 59.0	01.0	98 32.8	48.7	100 13.5	04.8
21	59 41.0	154 49.4	51.4	33 00.4	01.4	113 34.7	48.6	115 15.7	04.7
22	74 43.5	169 48.5	51.6	48 01.8	01.9	128 36.5	48.5	130 17.9	04.7
23	89 46.0	184 47.5	51.8	63 03.2	02.3	143 38.4	48.3	145 20.0	04.6
24	104 48.4	199 46.6	−22 52.0	78 04.6	+12 02.7	158 40.3	−19 48.2	160 22.2	−20 04.6
Dif	—	−9	−2	+14	+4	+19	+1	+22	+1

UT	SOL SD: 16′.3 PMG: 12h 05m.5				LUNA Edad: 21d.3 SD: 15′.9 PMG: 5h 07m PHE: 4h: 58′.6; 12h: 58′.7; 20h: 58′.8 Rº: 48m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	40.9	−22	36.5	285	45.6	+6	04.8	**60 N**	7 08	8 04	8 59	23 42	94	11 41	6
1	193	40.6		36.3	300	16.4 118	+5	50.6 142	**58**	7 01	7 53	43	42	90	40	9
2	208	40.4		36.0	314	47.2 118		36.4 142	**56**	6 55	43	29	42	87	38	12
3	223	40.1		35.7	329	18.0 118		22.2 142	**54**	49	35	18	42	85	37	14
4	238	39.8		35.4	343	48.8 118	+5	07.9 143	**52**	44	27	8 07	42	82	36	16
5	253	39.5	−22	35.1	358	19.7 119	+4	53.6 143	**50**	6 39	7 20	7 58	23 42	80	11 34	19
6	268	39.3	−22	34.8	12	50.5 118	+4	39.3 143	**45**	6 28	7 05	7 38	23 42	75	11 32	24
7	283	39.0		34.6	27	21.3 118		24.9 144	**40**	18	6 52	22	43	70	30	27
8	298	38.7		34.3	41	52.2 119	+4	10.5 144	**35**	09	41	7 09	43	67	28	31
9	313	38.4		34.0	56	23.0 118	+3	56.1 144	**30**	6 01	31	6 57	43	64	26	34
10	328	38.1		33.7	70	53.9 119		41.6 145	**20**	5 45	6 12	36	43	58	23	40
11	343	37.9	−22	33.4	85	24.7 118	+3	27.2 144	**10 N**	5 30	5 56	6 19	23 43	54	11 21	44
12	358	37.6	−22	33.1	99	55.5 118	+3	12.7 145	**0**	5 13	5 39	6 02	23 44	49	11 18	49
13	13	37.3		32.8	114	26.4 119	+2	58.1 146	**10 S**	4 55	22	5 45	44	44	16	53
14	28	37.0		32.5	128	57.2 118		43.6 145	**20**	33	5 02	27	44	40	13	58
15	43	36.8		32.2	143	28.1 119		29.0 146	**30**	4 05	4 38	5 05	45	34	10	63
16	58	36.5		31.9	157	58.9 118	+2	14.4 146	**35**	3 47	24	4 53	45	31	08	66
17	73	36.2	−22	31.7	172	29.7 118	+1	59.8 146	**40**	3 25	4 06	4 39	23 45	28	11 06	70
18	88	35.9	−22	31.4	187	00.6 119	+1	45.2 146	**45**	2 56	3 45	4 21	23 45	24	11 04	74
19	103	35.7		31.1	201	31.4 118		30.6 146	**50**	2 14	16	4 00	46	19	01	79
20	118	35.4		30.8	216	02.2 118		15.9 147	**52**	1 49	3 02	3 50	46	17	11 00	81
21	133	35.1		30.5	230	33.0 118	+1	01.2 147	**54**	1 13	2 46	38	46	15	10 58	84
22	148	34.8		30.2	245	03.8 118	+0	46.6 146	**56**	** **	2 25	25	46	13	57	86
23	163	34.6		29.9	259	34.5 117		31.9 147	**58**	** **	1 59	3 09	47	9	55	90
24	178	34.3	−22	29.6	274	05.3 118	+0	17.2 147	**60 S**	** **	1 20	2 50	23 47	6	10 53	93

UT	ARIES PMG 16h 58m.0		VENUS Mag: −3.9 PMG: 10h 42m			MARTE Mag: −0.1 PMG: 18h 46m			JÚPITER Mag: −2.0 PMG: 13h 24m			SATURNO Mag: +0.6 PMG: 13h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	104	48.4	199	46.6	−22 52.0	78	04.6	+12 02.7	158	40.3	−19 48.2	160	22.2	−20 04.6
1	119	50.9	214	45.7	52.2	93	06.0	03.2	173	42.1	48.1	175	24.4	04.5
2	134	53.4	229	44.8	52.5	108	07.4	03.6	188	44.0	48.0	190	26.5	04.4
3	149	55.8	244	43.8	52.7	123	08.9	04.1	203	45.9	47.8	205	28.7	04.4
4	164	58.3	259	42.9	52.9	138	10.3	04.5	218	47.7	47.7	220	30.9	04.3
5	180	00.8	274	42.0	−22 53.1	153	11.7	+12 04.9	233	49.6	−19 47.6	235	33.0	−20 04.2
6	195	03.2	289	41.0	−22 53.3	168	13.1	+12 05.4	248	51.5	−19 47.4	250	35.2	−20 04.2
7	210	05.7	304	40.1	53.5	183	14.5	05.8	263	53.3	47.3	265	37.3	04.1
8	225	08.1	319	39.2	53.7	198	15.9	06.3	278	55.2	47.2	280	39.5	04.1
9	240	10.6	334	38.2	53.9	213	17.3	06.7	293	57.1	47.0	295	41.7	04.0
10	255	13.1	349	37.3	54.1	228	18.7	07.1	308	58.9	46.9	310	43.8	03.9
11	270	15.5	4	36.4	−22 54.3	243	20.1	+12 07.6	324	00.8	−19 46.8	325	46.0	−20 03.9
12	285	18.0	19	35.5	−22 54.5	258	21.5	+12 08.0	339	02.7	−19 46.6	340	48.2	−20 03.8
13	300	20.5	34	34.5	54.7	273	22.9	08.5	354	04.5	46.5	355	50.3	03.7
14	315	22.9	49	33.6	54.9	288	24.3	08.9	9	06.4	46.4	10	52.5	03.7
15	330	25.4	64	32.7	55.1	303	25.7	09.4	24	08.3	46.2	25	54.7	03.6
16	345	27.9	79	31.7	55.3	318	27.1	09.8	39	10.1	46.1	40	56.8	03.6
17	0	30.3	94	30.8	−22 55.5	333	28.5	+12 10.2	54	12.0	−19 46.0	55	59.0	−20 03.5
18	15	32.8	109	29.9	−22 55.7	348	29.9	+12 10.7	69	13.9	−19 45.8	71	01.1	−20 03.4
19	30	35.3	124	28.9	55.9	3	31.2	11.1	84	15.7	45.7	86	03.3	03.4
20	45	37.7	139	28.0	56.1	18	32.6	11.6	99	17.6	45.6	101	05.5	03.3
21	60	40.2	154	27.1	56.2	33	34.0	12.0	114	19.5	45.4	116	07.6	03.2
22	75	42.6	169	26.1	56.4	48	35.4	12.4	129	21.3	45.3	131	09.8	03.2
23	90	45.1	184	25.2	56.6	63	36.8	12.9	144	23.2	45.2	146	12.0	03.1
24	105	47.6	199	24.3	−22 56.8	78	38.2	+12 13.3	159	25.1	−19 45.0	161	14.1	−20 03.1
Dif	—			−9	−2		+14	+4		+19	+1		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 05m.9				LUNA Edad: 22d.3 SD: 16′.0 PMG: 5h 55m PHE 4h: 59′.0; 12h: 59′.1; 20h: 59′.2 Rº: 49m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	34.3	−22	29.6	274	05.3	+0	17.2	**60 N**	15 14	16 09	17 05	** **	**	11 47	7
1	193	34.0		29.3	288	36.1 118	+0	02.4 148	**58**	30	20	12	** **	**	49	10
2	208	33.7		29.0	303	06.8 117	−0	12.3 147	**56**	43	29	18	** **	**	50	13
3	223	33.5		28.7	317	37.5 117		27.0 147	**54**	15 55	38	23	** **	**	51	16
4	238	33.2		28.4	332	08.2 117		41.7 147	**52**	16 05	46	29	** **	**	52	18
5	253	32.9	−22	28.1	346	38.9 117	−0	56.5 148	**50**	16 15	16 52	17 34	** **	**	11 53	20
6	268	32.6	−22	27.8	1	09.5 116	−1	11.2 147	**45**	16 34	17 08	17 44	** **	**	11 56	24
7	283	32.4		27.5	15	40.2 117		25.9 147	**40**	16 50	20	17 54	** **	**	57	29
8	298	32.1		27.1	30	10.8 116		40.7 148	**35**	17 03	31	18 03	** **	**	11 59	32
9	313	31.8		26.8	44	41.4 116	−1	55.4 147	**30**	15	41	11	** **	**	12 00	35
10	328	31.5		26.5	59	11.9 115	−2	10.1 147	**20**	35	17 59	27	** **	**	03	40
11	343	31.3	−22	26.2	73	42.5 116	−2	24.9 148	**10 N**	17 53	18 16	18 42	** **	**	12 05	45
12	358	31.0	−22	25.9	88	13.0 115	−2	39.6 147	**0**	18 10	18 32	18 58	** **	**	12 07	49
13	13	30.7		25.6	102	43.5 115	−2	54.3 147	**10 S**	26	18 49	19 16	** **	**	09	54
14	28	30.5		25.3	117	13.9 114	−3	09.0 147	**20**	18 44	19 09	19 38	** **	**	11	59
15	43	30.2		25.0	131	44.4 115		23.7 147	**30**	19 05	33	20 05	** **	**	13	64
16	58	29.9		24.7	146	14.8 114		38.4 147	**35**	18	19 47	23	** **	**	14	68
17	73	29.6	−22	24.4	160	45.1 113	−3	53.1 147	**40**	19 32	20 04	20 45	** **	**	12 16	71
18	88	29.4	−22	24.0	175	15.5 114	−4	07.8 147	**45**	19 49	20 26	21 14	** **	**	12 18	75
19	103	29.1		23.7	189	45.8 113		22.4 146	**50**	20 10	20 53	21 55	** **	**	20	80
20	118	28.8		23.4	204	16.0 112		37.0 146	**52**	20	21 07	22 19	** **	**	21	83
21	133	28.6		23.1	218	46.3 113	−4	51.6 146	**54**	32	24	22 53	** **	**	22	85
22	148	28.3		22.8	233	16.4 111	−5	06.2 146	**56**	20 45	21 44	** **	23 59	13	23	88
23	163	28.0		22.5	247	46.6 112		20.8 146	**58**	21 00	22 09	** **		56 11	25	91
24	178	27.7	−22	22.1	262	16.7 111	−5	35.4 146	**60 S**	21 19	22 46	** **	23 53	8	12 26	95

UT	ARIES PMG 16h 54m.1		VENUS Mag: −3.9 PMG: 10h 43m			MARTE Mag: −0.1 PMG: 18h 44m			JÚPITER Mag: −2.0 PMG: 13h 21m			SATURNO Mag: +0.6 PMG: 13h 13m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	105	47.6	199	24.3	−22 56.8	78	38.2	+12 13.3	159	25.1	−19 45.0	161	14.1	−20 03.1
1	120	50.0	214	23.3	57.0	93	39.6	13.8	174	26.9	44.9	176	16.3	03.0
2	135	52.5	229	22.4	57.2	108	41.0	14.2	189	28.8	44.8	191	18.4	02.9
3	150	55.0	244	21.5	57.4	123	42.4	14.7	204	30.7	44.6	206	20.6	02.9
4	165	57.4	259	20.5	57.5	138	43.8	15.1	219	32.5	44.5	221	22.8	02.8
5	180	59.9	274	19.6	−22 57.7	153	45.2	+12 15.5	234	34.4	−19 44.4	236	24.9	−20 02.7
6	196	02.4	289	18.7	−22 57.9	168	46.6	+12 16.0	249	36.3	−19 44.2	251	27.1	−20 02.7
7	211	04.8	304	17.7	58.1	183	48.0	16.4	264	38.1	44.1	266	29.3	02.6
8	226	07.3	319	16.8	58.2	198	49.4	16.9	279	40.0	43.9	281	31.4	02.6
9	241	09.7	334	15.9	58.4	213	50.7	17.3	294	41.9	43.8	296	33.6	02.5
10	256	12.2	349	14.9	58.6	228	52.1	17.8	309	43.7	43.7	311	35.7	02.4
11	271	14.7	4	14.0	−22 58.8	243	53.5	+12 18.2	324	45.6	−19 43.5	326	37.9	−20 02.4
12	286	17.1	19	13.0	−22 58.9	258	54.9	+12 18.6	339	47.5	−19 43.4	341	40.1	−20 02.3
13	301	19.6	34	12.1	59.1	273	56.3	19.1	354	49.3	43.3	356	42.2	02.2
14	316	22.1	49	11.2	59.3	288	57.7	19.5	9	51.2	43.1	11	44.4	02.2
15	331	24.5	64	10.2	59.4	303	59.1	20.0	24	53.1	43.0	26	46.6	02.1
16	346	27.0	79	09.3	59.6	319	00.5	20.4	39	54.9	42.9	41	48.7	02.0
17	1	29.5	94	08.4	−22 59.8	334	01.8	+12 20.9	54	56.8	−19 42.7	56	50.9	−20 02.0
18	16	31.9	109	07.4	−22 59.9	349	03.2	+12 21.3	69	58.7	−19 42.6	71	53.1	−20 01.9
19	31	34.4	124	06.5	−23 00.1	4	04.6	21.7	85	00.5	42.5	86	55.2	01.9
20	46	36.9	139	05.6	00.3	19	06.0	22.2	100	02.4	42.3	101	57.4	01.8
21	61	39.3	154	04.6	00.4	34	07.4	22.6	115	04.3	42.2	116	59.5	01.7
22	76	41.8	169	03.7	00.6	49	08.8	23.1	130	06.1	42.1	132	01.7	01.7
23	91	44.2	184	02.7	00.7	64	10.1	23.5	145	08.0	41.9	147	03.9	01.6
24	106	46.7	199	01.8	−23 00.9	79	11.5	+12 24.0	160	09.9	−19 41.8	162	06.0	−20 01.5
Dif	—			−9	−2		+14	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 23^{d}.3		PHE	4^{h}: 59′.3									
	PMG: 12^{h} 06^{m}.4				SD: 16′.1			12^{h}: 59′.4									
					PMG: 6^{h} 44^{m}			20^{h}: 59′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	27.7	−22	22.1	262	16.7	−5	35.4		**60 N**	7 07	8 02	8 58	1 16	97	11 54	8
1	193	27.5		21.8	276	46.8 111	−5	49.9	145	**58**	7 00	7 52	42	12	93	11 59	12
2	208	27.2		21.5	291	16.8 110	−6	04.4	145	**56**	6 54	42	28	09	90	12 03	15
3	223	26.9		21.2	305	46.8 110		18.9	145	**54**	48	34	17	07	86	07	18
4	238	26.7		20.9	320	16.7 109		33.3	144	**52**	43	26	8 06	04	84	10	21
5	253	26.4	−22	20.5	334	46.6 109	−6	47.8	145	**50**	6 38	7 19	7 57	1 02	81	12 13	23
6	268	26.1	−22	20.2	349	16.4 108	−7	02.2	144	**45**	6 28	7 04	7 38	0 57	76	12 20	28
7	283	25.9		19.9	3	46.2 108		16.5	143	**40**	18	6 52	22	53	72	26	32
8	298	25.6		19.6	18	16.0 108		30.8	143	**35**	09	41	7 09	50	68	31	35
9	313	25.3		19.3	32	45.7 107		45.1	143	**30**	6 01	31	6 57	47	65	35	38
10	328	25.1		18.9	47	15.3 106	−7	59.4	143	**20**	5 46	6 13	37	41	60	43	43
11	343	24.8	−22	18.6	61	44.9 106	−8	13.6	142	**10 N**	5 30	5 57	6 19	0 37	55	12 50	48
12	358	24.5	−22	18.3	76	14.5 106	−8	27.8	142	**0**	5 14	5 40	6 03	0 33	50	12 56	52
13	13	24.3		17.9	90	43.9 104		41.9	141	**10 S**	4 56	23	5 46	28	47	13 03	56
14	28	24.0		17.6	105	13.4 105	−8	56.0	141	**20**	35	5 04	28	24	42	10	60
15	43	23.7		17.3	119	42.8 104	−9	10.1	141	**30**	4 07	4 40	5 07	19	36	17	66
16	58	23.5		17.0	134	12.1 103		24.1	140	**35**	3 49	25	4 55	16	34	22	69
17	73	23.2	−22	16.6	148	41.3 102	−9	38.1	140	**40**	3 28	4 08	4 40	0 13	30	13 27	73
18	88	22.9	−22	16.3	163	10.5 102	−9	52.0	139	**45**	2 59	3 47	4 24	0 09	26	13 33	77
19	103	22.7		16.0	177	39.7 102	−10	05.9	139	**50**	2 18	19	4 02	05	21	40	82
20	118	22.4		15.6	192	08.8 101		19.7	138	**52**	1 54	3 05	3 52	03	19	44	84
21	133	22.1		15.3	206	37.8 100		33.4	137	**54**	1 20	2 49	41	0 01	17	47	88
22	148	21.9		15.0	221	06.8 100	−10	47.2	138	**56**	** **	29	28	** **	**	51	91
23	163	21.6		14.6	235	35.7 99	−11	00.8	136	**58**	** **	2 04	3 12	** **	**	13 56	94
24	178	21.3	−22	14.3	250	04.5 98	−11	14.4	136	**60 S**	** **	1 27	2 54	** **	**	14 01	98

UT	ARIES		VENUS			MARTE				JÚPITER				SATURNO			
	PMG		Mag: −3.9			Mag: −0.1				Mag: −2.0				Mag: +0.6			
	16^{h} 50^{m}.1		PMG: 10^{h} 45^{m}			PMG: 18^{h} 42^{m}				PMG: 13^{h} 18^{m}				PMG: 13^{h} 10^{m}			
	hG ♈		hG ♀		Dec	hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º ′	º	′	º	′	º	′	º	′	º	′	º	′
0	106	46.7	199	01.8	−23 00.9	79	11.5	+12	24.0	160	09.9	−19	41.8	162	06.0	−20	01.5
1	121	49.2	214	00.9	01.0	94	12.9		24.4	175	11.7		41.7	177	08.2		01.5
2	136	51.6	228	59.9	01.2	109	14.3		24.8	190	13.6		41.5	192	10.3		01.4
3	151	54.1	243	59.0	01.3	124	15.7		25.3	205	15.5		41.4	207	12.5		01.4
4	166	56.6	258	58.1	01.5	139	17.0		25.7	220	17.3		41.3	222	14.7		01.3
5	181	59.0	273	57.1	−23 01.6	154	18.4	+12	26.2	235	19.2	−19	41.1	237	16.8	−20	01.2
6	197	01.5	288	56.2	−23 01.8	169	19.8	+12	26.6	250	21.1	−19	41.0	252	19.0	−20	01.2
7	212	04.0	303	55.2	01.9	184	21.2		27.1	265	22.9		40.9	267	21.2		01.1
8	227	06.4	318	54.3	02.1	199	22.6		27.5	280	24.8		40.7	282	23.3		01.0
9	242	08.9	333	53.4	02.2	214	23.9		27.9	295	26.7		40.6	297	25.5		01.0
10	257	11.4	348	52.4	02.4	229	25.3		28.4	310	28.5		40.4	312	27.6		00.9
11	272	13.8	3	51.5	−23 02.5	244	26.7	+12	28.8	325	30.4	−19	40.3	327	29.8	−20	00.8
12	287	16.3	18	50.5	−23 02.7	259	28.1	+12	29.3	340	32.2	−19	40.2	342	32.0	−20	00.8
13	302	18.7	33	49.6	02.8	274	29.4		29.7	355	34.1		40.0	357	34.1		00.7
14	317	21.2	48	48.7	02.9	289	30.8		30.2	10	36.0		39.9	12	36.3		00.7
15	332	23.7	63	47.7	03.1	304	32.2		30.6	25	37.8		39.8	27	38.5		00.6
16	347	26.1	78	46.8	03.2	319	33.6		31.1	40	39.7		39.6	42	40.6		00.5
17	2	28.6	93	45.8	−23 03.4	334	34.9	+12	31.5	55	41.6	−19	39.5	57	42.8	−20	00.5
18	17	31.1	108	44.9	−23 03.5	349	36.3	+12	31.9	70	43.4	−19	39.4	72	44.9	−20	00.4
19	32	33.5	123	44.0	03.6	4	37.7		32.4	85	45.3		39.2	87	47.1		00.3
20	47	36.0	138	43.0	03.8	19	39.1		32.8	100	47.2		39.1	102	49.3		00.3
21	62	38.5	153	42.1	03.9	34	40.4		33.3	115	49.0		39.0	117	51.4		00.2
22	77	40.9	168	41.1	04.0	49	41.8		33.7	130	50.9		38.8	132	53.6		00.1
23	92	43.4	183	40.2	04.1	64	43.2		34.2	145	52.8		38.7	147	55.7	−20	00.1
24	107	45.8	198	39.3	−23 04.3	79	44.5	+12	34.6	160	54.6	−19	38.6	162	57.9	−20	00.0
Dif	—			−9	−1		+14		+4		+19		+1		+22		+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 24ᵈ.3		PHE	4ʰ: 59′.5									
	PMG: 12ʰ 06ᵐ.8				SD: 16′.2			12ʰ: 59′.6									
					PMG: 7ʰ 36ᵐ			20ʰ: 59′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	21.3	−22	14.3	250	04.5	−11	14.4		**60 N**	15 17	16 12	17 08	2 53	99	12 02	12
1	193	21.1		13.9	264	33.3 98		28.0	136	**58**	33	23	14	45	95	11	16
2	208	20.8		13.6	279	02.0 97		41.4	134	**56**	46	32	20	39	91	18	20
3	223	20.5		13.3	293	30.6 96	−11	54.9	135	**54**	15 58	40	26	33	88	25	22
4	238	20.3		12.9	307	59.2 96	−12	08.2	133	**52**	16 08	48	31	28	85	31	25
5	253	20.0	−22	12.6	322	27.7 95	−12	21.5	133	**50**	16 17	16 55	17 36	2 23	83	12 36	28
6	268	19.7	−22	12.3	336	56.1 94	−12	34.7	132	**45**	16 36	17 10	17 46	2 13	78	12 48	32
7	283	19.5		11.9	351	24.5 94	−12	47.9	132	**40**	16 52	22	17 56	2 05	73	12 58	36
8	298	19.2		11.6	5	52.8 93	−13	01.0	131	**35**	17 05	33	18 04	1 58	70	13 06	39
9	313	19.0		11.2	20	21.0 92		14.0	130	**30**	17	17 43	12	52	67	13	43
10	328	18.7		10.9	34	49.2 92		27.0	130	**20**	37	18 00	28	41	62	26	47
11	343	18.4	−22	10.5	49	17.2 90	−13	39.8	128	**10 N**	17 54	18 17	18 43	1 32	57	13 38	51
12	358	18.2	−22	10.2	63	45.2 90	−13	52.6	128	**0**	18 10	18 33	18 59	1 23	54	13 48	55
13	13	17.9		09.8	78	13.2 90	−14	05.4	128	**10 S**	27	18 50	19 17	15	49	13 59	59
14	28	17.6		09.5	92	41.0 88		18.0	126	**20**	18 45	19 09	19 38	1 06	45	14 10	63
15	43	17.4		09.1	107	08.8 88		30.6	126	**30**	19 06	33	20 05	0 55	40	23	68
16	58	17.1		08.8	121	36.5 87		43.0	124	**35**	18	19 47	23	50	37	31	71
17	73	16.9	−22	08.5	136	04.2 87	−14	55.4	124	**40**	19 32	20 04	20 44	0 43	34	14 40	74
18	88	16.6	−22	08.1	150	31.7 85	−15	07.7	123	**45**	19 48	20 25	21 12	0 35	30	14 50	78
19	103	16.3		07.8	164	59.2 85		20.0	123	**50**	20 09	20 52	21 53	26	25	15 02	83
20	118	16.1		07.4	179	26.6 84		32.1	121	**52**	19	21 06	22 16	22	23	08	86
21	133	15.8		07.0	193	54.0 84		44.2	121	**54**	30	22	22 48	18	20	15	88
22	148	15.6		06.7	208	21.2 82	−15	56.1	119	**56**	43	21 41	** **	12	18	22	91
23	163	15.3		06.3	222	48.4 82	−16	08.0	119	**58**	20 58	22 06	** **	07	14	30	95
24	178	15.0	−22	06.0	237	15.5 81	−16	19.7	117	**60 S**	21 16	22 40	** **	0 00	11	15 39	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.0			Mag: +0.6		
	16ʰ 46ᵐ.2		PMG: 10ʰ 46ᵐ			PMG: 18ʰ 39ᵐ			PMG: 13ʰ 15ᵐ			PMG: 13ʰ 06ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	107	45.8	198	39.3	−23 04.3	79	44.5	+12 34.6	160	54.6	−19 38.6	162	57.9	−20 00.0
1	122	48.3	213	38.3	04.4	94	45.9	35.0	175	56.5	38.4	178	00.1	−20 00.0
2	137	50.8	228	37.4	04.5	109	47.3	35.5	190	58.4	38.3	193	02.2	−19 59.9
3	152	53.2	243	36.4	04.6	124	48.7	35.9	206	00.2	38.1	208	04.4	59.8
4	167	55.7	258	35.5	04.8	139	50.0	36.4	221	02.1	38.0	223	06.6	59.8
5	182	58.2	273	34.6	−23 04.9	154	51.4	+12 36.8	236	04.0	−19 37.9	238	08.7	−19 59.7
6	198	00.6	288	33.6	−23 05.0	169	52.8	+12 37.3	251	05.8	−19 37.7	253	10.9	−19 59.6
7	213	03.1	303	32.7	05.1	184	54.1	37.7	266	07.7	37.6	268	13.0	59.6
8	228	05.6	318	31.7	05.2	199	55.5	38.2	281	09.5	37.5	283	15.2	59.5
9	243	08.0	333	30.8	05.4	214	56.9	38.6	296	11.4	37.3	298	17.4	59.4
10	258	10.5	348	29.9	05.5	229	58.2	39.0	311	13.3	37.2	313	19.5	59.4
11	273	13.0	3	28.9	−23 05.6	244	59.6	+12 39.5	326	15.1	−19 37.1	328	21.7	−19 59.3
12	288	15.4	18	28.0	−23 05.7	260	01.0	+12 39.9	341	17.0	−19 36.9	343	23.8	−19 59.3
13	303	17.9	33	27.0	05.8	275	02.3	40.4	356	18.9	36.8	358	26.0	59.2
14	318	20.3	48	26.1	05.9	290	03.7	40.8	11	20.7	36.6	13	28.2	59.1
15	333	22.8	63	25.1	06.0	305	05.0	41.3	26	22.6	36.5	28	30.3	59.1
16	348	25.3	78	24.2	06.1	320	06.4	41.7	41	24.5	36.4	43	32.5	59.0
17	3	27.7	93	23.3	−23 06.2	335	07.8	+12 42.2	56	26.3	−19 36.2	58	34.6	−19 58.9
18	18	30.2	108	22.3	−23 06.3	350	09.1	+12 42.6	71	28.2	−19 36.1	73	36.8	−19 58.9
19	33	32.7	123	21.4	06.4	5	10.5	43.0	86	30.1	36.0	88	39.0	58.8
20	48	35.1	138	20.4	06.5	20	11.9	43.5	101	31.9	35.8	103	41.1	58.7
21	63	37.6	153	19.5	06.6	35	13.2	43.9	116	33.8	35.7	118	43.3	58.7
22	78	40.1	168	18.5	06.7	50	14.6	44.4	131	35.6	35.6	133	45.5	58.6
23	93	42.5	183	17.6	06.8	65	15.9	44.8	146	37.5	35.4	148	47.6	58.6
24	108	45.0	198	16.7	−23 06.9	80	17.3	+12 45.3	161	39.4	−19 35.3	163	49.8	−19 58.5
Dif	—			−9	−1		+14	+4		+19	+1		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 07m.2				LUNA Edad: 25d.3 SD: 16′.2 PMG: 8h 30m PHE 4h: 59′.7, 12h: 59′.7, 20h: 59′.7 Rº: 57m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	15.0	−22	06.0	237	15.5	−16	19.7	**60 N**	7 06	8 01	8 55	4 32	100	12 14	19
1	193	14.8		05.6	251	42.5 80		31.4 117	**58**	6 59	7 50	40	20	95	27	23
2	208	14.5		05.3	266	09.5 80		43.0 116	**56**	53	41	27	10	91	38	27
3	223	14.3		04.9	280	36.3 78	−16	54.5 115	**54**	48	33	15	4 01	88	47	31
4	238	14.0		04.6	295	03.1 78	−17	05.8 113	**52**	43	26	8 05	3 53	85	12 56	33
5	253	13.7	−22	04.2	309	29.8 77	−17	17.1 113	**50**	6 38	7 19	7 56	3 46	83	13 04	35
6	268	13.5	−22	03.8	323	56.4 76	−17	28.3 112	**45**	6 27	7 04	7 37	3 31	78	13 20	40
7	283	13.2		03.5	338	23.0 76		39.4 111	**40**	18	6 52	22	18	74	34	43
8	298	13.0		03.1	352	49.5 75	−17	50.3 109	**35**	09	41	7 08	3 08	71	45	46
9	313	12.7		02.8	7	15.9 74	−18	01.2 109	**30**	6 01	31	6 57	2 59	68	13 56	48
10	328	12.5		02.4	21	42.2 73		11.9 107	**20**	5 46	6 13	37	43	64	14 13	52
11	343	12.2	−22	02.0	36	08.4 72	−18	22.5 106	**10 N**	5 31	5 57	6 20	2 29	61	14 29	55
12	358	11.9	−22	01.7	50	34.6 72	−18	33.0 105	**0**	5 15	5 41	6 04	2 17	56	14 43	58
13	13	11.7		01.3	65	00.6 70		43.4 104	**10 S**	4 57	24	5 47	2 04	53	14 58	61
14	28	11.4		00.9	79	26.6 70	−18	53.7 103	**20**	36	5 05	29	1 51	49	15 13	65
15	43	11.2		00.6	93	52.6 70	−19	03.9 102	**30**	4 09	4 42	5 09	35	46	31	68
16	58	10.9	−22	00.2	108	18.4 68		13.9 100	**35**	3 51	27	4 57	27	42	42	70
17	73	10.7	−21	59.8	122	44.2 68	−19	23.8 99	**40**	3 30	4 10	4 42	1 17	39	15 54	73
18	88	10.4	−21	59.5	137	09.9 67	−19	33.6 98	**45**	3 02	3 49	4 26	1 05	36	16 08	76
19	103	10.1		59.1	151	35.5 66		43.3 97	**50**	2 22	22	4 05	0 51	31	25	81
20	118	09.9		58.7	166	01.0 65	−19	52.9 96	**52**	1 59	3 09	3 55	45	29	34	82
21	133	09.6		58.4	180	26.5 65	−20	02.3 94	**54**	1 27	2 53	44	38	26	43	85
22	148	09.4		58.0	194	51.9 64		11.6 93	**56**	** **	33	31	30	23	16 53	89
23	163	09.1		57.6	209	17.2 63		20.7 91	**58**	** **	2 09	3 16	21	19	17 05	92
24	178	08.9	−21	57.3	223	42.4 62	−20	29.8 91	**60 S**	** **	1 34	2 58	0 11	15	17 19	97

UT	ARIES PMG 16h 42m.3		VENUS Mag: −3.9 PMG: 10h 48m			MARTE Mag: 0.0 PMG: 18h 37m			JÚPITER Mag: −2.0 PMG: 13h 12m			SATURNO Mag: +0.6 PMG: 13h 03m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	108	45.0	198	16.7	−23 06.9	80	17.3	+12 45.3	161	39.4	−19 35.3	163	49.8	−19 58.5
1	123	47.5	213	15.7	07.0	95	18.6	45.7	176	41.2	35.1	178	51.9	58.4
2	138	49.9	228	14.8	07.1	110	20.0	46.2	191	43.1	35.0	193	54.1	58.4
3	153	52.4	243	13.8	07.2	125	21.4	46.6	206	45.0	34.9	208	56.3	58.3
4	168	54.8	258	12.9	07.3	140	22.7	47.1	221	46.8	34.7	223	58.4	58.2
5	183	57.3	273	11.9	−23 07.4	155	24.1	+12 47.5	236	48.7	−19 34.6	239	00.6	−19 58.2
6	198	59.8	288	11.0	−23 07.5	170	25.4	+12 47.9	251	50.6	−19 34.5	254	02.7	−19 58.1
7	214	02.2	303	10.0	07.6	185	26.8	48.4	266	52.4	34.3	269	04.9	58.0
8	229	04.7	318	09.1	07.7	200	28.1	48.8	281	54.3	34.2	284	07.1	58.0
9	244	07.2	333	08.2	07.8	215	29.5	49.3	296	56.1	34.0	299	09.2	57.9
10	259	09.6	348	07.2	07.8	230	30.9	49.7	311	58.0	33.9	314	11.4	57.8
11	274	12.1	3	06.3	−23 07.9	245	32.2	+12 50.2	326	59.9	−19 33.8	329	13.5	−19 57.8
12	289	14.6	18	05.3	−23 08.0	260	33.6	+12 50.6	342	01.7	−19 33.6	344	15.7	−19 57.7
13	304	17.0	33	04.4	08.1	275	34.9	51.1	357	03.6	33.5	359	17.9	57.7
14	319	19.5	48	03.4	08.2	290	36.3	51.5	12	05.5	33.4	14	20.0	57.6
15	334	22.0	63	02.5	08.3	305	37.6	51.9	27	07.3	33.2	29	22.2	57.5
16	349	24.4	78	01.6	08.3	320	39.0	52.4	42	09.2	33.1	44	24.3	57.5
17	4	26.9	93	00.6	−23 08.4	335	40.3	+12 52.8	57	11.1	−19 32.9	59	26.5	−19 57.4
18	19	29.3	107	59.7	−23 08.5	350	41.7	+12 53.3	72	12.9	−19 32.8	74	28.7	−19 57.3
19	34	31.8	122	58.7	08.6	5	43.0	53.7	87	14.8	32.7	89	30.8	57.3
20	49	34.3	137	57.8	08.6	20	44.4	54.2	102	16.6	32.5	104	33.0	57.2
21	64	36.7	152	56.8	08.7	35	45.7	54.6	117	18.5	32.4	119	35.1	57.1
22	79	39.2	167	55.9	08.8	50	47.1	55.1	132	20.4	32.3	134	37.3	57.1
23	94	41.7	182	54.9	08.8	65	48.4	55.5	147	22.2	32.1	149	39.5	57.0
24	109	44.1	197	54.0	−23 08.9	80	49.8	+12 56.0	162	24.1	−19 32.0	164	41.6	−19 56.9
Dif	—			−9	−1		+14	+4		+19	+1		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 26ᵈ.3		PHE	4ʰ: 59′.7								
	PMG: 12ʰ 07ᵐ.6		SD: 16′.3			12ʰ: 59′.6								
			PMG: 9ʰ 27ᵐ			20ʰ: 59′.6								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	178 08.9	−21 57.3	223 42.4	62	−20 29.8	89	**60 N**	15 21	16 16	17 11	6 12	93	12 33	32
1	193 08.6	56.9	238 07.6	61	38.7	87	**58**	37	26	17	5 55	88	12 50	37
2	208 08.4	56.5	252 32.7	60	47.4	87	**56**	15 50	35	23	41	85	13 05	40
3	223 08.1	56.1	266 57.7	60	−20 56.1	87	**54**	16 01	43	28	29	82	18	42
4	238 07.9	55.8	281 22.7	59	−21 04.6	85	**52**	11	51	33	18	80	29	44
5	253 07.6	−21 55.4	295 47.6	58	−21 12.9	83	**50**	16 20	16 57	17 38	5 09	78	13 39	46
6	268 07.4	−21 55.0	310 12.4	57	−21 21.1	82	**45**	16 39	17 12	17 48	4 49	74	14 00	49
7	283 07.1	54.6	324 37.1	57	29.2	81	**40**	16 54	24	17 58	32	72	17	51
8	298 06.8	54.2	339 01.8	56	37.2	80	**35**	17 07	35	18 06	19	69	31	53
9	313 06.6	53.9	353 26.4	56	44.9	77	**30**	18	17 44	14	4 07	68	14 44	54
10	328 06.3	53.5	7 51.0	56	−21 52.6	77	**20**	38	18 02	29	3 47	65	15 05	57
11	343 06.1	−21 53.1	22 15.5	55	−22 00.1	75	**10 N**	17 55	18 18	18 44	3 30	62	15 24	59
12	358 05.8	−21 52.7	36 39.9	54	−22 07.5	74	**0**	18 11	18 34	18 59	3 13	60	15 41	61
13	13 05.6	52.3	51 04.3	54	14.7	72	**10 S**	28	18 50	19 17	2 57	57	15 59	62
14	28 05.3	52.0	65 28.6	53	21.7	70	**20**	18 45	19 09	19 38	40	55	16 18	64
15	43 05.1	51.6	79 52.8	52	28.6	69	**30**	19 05	32	20 05	21	51	39	67
16	58 04.8	51.2	94 17.0	52	35.4	68	**35**	17	19 47	22	2 09	50	16 52	68
17	73 04.6	−21 50.8	108 41.2	52	−22 42.0	66	**40**	19 31	20 03	20 43	1 56	47	17 07	69
18	88 04.3	−21 50.4	123 05.3	51	−22 48.4	64	**45**	19 48	20 24	21 11	1 41	44	17 24	71
19	103 04.1	50.0	137 29.3	50	−22 54.7	63	**50**	20 08	20 51	21 50	22	41	46	73
20	118 03.8	49.6	151 53.3	50	−23 00.9	62	**52**	18	21 04	22 12	14	38	17 56	75
21	133 03.6	49.3	166 17.2	49	06.8	59	**54**	29	20	22 43	1 04	36	18 08	76
22	148 03.3	48.9	180 41.1	49	12.7	59	**56**	42	21 38	** **	0 53	33	22	78
23	163 03.1	48.5	195 04.9	48	18.3	56	**58**	20 56	22 02	** **	40	30	37	81
24	178 02.8	−21 48.1	209 28.7	48	−23 23.8	55	**60 S**	21 14	22 35	** **	0 26	25	18 56	84

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: 0.0		Mag: −2.0		Mag: +0.6	
	16ʰ 38ᵐ.3	PMG: 10ʰ 49ᵐ		PMG: 18ʰ 35ᵐ		PMG: 13ʰ 09ᵐ		PMG: 12ʰ 59ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	109 44.1	197 54.0	−23 08.9	80 49.8	+12 56.0	162 24.1	−19 32.0	164 41.6	−19 56.9
1	124 46.6	212 53.0	09.0	95 51.1	56.4	177 26.0	31.8	179 43.8	56.9
2	139 49.1	227 52.1	09.0	110 52.5	56.9	192 27.8	31.7	194 45.9	56.8
3	154 51.5	242 51.2	09.1	125 53.8	57.3	207 29.7	31.6	209 48.1	56.8
4	169 54.0	257 50.2	09.2	140 55.1	57.7	222 31.5	31.4	224 50.3	56.7
5	184 56.4	272 49.3	−23 09.2	155 56.5	+12 58.2	237 33.4	−19 31.3	239 52.4	−19 56.6
6	199 58.9	287 48.3	−23 09.3	170 57.8	+12 58.6	252 35.3	−19 31.2	254 54.6	−19 56.6
7	215 01.4	302 47.4	09.4	185 59.2	59.1	267 37.1	31.0	269 56.7	56.5
8	230 03.8	317 46.4	09.4	201 00.5	+12 59.5	282 39.0	30.9	284 58.9	56.4
9	245 06.3	332 45.5	09.5	216 01.9	+13 00.0	297 40.9	30.7	300 01.1	56.4
10	260 08.8	347 44.5	09.5	231 03.2	+13 00.4	312 42.7	30.6	315 03.2	56.3
11	275 11.2	2 43.6	−23 09.6	246 04.6	+13 00.9	327 44.6	−19 30.5	330 05.4	−19 56.2
12	290 13.7	17 42.6	−23 09.6	261 05.9	+13 01.3	342 46.4	−19 30.3	345 07.5	−19 56.2
13	305 16.2	32 41.7	09.7	276 07.2	01.8	357 48.3	30.2	0 09.7	56.1
14	320 18.6	47 40.8	09.7	291 08.6	02.2	12 50.2	30.0	15 11.9	56.0
15	335 21.1	62 39.8	09.8	306 09.9	02.6	27 52.0	29.9	30 14.0	56.0
16	350 23.6	77 38.9	09.8	321 11.3	03.1	42 53.9	29.8	45 16.2	55.9
17	5 26.0	92 37.9	−23 09.9	336 12.6	+13 03.5	57 55.8	−19 29.6	60 18.3	−19 55.9
18	20 28.5	107 37.0	−23 09.9	351 13.9	+13 04.0	72 57.6	−19 29.5	75 20.5	−19 55.8
19	35 30.9	122 36.0	10.0	6 15.3	04.4	87 59.5	29.4	90 22.7	55.7
20	50 33.4	137 35.1	10.0	21 16.6	04.9	103 01.3	29.2	105 24.8	55.7
21	65 35.9	152 34.1	10.0	36 18.0	05.3	118 03.2	29.1	120 27.0	55.6
22	80 38.3	167 33.2	10.1	51 19.3	05.8	133 05.1	28.9	135 29.1	55.5
23	95 40.8	182 32.2	10.1	66 20.6	06.2	148 06.9	28.8	150 31.3	55.5
24	110 43.3	197 31.3	−23 10.2	81 22.0	+13 06.7	163 08.8	−19 28.7	165 33.5	−19 55.4
Dif	—	−9	−1	+13	+4	+19	+1	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 27^{d}.3		PHE	4^{h}: 59′.5									
	PMG: 12^{h} 08^{m}.0				SD: 16′.2			12^{h}: 59′.4									
					PMG: 10^{h} 27^{m}			20^{h}: 59′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′								
0	178	02.8	−21	48.1	209	28.7		−23	23.8		**60 N**	7 04	7 59	8 53	7 45	73	13 05	55
1	193	02.6		47.7	223	52.5	48		29.2	54	**58**	6 58	49	38	23	72	27	56
2	208	02.3		47.3	238	16.2	47		34.4	52	**56**	52	40	25	7 06	70	13 45	57
3	223	02.1		46.9	252	39.8	46		39.4	50	**54**	47	32	14	6 51	69	14 00	58
4	238	01.9		46.5	267	03.5	47		44.2	48	**52**	42	25	8 04	38	68	13	58
5	253	01.6	−21	46.1	281	27.1	46	−23	48.9	47	**50**	6 37	7 18	7 55	6 27	67	14 25	58
6	268	01.4	−21	45.7	295	50.6	45	−23	53.5	46	**45**	6 27	7 03	7 36	6 03	67	14 49	59
7	283	01.1		45.3	310	14.1	45	−23	57.8	43	**40**	18	6 51	21	5 44	66	15 08	60
8	298	00.9		44.9	324	37.6	45	−24	02.0	42	**35**	09	41	7 08	28	65	24	60
9	313	00.6		44.5	339	01.1	45		06.1	41	**30**	6 01	31	6 57	5 15	64	15 38	61
10	328	00.4		44.1	353	24.6	45		09.9	38	**20**	5 47	6 14	37	4 52	63	16 02	61
11	343	00.1	−21	43.7	7	48.0	44	−24	13.6	37	**10 N**	5 32	5 58	6 20	4 32	62	16 23	61
12	357	59.9	−21	43.3	22	11.4	44	−24	17.2	36	**0**	5 16	5 42	6 04	4 13	61	16 42	61
13	12	59.6		42.9	36	34.7	43		20.5	33	**10 S**	4 59	25	5 48	3 54	61	17 01	62
14	27	59.4		42.5	50	58.1	44		23.7	32	**20**	38	5 06	31	35	59	22	61
15	42	59.1		42.1	65	21.4	43		26.8	31	**30**	4 11	4 43	5 10	3 12	58	17 46	61
16	57	58.9		41.7	79	44.8	44		29.6	28	**35**	3 54	29	4 58	2 59	56	18 00	61
17	72	58.7	−21	41.3	94	08.1	43	−24	32.3	27	**40**	3 32	4 13	4 45	2 43	56	18 16	61
18	87	58.4	−21	40.9	108	31.4	43	−24	34.8	25	**45**	3 05	3 52	4 28	2 25	55	18 35	62
19	102	58.2		40.5	122	54.7	43		37.2	24	**50**	2 26	25	4 08	2 03	52	18 59	62
20	117	57.9		40.1	137	18.0	43		39.4	22	**52**	2 04	3 12	3 58	1 52	51	19 11	61
21	132	57.7		39.7	151	41.3	43		41.4	20	**54**	1 33	2 56	47	40	50	24	62
22	147	57.4		39.3	166	04.6	43		43.2	18	**56**	0 34	38	35	26	49	40	61
23	162	57.2		38.9	180	27.9	43		44.9	17	**58**	** **	2 14	20	1 10	46	19 58	61
24	177	57.0	−21	38.5	194	51.2	43	−24	46.4	15	**60 S**	** **	1 42	3 03	0 51	43	20 20	61

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.0			Mag: +0.6		
	16^{h} 34^{m}.4		PMG: 10^{h} 51^{m}			PMG: 18^{h} 33^{m}			PMG: 13^{h} 06^{m}			PMG: 12^{h} 56^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	110	43.3	197	31.3	−23 10.2	81	22.0	+13 06.7	163	08.8	−19 28.7	165	33.5	−19 55.4
1	125	45.7	212	30.3	10.2	96	23.3	07.1	178	10.7	28.5	180	35.6	55.3
2	140	48.2	227	29.4	10.2	111	24.6	07.6	193	12.5	28.4	195	37.8	55.3
3	155	50.7	242	28.4	10.3	126	26.0	08.0	208	14.4	28.2	210	39.9	55.2
4	170	53.1	257	27.5	10.3	141	27.3	08.5	223	16.2	28.1	225	42.1	55.1
5	185	55.6	272	26.6	−23 10.3	156	28.6	+13 08.9	238	18.1	−19 28.0	240	44.3	−19 55.1
6	200	58.1	287	25.6	−23 10.4	171	30.0	+13 09.3	253	20.0	−19 27.8	255	46.4	−19 55.0
7	216	00.5	302	24.7	10.4	186	31.3	09.8	268	21.8	27.7	270	48.6	54.9
8	231	03.0	317	23.7	10.4	201	32.6	10.2	283	23.7	27.5	285	50.7	54.9
9	246	05.4	332	22.8	10.5	216	34.0	10.7	298	25.6	27.4	300	52.9	54.8
10	261	07.9	347	21.8	10.5	231	35.3	11.1	313	27.4	27.3	315	55.1	54.8
11	276	10.4	2	20.9	−23 10.5	246	36.6	+13 11.6	328	29.3	−19 27.1	330	57.2	−19 54.7
12	291	12.8	17	19.9	−23 10.5	261	38.0	+13 12.0	343	31.1	−19 27.0	345	59.4	−19 54.6
13	306	15.3	32	19.0	10.6	276	39.3	12.5	358	33.0	26.8	1	01.5	54.6
14	321	17.8	47	18.0	10.6	291	40.6	12.9	13	34.9	26.7	16	03.7	54.5
15	336	20.2	62	17.1	10.6	306	42.0	13.4	28	36.7	26.6	31	05.8	54.4
16	351	22.7	77	16.1	10.6	321	43.3	13.8	43	38.6	26.4	46	08.0	54.4
17	6	25.2	92	15.2	−23 10.6	336	44.6	+13 14.3	58	40.5	−19 26.3	61	10.2	−19 54.3
18	21	27.6	107	14.2	−23 10.6	351	45.9	+13 14.7	73	42.3	−19 26.2	76	12.3	−19 54.2
19	36	30.1	122	13.3	10.7	6	47.3	15.1	88	44.2	26.0	91	14.5	54.2
20	51	32.6	137	12.3	10.7	21	48.6	15.6	103	46.0	25.9	106	16.6	54.1
21	66	35.0	152	11.4	10.7	36	49.9	16.0	118	47.9	25.7	121	18.8	54.0
22	81	37.5	167	10.5	10.7	51	51.2	16.5	133	49.8	25.6	136	21.0	54.0
23	96	39.9	182	09.5	10.7	66	52.6	16.9	148	51.6	25.5	151	23.1	53.9
24	111	42.4	197	08.6	−23 10.7	81	53.9	+13 17.4	163	53.5	−19 25.3	166	25.3	−19 53.8
Dif	—		−9		0	+13		+4	+19		+1	+22		+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 28.ᵈ3		PHE	4ʰ: 59′.1									
	PMG: 12ʰ 08.ᵐ4				SD: 16′.1			12ʰ: 59′.0									
					PMG: 11ʰ 29ᵐ			20ʰ: 58′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	57.0	−21	38.5	194	51.2 43	−24	46.4	13	**60 N**	15 26	16 19	17 14	8 58	48	14 00	77
1	192	56.7		38.1	209	14.5 43		47.7	11	**58**	40	29	20	35	50	23	74
2	207	56.5		37.7	223	37.8 43		48.8	10	**56**	15 53	38	26	16	51	42	72
3	222	56.2		37.3	238	01.1 43		49.8	8	**54**	16 04	46	31	8 00	53	14 58	71
4	237	56.0		36.9	252	24.4 43		50.6	7	**52**	14	16 53	36	7 46	54	15 11	70
5	252	55.8	−21	36.5	266	47.8 44	−24	51.3	5	**50**	16 23	17 00	17 40	7 34	55	15 23	69
6	267	55.5	−21	36.0	281	11.2 44	−24	51.8	3	**45**	16 41	17 14	17 51	7 10	55	15 48	67
7	282	55.3		35.6	295	34.5 43		52.1	1	**40**	16 56	26	18 00	6 50	56	16 08	65
8	297	55.0		35.2	309	58.0 45		52.2	0	**35**	17 09	37	08	33	58	24	65
9	312	54.8		34.8	324	21.4 44		52.2	3	**30**	20	17 46	15	6 19	58	16 39	63
10	327	54.6		34.4	338	44.8 44		51.9	3	**20**	39	18 03	30	5 55	59	17 03	62
11	342	54.3	−21	34.0	353	08.3 45	−24	51.6	6	**10 N**	17 56	18 19	18 45	5 34	59	17 24	60
12	357	54.1	−21	33.6	7	31.8 45	−24	51.0	7	**0**	18 12	18 34	19 00	5 14	60	17 43	59
13	12	53.8		33.1	21	55.4 46		50.3	9	**10 S**	28	18 51	17	4 55	60	18 03	57
14	27	53.6		32.7	36	19.0 46		49.4	10	**20**	18 45	19 09	19 38	34	61	23	57
15	42	53.4		32.3	50	42.6 46		48.4	12	**30**	19 05	32	20 05	4 10	62	18 47	55
16	57	53.1		31.9	65	06.2 46		47.2	14	**35**	17	19 46	22	3 55	63	19 01	54
17	72	52.9	−21	31.5	79	29.9 47	−24	45.8	15	**40**	19 31	20 03	20 42	3 39	63	19 17	52
18	87	52.6	−21	31.0	93	53.7 48	−24	44.3	17	**45**	19 47	20 23	21 09	3 20	63	19 37	50
19	102	52.4		30.6	108	17.5 48		42.6	19	**50**	20 07	20 49	21 48	2 55	64	20 01	48
20	117	52.2		30.2	122	41.3 48		40.7	21	**52**	16	21 02	22 09	43	65	12	47
21	132	51.9		29.8	137	05.2 49		38.6	22	**54**	27	17	22 37	30	65	26	45
22	147	51.7		29.3	151	29.1 49		36.4	23	**56**	39	35	23 26	2 15	65	41	43
23	162	51.5		28.9	165	53.1 50		34.1		**58**	20 54	21 58	** **	1 56	66	20 59	40
24	177	51.2	−21	28.5	180	17.1 50	−24	31.6	25	**60 S**	21 11	22 29	** **	1 34	66	21 21	36

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.0			Mag: +0.6		
	16ʰ 30.ᵐ5		PMG: 10ʰ 52ᵐ			PMG: 18ʰ 31ᵐ			PMG: 13ʰ 03ᵐ			PMG: 12ʰ 52ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	111	42.4	197	08.6	−23 10.7	81	53.9	+13 17.4	163	53.5	−19 25.3	166	25.3	−19 53.8
1	126	44.9	212	07.6	10.7	96	55.2	17.8	178	55.3	25.2	181	27.4	53.8
2	141	47.3	227	06.7	10.7	111	56.5	18.3	193	57.2	25.0	196	29.6	53.7
3	156	49.8	242	05.7	10.7	126	57.9	18.7	208	59.1	24.9	211	31.8	53.6
4	171	52.3	257	04.8	10.7	141	59.2	19.2	224	00.9	24.8	226	33.9	53.6
5	186	54.7	272	03.8	−23 10.7	157	00.5	+13 19.6	239	02.8	−19 24.6	241	36.1	−19 53.5
6	201	57.2	287	02.9	−23 10.7	172	01.8	+13 20.1	254	04.7	−19 24.5	256	38.2	−19 53.5
7	216	59.7	302	01.9	10.7	187	03.2	20.5	269	06.5	24.3	271	40.4	53.4
8	232	02.1	317	01.0	10.7	202	04.5	21.0	284	08.4	24.2	286	42.5	53.3
9	247	04.6	332	00.0	10.7	217	05.8	21.4	299	10.2	24.1	301	44.7	53.3
10	262	07.1	346	59.1	10.7	232	07.1	21.9	314	12.1	23.9	316	46.9	53.2
11	277	09.5	1	58.1	−23 10.7	247	08.4	+13 22.3	329	14.0	−19 23.8	331	49.0	−19 53.1
12	292	12.0	16	57.2	−23 10.7	262	09.8	+13 22.7	344	15.8	−19 23.6	346	51.2	−19 53.1
13	307	14.4	31	56.2	10.7	277	11.1	23.2	359	17.7	23.5	1	53.3	53.0
14	322	16.9	46	55.3	10.7	292	12.4	23.6	14	19.5	23.4	16	55.5	52.9
15	337	19.4	61	54.4	10.7	307	13.7	24.1	29	21.4	23.2	31	57.7	52.9
16	352	21.8	76	53.4	10.7	322	15.0	24.5	44	23.3	23.1	46	59.8	52.8
17	7	24.3	91	52.5	−23 10.7	337	16.4	+13 25.0	59	25.1	−19 22.9	62	02.0	−19 52.7
18	22	26.8	106	51.5	−23 10.7	352	17.7	+13 25.4	74	27.0	−19 22.8	77	04.1	−19 52.7
19	37	29.2	121	50.6	10.6	7	19.0	25.9	89	28.8	22.6	92	06.3	52.6
20	52	31.7	136	49.6	10.6	22	20.3	26.3	104	30.7	22.5	107	08.5	52.5
21	67	34.2	151	48.7	10.6	37	21.6	26.8	119	32.6	22.4	122	10.6	52.5
22	82	36.6	166	47.7	10.6	52	22.9	27.2	134	34.4	22.2	137	12.8	52.4
23	97	39.1	181	46.8	10.6	67	24.3	27.7	149	36.3	22.1	152	14.9	52.3
24	112	41.6	196	45.8	−23 10.5	82	25.6	+13 28.1	164	38.2	−19 21.9	167	17.1	−19 52.3
Dif	—			−9	0		+13	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 29ᵈ.3		PHE	4ʰ: 58′.6									
	PMG: 12ʰ 08ᵐ.8				SD: 16′.0			12ʰ: 58′.4									
					PMG: 12ʰ 28ᵐ			20ʰ: 58′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	177	51.2	−21	28.5	180	17.1	−24	31.6		**60 N**	7 03	7 57	8 50	9 46	27	15 17	90
1	192	51.0		28.1	194	41.2 51		28.9	27	**58**	6 56	47	36	25	31	37	86
2	207	50.8		27.6	209	05.4 52		26.0	29	**56**	51	38	23	9 07	35	15 54	82
3	222	50.5		27.2	223	29.6 52		23.0	30	**54**	46	30	12	8 53	37	16 09	79
4	237	50.3		26.8	237	53.9 53		19.9	31	**52**	41	23	8 03	40	40	21	77
5	252	50.1	−21	26.4	252	18.2 53	−24	16.6	33	**50**	6 36	7 17	7 54	8 29	41	16 32	75
6	267	49.8	−21	25.9	266	42.6 54	−24	13.1	35	**45**	6 26	7 03	7 36	8 05	45	16 55	71
7	282	49.6		25.5	281	07.1 55		09.5	36	**40**	17	6 51	21	7 46	47	17 13	69
8	297	49.4		25.1	295	31.7 56		05.7	38	**35**	09	40	7 08	31	49	29	66
9	312	49.1		24.6	309	56.3 56	−24	01.8	39	**30**	6 02	31	6 57	7 17	51	17 42	64
10	327	48.9		24.2	324	21.0 57	−23	57.7	41	**20**	5 47	6 14	38	6 54	53	18 05	60
11	342	48.7	−21	23.8	338	45.7 57	−23	53.5	42	**10 N**	5 32	5 58	6 21	6 33	56	18 24	58
12	357	48.4	−21	23.3	353	10.6 59	−23	49.1	44	**0**	5 17	5 43	6 05	6 14	58	18 42	56
13	12	48.2		22.9	7	35.5 59		44.6	45	**10 S**	5 00	26	5 49	5 55	60	19 00	53
14	27	48.0		22.5	22	00.5 60		39.9	47	**20**	4 39	5 08	32	35	62	20	50
15	42	47.7		22.0	36	25.6 61		35.1	48	**30**	4 13	4 45	12	5 12	64	42	47
16	57	47.5		21.6	50	50.7 61		30.1	50	**35**	3 56	31	5 00	4 58	65	19 55	45
17	72	47.3	−21	21.2	65	16.0 63	−23	25.0	51	**40**	3 35	4 15	4 47	4 42	67	20 09	43
18	87	47.0	−21	20.7	79	41.3 63	−23	19.7	53	**45**	3 08	3 55	4 31	4 23	69	20 27	40
19	102	46.8		20.3	94	06.7 64		14.4	53	**50**	2 30	29	11	3 59	72	49	36
20	117	46.6		19.8	108	32.2 65		08.8	56	**52**	2 09	16	4 01	48	73	20 59	34
21	132	46.3		19.4	122	57.8 66	−23	03.2	56	**54**	1 40	3 00	3 50	35	75	21 11	31
22	147	46.1		19.0	137	23.4 66	−22	57.3	59	**56**	0 51	2 42	38	20	77	24	29
23	162	45.9		18.5	151	49.2 68		51.4	59	**58**	** **	2 20	24	3 02	80	39	26
24	177	45.7	−21	18.1	166	15.0 68	−22	45.3	61	**60 S**	** **	1 49	3 07	2 40	85	21 57	22

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.1			Mag: −2.0			Mag: +0.6		
	16ʰ 26ᵐ.5		PMG: 10ʰ 54ᵐ			PMG: 18ʰ 29ᵐ			PMG: 13ʰ 00ᵐ			PMG: 12ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	112	41.6	196	45.8	−23 10.5	82	25.6	+13 28.1	164	38.2	−19 21.9	167	17.1	−19 52.3
1	127	44.0	211	44.9	10.5	97	26.9	28.6	179	40.0	21.8	182	19.2	52.2
2	142	46.5	226	43.9	10.5	112	28.2	29.0	194	41.9	21.7	197	21.4	52.1
3	157	48.9	241	43.0	10.5	127	29.5	29.5	209	43.7	21.5	212	23.6	52.1
4	172	51.4	256	42.0	10.5	142	30.8	29.9	224	45.6	21.4	227	25.7	52.0
5	187	53.9	271	41.1	−23 10.4	157	32.1	+13 30.3	239	47.5	−19 21.2	242	27.9	−19 52.0
6	202	56.3	286	40.1	−23 10.4	172	33.4	+13 30.8	254	49.3	−19 21.1	257	30.0	−19 51.9
7	217	58.8	301	39.2	10.4	187	34.8	31.2	269	51.2	21.0	272	32.2	51.8
8	233	01.3	316	38.2	10.3	202	36.1	31.7	284	53.0	20.8	287	34.4	51.8
9	248	03.7	331	37.3	10.3	217	37.4	32.1	299	54.9	20.7	302	36.5	51.7
10	263	06.2	346	36.4	10.3	232	38.7	32.6	314	56.8	20.5	317	38.7	51.6
11	278	08.7	1	35.4	−23 10.2	247	40.0	+13 33.0	329	58.6	−19 20.4	332	40.8	−19 51.6
12	293	11.1	16	34.5	−23 10.2	262	41.3	+13 33.5	345	00.5	−19 20.3	347	43.0	−19 51.5
13	308	13.6	31	33.5	10.2	277	42.6	33.9	0	02.3	20.1	2	45.1	51.4
14	323	16.1	46	32.6	10.1	292	43.9	34.4	15	04.2	20.0	17	47.3	51.4
15	338	18.5	61	31.6	10.1	307	45.2	34.8	30	06.1	19.8	32	49.5	51.3
16	353	21.0	76	30.7	10.0	322	46.5	35.3	45	07.9	19.7	47	51.6	51.2
17	8	23.4	91	29.7	−23 10.0	337	47.8	+13 35.7	60	09.8	−19 19.5	62	53.8	−19 51.2
18	23	25.9	106	28.8	−23 10.0	352	49.2	+13 36.2	75	11.6	−19 19.4	77	55.9	−19 51.1
19	38	28.4	121	27.8	09.9	7	50.5	36.6	90	13.5	19.3	92	58.1	51.0
20	53	30.8	136	26.9	09.9	22	51.8	37.1	105	15.4	19.1	108	00.2	51.0
21	68	33.3	151	25.9	09.8	37	53.1	37.5	120	17.2	19.0	123	02.4	50.9
22	83	35.8	166	25.0	09.8	52	54.4	38.0	135	19.1	18.8	138	04.6	50.8
23	98	38.2	181	24.0	09.7	67	55.7	38.4	150	20.9	18.7	153	06.7	50.8
24	113	40.7	196	23.1	−23 09.7	82	57.0	+13 38.8	165	22.8	−19 18.6	168	08.9	−19 50.7
Dif	—			−9	0		+13	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 30^{d}.3		PHE	4^{h}: 58′.0									
	PMG: 12^{h} 09^{m}.1				SD: 15′.8			12^{h}: 57′.8									
					PMG: 13^{h} 25^{m}			20^{h}: 57′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	45.7	−21	18.1	166	15.0 70	−22	45.3	62	**60 N**	15 30	16 23	17 17	10 13	15	16 47	92
1	192	45.4		17.6	180	41.0 70		39.1	63	**58**	44	33	23	9 56	20	17 03	87
2	207	45.2		17.2	195	07.0 71		32.8	65	**56**	15 57	41	29	42	24	16	83
3	222	45.0		16.7	209	33.1 73		26.3	66	**54**	16 07	49	34	30	27	28	80
4	237	44.7		16.3	223	59.4 73		19.7	67	**52**	17	16 56	39	20	29	38	78
5	252	44.5	−21	15.8	238	25.7 73	−22	13.0	67	**50**	16 25	17 02	17 43	9 10	31	17 47	76
6	267	44.3	−21	15.4	252	52.1 74	−22	06.1	69	**45**	16 43	17 16	17 53	8 50	35	18 06	71
7	282	44.1		15.0	267	18.6 75	−21	59.2	69	**40**	16 58	28	18 01	33	39	22	67
8	297	43.8		14.5	281	45.2 76		52.1	71	**35**	17 11	38	09	20	41	35	64
9	312	43.6		14.1	296	11.9 77		44.8	73	**30**	22	17 48	17	8 08	43	18 46	62
10	327	43.4		13.6	310	38.7 78		37.5	73	**20**	41	18 04	31	7 47	47	19 05	59
11	342	43.2	−21	13.2	325	05.6 79	−21	30.0	75	**10 N**	17 57	18 20	18 46	7 29	50	19 22	55
12	357	42.9	−21	12.7	339	32.6 80	−21	22.5	75	**0**	18 13	18 35	19 01	7 12	53	19 38	51
13	12	42.7		12.3	353	59.7 81		14.8	77	**10 S**	29	18 51	18	6 55	56	19 53	48
14	27	42.5		11.8	8	26.9 82	−21	06.9	79	**20**	18 45	19 10	19 38	37	59	20 10	44
15	42	42.3		11.4	22	54.2 83	−20	59.0	79	**30**	19 05	32	20 04	16	63	29	40
16	57	42.0		10.9	37	21.6 84		51.0	80	**35**	17	19 46	21	6 03	66	40	38
17	72	41.8	−21	10.4	51	49.1 85	−20	42.8	82	**40**	19 30	20 02	20 41	5 49	68	20 52	35
18	87	41.6	−21	10.0	66	16.7 86	−20	34.6	82	**45**	19 46	20 21	21 08	5 32	72	21 07	32
19	102	41.4		09.5	80	44.4 87		26.2	84	**50**	20 05	20 47	21 45	11	76	25	27
20	117	41.1		09.1	95	12.2 88		17.8	84	**52**	15	21 00	22 05	5 01	78	33	25
21	132	40.9		08.6	109	40.1 89		09.2	86	**54**	25	14	22 32	4 50	80	42	23
22	147	40.7		08.2	124	08.1 90	−20	00.5	87	**56**	37	32	23 14	37	83	21 53	20
23	162	40.5		07.7	138	36.2 91	−19	51.8	87	**58**	20 51	21 54	** **	22	87	22 05	17
24	177	40.2	−21	07.2	153	04.4 92	−19	42.9	89	**60 S**	21 07	22 23	** **	4 05	91	22 19	13

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.1			Mag: −2.0			Mag: +0.6		
	16^{h} 22^{m}.6		PMG: 10^{h} 55^{m}			PMG: 18^{h} 27^{m}			PMG: 12^{h} 57^{m}			PMG: 12^{h} 46^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	113	40.7	196	23.1	−23 09.7	82	57.0	+13 38.8	165	22.8	−19 18.6	168	08.9	−19 50.7
1	128	43.2	211	22.2	09.6	97	58.3	39.3	180	24.7	18.4	183	11.0	50.6
2	143	45.6	226	21.2	09.6	112	59.6	39.7	195	26.5	18.3	198	13.2	50.6
3	158	48.1	241	20.3	09.5	128	00.9	40.2	210	28.4	18.1	213	15.4	50.5
4	173	50.6	256	19.3	09.5	143	02.2	40.6	225	30.2	18.0	228	17.5	50.4
5	188	53.0	271	18.4	−23 09.4	158	03.5	+13 41.1	240	32.1	−19 17.8	243	19.7	−19 50.4
6	203	55.5	286	17.4	−23 09.3	173	04.8	+13 41.5	255	34.0	−19 17.7	258	21.8	−19 50.3
7	218	57.9	301	16.5	09.3	188	06.1	42.0	270	35.8	17.6	273	24.0	50.2
8	234	00.4	316	15.5	09.2	203	07.4	42.4	285	37.7	17.4	288	26.1	50.2
9	249	02.9	331	14.6	09.2	218	08.7	42.9	300	39.6	17.3	303	28.3	50.1
10	264	05.3	346	13.6	09.1	233	10.0	43.3	315	41.4	17.1	318	30.5	50.1
11	279	07.8	1	12.7	−23 09.0	248	11.3	+13 43.8	330	43.3	−19 17.0	333	32.6	−19 50.0
12	294	10.3	16	11.7	−23 09.0	263	12.6	+13 44.2	345	45.1	−19 16.8	348	34.8	−19 49.9
13	309	12.7	31	10.8	08.9	278	13.9	44.7	0	47.0	16.7	3	36.9	49.9
14	324	15.2	46	09.9	08.8	293	15.2	45.1	15	48.9	16.6	18	39.1	49.8
15	339	17.7	61	08.9	08.8	308	16.5	45.6	30	50.7	16.4	33	41.2	49.7
16	354	20.1	76	08.0	08.7	323	17.8	46.0	45	52.6	16.3	48	43.4	49.7
17	9	22.6	91	07.0	−23 08.6	338	19.1	+13 46.5	60	54.4	−19 16.1	63	45.6	−19 49.6
18	24	25.0	106	06.1	−23 08.5	353	20.4	+13 46.9	75	56.3	−19 16.0	78	47.7	−19 49.5
19	39	27.5	121	05.1	08.5	8	21.7	47.4	90	58.2	15.8	93	49.9	49.5
20	54	30.0	136	04.2	08.4	23	23.0	47.8	106	00.0	15.7	108	52.0	49.4
21	69	32.4	151	03.2	08.3	38	24.3	48.2	121	01.9	15.6	123	54.2	49.3
22	84	34.9	166	02.3	08.2	53	25.6	48.7	136	03.7	15.4	138	56.4	49.3
23	99	37.4	181	01.3	08.2	68	26.9	49.1	151	05.6	15.3	153	58.5	49.2
24	114	39.8	196	00.4	−23 08.1	83	28.1	+13 49.6	166	07.5	−19 15.1	169	00.7	−19 49.1
Dif	—			−9	+1		+13	+4		+19	+1		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 09m.5				LUNA Edad: 1d.8 SD: 15′.6 PMG: 14h 17m PHE: 4h: 57′.3; 12h: 57′.0; 20h: 56′.8 Rº: 48m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	40.2	−21	07.2	153	04.4	−19	42.9	**60 N**	7 01	7 55	8 47	10 28	10	18 19	88
1	192	40.0		06.8	167	32.7 93		33.9 90	**58**	6 55	45	33	16	14	30	84
2	207	39.8		06.3	182	01.2 95		24.9 90	**56**	49	36	21	10 06	17	39	82
3	222	39.6		05.9	196	29.7 95		15.7 92	**54**	44	29	10	9 57	19	48	78
4	237	39.4		05.4	210	58.3 96	−19	06.4 93	**52**	40	22	8 01	49	21	18 56	76
5	252	39.1	−21	04.9	225	27.0 97	−18	57.1 93	**50**	6 35	7 16	7 52	9 41	24	19 03	73
6	267	38.9	−21	04.5	239	55.9 99	−18	47.6 95	**45**	6 26	7 02	7 35	9 25	29	19 17	69
7	282	38.7		04.0	254	24.8 99		38.1 95	**40**	17	6 50	20	12	32	29	66
8	297	38.5		03.5	268	53.8 100		28.5 96	**35**	09	40	7 07	9 01	35	39	63
9	312	38.3		03.1	283	22.9 101		18.8 97	**30**	6 01	31	6 57	8 51	37	19 48	60
10	327	38.0		02.6	297	52.2 103	−18	09.0 98	**20**	5 47	6 14	38	34	42	20 04	54
11	342	37.8	−21	02.1	312	21.5 103	−17	59.1 99	**10 N**	5 33	5 59	6 21	8 19	46	20 17	51
12	357	37.6	−21	01.7	326	50.9 104	−17	49.2 99	**0**	5 18	5 44	6 06	8 05	49	20 29	47
13	12	37.4		01.2	341	20.5 106		39.1 101	**10 S**	5 01	28	5 50	7 51	53	41	44
14	27	37.2		00.7	355	50.1 106		29.0 101	**20**	4 41	5 09	33	36	57	20 54	40
15	42	36.9	−21	00.3	10	19.8 107		18.8 102	**30**	4 15	4 47	14	19	61	21 09	35
16	57	36.7	−20	59.8	24	49.7 109	−17	08.6 102	**35**	3 58	33	5 02	7 09	63	18	32
17	72	36.5	−20	59.3	39	19.6 109	−16	58.2 104	**40**	3 38	4 17	4 49	6 57	67	21 27	30
18	87	36.3	−20	58.9	53	49.6 110	−16	47.8 104	**45**	3 11	3 58	4 33	6 44	70	21 39	26
19	102	36.1		58.4	68	19.7 111		37.3 105	**50**	2 34	32	14	27	74	52	22
20	117	35.9		57.9	82	50.0 113		26.8 105	**52**	2 14	19	4 04	19	77	21 58	20
21	132	35.6		57.4	97	20.3 113		16.1 107	**54**	1 47	3 05	3 54	10	79	22 05	18
22	147	35.4		57.0	111	50.7 114	−16	05.4 107	**56**	1 05	2 47	42	6 00	82	13	15
23	162	35.2		56.5	126	21.2 115	−15	54.7 107	**58**	** **	2 25	28	5 49	86	22	12
24	177	35.0	−20	56.0	140	51.8 116	−15	43.8 109	**60 S**	** **	1 57	3 12	5 36	90	22 32	8

UT	ARIES PMG 16h 18m.7		VENUS Mag: −3.9 PMG: 10h 57m			MARTE Mag: +0.1 PMG: 18h 25m			JÚPITER Mag: −2.0 PMG: 12h 54m			SATURNO Mag: +0.6 PMG: 12h 42m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	114	39.8	196	00.4	−23 08.1	83	28.1	+13 49.6	166	07.5	−19 15.1	169	00.7	−19 49.1
1	129	42.3	210	59.5	08.0	98	29.4	50.0	181	09.3	15.0	184	02.8	49.1
2	144	44.8	225	58.5	07.9	113	30.7	50.5	196	11.2	14.9	199	05.0	49.0
3	159	47.2	240	57.6	07.8	128	32.0	50.9	211	13.0	14.7	214	07.1	48.9
4	174	49.7	255	56.6	07.7	143	33.3	51.4	226	14.9	14.6	229	09.3	48.9
5	189	52.2	270	55.7	−23 07.7	158	34.6	+13 51.8	241	16.8	−19 14.4	244	11.5	−19 48.8
6	204	54.6	285	54.7	−23 07.6	173	35.9	+13 52.3	256	18.6	−19 14.3	259	13.6	−19 48.7
7	219	57.1	300	53.8	07.5	188	37.2	52.7	271	20.5	14.1	274	15.8	48.7
8	234	59.5	315	52.8	07.4	203	38.5	53.2	286	22.3	14.0	289	17.9	48.6
9	250	02.0	330	51.9	07.3	218	39.8	53.6	301	24.2	13.8	304	20.1	48.5
10	265	04.5	345	51.0	07.2	233	41.1	54.1	316	26.0	13.7	319	22.2	48.5
11	280	06.9	0	50.0	−23 07.1	248	42.3	+13 54.5	331	27.9	−19 13.6	334	24.4	−19 48.4
12	295	09.4	15	49.1	−23 07.0	263	43.6	+13 55.0	346	29.8	−19 13.4	349	26.6	−19 48.3
13	310	11.9	30	48.1	06.9	278	44.9	55.4	1	31.6	13.3	4	28.7	48.3
14	325	14.3	45	47.2	06.8	293	46.2	55.9	16	33.5	13.1	19	30.9	48.2
15	340	16.8	60	46.2	06.7	308	47.5	56.3	31	35.3	13.0	34	33.0	48.1
16	355	19.3	75	45.3	06.6	323	48.8	56.7	46	37.2	12.8	49	35.2	48.1
17	10	21.7	90	44.3	−23 06.5	338	50.1	+13 57.2	61	39.1	−19 12.7	64	37.3	−19 48.0
18	25	24.2	105	43.4	−23 06.4	353	51.4	+13 57.6	76	40.9	−19 12.6	79	39.5	−19 47.9
19	40	26.7	120	42.5	06.3	8	52.6	58.1	91	42.8	12.4	94	41.7	47.9
20	55	29.1	135	41.5	06.2	23	53.9	58.5	106	44.6	12.3	109	43.8	47.8
21	70	31.6	150	40.6	06.1	38	55.2	59.0	121	46.5	12.1	124	46.0	47.7
22	85	34.0	165	39.6	06.0	53	56.5	59.4	136	48.4	12.0	139	48.1	47.7
23	100	36.5	180	38.7	05.9	68	57.8	+13 59.9	151	50.2	11.8	154	50.3	47.6
24	115	39.0	195	37.7	−23 05.8	83	59.1	+14 00.3	166	52.1	−19 11.7	169	52.4	−19 47.5
Dif	—			−9	+1		+13	+4		+19	+1		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 2ᵈ.8		PHE	4ʰ: 56′.5								
	PMG: 12ʰ 09ᵐ.8				SD: 15′.4			12ʰ: 56′.3								
					PMG: 15ʰ 05ᵐ			20ʰ: 56′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	35.0	−20	56.0	140	51.8	−15	43.8	**60 N**	15 35	16 27	17 21	10 38	7	19 47	84
1	192	34.8		55.5	155	22.5 117		32.9 109	**58**	15 48	36	27	30	10	19 54	81
2	207	34.6		55.0	169	53.3 118		22.0 109	**56**	16 00	45	32	23	13	20 01	78
3	222	34.4		54.6	184	24.2 119	−15	10.9 111	**54**	11	52	37	16	16	06	76
4	237	34.1		54.1	198	55.1 119	−14	59.9 110	**52**	20	16 59	41	10	18	12	72
5	252	33.9	−20	53.6	213	26.2 121	−14	48.7 112	**50**	16 28	17 05	17 45	10 05	20	20 16	71
6	267	33.7	−20	53.1	227	57.4 122	−14	37.5 112	**45**	16 46	17 19	17 55	9 54	24	20 26	67
7	282	33.5		52.7	242	28.6 122		26.3 112	**40**	17 00	30	18 03	44	27	35	62
8	297	33.3		52.2	256	59.9 123		15.0 113	**35**	13	40	11	36	30	42	59
9	312	33.1		51.7	271	31.4 125	−14	03.6 114	**30**	23	17 49	19	28	34	48	56
10	327	32.9		51.2	286	02.9 125	−13	52.2 114	**20**	42	18 06	33	16	37	20 58	52
11	342	32.7	−20	50.7	300	34.5 126	−13	40.7 115	**10 N**	17 58	18 21	18 46	9 05	41	21 08	48
12	357	32.4	−20	50.2	315	06.1 126	−13	29.2 115	**0**	18 13	18 36	19 01	8 54	46	21 16	44
13	12	32.2		49.8	329	37.9 128		17.6 116	**10 S**	29	18 52	18	44	49	25	40
14	27	32.0		49.3	344	09.8 129	−13	06.0 116	**20**	18 46	19 10	19 38	33	53	34	36
15	42	31.8		48.8	358	41.7 129	−12	54.3 117	**30**	19 05	31	20 04	20	58	44	32
16	57	31.6		48.3	13	13.7 130		42.6 117	**35**	16	19 45	20	12	61	50	29
17	72	31.4	−20	47.8	27	45.8 131	−12	30.9 117	**40**	19 29	20 01	20 40	8 04	63	21 57	26
18	87	31.2	−20	47.3	42	18.0 132	−12	19.1 118	**45**	19 45	20 20	21 06	7 54	67	22 05	22
19	102	31.0		46.8	56	50.2 132	−12	07.2 119	**50**	20 04	45	21 42	41	72	14	18
20	117	30.8		46.3	71	22.6 134	−11	55.3 119	**52**	13	20 57	22 01	36	74	18	16
21	132	30.6		45.8	85	55.0 134		43.4 119	**54**	23	21 12	22 26	29	77	23	14
22	147	30.4		45.4	100	27.5 135		31.4 120	**56**	35	28	23 04	22	80	28	12
23	162	30.1		44.9	115	00.0 135		19.4 120	**58**	20 48	21 49	** **	15	82	34	9
24	177	29.9	−20	44.4	129	32.7 137	−11	07.4 120	**60 S**	21 04	22 16	** **	7 06	86	22 40	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.1			Mag: −2.0			Mag: +0.6		
	16ʰ 14ᵐ.7		PMG: 10ʰ 58ᵐ			PMG: 18ʰ 22ᵐ			PMG: 12ʰ 51ᵐ			PMG: 12ʰ 39ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	115	39.0	195	37.7	−23 05.8	83	59.1	+14 00.3	166	52.1	−19 11.7	169	52.4	−19 47.5
1	130	41.4	210	36.8	05.7	99	00.3	00.8	181	53.9	11.6	184	54.6	47.5
2	145	43.9	225	35.9	05.6	114	01.6	01.2	196	55.8	11.4	199	56.8	47.4
3	160	46.4	240	34.9	05.4	129	02.9	01.7	211	57.7	11.3	214	58.9	47.3
4	175	48.8	255	34.0	05.3	144	04.2	02.1	226	59.5	11.1	230	01.1	47.3
5	190	51.3	270	33.0	−23 05.2	159	05.5	+14 02.6	242	01.4	−19 11.0	245	03.2	−19 47.2
6	205	53.8	285	32.1	−23 05.1	174	06.8	+14 03.0	257	03.2	−19 10.8	260	05.4	−19 47.1
7	220	56.2	300	31.1	05.0	189	08.0	03.5	272	05.1	10.7	275	07.5	47.1
8	235	58.7	315	30.2	04.9	204	09.3	03.9	287	07.0	10.5	290	09.7	47.0
9	251	01.1	330	29.3	04.7	219	10.6	04.4	302	08.8	10.4	305	11.9	46.9
10	266	03.6	345	28.3	04.6	234	11.9	04.8	317	10.7	10.3	320	14.0	46.9
11	281	06.1	0	27.4	−23 04.5	249	13.1	+14 05.3	332	12.5	−19 10.1	335	16.2	−19 46.8
12	296	08.5	15	26.4	−23 04.4	264	14.4	+14 05.7	347	14.4	−19 10.0	350	18.3	−19 46.8
13	311	11.0	30	25.5	04.2	279	15.7	06.1	2	16.3	09.8	5	20.5	46.7
14	326	13.5	45	24.5	04.1	294	17.0	06.6	17	18.1	09.7	20	22.6	46.6
15	341	15.9	60	23.6	04.0	309	18.3	07.0	32	20.0	09.5	35	24.8	46.6
16	356	18.4	75	22.7	03.8	324	19.5	07.5	47	21.8	09.4	50	27.0	46.5
17	11	20.9	90	21.7	−23 03.7	339	20.8	+14 07.9	62	23.7	−19 09.3	65	29.1	−19 46.4
18	26	23.3	105	20.8	−23 03.6	354	22.1	+14 08.4	77	25.6	−19 09.1	80	31.3	−19 46.4
19	41	25.8	120	19.8	03.4	9	23.4	08.8	92	27.4	09.0	95	33.4	46.3
20	56	28.3	135	18.9	03.3	24	24.6	09.3	107	29.3	08.8	110	35.6	46.2
21	71	30.7	150	18.0	03.2	39	25.9	09.7	122	31.1	08.7	125	37.7	46.2
22	86	33.2	165	17.0	03.0	54	27.2	10.2	137	33.0	08.5	140	39.9	46.1
23	101	35.6	180	16.1	02.9	69	28.5	10.6	152	34.8	08.4	155	42.1	46.0
24	116	38.1	195	15.1	−23 02.8	84	29.7	+14 11.1	167	36.7	−19 08.2	170	44.2	−19 46.0
Dif	—			−9	+1		+13	+4		+19	+1		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 3ᵈ.8		PHE	4ʰ: 55′.8								
	PMG: 12ʰ 10ᵐ.2				SD: 15′.2			12ʰ: 55′.6								
					PMG: 15ʰ 50ᵐ			20ʰ: 55′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	29.9	−20	44.4	129	32.7	−11	07.4	**60 N**	6 58	7 52	8 44	10 45	6	21 11	81
1	192	29.7		43.9	144	05.4 137	−10	55.3 121	**58**	53	43	30	40	8	15	78
2	207	29.5		43.4	158	38.2 138		43.2 121	**56**	47	34	19	36	11	19	74
3	222	29.3		42.9	173	11.0 138		31.1 121	**54**	43	27	8 08	32	13	22	72
4	237	29.1		42.4	187	44.0 140		18.9 122	**52**	38	20	7 59	28	15	24	71
5	252	28.9	−20	41.9	202	17.0 140	−10	06.7 122	**50**	6 34	7 14	7 51	10 25	17	21 27	68
6	267	28.7	−20	41.4	216	50.0 140	−9	54.5 122	**45**	6 25	7 01	7 33	10 18	21	21 33	63
7	282	28.5		40.9	231	23.2 142		42.2 123	**40**	16	6 49	19	11	25	37	60
8	297	28.3		40.4	245	56.4 142		29.9 123	**35**	09	40	7 07	06	28	41	57
9	312	28.1		39.9	260	29.7 143		17.6 123	**30**	6 01	31	6 56	10 02	30	44	55
10	327	27.9		39.4	275	03.0 143	−9	05.2 124	**20**	5 47	6 14	38	9 53	35	50	50
11	342	27.7	−20	38.9	289	36.4 144	−8	52.9 123	**10 N**	5 33	5 59	6 22	9 46	39	21 56	45
12	357	27.5	−20	38.4	304	09.9 145	−8	40.5 124	**0**	5 19	5 44	6 07	9 40	42	22 00	42
13	12	27.3		37.9	318	43.4 145		28.0 125	**10 S**	5 02	29	5 51	33	46	05	38
14	27	27.1		37.4	333	17.0 146		15.6 124	**20**	4 42	5 11	35	26	50	10	34
15	42	26.9		36.9	347	50.6 146	−8	03.1 125	**30**	17	4 49	15	18	55	16	29
16	57	26.7		36.4	2	24.3 147	−7	50.6 125	**35**	4 00	35	5 04	13	58	19	27
17	72	26.5	−20	35.9	16	58.1 148	−7	38.1 125	**40**	3 40	4 20	4 51	9 07	62	22 23	24
18	87	26.3	−20	35.4	31	31.9 148	−7	25.6 125	**45**	3 15	4 00	4 36	9 01	65	22 27	21
19	102	26.1		34.9	46	05.8 149		13.1 125	**50**	2 39	3 35	17	8 53	70	32	17
20	117	25.9		34.4	60	39.7 149	−7	00.5 126	**52**	2 19	23	4 08	50	71	34	15
21	132	25.7		33.9	75	13.7 150	−6	47.9 126	**54**	1 54	3 09	3 57	46	74	37	13
22	147	25.5		33.4	89	47.7 150		35.3 126	**56**	1 16	2 52	46	42	76	40	10
23	162	25.3		32.8	104	21.8 151		22.7 126	**58**	** **	31	33	37	79	43	8
24	177	25.1	−20	32.3	118	56.0 152	−6	10.1 126	**60 S**	** **	2 04	3 17	8 32	82	22 46	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.1			Mag: −2.0			Mag: +0.6		
	16ʰ 10ᵐ.8		PMG: 11ʰ 00ᵐ			PMG: 18ʰ 20ᵐ			PMG: 12ʰ 48ᵐ			PMG: 12ʰ 35ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	116	38.1	195	15.1	−23 02.8	84	29.7	+14 11.1	167	36.7	−19 08.2	170	44.2	−19 46.0
1	131	40.6	210	14.2	02.6	99	31.0	11.5	182	38.6	08.1	185	46.4	45.9
2	146	43.0	225	13.3	02.5	114	32.3	12.0	197	40.4	08.0	200	48.5	45.8
3	161	45.5	240	12.3	02.3	129	33.5	12.4	212	42.3	07.8	215	50.7	45.8
4	176	48.0	255	11.4	02.2	144	34.8	12.9	227	44.1	07.7	230	52.8	45.7
5	191	50.4	270	10.4	−23 02.0	159	36.1	+14 13.3	242	46.0	−19 07.5	245	55.0	−19 45.6
6	206	52.9	285	09.5	−23 01.9	174	37.4	+14 13.8	257	47.9	−19 07.4	260	57.2	−19 45.6
7	221	55.4	300	08.6	01.7	189	38.6	14.2	272	49.7	07.2	275	59.3	45.5
8	236	57.8	315	07.6	01.6	204	39.9	14.6	287	51.6	07.1	291	01.5	45.4
9	252	00.3	330	06.7	01.4	219	41.2	15.1	302	53.4	06.9	306	03.6	45.4
10	267	02.8	345	05.7	01.3	234	42.4	15.5	317	55.3	06.8	321	05.8	45.3
11	282	05.2	0	04.8	−23 01.1	249	43.7	+14 16.0	332	57.2	−19 06.6	336	07.9	−19 45.2
12	297	07.7	15	03.9	−23 01.0	264	45.0	+14 16.4	347	59.0	−19 06.5	351	10.1	−19 45.2
13	312	10.1	30	02.9	00.8	279	46.2	16.9	3	00.9	06.4	6	12.3	45.1
14	327	12.6	45	02.0	00.7	294	47.5	17.3	18	02.7	06.2	21	14.4	45.0
15	342	15.1	60	01.0	00.5	309	48.8	17.8	33	04.6	06.1	36	16.6	45.0
16	357	17.5	75	00.1	00.4	324	50.0	18.2	48	06.5	05.9	51	18.7	44.9
17	12	20.0	89	59.2	−23 00.2	339	51.3	+14 18.7	63	08.3	−19 05.8	66	20.9	−19 44.8
18	27	22.5	104	58.2	−23 00.0	354	52.6	+14 19.1	78	10.2	−19 05.6	81	23.0	−19 44.8
19	42	24.9	119	57.3	−22 59.9	9	53.8	19.6	93	12.0	05.5	96	25.2	44.7
20	57	27.4	134	56.4	59.7	24	55.1	20.0	108	13.9	05.3	111	27.4	44.6
21	72	29.9	149	55.4	59.5	39	56.4	20.5	123	15.7	05.2	126	29.5	44.6
22	87	32.3	164	54.5	59.4	54	57.6	20.9	138	17.6	05.0	141	31.7	44.5
23	102	34.8	179	53.5	59.2	69	58.9	21.4	153	19.5	04.9	156	33.8	44.4
24	117	37.2	194	52.6	−22 59.0	85	00.2	+14 21.8	168	21.3	−19 04.8	171	36.0	−19 44.4
Dif	—		−9		+2	+13		+4	+19		+1	+22		+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 4ᵈ.8		PHE	4ʰ: 55′.2									
	PMG: 12ʰ 10ᵐ.5				SD: 15′.1			12ʰ: 55′.0									
					PMG: 16ʰ 32ᵐ			20ʰ: 54′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	25.1	−20	32.3	118	56.0	−6	10.1		**60 N**	15 39	16 31	17 24	10 51	4	22 32	79
1	192	24.9		31.8	133	30.1 151	−5	57.5	126	**58**	15 53	40	30	48	8	33	76
2	207	24.7		31.3	148	04.4 153		44.8	127	**56**	16 04	48	35	47	9	33	74
3	222	24.5		30.8	162	38.7 153		32.2	126	**54**	14	16 55	40	45	12	34	71
4	237	24.3		30.3	177	13.0 153		19.5	127	**52**	23	17 02	44	43	14	35	68
5	252	24.1	−20	29.8	191	47.4 154	−5	06.8	127	**50**	16 31	17 08	17 48	10 42	16	22 35	67
6	267	23.9	−20	29.3	206	21.8 154	−4	54.1	127	**45**	16 49	17 21	17 57	10 39	20	22 36	63
7	282	23.7		28.8	220	56.3 155		41.4	127	**40**	17 03	32	18 05	36	23	37	59
8	297	23.5		28.2	235	30.8 155		28.7	127	**35**	15	42	13	34	26	38	56
9	312	23.3		27.7	250	05.3 155		16.0	127	**30**	25	17 51	20	32	29	39	53
10	327	23.1		27.2	264	39.9 156	−4	03.3	127	**20**	43	18 07	34	28	34	40	49
11	342	22.9	−20	26.7	279	14.5 156	−3	50.6	127	**10 N**	17 59	18 22	18 47	10 25	38	22 41	45
12	357	22.7	−20	26.2	293	49.2 157	−3	37.8	128	**0**	18 14	18 36	19 02	10 22	42	22 42	41
13	12	22.5		25.7	308	23.9 157		25.1	127	**10 S**	29	18 52	18	19	45	43	37
14	27	22.3		25.1	322	58.6 157	−3	12.4	127	**20**	18 45	19 09	19 38	16	49	44	33
15	42	22.1		24.6	337	33.4 158	−2	59.6	128	**30**	19 04	31	20 03	13	54	45	29
16	57	21.9		24.1	352	08.2 158		46.9	127	**35**	15	44	19	11	56	46	26
17	72	21.7	−20	23.6	6	43.0 158	−2	34.2	127	**40**	19 28	19 59	20 38	10 09	59	22 47	23
18	87	21.5	−20	23.1	21	17.9 159	−2	21.4	128	**45**	19 43	20 18	21 03	10 06	63	22 48	19
19	102	21.3		22.5	35	52.8 159	−2	08.7	127	**50**	20 02	43	38	03	67	49	15
20	117	21.1		22.0	50	27.7 159	−1	56.0	127	**52**	11	20 55	21 57	01	69	49	14
21	132	20.9		21.5	65	02.6 159		43.2	128	**54**	21	21 08	22 21	10 00	71	50	11
22	147	20.7		21.0	79	37.6 160		30.5	127	**56**	32	25	22 55	9 58	74	50	10
23	162	20.5		20.4	94	12.6 160		17.8	127	**58**	20 45	21 45	** **		56	76	51	7
24	177	20.4	−20	19.9	108	47.7 161	−1	05.0	128	**60 S**	21 00	22 10	** **	9 54	79	22 51	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.2			Mag: −2.0			Mag: +0.6		
	16ʰ 06ᵐ.9		PMG: 11ʰ 01ᵐ			PMG: 18ʰ 18ᵐ			PMG: 12ʰ 45ᵐ			PMG: 12ʰ 32ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	117	37.2	194	52.6	−22 59.0	85	00.2	+14 21.8	168	21.3	−19 04.8	171	36.0	−19 44.4
1	132	39.7	209	51.7	58.9	100	01.4	22.2	183	23.2	04.6	186	38.1	44.3
2	147	42.2	224	50.7	58.7	115	02.7	22.7	198	25.0	04.5	201	40.3	44.2
3	162	44.6	239	49.8	58.5	130	04.0	23.1	213	26.9	04.3	216	42.4	44.2
4	177	47.1	254	48.9	58.3	145	05.2	23.6	228	28.8	04.2	231	44.6	44.1
5	192	49.6	269	47.9	−22 58.2	160	06.5	+14 24.0	243	30.6	−19 04.0	246	46.8	−19 44.0
6	207	52.0	284	47.0	−22 58.0	175	07.7	+14 24.5	258	32.5	−19 03.9	261	48.9	−19 44.0
7	222	54.5	299	46.0	57.8	190	09.0	24.9	273	34.3	03.7	276	51.1	43.9
8	237	57.0	314	45.1	57.6	205	10.3	25.4	288	36.2	03.6	291	53.2	43.8
9	252	59.4	329	44.2	57.5	220	11.5	25.8	303	38.1	03.4	306	55.4	43.8
10	268	01.9	344	43.2	57.3	235	12.8	26.3	318	39.9	03.3	321	57.5	43.7
11	283	04.4	359	42.3	−22 57.1	250	14.0	+14 26.7	333	41.8	−19 03.2	336	59.7	−19 43.6
12	298	06.8	14	41.4	−22 56.9	265	15.3	+14 27.2	348	43.6	−19 03.0	352	01.9	−19 43.6
13	313	09.3	29	40.4	56.7	280	16.5	27.6	3	45.5	02.9	7	04.0	43.5
14	328	11.7	44	39.5	56.5	295	17.8	28.1	18	47.3	02.7	22	06.2	43.4
15	343	14.2	59	38.6	56.4	310	19.1	28.5	33	49.2	02.6	37	08.3	43.4
16	358	16.7	74	37.6	56.2	325	20.3	29.0	48	51.1	02.4	52	10.5	43.3
17	13	19.1	89	36.7	−22 56.0	340	21.6	+14 29.4	63	52.9	−19 02.3	67	12.6	−19 43.2
18	28	21.6	104	35.8	−22 55.8	355	22.8	+14 29.8	78	54.8	−19 02.1	82	14.8	−19 43.2
19	43	24.1	119	34.8	55.6	10	24.1	30.3	93	56.6	02.0	97	17.0	43.1
20	58	26.5	134	33.9	55.4	25	25.3	30.7	108	58.5	01.8	112	19.1	43.0
21	73	29.0	149	33.0	55.2	40	26.6	31.2	124	00.4	01.7	127	21.3	43.0
22	88	31.5	164	32.0	55.0	55	27.9	31.6	139	02.2	01.5	142	23.4	42.9
23	103	33.9	179	31.1	54.8	70	29.1	32.1	154	04.1	01.4	157	25.6	42.8
24	118	36.4	194	30.2	−22 54.6	85	30.4	+14 32.5	169	05.9	−19 01.3	172	27.7	−19 42.8
Dif	—			−9	+2		+13	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 5ᵈ.8		PHE	4ʰ: 54′.7									
	PMG: 12ʰ 10ᵐ.8				SD: 14′.9			12ʰ: 54′.6									
					PMG: 17ʰ 13ᵐ			20ʰ: 54′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	20.4	−20	19.9	108	47.7	−1	05.0		**60 N**	6 56	7 49	8 41	10 55	5	23 51	78
1	192	20.2		19.4	123	22.7 160	−0	52.3	127	**58**	51	40	27	56	7	49	75
2	207	20.0		18.9	137	57.8 161		39.6	127	**56**	46	32	16	56	10	47	72
3	222	19.8		18.3	152	32.9 161		26.9	127	**54**	41	25	8 06	57	12	45	70
4	237	19.6		17.8	167	08.0 161		14.2	127	**52**	37	19	7 57	57	14	43	69
5	252	19.4	−20	17.3	181	43.1 161	−0	01.5	127	**50**	6 33	7 13	7 49	10 58	16	23 42	66
6	267	19.2	−20	16.8	196	18.3 162	+0	11.2	127	**45**	6 24	7 00	7 32	10 59	19	23 39	62
7	282	19.0		16.2	210	53.5 162		23.8	126	**40**	15	6 49	18	10 59	23	36	59
8	297	18.8		15.7	225	28.7 162		36.5	127	**35**	08	39	7 06	11 00	26	34	56
9	312	18.6		15.2	240	03.9 162	+0	49.1	126	**30**	6 01	30	6 56	01	28	32	53
10	327	18.4		14.6	254	39.1 162	+1	01.8	127	**20**	5 47	14	38	02	33	29	48
11	342	18.3	−20	14.1	269	14.3 162	+1	14.4	126	**10 N**	5 34	6 00	6 22	11 03	37	23 26	44
12	357	18.1	−20	13.6	283	49.6 163	+1	27.0	126	**0**	5 19	5 45	6 07	11 04	40	23 23	41
13	12	17.9		13.0	298	24.8 162		39.6	126	**10 S**	5 03	30	5 52	04	45	20	37
14	27	17.7		12.5	313	00.1 163	+1	52.2	126	**20**	4 44	5 12	36	05	49	17	34
15	42	17.5		12.0	327	35.4 163	+2	04.8	126	**30**	19	4 51	17	07	53	14	29
16	57	17.3		11.4	342	10.6 162		17.4	126	**35**	4 03	38	5 06	07	56	12	26
17	72	17.1	−20	10.9	356	45.9 163	+2	29.9	125	**40**	3 43	4 22	4 54	11 08	59	23 10	23
18	87	16.9	−20	10.4	11	21.2 163	+2	42.4	125	**45**	3 18	4 03	4 38	11 09	62	23 07	21
19	102	16.8		09.8	25	56.5 163	+2	55.0	126	**50**	2 43	3 39	20	10	66	04	17
20	117	16.6		09.3	40	31.8 163	+3	07.5	125	**52**	25	27	11	10	69	03	14
21	132	16.4		08.7	55	07.1 163		19.9	124	**54**	2 01	3 13	4 01	11	70	01	13
22	147	16.2		08.2	69	42.4 163		32.4	125	**56**	1 27	2 57	3 50	12	72	23 00	10
23	162	16.0		07.7	84	17.8 164		44.8	124	**58**	** **	37	37	12	76	22 58	8
24	177	15.8	−20	07.1	98	53.1 163	+3	57.3	125	**60 S**	** **	2 12	3 22	11 13	79	22 56	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.2			Mag: −2.0			Mag: +0.6		
	16ʰ 02ᵐ.9		PMG: 11ʰ 03ᵐ			PMG: 18ʰ 16ᵐ			PMG: 12ʰ 42ᵐ			PMG: 12ʰ 28ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	118	36.4	194	30.2	−22 54.6	85	30.4	+14 32.5	169	05.9	−19 01.3	172	27.7	−19 42.8
1	133	38.9	209	29.2	54.4	100	31.6	33.0	184	07.8	01.1	187	29.9	42.7
2	148	41.3	224	28.3	54.2	115	32.9	33.4	199	09.7	01.0	202	32.0	42.6
3	163	43.8	239	27.4	54.0	130	34.1	33.9	214	11.5	00.8	217	34.2	42.6
4	178	46.2	254	26.4	53.8	145	35.4	34.3	229	13.4	00.7	232	36.4	42.5
5	193	48.7	269	25.5	−22 53.6	160	36.6	+14 34.8	244	15.2	−19 00.5	247	38.5	−19 42.4
6	208	51.2	284	24.6	−22 53.4	175	37.9	+14 35.2	259	17.1	−19 00.4	262	40.7	−19 42.4
7	223	53.6	299	23.6	53.2	190	39.1	35.6	274	18.9	00.2	277	42.8	42.3
8	238	56.1	314	22.7	53.0	205	40.4	36.1	289	20.8	−19 00.1	292	45.0	42.2
9	253	58.6	329	21.8	52.8	220	41.6	36.5	304	22.7	−18 59.9	307	47.1	42.2
10	269	01.0	344	20.8	52.6	235	42.9	37.0	319	24.5	59.8	322	49.3	42.1
11	284	03.5	359	19.9	−22 52.3	250	44.1	+14 37.4	334	26.4	−18 59.6	337	51.5	−19 42.0
12	299	06.0	14	19.0	−22 52.1	265	45.4	+14 37.9	349	28.2	−18 59.5	352	53.6	−19 41.9
13	314	08.4	29	18.0	51.9	280	46.6	38.3	4	30.1	59.3	7	55.8	41.9
14	329	10.9	44	17.1	51.7	295	47.9	38.8	19	32.0	59.2	22	57.9	41.8
15	344	13.3	59	16.2	51.5	310	49.1	39.2	34	33.8	59.1	38	00.1	41.7
16	359	15.8	74	15.2	51.3	325	50.4	39.7	49	35.7	58.9	53	02.2	41.7
17	14	18.3	89	14.3	−22 51.0	340	51.6	+14 40.1	64	37.5	−18 58.8	68	04.4	−19 41.6
18	29	20.7	104	13.4	−22 50.8	355	52.9	+14 40.6	79	39.4	−18 58.6	83	06.6	−19 41.5
19	44	23.2	119	12.5	50.6	10	54.1	41.0	94	41.3	58.5	98	08.7	41.5
20	59	25.7	134	11.5	50.4	25	55.4	41.4	109	43.1	58.3	113	10.9	41.4
21	74	28.1	149	10.6	50.2	40	56.6	41.9	124	45.0	58.2	128	13.0	41.3
22	89	30.6	164	09.7	49.9	55	57.8	42.3	139	46.8	58.0	143	15.2	41.3
23	104	33.1	179	08.7	49.7	70	59.1	42.8	154	48.7	57.9	158	17.3	41.2
24	119	35.5	194	07.8	−22 49.5	86	00.3	+14 43.2	169	50.5	−18 57.7	173	19.5	−19 41.1
Dif	—			−9	+2		+12	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 6ᵈ.8		PHE	4ʰ: 54′.4									
	PMG: 12ʰ 11ᵐ.1				SD: 14′.8			12ʰ: 54′.3									
					PMG: 17ʰ 54ᵐ			20ʰ: 54′.3									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	15.8	−20	07.1	98	53.1	+3	57.3		**60 N**	15 44	16 35	17 28	11 00	5	** **	**
1	192	15.7		06.6	113	28.4 163	+4	09.7 124		**58**	15 57	44	33	03	9	** **	**
2	207	15.5		06.0	128	03.7 163		22.0 123		**56**	16 08	52	38	06	11	** **	**
3	222	15.3		05.5	142	39.0 163		34.4 124		**54**	18	16 59	43	09	13	** **	**
4	237	15.1		04.9	157	14.3 163		46.7 123		**52**	27	17 05	47	11	15	** **	**
5	252	14.9	−20	04.4	171	49.6 163	+4	59.1 124		**50**	16 35	17 11	17 51	11 14	16	** **	**
6	267	14.7	−20	03.9	186	24.9 163	+5	11.4 123		**45**	16 51	17 24	18 00	11 18	21	** **	**
7	282	14.6		03.3	201	00.1 162		23.6 122		**40**	17 05	34	08	22	25	** **	**
8	297	14.4		02.8	215	35.4 163		35.9 123		**35**	17	44	15	26	27	** **	**
9	312	14.2		02.2	230	10.7 163	+5	48.1 122		**30**	27	17 53	22	29	30	** **	**
10	327	14.0		01.7	244	45.9 162	+6	00.3 122		**20**	17 45	18 08	35	35	34	** **	**
11	342	13.8	−20	01.1	259	21.2 163	+6	12.4 121		**10 N**	18 00	18 22	18 48	11 40	37	** **	**
12	357	13.7	−20	00.6	273	56.4 162	+6	24.6 122		**0**	18 15	18 37	19 02	11 44	41	** **	**
13	12	13.5	−20	00.0	288	31.6 162		36.7 121		**10 S**	29	18 52	18	49	45	23 57	39
14	27	13.3	−19	59.5	303	06.8 162	+6	48.8 121		**20**	18 45	19 09	19 37	11 54	48	51	34
15	42	13.1		58.9	317	42.0 162	+7	00.8 120		**30**	19 04	30	20 02	12 00	53	43	30
16	57	12.9		58.4	332	17.1 161		12.9 121		**35**	15	43	18	03	56	38	28
17	72	12.8	−19	57.8	346	52.3 162	+7	24.9 120		**40**	19 27	19 58	20 37	12 07	58	23 33	25
18	87	12.6	−19	57.3	1	27.4 161	+7	36.8 119		**45**	19 42	20 16	21 01	12 11	62	23 28	21
19	102	12.4		56.7	16	02.5 161	+7	48.8 120		**50**	20 00	40	35	16	67	21	17
20	117	12.2		56.2	30	37.6 161	+8	00.7 119		**52**	08	20 52	21 53	19	68	17	16
21	132	12.0		55.6	45	12.7 161		12.5 118		**54**	18	21 05	22 15	21	71	14	14
22	147	11.9		55.0	59	47.7 160		24.4 119		**56**	29	21	22 46	24	73	10	12
23	162	11.7		54.5	74	22.8 161		36.2 118		**58**	41	21 40	** **	28	75	06	9
24	177	11.5	−19	53.9	88	57.8 160	+8	47.9 117		**60 S**	20 56	22 04	** **	12 32	78	23 01	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.2			Mag: −2.0			Mag: +0.6		
	15ʰ 59ᵐ.0		PMG: 11ʰ 04ᵐ			PMG: 18ʰ 14ᵐ			PMG: 12ʰ 39ᵐ			PMG: 12ʰ 25ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	119	35.5	194	07.8	−22 49.5	86	00.3	+14 43.2	169	50.5	−18 57.7	173	19.5	−19 41.1
1	134	38.0	209	06.9	49.2	101	01.6	43.7	184	52.4	57.6	188	21.6	41.1
2	149	40.5	224	06.0	49.0	116	02.8	44.1	199	54.3	57.4	203	23.8	41.0
3	164	42.9	239	05.0	48.8	131	04.1	44.6	214	56.1	57.3	218	26.0	40.9
4	179	45.4	254	04.1	48.5	146	05.3	45.0	229	58.0	57.1	233	28.1	40.9
5	194	47.8	269	03.2	−22 48.3	161	06.5	+14 45.5	244	59.8	−18 57.0	248	30.3	−19 40.8
6	209	50.3	284	02.2	−22 48.1	176	07.8	+14 45.9	260	01.7	−18 56.8	263	32.4	−19 40.7
7	224	52.8	299	01.3	47.8	191	09.0	46.4	275	03.6	56.7	278	34.6	40.7
8	239	55.2	314	00.4	47.6	206	10.3	46.8	290	05.4	56.6	293	36.7	40.6
9	254	57.7	328	59.5	47.4	221	11.5	47.2	305	07.3	56.4	308	38.9	40.5
10	270	00.2	343	58.5	47.1	236	12.7	47.7	320	09.1	56.3	323	41.1	40.5
11	285	02.6	358	57.6	−22 46.9	251	14.0	+14 48.1	335	11.0	−18 56.1	338	43.2	−19 40.4
12	300	05.1	13	56.7	−22 46.6	266	15.2	+14 48.6	350	12.8	−18 56.0	353	45.4	−19 40.3
13	315	07.6	28	55.7	46.4	281	16.5	49.0	5	14.7	55.8	8	47.5	40.3
14	330	10.0	43	54.8	46.1	296	17.7	49.5	20	16.6	55.7	23	49.7	40.2
15	345	12.5	58	53.9	45.9	311	18.9	49.9	35	18.4	55.5	38	51.8	40.1
16	0	14.9	73	53.0	45.7	326	20.2	50.4	50	20.3	55.4	53	54.0	40.1
17	15	17.4	88	52.0	−22 45.4	341	21.4	+14 50.8	65	22.1	−18 55.2	68	56.1	−19 40.0
18	30	19.9	103	51.1	−22 45.2	356	22.7	+14 51.3	80	24.0	−18 55.1	83	58.3	−19 39.9
19	45	22.3	118	50.2	44.9	11	23.9	51.7	95	25.9	54.9	99	00.5	39.9
20	60	24.8	133	49.3	44.7	26	25.1	52.1	110	27.7	54.8	114	02.6	39.8
21	75	27.3	148	48.3	44.4	41	26.4	52.6	125	29.6	54.6	129	04.8	39.7
22	90	29.7	163	47.4	44.1	56	27.6	53.0	140	31.4	54.5	144	06.9	39.7
23	105	32.2	178	46.5	43.9	71	28.8	53.5	155	33.3	54.3	159	09.1	39.6
24	120	34.7	193	45.6	−22 43.6	86	30.1	+14 53.9	170	35.1	−18 54.2	174	11.2	−19 39.5
Dif	—			−9	+2		+12	+4		+19	+1		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 7ᵈ.8		PHE	4ʰ: 54′.2								
	PMG: 12ʰ 11ᵐ.4				SD: 14′.8			12ʰ: 54′.2								
					PMG: 18ʰ 36ᵐ			20ʰ: 54′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	11.5	−19	53.9	88	57.8	+8	47.9	**60 N**	6 53	7 46	8 37	11 05	7	1 09	80
1	192	11.3		53.4	103	32.7 159	+8	59.7 118	**58**	48	38	24	12	10	1 04	76
2	207	11.2		52.8	118	07.7 160	+9	11.4 117	**56**	43	30	13	17	13	0 59	74
3	222	11.0		52.3	132	42.6 159		23.0 116	**54**	39	23	8 03	22	15	55	71
4	237	10.8		51.7	147	17.5 159		34.7 117	**52**	35	17	7 55	26	18	52	68
5	252	10.6	−19	51.1	161	52.4 159	+9	46.2 115	**50**	6 31	7 11	7 47	11 30	20	0 48	67
6	267	10.5	−19	50.6	176	27.2 158	+9	57.8 116	**45**	6 22	6 58	7 31	11 39	23	0 41	62
7	282	10.3		50.0	191	02.0 158	+10	09.3 115	**40**	15	48	17	47	26	35	59
8	297	10.1		49.5	205	36.8 158		20.8 115	**35**	07	38	7 05	53	29	30	56
9	312	09.9		48.9	220	11.5 157		32.2 114	**30**	6 01	30	6 55	11 59	31	25	54
10	327	09.8		48.3	234	46.2 157		43.6 114	**20**	5 47	14	38	12 09	35	17	49
11	342	09.6	−19	47.8	249	20.9 157	+10	54.9 113	**10 N**	5 34	6 00	6 22	12 17	40	0 10	46
12	357	09.4	−19	47.2	263	55.5 156	+11	06.3 114	**0**	5 20	5 46	6 08	12 25	43	0 04	42
13	12	09.3		46.6	278	30.1 156		17.5 112	**10 S**	5 04	31	5 53	34	46	** **	**
14	27	09.1		46.1	293	04.7 156		28.7 112	**20**	4 45	5 13	37	42	50	** **	**
15	42	08.9		45.5	307	39.2 155		39.9 112	**30**	21	4 53	19	53	54	** **	**
16	57	08.7		44.9	322	13.7 155	+11	51.1 112	**35**	4 05	40	5 08	12 59	56	** **	**
17	72	08.6	−19	44.4	336	48.2 155	+12	02.1 110	**40**	3 46	4 25	4 56	13 05	60	23 58	29
18	87	08.4	−19	43.8	351	22.6 154	+12	13.2 111	**45**	3 22	4 06	4 41	13 13	63	23 49	25
19	102	08.2		43.2	5	56.9 153		24.2 110	**50**	2 48	3 43	23	23	67	38	21
20	117	08.1		42.7	20	31.3 154		35.1 109	**52**	30	31	15	27	69	33	19
21	132	07.9		42.1	35	05.5 152		46.0 109	**54**	2 08	18	4 05	32	71	28	17
22	147	07.7		41.5	49	39.8 153	+12	56.9 109	**56**	1 37	3 02	3 54	37	74	22	14
23	162	07.6		41.0	64	14.0 152	+13	07.7 108	**58**	0 31	2 43	42	43	77	15	11
24	177	07.4	−19	40.4	78	48.1 151	+13	18.4 107	**60 S**	** **	2 19	3 27	13 50	81	23 07	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.2			Mag: −2.0			Mag: +0.6		
	15ʰ 55ᵐ.1		PMG: 11ʰ 06ᵐ			PMG: 18ʰ 13ᵐ			PMG: 12ʰ 36ᵐ			PMG: 12ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	120	34.7	193	45.6	−22 43.6	86	30.1	+14 53.9	170	35.1	−18 54.2	174	11.2	−19 39.5
1	135	37.1	208	44.6	43.4	101	31.3	54.4	185	37.0	54.0	189	13.4	39.5
2	150	39.6	223	43.7	43.1	116	32.5	54.8	200	38.9	53.9	204	15.6	39.4
3	165	42.1	238	42.8	42.9	131	33.8	55.3	215	40.7	53.7	219	17.7	39.3
4	180	44.5	253	41.9	42.6	146	35.0	55.7	230	42.6	53.6	234	19.9	39.3
5	195	47.0	268	41.0	−22 42.3	161	36.2	+14 56.2	245	44.4	−18 53.4	249	22.0	−19 39.2
6	210	49.4	283	40.0	−22 42.1	176	37.5	+14 56.6	260	46.3	−18 53.3	264	24.2	−19 39.1
7	225	51.9	298	39.1	41.8	191	38.7	57.0	275	48.2	53.1	279	26.3	39.1
8	240	54.4	313	38.2	41.5	206	39.9	57.5	290	50.0	53.0	294	28.5	39.0
9	255	56.8	328	37.3	41.3	221	41.2	57.9	305	51.9	52.9	309	30.7	38.9
10	270	59.3	343	36.3	41.0	236	42.4	58.4	320	53.7	52.7	324	32.8	38.9
11	286	01.8	358	35.4	−22 40.7	251	43.6	+14 58.8	335	55.6	−18 52.6	339	35.0	−19 38.8
12	301	04.2	13	34.5	−22 40.5	266	44.9	+14 59.3	350	57.5	−18 52.4	354	37.1	−19 38.7
13	316	06.7	28	33.6	40.2	281	46.1	+14 59.7	5	59.3	52.3	9	39.3	38.7
14	331	09.2	43	32.7	39.9	296	47.3	+15 00.2	21	01.2	52.1	24	41.4	38.6
15	346	11.6	58	31.7	39.6	311	48.5	00.6	36	03.0	52.0	39	43.6	38.5
16	1	14.1	73	30.8	39.4	326	49.8	01.0	51	04.9	51.8	54	45.7	38.4
17	16	16.6	88	29.9	−22 39.1	341	51.0	+15 01.5	66	06.7	−18 51.7	69	47.9	−19 38.4
18	31	19.0	103	29.0	−22 38.8	356	52.2	+15 01.9	81	08.6	−18 51.5	84	50.1	−19 38.3
19	46	21.5	118	28.1	38.5	11	53.5	02.4	96	10.5	51.4	99	52.2	38.2
20	61	23.9	133	27.1	38.2	26	54.7	02.8	111	12.3	51.2	114	54.4	38.2
21	76	26.4	148	26.2	38.0	41	55.9	03.3	126	14.2	51.1	129	56.5	38.1
22	91	28.9	163	25.3	37.7	56	57.1	03.7	141	16.0	50.9	144	58.7	38.0
23	106	31.3	178	24.4	37.4	71	58.4	04.2	156	17.9	50.8	160	00.8	38.0
24	121	33.8	193	23.5	−22 37.1	86	59.6	+15 04.6	171	19.8	−18 50.6	175	03.0	−19 37.9
Dif	—			−9	+3		+12	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 8ᵈ.8		PHE	4ʰ: 54′.3									
	PMG: 12ʰ 11ᵐ.6				SD: 14′.8			12ʰ: 54′.3									
					PMG: 19ʰ 19ᵐ			20ʰ: 54′.4									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	07.4	−19	40.4	78	48.1	+13	18.4		**60 N**	15 49	16 39	17 32	11 12	11	2 29	80
1	192	07.2		39.8	93	22.2 151		29.1 107		**58**	16 01	48	37	22	13	20	77
2	207	07.1		39.2	107	56.3 151		39.8 107		**56**	12	16 55	42	30	16	13	74
3	222	06.9		38.7	122	30.3 150	+13	50.4 106		**54**	22	17 02	46	37	19	06	72
4	237	06.7		38.1	137	04.2 149	+14	00.9 105		**52**	30	08	50	44	21	2 00	69
5	252	06.6	−19	37.5	151	38.1 149	+14	11.4 105		**50**	16 38	17 14	17 54	11 50	23	1 55	67
6	267	06.4	−19	36.9	166	12.0 149	+14	21.9 105		**45**	16 54	17 26	18 02	12 02	27	1 43	63
7	282	06.2		36.4	180	45.8 148		32.2 103		**40**	17 07	37	10	13	30	34	60
8	297	06.1		35.8	195	19.5 147		42.6 104		**35**	19	46	17	22	33	26	57
9	312	05.9		35.2	209	53.2 147	+14	52.8 102		**30**	29	17 54	23	30	35	19	54
10	327	05.7		34.6	224	26.9 147	+15	03.1 103		**20**	17 46	18 09	36	44	39	1 06	51
11	342	05.6	−19	34.1	239	00.5 146	+15	13.2 101		**10 N**	18 01	18 23	18 49	12 57	42	0 56	47
12	357	05.4	−19	33.5	253	34.0 145	+15	23.3 101		**0**	18 15	18 37	19 03	13 08	45	0 46	44
13	12	05.2		32.9	268	07.5 145		33.4 101		**10 S**	30	18 52	18	20	48	36	40
14	27	05.1		32.3	282	40.9 144		43.3 99		**20**	18 45	19 09	19 37	32	52	25	37
15	42	04.9		31.7	297	14.3 144	+15	53.2 99		**30**	19 03	29	20 01	47	55	13	33
16	57	04.7		31.1	311	47.6 143	+16	03.1 99		**35**	14	42	16	13 55	58	0 06	31
17	72	04.6	−19	30.6	326	20.9 143	+16	12.9 98		**40**	19 26	19 57	20 35	14 05	60	** **	**
18	87	04.4	−19	30.0	340	54.1 142	+16	22.6 97		**45**	19 40	20 15	20 59	14 16	63	** **	**
19	102	04.3		29.4	355	27.2 141		32.3 97		**50**	19 58	37	21 31	30	67	23 59	26
20	117	04.1		28.8	10	00.3 141		41.9 96		**52**	20 06	20 49	21 48	36	70	52	24
21	132	03.9		28.2	24	33.3 140	+16	51.4 95		**54**	15	21 02	22 10	43	72	45	21
22	147	03.8		27.6	39	06.2 139	+17	00.9 95		**56**	26	17	22 38	14 51	75	36	19
23	162	03.6		27.1	53	39.1 139		10.3 94		**58**	38	35	23 27	15 00	78	26	16
24	177	03.5	−19	26.5	68	11.9 138	+17	19.6 93		**60 S**	20 52	21 58	** **	15 11	81	23 15	12

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.3			Mag: −2.0			Mag: +0.6		
	15ʰ 51ᵐ.1		PMG: 11ʰ 07ᵐ			PMG: 18ʰ 11ᵐ			PMG: 12ʰ 33ᵐ			PMG: 12ʰ 18ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	121	33.8	193	23.5	−22 37.1	86	59.6	+15 04.6	171	19.8	−18 50.6	175	03.0	−19 37.9
1	136	36.3	208	22.5	36.8	102	00.8	05.0	186	21.6	50.5	190	05.2	37.8
2	151	38.7	223	21.6	36.5	117	02.0	05.5	201	23.5	50.3	205	07.3	37.8
3	166	41.2	238	20.7	36.2	132	03.3	05.9	216	25.3	50.2	220	09.5	37.7
4	181	43.7	253	19.8	35.9	147	04.5	06.4	231	27.2	50.0	235	11.6	37.6
5	196	46.1	268	18.9	−22 35.7	162	05.7	+15 06.8	246	29.0	−18 49.9	250	13.8	−19 37.6
6	211	48.6	283	18.0	−22 35.4	177	06.9	+15 07.3	261	30.9	−18 49.7	265	15.9	−19 37.5
7	226	51.0	298	17.0	35.1	192	08.2	07.7	276	32.8	49.6	280	18.1	37.4
8	241	53.5	313	16.1	34.8	207	09.4	08.2	291	34.6	49.4	295	20.2	37.4
9	256	56.0	328	15.2	34.5	222	10.6	08.6	306	36.5	49.3	310	22.4	37.3
10	271	58.4	343	14.3	34.2	237	11.8	09.0	321	38.3	49.1	325	24.6	37.2
11	287	00.9	358	13.4	−22 33.9	252	13.1	+15 09.5	336	40.2	−18 49.0	340	26.7	−19 37.2
12	302	03.4	13	12.5	−22 33.6	267	14.3	+15 09.9	351	42.1	−18 48.8	355	28.9	−19 37.1
13	317	05.8	28	11.5	33.3	282	15.5	10.4	6	43.9	48.7	10	31.0	37.0
14	332	08.3	43	10.6	33.0	297	16.7	10.8	21	45.8	48.5	25	33.2	37.0
15	347	10.8	58	09.7	32.7	312	17.9	11.3	36	47.6	48.4	40	35.3	36.9
16	2	13.2	73	08.8	32.4	327	19.2	11.7	51	49.5	48.2	55	37.5	36.8
17	17	15.7	88	07.9	−22 32.1	342	20.4	+15 12.2	66	51.3	−18 48.1	70	39.7	−19 36.8
18	32	18.2	103	07.0	−22 31.7	357	21.6	+15 12.6	81	53.2	−18 47.9	85	41.8	−19 36.7
19	47	20.6	118	06.1	31.4	12	22.8	13.0	96	55.1	47.8	100	44.0	36.6
20	62	23.1	133	05.2	31.1	27	24.0	13.5	111	56.9	47.6	115	46.1	36.6
21	77	25.5	148	04.2	30.8	42	25.2	13.9	126	58.8	47.5	130	48.3	36.5
22	92	28.0	163	03.3	30.5	57	26.5	14.4	142	00.6	47.3	145	50.4	36.4
23	107	30.5	178	02.4	30.2	72	27.7	14.8	157	02.5	47.2	160	52.6	36.4
24	122	32.9	193	01.5	−22 29.9	87	28.9	+15 15.3	172	04.4	−18 47.0	175	54.7	−19 36.3
Dif	—			−9	+3		+12	+4		+19	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 9ᵈ.8		PHE	4ʰ: 54′.5									
	PMG: 12ʰ 11ᵐ.9				SD: 14′.8			12ʰ: 54′.6									
					PMG: 20ʰ 05ᵐ			20ʰ: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	03.5	−19	26.5	68	11.9	+17	19.6		**60 N**	6 51	7 43	8 33	11 23	15	3 49	82
1	192	03.3		25.9	82	44.7 138		28.9	93	**58**	46	35	21	35	20	37	78
2	207	03.1		25.3	97	17.4 137		38.1	92	**56**	41	27	10	46	23	27	74
3	222	03.0		24.7	111	50.0 136		47.2	91	**54**	37	21	8 01	11 56	25	18	71
4	237	02.8		24.1	126	22.6 136	+17	56.3	91	**52**	33	15	7 52	12 05	27	09	70
5	252	02.7	−19	23.5	140	55.1 135	+18	05.2	89	**50**	6 29	7 09	7 45	12 13	29	3 02	67
6	267	02.5	−19	22.9	155	27.6 135	+18	14.2	90	**45**	6 21	6 57	7 29	12 29	33	2 46	64
7	282	02.3		22.3	169	59.9 133		23.0	88	**40**	14	46	16	43	36	34	60
8	297	02.2		21.8	184	32.2 133		31.7	87	**35**	07	37	7 04	12 55	38	23	58
9	312	02.0		21.2	199	04.5 133		40.4	87	**30**	6 00	29	6 55	13 05	40	2 13	56
10	327	01.9		20.6	213	36.6 131		49.0	86	**20**	5 47	14	37	23	43	1 57	52
11	342	01.7	−19	20.0	228	08.7 131	+18	57.6	86	**10 N**	5 35	6 00	6 22	13 39	45	1 43	49
12	357	01.6	−19	19.4	242	40.8 131	+19	06.0	84	**0**	5 21	5 46	6 08	13 53	48	1 30	46
13	12	01.4		18.8	257	12.7 129		14.4	84	**10 S**	5 05	32	5 54	14 08	50	16	44
14	27	01.3		18.2	271	44.6 129		22.7	83	**20**	4 47	5 15	39	24	53	1 02	41
15	42	01.1		17.6	286	16.5 129		30.9	82	**30**	23	4 54	21	42	56	0 46	37
16	57	00.9		17.0	300	48.2 127		39.0	81	**35**	4 08	42	5 10	14 53	58	37	35
17	72	00.8	−19	16.4	315	19.9 127	+19	47.1	81	**40**	3 49	4 27	4 58	15 05	60	0 27	32
18	87	00.6	−19	15.8	329	51.5 126	+19	55.1	80	**45**	3 25	4 09	4 44	15 19	64	0 14	30
19	102	00.5		15.2	344	23.1 126	+20	02.9	78	**50**	2 53	3 47	26	37	67	** **	**
20	117	00.3		14.6	358	54.5 124		10.7	78	**52**	36	35	18	46	68	** **	**
21	132	00.2		14.0	13	25.9 124		18.5	78	**54**	2 14	22	4 09	15 55	71	** **	**
22	147	00.0		13.4	27	57.3 124		26.1	76	**56**	1 46	3 07	3 58	16 06	73	23 55	26
23	161	59.9		12.8	42	28.5 122		33.6	75	**58**	0 57	2 49	46	18	77	42	23
24	176	59.7	−19	12.2	56	59.7 122	+20	41.1	75	**60 S**	** **	2 26	3 32	16 32	81	23 27	19

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.3			Mag: −2.0			Mag: +0.6		
	15ʰ 47ᵐ.2		PMG: 11ʰ 09ᵐ			PMG: 18ʰ 09ᵐ			PMG: 12ʰ 30ᵐ			PMG: 12ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	122	32.9	193	01.5	−22 29.9	87	28.9	+15 15.3	172	04.4	−18 47.0	175	54.7	−19 36.3
1	137	35.4	208	00.6	29.6	102	30.1	15.7	187	06.2	46.9	190	56.9	36.2
2	152	37.9	222	59.7	29.2	117	31.3	16.1	202	08.1	46.7	205	59.1	36.1
3	167	40.3	237	58.8	28.9	132	32.5	16.6	217	09.9	46.6	221	01.2	36.1
4	182	42.8	252	57.9	28.6	147	33.8	17.0	232	11.8	46.4	236	03.4	36.0
5	197	45.3	267	56.9	−22 28.3	162	35.0	+15 17.5	247	13.6	−18 46.3	251	05.5	−19 35.9
6	212	47.7	282	56.0	−22 28.0	177	36.2	+15 17.9	262	15.5	−18 46.1	266	07.7	−19 35.9
7	227	50.2	297	55.1	27.6	192	37.4	18.4	277	17.4	46.0	281	09.8	35.8
8	242	52.7	312	54.2	27.3	207	38.6	18.8	292	19.2	45.8	296	12.0	35.7
9	257	55.1	327	53.3	27.0	222	39.8	19.2	307	21.1	45.7	311	14.1	35.7
10	272	57.6	342	52.4	26.7	237	41.0	19.7	322	22.9	45.5	326	16.3	35.6
11	288	00.0	357	51.5	−22 26.3	252	42.3	+15 20.1	337	24.8	−18 45.4	341	18.5	−19 35.5
12	303	02.5	12	50.6	−22 26.0	267	43.5	+15 20.6	352	26.7	−18 45.2	356	20.6	−19 35.5
13	318	05.0	27	49.7	25.7	282	44.7	21.0	7	28.5	45.1	11	22.8	35.4
14	333	07.4	42	48.8	25.3	297	45.9	21.5	22	30.4	44.9	26	24.9	35.3
15	348	09.9	57	47.8	25.0	312	47.1	21.9	37	32.2	44.8	41	27.1	35.3
16	3	12.4	72	46.9	24.7	327	48.3	22.3	52	34.1	44.6	56	29.2	35.2
17	18	14.8	87	46.0	−22 24.3	342	49.5	+15 22.8	67	35.9	−18 44.5	71	31.4	−19 35.1
18	33	17.3	102	45.1	−22 24.0	357	50.7	+15 23.2	82	37.8	−18 44.3	86	33.6	−19 35.1
19	48	19.8	117	44.2	23.7	12	51.9	23.7	97	39.7	44.2	101	35.7	35.0
20	63	22.2	132	43.3	23.3	27	53.2	24.1	112	41.5	44.0	116	37.9	34.9
21	78	24.7	147	42.4	23.0	42	54.4	24.6	127	43.4	43.9	131	40.0	34.9
22	93	27.2	162	41.5	22.6	57	55.6	25.0	142	45.2	43.7	146	42.2	34.8
23	108	29.6	177	40.6	22.3	72	56.8	25.4	157	47.1	43.6	161	44.3	34.7
24	123	32.1	192	39.7	−22 22.0	87	58.0	+15 25.9	172	49.0	−18 43.4	176	46.5	−19 34.7
Dif	—			−9	+3		+12	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.1				LUNA Edad: 10d.8 SD: 14′.9 PMG: 20h 53m PHE 4h: 54′.8; 12h: 54′.9; 20h: 55′.1 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	59.7	−19	12.2	56	59.7	+20	41.1	**60 N**	15 54	16 44	17 36	11 38	25	5 11	78
1	191	59.6		11.6	71	30.8 121		48.4 73	**58**	16 06	52	41	11 55	29	4 55	74
2	206	59.4		11.0	86	01.9 121	+20	55.7 73	**56**	16	16 59	45	12 09	32	41	71
3	221	59.3		10.4	100	32.8 119	+21	02.9 72	**54**	26	17 06	49	21	34	29	69
4	236	59.1		09.8	115	03.7 119		10.0 71	**52**	34	11	53	32	36	19	67
5	251	59.0	−19	09.2	129	34.5 118	+21	17.0 70	**50**	16 41	17 17	17 56	12 42	37	4 09	66
6	266	58.8	−19	08.6	144	05.3 118	+21	23.9 69	**45**	16 57	17 29	18 04	13 02	40	3 50	62
7	281	58.7		08.0	158	36.0 117		30.7 68	**40**	17 10	39	12	19	42	34	60
8	296	58.5		07.4	173	06.6 116		37.4 67	**35**	21	48	18	33	43	21	58
9	311	58.4		06.8	187	37.1 115		44.0 66	**30**	30	17 56	25	13 45	45	3 09	57
10	326	58.2		06.1	202	07.5 114		50.5 65	**20**	17 47	18 10	37	14 06	47	2 49	54
11	341	58.1	−19	05.5	216	37.9 114	+21	56.9 64	**10 N**	18 02	18 24	18 50	14 24	49	2 32	52
12	356	57.9	−19	04.9	231	08.2 113	+22	03.2 63	**0**	18 16	18 38	19 03	14 41	51	2 16	49
13	11	57.8		04.3	245	38.5 113		09.4 62	**10 S**	30	18 52	18	14 58	53	2 00	47
14	26	57.6		03.7	260	08.6 111		15.6 62	**20**	18 45	19 08	19 36	15 17	54	1 43	45
15	41	57.5		03.1	274	38.7 111		21.6 60	**30**	19 02	28	20 00	38	57	23	43
16	56	57.3		02.5	289	08.8 111		27.5 59	**35**	12	41	15	15 51	58	1 12	40
17	71	57.2	−19	01.9	303	38.7 109	+22	33.3 58	**40**	19 24	19 55	20 33	16 05	60	0 59	38
18	86	57.1	−19	01.3	318	08.6 109	+22	39.0 57	**45**	19 38	20 12	20 56	16 23	61	0 44	36
19	101	56.9	−19	00.6	332	38.4 108		44.6 56	**50**	19 55	35	21 27	44	64	25	32
20	116	56.8	−19	00.0	347	08.1 107		50.1 55	**52**	20 03	46	21 44	16 54	66	16	31
21	131	56.6	−18	59.4	1	37.8 107	+22	55.5 54	**54**	12	20 58	22 04	17 06	67	0 06	29
22	146	56.5		58.8	16	07.4 106	+23	00.7 52	**56**	22	21 12	22 30	19	69	** **	**
23	161	56.3		58.2	30	36.9 105		05.9 52	**58**	34	30	23 11	35	71	** **	**
24	176	56.2	−18	57.6	45	06.3 104	+23	11.0 51	**60 S**	20 48	21 51	** **	17 53	75	23 46	33

UT	ARIES PMG 15h 43m.3		VENUS Mag: −3.9 PMG: 11h 10m			MARTE Mag: +0.3 PMG: 18h 07m			JÚPITER Mag: −2.0 PMG: 12h 27m			SATURNO Mag: +0.6 PMG: 12h 11m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	123	32.1	192	39.7	−22 22.0	87	58.0	+15 25.9	172	49.0	−18 43.4	176	46.5	−19 34.7
1	138	34.5	207	38.8	21.6	102	59.2	26.3	187	50.8	43.3	191	48.7	34.6
2	153	37.0	222	37.9	21.3	118	00.4	26.8	202	52.7	43.1	206	50.8	34.5
3	168	39.5	237	37.0	20.9	133	01.6	27.2	217	54.5	43.0	221	53.0	34.5
4	183	41.9	252	36.1	20.6	148	02.8	27.7	232	56.4	42.8	236	55.1	34.4
5	198	44.4	267	35.2	−22 20.2	163	04.0	+15 28.1	247	58.3	−18 42.7	251	57.3	−19 34.3
6	213	46.9	282	34.3	−22 19.9	178	05.2	+15 28.5	263	00.1	−18 42.5	266	59.4	−19 34.3
7	228	49.3	297	33.4	19.5	193	06.4	29.0	278	02.0	42.4	282	01.6	34.2
8	243	51.8	312	32.5	19.2	208	07.6	29.4	293	03.8	42.2	297	03.8	34.1
9	258	54.3	327	31.5	18.8	223	08.8	29.9	308	05.7	42.1	312	05.9	34.1
10	273	56.7	342	30.6	18.5	238	10.1	30.3	323	07.5	41.9	327	08.1	34.0
11	288	59.2	357	29.7	−22 18.1	253	11.3	+15 30.7	338	09.4	−18 41.8	342	10.2	−19 33.9
12	304	01.6	12	28.8	−22 17.7	268	12.5	+15 31.2	353	11.3	−18 41.6	357	12.4	−19 33.8
13	319	04.1	27	27.9	17.4	283	13.7	31.6	8	13.1	41.5	12	14.5	33.8
14	334	06.6	42	27.0	17.0	298	14.9	32.1	23	15.0	41.3	27	16.7	33.7
15	349	09.0	57	26.1	16.7	313	16.1	32.5	38	16.8	41.2	42	18.9	33.6
16	4	11.5	72	25.2	16.3	328	17.3	33.0	53	18.7	41.0	57	21.0	33.6
17	19	14.0	87	24.3	−22 15.9	343	18.5	+15 33.4	68	20.6	−18 40.9	72	23.2	−19 33.5
18	34	16.4	102	23.4	−22 15.6	358	19.7	+15 33.8	83	22.4	−18 40.7	87	25.3	−19 33.4
19	49	18.9	117	22.5	15.2	13	20.9	34.3	98	24.3	40.6	102	27.5	33.4
20	64	21.4	132	21.6	14.8	28	22.1	34.7	113	26.1	40.4	117	29.6	33.3
21	79	23.8	147	20.7	14.5	43	23.3	35.2	128	28.0	40.3	132	31.8	33.2
22	94	26.3	162	19.8	14.1	58	24.5	35.6	143	29.8	40.1	147	34.0	33.2
23	109	28.8	177	18.9	13.7	73	25.7	36.0	158	31.7	40.0	162	36.1	33.1
24	124	31.2	192	18.0	−22 13.4	88	26.9	+15 36.5	173	33.6	−18 39.8	177	38.3	−19 33.0
Dif	—			−9	+4		+12	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 11^{d}.8		PHE	4^{h}: 55′.3									
	PMG: 12^{h} 12^{m}.4				SD: 15′.0			12^{h}: 55′.5									
					PMG: 21^{h} 45^{m}			20^{h}: 55′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	176	56.2	−18	57.6	45	06.3	+23	11.0		**60 N**	6 48	7 40	8 29	12 03	42	6 29	68
1	191	56.1		57.0	59	35.7 104		15.9	49	**58**	43	32	17	24	44	6 09	66
2	206	55.9		56.3	74	05.0 103		20.7	48	**56**	39	24	8 07	41	45	5 52	65
3	221	55.8		55.7	88	34.3 103		25.5	48	**54**	35	18	7 58	12 55	47	38	63
4	236	55.6		55.1	103	03.5 102		30.1	46	**52**	31	12	50	13 08	47	26	62
5	251	55.5	−18	54.5	117	32.6 101	+23	34.6	45	**50**	6 27	7 07	7 43	13 19	48	5 15	61
6	266	55.3	−18	53.9	132	01.6 100	+23	38.9	43	**45**	6 20	6 55	7 27	13 42	49	4 52	60
7	281	55.2		53.2	146	30.6 100		43.2	43	**40**	12	45	14	14 01	50	34	58
8	296	55.1		52.6	160	59.5 99		47.3	41	**35**	6 06	36	7 03	16	51	19	57
9	311	54.9		52.0	175	28.3 98		51.4	41	**30**	5 59	28	6 54	30	51	4 06	56
10	326	54.8		51.4	189	57.1 98		55.3	39	**20**	47	14	37	14 53	52	3 43	55
11	341	54.6	−18	50.8	204	25.8 97	+23	59.1	38	**10 N**	5 35	6 00	6 23	15 13	53	3 24	53
12	356	54.5	−18	50.1	218	54.5 97	+24	02.7	36	**0**	5 22	5 47	6 09	15 32	54	3 05	53
13	11	54.4		49.5	233	23.0 95		06.3	36	**10 S**	5 06	33	5 55	15 51	54	2 47	51
14	26	54.2		48.9	247	51.6 96		09.7	34	**20**	4 48	5 16	40	16 11	55	28	50
15	41	54.1		48.3	262	20.0 94		13.0	33	**30**	25	4 56	23	35	55	2 06	48
16	56	54.0		47.6	276	48.4 94		16.2	32	**35**	4 10	44	12	16 49	56	1 52	48
17	71	53.8	−18	47.0	291	16.8 94	+24	19.2	30	**40**	3 52	4 30	5 01	17 05	56	1 37	46
18	86	53.7	−18	46.4	305	45.1 93	+24	22.2	30	**45**	3 29	4 13	4 47	17 24	57	1 20	44
19	101	53.5		45.7	320	13.3 92		25.0	28	**50**	2 58	3 50	30	17 48	58	0 57	43
20	116	53.4		45.1	334	41.4 91		27.7	27	**52**	41	40	22	18 00	58	47	41
21	131	53.3		44.5	349	09.5 91		30.2	25	**54**	2 21	27	13	13	58	35	40
22	146	53.1		43.9	3	37.6 91		32.6	24	**56**	1 55	3 13	4 03	28	59	21	38
23	161	53.0		43.2	18	05.6 90		34.9	23	**58**	1 14	2 55	3 51	18 46	60	0 05	36
24	176	52.9	−18	42.6	32	33.5 89	+24	37.1	22	**60 S**	** **	2 34	3 38	19 08	61	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.3			Mag: −2.0			Mag: +0.6		
	15^{h} 39^{m}.3		PMG: 11^{h} 11^{m}			PMG: 18^{h} 05^{m}			PMG: 12^{h} 24^{m}			PMG: 12^{h} 08^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	124	31.2	192	18.0	−22 13.4	88	26.9	+15 36.5	173	33.6	−18 39.8	177	38.3	−19 33.0
1	139	33.7	207	17.1	13.0	103	28.1	36.9	188	35.4	39.7	192	40.4	33.0
2	154	36.1	222	16.2	12.6	118	29.3	37.4	203	37.3	39.5	207	42.6	32.9
3	169	38.6	237	15.3	12.2	133	30.5	37.8	218	39.1	39.3	222	44.7	32.8
4	184	41.1	252	14.4	11.9	148	31.7	38.3	233	41.0	39.2	237	46.9	32.7
5	199	43.5	267	13.6	−22 11.5	163	32.9	+15 38.7	248	42.9	−18 39.0	252	49.0	−19 32.7
6	214	46.0	282	12.7	−22 11.1	178	34.1	+15 39.1	263	44.7	−18 38.9	267	51.2	−19 32.6
7	229	48.5	297	11.8	10.7	193	35.3	39.6	278	46.6	38.7	282	53.4	32.5
8	244	50.9	312	10.9	10.3	208	36.5	40.0	293	48.4	38.6	297	55.5	32.5
9	259	53.4	327	10.0	10.0	223	37.7	40.5	308	50.3	38.4	312	57.7	32.4
10	274	55.9	342	09.1	09.6	238	38.9	40.9	323	52.2	38.3	327	59.8	32.3
11	289	58.3	357	08.2	−22 09.2	253	40.0	+15 41.3	338	54.0	−18 38.1	343	02.0	−19 32.3
12	305	00.8	12	07.3	−22 08.8	268	41.2	+15 41.8	353	55.9	−18 38.0	358	04.1	−19 32.2
13	320	03.3	27	06.4	08.4	283	42.4	42.2	8	57.7	37.8	13	06.3	32.1
14	335	05.7	42	05.5	08.0	298	43.6	42.7	23	59.6	37.7	28	08.5	32.1
15	350	08.2	57	04.6	07.6	313	44.8	43.1	39	01.4	37.5	43	10.6	32.0
16	5	10.6	72	03.7	07.3	328	46.0	43.5	54	03.3	37.4	58	12.8	31.9
17	20	13.1	87	02.8	−22 06.9	343	47.2	+15 44.0	69	05.2	−18 37.2	73	14.9	−19 31.9
18	35	15.6	102	01.9	−22 06.5	358	48.4	+15 44.4	84	07.0	−18 37.1	88	17.1	−19 31.8
19	50	18.0	117	01.0	06.1	13	49.6	44.9	99	08.9	36.9	103	19.2	31.7
20	65	20.5	132	00.1	05.7	28	50.8	45.3	114	10.7	36.8	118	21.4	31.7
21	80	23.0	146	59.2	05.3	43	52.0	45.7	129	12.6	36.6	133	23.6	31.6
22	95	25.4	161	58.4	04.9	58	53.2	46.2	144	14.5	36.5	148	25.7	31.5
23	110	27.9	176	57.5	04.5	73	54.4	46.6	159	16.3	36.3	163	27.9	31.4
24	125	30.4	191	56.6	−22 04.1	88	55.6	+15 47.1	174	18.2	−18 36.2	178	30.0	−19 31.4
Dif	—			−9	+4		+12	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.6				LUNA Edad: 12d.8 SD: 15′.2 PMG: 22h 39m PHE { 4h: 55′.8; 12h: 56′.0; 20h: 56′.3 Rº: 55m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾		Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′		º	h m	h m	h m	h m	m	h m	m
0	176	52.9	−18	42.6	32	33.5	89	+24	37.1	20	**60 N**	15 59	16 48	17 40	12 45	63	7 37	51
1	191	52.7		42.0	47	01.4	89		39.1	19	**58**	16 11	16 56	45	13 08	62	7 15	52
2	206	52.6		41.3	61	29.3	88		41.0	18	**56**	21	17 03	49	26	61	6 57	52
3	221	52.5		40.7	75	57.1	87		42.8	17	**54**	29	09	52	42	60	41	53
4	236	52.3		40.1	90	24.8	87		44.5	15	**52**	37	15	56	13 55	60	28	53
5	251	52.2	−18	39.4	104	52.5	86	+24	46.0	13	**50**	16 44	17 20	17 59	14 07	59	6 16	53
6	266	52.1	−18	38.8	119	20.1	86	+24	47.3	13	**45**	17 00	17 31	18 07	14 31	59	5 52	53
7	281	51.9		38.2	133	47.7	86		48.6	11	**40**	12	41	14	14 51	58	32	54
8	296	51.8		37.5	148	15.3	85		49.7	10	**35**	23	50	20	15 07	58	16	54
9	311	51.7		36.9	162	42.8	85		50.7	8	**30**	32	17 57	26	21	58	5 02	54
10	326	51.5		36.3	177	10.3	84		51.5	7	**20**	17 48	18 12	38	15 45	57	4 38	54
11	341	51.4	−18	35.6	191	37.7	84	+24	52.2	6	**10 N**	18 03	18 25	18 50	16 06	56	4 17	54
12	356	51.3	−18	35.0	206	05.1	84	+24	52.8	4	**0**	18 16	18 38	19 03	16 26	55	3 58	54
13	11	51.1		34.3	220	32.4	83		53.2	3	**10 S**	30	18 52	18	16 45	55	38	55
14	26	51.0		33.7	234	59.7	83		53.5	2	**20**	18 44	19 08	36	17 06	54	3 18	54
15	41	50.9		33.1	249	27.0	83		53.7	0	**30**	19 01	27	19 59	30	53	2 54	54
16	56	50.8		32.4	263	54.2	82		53.7	1	**35**	11	39	20 13	17 45	52	40	54
17	71	50.6	−18	31.8	278	21.4	82	+24	53.6	3	**40**	19 23	19 53	20 31	18 01	51	2 23	54
18	86	50.5	−18	31.1	292	48.6	82	+24	53.3	4	**45**	19 36	20 10	20 53	18 21	50	2 04	54
19	101	50.4		30.5	307	15.7	81		52.9	5	**50**	19 53	32	21 23	46	48	1 40	53
20	116	50.2		29.9	321	42.8	81		52.4	7	**52**	20 00	42	39	18 58	47	28	53
21	131	50.1		29.2	336	09.9	81		51.7	8	**54**	09	20 54	21 58	19 11	47	1 15	53
22	146	50.0		28.6	350	36.9	80		50.9	9	**56**	19	21 08	22 23	27	46	0 59	53
23	161	49.9		27.9	5	03.9	80		50.0	11	**58**	30	25	22 58	19 46	44	41	52
24	176	49.7	−18	27.3	19	30.9	80	+24	48.9		**60 S**	20 43	21 45	** **	20 09	41	0 19	51

UT	ARIES PMG 15h 35m.4		VENUS Mag: −3.9 PMG: 11h 13m			MARTE Mag: +0.3 PMG: 18h 03m			JÚPITER Mag: −2.0 PMG: 12h 21m			SATURNO Mag: +0.6 PMG: 12h 04m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	125	30.4	191	56.6	−22 04.1	88	55.6	+15 47.1	174	18.2	−18 36.2	178	30.0	−19 31.4
1	140	32.8	206	55.7	03.7	103	56.7	47.5	189	20.0	36.0	193	32.2	31.3
2	155	35.3	221	54.8	03.3	118	57.9	47.9	204	21.9	35.9	208	34.3	31.2
3	170	37.8	236	53.9	02.9	133	59.1	48.4	219	23.8	35.7	223	36.5	31.2
4	185	40.2	251	53.0	02.5	149	00.3	48.8	234	25.6	35.6	238	38.7	31.1
5	200	42.7	266	52.1	−22 02.1	164	01.5	+15 49.3	249	27.5	−18 35.4	253	40.8	−19 31.0
6	215	45.1	281	51.2	−22 01.7	179	02.7	+15 49.7	264	29.3	−18 35.2	268	43.0	−19 31.0
7	230	47.6	296	50.3	01.3	194	03.9	50.1	279	31.2	35.1	283	45.1	30.9
8	245	50.1	311	49.5	00.9	209	05.1	50.6	294	33.0	34.9	298	47.3	30.8
9	260	52.5	326	48.6	−22 00.4	224	06.3	51.0	309	34.9	34.8	313	49.4	30.8
10	275	55.0	341	47.7	−22 00.0	239	07.4	51.4	324	36.8	34.6	328	51.6	30.7
11	290	57.5	356	46.8	−21 59.6	254	08.6	+15 51.9	339	38.6	−18 34.5	343	53.7	−19 30.6
12	305	59.9	11	45.9	−21 59.2	269	09.8	+15 52.3	354	40.5	−18 34.3	358	55.9	−19 30.6
13	321	02.4	26	45.0	58.8	284	11.0	52.8	9	42.3	34.2	13	58.1	30.5
14	336	04.9	41	44.1	58.4	299	12.2	53.2	24	44.2	34.0	29	00.2	30.4
15	351	07.3	56	43.2	58.0	314	13.4	53.6	39	46.1	33.9	44	02.4	30.4
16	6	09.8	71	42.4	57.5	329	14.6	54.1	54	47.9	33.7	59	04.5	30.3
17	21	12.3	86	41.5	−21 57.1	344	15.7	+15 54.5	69	49.8	−18 33.6	74	06.7	−19 30.2
18	36	14.7	101	40.6	−21 56.7	359	16.9	+15 55.0	84	51.6	−18 33.4	89	08.8	−19 30.1
19	51	17.2	116	39.7	56.3	14	18.1	55.4	99	53.5	33.3	104	11.0	30.1
20	66	19.6	131	38.8	55.9	29	19.3	55.8	114	55.4	33.1	119	13.2	30.0
21	81	22.1	146	37.9	55.4	44	20.5	56.3	129	57.2	33.0	134	15.3	29.9
22	96	24.6	161	37.1	55.0	59	21.7	56.7	144	59.1	32.8	149	17.5	29.9
23	111	27.0	176	36.2	54.6	74	22.9	57.2	160	00.9	32.7	164	19.6	29.8
24	126	29.5	191	35.3	−21 54.2	89	24.0	+15 57.6	175	02.8	−18 32.5	179	21.8	−19 29.7
Dif	—			−9	+4		+12	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 13ᵈ8		PHE	4ʰ: 56′.5									
	PMG: 12ʰ 12ᵐ8				SD: 15′.3			12ʰ: 56′.7									
					PMG: 23ʰ 34ᵐ			20ʰ: 56′.9									
	hG ☉		Dec		hG ☾	Dif		Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′		h m	h m	h m	h m	m	h m	m
0	176	49.7	−18	27.3	19	30.9	80	+24	48.9	13	**60 N**	6 44	7 36	8 25	13 48	82	8 28	33
1	191	49.6		26.6	33	57.9	80		47.6	14	**58**	40	28	13	14 10	77	8 07	36
2	206	49.5		26.0	48	24.9	79		46.2	15	**56**	36	21	8 04	27	75	7 49	39
3	221	49.4		25.4	62	51.8	79		44.7	16	**54**	32	15	7 55	42	73	34	41
4	236	49.2		24.7	77	18.7	79		43.1	18	**52**	29	10	47	14 55	71	21	42
5	251	49.1	−18	24.1	91	45.6	79	+24	41.3	20	**50**	6 25	7 05	7 40	15 06	70	7 09	44
6	266	49.0	−18	23.4	106	12.4	78	+24	39.3	21	**45**	6 18	6 53	7 25	15 30	67	6 45	46
7	281	48.9		22.8	120	39.3	79		37.2	22	**40**	11	44	13	15 49	65	26	48
8	296	48.7		22.1	135	06.1	78		35.0	24	**35**	6 05	35	7 02	16 05	63	6 10	49
9	311	48.6		21.5	149	32.9	78		32.6	25	**30**	5 59	28	6 53	19	61	5 56	50
10	326	48.5		20.8	163	59.8	79		30.1	27	**20**	47	14	37	16 42	59	32	52
11	341	48.4	−18	20.2	178	26.6	78	+24	27.4	27	**10 N**	5 35	6 01	6 23	17 02	57	5 11	54
12	356	48.3	−18	19.5	192	53.4	78	+24	24.7	27	**0**	5 22	5 47	6 09	17 21	55	4 52	55
13	11	48.1		18.9	207	20.1	77		21.7	30	**10 S**	5 07	33	5 56	17 40	53	33	56
14	26	48.0		18.2	221	46.9	78		18.6	31	**20**	4 50	5 18	41	18 00	51	4 12	58
15	41	47.9		17.5	236	13.7	78		15.4	32	**30**	27	4 58	24	23	48	3 48	59
16	56	47.8		16.9	250	40.5	78		12.0	34	**35**	4 13	46	14	37	46	34	60
17	71	47.6	−18	16.2	265	07.2	77	+24	08.5	35	**40**	3 55	4 33	5 03	18 52	45	3 17	62
18	86	47.5	−18	15.6	279	34.0	78	+24	04.9	36	**45**	3 33	4 16	4 50	19 11	42	2 58	63
19	101	47.4		14.9	294	00.8	78	+24	01.1	38	**50**	3 03	3 54	33	34	40	33	65
20	116	47.3		14.3	308	27.5	77	+23	57.1	40	**52**	2 47	44	26	45	38	21	66
21	131	47.2		13.6	322	54.3	78		53.0	41	**54**	28	32	17	19 58	36	2 08	67
22	146	47.1		13.0	337	21.1	78		48.8	42	**56**	2 03	18	4 07	20 13	33	1 52	69
23	161	46.9		12.3	351	47.9	78		44.5	43	**58**	1 28	3 01	3 56	30	30	33	71
24	176	46.8	−18	11.6	6	14.7	78	+23	40.0	45	**60 S**	** **	2 41	3 43	20 50	26	1 10	74

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.4			Mag: −2.0			Mag: +0.6		
	15ʰ 31ᵐ5		PMG: 11ʰ 14ᵐ			PMG: 18ʰ 01ᵐ			PMG: 12ʰ 18ᵐ			PMG: 12ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	126	29.5	191	35.3	−21 54.2	89	24.0	+15 57.6	175	02.8	−18 32.5	179	21.8	−19 29.7
1	141	32.0	206	34.4	53.7	104	25.2	58.0	190	04.6	32.3	194	23.9	29.7
2	156	34.4	221	33.5	53.3	119	26.4	58.5	205	06.5	32.2	209	26.1	29.6
3	171	36.9	236	32.6	52.9	134	27.6	58.9	220	08.4	32.0	224	28.3	29.5
4	186	39.4	251	31.8	52.4	149	28.8	59.3	235	10.2	31.9	239	30.4	29.5
5	201	41.8	266	30.9	−21 52.0	164	29.9	+15 59.8	250	12.1	−18 31.7	254	32.6	−19 29.4
6	216	44.3	281	30.0	−21 51.6	179	31.1	+16 00.2	265	13.9	−18 31.6	269	34.7	−19 29.3
7	231	46.7	296	29.1	51.1	194	32.3	00.7	280	15.8	31.4	284	36.9	29.3
8	246	49.2	311	28.2	50.7	209	33.5	01.1	295	17.7	31.3	299	39.0	29.2
9	261	51.7	326	27.4	50.3	224	34.7	01.5	310	19.5	31.1	314	41.2	29.1
10	276	54.1	341	26.5	49.8	239	35.8	02.0	325	21.4	31.0	329	43.4	29.1
11	291	56.6	356	25.6	−21 49.4	254	37.0	+16 02.4	340	23.2	−18 30.8	344	45.5	−19 29.0
12	306	59.1	11	24.7	−21 48.9	269	38.2	+16 02.8	355	25.1	−18 30.7	359	47.7	−19 28.9
13	322	01.5	26	23.8	48.5	284	39.4	03.3	10	27.0	30.5	14	49.8	28.8
14	337	04.0	41	23.0	48.0	299	40.6	03.7	25	28.8	30.4	29	52.0	28.8
15	352	06.5	56	22.1	47.6	314	41.7	04.2	40	30.7	30.2	44	54.1	28.7
16	7	08.9	71	21.2	47.2	329	42.9	04.6	55	32.5	30.1	59	56.3	28.6
17	22	11.4	86	20.3	−21 46.7	344	44.1	+16 05.0	70	34.4	−18 29.9	74	58.5	−19 28.6
18	37	13.9	101	19.5	−21 46.3	359	45.3	+16 05.5	85	36.3	−18 29.7	90	00.6	−19 28.5
19	52	16.3	116	18.6	45.8	14	46.4	05.9	100	38.1	29.6	105	02.8	28.4
20	67	18.8	131	17.7	45.4	29	47.6	06.3	115	40.0	29.4	120	04.9	28.4
21	82	21.2	146	16.8	44.9	44	48.8	06.8	130	41.8	29.3	135	07.1	28.3
22	97	23.7	161	16.0	44.5	59	50.0	07.2	145	43.7	29.1	150	09.2	28.2
23	112	26.2	176	15.1	44.0	74	51.1	07.7	160	45.5	29.0	165	11.4	28.2
24	127	28.6	191	14.2	−21 43.5	89	52.3	+16 08.1	175	47.4	−18 28.8	180	13.6	−19 28.1
Dif	—			−9	+4		+12	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.0				LUNA Edad: 14d.8 SD: 15′.5 PMG: **h **m PHE 4h: 57′.1; 12h: 57′.3; 20h: 57′.5 Rº: **m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	46.8	−18	11.6	6	14.7	+23	40.0	**60 N**	16 04	16 53	17 44	15 10	92	9 01	21
1	191	46.7		11.0	20	41.5 78		35.3 47	**58**	15	17 00	48	27	88	8 43	25
2	206	46.6		10.3	35	08.3 78		30.5 48	**56**	25	07	52	42	84	28	28
3	221	46.5		09.7	49	35.1 78		25.6 49	**54**	33	13	56	15 55	81	15	31
4	236	46.3		09.0	64	01.9 78		20.5 51	**52**	41	18	17 59	16 06	78	8 03	33
5	251	46.2	−18	08.3	78	28.8 79	+23	15.3 52	**50**	16 48	17 23	18 02	16 16	76	7 53	35
6	266	46.1	−18	07.7	92	55.6 78	+23	10.0 53	**45**	17 02	17 34	18 09	16 37	72	7 31	39
7	281	46.0		07.0	107	22.5 79	+23	04.5 55	**40**	14	43	16	16 54	68	7 14	42
8	296	45.9		06.4	121	49.4 79	+22	58.9 56	**35**	25	52	22	17 08	66	6 59	44
9	311	45.8		05.7	136	16.3 79		53.1 58	**30**	34	17 59	28	20	64	46	46
10	326	45.7		05.0	150	43.2 79		47.2 59	**20**	17 50	18 13	39	41	60	24	50
11	341	45.5	−18	04.4	165	10.2 80	+22	41.2 60	**10 N**	18 03	18 25	18 51	17 59	57	6 05	52
12	356	45.4	−18	03.7	179	37.1 79	+22	35.0 62	**0**	18 17	18 38	19 04	18 16	54	5 47	55
13	11	45.3		03.0	194	04.1 80		28.7 63	**10 S**	30	18 52	18	33	51	29	57
14	26	45.2		02.4	208	31.1 80		22.3 64	**20**	18 44	19 07	35	18 51	47	5 10	60
15	41	45.1		01.7	222	58.2 81		15.7 66	**30**	19 00	26	19 57	19 11	44	4 47	63
16	56	45.0		01.0	237	25.2 80		09.0 67	**35**	10	38	20 11	23	42	34	65
17	71	44.9	−18	00.4	251	52.3 81	+22	02.2 68	**40**	19 21	19 51	20 29	19 37	39	4 19	67
18	86	44.8	−17	59.7	266	19.4 81	+21	55.2 70	**45**	19 34	20 08	20 50	19 53	36	4 01	70
19	101	44.6		59.0	280	46.6 82		48.1 71	**50**	50	29	21 19	20 14	31	3 38	73
20	116	44.5		58.4	295	13.7 81		40.9 72	**52**	19 57	39	34	23	29	27	75
21	131	44.4		57.7	309	40.9 82		33.5 74	**54**	20 06	20 50	21 52	34	26	15	77
22	146	44.3		57.0	324	08.2 83		26.0 75	**56**	15	21 04	22 15	20 46	23	3 01	80
23	161	44.2		56.3	338	35.4 82		18.4 76	**58**	26	19	22 47	21 00	20	2 44	83
24	176	44.1	−17	55.7	353	02.7 83	+21	10.6 78	**60 S**	20 38	21 38	** **	21 16	16	2 24	88

UT	ARIES PMG 15h 27m.6		VENUS Mag: −3.9 PMG: 11h 16m			MARTE Mag: +0.4 PMG: 17h 59m			JÚPITER Mag: −2.0 PMG: 12h 15m			SATURNO Mag: +0.6 PMG: 11h 57m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	127	28.6	191	14.2	−21 43.5	89	52.3	+16 08.1	175	47.4	−18 28.8	180	13.6	−19 28.1
1	142	31.1	206	13.3	43.1	104	53.5	08.5	190	49.3	28.7	195	15.7	28.0
2	157	33.6	221	12.5	42.6	119	54.7	09.0	205	51.1	28.5	210	17.9	28.0
3	172	36.0	236	11.6	42.2	134	55.8	09.4	220	53.0	28.4	225	20.0	27.9
4	187	38.5	251	10.7	41.7	149	57.0	09.8	235	54.8	28.2	240	22.2	27.8
5	202	41.0	266	09.8	−21 41.3	164	58.2	+16 10.3	250	56.7	−18 28.1	255	24.3	−19 27.7
6	217	43.4	281	09.0	−21 40.8	179	59.4	+16 10.7	265	58.6	−18 27.9	270	26.5	−19 27.7
7	232	45.9	296	08.1	40.3	195	00.5	11.1	281	00.4	27.7	285	28.7	27.6
8	247	48.4	311	07.2	39.9	210	01.7	11.6	296	02.3	27.6	300	30.8	27.5
9	262	50.8	326	06.4	39.4	225	02.9	12.0	311	04.1	27.4	315	33.0	27.5
10	277	53.3	341	05.5	38.9	240	04.0	12.4	326	06.0	27.3	330	35.1	27.4
11	292	55.7	356	04.6	−21 38.5	255	05.2	+16 12.9	341	07.9	−18 27.1	345	37.3	−19 27.3
12	307	58.2	11	03.7	−21 38.0	270	06.4	+16 13.3	356	09.7	−18 27.0	0	39.4	−19 27.3
13	323	00.7	26	02.9	37.5	285	07.6	13.8	11	11.6	26.8	15	41.6	27.2
14	338	03.1	41	02.0	37.1	300	08.7	14.2	26	13.4	26.7	30	43.8	27.1
15	353	05.6	56	01.1	36.6	315	09.9	14.6	41	15.3	26.5	45	45.9	27.1
16	8	08.1	71	00.3	36.1	330	11.1	15.1	56	17.2	26.4	60	48.1	27.0
17	23	10.5	85	59.4	−21 35.6	345	12.2	+16 15.5	71	19.0	−18 26.2	75	50.2	−19 26.9
18	38	13.0	100	58.5	−21 35.2	0	13.4	+16 15.9	86	20.9	−18 26.1	90	52.4	−19 26.9
19	53	15.5	115	57.7	34.7	15	14.6	16.4	101	22.7	25.9	105	54.5	26.8
20	68	17.9	130	56.8	34.2	30	15.7	16.8	116	24.6	25.8	120	56.7	26.7
21	83	20.4	145	55.9	33.7	45	16.9	17.2	131	26.5	25.6	135	58.9	26.6
22	98	22.9	160	55.1	33.3	60	18.1	17.7	146	28.3	25.4	151	01.0	26.6
23	113	25.3	175	54.2	32.8	75	19.2	18.1	161	30.2	25.3	166	03.2	26.5
24	128	27.8	190	53.3	−21 32.3	90	20.4	+16 18.5	176	32.0	−18 25.1	181	05.3	−19 26.4
Dif	—			−9	+5		+12	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 15^{d}.8		PHE	4^{h}: 57′.7									
	PMG: 12^{h} 13^{m}.1				SD: 15′.7			12^{h}: 57′.9									
					PMG: 0^{h} 29^{m}			20^{h}: 58′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	176	44.1	−17	55.7	353	02.7	+21	10.6		**60 N**	6 41	7 32	8 20	16 42	95	9 22	13
1	191	44.0		55.0	7	30.1	84 +21	02.7	79	**58**	37	25	09	16 55	91	9 08	17
2	206	43.9		54.3	21	57.4	83 +20	54.7	80	**56**	33	18	8 00	17 06	87	8 56	21
3	221	43.8		53.7	36	24.8	84	46.6	81	**54**	30	13	7 52	16	84	46	23
4	236	43.7		53.0	50	52.3	85	38.3	83	**52**	26	07	44	24	82	36	26
5	251	43.6	−17	52.3	65	19.7	84 +20	29.9	84	**50**	6 23	7 02	7 37	17 32	79	8 28	28
6	266	43.4	−17	51.6	79	47.2	85 +20	21.4	85	**45**	6 16	6 52	7 23	17 49	74	8 10	33
7	281	43.3		51.0	94	14.8	86	12.8	86	**40**	10	42	11	18 02	71	7 56	36
8	296	43.2		50.3	108	42.4	86 +20	04.0	88	**35**	6 04	34	7 01	14	67	43	39
9	311	43.1		49.6	123	10.0	86 +19	55.2	88	**30**	5 58	27	6 52	24	64	32	42
10	326	43.0		48.9	137	37.6	86	46.2	90	**20**	47	13	36	41	60	7 14	46
11	341	42.9	−17	48.2	152	05.3	87 +19	37.0	92	**10 N**	5 35	6 01	6 23	18 56	56	6 57	50
12	356	42.8	−17	47.6	166	33.1	88 +19	27.8	92	**0**	5 23	5 48	6 10	19 10	52	6 42	53
13	11	42.7		46.9	181	00.9	88	18.5	93	**10 S**	5 08	34	5 57	24	48	26	57
14	26	42.6		46.2	195	28.7	88 +19	09.0	95	**20**	4 51	19	42	38	45	6 10	60
15	41	42.5		45.5	209	56.5	88 +18	59.4	96	**30**	29	5 00	26	19 55	40	5 50	65
16	56	42.4		44.8	224	24.4	89	49.7	97	**35**	4 15	4 49	17	20 05	37	39	67
17	71	42.3	−17	44.2	238	52.4	90 +18	39.9	98	**40**	3 58	4 35	5 06	20 16	34	5 26	70
18	86	42.2	−17	43.5	253	20.4	90 +18	30.0	99	**45**	3 36	4 19	4 53	20 29	30	5 11	73
19	101	42.1		42.8	267	48.4	90	19.9	101	**50**	3 07	3 58	37	45	25	4 51	79
20	116	42.0		42.1	282	16.5	91 +18	09.8	101	**52**	2 52	48	29	20 52	23	42	81
21	131	41.9		41.4	296	44.6	91 +17	59.5	103	**54**	34	37	21	21 00	21	32	83
22	146	41.8		40.8	311	12.8	92	49.2	103	**56**	2 11	23	12	09	18	21	86
23	161	41.7		40.1	325	41.0	92	38.7	105	**58**	1 40	3 08	4 01	20	14	4 07	90
24	176	41.6	−17	39.4	340	09.2	92 +17	28.1	106	**60 S**	** **	2 48	3 49	21 32	10	3 52	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.4			Mag: −2.0			Mag: +0.6		
	15^{h} 23^{m}.6		PMG: 11^{h} 17^{m}			PMG: 17^{h} 57^{m}			PMG: 12^{h} 12^{m}			PMG: 11^{h} 54^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	128	27.8	190	53.3	−21 32.3	90	20.4	+16 18.5	176	32.0	−18 25.1	181	05.3	−19 26.4
1	143	30.2	205	52.5	31.8	105	21.6	19.0	191	33.9	25.0	196	07.5	26.4
2	158	32.7	220	51.6	31.3	120	22.7	19.4	206	35.8	24.8	211	09.6	26.3
3	173	35.2	235	50.7	30.8	135	23.9	19.8	221	37.6	24.7	226	11.8	26.2
4	188	37.6	250	49.9	30.4	150	25.1	20.3	236	39.5	24.5	241	14.0	26.2
5	203	40.1	265	49.0	−21 29.9	165	26.2	+16 20.7	251	41.3	−18 24.4	256	16.1	−19 26.1
6	218	42.6	280	48.1	−21 29.4	180	27.4	+16 21.1	266	43.2	−18 24.2	271	18.3	−19 26.0
7	233	45.0	295	47.3	28.9	195	28.6	21.6	281	45.1	24.1	286	20.4	26.0
8	248	47.5	310	46.4	28.4	210	29.7	22.0	296	46.9	23.9	301	22.6	25.9
9	263	50.0	325	45.6	27.9	225	30.9	22.5	311	48.8	23.7	316	24.7	25.8
10	278	52.4	340	44.7	27.4	240	32.0	22.9	326	50.6	23.6	331	26.9	25.8
11	293	54.9	355	43.8	−21 26.9	255	33.2	+16 23.3	341	52.5	−18 23.4	346	29.1	−19 25.7
12	308	57.4	10	43.0	−21 26.4	270	34.4	+16 23.8	356	54.4	−18 23.3	1	31.2	−19 25.6
13	323	59.8	25	42.1	25.9	285	35.5	24.2	11	56.2	23.1	16	33.4	25.5
14	339	02.3	40	41.3	25.4	300	36.7	24.6	26	58.1	23.0	31	35.5	25.5
15	354	04.7	55	40.4	24.9	315	37.9	25.1	41	59.9	22.8	46	37.7	25.4
16	9	07.2	70	39.5	24.4	330	39.0	25.5	57	01.8	22.7	61	39.9	25.3
17	24	09.7	85	38.7	−21 23.9	345	40.2	+16 25.9	72	03.7	−18 22.5	76	42.0	−19 25.3
18	39	12.1	100	37.8	−21 23.4	0	41.3	+16 26.4	87	05.5	−18 22.4	91	44.2	−19 25.2
19	54	14.6	115	37.0	22.9	15	42.5	26.8	102	07.4	22.2	106	46.3	25.1
20	69	17.1	130	36.1	22.4	30	43.7	27.2	117	09.3	22.0	121	48.5	25.1
21	84	19.5	145	35.2	21.9	45	44.8	27.7	132	11.1	21.9	136	50.6	25.0
22	99	22.0	160	34.4	21.4	60	46.0	28.1	147	13.0	21.7	151	52.8	24.9
23	114	24.5	175	33.5	20.9	75	47.1	28.5	162	14.8	21.6	166	55.0	24.9
24	129	26.9	190	32.7	−21 20.4	90	48.3	+16 29.0	177	16.7	−18 21.4	181	57.1	−19 24.8
Dif	—			−9	+5		+12	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.3				☾ LUNA Edad: 16d.8 SD: 15′.8 PMG: 1h 22m PHE 4h: 58′.2; 12h: 58′.4; 20h: 58′.5 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	41.6	−17	39.4	340	09.2	+17	28.1	**60 N**	16 09	16 57	17 48	18 17	95	9 35	9
1	191	41.5		38.7	354	37.5 93		17.4 107	**58**	20	17 04	52	26	91	25	13
2	206	41.4		38.0	9	05.8 93	+17	06.6 108	**56**	29	11	56	33	88	17	15
3	221	41.3		37.3	23	34.2 94	+16	55.8 108	**54**	37	16	17 59	40	85	09	19
4	236	41.2		36.6	38	02.7 95		44.8 110	**52**	45	21	18 02	46	82	9 02	21
5	251	41.1	−17	35.9	52	31.1 94	+16	33.7 111	**50**	16 51	17 26	18 05	18 51	80	8 56	23
6	266	41.0	−17	35.3	66	59.6 95	+16	22.5 112	**45**	17 05	17 37	18 12	19 03	75	8 43	28
7	281	40.9		34.6	81	28.2 96	+16	11.2 113	**40**	17	46	18	13	71	32	32
8	296	40.8		33.9	95	56.8 96	+15	59.8 114	**35**	27	17 54	24	21	67	22	36
9	311	40.7		33.2	110	25.4 96		48.4 114	**30**	36	18 01	29	28	65	14	38
10	326	40.6		32.5	124	54.1 97		36.8 116	**20**	17 51	14	40	41	59	8 00	42
11	341	40.5	−17	31.8	139	22.9 98	+15	25.1 117	**10 N**	18 04	18 26	18 52	19 52	54	7 47	47
12	356	40.4	−17	31.1	153	51.6 97	+15	13.4 117	**0**	18 17	18 39	19 04	20 02	50	7 35	51
13	11	40.3		30.4	168	20.5 99	+15	01.5 119	**10 S**	30	18 52	18	12	46	23	55
14	26	40.2		29.7	182	49.3 98	+14	49.6 119	**20**	43	19 07	34	23	41	7 10	59
15	41	40.1		29.0	197	18.2 99		37.5 121	**30**	18 59	25	19 56	35	36	6 55	64
16	56	40.0		28.3	211	47.2 100		25.4 121	**35**	19 09	36	20 10	42	34	46	67
17	71	39.9	−17	27.7	226	16.2 100	+14	13.2 122	**40**	19 19	19 49	20 26	20 50	30	6 36	71
18	86	39.8	−17	27.0	240	45.2 100	+14	01.0 122	**45**	19 32	20 05	20 47	20 59	27	6 24	75
19	101	39.7		26.3	255	14.3 101	+13	48.6 124	**50**	47	25	21 15	21 10	22	10	79
20	116	39.6		25.6	269	43.4 101		36.1 125	**52**	19 54	35	30	15	20	6 03	82
21	131	39.5		24.9	284	12.6 102		23.6 125	**54**	20 02	46	21 47	21	17	5 55	85
22	146	39.5		24.2	298	41.8 102	+13	11.0 126	**56**	11	20 59	22 08	27	15	47	88
23	161	39.4		23.5	313	11.1 103	+12	58.3 127	**58**	22	21 14	22 37	34	11	37	92
24	176	39.3	−17	22.8	327	40.3 102	+12	45.6 127	**60 S**	20 33	21 32	23 25	21 42	8	5 26	96

UT	ARIES PMG 15h 19m.7		VENUS Mag: −3.9 PMG: 11h 18m			MARTE Mag: +0.4 PMG: 17h 55m			JÚPITER Mag: −2.0 PMG: 12h 09m			SATURNO Mag: +0.6 PMG: 11h 50m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	129	26.9	190	32.7	−21 20.4	90	48.3	+16 29.0	177	16.7	−18 21.4	181	57.1	−19 24.8
1	144	29.4	205	31.8	19.9	105	49.5	29.4	192	18.6	21.3	196	59.3	24.7
2	159	31.8	220	31.0	19.4	120	50.6	29.8	207	20.4	21.1	212	01.4	24.7
3	174	34.3	235	30.1	18.8	135	51.8	30.3	222	22.3	21.0	227	03.6	24.6
4	189	36.8	250	29.3	18.3	150	52.9	30.7	237	24.1	20.8	242	05.7	24.5
5	204	39.2	265	28.4	−21 17.8	165	54.1	+16 31.1	252	26.0	−18 20.6	257	07.9	−19 24.4
6	219	41.7	280	27.5	−21 17.3	180	55.2	+16 31.6	267	27.9	−18 20.5	272	10.1	−19 24.4
7	234	44.2	295	26.7	16.8	195	56.4	32.0	282	29.7	20.3	287	12.2	24.3
8	249	46.6	310	25.8	16.3	210	57.6	32.4	297	31.6	20.2	302	14.4	24.2
9	264	49.1	325	25.0	15.8	225	58.7	32.8	312	33.4	20.0	317	16.5	24.2
10	279	51.6	340	24.1	15.2	240	59.9	33.3	327	35.3	19.9	332	18.7	24.1
11	294	54.0	355	23.3	−21 14.7	256	01.0	+16 33.7	342	37.2	−18 19.7	347	20.9	−19 24.0
12	309	56.5	10	22.4	−21 14.2	271	02.2	+16 34.1	357	39.0	−18 19.6	2	23.0	−19 24.0
13	324	59.0	25	21.6	13.7	286	03.3	34.6	12	40.9	19.4	17	25.2	23.9
14	340	01.4	40	20.7	13.1	301	04.5	35.0	27	42.7	19.2	32	27.3	23.8
15	355	03.9	55	19.9	12.6	316	05.6	35.4	42	44.6	19.1	47	29.5	23.8
16	10	06.3	70	19.0	12.1	331	06.8	35.9	57	46.5	18.9	62	31.6	23.7
17	25	08.8	85	18.2	−21 11.6	346	07.9	+16 36.3	72	48.3	−18 18.8	77	33.8	−19 23.6
18	40	11.3	100	17.3	−21 11.0	1	09.1	+16 36.7	87	50.2	−18 18.6	92	36.0	−19 23.6
19	55	13.7	115	16.5	10.5	16	10.2	37.2	102	52.0	18.5	107	38.1	23.5
20	70	16.2	130	15.6	10.0	31	11.4	37.6	117	53.9	18.3	122	40.3	23.4
21	85	18.7	145	14.8	09.4	46	12.5	38.0	132	55.8	18.2	137	42.4	23.3
22	100	21.1	160	13.9	08.9	61	13.7	38.5	147	57.6	18.0	152	44.6	23.3
23	115	23.6	175	13.1	08.4	76	14.9	38.9	162	59.5	17.8	167	46.7	23.2
24	130	26.1	190	12.3	−21 07.8	91	16.0	+16 39.3	178	01.3	−18 17.7	182	48.9	−19 23.1
Dif	—			−9	+5		+12	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 12h 13m.5				Edad: 17d.8 SD: 15′.9 PMG: 2h 14m				PHE 4h: 58′.6 12h: 58′.7 20h: 58′.8 Rº: 50m							
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	39.3	−17	22.8	327	40.3	+12	45.6	**60 N**	6 37	7 28	8 16	19 52	95	9 44	7
1	191	39.2		22.1	342	09.7 104		32.7 129	**58**	34	21	8 05	19 57	91	38	10
2	206	39.1		21.4	356	39.0 103		19.8 129	**56**	30	15	7 56	20 01	88	32	14
3	221	39.0		20.7	11	08.4 104	+12	06.8 130	**54**	27	10	48	05	85	28	16
4	236	38.9		20.0	25	37.9 105	+11	53.8 130	**52**	24	04	41	08	83	23	19
5	251	38.8	−17	19.3	40	07.4 105	+11	40.7 131	**50**	6 21	7 00	7 35	20 11	80	9 19	21
6	266	38.7	−17	18.6	54	36.9 105	+11	27.5 132	**45**	6 14	6 49	7 21	20 18	75	9 11	25
7	281	38.6		17.9	69	06.4 105		14.2 133	**40**	08	41	7 09	24	70	9 04	29
8	296	38.5		17.2	83	36.0 106	+11	00.9 133	**35**	6 02	33	6 59	28	67	8 58	32
9	311	38.5		16.5	98	05.7 107	+10	47.5 134	**30**	5 57	26	51	33	63	52	36
10	326	38.4		15.8	112	35.3 106		34.0 135	**20**	46	13	36	40	58	42	41
11	341	38.3	−17	15.1	127	05.0 107	+10	20.5 135	**10 N**	5 35	6 01	6 22	20 46	54	8 34	45
12	356	38.2	−17	14.4	141	34.8 108	+10	06.9 136	**0**	5 23	5 48	6 10	20 52	49	8 26	50
13	11	38.1		13.7	156	04.5 107	+9	53.3 136	**10 S**	5 09	35	5 57	20 58	45	18	54
14	26	38.0		13.0	170	34.3 108		39.6 137	**20**	4 53	20	44	21 04	40	8 09	59
15	41	37.9		12.2	185	04.2 109		25.8 138	**30**	31	5 02	28	11	35	7 59	64
16	56	37.8		11.5	199	34.0 108	+9	12.0 138	**35**	18	4 51	19	16	31	53	67
17	71	37.7	−17	10.8	214	03.9 109	+8	58.2 138	**40**	4 01	4 38	5 08	21 20	29	7 47	70
18	86	37.7	−17	10.1	228	33.9 110	+8	44.3 139	**45**	3 40	4 22	4 56	21 26	24	7 39	75
19	101	37.6		09.4	243	03.8 109		30.3 140	**50**	3 12	4 02	40	32	20	29	80
20	116	37.5		08.7	257	33.8 110		16.3 140	**52**	2 58	3 52	33	35	17	25	82
21	131	37.4		08.0	272	03.8 110	+8	02.2 141	**54**	41	41	25	38	15	20	85
22	146	37.3		07.3	286	33.8 110	+7	48.1 141	**56**	2 19	29	16	42	12	15	88
23	161	37.2		06.6	301	03.9 111		33.9 142	**58**	1 51	3 14	4 06	45	10	09	91
24	176	37.2	−17	05.9	315	34.0 111	+7	19.7 142	**60 S**	1 02	2 56	3 54	21 50	6	7 02	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 15h 15m.8		Mag: −3.9 PMG: 11h 20m			Mag: +0.4 PMG: 17h 54m			Mag: −2.0 PMG: 12h 06m			Mag: +0.6 PMG: 11h 47m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	130	26.1	190	12.3	−21 07.8	91	16.0	+16 39.3	178	01.3	−18 17.7	182	48.9	−19 23.1
1	145	28.5	205	11.4	07.3	106	17.2	39.8	193	03.2	17.5	197	51.1	23.1
2	160	31.0	220	10.6	06.8	121	18.3	40.2	208	05.1	17.4	212	53.2	23.0
3	175	33.5	235	09.7	06.2	136	19.5	40.6	223	06.9	17.2	227	55.4	22.9
4	190	35.9	250	08.9	05.7	151	20.6	41.0	238	08.8	17.1	242	57.5	22.9
5	205	38.4	265	08.0	−21 05.1	166	21.7	+16 41.5	253	10.6	−18 16.9	257	59.7	−19 22.8
6	220	40.8	280	07.2	−21 04.6	181	22.9	+16 41.9	268	12.5	−18 16.8	273	01.9	−19 22.7
7	235	43.3	295	06.3	04.1	196	24.0	42.3	283	14.4	16.6	288	04.0	22.7
8	250	45.8	310	05.5	03.5	211	25.2	42.8	298	16.2	16.4	303	06.2	22.6
9	265	48.2	325	04.7	03.0	226	26.3	43.2	313	18.1	16.3	318	08.3	22.5
10	280	50.7	340	03.8	02.4	241	27.5	43.6	328	19.9	16.1	333	10.5	22.4
11	295	53.2	355	03.0	−21 01.9	256	28.6	+16 44.1	343	21.8	−18 16.0	348	12.6	−19 22.4
12	310	55.6	10	02.1	−21 01.3	271	29.8	+16 44.5	358	23.7	−18 15.8	3	14.8	−19 22.3
13	325	58.1	25	01.3	00.8	286	30.9	44.9	13	25.5	15.7	18	17.0	22.2
14	341	00.6	40	00.4	−21 00.2	301	32.1	45.3	28	27.4	15.5	33	19.1	22.2
15	356	03.0	54	59.6	−20 59.7	316	33.2	45.8	43	29.2	15.3	48	21.3	22.1
16	11	05.5	69	58.8	59.1	331	34.4	46.2	58	31.1	15.2	63	23.4	22.0
17	26	07.9	84	57.9	−20 58.6	346	35.5	+16 46.6	73	33.0	−18 15.0	78	25.6	−19 22.0
18	41	10.4	99	57.1	−20 58.0	1	36.7	+16 47.1	88	34.8	−18 14.9	93	27.8	−19 21.9
19	56	12.9	114	56.2	57.5	16	37.8	47.5	103	36.7	14.7	108	29.9	21.8
20	71	15.3	129	55.4	56.9	31	38.9	47.9	118	38.6	14.6	123	32.1	21.8
21	86	17.8	144	54.6	56.3	46	40.1	48.4	133	40.4	14.4	138	34.2	21.7
22	101	20.3	159	53.7	55.8	61	41.2	48.8	148	42.3	14.3	153	36.4	21.6
23	116	22.7	174	52.9	55.2	76	42.4	49.2	163	44.1	14.1	168	38.6	21.5
24	131	25.2	189	52.1	−20 54.7	91	43.5	+16 49.6	178	46.0	−18 13.9	183	40.7	−19 21.5
Dif	—			−8	+5		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 12h 13m.6				Edad: 18d.8 SD: 16′.0 PMG: 3h 04m		PHE 4h: 58′.9 12h: 59′.0 20h: 59′.1 Rº: 49m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	176	37.2	−17	05.9	315	34.0	+7	19.7	**60 N**	16 15	17 02	17 53	21 27	94	9 51	6
1	191	37.1		05.2	330	04.1 111	+7	05.5 142	**58**	25	09	17 56	28	91	48	9
2	206	37.0		04.4	344	34.2 111	+6	51.2 143	**56**	33	15	18 00	29	88	46	12
3	221	36.9		03.7	359	04.4 112		36.9 143	**54**	41	20	03	30	85	44	14
4	236	36.8		03.0	13	34.6 112		22.5 144	**52**	48	25	05	31	82	42	17
5	251	36.7	−17	02.3	28	04.8 112	+6	08.1 144	**50**	16 55	17 29	18 08	21 31	80	9 40	19
6	266	36.7	−17	01.6	42	35.0 112	+5	53.7 144	**45**	17 08	17 39	18 14	21 33	75	9 36	24
7	281	36.6		00.9	57	05.3 113		39.2 145	**40**	19	48	20	34	71	33	28
8	296	36.5	−17	00.2	71	35.5 112		24.7 145	**35**	29	17 55	26	35	67	30	31
9	311	36.4	−16	59.4	86	05.8 113	+5	10.1 146	**30**	37	18 02	31	36	64	28	34
10	326	36.3		58.7	100	36.1 113	+4	55.6 145	**20**	17 52	15	41	38	59	23	40
11	341	36.3	−16	58.0	115	06.4 113	+4	41.0 146	**10 N**	18 05	18 27	18 52	21 40	53	9 19	45
12	356	36.2	−16	57.3	129	36.7 113	+4	26.3 147	**0**	18 17	18 39	19 04	21 41	49	9 16	48
13	11	36.1		56.6	144	07.1 114	+4	11.7 146	**10 S**	29	18 51	17	43	44	12	53
14	26	36.0		55.9	158	37.4 113	+3	57.0 147	**20**	43	19 06	34	44	40	08	58
15	41	35.9		55.1	173	07.8 114		42.3 147	**30**	18 58	24	19 54	46	35	03	64
16	56	35.9		54.4	187	38.2 114		27.5 148	**35**	19 07	34	20 08	47	32	9 00	67
17	71	35.8	−16	53.7	202	08.6 114	+3	12.8 147	**40**	19 17	19 47	20 24	21 49	27	8 57	71
18	86	35.7	−16	53.0	216	39.0 114	+2	58.0 148	**45**	19 29	20 03	20 44	21 50	24	8 54	75
19	101	35.6		52.3	231	09.4 114		43.2 148	**50**	44	22	21 11	52	19	49	80
20	116	35.5		51.5	245	39.8 114		28.4 148	**52**	51	31	25	52	17	47	83
21	131	35.5		50.8	260	10.2 114	+2	13.6 148	**54**	19 59	42	21 41	53	15	45	85
22	146	35.4		50.1	274	40.6 114	+1	58.8 148	**56**	20 07	20 54	22 01	54	12	43	87
23	161	35.3		49.4	289	11.1 115		43.9 149	**58**	17	21 08	22 27	55	9	40	91
24	176	35.2	−16	48.7	303	41.5 114	+1	29.1 148	**60 S**	20 28	21 25	23 07	21 56	6	8 37	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 15h 11m.8		Mag: −3.9 PMG: 11h 21m			Mag: +0.5 PMG: 17h 52m			Mag: −2.0 PMG: 12h 03m			Mag: +0.6 PMG: 11h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	131	25.2	189	52.1	−20 54.7	91	43.5	+16 49.6	178	46.0	−18 13.9	183	40.7	−19 21.5
1	146	27.7	204	51.2	54.1	106	44.7	50.1	193	47.9	13.8	198	42.9	21.4
2	161	30.1	219	50.4	53.5	121	45.8	50.5	208	49.7	13.6	213	45.0	21.3
3	176	32.6	234	49.6	53.0	136	46.9	50.9	223	51.6	13.5	228	47.2	21.3
4	191	35.1	249	48.7	52.4	151	48.1	51.4	238	53.4	13.3	243	49.3	21.2
5	206	37.5	264	47.9	−20 51.8	166	49.2	+16 51.8	253	55.3	−18 13.2	258	51.5	−19 21.1
6	221	40.0	279	47.0	−20 51.3	181	50.4	+16 52.2	268	57.2	−18 13.0	273	53.7	−19 21.1
7	236	42.4	294	46.2	50.7	196	51.5	52.6	283	59.0	12.8	288	55.8	21.0
8	251	44.9	309	45.4	50.1	211	52.7	53.1	299	00.9	12.7	303	58.0	20.9
9	266	47.4	324	44.6	49.6	226	53.8	53.5	314	02.7	12.5	319	00.1	20.9
10	281	49.8	339	43.7	49.0	241	54.9	53.9	329	04.6	12.4	334	02.3	20.8
11	296	52.3	354	42.9	−20 48.4	256	56.1	+16 54.3	344	06.5	−18 12.2	349	04.5	−19 20.7
12	311	54.8	9	42.1	−20 47.8	271	57.2	+16 54.8	359	08.3	−18 12.1	4	06.6	−19 20.7
13	326	57.2	24	41.2	47.3	286	58.3	55.2	14	10.2	11.9	19	08.8	20.6
14	341	59.7	39	40.4	46.7	301	59.5	55.6	29	12.1	11.7	34	10.9	20.5
15	357	02.2	54	39.6	46.1	317	00.6	56.1	44	13.9	11.6	49	13.1	20.4
16	12	04.6	69	38.7	45.5	332	01.8	56.5	59	15.8	11.4	64	15.3	20.4
17	27	07.1	84	37.9	−20 44.9	347	02.9	+16 56.9	74	17.6	−18 11.3	79	17.4	−19 20.3
18	42	09.5	99	37.1	−20 44.4	2	04.0	+16 57.3	89	19.5	−18 11.1	94	19.6	−19 20.2
19	57	12.0	114	36.2	43.8	17	05.2	57.8	104	21.4	11.0	109	21.7	20.2
20	72	14.5	129	35.4	43.2	32	06.3	58.2	119	23.2	10.8	124	23.9	20.1
21	87	16.9	144	34.6	42.6	47	07.4	58.6	134	25.1	10.6	139	26.0	20.0
22	102	19.4	159	33.8	42.0	62	08.6	59.0	149	26.9	10.5	154	28.2	20.0
23	117	21.9	174	32.9	41.4	77	09.7	59.5	164	28.8	10.3	169	30.4	19.9
24	132	24.3	189	32.1	−20 40.9	92	10.9	+16 59.9	179	30.7	−18 10.2	184	32.5	−19 19.8
Dif	—			−8	+6		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 19^{d}.8		PHE	4^{h}: 59′.1								
	PMG: 12^{h} 13^{m}.7				SD: 16′.1			12^{h}: 59′.2								
					PMG: 3^{h} 53^{m}			20^{h}: 59′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	35.2	−16	48.7	303	41.5	+1	29.1	**60 N**	6 34	7 24	8 11	23 01	96	9 57	6
1	191	35.2		47.9	318	11.9 114	+1	14.2 149	**58**	30	17	8 01	22 59	92	57	10
2	206	35.1		47.2	332	42.4 115	+0	59.3 149	**56**	27	12	7 53	57	88	58	12
3	221	35.0		46.5	347	12.8 114		44.4 149	**54**	24	06	45	55	85	58	15
4	236	34.9		45.8	1	43.3 115		29.5 149	**52**	21	7 02	38	53	83	59	17
5	251	34.9	−16	45.0	16	13.7 114	+0	14.6 149	**50**	6 18	6 57	7 32	22 51	81	9 59	20
6	266	34.8	−16	44.3	30	44.1 114	−0	00.3 149	**45**	6 12	6 47	7 18	22 48	75	10 00	24
7	281	34.7		43.6	45	14.5 114		15.2 149	**40**	07	39	7 07	45	71	01	28
8	296	34.6		42.8	59	45.0 115		30.1 149	**35**	6 01	31	6 58	42	68	01	32
9	311	34.6		42.1	74	15.4 114		45.0 149	**30**	5 56	25	50	40	65	02	35
10	326	34.5		41.4	88	45.8 114	−0	59.9 149	**20**	46	12	35	37	59	03	40
11	341	34.4	−16	40.7	103	16.2 114	−1	14.8 149	**10 N**	5 35	6 00	6 22	22 33	55	10 04	45
12	356	34.4	−16	39.9	117	46.6 114	−1	29.7 149	**0**	5 24	5 49	6 10	22 30	50	10 04	50
13	11	34.3		39.2	132	17.0 114		44.6 149	**10 S**	5 10	36	5 58	27	46	05	54
14	26	34.2		38.5	146	47.3 113	−1	59.4 148	**20**	4 54	22	45	24	41	06	59
15	41	34.1		37.7	161	17.7 114	−2	14.3 149	**30**	33	5 04	30	21	35	07	64
16	56	34.1		37.0	175	48.0 113		29.2 149	**35**	20	4 53	21	19	32	07	68
17	71	34.0	−16	36.3	190	18.4 114	−2	44.0 148	**40**	4 04	4 41	5 10	22 16	30	10 08	71
18	86	33.9	−16	35.5	204	48.7 113	−2	58.9 149	**45**	3 44	4 25	4 58	22 14	25	10 09	75
19	101	33.9		34.8	219	19.0 113	−3	13.7 148	**50**	17	4 06	44	11	20	09	81
20	116	33.8		34.1	233	49.3 113		28.5 148	**52**	3 03	3 57	37	09	19	10	82
21	131	33.7		33.3	248	19.5 112		43.3 148	**54**	2 47	46	29	08	16	10	85
22	146	33.7		32.6	262	49.8 113	−3	58.0 147	**56**	27	34	21	06	13	10	88
23	161	33.6		31.9	277	20.0 112	−4	12.8 148	**58**	2 01	20	11	04	11	11	91
24	176	33.5	−16	31.1	291	50.2 112	−4	27.5 147	**60 S**	1 21	3 03	4 00	22 02	7	10 11	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.0			Mag: +0.6		
	15^{h} 07^{m}.9		PMG: 11^{h} 22^{m}			PMG: 17^{h} 50^{m}			PMG: 12^{h} 00^{m}			PMG: 11^{h} 40^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	132	24.3	189	32.1	−20 40.9	92	10.9	+16 59.9	179	30.7	−18 10.2	184	32.5	−19 19.8
1	147	26.8	204	31.3	40.3	107	12.0	+17 00.3	194	32.5	10.0	199	34.7	19.8
2	162	29.3	219	30.5	39.7	122	13.1	00.8	209	34.4	09.9	214	36.8	19.7
3	177	31.7	234	29.6	39.1	137	14.3	01.2	224	36.3	09.7	229	39.0	19.6
4	192	34.2	249	28.8	38.5	152	15.4	01.6	239	38.1	09.5	244	41.2	19.5
5	207	36.7	264	28.0	−20 37.9	167	16.5	+17 02.0	254	40.0	−18 09.4	259	43.3	−19 19.5
6	222	39.1	279	27.2	−20 37.3	182	17.7	+17 02.5	269	41.8	−18 09.2	274	45.5	−19 19.4
7	237	41.6	294	26.3	36.7	197	18.8	02.9	284	43.7	09.1	289	47.6	19.3
8	252	44.0	309	25.5	36.1	212	19.9	03.3	299	45.6	08.9	304	49.8	19.3
9	267	46.5	324	24.7	35.5	227	21.1	03.7	314	47.4	08.8	319	52.0	19.2
10	282	49.0	339	23.9	34.9	242	22.2	04.2	329	49.3	08.6	334	54.1	19.1
11	297	51.4	354	23.1	−20 34.3	257	23.3	+17 04.6	344	51.1	−18 08.4	349	56.3	−19 19.1
12	312	53.9	9	22.2	−20 33.7	272	24.5	+17 05.0	359	53.0	−18 08.3	4	58.4	−19 19.0
13	327	56.4	24	21.4	33.1	287	25.6	05.4	14	54.9	08.1	20	00.6	18.9
14	342	58.8	39	20.6	32.5	302	26.7	05.9	29	56.7	08.0	35	02.8	18.9
15	358	01.3	54	19.8	31.9	317	27.8	06.3	44	58.6	07.8	50	04.9	18.8
16	13	03.8	69	19.0	31.3	332	29.0	06.7	60	00.5	07.7	65	07.1	18.7
17	28	06.2	84	18.1	−20 30.7	347	30.1	+17 07.1	75	02.3	−18 07.5	80	09.2	−19 18.6
18	43	08.7	99	17.3	−20 30.1	2	31.2	+17 07.6	90	04.2	−18 07.3	95	11.4	−19 18.6
19	58	11.2	114	16.5	29.5	17	32.4	08.0	105	06.0	07.2	110	13.6	18.5
20	73	13.6	129	15.7	28.9	32	33.5	08.4	120	07.9	07.0	125	15.7	18.4
21	88	16.1	144	14.9	28.3	47	34.6	08.8	135	09.8	06.9	140	17.9	18.4
22	103	18.5	159	14.0	27.7	62	35.8	09.3	150	11.6	06.7	155	20.0	18.3
23	118	21.0	174	13.2	27.0	77	36.9	09.7	165	13.5	06.6	170	22.2	18.2
24	133	23.5	189	12.4	−20 26.4	92	38.0	+17 10.1	180	15.4	−18 06.4	185	24.4	−19 18.2
Dif	—			−8	+6		+11	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.8				LUNA Edad: 20d.8 SD: 16′.1 PMG: 4h 42m PHE 4h: 59′.2; 12h: 59′.2; 20h: 59′.2 Rº: 50m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	33.5	−16	31.1	291	50.2	−4	27.5	**60 N**	16 20	17 07	17 57	** **	**	10 03	7
1	191	33.5		30.4	306	20.4 112		42.2 147	**58**	29	13	18 00	** **	**	07	11
2	206	33.4		29.7	320	50.5 111	−4	56.9 147	**56**	38	19	03	** **	**	10	14
3	221	33.3		28.9	335	20.7 112	−5	11.6 147	**54**	45	24	06	** **	**	13	17
4	236	33.3		28.2	349	50.8 111		26.2 146	**52**	52	28	09	** **	**	16	19
5	251	33.2	−16	27.5	4	20.9 111	−5	40.8 146	**50**	16 58	17 33	18 11	** **	**	10 19	21
6	266	33.1	−16	26.7	18	50.9 110	−5	55.4 146	**45**	17 11	17 42	18 17	** **	**	10 24	27
7	281	33.1		26.0	33	20.9 110	−6	09.9 145	**40**	22	50	22	23 56	72	29	30
8	296	33.0		25.2	47	50.9 110		24.4 145	**35**	31	17 57	28	50	69	33	34
9	311	32.9		24.5	62	20.9 110		38.9 145	**30**	39	18 04	33	45	65	37	36
10	326	32.9		23.8	76	50.8 109	−6	53.3 144	**20**	17 53	16	42	36	60	43	42
11	341	32.8	−16	23.0	91	20.7 109	−7	07.7 144	**10 N**	18 06	18 27	18 53	23 28	56	10 49	46
12	356	32.7	−16	22.3	105	50.6 109	−7	22.1 144	**0**	18 17	18 39	19 04	23 20	52	10 54	51
13	11	32.7		21.5	120	20.4 108		36.4 143	**10 S**	29	18 51	17	13	48	10 59	55
14	26	32.6		20.8	134	50.2 108	−7	50.7 143	**20**	42	19 05	33	23 05	43	11 05	59
15	41	32.6		20.1	149	19.9 107	−8	04.9 142	**30**	18 57	22	19 53	22 56	38	11	65
16	56	32.5		19.3	163	49.6 107		19.1 142	**35**	19 05	33	20 06	51	36	15	68
17	71	32.4	−16	18.6	178	19.3 107	−8	33.3 142	**40**	19 15	19 45	20 21	22 46	31	11 19	72
18	86	32.4	−16	17.8	192	49.0 107	−8	47.4 141	**45**	19 27	20 00	20 41	22 39	28	11 24	76
19	101	32.3		17.1	207	18.6 106	−9	01.4 140	**50**	41	18	21 07	31	23	30	81
20	116	32.3		16.3	221	48.1 105		15.5 141	**52**	48	27	20	28	21	32	84
21	131	32.2		15.6	236	17.6 105		29.4 139	**54**	19 55	38	35	24	18	35	86
22	146	32.1		14.8	250	47.1 105		43.3 139	**56**	20 03	20 49	21 54	19	16	38	90
23	161	32.1		14.1	265	16.5 104	−9	57.2 139	**58**	13	21 03	22 18	15	12	42	93
24	176	32.0	−16	13.3	279	45.9 104	−10	11.0 138	**60 S**	20 23	21 19	22 52	22 09	9	11 46	97

UT	ARIES PMG 15h 04m.0		VENUS Mag: −3.9 PMG: 11h 24m			MARTE Mag: +0.5 PMG: 17h 48m			JÚPITER Mag: −2.0 PMG: 11h 57m			SATURNO Mag: +0.6 PMG: 11h 37m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	133	23.5	189	12.4	−20 26.4	92	38.0	+17 10.1	180	15.4	−18 06.4	185	24.4	−19 18.2
1	148	25.9	204	11.6	25.8	107	39.1	10.5	195	17.2	06.2	200	26.5	18.1
2	163	28.4	219	10.8	25.2	122	40.3	11.0	210	19.1	06.1	215	28.7	18.0
3	178	30.9	234	10.0	24.6	137	41.4	11.4	225	20.9	05.9	230	30.8	18.0
4	193	33.3	249	09.2	24.0	152	42.5	11.8	240	22.8	05.8	245	33.0	17.9
5	208	35.8	264	08.3	−20 23.4	167	43.6	+17 12.2	255	24.7	−18 05.6	260	35.2	−19 17.8
6	223	38.3	279	07.5	−20 22.7	182	44.8	+17 12.7	270	26.5	−18 05.5	275	37.3	−19 17.7
7	238	40.7	294	06.7	22.1	197	45.9	13.1	285	28.4	05.3	290	39.5	17.7
8	253	43.2	309	05.9	21.5	212	47.0	13.5	300	30.3	05.1	305	41.6	17.6
9	268	45.6	324	05.1	20.9	227	48.1	13.9	315	32.1	05.0	320	43.8	17.5
10	283	48.1	339	04.3	20.2	242	49.3	14.4	330	34.0	04.8	335	45.9	17.5
11	298	50.6	354	03.5	−20 19.6	257	50.4	+17 14.8	345	35.8	−18 04.7	350	48.1	−19 17.4
12	313	53.0	9	02.7	−20 19.0	272	51.5	+17 15.2	0	37.7	−18 04.5	5	50.3	−19 17.3
13	328	55.5	24	01.9	18.4	287	52.6	15.6	15	39.6	04.3	20	52.4	17.3
14	343	58.0	39	01.0	17.7	302	53.8	16.0	30	41.4	04.2	35	54.6	17.2
15	359	00.4	54	00.2	17.1	317	54.9	16.5	45	43.3	04.0	50	56.7	17.1
16	14	02.9	68	59.4	16.5	332	56.0	16.9	60	45.2	03.9	65	58.9	17.1
17	29	05.4	83	58.6	−20 15.9	347	57.1	+17 17.3	75	47.0	−18 03.7	81	01.1	−19 17.0
18	44	07.8	98	57.8	−20 15.2	2	58.3	+17 17.7	90	48.9	−18 03.6	96	03.2	−19 16.9
19	59	10.3	113	57.0	14.6	17	59.4	18.2	105	50.7	03.4	111	05.4	16.8
20	74	12.8	128	56.2	14.0	33	00.5	18.6	120	52.6	03.2	126	07.6	16.8
21	89	15.2	143	55.4	13.3	48	01.6	19.0	135	54.5	03.1	141	09.7	16.7
22	104	17.7	158	54.6	12.7	63	02.7	19.4	150	56.3	02.9	156	11.9	16.6
23	119	20.1	173	53.8	12.0	78	03.9	19.8	165	58.2	02.8	171	14.0	16.6
24	134	22.6	188	53.0	−20 11.4	93	05.0	+17 20.3	181	00.1	−18 02.6	186	16.2	−19 16.5
Dif	—			−8	+6		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 21^{d}.8		PHE	4^{h}: 59′.2									
	PMG: 12^{h} 13^{m}.9				SD: 16′.1			12^{h}: 59′.2									
					PMG: 5^{h} 32^{m}			20^{h}: 59′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	176	32.0	−16	13.3	279	45.9	−10	11.0		**60 N**	6 30	7 20	8 06	0 37	98	10 10	11
1	191	32.0		12.6	294	15.2	103	24.7	137	**58**	26	14	7 57	31	93	18	14
2	206	31.9		11.9	308	44.5	103	38.4	137	**56**	24	08	49	25	90	24	18
3	221	31.8		11.1	323	13.8	103	−10 52.0	136	**54**	21	7 03	41	20	87	30	21
4	236	31.8		10.4	337	42.9	101	−11 05.6	136	**52**	18	6 59	35	16	84	35	23
5	251	31.7	−16	09.6	352	12.1	102	−11 19.1	135	**50**	6 16	6 54	7 29	0 12	82	10 40	26
6	266	31.7	−16	08.9	6	41.2	101	−11 32.5	134	**45**	6 10	6 45	7 16	0 03	77	10 51	30
7	281	31.6		08.1	21	10.2	100	45.9	134	**40**	05	37	7 05	** **	**	10 59	34
8	296	31.6		07.4	35	39.2	100	−11 59.2	133	**35**	6 00	30	6 56	** **	**	11 07	37
9	311	31.5		06.6	50	08.1	99	−12 12.5	133	**30**	5 55	23	48	** **	**	13	41
10	326	31.4		05.8	64	37.0	99	25.6	131	**20**	45	11	34	** **	**	25	45
11	341	31.4	−16	05.1	79	05.9	99	−12 38.7	131	**10 N**	5 35	6 00	6 22	** **	**	11 35	49
12	356	31.3	−16	04.3	93	34.6	97	−12 51.8	131	**0**	5 24	5 49	6 10	** **	**	11 45	53
13	11	31.3		03.6	108	03.3	97	−13 04.7	129	**10 S**	5 11	37	5 59	** **	**	11 54	57
14	26	31.2		02.8	122	32.0	97	17.6	129	**20**	4 55	23	46	23 48	47	12 04	61
15	41	31.2		02.1	137	00.6	96	30.4	128	**30**	35	5 06	31	34	43	16	66
16	56	31.1		01.3	151	29.2	96	43.2	128	**35**	22	4 55	23	27	39	23	69
17	71	31.1	−16	00.6	165	57.7	95	−13 55.8	126	**40**	4 07	4 43	5 13	23 17	37	12 31	72
18	86	31.0	−15	59.8	180	26.1	94	−14 08.4	126	**45**	3 47	4 28	5 01	23 07	33	12 40	76
19	101	31.0		59.1	194	54.5	94	20.9	125	**50**	22	10	4 47	22 54	29	51	81
20	116	30.9		58.3	209	22.8	93	33.3	124	**52**	3 09	4 01	41	49	26	12 56	84
21	131	30.9		57.5	223	51.0	92	45.6	123	**54**	2 53	3 51	33	42	24	13 01	87
22	146	30.8		56.8	238	19.2	92	−14 57.9	123	**56**	34	39	25	35	20	08	89
23	161	30.7		56.0	252	47.4	92	−15 10.0	121	**58**	2 10	26	16	27	17	15	93
24	176	30.7	−15	55.3	267	15.4	90	−15 22.1	121	**60 S**	1 36	3 10	4 05	22 18	13	13 23	98

UT	ARIES		VENUS			MARTE				JÚPITER				SATURNO			
	PMG		Mag: −3.9			Mag: +0.5				Mag: −2.0				Mag: +0.6			
	15^{h} 00^{m}.0		PMG: 11^{h} 25^{m}			PMG: 17^{h} 46^{m}				PMG: 11^{h} 55^{m}				PMG: 11^{h} 33^{m}			
	hG ♈		hG ♀		Dec	hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	° ′	°	′	°	′	°	′	°	′	°	′	°	′
0	134	22.6	188	53.0	−20 11.4	93	05.0	+17	20.3	181	00.1	−18	02.6	186	16.2	−19	16.5
1	149	25.1	203	52.2	10.8	108	06.1		20.7	196	01.9		02.4	201	18.4		16.4
2	164	27.5	218	51.4	10.1	123	07.2		21.1	211	03.8		02.3	216	20.5		16.4
3	179	30.0	233	50.6	09.5	138	08.3		21.5	226	05.6		02.1	231	22.7		16.3
4	194	32.5	248	49.8	08.8	153	09.5		22.0	241	07.5		02.0	246	24.8		16.2
5	209	34.9	263	49.0	−20 08.2	168	10.6	+17	22.4	256	09.4	−18	01.8	261	27.0	−19	16.2
6	224	37.4	278	48.2	−20 07.6	183	11.7	+17	22.8	271	11.2	−18	01.7	276	29.2	−19	16.1
7	239	39.9	293	47.4	06.9	198	12.8		23.2	286	13.1		01.5	291	31.3		16.0
8	254	42.3	308	46.6	06.3	213	13.9		23.6	301	15.0		01.3	306	33.5		15.9
9	269	44.8	323	45.8	05.6	228	15.0		24.1	316	16.8		01.2	321	35.6		15.9
10	284	47.2	338	45.0	05.0	243	16.2		24.5	331	18.7		01.0	336	37.8		15.8
11	299	49.7	353	44.2	−20 04.3	258	17.3	+17	24.9	346	20.5	−18	00.9	351	40.0	−19	15.7
12	314	52.2	8	43.4	−20 03.7	273	18.4	+17	25.3	1	22.4	−18	00.7	6	42.1	−19	15.7
13	329	54.6	23	42.6	03.0	288	19.5		25.7	16	24.3		00.5	21	44.3		15.6
14	344	57.1	38	41.8	02.4	303	20.6		26.2	31	26.1		00.4	36	46.4		15.5
15	359	59.6	53	41.0	01.7	318	21.7		26.6	46	28.0		00.2	51	48.6		15.5
16	15	02.0	68	40.2	01.1	333	22.9		27.0	61	29.9	−18	00.1	66	50.8		15.4
17	30	04.5	83	39.4	−20 00.4	348	24.0	+17	27.4	76	31.7	−17	59.9	81	52.9	−19	15.3
18	45	07.0	98	38.6	−19 59.8	3	25.1	+17	27.8	91	33.6	−17	59.8	96	55.1	−19	15.3
19	60	09.4	113	37.8	59.1	18	26.2		28.3	106	35.5		59.6	111	57.2		15.2
20	75	11.9	128	37.0	58.4	33	27.3		28.7	121	37.3		59.4	126	59.4		15.1
21	90	14.4	143	36.2	57.8	48	28.4		29.1	136	39.2		59.3	142	01.6		15.0
22	105	16.8	158	35.4	57.1	63	29.5		29.5	151	41.0		59.1	157	03.7		15.0
23	120	19.3	173	34.6	56.5	78	30.7		29.9	166	42.9		59.0	172	05.9		14.9
24	135	21.7	188	33.8	−19 55.8	93	31.8	+17	30.4	181	44.8	−17	58.8	187	08.0	−19	14.8
Dif	—		−8		+7	+11			+4	+19			+2	+22			+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22^{d}.8		PHE	4^{h}: 59′.2									
	PMG: 12^{h} 14^{m}.0				SD: 16′.1			12^{h}: 59′.1									
					PMG: 6^{h} 25^{m}			20^{h}: 59′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	176	30.7	−15	55.3	267	15.4	−15	22.1		**60 N**	16 25	17 11	18 01	2 15	98	10 21	15
1	191	30.6		54.5	281	43.4 90		34.1	120	**58**	34	17	04	2 04	94	32	20
2	206	30.6		53.7	296	11.4 90		46.0	119	**56**	42	23	07	1 55	90	42	24
3	221	30.5		53.0	310	39.3 89	−15	57.8	118	**54**	49	27	10	47	86	51	26
4	236	30.5		52.2	325	07.1 88	−16	09.5	117	**52**	16 56	32	12	40	84	10 58	30
5	251	30.4	−15	51.5	339	34.8 87	−16	21.1	116	**50**	17 01	17 36	18 14	1 34	81	11 06	31
6	266	30.4	−15	50.7	354	02.5 87	−16	32.6	115	**45**	17 14	17 45	18 20	1 20	76	11 21	36
7	281	30.4		49.9	8	30.1 86		44.0	114	**40**	24	52	25	1 08	73	33	40
8	296	30.3		49.2	22	57.7 86	−16	55.3	113	**35**	33	17 59	29	0 59	69	44	43
9	311	30.3		48.4	37	25.2 85	−17	06.5	112	**30**	41	18 06	34	50	67	11 54	45
10	326	30.2		47.7	51	52.6 84		17.6	111	**20**	17 54	17	43	36	62	12 10	49
11	341	30.2	−15	46.9	66	20.0 84	−17	28.6	110	**10 N**	18 06	18 28	18 53	0 24	58	12 24	53
12	356	30.1	−15	46.1	80	47.3 83	−17	39.5	109	**0**	18 17	18 39	19 04	0 12	54	12 38	55
13	11	30.1		45.4	95	14.5 82	−17	50.3	108	**10 S**	29	18 51	16	0 01	50	12 51	59
14	26	30.0		44.6	109	41.7 82	−18	01.0	107	**20**	41	19 04	32	** **	**	13 05	63
15	41	30.0		43.8	124	08.8 81		11.6	106	**30**	18 55	21	19 51	** **	**	22	67
16	56	29.9		43.1	138	35.9 81		22.1	105	**35**	19 04	31	20 04	** **	**	32	69
17	71	29.9	−15	42.3	153	02.8 79	−18	32.4	103	**40**	19 13	19 43	20 19	23 54	43	13 43	72
18	86	29.8	−15	41.5	167	29.7 79	−18	42.7	103	**45**	19 24	19 57	20 37	23 40	40	13 56	75
19	101	29.8		40.8	181	56.6 79	−18	52.8	101	**50**	38	20 15	21 02	23	36	14 12	80
20	116	29.8		40.0	196	23.4 78	−19	02.8	100	**52**	44	23	15	15	33	20	82
21	131	29.7		39.2	210	50.1 77		12.7	99	**54**	51	33	29	23 06	31	28	85
22	146	29.7		38.5	225	16.7 76		22.5	98	**56**	19 59	44	21 47	22 55	29	37	88
23	161	29.6		37.7	239	43.3 76		32.2	97	**58**	20 08	20 57	22 09	44	25	14 48	92
24	176	29.6	−15	36.9	254	09.8 75	−19	41.7	95	**60 S**	20 18	21 12	22 40	22 31	20	15 01	96

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.0			Mag: +0.6		
	14^{h} 56^{m}.1		PMG: 11^{h} 26^{m}			PMG: 17^{h} 45^{m}			PMG: 11^{h} 52^{m}			PMG: 11^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	135	21.7	188	33.8	−19 55.8	93	31.8	+17 30.4	181	44.8	−17 58.8	187	08.0	−19 14.8
1	150	24.2	203	33.0	55.1	108	32.9	30.8	196	46.6	58.6	202	10.2	14.8
2	165	26.7	218	32.2	54.5	123	34.0	31.2	211	48.5	58.5	217	12.4	14.7
3	180	29.1	233	31.4	53.8	138	35.1	31.6	226	50.4	58.3	232	14.5	14.6
4	195	31.6	248	30.6	53.1	153	36.2	32.0	241	52.2	58.2	247	16.7	14.6
5	210	34.1	263	29.8	−19 52.5	168	37.3	+17 32.5	256	54.1	−17 58.0	262	18.9	−19 14.5
6	225	36.5	278	29.1	−19 51.8	183	38.4	+17 32.9	271	56.0	−17 57.8	277	21.0	−19 14.4
7	240	39.0	293	28.3	51.1	198	39.5	33.3	286	57.8	57.7	292	23.2	14.4
8	255	41.5	308	27.5	50.5	213	40.7	33.7	301	59.7	57.5	307	25.3	14.3
9	270	43.9	323	26.7	49.8	228	41.8	34.1	317	01.5	57.4	322	27.5	14.2
10	285	46.4	338	25.9	49.1	243	42.9	34.6	332	03.4	57.2	337	29.7	14.1
11	300	48.9	353	25.1	−19 48.4	258	44.0	+17 35.0	347	05.3	−17 57.0	352	31.8	−19 14.1
12	315	51.3	8	24.3	−19 47.8	273	45.1	+17 35.4	2	07.1	−17 56.9	7	34.0	−19 14.0
13	330	53.8	23	23.5	47.1	288	46.2	35.8	17	09.0	56.7	22	36.1	13.9
14	345	56.2	38	22.7	46.4	303	47.3	36.2	32	10.9	56.6	37	38.3	13.9
15	0	58.7	53	22.0	45.7	318	48.4	36.6	47	12.7	56.4	52	40.5	13.8
16	16	01.2	68	21.2	45.0	333	49.5	37.1	62	14.6	56.3	67	42.6	13.7
17	31	03.6	83	20.4	−19 44.4	348	50.6	+17 37.5	77	16.5	−17 56.1	82	44.8	−19 13.7
18	46	06.1	98	19.6	−19 43.7	3	51.7	+17 37.9	92	18.3	−17 55.9	97	46.9	−19 13.6
19	61	08.6	113	18.8	43.0	18	52.8	38.3	107	20.2	55.8	112	49.1	13.5
20	76	11.0	128	18.0	42.3	33	54.0	38.7	122	22.0	55.6	127	51.3	13.4
21	91	13.5	143	17.3	41.6	48	55.1	39.2	137	23.9	55.5	142	53.4	13.4
22	106	16.0	158	16.5	41.0	63	56.2	39.6	152	25.8	55.3	157	55.6	13.3
23	121	18.4	173	15.7	40.3	78	57.3	40.0	167	27.6	55.1	172	57.8	13.2
24	136	20.9	188	14.9	−19 39.6	93	58.4	+17 40.4	182	29.5	−17 55.0	187	59.9	−19 13.2
Dif	—			−8	+7		+11	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.1				LUNA Edad: 23d.8 SD: 16′.1 PMG: 7h 20m PHE 4h: 59′.0 12h: 59′.0 20h: 58′.9 Rº: 58m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	29.6	−15	36.9	254	09.8	−19	41.7	**60 N**	6 25	7 15	8 01	3 53	94	10 36	26
1	191	29.5		36.1	268	36.3 75	−19	51.2 95	**58**	23	10	7 52	38	89	10 52	31
2	206	29.5		35.4	283	02.6 73	−20	00.5 93	**56**	20	04	45	25	85	11 06	34
3	221	29.5		34.6	297	29.0 74		09.6 91	**54**	18	7 00	38	13	83	17	37
4	236	29.4		33.8	311	55.2 72		18.7 91	**52**	15	6 55	31	3 04	79	28	39
5	251	29.4	−15	33.1	326	21.4 72	−20	27.6 89	**50**	6 13	6 51	7 26	2 55	77	11 37	41
6	266	29.3	−15	32.3	340	47.6 72	−20	36.4 88	**45**	6 08	6 43	7 13	2 36	74	11 57	44
7	281	29.3		31.5	355	13.6 70		45.1 87	**40**	6 03	35	7 03	21	71	12 13	47
8	296	29.2		30.7	9	39.6 70	−20	53.6 85	**35**	5 58	28	6 55	2 08	68	27	49
9	311	29.2		30.0	24	05.6 70	−21	02.1 85	**30**	54	22	47	1 57	66	39	50
10	326	29.2		29.2	38	31.5 69		10.3 82	**20**	45	11	34	38	63	12 59	54
11	341	29.1	−15	28.4	52	57.3 68	−21	18.5 82	**10 N**	5 35	6 00	6 22	1 22	60	13 17	56
12	356	29.1	−15	27.6	67	23.1 68	−21	26.5 80	**0**	5 24	5 49	6 11	1 06	58	13 33	59
13	11	29.1		26.9	81	48.8 67		34.4 79	**10 S**	5 12	37	5 59	0 51	55	13 50	60
14	26	29.0		26.1	96	14.4 66		42.1 77	**20**	4 57	24	47	35	52	14 08	63
15	41	29.0		25.3	110	40.0 66		49.7 76	**30**	37	5 08	33	17	48	29	65
16	56	28.9		24.5	125	05.6 66	−21	57.2 75	**35**	25	4 58	25	0 06	46	41	67
17	71	28.9	−15	23.7	139	31.1 65	−22	04.5 73	**40**	4 10	4 46	5 15	** **	**	14 55	69
18	86	28.9	−15	23.0	153	56.5 64	−22	11.7 72	**45**	3 51	4 32	5 04	** **	**	15 11	72
19	101	28.8		22.2	168	21.9 64		18.7 70	**50**	26	14	4 51	23 59	46	32	74
20	116	28.8		21.4	182	47.2 63		25.6 69	**52**	3 14	4 05	45	48	45	42	76
21	131	28.8		20.6	197	12.5 63		32.4 68	**54**	2 59	3 56	38	37	43	15 53	78
22	146	28.7		19.9	211	37.7 62		39.0 66	**56**	42	45	30	24	41	16 05	81
23	161	28.7		19.1	226	02.8 61		45.4 64	**58**	2 20	32	21	23 09	38	20	83
24	176	28.7	−15	18.3	240	28.0 62	−22	51.8 64	**60 S**	1 49	3 16	4 11	22 51	35	16 37	88

UT	ARIES PMG 14h 52m.2		VENUS Mag: −3.9 PMG: 11h 28m			MARTE Mag: +0.5 PMG: 17h 43m			JÚPITER Mag: −2.0 PMG: 11h 49m			SATURNO Mag: +0.6 PMG: 11h 26m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	136	20.9	188	14.9	−19 39.6	93	58.4	+17 40.4	182	29.5	−17 55.0	187	59.9	−19 13.2
1	151	23.4	203	14.1	38.9	108	59.5	40.8	197	31.4	54.8	203	02.1	13.1
2	166	25.8	218	13.3	38.2	124	00.6	41.2	212	33.2	54.7	218	04.2	13.0
3	181	28.3	233	12.6	37.5	139	01.7	41.7	227	35.1	54.5	233	06.4	13.0
4	196	30.7	248	11.8	36.8	154	02.8	42.1	242	37.0	54.3	248	08.6	12.9
5	211	33.2	263	11.0	−19 36.1	169	03.9	+17 42.5	257	38.8	−17 54.2	263	10.7	−19 12.8
6	226	35.7	278	10.2	−19 35.4	184	05.0	+17 42.9	272	40.7	−17 54.0	278	12.9	−19 12.8
7	241	38.1	293	09.4	34.7	199	06.1	43.3	287	42.6	53.9	293	15.0	12.7
8	256	40.6	308	08.7	34.1	214	07.2	43.7	302	44.4	53.7	308	17.2	12.6
9	271	43.1	323	07.9	33.4	229	08.3	44.2	317	46.3	53.5	323	19.4	12.5
10	286	45.5	338	07.1	32.7	244	09.4	44.6	332	48.1	53.4	338	21.5	12.5
11	301	48.0	353	06.3	−19 32.0	259	10.5	+17 45.0	347	50.0	−17 53.2	353	23.7	−19 12.4
12	316	50.5	8	05.6	−19 31.3	274	11.6	+17 45.4	2	51.9	−17 53.1	8	25.9	−19 12.3
13	331	52.9	23	04.8	30.6	289	12.7	45.8	17	53.7	52.9	23	28.0	12.3
14	346	55.4	38	04.0	29.9	304	13.8	46.2	32	55.6	52.7	38	30.2	12.2
15	1	57.8	53	03.2	29.2	319	14.9	46.6	47	57.5	52.6	53	32.3	12.1
16	17	00.3	68	02.5	28.5	334	16.0	47.1	62	59.3	52.4	68	34.5	12.1
17	32	02.8	83	01.7	−19 27.8	349	17.1	+17 47.5	78	01.2	−17 52.3	83	36.7	−19 12.0
18	47	05.2	98	00.9	−19 27.0	4	18.2	+17 47.9	93	03.1	−17 52.1	98	38.8	−19 11.9
19	62	07.7	113	00.1	26.3	19	19.3	48.3	108	04.9	51.9	113	41.0	11.9
20	77	10.2	127	59.4	25.6	34	20.4	48.7	123	06.8	51.8	128	43.2	11.8
21	92	12.6	142	58.6	24.9	49	21.5	49.1	138	08.7	51.6	143	45.3	11.7
22	107	15.1	157	57.8	24.2	64	22.6	49.6	153	10.5	51.5	158	47.5	11.6
23	122	17.6	172	57.0	23.5	79	23.7	50.0	168	12.4	51.3	173	49.6	11.6
24	137	20.0	187	56.3	−19 22.8	94	24.8	+17 50.4	183	14.3	−17 51.1	188	51.8	−19 11.5
Dif	—		−8		+7	+11		+4	+19		+2	+22		+1

UT	SOL		LUNA			Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 24ᵈ.8		PHE: 4ʰ: 58′.8, 12ʰ: 58′.7, 20ʰ: 58′.6			Civil	Náutico	Hora	Rº	Hora	Rº
	PMG: 12ʰ 14ᵐ.1		SD: 16′.0										
			PMG: 8ʰ 18ᵐ		Rº: 59ᵐ								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif							
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m m	h m m	h m m
0	176 28.7	−15 18.3	240 28.0		−22 51.8		**60 N**	16 31	17 16	18 06	5 27 79	11 02 44	
1	191 28.6	17.5	254 53.0	60	−22 57.9	61	**58**	39	22	09	5 07 76	23 47	
2	206 28.6	16.7	269 18.1	61	−23 04.0	61	**56**	47	27	11	4 50 74	40 48	
3	221 28.6	15.9	283 43.1	60	09.8	58	**54**	53	31	13	36 72	11 54 50	
4	236 28.5	15.2	298 08.0	59	15.6	58	**52**	16 59	35	15	23 71	12 07 51	
5	251 28.5	−15 14.4	312 32.9	59	−23 21.1	55	**50**	17 05	17 39	18 17	4 12 70	12 18 52	
6	266 28.5	−15 13.6	326 57.7	58	−23 26.6	55	**45**	17 17	17 47	18 22	3 50 68	12 41 54	
7	281 28.4	12.8	341 22.6	59	31.8	52	**40**	26	17 55	27	32 66	13 00 55	
8	296 28.4	12.0	355 47.3	57	36.9	51	**35**	35	18 01	31	16 65	16 56	
9	311 28.4	11.2	10 12.1	58	41.9	50	**30**	42	07	36	3 03 64	29 57	
10	326 28.3	10.5	24 36.8	57	46.7	48	**20**	17 55	18	44	2 41 62	13 53 57	
11	341 28.3	−15 09.7	39 01.4	56	−23 51.4	47	**10 N**	18 07	18 28	18 54	2 22 60	14 13 58	
12	356 28.3	−15 08.9	53 26.1	57	−23 55.9	45	**0**	18 18	18 39	19 04	2 04 59	14 32 59	
13	11 28.2	08.1	67 50.7	56	−24 00.2	43	**10 S**	29	18 50	16	1 46 57	14 50 61	
14	26 28.2	07.3	82 15.3	56	04.4	42	**20**	40	19 03	30	27 55	15 11 61	
15	41 28.2	06.5	96 39.8	55	08.4	40	**30**	18 54	19	19 49	1 05 54	34 62	
16	56 28.1	05.7	111 04.3	55	12.3	39	**35**	19 02	29	20 01	0 52 53	15 48 62	
17	71 28.1	−15 04.9	125 28.8	55	−24 16.0	37	**40**	19 11	19 40	20 16	0 37 51	16 04 62	
18	86 28.1	−15 04.2	139 53.3	55	−24 19.6	36	**45**	19 22	19 54	20 34	0 20 49	16 23 63	
19	101 28.1	03.4	154 17.7	54	23.0	34	**50**	35	20 11	20 58	** ** **	46 65	
20	116 28.0	02.6	168 42.2	55	26.2	32	**52**	41	19	21 10	** ** **	16 58 64	
21	131 28.0	01.8	183 06.6	54	29.3	31	**54**	47	29	24	** ** **	17 11 65	
22	146 28.0	01.0	197 31.0	54	32.2	29	**56**	19 55	39	21 40	** ** **	26 66	
23	161 27.9	−15 00.2	211 55.3	53	35.0	28	**58**	20 03	20 52	22 01	23 47 57	17 43 67	
24	176 27.9	−14 59.4	226 19.7	54	−24 37.6	26	**60 S**	20 13	21 06	22 28	23 26 55	18 05 68	

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +0.6		Mag: −2.0		Mag: +0.6	
	14ʰ 48ᵐ.2	PMG: 11ʰ 29ᵐ		PMG: 17ʰ 41ᵐ		PMG: 11ʰ 46ᵐ		PMG: 11ʰ 23ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	137 20.0	187 56.3	−19 22.8	94 24.8	+17 50.4	183 14.3	−17 51.1	188 51.8	−19 11.5
1	152 22.5	202 55.5	22.1	109 25.9	50.8	198 16.1	51.0	203 54.0	11.4
2	167 25.0	217 54.7	21.4	124 27.0	51.2	213 18.0	50.8	218 56.1	11.4
3	182 27.4	232 54.0	20.7	139 28.1	51.6	228 19.9	50.7	233 58.3	11.3
4	197 29.9	247 53.2	19.9	154 29.2	52.0	243 21.7	50.5	249 00.5	11.2
5	212 32.3	262 52.4	−19 19.2	169 30.3	+17 52.5	258 23.6	−17 50.3	264 02.6	−19 11.2
6	227 34.8	277 51.7	−19 18.5	184 31.4	+17 52.9	273 25.4	−17 50.2	279 04.8	−19 11.1
7	242 37.3	292 50.9	17.8	199 32.5	53.3	288 27.3	50.0	294 06.9	11.0
8	257 39.7	307 50.1	17.1	214 33.6	53.7	303 29.2	49.9	309 09.1	11.0
9	272 42.2	322 49.4	16.4	229 34.7	54.1	318 31.0	49.7	324 11.3	10.9
10	287 44.7	337 48.6	15.6	244 35.8	54.5	333 32.9	49.5	339 13.4	10.8
11	302 47.1	352 47.8	−19 14.9	259 36.9	+17 54.9	348 34.8	−17 49.4	354 15.6	−19 10.7
12	317 49.6	7 47.1	−19 14.2	274 38.0	+17 55.3	3 36.6	−17 49.2	9 17.8	−19 10.7
13	332 52.1	22 46.3	13.5	289 39.1	55.8	18 38.5	49.1	24 19.9	10.6
14	347 54.5	37 45.5	12.7	304 40.2	56.2	33 40.4	48.9	39 22.1	10.5
15	2 57.0	52 44.8	12.0	319 41.2	56.6	48 42.2	48.7	54 24.2	10.5
16	17 59.5	67 44.0	11.3	334 42.3	57.0	63 44.1	48.6	69 26.4	10.4
17	33 01.9	82 43.2	−19 10.6	349 43.4	+17 57.4	78 46.0	−17 48.4	84 28.6	−19 10.3
18	48 04.4	97 42.5	−19 09.8	4 44.5	+17 57.8	93 47.8	−17 48.3	99 30.7	−19 10.3
19	63 06.8	112 41.7	09.1	19 45.6	58.2	108 49.7	48.1	114 32.9	10.2
20	78 09.3	127 41.0	08.4	34 46.7	58.6	123 51.6	47.9	129 35.1	10.1
21	93 11.8	142 40.2	07.7	49 47.8	59.1	138 53.4	47.8	144 37.2	10.0
22	108 14.2	157 39.4	06.9	64 48.9	59.5	153 55.3	47.6	159 39.4	10.0
23	123 16.7	172 38.7	06.2	79 50.0	+17 59.9	168 57.2	47.5	174 41.5	09.9
24	138 19.2	187 37.9	−19 05.5	94 51.1	+18 00.3	183 59.0	−17 47.3	189 43.7	−19 09.8
Dif	—	−8	+7	+11	+4	+19	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 25^{d}.8		PHE	4^{h}: 58′.5									
	PMG: 12^{h} 14^{m}.2				SD: 16′.0			12^{h}: 58′.4									
					PMG: 9^{h} 17^{m}			20^{h}: 58′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	176	27.9	−14	59.4	226	19.7	−24	37.6		**60 N**	6 21	7 11	7 56	6 46	56	11 46	68
1	191	27.9		58.6	240	44.0 53		40.0	24	**58**	19	05	48	23	56	12 10	66
2	206	27.9		57.8	255	08.4 54		42.3	23	**56**	16	7 01	40	6 04	57	28	66
3	221	27.8		57.0	269	32.7 53		44.4	21	**54**	14	6 56	34	5 48	58	44	65
4	236	27.8		56.2	283	57.0 53		46.3	19	**52**	12	52	28	34	58	12 58	64
5	251	27.8	−14	55.4	298	21.4 54	−24	48.1	18	**50**	6 10	6 48	7 22	5 22	58	13 10	64
6	266	27.8	−14	54.6	312	45.7 53	−24	49.7	16	**45**	6 05	6 40	7 11	4 58	58	13 35	63
7	281	27.7		53.8	327	10.0 53		51.2	15	**40**	6 01	33	7 01	38	58	13 55	62
8	296	27.7		53.1	341	34.3 53		52.5	13	**35**	5 57	27	6 53	21	59	14 12	61
9	311	27.7		52.3	355	58.6 53		53.6	11	**30**	52	21	45	4 07	59	26	61
10	326	27.7		51.5	10	23.0 54		54.6	10	**20**	44	10	33	3 43	59	14 50	60
11	341	27.7	−14	50.7	24	47.3 53	−24	55.4	8	**10 N**	5 35	6 00	6 21	3 22	59	15 11	60
12	356	27.6	−14	49.9	39	11.6 53	−24	56.1	7	**0**	5 24	5 49	6 11	3 03	59	15 31	59
13	11	27.6		49.1	53	36.0 54		56.6	5	**10 S**	5 13	38	6 00	2 43	59	15 51	57
14	26	27.6		48.3	68	00.4 54		56.9	3	**20**	4 58	25	5 48	2 22	60	16 12	57
15	41	27.6		47.5	82	24.7 53		57.0	1	**30**	39	09	35	1 59	59	36	56
16	56	27.5		46.7	96	49.1 54		57.1	1	**35**	27	5 00	27	45	58	16 50	55
17	71	27.5	−14	45.9	111	13.5 54	−24	56.9	2	**40**	4 13	4 49	5 18	1 28	59	17 06	55
18	86	27.5	−14	45.1	125	38.0 55	−24	56.6	3	**45**	3 55	4 35	5 07	1 09	59	17 26	53
19	101	27.5		44.3	140	02.4 54		56.1	5	**50**	31	18	4 54	0 45	58	17 51	51
20	116	27.5		43.5	154	26.9 55		55.5	6	**52**	19	10	48	33	58	18 02	51
21	131	27.4		42.7	168	51.4 55		54.6	9	**54**	3 05	4 00	42	20	58	16	50
22	146	27.4		41.9	183	15.9 55		53.7	9	**56**	2 49	3 50	34	0 05	57	32	48
23	161	27.4		41.1	197	40.5 56		52.6	11	**58**	28	38	26	** **	**	18 50	47
24	176	27.4	−14	40.3	212	05.1 56	−24	51.3	13	**60 S**	2 01	3 23	4 16	** **	**	19 13	44

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.0			Mag: +0.6		
	14^{h} 44^{m}.3		PMG: 11^{h} 30^{m}			PMG: 17^{h} 39^{m}			PMG: 11^{h} 43^{m}			PMG: 11^{h} 19^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	138	19.2	187	37.9	−19 05.5	94	51.1	+18 00.3	183	59.0	−17 47.3	189	43.7	−19 09.8
1	153	21.6	202	37.2	04.7	109	52.2	00.7	199	00.9	47.1	204	45.9	09.8
2	168	24.1	217	36.4	04.0	124	53.3	01.1	214	02.8	47.0	219	48.0	09.7
3	183	26.6	232	35.7	03.2	139	54.3	01.5	229	04.6	46.8	234	50.2	09.6
4	198	29.0	247	34.9	02.5	154	55.4	01.9	244	06.5	46.6	249	52.4	09.6
5	213	31.5	262	34.1	−19 01.8	169	56.5	+18 02.4	259	08.4	−17 46.5	264	54.5	−19 09.5
6	228	34.0	277	33.4	−19 01.0	184	57.6	+18 02.8	274	10.2	−17 46.3	279	56.7	−19 09.4
7	243	36.4	292	32.6	−19 00.3	199	58.7	03.2	289	12.1	46.2	294	58.8	09.4
8	258	38.9	307	31.9	−18 59.5	214	59.8	03.6	304	14.0	46.0	310	01.0	09.3
9	273	41.3	322	31.1	58.8	230	00.9	04.0	319	15.8	45.8	325	03.2	09.2
10	288	43.8	337	30.4	58.1	245	02.0	04.4	334	17.7	45.7	340	05.3	09.1
11	303	46.3	352	29.6	−18 57.3	260	03.0	+18 04.8	349	19.6	−17 45.5	355	07.5	−19 09.1
12	318	48.7	7	28.9	−18 56.6	275	04.1	+18 05.2	4	21.4	−17 45.4	10	09.7	−19 09.0
13	333	51.2	22	28.1	55.8	290	05.2	05.6	19	23.3	45.2	25	11.8	08.9
14	348	53.7	37	27.4	55.1	305	06.3	06.0	34	25.2	45.0	40	14.0	08.9
15	3	56.1	52	26.6	54.3	320	07.4	06.5	49	27.0	44.9	55	16.2	08.8
16	18	58.6	67	25.9	53.6	335	08.5	06.9	64	28.9	44.7	70	18.3	08.7
17	34	01.1	82	25.1	−18 52.8	350	09.6	+18 07.3	79	30.8	−17 44.6	85	20.5	−19 08.7
18	49	03.5	97	24.4	−18 52.1	5	10.7	+18 07.7	94	32.6	−17 44.4	100	22.6	−19 08.6
19	64	06.0	112	23.6	51.3	20	11.7	08.1	109	34.5	44.2	115	24.8	08.5
20	79	08.5	127	22.9	50.6	35	12.8	08.5	124	36.4	44.1	130	27.0	08.5
21	94	10.9	142	22.1	49.8	50	13.9	08.9	139	38.2	43.9	145	29.1	08.4
22	109	13.4	157	21.4	49.1	65	15.0	09.3	154	40.1	43.8	160	31.3	08.3
23	124	15.8	172	20.6	48.3	80	16.1	09.7	169	42.0	43.6	175	33.5	08.2
24	139	18.3	187	19.9	−18 47.6	95	17.2	+18 10.1	184	43.8	−17 43.4	190	35.6	−19 08.2
Dif	—			−8	+7		+11	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.2				LUNA Edad: 26d.8 SD: 15′.9 PMG: 10h 16m PHE 4h: 58′.2; 12h: 58′.0; 20h: 57′.9 Rº: 57m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	27.4	−14	40.3	212	05.1	−24	51.3	**60 N**	16 36	17 21	18 10	7 42	33	12 54	85
1	191	27.4		39.5	226	29.7 56		49.8 15	**58**	44	26	13	19	37	13 16	80
2	206	27.4		38.7	240	54.3 56		48.2 16	**56**	51	31	15	7 01	40	34	77
3	221	27.3		37.9	255	19.0 57		46.5 17	**54**	16 57	35	17	6 46	42	13 49	75
4	236	27.3		37.1	269	43.7 57		44.6 19	**52**	17 03	39	19	32	44	14 02	74
5	251	27.3	−14	36.2	284	08.5 58	−24	42.5 21	**50**	17 08	17 42	18 20	6 20	46	14 14	72
6	266	27.3	−14	35.4	298	33.3 58	−24	40.3 22	**45**	17 20	17 50	18 25	5 56	48	14 38	69
7	281	27.3		34.6	312	58.1 58		37.9 24	**40**	29	17 57	29	36	50	14 57	67
8	296	27.3		33.8	327	23.0 59		35.4 25	**35**	37	18 03	33	20	51	15 13	65
9	311	27.2		33.0	341	48.0 60		32.7 27	**30**	44	09	37	5 06	52	27	63
10	326	27.2		32.2	356	13.0 60		29.8 29	**20**	17 56	19	45	4 42	54	15 50	61
11	341	27.2	−14	31.4	10	38.0 60	−24	26.8 30	**10 N**	18 07	18 29	18 54	4 21	56	16 11	58
12	356	27.2	−14	30.6	25	03.1 61	−24	23.7 31	**0**	18 18	18 39	19 04	4 02	57	16 30	56
13	11	27.2		29.8	39	28.2 61		20.4 33	**10 S**	28	18 50	15	3 42	59	16 48	55
14	26	27.2		29.0	53	53.4 62		16.9 35	**20**	39	19 02	29	3 22	60	17 09	51
15	41	27.1		28.2	68	18.7 63		13.3 36	**30**	18 52	18	48	2 58	62	32	49
16	56	27.1		27.4	82	44.0 63		09.6 37	**35**	19 00	27	19 59	43	64	17 45	48
17	71	27.1	−14	26.6	97	09.3 63	−24	05.7 39	**40**	19 09	19 38	20 13	2 27	65	18 01	45
18	86	27.1	−14	25.8	111	34.8 65	−24	01.7 40	**45**	19 19	19 51	20 30	2 08	66	18 19	43
19	101	27.1		24.9	126	00.2 64	−23	57.5 42	**50**	31	20 07	20 53	1 43	68	42	40
20	116	27.1		24.1	140	25.8 66		53.1 44	**52**	37	15	21 05	31	70	18 53	38
21	131	27.1		23.3	154	51.4 66		48.7 44	**54**	43	24	18	18	70	19 06	36
22	146	27.1		22.5	169	17.1 67		44.0 47	**56**	50	34	33	1 02	72	20	33
23	161	27.1		21.7	183	42.8 67		39.3 47	**58**	19 58	46	21 53	0 44	74	37	30
24	176	27.0	−14	20.9	198	08.6 68	−23	34.4 49	**60 S**	20 08	20 59	22 17	0 21	77	19 57	26

UT	ARIES PMG 14h 40m.4		VENUS Mag: −3.9 PMG: 11h 31m			MARTE Mag: +0.6 PMG: 17h 38m			JÚPITER Mag: −2.0 PMG: 11h 40m			SATURNO Mag: +0.6 PMG: 11h 16m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	139	18.3	187	19.9	−18 47.6	95	17.2	+18 10.1	184	43.8	−17 43.4	190	35.6	−19 08.2
1	154	20.8	202	19.1	46.8	110	18.2	10.5	199	45.7	43.3	205	37.8	08.1
2	169	23.2	217	18.4	46.0	125	19.3	11.0	214	47.6	43.1	220	40.0	08.0
3	184	25.7	232	17.6	45.3	140	20.4	11.4	229	49.4	42.9	235	42.1	08.0
4	199	28.2	247	16.9	44.5	155	21.5	11.8	244	51.3	42.8	250	44.3	07.9
5	214	30.6	262	16.1	−18 43.8	170	22.6	+18 12.2	259	53.2	−17 42.6	265	46.4	−19 07.8
6	229	33.1	277	15.4	−18 43.0	185	23.7	+18 12.6	274	55.0	−17 42.5	280	48.6	−19 07.8
7	244	35.6	292	14.7	42.2	200	24.7	13.0	289	56.9	42.3	295	50.8	07.7
8	259	38.0	307	13.9	41.5	215	25.8	13.4	304	58.8	42.1	310	52.9	07.6
9	274	40.5	322	13.2	40.7	230	26.9	13.8	320	00.6	42.0	325	55.1	07.6
10	289	43.0	337	12.4	39.9	245	28.0	14.2	335	02.5	41.8	340	57.3	07.5
11	304	45.4	352	11.7	−18 39.2	260	29.1	+18 14.6	350	04.4	−17 41.7	355	59.4	−19 07.4
12	319	47.9	7	10.9	−18 38.4	275	30.1	+18 15.0	5	06.2	−17 41.5	11	01.6	−19 07.3
13	334	50.3	22	10.2	37.6	290	31.2	15.4	20	08.1	41.3	26	03.8	07.3
14	349	52.8	37	09.5	36.9	305	32.3	15.9	35	10.0	41.2	41	05.9	07.2
15	4	55.3	52	08.7	36.1	320	33.4	16.3	50	11.8	41.0	56	08.1	07.1
16	19	57.7	67	08.0	35.3	335	34.5	16.7	65	13.7	40.8	71	10.3	07.1
17	35	00.2	82	07.2	−18 34.5	350	35.5	+18 17.1	80	15.6	−17 40.7	86	12.4	−19 07.0
18	50	02.7	97	06.5	−18 33.8	5	36.6	+18 17.5	95	17.4	−17 40.5	101	14.6	−19 06.9
19	65	05.1	112	05.8	33.0	20	37.7	17.9	110	19.3	40.4	116	16.8	06.9
20	80	07.6	127	05.0	32.2	35	38.8	18.3	125	21.2	40.2	131	18.9	06.8
21	95	10.1	142	04.3	31.4	50	39.8	18.7	140	23.0	40.0	146	21.1	06.7
22	110	12.5	157	03.6	30.7	65	40.9	19.1	155	24.9	39.9	161	23.2	06.7
23	125	15.0	172	02.8	29.9	80	42.0	19.5	170	26.8	39.7	176	25.4	06.6
24	140	17.4	187	02.1	−18 29.1	95	43.1	+18 19.9	185	28.6	−17 39.6	191	27.6	−19 06.5
Dif	—			−7	+8		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 27^{d}.8		PHE	4^{h}: 57′.7									
	PMG: 12^{h} 14^{m}.2				SD: 15′.7			12^{h}: 57′.6									
					PMG: 11^{h} 13^{m}			20^{h}: 57′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	176	27.0	−14	20.9	198	08.6	−23	34.4		**60 N**	6 17	7 06	7 51	8 15	19	14 19	91
1	191	27.0		20.1	212	34.5 69		29.3	51	**58**	15	7 01	43	7 56	24	36	87
2	206	27.0		19.3	227	00.4 69		24.1	52	**56**	13	6 57	36	41	27	14 51	83
3	221	27.0		18.4	241	26.5 71		18.8	53	**54**	11	52	30	28	30	15 04	80
4	236	27.0		17.6	255	52.6 71		13.3	55	**52**	09	49	24	16	32	16	77
5	251	27.0	−14	16.8	270	18.7 71	−23	07.7	56	**50**	6 07	6 45	7 19	7 06	34	15 26	75
6	266	27.0	−14	16.0	284	45.0 73	−23	02.0	57	**45**	6 03	6 38	7 08	6 44	38	15 47	71
7	281	27.0		15.2	299	11.3 73	−22	56.1	59	**40**	5 59	31	6 59	26	41	16 04	67
8	296	27.0		14.4	313	37.7 74		50.2	59	**35**	55	25	51	6 11	44	18	65
9	311	27.0		13.5	328	04.1 74		44.0	62	**30**	51	19	44	5 58	46	30	63
10	326	27.0		12.7	342	30.7 76		37.8	62	**20**	43	6 09	32	36	49	16 51	59
11	341	26.9	−14	11.9	356	57.3 76	−22	31.4	64	**10 N**	5 34	5 59	6 21	5 17	52	17 09	56
12	356	26.9	−14	11.1	11	24.0 77	−22	24.9	65	**0**	5 25	5 49	6 11	4 59	55	17 26	52
13	11	26.9		10.3	25	50.8 78		18.2	67	**10 S**	5 13	39	6 00	41	57	17 43	49
14	26	26.9		09.5	40	17.7 79		11.4	68	**20**	4 59	26	5 49	22	60	18 00	47
15	41	26.9		08.6	54	44.6 79	−22	04.5	69	**30**	41	11	36	4 00	63	21	42
16	56	26.9		07.8	69	11.7 81	−21	57.5	70	**35**	30	5 02	29	3 47	65	33	40
17	71	26.9	−14	07.0	83	38.8 81	−21	50.4	71	**40**	4 16	4 51	5 20	3 32	67	18 46	38
18	86	26.9	−14	06.2	98	06.0 82	−21	43.1	73	**45**	3 58	4 38	5 10	3 14	70	19 02	35
19	101	26.9		05.4	112	33.3 83		35.8	73	**50**	36	22	4 58	2 51	74	22	30
20	116	26.9		04.5	127	00.7 84		28.3	75	**52**	24	14	52	41	75	31	28
21	131	26.9		03.7	141	28.1 84		20.6	77	**54**	3 11	4 05	46	28	78	42	25
22	146	26.9		02.9	155	55.7 86		12.9	77	**56**	2 56	3 55	39	2 14	81	19 53	23
23	161	26.9		02.1	170	23.3 86	−21	05.1	78	**58**	37	43	31	1 58	84	20 07	19
24	176	26.9	−14	01.3	184	51.0 87	−20	57.1	80	**60 S**	2 12	3 30	4 22	1 38	89	20 23	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.0			Mag: +0.7		
	14^{h} 36^{m}.4		PMG: 11^{h} 32^{m}			PMG: 17^{h} 36^{m}			PMG: 11^{h} 37^{m}			PMG: 11^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	140	17.4	187	02.1	−18 29.1	95	43.1	+18 19.9	185	28.6	−17 39.6	191	27.6	−19 06.5
1	155	19.9	202	01.4	28.3	110	44.1	20.3	200	30.5	39.4	206	29.7	06.4
2	170	22.4	217	00.6	27.5	125	45.2	20.7	215	32.4	39.2	221	31.9	06.4
3	185	24.8	231	59.9	26.8	140	46.3	21.1	230	34.2	39.1	236	34.1	06.3
4	200	27.3	246	59.2	26.0	155	47.4	21.5	245	36.1	38.9	251	36.2	06.2
5	215	29.8	261	58.4	−18 25.2	170	48.4	+18 21.9	260	38.0	−17 38.7	266	38.4	−19 06.2
6	230	32.2	276	57.7	−18 24.4	185	49.5	+18 22.4	275	39.8	−17 38.6	281	40.6	−19 06.1
7	245	34.7	291	57.0	23.6	200	50.6	22.8	290	41.7	38.4	296	42.7	06.0
8	260	37.2	306	56.2	22.8	215	51.7	23.2	305	43.6	38.3	311	44.9	06.0
9	275	39.6	321	55.5	22.1	230	52.7	23.6	320	45.4	38.1	326	47.1	05.9
10	290	42.1	336	54.8	21.3	245	53.8	24.0	335	47.3	37.9	341	49.2	05.8
11	305	44.6	351	54.0	−18 20.5	260	54.9	+18 24.4	350	49.2	−17 37.8	356	51.4	−19 05.8
12	320	47.0	6	53.3	−18 19.7	275	56.0	+18 24.8	5	51.1	−17 37.6	11	53.6	−19 05.7
13	335	49.5	21	52.6	18.9	290	57.0	25.2	20	52.9	37.5	26	55.7	05.6
14	350	51.9	36	51.9	18.1	305	58.1	25.6	35	54.8	37.3	41	57.9	05.5
15	5	54.4	51	51.1	17.3	320	59.2	26.0	50	56.7	37.1	57	00.0	05.5
16	20	56.9	66	50.4	16.5	336	00.2	26.4	65	58.5	37.0	72	02.2	05.4
17	35	59.3	81	49.7	−18 15.7	351	01.3	+18 26.8	81	00.4	−17 36.8	87	04.4	−19 05.3
18	51	01.8	96	49.0	−18 14.9	6	02.4	+18 27.2	96	02.3	−17 36.6	102	06.5	−19 05.3
19	66	04.3	111	48.2	14.1	21	03.5	27.6	111	04.1	36.5	117	08.7	05.2
20	81	06.7	126	47.5	13.3	36	04.5	28.0	126	06.0	36.3	132	10.9	05.1
21	96	09.2	141	46.8	12.5	51	05.6	28.4	141	07.9	36.2	147	13.0	05.1
22	111	11.7	156	46.1	11.7	66	06.7	28.8	156	09.7	36.0	162	15.2	05.0
23	126	14.1	171	45.3	10.9	81	07.7	29.2	171	11.6	35.8	177	17.4	04.9
24	141	16.6	186	44.6	−18 10.1	96	08.8	+18 29.6	186	13.5	−17 35.7	192	19.5	−19 04.8
Dif	—			−7	+8		+11	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.2				LUNA Edad: 28d.8 SD: 15′.6 PMG: 12h 06m				PHE: 4h: 57′.2; 12h: 57′.0; 20h: 56′.9 Rº: 50m	Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	176	26.9	−14	01.3	184	51.0	−20	57.1		**60 N**	16 41	17 26	18 15	8 34	12	15 50	90
1	191	26.9	−14	00.4	199	18.9 89		49.1	80	**58**	49	31	17	20	16	16 03	86
2	206	26.9	−13	59.6	213	46.8 89		40.9	82	**56**	16 55	35	19	8 08	19	14	83
3	221	26.9		58.8	228	14.7 89		32.6	83	**54**	17 01	39	20	7 58	22	24	80
4	236	26.9		58.0	242	42.8 91		24.2	84	**52**	07	42	22	48	25	33	77
5	251	26.9	−13	57.1	257	11.0 92	−20	15.7	85	**50**	17 12	17 46	18 24	7 40	26	16 41	75
6	266	26.9	−13	56.3	271	39.2 92	−20	07.1	86	**45**	17 22	17 53	18 27	7 22	31	16 58	70
7	281	26.9		55.5	286	07.6 94	−19	58.4	87	**40**	31	17 59	31	7 07	35	17 11	67
8	296	26.9		54.7	300	36.0 94		49.6	88	**35**	39	18 05	35	6 55	37	23	63
9	311	26.9		53.8	315	04.5 95		40.7	89	**30**	46	10	38	44	40	33	60
10	326	26.9		53.0	329	33.2 97		31.7	90	**20**	17 57	20	46	25	44	17 50	56
11	341	26.9	−13	52.2	344	01.9 97	−19	22.6	91	**10 N**	18 08	18 29	18 54	6 09	47	18 05	52
12	356	26.9	−13	51.4	358	30.7 98	−19	13.4	92	**0**	18 18	18 39	19 04	5 54	50	18 18	49
13	11	26.9		50.5	12	59.5 98	−19	04.1	93	**10 S**	28	18 49	15	38	54	32	45
14	26	26.9		49.7	27	28.5 100	−18	54.7	94	**20**	38	19 01	28	22	57	18 47	41
15	41	26.9		48.9	41	57.6 101		45.2	95	**30**	51	16	46	5 03	61	19 03	38
16	56	26.9		48.0	56	26.7 101		35.6	96	**35**	18 58	25	19 57	4 52	64	13	35
17	71	26.9	−13	47.2	70	56.0 103	−18	25.9	97	**40**	19 06	19 35	20 10	4 39	67	19 24	32
18	86	26.9	−13	46.4	85	25.3 103	−18	16.2	97	**45**	19 16	19 48	20 27	4 24	70	19 37	28
19	101	26.9		45.6	99	54.7 104	−18	06.4	98	**50**	28	20 03	20 49	4 05	75	52	24
20	116	26.9		44.7	114	24.2 105	−17	56.4	100	**52**	33	11	21 00	3 56	78	19 59	22
21	131	26.9		43.9	128	53.9 107		46.4	100	**54**	39	19	12	46	80	20 07	20
22	146	26.9		43.1	143	23.5 106		36.3	101	**56**	46	29	27	35	83	16	17
23	161	26.9		42.2	157	53.3 108		26.1	102	**58**	19 53	40	21 45	22	87	26	14
24	176	26.9	−13	41.4	172	23.2 109	−17	15.9	102	**60 S**	20 02	20 53	22 07	3 07	91	20 38	10

UT	ARIES PMG 14h 32m.5		VENUS Mag: −3.9 PMG: 11h 34m			MARTE Mag: +0.6 PMG: 17h 34m			JÚPITER Mag: −2.0 PMG: 11h 34m			SATURNO Mag: +0.7 PMG: 11h 09m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	141	16.6	186	44.6	−18 10.1	96	08.8	+18 29.6	186	13.5	−17 35.7	192	19.5	−19 04.8
1	156	19.1	201	43.9	09.3	111	09.9	30.0	201	15.3	35.5	207	21.7	04.8
2	171	21.5	216	43.2	08.5	126	10.9	30.4	216	17.2	35.3	222	23.9	04.7
3	186	24.0	231	42.4	07.7	141	12.0	30.8	231	19.1	35.2	237	26.0	04.6
4	201	26.4	246	41.7	06.9	156	13.1	31.2	246	21.0	35.0	252	28.2	04.6
5	216	28.9	261	41.0	−18 06.1	171	14.2	+18 31.6	261	22.8	−17 34.9	267	30.4	−19 04.5
6	231	31.4	276	40.3	−18 05.3	186	15.2	+18 32.0	276	24.7	−17 34.7	282	32.5	−19 04.4
7	246	33.8	291	39.6	04.5	201	16.3	32.4	291	26.6	34.5	297	34.7	04.4
8	261	36.3	306	38.8	03.7	216	17.4	32.8	306	28.4	34.4	312	36.9	04.3
9	276	38.8	321	38.1	02.9	231	18.4	33.2	321	30.3	34.2	327	39.0	04.2
10	291	41.2	336	37.4	02.1	246	19.5	33.6	336	32.2	34.1	342	41.2	04.2
11	306	43.7	351	36.7	−18 01.3	261	20.6	+18 34.0	351	34.0	−17 33.9	357	43.4	−19 04.1
12	321	46.2	6	36.0	−18 00.4	276	21.6	+18 34.4	6	35.9	−17 33.7	12	45.5	−19 04.0
13	336	48.6	21	35.3	−17 59.6	291	22.7	34.9	21	37.8	33.6	27	47.7	03.9
14	351	51.1	36	34.6	58.8	306	23.8	35.3	36	39.6	33.4	42	49.9	03.9
15	6	53.6	51	33.8	58.0	321	24.8	35.7	51	41.5	33.2	57	52.0	03.8
16	21	56.0	66	33.1	57.2	336	25.9	36.1	66	43.4	33.1	72	54.2	03.7
17	36	58.5	81	32.4	−17 56.4	351	26.9	+18 36.5	81	45.3	−17 32.9	87	56.4	−19 03.7
18	52	00.9	96	31.7	−17 55.6	6	28.0	+18 36.9	96	47.1	−17 32.8	102	58.5	−19 03.6
19	67	03.4	111	31.0	54.7	21	29.1	37.3	111	49.0	32.6	118	00.7	03.5
20	82	05.9	126	30.3	53.9	36	30.1	37.7	126	50.9	32.4	133	02.9	03.5
21	97	08.3	141	29.6	53.1	51	31.2	38.1	141	52.7	32.3	148	05.0	03.4
22	112	10.8	156	28.8	52.3	66	32.3	38.5	156	54.6	32.1	163	07.2	03.3
23	127	13.3	171	28.1	51.5	81	33.3	38.9	171	56.5	31.9	178	09.4	03.3
24	142	15.7	186	27.4	−17 50.6	96	34.4	+18 39.3	186	58.3	−17 31.8	193	11.5	−19 03.2
Dif	—			−7	+8		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 0ᵈ.2		PHE	4ʰ: 56′.7								
	PMG: 12ʰ 14ᵐ.2				SD: 15′.5			12ʰ: 56′.5								
					PMG: 12ʰ 56ᵐ			20ʰ: 56′.3								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	26.9	−13	41.4	172	23.2	−17	15.9	**60 N**	6 12	7 01	7 46	8 46	7	17 20	87
1	191	26.9		40.6	186	53.2 110	−17	05.6 103	**58**	10	6 57	38	36	11	29	83
2	206	26.9		39.7	201	23.2 110	−16	55.1 105	**56**	09	52	32	27	14	37	80
3	221	26.9		38.9	215	53.3 111		44.6 105	**54**	07	49	26	20	16	44	77
4	236	27.0		38.1	230	23.6 113		34.1 105	**52**	06	45	20	13	19	50	75
5	251	27.0	−13	37.2	244	53.9 113	−16	23.4 107	**50**	6 04	6 42	7 16	8 06	22	17 56	72
6	266	27.0	−13	36.4	259	24.3 114	−16	12.7 107	**45**	6 00	6 35	7 05	7 53	26	18 08	68
7	281	27.0		35.6	273	54.7 114	−16	02.0 107	**40**	5 57	29	6 56	42	29	18	64
8	296	27.0		34.7	288	25.3 116	−15	51.1 109	**35**	53	23	49	32	32	26	61
9	311	27.0		33.9	302	56.0 117		40.2 109	**30**	50	18	42	24	35	33	59
10	326	27.0		33.1	317	26.7 117		29.2 110	**20**	42	6 08	31	7 09	40	46	53
11	341	27.0	−13	32.2	331	57.5 118	−15	18.1 111	**10 N**	5 34	5 59	6 20	6 56	44	18 57	49
12	356	27.0	−13	31.4	346	28.4 119	−15	07.0 111	**0**	5 25	5 50	6 11	6 44	47	19 07	46
13	11	27.0		30.5	0	59.4 120	−14	55.8 112	**10 S**	14	39	6 01	32	51	17	42
14	26	27.0		29.7	15	30.5 121		44.6 112	**20**	5 01	27	5 50	19	55	28	38
15	41	27.1		28.9	30	01.6 121		33.3 113	**30**	4 43	13	38	6 04	60	41	33
16	56	27.1		28.0	44	32.8 122		21.9 114	**35**	32	5 04	31	5 56	62	48	30
17	71	27.1	−13	27.2	59	04.2 124	−14	10.5 114	**40**	4 19	4 54	5 23	5 46	65	19 56	27
18	86	27.1	−13	26.4	73	35.6 124	−13	59.0 115	**45**	4 02	4 41	5 13	5 34	69	20 05	24
19	101	27.1		25.5	88	07.0 124		47.5 115	**50**	3 40	26	5 01	20	74	16	19
20	116	27.1		24.7	102	38.6 126		35.9 116	**52**	30	18	4 56	14	75	21	18
21	131	27.1		23.8	117	10.2 126		24.3 116	**54**	17	10	50	5 06	78	27	15
22	146	27.1		23.0	131	41.9 127		12.6 117	**56**	3 02	4 00	43	4 58	81	33	13
23	161	27.1		22.2	146	13.7 128	−13	00.8 118	**58**	2 45	3 49	36	49	84	40	10
24	176	27.2	−13	21.3	160	45.6 129	−12	49.0 118	**60 S**	2 22	3 36	4 27	4 38	88	20 48	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.0			Mag: +0.7		
	14ʰ 28ᵐ.6		PMG: 11ʰ 35ᵐ			PMG: 17ʰ 32ᵐ			PMG: 11ʰ 31ᵐ			PMG: 11ʰ 06ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	142	15.7	186	27.4	−17 50.6	96	34.4	+18 39.3	186	58.3	−17 31.8	193	11.5	−19 03.2
1	157	18.2	201	26.7	49.8	111	35.4	39.7	202	00.2	31.6	208	13.7	03.1
2	172	20.7	216	26.0	49.0	126	36.5	40.1	217	02.1	31.5	223	15.9	03.0
3	187	23.1	231	25.3	48.2	141	37.6	40.5	232	04.0	31.3	238	18.0	03.0
4	202	25.6	246	24.6	47.3	156	38.6	40.9	247	05.8	31.1	253	20.2	02.9
5	217	28.0	261	23.9	−17 46.5	171	39.7	+18 41.3	262	07.7	−17 31.0	268	22.4	−19 02.8
6	232	30.5	276	23.2	−17 45.7	186	40.8	+18 41.7	277	09.6	−17 30.8	283	24.5	−19 02.8
7	247	33.0	291	22.5	44.8	201	41.8	42.1	292	11.4	30.6	298	26.7	02.7
8	262	35.4	306	21.8	44.0	216	42.9	42.5	307	13.3	30.5	313	28.9	02.6
9	277	37.9	321	21.1	43.2	231	43.9	42.8	322	15.2	30.3	328	31.0	02.6
10	292	40.4	336	20.4	42.4	246	45.0	43.2	337	17.0	30.2	343	33.2	02.5
11	307	42.8	351	19.6	−17 41.5	261	46.1	+18 43.6	352	18.9	−17 30.0	358	35.4	−19 02.4
12	322	45.3	6	18.9	−17 40.7	276	47.1	+18 44.0	7	20.8	−17 29.8	13	37.5	−19 02.4
13	337	47.8	21	18.2	39.9	291	48.2	44.4	22	22.7	29.7	28	39.7	02.3
14	352	50.2	36	17.5	39.0	306	49.2	44.8	37	24.5	29.5	43	41.9	02.2
15	7	52.7	51	16.8	38.2	321	50.3	45.2	52	26.4	29.3	58	44.0	02.2
16	22	55.2	66	16.1	37.3	336	51.3	45.6	67	28.3	29.2	73	46.2	02.1
17	37	57.6	81	15.4	−17 36.5	351	52.4	+18 46.0	82	30.1	−17 29.0	88	48.4	−19 02.0
18	53	00.1	96	14.7	−17 35.7	6	53.5	+18 46.4	97	32.0	−17 28.9	103	50.5	−19 01.9
19	68	02.5	111	14.0	34.8	21	54.5	46.8	112	33.9	28.7	118	52.7	01.9
20	83	05.0	126	13.3	34.0	36	55.6	47.2	127	35.8	28.5	133	54.9	01.8
21	98	07.5	141	12.6	33.2	51	56.6	47.6	142	37.6	28.4	148	57.0	01.7
22	113	09.9	156	11.9	32.3	66	57.7	48.0	157	39.5	28.2	163	59.2	01.7
23	128	12.4	171	11.2	31.5	81	58.7	48.4	172	41.4	28.0	179	01.4	01.6
24	143	14.9	186	10.5	−17 30.6	96	59.8	+18 48.8	187	43.2	−17 27.9	194	03.5	−19 01.5
Dif	—			−7	+8		+11	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 1ᵈ.2		PHE: 4ʰ: 56′.1, 12ʰ: 55′.9, 20ʰ: 55′.7									
	PMG: 12ʰ 14ᵐ.2				SD: 15′.3											
					PMG: 13ʰ 42ᵐ				Rº: 44ᵐ							
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	27.2	−13	21.3	160	45.6	−12	49.0	**60 N**	16 46	17 31	18 20	8 53	6	18 47	83
1	191	27.2		20.5	175	17.5 129		37.2 118	**58**	16 54	35	21	47	9	52	80
2	206	27.2		19.6	189	49.5 130		25.3 119	**56**	17 00	39	23	41	12	18 57	77
3	221	27.2		18.8	204	21.6 131		13.3 120	**54**	05	42	24	36	14	19 01	74
4	236	27.2		17.9	218	53.7 131	−12	01.4 119	**52**	11	46	25	32	16	05	72
5	251	27.2	−13	17.1	233	26.0 133	−11	49.3 121	**50**	17 15	17 49	18 27	8 28	18	19 08	70
6	266	27.2	−13	16.3	247	58.3 133	−11	37.3 120	**45**	17 25	17 56	18 30	8 19	22	19 16	65
7	281	27.3		15.4	262	30.6 133		25.1 122	**40**	34	18 02	33	11	26	22	62
8	296	27.3		14.6	277	03.1 135		13.0 121	**35**	41	07	37	8 04	29	27	59
9	311	27.3		13.7	291	35.6 135	−11	00.8 122	**30**	47	12	40	7 59	31	32	55
10	326	27.3		12.9	306	08.2 136	−10	48.6 122	**20**	17 58	21	47	49	36	39	52
11	341	27.3	−13	12.0	320	40.8 136	−10	36.3 123	**10 N**	18 08	18 30	18 55	7 40	40	19 46	47
12	356	27.3	−13	11.2	335	13.5 137	−10	24.0 123	**0**	18 18	18 39	19 03	7 31	45	19 53	43
13	11	27.4		10.3	349	46.3 138	−10	11.7 123	**10 S**	27	18 49	14	23	48	19 59	39
14	26	27.4		09.5	4	19.2 139	−9	59.3 124	**20**	37	19 00	27	14	52	20 06	35
15	41	27.4		08.6	18	52.1 139		46.9 124	**30**	49	14	44	7 04	57	14	30
16	56	27.4		07.8	33	25.1 140		34.5 124	**35**	18 56	22	19 54	6 58	60	18	28
17	71	27.4	−13	07.0	47	58.1 140	−9	22.0 125	**40**	19 04	19 32	20 07	6 51	63	20 23	25
18	86	27.5	−13	06.1	62	31.2 141	−9	09.5 125	**45**	19 13	19 45	20 23	6 43	67	20 29	21
19	101	27.5		05.3	77	04.4 142	−8	57.0 125	**50**	24	20 00	44	34	71	35	18
20	116	27.5		04.4	91	37.6 142		44.4 126	**52**	29	07	20 54	29	74	39	15
21	131	27.5		03.6	106	10.8 142		31.8 126	**54**	35	15	21 06	24	76	42	13
22	146	27.5		02.7	120	44.2 144		19.2 126	**56**	41	24	20	19	78	46	11
23	161	27.6		01.9	135	17.6 144	−8	06.6 126	**58**	48	34	37	13	81	50	8
24	176	27.6	−13	01.0	149	51.0 144	−7	53.9 127	**60 S**	19 57	20 46	21 58	6 06	85	20 55	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.0			Mag: +0.7		
	14ʰ 24ᵐ.6		PMG: 11ʰ 36ᵐ			PMG: 17ʰ 31ᵐ			PMG: 11ʰ 28ᵐ			PMG: 11ʰ 02ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	143	14.9	186	10.5	−17 30.6	96	59.8	+18 48.8	187	43.2	−17 27.9	194	03.5	−19 01.5
1	158	17.3	201	09.8	29.8	112	00.9	49.2	202	45.1	27.7	209	05.7	01.5
2	173	19.8	216	09.1	28.9	127	01.9	49.6	217	47.0	27.5	224	07.9	01.4
3	188	22.3	231	08.4	28.1	142	03.0	50.0	232	48.8	27.4	239	10.0	01.3
4	203	24.7	246	07.8	27.2	157	04.0	50.4	247	50.7	27.2	254	12.2	01.3
5	218	27.2	261	07.1	−17 26.4	172	05.1	+18 50.8	262	52.6	−17 27.1	269	14.4	−19 01.2
6	233	29.6	276	06.4	−17 25.5	187	06.1	+18 51.2	277	54.5	−17 26.9	284	16.5	−19 01.1
7	248	32.1	291	05.7	24.7	202	07.2	51.6	292	56.3	26.7	299	18.7	01.0
8	263	34.6	306	05.0	23.8	217	08.2	52.0	307	58.2	26.6	314	20.9	01.0
9	278	37.0	321	04.3	23.0	232	09.3	52.4	323	00.1	26.4	329	23.1	00.9
10	293	39.5	336	03.6	22.1	247	10.3	52.8	338	02.0	26.2	344	25.2	00.8
11	308	42.0	351	02.9	−17 21.3	262	11.4	+18 53.2	353	03.8	−17 26.1	359	27.4	−19 00.8
12	323	44.4	6	02.2	−17 20.4	277	12.4	+18 53.6	8	05.7	−17 25.9	14	29.6	−19 00.7
13	338	46.9	21	01.5	19.6	292	13.5	54.0	23	07.6	25.8	29	31.7	00.6
14	353	49.4	36	00.8	18.7	307	14.5	54.4	38	09.4	25.6	44	33.9	00.6
15	8	51.8	51	00.1	17.9	322	15.6	54.7	53	11.3	25.4	59	36.1	00.5
16	23	54.3	65	59.4	17.0	337	16.6	55.1	68	13.2	25.3	74	38.2	00.4
17	38	56.8	80	58.8	−17 16.2	352	17.7	+18 55.5	83	15.1	−17 25.1	89	40.4	−19 00.4
18	53	59.2	95	58.1	−17 15.3	7	18.7	+18 55.9	98	16.9	−17 24.9	104	42.6	−19 00.3
19	69	01.7	110	57.4	14.4	22	19.8	56.3	113	18.8	24.8	119	44.7	00.2
20	84	04.1	125	56.7	13.6	37	20.8	56.7	128	20.7	24.6	134	46.9	00.1
21	99	06.6	140	56.0	12.7	52	21.9	57.1	143	22.5	24.4	149	49.1	−19 00.1
22	114	09.1	155	55.3	11.8	67	22.9	57.5	158	24.4	24.3	164	51.2	−19 00.0
23	129	11.5	170	54.6	11.0	82	24.0	57.9	173	26.3	24.1	179	53.4	−18 59.9
24	144	14.0	185	53.9	−17 10.1	97	25.0	+18 58.3	188	28.2	−17 24.0	194	55.6	−18 59.9
Dif	—			−7	+9		+11	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.1				LUNA Edad: 2d.2 SD: 15′.1 PMG: 14h 26m PHE: 4h: 55′.5; 12h: 55′.4; 20h: 55′.2 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	27.6	−13	01.0	149	51.0	−7	53.9	**60 N**	6 08	6 56	7 40	8 59	5	20 10	80
1	191	27.6	−13	00.2	164	24.5 145		41.3 126	**58**	06	52	33	56	7	12	77
2	206	27.6	−12	59.3	178	58.1 146		28.6 127	**56**	05	48	27	53	10	14	74
3	221	27.6		58.5	193	31.7 146		15.9 127	**54**	03	45	22	50	13	15	73
4	236	27.7		57.6	208	05.4 147	−7	03.1 128	**52**	02	42	17	48	14	17	70
5	251	27.7	−12	56.8	222	39.1 147	−6	50.4 127	**50**	6 01	6 39	7 12	8 46	16	20 18	68
6	266	27.7	−12	55.9	237	12.9 148	−6	37.6 128	**45**	5 58	6 32	7 02	8 41	20	20 21	64
7	281	27.7		55.0	251	46.7 148		24.8 128	**40**	54	26	6 54	37	24	24	60
8	296	27.8		54.2	266	20.5 148	−6	12.0 128	**35**	51	21	47	33	27	26	57
9	311	27.8		53.3	280	54.5 150	−5	59.2 128	**30**	48	16	41	30	30	27	55
10	326	27.8		52.5	295	28.4 149		46.4 128	**20**	41	6 07	30	25	34	31	49
11	341	27.8	−12	51.6	310	02.4 150	−5	33.5 129	**10 N**	5 34	5 58	6 20	8 20	38	20 33	46
12	356	27.9	−12	50.8	324	36.5 151	−5	20.6 129	**0**	5 25	5 50	6 11	8 16	42	20 36	41
13	11	27.9		49.9	339	10.6 151	−5	07.8 128	**10 S**	15	40	6 01	11	46	38	38
14	26	27.9		49.1	353	44.7 151	−4	54.9 129	**20**	5 02	29	5 51	06	50	41	34
15	41	27.9		48.2	8	18.9 152		42.0 129	**30**	4 45	15	40	8 01	55	44	29
16	56	28.0		47.4	22	53.1 152		29.1 129	**35**	34	5 06	33	7 58	57	46	26
17	71	28.0	−12	46.5	37	27.4 153	−4	16.2 129	**40**	4 22	4 56	5 25	7 54	61	20 48	23
18	86	28.0	−12	45.6	52	01.7 153	−4	03.3 129	**45**	4 06	4 44	5 16	7 50	64	20 50	20
19	101	28.0		44.8	66	36.0 153	−3	50.4 129	**50**	3 45	29	05	45	69	53	16
20	116	28.1		43.9	81	10.4 154		37.5 129	**52**	35	22	5 00	43	70	54	14
21	131	28.1		43.1	95	44.8 154		24.5 130	**54**	23	14	4 54	40	73	55	12
22	146	28.1		42.2	110	19.3 155	−3	11.6 129	**56**	3 09	4 05	48	37	76	57	9
23	161	28.2		41.4	124	53.8 155	−2	58.7 129	**58**	2 52	3 55	41	34	78	20 58	7
24	176	28.2	−12	40.5	139	28.3 155	−2	45.7 130	**60 S**	2 31	3 43	4 33	7 31	81	21 00	4

UT	ARIES PMG 14h 20m.7		VENUS Mag: −3.9 PMG: 11h 37m			MARTE Mag: +0.7 PMG: 17h 29m			JÚPITER Mag: −2.0 PMG: 11h 25m			SATURNO Mag: +0.7 PMG: 10h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	144	14.0	185	53.9	−17 10.1	97	25.0	+18 58.3	188	28.2	−17 24.0	194	55.6	−18 59.9
1	159	16.5	200	53.3	09.3	112	26.1	58.7	203	30.0	23.8	209	57.8	59.8
2	174	18.9	215	52.6	08.4	127	27.1	59.1	218	31.9	23.6	224	59.9	59.7
3	189	21.4	230	51.9	07.5	142	28.2	59.5	233	33.8	23.5	240	02.1	59.7
4	204	23.9	245	51.2	06.7	157	29.2	+18 59.9	248	35.6	23.3	255	04.3	59.6
5	219	26.3	260	50.5	−17 05.8	172	30.3	+19 00.3	263	37.5	−17 23.1	270	06.4	−18 59.5
6	234	28.8	275	49.8	−17 04.9	187	31.3	+19 00.6	278	39.4	−17 23.0	285	08.6	−18 59.5
7	249	31.3	290	49.2	04.0	202	32.4	01.0	293	41.3	22.8	300	10.8	59.4
8	264	33.7	305	48.5	03.2	217	33.4	01.4	308	43.1	22.7	315	12.9	59.3
9	279	36.2	320	47.8	02.3	232	34.5	01.8	323	45.0	22.5	330	15.1	59.2
10	294	38.6	335	47.1	01.4	247	35.5	02.2	338	46.9	22.3	345	17.3	59.2
11	309	41.1	350	46.4	−17 00.6	262	36.6	+19 02.6	353	48.8	−17 22.2	0	19.4	−18 59.1
12	324	43.6	5	45.8	−16 59.7	277	37.6	+19 03.0	8	50.6	−17 22.0	15	21.6	−18 59.0
13	339	46.0	20	45.1	58.8	292	38.6	03.4	23	52.5	21.8	30	23.8	59.0
14	354	48.5	35	44.4	57.9	307	39.7	03.8	38	54.4	21.7	45	26.0	58.9
15	9	51.0	50	43.7	57.1	322	40.7	04.2	53	56.3	21.5	60	28.1	58.8
16	24	53.4	65	43.1	56.2	337	41.8	04.6	68	58.1	21.3	75	30.3	58.8
17	39	55.9	80	42.4	−16 55.3	352	42.8	+19 05.0	84	00.0	−17 21.2	90	32.5	−18 58.7
18	54	58.4	95	41.7	−16 54.4	7	43.9	+19 05.3	99	01.9	−17 21.0	105	34.6	−18 58.6
19	70	00.8	110	41.0	53.5	22	44.9	05.7	114	03.7	20.9	120	36.8	58.6
20	85	03.3	125	40.3	52.7	37	46.0	06.1	129	05.6	20.7	135	39.0	58.5
21	100	05.7	140	39.7	51.8	52	47.0	06.5	144	07.5	20.5	150	41.1	58.4
22	115	08.2	155	39.0	50.9	67	48.0	06.9	159	09.4	20.4	165	43.3	58.4
23	130	10.7	170	38.3	50.0	82	49.1	07.3	174	11.2	20.2	180	45.5	58.3
24	145	13.1	185	37.7	−16 49.1	97	50.1	+19 07.7	189	13.1	−17 20.0	195	47.6	−18 58.2
Dif	—			−7	+9		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 12h 14m.1				Edad: 3d.2 SD: 15′.0 PMG: 15h 08m		PHE	4h: 55′.0 12h: 54′.9 20h: 54′.7 Rº: 41m			Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	176	28.2	−12	40.5	139	28.3	−2	45.7	**60 N**	16 52	17 36	18 24	9 04	4	21 30	80
1	191	28.2		39.6	154	02.9 156		32.8 129	**58**	16 58	39	25	03	8	29	77
2	206	28.2		38.8	168	37.5 156		19.9 129	**56**	17 04	43	27	03	10	28	74
3	221	28.3		37.9	183	12.1 156	−2	06.9 130	**54**	10	46	28	03	11	28	71
4	236	28.3		37.1	197	46.7 156	−1	54.0 129	**52**	14	49	29	02	14	27	69
5	251	28.3	−12	36.2	212	21.4 157	−1	41.1 129	**50**	17 19	17 52	18 30	9 02	16	21 26	67
6	266	28.4	−12	35.3	226	56.1 157	−1	28.1 130	**45**	17 28	17 58	18 33	9 01	20	21 25	63
7	281	28.4		34.5	241	30.8 157		15.2 129	**40**	36	18 04	35	01	23	24	59
8	296	28.4		33.6	256	05.6 158	−1	02.3 129	**35**	43	09	38	00	26	23	56
9	311	28.5		32.8	270	40.4 158	−0	49.4 129	**30**	49	13	41	9 00	28	22	53
10	326	28.5		31.9	285	15.2 158		36.5 129	**20**	17 59	22	48	8 59	33	20	49
11	341	28.5	−12	31.0	299	50.0 158	−0	23.6 129	**10 N**	18 09	18 30	18 55	8 58	38	21 19	45
12	356	28.5	−12	30.2	314	24.8 158	−0	10.7 129	**0**	18 17	18 39	19 03	8 58	41	21 17	42
13	11	28.6		29.3	328	59.7 159	+0	02.2 129	**10 S**	26	48	13	57	45	16	37
14	26	28.6		28.4	343	34.6 159		15.1 129	**20**	36	18 59	25	56	49	15	33
15	41	28.6		27.6	358	09.5 159		27.9 128	**30**	47	19 12	42	56	53	13	29
16	56	28.7		26.7	12	44.5 160		40.8 129	**35**	18 54	20	19 52	55	57	12	26
17	71	28.7	−12	25.8	27	19.4 159	+0	53.6 128	**40**	19 01	19 30	20 04	8 55	59	21 11	23
18	86	28.8	−12	25.0	41	54.4 160	+1	06.5 129	**45**	19 10	19 41	20 20	8 54	63	21 10	20
19	101	28.8		24.1	56	29.3 159		19.3 128	**50**	20	19 56	39	54	67	09	15
20	116	28.8		23.2	71	04.3 160		32.1 128	**52**	25	20 02	20 49	53	70	08	14
21	131	28.9		22.4	85	39.3 160		44.9 128	**54**	31	10	21 01	53	72	07	12
22	146	28.9		21.5	100	14.4 161	+1	57.6 127	**56**	37	19	14	53	74	06	10
23	161	28.9		20.6	114	49.4 160	+2	10.4 128	**58**	43	28	29	52	77	05	8
24	176	29.0	−12	19.8	129	24.4 160	+2	23.1 127	**60 S**	19 51	20 40	21 49	8 52	80	21 04	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 14h 16m.8		Mag: −3.9 PMG: 11h 38m			Mag: +0.7 PMG: 17h 27m			Mag: −2.0 PMG: 11h 22m			Mag: +0.7 PMG: 10h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	145	13.1	185	37.7	−16 49.1	97	50.1	+19 07.7	189	13.1	−17 20.0	195	47.6	−18 58.2
1	160	15.6	200	37.0	48.2	112	51.2	08.1	204	15.0	19.9	210	49.8	58.1
2	175	18.1	215	36.3	47.4	127	52.2	08.5	219	16.9	19.7	225	52.0	58.1
3	190	20.5	230	35.6	46.5	142	53.3	08.9	234	18.7	19.5	240	54.2	58.0
4	205	23.0	245	35.0	45.6	157	54.3	09.2	249	20.6	19.4	255	56.3	57.9
5	220	25.5	260	34.3	−16 44.7	172	55.3	+19 09.6	264	22.5	−17 19.2	270	58.5	−18 57.9
6	235	27.9	275	33.6	−16 43.8	187	56.4	+19 10.0	279	24.4	−17 19.1	286	00.7	−18 57.8
7	250	30.4	290	33.0	42.9	202	57.4	10.4	294	26.2	18.9	301	02.8	57.7
8	265	32.9	305	32.3	42.0	217	58.5	10.8	309	28.1	18.7	316	05.0	57.7
9	280	35.3	320	31.6	41.1	232	59.5	11.2	324	30.0	18.6	331	07.2	57.6
10	295	37.8	335	31.0	40.2	248	00.5	11.6	339	31.9	18.4	346	09.4	57.5
11	310	40.2	350	30.3	−16 39.4	263	01.6	+19 12.0	354	33.7	−17 18.2	1	11.5	−18 57.5
12	325	42.7	5	29.6	−16 38.5	278	02.6	+19 12.4	9	35.6	−17 18.1	16	13.7	−18 57.4
13	340	45.2	20	29.0	37.6	293	03.6	12.7	24	37.5	17.9	31	15.9	57.3
14	355	47.6	35	28.3	36.7	308	04.7	13.1	39	39.3	17.7	46	18.0	57.3
15	10	50.1	50	27.6	35.8	323	05.7	13.5	54	41.2	17.6	61	20.2	57.2
16	25	52.6	65	27.0	34.9	338	06.8	13.9	69	43.1	17.4	76	22.4	57.1
17	40	55.0	80	26.3	−16 34.0	353	07.8	+19 14.3	84	45.0	−17 17.2	91	24.5	−18 57.0
18	55	57.5	95	25.6	−16 33.1	8	08.8	+19 14.7	99	46.8	−17 17.1	106	26.7	−18 57.0
19	71	00.0	110	25.0	32.2	23	09.9	15.1	114	48.7	16.9	121	28.9	56.9
20	86	02.4	125	24.3	31.3	38	10.9	15.5	129	50.6	16.8	136	31.1	56.8
21	101	04.9	140	23.6	30.4	53	11.9	15.8	144	52.5	16.6	151	33.2	56.8
22	116	07.3	155	23.0	29.5	68	13.0	16.2	159	54.3	16.4	166	35.4	56.7
23	131	09.8	170	22.3	28.6	83	14.0	16.6	174	56.2	16.3	181	37.6	56.6
24	146	12.3	185	21.7	−16 27.7	98	15.1	+19 17.0	189	58.1	−17 16.1	196	39.7	−18 56.6
Dif	—			−7	+9		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 4ᵈ.2		PHE	4ʰ: 54′.6								
	PMG: 12ʰ 14ᵐ.0				SD: 14′.9			12ʰ: 54′.5								
					PMG: 15ʰ 49ᵐ			20ʰ: 54′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	29.0	−12	19.8	129	24.4	+2	23.1	**60 N**	6 03	6 51	7 35	9 08	5	22 50	79
1	191	29.0		18.9	143	59.5 161		35.9 128	**58**	02	47	28	11	7	46	76
2	206	29.0		18.0	158	34.5 160	+2	48.6 127	**56**	01	44	23	13	10	42	73
3	221	29.1		17.2	173	09.6 161	+3	01.3 127	**54**	6 00	41	17	14	13	39	71
4	236	29.1		16.3	187	44.7 161		13.9 126	**52**	5 58	38	13	16	15	36	69
5	251	29.2	−12	15.4	202	19.7 160	+3	26.6 127	**50**	5 57	6 35	7 08	9 18	16	22 33	67
6	266	29.2	−12	14.6	216	54.8 161	+3	39.2 126	**45**	5 55	6 29	6 59	9 21	20	22 28	62
7	281	29.2		13.7	231	29.9 161	+3	51.8 126	**40**	52	24	51	24	23	23	59
8	296	29.3		12.8	246	05.0 161	+4	04.4 126	**35**	49	19	45	26	27	19	56
9	311	29.3		12.0	260	40.1 161		17.0 126	**30**	46	14	39	28	30	15	54
10	326	29.3		11.1	275	15.2 161		29.5 125	**20**	40	6 06	29	32	34	09	49
11	341	29.4	−12	10.2	289	50.3 161	+4	42.0 125	**10 N**	5 33	5 58	6 19	9 36	37	22 04	45
12	356	29.4	−12	09.3	304	25.4 161	+4	54.5 125	**0**	5 25	5 49	6 11	9 39	41	21 59	41
13	11	29.5		08.5	319	00.4 160	+5	07.0 125	**10 S**	15	40	6 02	42	45	53	38
14	26	29.5		07.6	333	35.5 161		19.4 124	**20**	5 03	30	5 52	45	49	48	34
15	41	29.6		06.7	348	10.6 161		31.8 124	**30**	4 47	16	41	49	54	42	30
16	56	29.6		05.9	2	45.7 161		44.2 124	**35**	37	5 08	35	52	56	38	28
17	71	29.6	−12	05.0	17	20.8 161	+5	56.6 124	**40**	4 24	4 59	5 28	9 54	59	21 34	25
18	86	29.7	−12	04.1	31	55.8 160	+6	08.9 123	**45**	4 09	4 48	5 19	9 57	63	21 30	21
19	101	29.7		03.2	46	30.9 161		21.2 123	**50**	3 49	33	09	10 01	67	24	17
20	116	29.8		02.4	61	05.9 160		33.5 123	**52**	40	27	5 04	03	69	22	15
21	131	29.8		01.5	75	41.0 161		45.7 122	**54**	28	19	4 58	05	71	19	13
22	146	29.8	−12	00.6	90	16.0 160	+6	57.9 122	**56**	15	10	52	07	73	16	11
23	161	29.9	−11	59.7	104	51.0 160	+7	10.1 122	**58**	3 00	4 01	46	09	76	13	8
24	176	29.9	−11	58.9	119	26.0 160	+7	22.3 122	**60 S**	2 40	3 49	4 38	10 12	79	21 09	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.0			Mag: +0.7		
	14ʰ 12ᵐ.8		PMG: 11ʰ 39ᵐ			PMG: 17ʰ 26ᵐ			PMG: 11ʰ 19ᵐ			PMG: 10ʰ 52ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	146	12.3	185	21.7	−16 27.7	98	15.1	+19 17.0	189	58.1	−17 16.1	196	39.7	−18 56.6
1	161	14.7	200	21.0	26.8	113	16.1	17.4	205	00.0	15.9	211	41.9	56.5
2	176	17.2	215	20.3	25.9	128	17.1	17.8	220	01.8	15.8	226	44.1	56.4
3	191	19.7	230	19.7	25.0	143	18.2	18.2	235	03.7	15.6	241	46.3	56.4
4	206	22.1	245	19.0	24.0	158	19.2	18.5	250	05.6	15.4	256	48.4	56.3
5	221	24.6	260	18.4	−16 23.1	173	20.2	+19 18.9	265	07.5	−17 15.3	271	50.6	−18 56.2
6	236	27.1	275	17.7	−16 22.2	188	21.3	+19 19.3	280	09.3	−17 15.1	286	52.8	−18 56.1
7	251	29.5	290	17.1	21.3	203	22.3	19.7	295	11.2	15.0	301	54.9	56.1
8	266	32.0	305	16.4	20.4	218	23.3	20.1	310	13.1	14.8	316	57.1	56.0
9	281	34.5	320	15.7	19.5	233	24.4	20.5	325	15.0	14.6	331	59.3	55.9
10	296	36.9	335	15.1	18.6	248	25.4	20.9	340	16.9	14.5	347	01.5	55.9
11	311	39.4	350	14.4	−16 17.7	263	26.4	+19 21.2	355	18.7	−17 14.3	2	03.6	−18 55.8
12	326	41.8	5	13.8	−16 16.8	278	27.5	+19 21.6	10	20.6	−17 14.1	17	05.8	−18 55.7
13	341	44.3	20	13.1	15.9	293	28.5	22.0	25	22.5	14.0	32	08.0	55.7
14	356	46.8	35	12.5	14.9	308	29.5	22.4	40	24.4	13.8	47	10.1	55.6
15	11	49.2	50	11.8	14.0	323	30.6	22.8	55	26.2	13.6	62	12.3	55.5
16	26	51.7	65	11.2	13.1	338	31.6	23.2	70	28.1	13.5	77	14.5	55.5
17	41	54.2	80	10.5	−16 12.2	353	32.6	+19 23.6	85	30.0	−17 13.3	92	16.7	−18 55.4
18	56	56.6	95	09.9	−16 11.3	8	33.6	+19 23.9	100	31.9	−17 13.1	107	18.8	−18 55.3
19	71	59.1	110	09.2	10.4	23	34.7	24.3	115	33.7	13.0	122	21.0	55.3
20	87	01.6	125	08.6	09.4	38	35.7	24.7	130	35.6	12.8	137	23.2	55.2
21	102	04.0	140	07.9	08.5	53	36.7	25.1	145	37.5	12.7	152	25.3	55.1
22	117	06.5	155	07.3	07.6	68	37.8	25.5	160	39.4	12.5	167	27.5	55.0
23	132	08.9	170	06.6	06.7	83	38.8	25.9	175	41.2	12.3	182	29.7	55.0
24	147	11.4	185	06.0	−16 05.7	98	39.8	+19 26.2	190	43.1	−17 12.2	197	31.9	−18 54.9
Dif	—			−7	+9		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 5^{d}.2		PHE	4^{h}: 54′.3								
	PMG: 12^{h} 14^{m}.0				SD: 14′.8			12^{h}: 54′.3								
					PMG: 16^{h} 30^{m}			20^{h}: 54′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	176	29.9	−11	58.9	119	26.0	+7	22.3	**60 N**	16 57	17 40	18 29	9 13	6	** **	**
1	191	30.0		58.0	134	01.0^{160}		34.4^{121}	**58**	17 03	44	30	18	9	** **	**
2	206	30.0		57.1	148	36.0^{160}		46.5^{121}	**56**	09	47	31	23	12	23 55	74
3	221	30.1		56.2	163	11.0^{160}	+7	58.5^{120}	**54**	14	50	31	27	14	50	71
4	236	30.1		55.4	177	45.9^{159}	+8	10.5^{120}	**52**	18	53	32	31	16	45	69
5	251	30.2	−11	54.5	192	20.8^{159}	+8	22.5^{120}	**50**	17 22	17 55	18 33	9 34	18	23 40	67
6	266	30.2	−11	53.6	206	55.8^{160}	+8	34.4^{119}	**45**	17 31	18 01	18 35	9 41	22	23 30	63
7	281	30.3		52.7	221	30.6^{158}		46.3^{119}	**40**	38	06	38	47	26	22	59
8	296	30.3		51.9	236	05.5^{159}	+8	58.2^{119}	**35**	45	11	40	53	28	15	56
9	311	30.3		51.0	250	40.4^{159}	+9	10.0^{118}	**30**	17 50	15	43	9 58	30	23 09	54
10	326	30.4		50.1	265	15.2^{158}		21.8^{118}	**20**	18 00	23	49	10 06	35	22 58	50
11	341	30.4	−11	49.2	279	50.0^{158}	+9	33.6^{118}	**10 N**	18 09	18 30	18 55	10 13	39	22 49	46
12	356	30.5	−11	48.3	294	24.8^{158}	+9	45.3^{117}	**0**	18 17	18 38	19 03	10 20	42	22 40	43
13	11	30.5		47.5	308	59.6^{158}	+9	56.9^{116}	**10 S**	26	47	12	27	45	31	40
14	26	30.6		46.6	323	34.3^{157}	+10	08.6^{117}	**20**	35	18 58	24	34	50	22	36
15	41	30.6		45.7	338	09.0^{157}		20.2^{116}	**30**	45	19 10	39	43	54	12	31
16	56	30.7		44.8	352	43.7^{157}		31.7^{115}	**35**	52	18	19 49	48	56	22 06	29
17	71	30.7	−11	43.9	7	18.4^{157}	+10	43.2^{115}	**40**	18 59	19 27	20 01	10 53	60	21 59	26
18	86	30.8	−11	43.1	21	53.0^{156}	+10	54.6^{114}	**45**	19 07	19 38	20 16	11 00	63	21 51	23
19	101	30.8		42.2	36	27.6^{156}	+11	06.1^{115}	**50**	17	51	35	08	67	41	20
20	116	30.9		41.3	51	02.2^{156}		17.4^{113}	**52**	21	19 58	44	12	69	37	17
21	131	30.9		40.4	65	36.7^{155}		28.7^{113}	**54**	26	20 05	20 55	16	71	32	16
22	146	31.0		39.5	80	11.3^{156}		40.0^{113}	**56**	32	13	21 07	20	74	27	13
23	161	31.0		38.6	94	45.7^{154}	+11	51.2^{112}	**58**	38	23	22	25	77	21	10
24	176	31.1	−11	37.8	109	20.2^{155}	+12	02.4^{112}	**60 S**	19 45	20 33	21 40	11 31	80	21 14	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.0			Mag: +0.7		
	14^{h} 08^{m}.9		PMG: 11^{h} 40^{m}			PMG: 17^{h} 24^{m}			PMG: 11^{h} 16^{m}			PMG: 10^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	147	11.4	185	06.0	−16 05.7	98	39.8	+19 26.2	190	43.1	−17 12.2	197	31.9	−18 54.9
1	162	13.9	200	05.3	04.8	113	40.9	26.6	205	45.0	12.0	212	34.0	54.8
2	177	16.3	215	04.7	03.9	128	41.9	27.0	220	46.9	11.8	227	36.2	54.8
3	192	18.8	230	04.0	03.0	143	42.9	27.4	235	48.7	11.7	242	38.4	54.7
4	207	21.3	245	03.4	02.1	158	43.9	27.8	250	50.6	11.5	257	40.6	54.6
5	222	23.7	260	02.7	−16 01.1	173	45.0	+19 28.1	265	52.5	−17 11.3	272	42.7	−18 54.6
6	237	26.2	275	02.1	−16 00.2	188	46.0	+19 28.5	280	54.4	−17 11.2	287	44.9	−18 54.5
7	252	28.7	290	01.4	−15 59.3	203	47.0	28.9	295	56.3	11.0	302	47.1	54.4
8	267	31.1	305	00.8	58.3	218	48.0	29.3	310	58.1	10.8	317	49.2	54.4
9	282	33.6	320	00.2	57.4	233	49.1	29.7	326	00.0	10.7	332	51.4	54.3
10	297	36.1	334	59.5	56.5	248	50.1	30.1	341	01.9	10.5	347	53.6	54.2
11	312	38.5	349	58.9	−15 55.5	263	51.1	+19 30.4	356	03.8	−17 10.3	2	55.8	−18 54.2
12	327	41.0	4	58.2	−15 54.6	278	52.2	+19 30.8	11	05.6	−17 10.2	17	57.9	−18 54.1
13	342	43.4	19	57.6	53.7	293	53.2	31.2	26	07.5	10.0	33	00.1	54.0
14	357	45.9	34	56.9	52.8	308	54.2	31.6	41	09.4	09.9	48	02.3	54.0
15	12	48.4	49	56.3	51.8	323	55.2	32.0	56	11.3	09.7	63	04.5	53.9
16	27	50.8	64	55.7	50.9	338	56.3	32.3	71	13.1	09.5	78	06.6	53.8
17	42	53.3	79	55.0	−15 49.9	353	57.3	+19 32.7	86	15.0	−17 09.4	93	08.8	−18 53.7
18	57	55.8	94	54.4	−15 49.0	8	58.3	+19 33.1	101	16.9	−17 09.2	108	11.0	−18 53.7
19	72	58.2	109	53.8	48.1	23	59.3	33.5	116	18.8	09.0	123	13.2	53.6
20	88	00.7	124	53.1	47.1	39	00.4	33.9	131	20.7	08.9	138	15.3	53.5
21	103	03.2	139	52.5	46.2	54	01.4	34.2	146	22.5	08.7	153	17.5	53.5
22	118	05.6	154	51.8	45.3	69	02.4	34.6	161	24.4	08.5	168	19.7	53.4
23	133	08.1	169	51.2	44.3	84	03.4	35.0	176	26.3	08.4	183	21.8	53.3
24	148	10.6	184	50.6	−15 43.4	99	04.4	+19 35.4	191	28.2	−17 08.2	198	24.0	−18 53.3
Dif	—			−6	+9		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 6ᵈ.2		PHE	4ʰ: 54′.2								
	PMG: 12ʰ 13ᵐ.9				SD: 14′.8			12ʰ: 54′.2								
					PMG: 17ʰ 12ᵐ			20ʰ: 54′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	176	31.1	−11	37.8	109	20.2	+12	02.4	**60 N**	5 58	6 46	7 29	9 19	9	0 09	80
1	191	31.1		36.9	123	54.6 154		13.6 112	**58**	57	43	23	27	12	0 02	77
2	206	31.2		36.0	138	29.0 154		24.6 110	**56**	56	40	18	35	14	** **	**
3	221	31.2		35.1	153	03.3 153		35.7 111	**54**	56	37	13	41	17	** **	**
4	236	31.3		34.2	167	37.6 153		46.6 109	**52**	55	34	09	47	19	** **	**
5	251	31.3	−11	33.3	182	11.9 153	+12	57.6 110	**50**	5 54	6 32	7 05	9 52	21	** **	**
6	266	31.4	−11	32.5	196	46.1 152	+13	08.5 109	**45**	5 52	6 26	6 56	10 03	25	** **	**
7	281	31.4		31.6	211	20.3 152		19.3 108	**40**	50	21	49	13	28	** **	**
8	296	31.5		30.7	225	54.5 152		30.1 108	**35**	47	17	43	21	31	** **	**
9	311	31.6		29.8	240	28.6 151		40.8 107	**30**	45	13	37	28	33	** **	**
10	326	31.6		28.9	255	02.7 151	+13	51.4 106	**20**	39	6 05	27	41	37	23 48	51
11	341	31.7	−11	28.0	269	36.7 150	+14	02.0 106	**10 N**	5 33	5 57	6 19	10 52	40	23 35	48
12	356	31.7	−11	27.1	284	10.7 150	+14	12.6 106	**0**	5 25	5 49	6 11	11 02	44	23 23	45
13	11	31.8		26.3	298	44.6 149		23.1 105	**10 S**	16	41	6 02	12	47	23 11	42
14	26	31.8		25.4	313	18.5 149		33.5 104	**20**	5 04	31	5 53	24	50	22 58	39
15	41	31.9		24.5	327	52.4 149		43.9 104	**30**	4 49	18	43	37	54	43	35
16	56	31.9		23.6	342	26.2 148	+14	54.2 103	**35**	39	10	37	44	57	35	33
17	71	32.0	−11	22.7	356	59.9 147	+15	04.5 103	**40**	4 27	5 01	5 30	11 53	59	22 25	31
18	86	32.1	−11	21.8	11	33.6 147	+15	14.7 102	**45**	4 13	4 51	5 22	12 03	63	22 14	27
19	101	32.1		20.9	26	07.3 147		24.9 102	**50**	3 54	37	12	15	67	22 01	23
20	116	32.2		20.0	40	40.9 146		34.9 100	**52**	44	31	07	21	69	21 54	22
21	131	32.2		19.1	55	14.5 146		45.0 101	**54**	34	24	5 02	27	71	48	19
22	146	32.3		18.3	69	48.0 145	+15	54.9 99	**56**	22	15	4 57	34	74	40	16
23	161	32.3		17.4	84	21.5 145	+16	04.8 99	**58**	3 07	4 06	51	42	77	31	14
24	176	32.4	−11	16.5	98	54.9 144	+16	14.7 99	**60 S**	2 49	3 55	4 44	12 51	81	21 21	10

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	14ʰ 05ᵐ.0		PMG: 11ʰ 41ᵐ			PMG: 17ʰ 23ᵐ			PMG: 11ʰ 13ᵐ			PMG: 10ʰ 45ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	148	10.6	184	50.6	−15 43.4	99	04.4	+19 35.4	191	28.2	−17 08.2	198	24.0	−18 53.3
1	163	13.0	199	49.9	42.4	114	05.5	35.8	206	30.0	08.0	213	26.2	53.2
2	178	15.5	214	49.3	41.5	129	06.5	36.1	221	31.9	07.9	228	28.4	53.1
3	193	17.9	229	48.7	40.5	144	07.5	36.5	236	33.8	07.7	243	30.5	53.1
4	208	20.4	244	48.0	39.6	159	08.5	36.9	251	35.7	07.6	258	32.7	53.0
5	223	22.9	259	47.4	−15 38.7	174	09.6	+19 37.3	266	37.6	−17 07.4	273	34.9	−18 52.9
6	238	25.3	274	46.8	−15 37.7	189	10.6	+19 37.6	281	39.4	−17 07.2	288	37.1	−18 52.9
7	253	27.8	289	46.1	36.8	204	11.6	38.0	296	41.3	07.1	303	39.2	52.8
8	268	30.3	304	45.5	35.8	219	12.6	38.4	311	43.2	06.9	318	41.4	52.7
9	283	32.7	319	44.9	34.9	234	13.6	38.8	326	45.1	06.7	333	43.6	52.6
10	298	35.2	334	44.2	33.9	249	14.7	39.2	341	47.0	06.6	348	45.8	52.6
11	313	37.7	349	43.6	−15 33.0	264	15.7	+19 39.5	356	48.8	−17 06.4	3	47.9	−18 52.5
12	328	40.1	4	43.0	−15 32.0	279	16.7	+19 39.9	11	50.7	−17 06.2	18	50.1	−18 52.4
13	343	42.6	19	42.3	31.1	294	17.7	40.3	26	52.6	06.1	33	52.3	52.4
14	358	45.0	34	41.7	30.1	309	18.7	40.7	41	54.5	05.9	48	54.5	52.3
15	13	47.5	49	41.1	29.2	324	19.8	41.0	56	56.3	05.7	63	56.6	52.2
16	28	50.0	64	40.5	28.2	339	20.8	41.4	71	58.2	05.6	78	58.8	52.2
17	43	52.4	79	39.8	−15 27.3	354	21.8	+19 41.8	87	00.1	−17 05.4	94	01.0	−18 52.1
18	58	54.9	94	39.2	−15 26.3	9	22.8	+19 42.2	102	02.0	−17 05.2	109	03.2	−18 52.0
19	73	57.4	109	38.6	25.4	24	23.8	42.5	117	03.9	05.1	124	05.3	52.0
20	88	59.8	124	38.0	24.4	39	24.8	42.9	132	05.7	04.9	139	07.5	51.9
21	104	02.3	139	37.3	23.4	54	25.9	43.3	147	07.6	04.7	154	09.7	51.8
22	119	04.8	154	36.7	22.5	69	26.9	43.7	162	09.5	04.6	169	11.9	51.8
23	134	07.2	169	36.1	21.5	84	27.9	44.0	177	11.4	04.4	184	14.0	51.7
24	149	09.7	184	35.5	−15 20.6	99	28.9	+19 44.4	192	13.3	−17 04.3	199	16.2	−18 51.6
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 7ᵈ.2		PHE	4ʰ: 54′.3									
	PMG: 12ʰ 13ᵐ.8				SD: 14′.8			12ʰ: 54′.3									
					PMG: 17ʰ 57ᵐ			20ʰ: 54′.4									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	176	32.4	−11	16.5	98	54.9	+16	14.7		**60 N**	17 02	17 45	18 34	9 28	12	1 29	82
1	191	32.5		15.6	113	28.3 144		24.4	97	**58**	08	48	34	39	16	19	77
2	206	32.5		14.7	128	01.6 143		34.1	97	**56**	13	51	35	49	19	09	74
3	221	32.6		13.8	142	34.8 142		43.8	97	**54**	18	54	35	9 58	22	1 01	71
4	236	32.6		12.9	157	08.1 143	+16	53.3	95	**52**	22	56	36	10 06	24	0 54	69
5	251	32.7	−11	12.0	171	41.2 141	+17	02.8	95	**50**	17 26	17 59	18 36	10 13	26	0 47	67
6	266	32.8	−11	11.1	186	14.3 141	+17	12.3	95	**45**	17 34	18 04	18 38	10 28	30	0 33	63
7	281	32.8		10.2	200	47.3 140		21.6	93	**40**	41	08	40	41	33	21	60
8	296	32.9		09.3	215	20.3 140		30.9	93	**35**	47	12	42	10 52	35	11	58
9	311	32.9		08.4	229	53.3 140		40.1	92	**30**	17 52	16	44	11 01	38	0 03	55
10	326	33.0		07.6	244	26.1 138		49.3	92	**20**	18 01	24	49	18	40	** **	**
11	341	33.1	−11	06.7	258	58.9 138	+17	58.4	91	**10 N**	18 09	18 31	18 55	11 32	44	** **	**
12	356	33.1	−11	05.8	273	31.7 138	+18	07.4	90	**0**	18 17	18 38	19 03	11 46	46	** **	**
13	11	33.2		04.9	288	04.4 137		16.3	89	**10 S**	25	47	12	11 59	50	23 53	45
14	26	33.3		04.0	302	37.0 136		25.2	89	**20**	34	18 56	23	12 14	52	37	42
15	41	33.3		03.1	317	09.6 136		34.0	88	**30**	43	19 08	37	31	56	18	40
16	56	33.4		02.2	331	42.1 135		42.7	87	**35**	49	15	47	41	58	23 08	37
17	71	33.4	−11	01.3	346	14.6 135	+18	51.3	86	**40**	18 56	19 24	19 58	12 52	60	22 56	35
18	86	33.5	−11	00.4	0	47.0 134	+18	59.9	86	**45**	19 03	19 34	20 12	13 06	63	22 41	33
19	101	33.6	−10	59.5	15	19.3 133	+19	08.3	84	**50**	13	47	30	22	67	24	29
20	116	33.6		58.6	29	51.6 133		16.7	84	**52**	17	19 53	39	30	69	16	27
21	131	33.7		57.7	44	23.8 132		25.1	84	**54**	22	20 00	20 49	38	71	22 07	25
22	146	33.8		56.8	58	55.9 131		33.3	82	**56**	27	08	21 01	48	74	21 56	23
23	161	33.8		55.9	73	28.0 131		41.4	81	**58**	33	17	15	13 59	77	45	19
24	176	33.9	−10	55.0	88	00.0 130	+19	49.5	81	**60 S**	19 40	20 27	21 31	14 12	81	21 31	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	14ʰ 01ᵐ.1		PMG: 11ʰ 42ᵐ			PMG: 17ʰ 21ᵐ			PMG: 11ʰ 10ᵐ			PMG: 10ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	149	09.7	184	35.5	−15 20.6	99	28.9	+19 44.4	192	13.3	−17 04.3	199	16.2	−18 51.6
1	164	12.2	199	34.8	19.6	114	29.9	44.8	207	15.1	04.1	214	18.4	51.6
2	179	14.6	214	34.2	18.6	129	30.9	45.2	222	17.0	03.9	229	20.6	51.5
3	194	17.1	229	33.6	17.7	144	32.0	45.5	237	18.9	03.8	244	22.7	51.4
4	209	19.5	244	33.0	16.7	159	33.0	45.9	252	20.8	03.6	259	24.9	51.3
5	224	22.0	259	32.4	−15 15.8	174	34.0	+19 46.3	267	22.7	−17 03.4	274	27.1	−18 51.3
6	239	24.5	274	31.7	−15 14.8	189	35.0	+19 46.7	282	24.5	−17 03.3	289	29.3	−18 51.2
7	254	26.9	289	31.1	13.8	204	36.0	47.0	297	26.4	03.1	304	31.4	51.1
8	269	29.4	304	30.5	12.9	219	37.0	47.4	312	28.3	02.9	319	33.6	51.1
9	284	31.9	319	29.9	11.9	234	38.0	47.8	327	30.2	02.8	334	35.8	51.0
10	299	34.3	334	29.3	10.9	249	39.1	48.2	342	32.1	02.6	349	38.0	50.9
11	314	36.8	349	28.6	−15 10.0	264	40.1	+19 48.5	357	33.9	−17 02.4	4	40.1	−18 50.9
12	329	39.3	4	28.0	−15 09.0	279	41.1	+19 48.9	12	35.8	−17 02.3	19	42.3	−18 50.8
13	344	41.7	19	27.4	08.0	294	42.1	49.3	27	37.7	02.1	34	44.5	50.7
14	359	44.2	34	26.8	07.1	309	43.1	49.7	42	39.6	01.9	49	46.7	50.7
15	14	46.7	49	26.2	06.1	324	44.1	50.0	57	41.5	01.8	64	48.8	50.6
16	29	49.1	64	25.6	05.1	339	45.1	50.4	72	43.3	01.6	79	51.0	50.5
17	44	51.6	79	24.9	−15 04.2	354	46.2	+19 50.8	87	45.2	−17 01.4	94	53.2	−18 50.5
18	59	54.0	94	24.3	−15 03.2	9	47.2	+19 51.2	102	47.1	−17 01.3	109	55.4	−18 50.4
19	74	56.5	109	23.7	02.2	24	48.2	51.5	117	49.0	01.1	124	57.5	50.3
20	89	59.0	124	23.1	01.2	39	49.2	51.9	132	50.9	01.0	139	59.7	50.3
21	105	01.4	139	22.5	−15 00.3	54	50.2	52.3	147	52.7	00.8	155	01.9	50.2
22	120	03.9	154	21.9	−14 59.3	69	51.2	52.6	162	54.6	00.6	170	04.1	50.1
23	135	06.4	169	21.3	58.3	84	52.2	53.0	177	56.5	00.5	185	06.2	50.0
24	150	08.8	184	20.7	−14 57.3	99	53.2	+19 53.4	192	58.4	−17 00.3	200	08.4	−18 50.0
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 8ᵈ.2		PHE	4ʰ: 54′.5									
	PMG: 12ʰ 13ᵐ.7				SD: 14′.8			12ʰ: 54′.6									
					PMG: 18ʰ 44ᵐ			20ʰ: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	176	33.9	−10	55.0	88	00.0	+19	49.5		**60 N**	5 53	6 41	7 24	9 40	20	2 51	79
1	191	34.0		54.1	102	31.9 129	+19	57.5	80	**58**	52	38	18	9 55	24	36	76
2	206	34.0		53.2	117	03.8 129	+20	05.4	79	**56**	52	35	13	10 08	27	23	73
3	221	34.1		52.3	131	35.6 128		13.2	78	**54**	51	33	09	20	29	12	70
4	236	34.2		51.4	146	07.4 128		21.0	78	**52**	51	30	05	30	31	2 03	68
5	251	34.2	−10	50.5	160	39.1 127	+20	28.6	76	**50**	5 50	6 28	7 01	10 39	33	1 54	66
6	266	34.3	−10	49.6	175	10.7 126	+20	36.2	76	**45**	5 49	6 23	6 53	10 58	36	1 36	62
7	281	34.4		48.7	189	42.3 126		43.7	75	**40**	47	19	46	11 14	38	21	60
8	296	34.4		47.8	204	13.8 125		51.1	74	**35**	45	15	40	27	40	1 09	57
9	311	34.5		46.9	218	45.2 124	+20	58.4	73	**30**	43	11	35	39	42	0 58	56
10	326	34.6		46.0	233	16.5 123	+21	05.6	72	**20**	38	6 04	26	11 58	45	39	53
11	341	34.6	−10	45.1	247	47.8 123	+21	12.7	71	**10 N**	5 32	5 57	6 18	12 16	47	0 23	50
12	356	34.7	−10	44.2	262	19.0 122	+21	19.7	70	**0**	5 25	5 49	6 10	12 32	49	0 08	48
13	11	34.8		43.3	276	50.2 122		26.7	70	**10 S**	16	41	6 03	12 49	51	** **	**
14	26	34.8		42.4	291	21.3 121		33.5	68	**20**	5 05	32	5 54	13 06	54	** **	**
15	41	34.9		41.5	305	52.3 120		40.2	67	**30**	4 51	20	44	27	56	23 58	45
16	56	35.0		40.6	320	23.3 120		46.9	67	**35**	41	12	39	39	57	45	44
17	71	35.1	−10	39.7	334	54.1 118	+21	53.5	66	**40**	4 30	5 04	5 32	13 52	60	23 31	42
18	86	35.1	−10	38.8	349	24.9 118	+21	59.9	64	**45**	4 16	4 54	5 25	14 09	61	23 14	40
19	101	35.2		37.9	3	55.7 118	+22	06.3	64	**50**	3 58	41	16	29	65	22 53	37
20	116	35.3		37.0	18	26.4 117		12.5	62	**52**	49	35	11	39	66	43	36
21	131	35.3		36.1	32	57.0 116		18.7	62	**54**	39	28	07	14 49	69	32	34
22	146	35.4		35.2	47	27.5 115		24.8	61	**56**	28	20	5 01	15 02	70	19	32
23	161	35.5		34.3	61	58.0 115		30.7	59	**58**	3 14	12	4 56	16	74	22 04	29
24	176	35.6	−10	33.4	76	28.4 114	+22	36.6	59	**60 S**	2 57	4 02	4 49	15 33	78	21 46	26

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	13ʰ 57ᵐ.1		PMG: 11ʰ 43ᵐ			PMG: 17ʰ 19ᵐ			PMG: 11ʰ 07ᵐ			PMG: 10ʰ 38ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	150	08.8	184	20.7	−14 57.3	99	53.2	+19 53.4	192	58.4	−17 00.3	200	08.4	−18 50.0
1	165	11.3	199	20.0	56.4	114	54.2	53.8	208	00.3	−17 00.1	215	10.6	49.9
2	180	13.8	214	19.4	55.4	129	55.3	54.1	223	02.1	−17 00.0	230	12.8	49.8
3	195	16.2	229	18.8	54.4	144	56.3	54.5	238	04.0	−16 59.8	245	15.0	49.8
4	210	18.7	244	18.2	53.4	159	57.3	54.9	253	05.9	59.6	260	17.1	49.7
5	225	21.1	259	17.6	−14 52.4	174	58.3	+19 55.2	268	07.8	−16 59.5	275	19.3	−18 49.6
6	240	23.6	274	17.0	−14 51.5	189	59.3	+19 55.6	283	09.7	−16 59.3	290	21.5	−18 49.6
7	255	26.1	289	16.4	50.5	205	00.3	56.0	298	11.6	59.1	305	23.7	49.5
8	270	28.5	304	15.8	49.5	220	01.3	56.3	313	13.4	59.0	320	25.8	49.4
9	285	31.0	319	15.2	48.5	235	02.3	56.7	328	15.3	58.8	335	28.0	49.4
10	300	33.5	334	14.6	47.5	250	03.3	57.1	343	17.2	58.6	350	30.2	49.3
11	315	35.9	349	14.0	−14 46.6	265	04.3	+19 57.5	358	19.1	−16 58.5	5	32.4	−18 49.2
12	330	38.4	4	13.4	−14 45.6	280	05.3	+19 57.8	13	21.0	−16 58.3	20	34.5	−18 49.2
13	345	40.9	19	12.7	44.6	295	06.3	58.2	28	22.8	58.1	35	36.7	49.1
14	0	43.3	34	12.1	43.6	310	07.4	58.6	43	24.7	58.0	50	38.9	49.0
15	15	45.8	49	11.5	42.6	325	08.4	58.9	58	26.6	57.8	65	41.1	49.0
16	30	48.3	64	10.9	41.6	340	09.4	59.3	73	28.5	57.6	80	43.3	48.9
17	45	50.7	79	10.3	−14 40.6	355	10.4	+19 59.7	88	30.4	−16 57.5	95	45.4	−18 48.8
18	60	53.2	94	09.7	−14 39.6	10	11.4	+20 00.0	103	32.3	−16 57.3	110	47.6	−18 48.8
19	75	55.6	109	09.1	38.7	25	12.4	+20 00.4	118	34.1	57.1	125	49.8	48.7
20	90	58.1	124	08.5	37.7	40	13.4	00.8	133	36.0	57.0	140	52.0	48.6
21	106	00.6	139	07.9	36.7	55	14.4	01.1	148	37.9	56.8	155	54.1	48.5
22	121	03.0	154	07.3	35.7	70	15.4	01.5	163	39.8	56.7	170	56.3	48.5
23	136	05.5	169	06.7	34.7	85	16.4	01.9	178	41.7	56.5	185	58.5	48.4
24	151	08.0	184	06.1	−14 33.7	100	17.4	+20 02.2	193	43.5	−16 56.3	201	00.7	−18 48.3
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 9ᵈ.2		PHE	4ʰ: 54′.9								
	PMG: 12ʰ 13ᵐ.6				SD: 14′.9			12ʰ: 55′.0								
					PMG: 19ʰ 34ᵐ			20ʰ: 55′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	35.6	−10	33.4	76	28.4	+22	36.6	**60 N**	17 07	17 50	18 38	10 00	33	4 10	73
1	191	35.6		32.5	90	58.7 113		42.4 58	**58**	13	53	38	19	37	3 52	69
2	206	35.7		31.6	105	29.0 113		48.0 56	**56**	17	55	39	35	39	36	67
3	221	35.8		30.7	119	59.2 112		53.6 56	**54**	22	17 58	39	10 49	40	22	66
4	236	35.9		29.8	134	29.3 111	+22	59.0 54	**52**	25	18 00	39	11 01	42	11	63
5	251	35.9	−10	28.9	148	59.4 111	+23	04.4 54	**50**	17 29	18 02	18 39	11 12	42	3 00	63
6	266	36.0	−10	27.9	163	29.4 110	+23	09.6 52	**45**	17 37	18 06	18 41	11 34	45	2 38	61
7	281	36.1		27.0	177	59.3 109		14.7 51	**40**	43	10	42	11 52	46	21	58
8	296	36.2		26.1	192	29.2 109		19.8 51	**35**	48	14	44	12 07	48	2 06	57
9	311	36.2		25.2	206	59.0 108		24.7 49	**30**	17 53	18	46	21	48	1 54	55
10	326	36.3		24.3	221	28.7 107		29.5 48	**20**	18 02	24	50	12 43	50	32	54
11	341	36.4	−10	23.4	235	58.4 107	+23	34.2 47	**10 N**	18 10	18 31	18 56	13 03	51	1 13	52
12	356	36.5	−10	22.5	250	28.0 106	+23	38.8 46	**0**	18 17	18 38	19 02	13 21	52	0 56	50
13	11	36.5		21.6	264	57.5 105		43.2 44	**10 S**	24	46	11	13 40	53	38	49
14	26	36.6		20.7	279	27.0 105		47.6 44	**20**	32	18 55	21	14 00	54	0 19	47
15	41	36.7		19.8	293	56.4 104		51.8 42	**30**	41	19 06	35	23	55	** **	**
16	56	36.8		18.9	308	25.7 103	+23	56.0 42	**35**	47	13	44	36	56	** **	**
17	71	36.8	−10	18.0	322	55.0 103	+24	00.0 40	**40**	18 53	19 21	19 55	14 52	57	** **	**
18	86	36.9	−10	17.1	337	24.2 102	+24	03.9 39	**45**	19 00	19 31	20 08	15 10	59	23 54	49
19	101	37.0		16.1	351	53.3 101		07.7 38	**50**	09	43	25	34	60	30	48
20	116	37.1		15.2	6	22.4 101		11.3 36	**52**	13	49	34	45	61	19	47
21	131	37.2		14.3	20	51.4 100		14.9 36	**54**	17	19 55	43	15 58	61	23 06	46
22	146	37.2		13.4	35	20.4 100		18.3 34	**56**	22	20 03	20 54	16 12	63	22 51	45
23	161	37.3		12.5	49	49.3 99		21.6 33	**58**	28	11	21 07	30	64	33	44
24	176	37.4	−10	11.6	64	18.1 98	+24	24.8 32	**60 S**	19 34	20 20	21 23	16 51	67	22 12	41

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	13ʰ 53ᵐ.2		PMG: 11ʰ 44ᵐ			PMG: 17ʰ 18ᵐ			PMG: 11ʰ 04ᵐ			PMG: 10ʰ 34ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	151	08.0	184	06.1	−14 33.7	100	17.4	+20 02.2	193	43.5	−16 56.3	201	00.7	−18 48.3
1	166	10.4	199	05.5	32.7	115	18.4	02.6	208	45.4	56.2	216	02.9	48.3
2	181	12.9	214	04.9	31.7	130	19.4	03.0	223	47.3	56.0	231	05.0	48.2
3	196	15.4	229	04.3	30.7	145	20.4	03.3	238	49.2	55.8	246	07.2	48.1
4	211	17.8	244	03.7	29.7	160	21.4	03.7	253	51.1	55.7	261	09.4	48.1
5	226	20.3	259	03.1	−14 28.7	175	22.4	+20 04.1	268	53.0	−16 55.5	276	11.6	−18 48.0
6	241	22.8	274	02.5	−14 27.7	190	23.4	+20 04.4	283	54.8	−16 55.3	291	13.7	−18 47.9
7	256	25.2	289	01.9	26.7	205	24.4	04.8	298	56.7	55.2	306	15.9	47.9
8	271	27.7	304	01.3	25.7	220	25.4	05.2	313	58.6	55.0	321	18.1	47.8
9	286	30.1	319	00.8	24.7	235	26.4	05.5	329	00.5	54.8	336	20.3	47.7
10	301	32.6	334	00.2	23.7	250	27.4	05.9	344	02.4	54.7	351	22.5	47.7
11	316	35.1	348	59.6	−14 22.7	265	28.4	+20 06.3	359	04.3	−16 54.5	6	24.6	−18 47.6
12	331	37.5	3	59.0	−14 21.7	280	29.4	+20 06.6	14	06.1	−16 54.3	21	26.8	−18 47.5
13	346	40.0	18	58.4	20.7	295	30.4	07.0	29	08.0	54.2	36	29.0	47.5
14	1	42.5	33	57.8	19.7	310	31.4	07.4	44	09.9	54.0	51	31.2	47.4
15	16	44.9	48	57.2	18.7	325	32.4	07.7	59	11.8	53.8	66	33.3	47.3
16	31	47.4	63	56.6	17.7	340	33.4	08.1	74	13.7	53.7	81	35.5	47.3
17	46	49.9	78	56.0	−14 16.7	355	34.4	+20 08.5	89	15.6	−16 53.5	96	37.7	−18 47.2
18	61	52.3	93	55.4	−14 15.7	10	35.4	+20 08.8	104	17.4	−16 53.3	111	39.9	−18 47.1
19	76	54.8	108	54.8	14.7	25	36.4	09.2	119	19.3	53.2	126	42.1	47.1
20	91	57.3	123	54.2	13.7	40	37.4	09.6	134	21.2	53.0	141	44.2	47.0
21	106	59.7	138	53.7	12.7	55	38.4	09.9	149	23.1	52.8	156	46.4	46.9
22	122	02.2	153	53.1	11.7	70	39.4	10.3	164	25.0	52.7	171	48.6	46.8
23	137	04.6	168	52.5	10.7	85	40.4	10.6	179	26.9	52.5	186	50.8	46.8
24	152	07.1	183	51.9	−14 09.7	100	41.4	+20 11.0	194	28.8	−16 52.3	201	53.0	−18 46.7
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 10^{d}.2		PHE	4^{h}: 55′.4									
	PMG: 12^{h} 13^{m}.4				SD: 15′.1			12^{h}: 55′.6									
					PMG: 20^{h} 26^{m}			20^{h}: 55′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	176	37.4	−10	11.6	64	18.1	+24	24.8		**60 N**	5 47	6 35	7 18	10 33	53	5 23	58
1	191	37.5		10.7	78	46.9 98		27.9	31	**58**	47	33	13	10 56	53	5 01	58
2	206	37.5		09.8	93	15.6 97		30.8	29	**56**	47	30	08	11 14	54	4 43	57
3	221	37.6		08.9	107	44.3 97		33.6	28	**54**	47	28	04	29	54	28	56
4	236	37.7		07.9	122	12.9 96		36.3	27	**52**	47	26	7 00	43	54	14	57
5	251	37.8	−10	07.0	136	41.4 95	+24	38.9	26	**50**	5 47	6 24	6 57	11 54	54	4 03	56
6	266	37.9	−10	06.1	151	09.9 95	+24	41.4	25	**45**	5 46	6 20	6 50	12 19	54	3 39	55
7	281	38.0		05.2	165	38.3 94		43.7	23	**40**	44	16	43	38	54	19	56
8	296	38.0		04.3	180	06.7 94		45.9	22	**35**	43	12	38	12 55	54	3 03	55
9	311	38.1		03.4	194	35.0 93		47.9	20	**30**	41	09	33	13 09	54	2 49	55
10	326	38.2		02.5	209	03.3 93		49.9	20	**20**	37	6 02	25	33	54	26	54
11	341	38.3	−10	01.5	223	31.5 92	+24	51.7	18	**10 N**	5 31	5 56	6 17	13 54	54	2 05	54
12	356	38.4	−10	00.6	237	59.6 91	+24	53.4	17	**0**	5 25	5 49	6 10	14 13	54	1 46	53
13	11	38.4	−9	59.7	252	27.7 91		54.9	15	**10 S**	17	41	6 03	33	54	27	52
14	26	38.5		58.8	266	55.8 91		56.4	15	**20**	5 06	32	5 55	14 54	53	1 06	52
15	41	38.6		57.9	281	23.8 90		57.7	13	**30**	4 52	21	46	15 18	53	0 43	51
16	56	38.7		57.0	295	51.8 90		58.8	11	**35**	43	14	41	32	54	29	51
17	71	38.8	−9	56.1	310	19.7 89	+24	59.9	11	**40**	4 33	5 06	5 35	15 49	53	0 13	50
18	86	38.9	−9	55.1	324	47.5 88	+25	00.8	9	**45**	4 19	4 57	5 28	16 09	52	** **	**
19	101	38.9		54.2	339	15.4 89		01.5	7	**50**	4 02	45	19	34	52	** **	**
20	116	39.0		53.3	353	43.1 87		02.2	7	**52**	3 54	39	15	46	52	** **	**
21	131	39.1		52.4	8	10.9 88		02.7	5	**54**	44	33	11	16 59	52	23 52	61
22	146	39.2		51.5	22	38.6 87		03.0	3	**56**	33	25	06	17 15	51	36	62
23	161	39.3		50.6	37	06.2 86		03.3	3	**58**	21	17	5 00	34	51	23 17	62
24	176	39.4	−9	49.6	51	33.8 86	+25	03.4	1	**60 S**	3 05	4 08	4 54	17 58	49	22 53	64

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	13^{h} 49^{m}.3		PMG: 11^{h} 45^{m}			PMG: 17^{h} 16^{m}			PMG: 11^{h} 01^{m}			PMG: 10^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	152	07.1	183	51.9	−14 09.7	100	41.4	+20 11.0	194	28.8	−16 52.3	201	53.0	−18 46.7
1	167	09.6	198	51.3	08.6	115	42.4	11.4	209	30.6	52.2	216	55.1	46.6
2	182	12.0	213	50.7	07.6	130	43.4	11.7	224	32.5	52.0	231	57.3	46.6
3	197	14.5	228	50.1	06.6	145	44.4	12.1	239	34.4	51.8	246	59.5	46.5
4	212	17.0	243	49.5	05.6	160	45.4	12.5	254	36.3	51.7	262	01.7	46.4
5	227	19.4	258	49.0	−14 04.6	175	46.4	+20 12.8	269	38.2	−16 51.5	277	03.9	−18 46.4
6	242	21.9	273	48.4	−14 03.6	190	47.4	+20 13.2	284	40.1	−16 51.4	292	06.0	−18 46.3
7	257	24.4	288	47.8	02.6	205	48.4	13.5	299	41.9	51.2	307	08.2	46.2
8	272	26.8	303	47.2	01.6	220	49.4	13.9	314	43.8	51.0	322	10.4	46.2
9	287	29.3	318	46.6	−14 00.5	235	50.4	14.3	329	45.7	50.9	337	12.6	46.1
10	302	31.7	333	46.0	−13 59.5	250	51.4	14.6	344	47.6	50.7	352	14.8	46.0
11	317	34.2	348	45.5	−13 58.5	265	52.4	+20 15.0	359	49.5	−16 50.5	7	16.9	−18 46.0
12	332	36.7	3	44.9	−13 57.5	280	53.4	+20 15.4	14	51.4	−16 50.4	22	19.1	−18 45.9
13	347	39.1	18	44.3	56.5	295	54.4	15.7	29	53.3	50.2	37	21.3	45.8
14	2	41.6	33	43.7	55.4	310	55.4	16.1	44	55.1	50.0	52	23.5	45.8
15	17	44.1	48	43.1	54.4	325	56.4	16.4	59	57.0	49.9	67	25.7	45.7
16	32	46.5	63	42.6	53.4	340	57.4	16.8	74	58.9	49.7	82	27.8	45.6
17	47	49.0	78	42.0	−13 52.4	355	58.4	+20 17.2	90	00.8	−16 49.5	97	30.0	−18 45.6
18	62	51.5	93	41.4	−13 51.4	10	59.4	+20 17.5	105	02.7	−16 49.4	112	32.2	−18 45.5
19	77	53.9	108	40.8	50.3	26	00.4	17.9	120	04.6	49.2	127	34.4	45.4
20	92	56.4	123	40.2	49.3	41	01.4	18.2	135	06.5	49.0	142	36.6	45.4
21	107	58.9	138	39.7	48.3	56	02.4	18.6	150	08.3	48.9	157	38.7	45.3
22	123	01.3	153	39.1	47.3	71	03.4	19.0	165	10.2	48.7	172	40.9	45.2
23	138	03.8	168	38.5	46.2	86	04.3	19.3	180	12.1	48.5	187	43.1	45.2
24	153	06.2	183	37.9	−13 45.2	101	05.3	+20 19.7	195	14.0	−16 48.4	202	45.3	−18 45.1
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 11ᵈ.2		PHE	4ʰ: 56′.1									
	PMG: 12ʰ 13ᵐ.3				SD: 15′.2			12ʰ: 56′.3									
					PMG: 21ʰ 20ᵐ			20ʰ: 56′.6									
	hG ☉		Dec		hG ☾	Dif		Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′	º	h m	h m	h m	h m	m	h m	m
0	176	39.4	−9	49.6	51	33.8	86	+25	03.4	**60 N**	17 12	17 55	18 43	11 26	74	6 21	40
1	191	39.5		48.7	66	01.4	85		03.3	1 **58**	17	17 57	43	11 49	71	5 59	42
2	206	39.5		47.8	80	28.9	85		03.1	2 **56**	22	18 00	43	12 08	69	40	44
3	221	39.6		46.9	94	56.4	85		02.8	3 **54**	26	02	43	23	68	24	46
4	236	39.7		46.0	109	23.8	84		02.4	4 **52**	29	03	43	37	66	5 11	46
5	251	39.8	−9	45.0	123	51.2	84	+25	01.8	6 **50**	17 32	18 05	18 43	12 48	66	4 59	47
6	266	39.9	−9	44.1	138	18.6	84	+25	01.1	7 **45**	17 39	18 09	18 43	13 13	63	4 34	49
7	281	40.0		43.2	152	46.0	84	+25	00.2	9 **40**	45	13	44	32	62	4 15	50
8	296	40.1		42.3	167	13.3	83	+24	59.2	10 **35**	50	16	45	13 49	60	3 58	51
9	311	40.2		41.4	181	40.6	83		58.0	12 **30**	17 55	19	47	14 03	59	44	52
10	326	40.3		40.5	196	07.8	82		56.8	12 **20**	18 03	25	51	27	58	3 20	52
11	341	40.3	−9	39.5	210	35.0	82	+24	55.3	15 **10 N**	18 10	18 31	18 56	14 48	56	2 59	53
12	356	40.4	−9	38.6	225	02.2	82	+24	53.8	15 **0**	18 17	18 38	19 02	15 07	55	2 39	55
13	11	40.5		37.7	239	29.4	82		52.1	17 **10 S**	23	45	10	27	53	2 19	56
14	26	40.6		36.8	253	56.5	81		50.2	19 **20**	31	18 53	20	15 47	52	1 58	56
15	41	40.7		35.8	268	23.7	82		48.2	20 **30**	39	19 04	33	16 11	50	34	57
16	56	40.8		34.9	282	50.7	80		46.1	21 **35**	44	10	41	26	48	20	57
17	71	40.9	−9	34.0	297	17.8	81	+24	43.8	23 **40**	18 50	19 18	19 52	16 42	47	1 03	58
18	86	41.0	−9	33.1	311	44.9	81	+24	41.4	24 **45**	18 57	19 27	20 04	17 01	46	0 43	59
19	101	41.1		32.2	326	11.9	80		38.9	25 **50**	19 05	39	21	26	43	18	60
20	116	41.2		31.2	340	38.9	80		36.2	27 **52**	09	44	29	38	41	0 06	60
21	131	41.2		30.3	355	05.9	80		33.3	29 **54**	13	50	38	17 51	40	** **	**
22	146	41.3		29.4	9	32.9	80		30.4	29 **56**	17	19 57	20 48	18 06	38	** **	**
23	161	41.4		28.5	23	59.9	80		27.2	32 **58**	22	20 05	21 00	25	35	** **	**
24	176	41.5	−9	27.5	38	26.8	79	+24	24.0	32 **60 S**	19 28	20 14	21 15	18 47	31	23 57	83

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.8			Mag: −2.0			Mag: +0.7		
	13ʰ 45ᵐ.3		PMG: 11ʰ 46ᵐ			PMG: 17ʰ 15ᵐ			PMG: 10ʰ 58ᵐ			PMG: 10ʰ 27ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	153	06.2	183	37.9	−13 45.2	101	05.3	+20 19.7	195	14.0	−16 48.4	202	45.3	−18 45.1
1	168	08.7	198	37.4	44.2	116	06.3	20.0	210	15.9	48.2	217	47.5	45.0
2	183	11.2	213	36.8	43.2	131	07.3	20.4	225	17.8	48.0	232	49.6	45.0
3	198	13.6	228	36.2	42.1	146	08.3	20.8	240	19.7	47.9	247	51.8	44.9
4	213	16.1	243	35.6	41.1	161	09.3	21.1	255	21.5	47.7	262	54.0	44.8
5	228	18.6	258	35.1	−13 40.1	176	10.3	+20 21.5	270	23.4	−16 47.5	277	56.2	−18 44.8
6	243	21.0	273	34.5	−13 39.1	191	11.3	+20 21.8	285	25.3	−16 47.4	292	58.4	−18 44.7
7	258	23.5	288	33.9	38.0	206	12.3	22.2	300	27.2	47.2	308	00.5	44.6
8	273	26.0	303	33.3	37.0	221	13.3	22.5	315	29.1	47.0	323	02.7	44.5
9	288	28.4	318	32.8	36.0	236	14.3	22.9	330	31.0	46.9	338	04.9	44.5
10	303	30.9	333	32.2	34.9	251	15.3	23.3	345	32.9	46.7	353	07.1	44.4
11	318	33.4	348	31.6	−13 33.9	266	16.2	+20 23.6	0	34.7	−16 46.5	8	09.3	−18 44.3
12	333	35.8	3	31.1	−13 32.9	281	17.2	+20 24.0	15	36.6	−16 46.4	23	11.5	−18 44.3
13	348	38.3	18	30.5	31.8	296	18.2	24.3	30	38.5	46.2	38	13.6	44.2
14	3	40.7	33	29.9	30.8	311	19.2	24.7	45	40.4	46.0	53	15.8	44.1
15	18	43.2	48	29.3	29.8	326	20.2	25.0	60	42.3	45.9	68	18.0	44.1
16	33	45.7	63	28.8	28.7	341	21.2	25.4	75	44.2	45.7	83	20.2	44.0
17	48	48.1	78	28.2	−13 27.7	356	22.2	+20 25.8	90	46.1	−16 45.5	98	22.4	−18 43.9
18	63	50.6	93	27.6	−13 26.7	11	23.2	+20 26.1	105	48.0	−16 45.4	113	24.5	−18 43.9
19	78	53.1	108	27.1	25.6	26	24.2	26.5	120	49.8	45.2	128	26.7	43.8
20	93	55.5	123	26.5	24.6	41	25.1	26.8	135	51.7	45.0	143	28.9	43.7
21	108	58.0	138	25.9	23.5	56	26.1	27.2	150	53.6	44.9	158	31.1	43.7
22	124	00.5	153	25.4	22.5	71	27.1	27.5	165	55.5	44.7	173	33.3	43.6
23	139	02.9	168	24.8	21.5	86	28.1	27.9	180	57.4	44.5	188	35.5	43.5
24	154	05.4	183	24.3	−13 20.4	101	29.1	+20 28.2	195	59.3	−16 44.4	203	37.6	−18 43.5
Dif	—			−6	+10		+10	+4		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.2				LUNA Edad: 12d.2 SD: 15′.4 PMG: 22h 15m PHE: 4h: 56′.8; 12h: 57′.1; 20h: 57′.4 Rº: 55m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	41.5	−9	27.5	38	26.8 80	+24	24.0 34	**60 N**	5 42	6 30	7 12	12 40	90	7 01	25
1	191	41.6		26.6	52	53.8 79		20.6 36	**58**	42	28	08	13 00	85	6 41	29
2	206	41.7		25.7	67	20.7 79		17.0 37	**56**	43	26	03	17	81	24	33
3	221	41.8		24.8	81	47.6 79		13.3 38	**54**	43	24	7 00	31	78	6 10	35
4	236	41.9		23.9	96	14.5 79		09.5 40	**52**	43	22	6 56	43	76	5 57	37
5	251	42.0	−9	22.9	110	41.4 79	+24	05.5 41	**50**	5 43	6 20	6 53	13 54	74	5 46	39
6	266	42.1	−9	22.0	125	08.3 79	+24	01.4 43	**45**	5 43	6 17	6 46	14 16	71	5 23	42
7	281	42.2		21.1	139	35.2 79	+23	57.1 44	**40**	42	13	41	34	68	5 05	44
8	296	42.3		20.1	154	02.1 79		52.7 45	**35**	41	10	36	14 49	66	4 49	47
9	311	42.4		19.2	168	29.0 79		48.2 47	**30**	39	07	31	15 02	64	36	48
10	326	42.5		18.3	182	55.9 79		43.5 48	**20**	35	6 01	23	25	60	4 12	51
11	341	42.6	−9	17.4	197	22.8 79	+23	38.7 50	**10 N**	5 31	5 55	6 16	15 44	57	3 52	53
12	356	42.6	−9	16.4	211	49.6 78	+23	33.7 51	**0**	5 25	5 49	6 10	16 02	55	3 34	54
13	11	42.7		15.5	226	16.5 79		28.6 53	**10 S**	17	42	6 03	20	52	3 15	57
14	26	42.8		14.6	240	43.4 79		23.3 54	**20**	5 07	33	5 56	16 39	50	2 54	59
15	41	42.9		13.7	255	10.3 79		17.9 55	**30**	4 54	23	47	17 01	46	31	61
16	56	43.0		12.7	269	37.2 79		12.4 57	**35**	46	16	42	14	44	17	63
17	71	43.1	−9	11.8	284	04.1 79	+23	06.7 58	**40**	4 35	5 09	5 37	17 29	42	2 01	65
18	86	43.2	−9	10.9	298	31.0 79	+23	00.9 60	**45**	4 23	5 00	5 30	17 47	38	1 42	67
19	101	43.3		10.0	312	57.9 79	+22	54.9 61	**50**	4 07	4 48	22	18 09	34	18	70
20	116	43.4		09.0	327	24.8 79		48.8 62	**52**	3 59	43	19	19	33	1 06	72
21	131	43.5		08.1	341	51.8 80		42.6 64	**54**	50	37	15	31	30	0 53	73
22	146	43.6		07.2	356	18.7 79		36.2 65	**56**	39	30	10	18 44	28	38	75
23	161	43.7		06.2	10	45.7 80		29.7 66	**58**	27	22	05	19 00	24	0 19	79
24	176	43.8	−9	05.3	25	12.7 80	+22	23.1	**60 S**	3 13	4 14	5 00	19 18	19	** **	**

UT	ARIES PMG 13h 41m.4		VENUS Mag: −3.9 PMG: 11h 47m				MARTE Mag: +0.8 PMG: 17h 13m				JÚPITER Mag: −2.0 PMG: 10h 55m				SATURNO Mag: +0.7 PMG: 10h 24m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	154	05.4	183	24.3	−13	20.4	101	29.1	+20	28.2	195	59.3	−16	44.4	203	37.6	−18	43.5
1	169	07.9	198	23.7		19.4	116	30.1		28.6	211	01.2		44.2	218	39.8		43.4
2	184	10.3	213	23.1		18.3	131	31.1		28.9	226	03.1		44.1	233	42.0		43.3
3	199	12.8	228	22.6		17.3	146	32.1		29.3	241	04.9		43.9	248	44.2		43.3
4	214	15.2	243	22.0		16.3	161	33.0		29.7	256	06.8		43.7	263	46.4		43.2
5	229	17.7	258	21.4	−13	15.2	176	34.0	+20	30.0	271	08.7	−16	43.6	278	48.5	−18	43.1
6	244	20.2	273	20.9	−13	14.2	191	35.0	+20	30.4	286	10.6	−16	43.4	293	50.7	−18	43.1
7	259	22.6	288	20.3		13.1	206	36.0		30.7	301	12.5		43.2	308	52.9		43.0
8	274	25.1	303	19.7		12.1	221	37.0		31.1	316	14.4		43.1	323	55.1		42.9
9	289	27.6	318	19.2		11.0	236	38.0		31.4	331	16.3		42.9	338	57.3		42.9
10	304	30.0	333	18.6		10.0	251	39.0		31.8	346	18.2		42.7	353	59.5		42.8
11	319	32.5	348	18.1	−13	08.9	266	39.9	+20	32.1	1	20.0	−16	42.6	9	01.6	−18	42.7
12	334	35.0	3	17.5	−13	07.9	281	40.9	+20	32.5	16	21.9	−16	42.4	24	03.8	−18	42.7
13	349	37.4	18	17.0		06.8	296	41.9		32.8	31	23.8		42.2	39	06.0		42.6
14	4	39.9	33	16.4		05.8	311	42.9		33.2	46	25.7		42.1	54	08.2		42.5
15	19	42.3	48	15.8		04.7	326	43.9		33.5	61	27.6		41.9	69	10.4		42.5
16	34	44.8	63	15.3		03.7	341	44.9		33.9	76	29.5		41.7	84	12.6		42.4
17	49	47.3	78	14.7	−13	02.6	356	45.8	+20	34.2	91	31.4	−16	41.6	99	14.7	−18	42.3
18	64	49.7	93	14.2	−13	01.6	11	46.8	+20	34.6	106	33.3	−16	41.4	114	16.9	−18	42.3
19	79	52.2	108	13.6	−13	00.5	26	47.8		34.9	121	35.2		41.2	129	19.1		42.2
20	94	54.7	123	13.1	−12	59.5	41	48.8		35.3	136	37.0		41.1	144	21.3		42.1
21	109	57.1	138	12.5		58.4	56	49.8		35.6	151	38.9		40.9	159	23.5		42.1
22	124	59.6	153	11.9		57.4	71	50.8		36.0	166	40.8		40.7	174	25.7		42.0
23	140	02.1	168	11.4		56.3	86	51.7		36.3	181	42.7		40.6	189	27.8		41.9
24	155	04.5	183	10.8	−12	55.3	101	52.7	+20	36.7	196	44.6	−16	40.4	204	30.0	−18	41.9
Dif	—			−6		+10		+10		+4		+19		+2		+22		+1

UT	SOL SD: 16′.2 PMG: 12h 13m.0				LUNA Edad: 13d.2 SD: 15′.7 PMG: 23h 10m PHE 4h: 57′.6; 12h: 57′.9; 20h: 58′.2 Rº: 53m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	43.8	−9	05.3	25	12.7 79	+22	23.1 68	**60 N**	17 18	18 00	18 48	14 10	96	7 26	15
1	191	43.9		04.4	39	39.6 80		16.3 70	**58**	22	02	47	25	91	7 10	20
2	206	44.0		03.5	54	06.6 81		09.3 70	**56**	26	04	47	38	88	6 57	23
3	221	44.1		02.5	68	33.7 80	+22	02.3 72	**54**	30	05	46	49	85	45	26
4	236	44.2		01.6	83	00.7 80	+21	55.1 74	**52**	33	07	46	14 59	82	34	29
5	251	44.3	−9	00.7	97	27.7 80	+21	47.7 74	**50**	17 36	18 08	18 46	15 08	79	6 25	31
6	266	44.4	−8	59.7	111	54.8 81	+21	40.3 74	**45**	17 42	18 12	18 46	15 27	74	6 05	36
7	281	44.5		58.8	126	21.9 81		32.7 76	**40**	47	15	46	42	71	5 49	39
8	296	44.6		57.9	140	49.0 81		24.9 78	**35**	52	18	47	15 55	68	36	41
9	311	44.7		56.9	155	16.1 81		17.1 78	**30**	17 56	20	48	16 06	65	24	43
10	326	44.8		56.0	169	43.3 82		09.1 80	**20**	18 04	26	52	25	61	5 03	48
11	341	44.9	−8	55.1	184	10.5 82	+21	00.9 82	**10 N**	18 10	18 31	18 56	16 41	58	4 45	51
12	356	45.0	−8	54.1	198	37.7 82	+20	52.7 82	**0**	18 16	18 37	19 02	16 57	53	4 28	55
13	11	45.1		53.2	213	04.9 82		44.3 84	**10 S**	23	44	09	17 12	50	4 12	57
14	26	45.2		52.3	227	32.1 82		35.7 86	**20**	29	18 52	18	29	46	3 53	61
15	41	45.3		51.3	241	59.4 83		27.1 86	**30**	37	19 02	31	47	42	32	65
16	56	45.4		50.4	256	26.7 83		18.3 88	**35**	42	08	39	17 58	40	20	67
17	71	45.5	−8	49.5	270	54.0 83	+20	09.4 89	**40**	18 47	19 15	19 48	18 11	36	3 06	69
18	86	45.6	−8	48.5	285	21.4 84	+20	00.3 91	**45**	18 53	19 24	20 00	18 25	33	2 49	73
19	101	45.7		47.6	299	48.7 83	+19	51.2 91	**50**	19 01	35	16	43	28	28	77
20	116	45.8		46.7	314	16.1 84		41.9 93	**52**	04	40	23	18 52	25	18	79
21	131	45.9		45.7	328	43.6 85		32.5 94	**54**	08	45	32	19 01	23	2 06	82
22	146	46.0		44.8	343	11.0 84		22.9 96	**56**	12	52	42	12	20	1 53	86
23	161	46.2		43.9	357	38.5 85		13.3 96	**58**	17	19 59	20 53	24	16	38	89
24	176	46.3	−8	42.9	12	06.1 86	+19	03.5 98	**60 S**	19 22	20 07	21 07	19 37	13	1 20	94

UT	ARIES PMG 13h 37m.5		VENUS Mag: −3.9 PMG: 11h 48m				MARTE Mag: +0.9 PMG: 17h 11m				JÚPITER Mag: −2.0 PMG: 10h 52m				SATURNO Mag: +0.7 PMG: 10h 20m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	155	04.5	183	10.8	−12	55.3	101	52.7	+20	36.7	196	44.6	−16	40.4	204	30.0	−18	41.9
1	170	07.0	198	10.3		54.2	116	53.7		37.0	211	46.5		40.2	219	32.2		41.8
2	185	09.5	213	09.7		53.1	131	54.7		37.4	226	48.4		40.1	234	34.4		41.7
3	200	11.9	228	09.2		52.1	146	55.7		37.7	241	50.3		39.9	249	36.6		41.7
4	215	14.4	243	08.6		51.0	161	56.6		38.1	256	52.2		39.7	264	38.8		41.6
5	230	16.8	258	08.1	−12	50.0	176	57.6	+20	38.4	271	54.1	−16	39.6	279	41.0	−18	41.5
6	245	19.3	273	07.5	−12	48.9	191	58.6	+20	38.8	286	55.9	−16	39.4	294	43.1	−18	41.5
7	260	21.8	288	07.0		47.9	206	59.6		39.1	301	57.8		39.2	309	45.3		41.4
8	275	24.2	303	06.4		46.8	222	00.6		39.5	316	59.7		39.1	324	47.5		41.3
9	290	26.7	318	05.9		45.7	237	01.5		39.8	332	01.6		38.9	339	49.7		41.3
10	305	29.2	333	05.3		44.7	252	02.5		40.2	347	03.5		38.7	354	51.9		41.2
11	320	31.6	348	04.8	−12	43.6	267	03.5	+20	40.5	2	05.4	−16	38.6	9	54.1	−18	41.1
12	335	34.1	3	04.2	−12	42.5	282	04.5	+20	40.9	17	07.3	−16	38.4	24	56.2	−18	41.1
13	350	36.6	18	03.7		41.5	297	05.5		41.2	32	09.2		38.2	39	58.4		41.0
14	5	39.0	33	03.1		40.4	312	06.4		41.6	47	11.1		38.1	55	00.6		40.9
15	20	41.5	48	02.6		39.4	327	07.4		41.9	62	13.0		37.9	70	02.8		40.9
16	35	44.0	63	02.0		38.3	342	08.4		42.3	77	14.8		37.7	85	05.0		40.8
17	50	46.4	78	01.5	−12	37.2	357	09.4	+20	42.6	92	16.7	−16	37.6	100	07.2	−18	40.7
18	65	48.9	93	01.0	−12	36.2	12	10.3	+20	43.0	107	18.6	−16	37.4	115	09.4	−18	40.6
19	80	51.3	108	00.4		35.1	27	11.3		43.3	122	20.5		37.2	130	11.5		40.6
20	95	53.8	122	59.9		34.0	42	12.3		43.7	137	22.4		37.1	145	13.7		40.5
21	110	56.3	137	59.3		33.0	57	13.3		44.0	152	24.3		36.9	160	15.9		40.4
22	125	58.7	152	58.8		31.9	72	14.3		44.4	167	26.2		36.7	175	18.1		40.4
23	141	01.2	167	58.2		30.8	87	15.2		44.7	182	28.1		36.6	190	20.3		40.3
24	156	03.7	182	57.7	−12	29.7	102	16.2	+20	45.0	197	30.0	−16	36.4	205	22.5	−18	40.2
Dif	—			−5		+11		+10		+3		+19		+2		+22		+1

UT	SOL SD: 16′.2 PMG: 12h 12m.8				LUNA Edad: 14d.2 SD: 15′.9 PMG: **h **m PHE 4h: 58′.4 12h: 58′.6 20h: 58′.9 Rº: **m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	46.3	−8	42.9	12	06.1 85	+19	03.5 99	**60 N**	5 37	6 25	7 07	15 46	98	7 41	11
1	191	46.4		42.0	26	33.6 86	+18	53.6 100	**58**	37	23	7 02	15 56	94	30	14
2	206	46.5		41.1	41	01.2 86		43.6 102	**56**	38	21	6 59	16 06	90	20	18
3	221	46.6		40.1	55	28.8 87		33.4 102	**54**	39	19	55	14	87	11	21
4	236	46.7		39.2	69	56.5 87		23.2 104	**52**	39	18	52	21	84	7 03	23
5	251	46.8	−8	38.3	84	24.2 87	+18	12.8 105	**50**	5 39	6 17	6 49	16 27	82	6 56	25
6	266	46.9	−8	37.3	98	51.9 87	+18	02.3 106	**45**	5 39	6 13	6 43	16 41	77	6 41	30
7	281	47.0		36.4	113	19.6 87	+17	51.7 107	**40**	39	10	38	16 53	72	28	34
8	296	47.1		35.5	127	47.4 88		41.0 109	**35**	38	08	33	17 03	69	17	37
9	311	47.2		34.5	142	15.2 88		30.1 109	**30**	37	05	29	11	66	6 07	40
10	326	47.3		33.6	156	43.1 89		19.2 111	**20**	34	6 00	22	26	61	5 51	45
11	341	47.4	−8	32.6	171	10.9 88	+17	08.1 112	**10 N**	5 30	5 54	6 16	17 39	56	5 36	49
12	356	47.5	−8	31.7	185	38.8 89	+16	56.9 112	**0**	5 24	5 49	6 10	17 50	53	5 23	52
13	11	47.6		30.8	200	06.8 90		45.7 114	**10 S**	17	42	6 03	18 02	48	5 09	57
14	26	47.7		29.8	214	34.8 90		34.3 115	**20**	5 08	34	5 57	15	44	4 54	61
15	41	47.9		28.9	229	02.8 90		22.8 116	**30**	4 56	24	49	29	39	37	66
16	56	48.0		28.0	243	30.8 90	+16	11.2 117	**35**	48	18	44	38	35	27	69
17	71	48.1	−8	27.0	257	58.9 91	+15	59.5 118	**40**	4 38	5 11	5 39	18 47	32	4 15	72
18	86	48.2	−8	26.1	272	27.1 92	+15	47.7 119	**45**	4 26	5 03	5 33	18 58	28	4 02	76
19	101	48.3		25.1	286	55.2 91		35.8 120	**50**	11	4 52	26	19 11	24	3 45	81
20	116	48.4		24.2	301	23.4 92		23.8 121	**52**	4 03	47	22	17	21	37	84
21	131	48.5		23.3	315	51.6 92	+15	11.7 122	**54**	3 55	41	19	24	19	28	87
22	146	48.6		22.3	330	19.9 93	+14	59.5 123	**56**	45	35	15	32	15	19	89
23	161	48.7		21.4	344	48.2 93		47.2 124	**58**	34	28	10	40	12	3 07	93
24	176	48.8	−8	20.4	359	16.5 93	+14	34.8	**60 S**	3 20	4 19	5 05	19 50	8	2 54	98

UT	ARIES PMG 13h 33m.5		VENUS Mag: −3.9 PMG: 11h 49m			MARTE Mag: +0.9 PMG: 17h 10m			JÚPITER Mag: −2.0 PMG: 10h 49m			SATURNO Mag: +0.7 PMG: 10h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	156	03.7	182	57.7	−12 29.7	102	16.2	+20 45.0	197	30.0	−16 36.4	205	22.5	−18 40.2
1	171	06.1	197	57.2	28.7	117	17.2	45.4	212	31.9	36.2	220	24.7	40.2
2	186	08.6	212	56.6	27.6	132	18.2	45.7	227	33.8	36.1	235	26.8	40.1
3	201	11.1	227	56.1	26.5	147	19.1	46.1	242	35.7	35.9	250	29.0	40.0
4	216	13.5	242	55.5	25.5	162	20.1	46.4	257	37.5	35.7	265	31.2	40.0
5	231	16.0	257	55.0	−12 24.4	177	21.1	+20 46.8	272	39.4	−16 35.6	280	33.4	−18 39.9
6	246	18.4	272	54.4	−12 23.3	192	22.1	+20 47.1	287	41.3	−16 35.4	295	35.6	−18 39.8
7	261	20.9	287	53.9	22.2	207	23.0	47.5	302	43.2	35.2	310	37.8	39.8
8	276	23.4	302	53.4	21.2	222	24.0	47.8	317	45.1	35.1	325	40.0	39.7
9	291	25.8	317	52.8	20.1	237	25.0	48.2	332	47.0	34.9	340	42.1	39.6
10	306	28.3	332	52.3	19.0	252	26.0	48.5	347	48.9	34.7	355	44.3	39.6
11	321	30.8	347	51.8	−12 17.9	267	26.9	+20 48.8	2	50.8	−16 34.6	10	46.5	−18 39.5
12	336	33.2	2	51.2	−12 16.9	282	27.9	+20 49.2	17	52.7	−16 34.4	25	48.7	−18 39.4
13	351	35.7	17	50.7	15.8	297	28.9	49.5	32	54.6	34.2	40	50.9	39.4
14	6	38.2	32	50.1	14.7	312	29.8	49.9	47	56.5	34.1	55	53.1	39.3
15	21	40.6	47	49.6	13.6	327	30.8	50.2	62	58.4	33.9	70	55.3	39.2
16	36	43.1	62	49.1	12.5	342	31.8	50.6	78	00.3	33.7	85	57.4	39.2
17	51	45.6	77	48.5	−12 11.5	357	32.8	+20 50.9	93	02.1	−16 33.6	100	59.6	−18 39.1
18	66	48.0	92	48.0	−12 10.4	12	33.7	+20 51.2	108	04.0	−16 33.4	116	01.8	−18 39.0
19	81	50.5	107	47.5	09.3	27	34.7	51.6	123	05.9	33.2	131	04.0	39.0
20	96	52.9	122	46.9	08.2	42	35.7	51.9	138	07.8	33.1	146	06.2	38.9
21	111	55.4	137	46.4	07.1	57	36.7	52.3	153	09.7	32.9	161	08.4	38.8
22	126	57.9	152	45.9	06.1	72	37.6	52.6	168	11.6	32.8	176	10.6	38.8
23	142	00.3	167	45.3	05.0	87	38.6	52.9	183	13.5	32.6	191	12.8	38.7
24	157	02.8	182	44.8	−12 03.9	102	39.6	+20 53.3	198	15.4	−16 32.4	206	14.9	−18 38.6
Dif	—			−5	+11		+10	+3		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.7				LUNA Edad: 15d.2 SD: 16′.1 PMG: 0h 03m PHE 4h: 59′.1; 12h: 59′.3; 20h: 59′.4 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	48.8	−8	20.4	359	16.5 94	+14	34.8 125	**60 N**	17 23	18 05	18 53	17 24	98	7 52	7
1	191	49.0		19.5	13	44.9 94		22.3 125	**58**	27	06	52	30	94	44	11
2	206	49.1		18.6	28	13.3 94	+14	09.8 125	**56**	30	08	51	36	90	38	14
3	221	49.2		17.6	42	41.7 94	+13	57.1 127	**54**	33	09	50	41	87	32	17
4	236	49.3		16.7	57	10.1 94		44.3 128	**52**	36	10	49	45	85	26	20
5	251	49.4	−8	15.7	71	38.6 95	+13	31.5 128	**50**	17 39	18 12	18 49	17 49	83	7 21	22
6	266	49.5	−8	14.8	86	07.2 96	+13	18.5 130	**45**	17 45	18 14	18 48	17 58	77	7 11	26
7	281	49.6		13.9	100	35.7 95	+13	05.5 130	**40**	50	17	48	18 05	73	7 02	31
8	296	49.7		12.9	115	04.3 96	+12	52.4 131	**35**	54	19	49	12	69	6 54	34
9	311	49.8		12.0	129	32.9 96		39.2 132	**30**	17 58	22	50	17	66	47	38
10	326	50.0		11.0	144	01.6 97		26.0 132	**20**	18 04	27	52	27	60	36	42
11	341	50.1	−8	10.1	158	30.3 97	+12	12.6 134	**10 N**	18 10	18 31	18 56	18 35	55	6 25	47
12	356	50.2	−8	09.1	172	59.0 97	+11	59.2 134	**0**	18 16	18 37	19 01	18 43	51	6 15	52
13	11	50.3		08.2	187	27.8 98		45.7 135	**10 S**	22	43	08	50	47	6 06	55
14	26	50.4		07.3	201	56.5 97		32.1 136	**20**	28	18 50	16	18 59	41	5 55	60
15	41	50.5		06.3	216	25.3 98		18.4 137	**30**	35	19 00	28	19 08	36	43	66
16	56	50.6		05.4	230	54.2 99	+11	04.7 137	**35**	39	05	36	13	33	36	69
17	71	50.8	−8	04.4	245	23.1 99	+10	50.9 138	**40**	18 44	19 12	19 45	19 19	30	5 27	73
18	86	50.9	−8	03.5	259	51.9 98	+10	37.0 139	**45**	18 50	19 20	19 56	19 26	26	5 18	77
19	101	51.0		02.5	274	20.9 100		23.0 140	**50**	18 57	30	20 11	35	20	06	82
20	116	51.1		01.6	288	49.8 99	+10	09.0 140	**52**	19 00	35	18	38	19	5 01	84
21	131	51.2	−8	00.7	303	18.8 100	+9	54.9 141	**54**	03	40	26	43	16	4 55	87
22	146	51.3	−7	59.7	317	47.8 100		40.8 141	**56**	07	46	36	47	13	48	91
23	161	51.4		58.8	332	16.8 100		26.6 142	**58**	11	19 53	46	52	11	40	95
24	176	51.6	−7	57.8	346	45.9 101	+9	12.3 143	**60 S**	19 16	20 01	20 59	19 58	7	4 32	98

UT	ARIES PMG 13h 29m.6		VENUS Mag: −3.9 PMG: 11h 49m			MARTE Mag: +0.9 PMG: 17h 08m			JÚPITER Mag: −2.0 PMG: 10h 46m			SATURNO Mag: +0.7 PMG: 10h 14m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	157	02.8	182	44.8	−12 03.9	102	39.6	+20 53.3	198	15.4	−16 32.4	206	14.9	−18 38.6
1	172	05.3	197	44.3	02.8	117	40.5	53.6	213	17.3	32.3	221	17.1	38.6
2	187	07.7	212	43.7	01.7	132	41.5	54.0	228	19.2	32.1	236	19.3	38.5
3	202	10.2	227	43.2	−12 00.6	147	42.5	54.3	243	21.1	31.9	251	21.5	38.4
4	217	12.7	242	42.7	−11 59.6	162	43.4	54.7	258	23.0	31.8	266	23.7	38.4
5	232	15.1	257	42.2	−11 58.5	177	44.4	+20 55.0	273	24.9	−16 31.6	281	25.9	−18 38.3
6	247	17.6	272	41.6	−11 57.4	192	45.4	+20 55.3	288	26.8	−16 31.4	296	28.1	−18 38.2
7	262	20.1	287	41.1	56.3	207	46.4	55.7	303	28.6	31.3	311	30.3	38.2
8	277	22.5	302	40.6	55.2	222	47.3	56.0	318	30.5	31.1	326	32.4	38.1
9	292	25.0	317	40.0	54.1	237	48.3	56.4	333	32.4	30.9	341	34.6	38.0
10	307	27.4	332	39.5	53.0	252	49.3	56.7	348	34.3	30.8	356	36.8	38.0
11	322	29.9	347	39.0	−11 51.9	267	50.2	+20 57.0	3	36.2	−16 30.6	11	39.0	−18 37.9
12	337	32.4	2	38.5	−11 50.9	282	51.2	+20 57.4	18	38.1	−16 30.4	26	41.2	−18 37.8
13	352	34.8	17	37.9	49.8	297	52.2	57.7	33	40.0	30.3	41	43.4	37.8
14	7	37.3	32	37.4	48.7	312	53.1	58.0	48	41.9	30.1	56	45.6	37.7
15	22	39.8	47	36.9	47.6	327	54.1	58.4	63	43.8	29.9	71	47.8	37.7
16	37	42.2	62	36.4	46.5	342	55.1	58.7	78	45.7	29.8	86	49.9	37.6
17	52	44.7	77	35.8	−11 45.4	357	56.0	+20 59.1	93	47.6	−16 29.6	101	52.1	−18 37.5
18	67	47.2	92	35.3	−11 44.3	12	57.0	+20 59.4	108	49.5	−16 29.4	116	54.3	−18 37.5
19	82	49.6	107	34.8	43.2	27	58.0	+20 59.7	123	51.4	29.3	131	56.5	37.4
20	97	52.1	122	34.3	42.1	42	58.9	+21 00.1	138	53.3	29.1	146	58.7	37.3
21	112	54.5	137	33.7	41.0	57	59.9	00.4	153	55.2	28.9	162	00.9	37.3
22	127	57.0	152	33.2	39.9	73	00.9	00.7	168	57.1	28.8	177	03.1	37.2
23	142	59.5	167	32.7	38.8	88	01.8	01.1	183	59.0	28.6	192	05.3	37.1
24	158	01.9	182	32.2	−11 37.7	103	02.8	+21 01.4	199	00.9	−16 28.4	207	07.5	−18 37.1
Dif	—			−5	+11		+10	+3		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 12m.5				☾ LUNA Edad: 16d.2 SD: 16′.2 PMG: 0h 55m PHE 4h: 59′.6; 12h: 59′.7; 20h: 59′.8 Rº: 51m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	51.6	−7	57.8	346	45.9	+9	12.3	**60 N**	5 31	6 19	7 01	19 02	98	7 59	6
1	191	51.7		56.9	1	15.0 101	+8	58.0 143	**58**	32	18	6 57	04	94	55	10
2	206	51.8		55.9	15	44.1 101		43.6 144	**56**	33	16	54	06	91	52	12
3	221	51.9		55.0	30	13.2 101		29.1 145	**54**	34	15	50	08	88	49	15
4	236	52.0		54.0	44	42.4 102		14.6 145	**52**	35	14	48	10	85	46	17
5	251	52.1	−7	53.1	59	11.6 102	+8	00.1 145	**50**	5 35	6 13	6 45	19 12	83	7 43	20
6	266	52.3	−7	52.2	73	40.8 102	+7	45.5 146	**45**	5 36	6 10	6 39	19 15	78	7 37	25
7	281	52.4		51.2	88	10.0 102		30.8 147	**40**	36	08	35	18	73	33	29
8	296	52.5		50.3	102	39.2 102		16.1 147	**35**	36	05	31	21	69	28	33
9	311	52.6		49.3	117	08.5 103	+7	01.3 148	**30**	35	6 03	27	23	66	25	35
10	326	52.7		48.4	131	37.8 103	+6	46.5 148	**20**	33	5 58	20	27	60	18	41
11	341	52.9	−7	47.4	146	07.0 102	+6	31.7 148	**10 N**	5 29	5 54	6 15	19 30	56	7 12	46
12	356	53.0	−7	46.5	160	36.4 104	+6	16.8 149	**0**	5 24	5 48	6 09	19 34	50	7 07	51
13	11	53.1		45.5	175	05.7 103	+6	01.9 149	**10 S**	18	42	6 04	37	46	7 01	56
14	26	53.2		44.6	189	35.0 103	+5	46.9 150	**20**	5 09	35	5 57	40	41	6 55	61
15	41	53.3		43.6	204	04.4 104		31.9 150	**30**	4 57	26	50	44	36	49	66
16	56	53.4		42.7	218	33.8 104		16.8 151	**35**	50	20	46	46	33	45	69
17	71	53.6	−7	41.7	233	03.2 104	+5	01.7 151	**40**	4 41	5 14	5 41	19 49	29	6 40	73
18	86	53.7	−7	40.8	247	32.6 104	+4	46.6 151	**45**	4 29	5 06	5 36	19 52	24	6 35	77
19	101	53.8		39.8	262	02.0 104		31.4 152	**50**	15	4 56	29	55	20	28	83
20	116	53.9		38.9	276	31.4 104		16.3 151	**52**	08	51	26	57	17	25	86
21	131	54.0		37.9	291	00.8 104	+4	01.0 153	**54**	4 00	46	23	19 59	15	22	88
22	146	54.2		37.0	305	30.3 105	+3	45.8 152	**56**	3 50	40	19	20 00	13	19	90
23	161	54.3		36.0	319	59.8 105		30.5 153	**58**	40	33	15	03	9	15	94
24	176	54.4	−7	35.1	334	29.2 104	+3	15.2 153	**60 S**	3 27	4 25	5 10	20 05	6	6 10	98

UT	ARIES PMG 13h 25m.7		VENUS Mag: −3.9 PMG: 11h 50m			MARTE Mag: +0.9 PMG: 17h 07m			JÚPITER Mag: −2.0 PMG: 10h 43m			SATURNO Mag: +0.7 PMG: 10h 10m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	158	01.9	182	32.2	−11 37.7	103	02.8	+21 01.4	199	00.9	−16 28.4	207	07.5	−18 37.1
1	173	04.4	197	31.7	36.6	118	03.8	01.8	214	02.8	28.3	222	09.6	37.0
2	188	06.9	212	31.1	35.5	133	04.7	02.1	229	04.6	28.1	237	11.8	36.9
3	203	09.3	227	30.6	34.4	148	05.7	02.4	244	06.5	27.9	252	14.0	36.9
4	218	11.8	242	30.1	33.3	163	06.7	02.8	259	08.4	27.8	267	16.2	36.8
5	233	14.3	257	29.6	−11 32.2	178	07.6	+21 03.1	274	10.3	−16 27.6	282	18.4	−18 36.7
6	248	16.7	272	29.1	−11 31.1	193	08.6	+21 03.4	289	12.2	−16 27.4	297	20.6	−18 36.7
7	263	19.2	287	28.5	30.0	208	09.5	03.8	304	14.1	27.3	312	22.8	36.6
8	278	21.7	302	28.0	28.9	223	10.5	04.1	319	16.0	27.1	327	25.0	36.5
9	293	24.1	317	27.5	27.8	238	11.5	04.4	334	17.9	26.9	342	27.2	36.5
10	308	26.6	332	27.0	26.7	253	12.4	04.8	349	19.8	26.8	357	29.3	36.4
11	323	29.0	347	26.5	−11 25.6	268	13.4	+21 05.1	4	21.7	−16 26.6	12	31.5	−18 36.3
12	338	31.5	2	25.9	−11 24.5	283	14.4	+21 05.4	19	23.6	−16 26.4	27	33.7	−18 36.3
13	353	34.0	17	25.4	23.4	298	15.3	05.8	34	25.5	26.3	42	35.9	36.2
14	8	36.4	32	24.9	22.3	313	16.3	06.1	49	27.4	26.1	57	38.1	36.1
15	23	38.9	47	24.4	21.2	328	17.2	06.4	64	29.3	25.9	72	40.3	36.1
16	38	41.4	62	23.9	20.1	343	18.2	06.8	79	31.2	25.8	87	42.5	36.0
17	53	43.8	77	23.4	−11 19.0	358	19.2	+21 07.1	94	33.1	−16 25.6	102	44.7	−18 35.9
18	68	46.3	92	22.9	−11 17.9	13	20.1	+21 07.4	109	35.0	−16 25.4	117	46.9	−18 35.9
19	83	48.8	107	22.3	16.8	28	21.1	07.8	124	36.9	25.3	132	49.1	35.8
20	98	51.2	122	21.8	15.7	43	22.1	08.1	139	38.8	25.1	147	51.2	35.7
21	113	53.7	137	21.3	14.6	58	23.0	08.4	154	40.7	24.9	162	53.4	35.7
22	128	56.1	152	20.8	13.5	73	24.0	08.8	169	42.6	24.8	177	55.6	35.6
23	143	58.6	167	20.3	12.4	88	24.9	09.1	184	44.5	24.6	192	57.8	35.5
24	159	01.1	182	19.8	−11 11.2	103	25.9	+21 09.4	199	46.4	−16 24.4	208	00.0	−18 35.5
Dif	—		−5		+11	+10		+3	+19		+2	+22		+1

UT	SOL SD: 16′.1 PMG: 12h 12m.3		☽ LUNA Edad: 17d.2 SD: 16′.3 PMG: 1h 46m PHE { 4h: 59′.9; 12h: 60′.0; 20h: 60′.0 Rº: 50m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	176 54.4	−7 35.1	334 29.2		+3 15.2		**60 N**	17 28	18 10	18 58	20 40	98	8 05	6
1	191 54.5	34.1	348 58.7	105	+2 59.9	153	**58**	31	11	56	38	95	05	9
2	206 54.7	33.2	3 28.2	105	44.6	153	**56**	35	12	55	37	92	04	13
3	221 54.8	32.2	17 57.6	104	29.2	154	**54**	37	13	54	36	89	04	15
4	236 54.9	31.3	32 27.1	105	+2 13.8	154	**52**	40	14	53	35	86	03	18
5	251 55.0	−7 30.3	46 56.6	105	+1 58.4	154	**50**	17 42	18 15	18 52	20 35	83	8 03	20
6	266 55.1	−7 29.4	61 26.1	105	+1 43.0	154	**45**	17 48	18 17	18 51	20 33	78	8 02	25
7	281 55.3	28.4	75 55.6	105	27.6	154	**40**	52	19	51	31	74	02	28
8	296 55.4	27.5	90 25.1	105	+1 12.2	154	**35**	56	21	51	30	70	01	32
9	311 55.5	26.5	104 54.6	105	+0 56.7	155	**30**	17 59	23	51	29	66	8 00	36
10	326 55.6	25.6	119 24.1	105	41.3	154	**20**	18 05	27	53	27	61	7 59	41
11	341 55.8	−7 24.6	133 53.6	105	+0 25.8	155	**10 N**	18 10	18 32	18 56	20 26	55	7 58	46
12	356 55.9	−7 23.7	148 23.1	105	+0 10.4	154	**0**	18 16	18 36	19 01	20 24	51	7 58	50
13	11 56.0	22.7	162 52.6	105	−0 05.1	155	**10 S**	21	42	07	23	46	57	55
14	26 56.1	21.8	177 22.1	105	20.6	155	**20**	26	49	15	21	42	56	60
15	41 56.3	20.8	191 51.5	104	36.0	154	**30**	33	18 57	26	20	36	55	66
16	56 56.4	19.9	206 21.0	105	−0 51.5	155	**35**	37	19 03	33	19	33	54	69
17	71 56.5	−7 18.9	220 50.5	105	−1 06.9	154	**40**	18 41	19 09	19 42	20 18	29	7 53	73
18	86 56.6	−7 18.0	235 19.9	104	−1 22.4	155	**45**	18 46	19 16	19 53	20 16	26	7 52	78
19	101 56.8	17.0	249 49.4	105	37.9	155	**50**	53	26	20 06	15	20	51	83
20	116 56.9	16.1	264 18.8	104	−1 53.3	154	**52**	55	30	13	14	18	51	85
21	131 57.0	15.1	278 48.2	104	−2 08.7	154	**54**	18 59	35	21	14	15	50	88
22	146 57.1	14.2	293 17.6	104	24.2	155	**56**	19 02	41	29	13	13	49	91
23	161 57.3	13.2	307 47.0	104	39.6	154	**58**	06	47	39	12	10	49	94
24	176 57.4	−7 12.2	322 16.4	104	−2 55.0	154	**60 S**	19 10	19 55	20 51	20 11	6	7 48	98

UT	ARIES PMG 13h 21m.7	VENUS Mag: −3.9 PMG: 11h 51m		MARTE Mag: +0.9 PMG: 17h 05m		JÚPITER Mag: −2.0 PMG: 10h 40m		SATURNO Mag: +0.7 PMG: 10h 07m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	159 01.1	182 19.8	−11 11.2	103 25.9	+21 09.4	199 46.4	−16 24.4	208 00.0	−18 35.5
1	174 03.5	197 19.3	10.1	118 26.9	09.8	214 48.3	24.3	223 02.2	35.4
2	189 06.0	212 18.8	09.0	133 27.8	10.1	229 50.2	24.1	238 04.4	35.3
3	204 08.5	227 18.3	07.9	148 28.8	10.4	244 52.1	23.9	253 06.6	35.3
4	219 10.9	242 17.7	06.8	163 29.7	10.8	259 54.0	23.8	268 08.8	35.2
5	234 13.4	257 17.2	−11 05.7	178 30.7	+21 11.1	274 55.9	−16 23.6	283 11.0	−18 35.1
6	249 15.9	272 16.7	−11 04.6	193 31.7	+21 11.4	289 57.8	−16 23.4	298 13.2	−18 35.1
7	264 18.3	287 16.2	03.5	208 32.6	11.8	304 59.6	23.3	313 15.3	35.0
8	279 20.8	302 15.7	02.3	223 33.6	12.1	320 01.5	23.1	328 17.5	34.9
9	294 23.3	317 15.2	01.2	238 34.5	12.4	335 03.4	22.9	343 19.7	34.9
10	309 25.7	332 14.7	−11 00.1	253 35.5	12.7	350 05.3	22.8	358 21.9	34.8
11	324 28.2	347 14.2	−10 59.0	268 36.4	+21 13.1	5 07.2	−16 22.6	13 24.1	−18 34.7
12	339 30.6	2 13.7	−10 57.9	283 37.4	+21 13.4	20 09.1	−16 22.4	28 26.3	−18 34.7
13	354 33.1	17 13.2	56.8	298 38.4	13.7	35 11.0	22.3	43 28.5	34.6
14	9 35.6	32 12.7	55.7	313 39.3	14.1	50 12.9	22.1	58 30.7	34.5
15	24 38.0	47 12.2	54.5	328 40.3	14.4	65 14.8	21.9	73 32.9	34.5
16	39 40.5	62 11.7	53.4	343 41.2	14.7	80 16.7	21.8	88 35.1	34.4
17	54 43.0	77 11.2	−10 52.3	358 42.2	+21 15.1	95 18.6	−16 21.6	103 37.3	−18 34.3
18	69 45.4	92 10.6	−10 51.2	13 43.1	+21 15.4	110 20.5	−16 21.4	118 39.5	−18 34.3
19	84 47.9	107 10.1	50.1	28 44.1	15.7	125 22.4	21.3	133 41.6	34.2
20	99 50.4	122 09.6	48.9	43 45.1	16.0	140 24.3	21.1	148 43.8	34.2
21	114 52.8	137 09.1	47.8	58 46.0	16.4	155 26.2	20.9	163 46.0	34.1
22	129 55.3	152 08.6	46.7	73 47.0	16.7	170 28.1	20.8	178 48.2	34.0
23	144 57.7	167 08.1	45.6	88 47.9	17.0	185 30.0	20.6	193 50.4	34.0
24	160 00.2	182 07.6	−10 44.5	103 48.9	+21 17.3	200 31.9	−16 20.4	208 52.6	−18 33.9
Dif	—	−5	+11	+10	+3	+19	+2	+22	+1

UT	SOL SD: 16′.1 PMG: 12h 12m.1				LUNA Edad: 18d.2 SD: 16′.3 PMG: 2h 36m PHE: 4h: 60′.0; 12h: 60′.0; 20h: 60′.0 Rº: 52m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	176	57.4	−7	12.2	322	16.4	−2	55.0	**60 N**	5 25	6 13	6 55	22 18	100	8 11	7
1	191	57.5		11.3	336	45.8 104	−3	10.3 153	**58**	27	12	52	13	96	14	11
2	206	57.6		10.3	351	15.2 104		25.7 154	**56**	28	11	49	09	92	17	13
3	221	57.8		09.4	5	44.5 103		41.1 154	**54**	30	10	46	05	89	19	16
4	236	57.9		08.4	20	13.8 103	−3	56.4 153	**52**	31	09	43	22 01	86	21	19
5	251	58.0	−7	07.5	34	43.1 103	−4	11.7 153	**50**	5 31	6 09	6 41	21 58	83	8 23	21
6	266	58.1	−7	06.5	49	12.4 103	−4	27.0 153	**45**	5 33	6 07	6 36	21 51	78	8 27	26
7	281	58.3		05.6	63	41.7 103		42.2 152	**40**	33	05	32	45	74	30	30
8	296	58.4		04.6	78	10.9 102	−4	57.4 152	**35**	33	03	28	40	70	33	34
9	311	58.5		03.7	92	40.2 103	−5	12.6 152	**30**	33	6 01	25	35	68	36	37
10	326	58.7		02.7	107	09.4 102		27.8 152	**20**	31	5 57	19	28	62	40	43
11	341	58.8	−7	01.7	121	38.5 101	−5	42.9 151	**10 N**	5 28	5 53	6 14	21 21	57	8 44	48
12	356	58.9	−7	00.8	136	07.7 102	−5	58.0 151	**0**	5 24	5 48	6 09	21 15	53	8 48	52
13	11	59.0	−6	59.8	150	36.8 101	−6	13.1 151	**10 S**	18	42	6 04	09	48	52	56
14	26	59.2		58.9	165	05.9 101		28.1 150	**20**	5 10	36	5 58	21 03	43	8 56	61
15	41	59.3		57.9	179	35.0 101		43.1 150	**30**	4 59	27	52	20 56	38	9 01	66
16	56	59.4		57.0	194	04.0 100	−6	58.0 149	**35**	52	22	48	52	35	03	70
17	71	59.6	−6	56.0	208	33.1 101	−7	12.9 149	**40**	4 43	5 16	5 44	20 47	31	9 06	74
18	86	59.7	−6	55.0	223	02.0 99	−7	27.8 149	**45**	4 32	5 09	5 39	20 42	27	9 10	78
19	101	59.8		54.1	237	31.0 100		42.6 148	**50**	19	4 59	33	35	23	14	83
20	117	00.0		53.1	251	59.9 99	−7	57.4 148	**52**	12	55	30	32	20	16	86
21	132	00.1		52.2	266	28.8 99	−8	12.1 147	**54**	4 04	50	27	29	18	18	89
22	147	00.2		51.2	280	57.7 99		26.8 147	**56**	3 56	44	23	26	14	20	92
23	162	00.3		50.3	295	26.5 98		41.4 146	**58**	46	38	20	22	11	23	95
24	177	00.5	−6	49.3	309	55.3 98	−8	56.0 146	**60 S**	3 34	4 31	5 15	20 17	8	9 26	99

UT	ARIES PMG 13h 17m.8		VENUS Mag: −3.9 PMG: 11h 52m			MARTE Mag: +0.9 PMG: 17h 04m			JÚPITER Mag: −2.0 PMG: 10h 37m			SATURNO Mag: +0.7 PMG: 10h 03m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	160	00.2	182	07.6	−10 44.5	103	48.9	+21 17.3	200	31.9	−16 20.4	208	52.6	−18 33.9
1	175	02.7	197	07.1	43.3	118	49.8	17.7	215	33.8	20.3	223	54.8	33.8
2	190	05.1	212	06.6	42.2	133	50.8	18.0	230	35.7	20.1	238	57.0	33.8
3	205	07.6	227	06.1	41.1	148	51.7	18.3	245	37.6	19.9	253	59.2	33.7
4	220	10.1	242	05.6	40.0	163	52.7	18.7	260	39.5	19.8	269	01.4	33.6
5	235	12.5	257	05.1	−10 38.8	178	53.6	+21 19.0	275	41.4	−16 19.6	284	03.6	−18 33.6
6	250	15.0	272	04.6	−10 37.7	193	54.6	+21 19.3	290	43.3	−16 19.4	299	05.8	−18 33.5
7	265	17.5	287	04.1	36.6	208	55.6	19.6	305	45.2	19.3	314	08.0	33.4
8	280	19.9	302	03.6	35.5	223	56.5	20.0	320	47.1	19.1	329	10.2	33.4
9	295	22.4	317	03.1	34.3	238	57.5	20.3	335	49.0	18.9	344	12.3	33.3
10	310	24.9	332	02.6	33.2	253	58.4	20.6	350	50.9	18.8	359	14.5	33.2
11	325	27.3	347	02.1	−10 32.1	268	59.4	+21 20.9	5	52.8	−16 18.6	14	16.7	−18 33.2
12	340	29.8	2	01.6	−10 31.0	284	00.3	+21 21.3	20	54.7	−16 18.4	29	18.9	−18 33.1
13	355	32.2	17	01.1	29.8	299	01.3	21.6	35	56.6	18.3	44	21.1	33.0
14	10	34.7	32	00.7	28.7	314	02.2	21.9	50	58.5	18.1	59	23.3	33.0
15	25	37.2	47	00.2	27.6	329	03.2	22.2	66	00.4	17.9	74	25.5	32.9
16	40	39.6	61	59.7	26.4	344	04.1	22.6	81	02.3	17.8	89	27.7	32.8
17	55	42.1	76	59.2	−10 25.3	359	05.1	+21 22.9	96	04.2	−16 17.6	104	29.9	−18 32.8
18	70	44.6	91	58.7	−10 24.2	14	06.0	+21 23.2	111	06.1	−16 17.4	119	32.1	−18 32.7
19	85	47.0	106	58.2	23.1	29	07.0	23.5	126	08.0	17.3	134	34.3	32.6
20	100	49.5	121	57.7	21.9	44	07.9	23.8	141	09.9	17.1	149	36.5	32.6
21	115	52.0	136	57.2	20.8	59	08.9	24.2	156	11.8	16.9	164	38.7	32.5
22	130	54.4	151	56.7	19.7	74	09.8	24.5	171	13.7	16.8	179	40.9	32.4
23	145	56.9	166	56.2	18.5	89	10.8	24.8	186	15.6	16.6	194	43.1	32.4
24	160	59.4	181	55.7	−10 17.4	104	11.7	+21 25.1	201	17.5	−16 16.4	209	45.2	−18 32.3
Dif	—			−5	+11		+10	+3		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 11m.9		LUNA Edad: 19d.2 SD: 16′.3 PMG: 3h 28m PHE 4h: 59′.9; 12h: 59′.9; 20h: 59′.8 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	177 00.5	−6 49.3	309 55.3	97	−8 56.0	145	**60 N**	17 33	18 15	19 03	23 58	101	8 18	9
1	192 00.6	48.3	324 24.0	98	−9 10.5	145	**58**	36	15	19 01	49	96	25	12
2	207 00.7	47.4	338 52.8	96	25.0	144	**56**	39	16	18 59	41	92	30	16
3	222 00.9	46.4	353 21.4	97	39.4	143	**54**	41	17	58	34	88	35	19
4	237 01.0	45.5	7 50.1	96	−9 53.7	143	**52**	44	17	56	27	86	40	22
5	252 01.1	−6 44.5	22 18.7	96	−10 08.0	143	**50**	17 46	18 18	18 55	23 21	84	8 44	24
6	267 01.3	−6 43.5	36 47.2	95	−10 22.2	142	**45**	17 50	18 20	18 54	23 09	78	8 53	29
7	282 01.4	42.6	51 15.8	96	36.4	142	**40**	54	21	53	22 59	74	9 00	34
8	297 01.5	41.6	65 44.3	95	−10 50.5	141	**35**	17 58	23	52	50	71	07	37
9	312 01.7	40.7	80 12.7	94	−11 04.5	140	**30**	18 01	25	52	43	67	13	39
10	327 01.8	39.7	94 41.1	94	18.4	139	**20**	06	28	54	30	62	23	45
11	342 01.9	−6 38.7	109 09.5	94	−11 32.3	139	**10 N**	18 11	18 32	18 56	22 18	59	9 32	49
12	357 02.1	−6 37.8	123 37.8	93	−11 46.1	138	**0**	18 15	18 36	19 00	22 08	54	9 40	53
13	12 02.2	36.8	138 06.0	92	−11 59.9	138	**10 S**	20	41	06	21 57	51	48	58
14	27 02.3	35.9	152 34.3	93	−12 13.6	137	**20**	25	47	13	46	47	9 57	62
15	42 02.5	34.9	167 02.4	91	27.1	135	**30**	31	18 55	23	34	41	10 07	68
16	57 02.6	33.9	181 30.6	92	40.7	136	**35**	34	19 00	30	27	38	13	71
17	72 02.7	−6 33.0	195 58.7	91	−12 54.1	134	**40**	18 38	19 06	19 38	21 18	36	10 20	74
18	87 02.9	−6 32.0	210 26.7	90	−13 07.5	134	**45**	18 43	19 13	19 49	21 09	32	10 28	78
19	102 03.0	31.1	224 54.7	90	20.7	132	**50**	48	22	20 02	20 58	26	37	84
20	117 03.1	30.1	239 22.6	89	33.9	132	**52**	51	26	08	52	25	42	86
21	132 03.3	29.1	253 50.5	89	−13 47.0	131	**54**	54	30	15	47	21	47	89
22	147 03.4	28.2	268 18.4	89	−14 00.1	131	**56**	18 57	36	23	40	19	52	92
23	162 03.5	27.2	282 46.2	88	13.0	129	**58**	19 00	41	33	33	15	10 58	96
24	177 03.7	−6 26.3	297 13.9	87	−14 25.8	128	**60 S**	19 04	19 48	20 44	20 25	11	11 05	100

UT	ARIES PMG 13h 13m.9	VENUS Mag: −3.9 PMG: 11h 53m		MARTE Mag: +0.9 PMG: 17h 02m		JÚPITER Mag: −2.0 PMG: 10h 33m		SATURNO Mag: +0.7 PMG: 10h 00m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	160 59.4	181 55.7	−10 17.4	104 11.7	+21 25.1	201 17.5	−16 16.4	209 45.2	−18 32.3
1	176 01.8	196 55.2	16.3	119 12.7	25.5	216 19.4	16.3	224 47.4	32.3
2	191 04.3	211 54.7	15.1	134 13.6	25.8	231 21.3	16.1	239 49.6	32.2
3	206 06.7	226 54.2	14.0	149 14.6	26.1	246 23.2	15.9	254 51.8	32.1
4	221 09.2	241 53.7	12.8	164 15.5	26.4	261 25.1	15.8	269 54.0	32.1
5	236 11.7	256 53.3	−10 11.7	179 16.5	+21 26.7	276 27.0	−16 15.6	284 56.2	−18 32.0
6	251 14.1	271 52.8	−10 10.6	194 17.4	+21 27.1	291 28.9	−16 15.4	299 58.4	−18 31.9
7	266 16.6	286 52.3	09.4	209 18.4	27.4	306 30.8	15.3	315 00.6	31.9
8	281 19.1	301 51.8	08.3	224 19.3	27.7	321 32.7	15.1	330 02.8	31.8
9	296 21.5	316 51.3	07.2	239 20.3	28.0	336 34.6	14.9	345 05.0	31.7
10	311 24.0	331 50.8	06.0	254 21.2	28.3	351 36.5	14.8	0 07.2	31.7
11	326 26.5	346 50.3	−10 04.9	269 22.2	+21 28.7	6 38.4	−16 14.6	15 09.4	−18 31.6
12	341 28.9	1 49.8	−10 03.7	284 23.1	+21 29.0	21 40.4	−16 14.4	30 11.6	−18 31.5
13	356 31.4	16 49.3	02.6	299 24.1	29.3	36 42.3	14.3	45 13.8	31.5
14	11 33.8	31 48.9	01.5	314 25.0	29.6	51 44.2	14.1	60 16.0	31.4
15	26 36.3	46 48.4	−10 00.3	329 26.0	29.9	66 46.1	13.9	75 18.2	31.3
16	41 38.8	61 47.9	−9 59.2	344 26.9	30.3	81 48.0	13.8	90 20.4	31.3
17	56 41.2	76 47.4	−9 58.0	359 27.8	+21 30.6	96 49.9	−16 13.6	105 22.6	−18 31.2
18	71 43.7	91 46.9	−9 56.9	14 28.8	+21 30.9	111 51.8	−16 13.4	120 24.8	−18 31.1
19	86 46.2	106 46.4	55.8	29 29.7	31.2	126 53.7	13.3	135 27.0	31.1
20	101 48.6	121 45.9	54.6	44 30.7	31.5	141 55.6	13.1	150 29.2	31.0
21	116 51.1	136 45.5	53.5	59 31.6	31.9	156 57.5	12.9	165 31.3	30.9
22	131 53.6	151 45.0	52.3	74 32.6	32.2	171 59.4	12.8	180 33.5	30.9
23	146 56.0	166 44.5	51.2	89 33.5	32.5	187 01.3	12.6	195 35.7	30.8
24	161 58.5	181 44.0	−9 50.0	104 34.5	+21 32.8	202 03.2	−16 12.4	210 37.9	−18 30.8
Dif	—	−5	+11	+9	+3	+19	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 20ᵈ.2		PHE	4ʰ: 59′.7									
	PMG: 12ʰ 11ᵐ.6				SD: 16′.3			12ʰ: 59′.6									
					PMG: 4ʰ 20ᵐ			20ʰ: 59′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	177	03.7	−6	26.3	297	13.9	−14	25.8		**60 N**	5 20	6 08	6 49	** **	**	8 27	13
1	192	03.8		25.3	311	41.6 87		38.6	128	**58**	22	07	46	** **	**	37	18
2	207	04.0		24.3	326	09.3 87	−14	51.2	126	**56**	23	06	43	** **	**	46	22
3	222	04.1		23.4	340	36.9 86	−15	03.8	126	**54**	25	06	41	** **	**	8 54	25
4	237	04.2		22.4	355	04.4 85		16.3	125	**52**	26	05	39	** **	**	9 02	27
5	252	04.4	−6	21.4	9	31.9 85	−15	28.7	124	**50**	5 27	6 05	6 37	** **	**	9 08	30
6	267	04.5	−6	20.5	23	59.4 85	−15	40.9	122	**45**	5 29	6 03	6 32	** **	**	9 22	35
7	282	04.6		19.5	38	26.8 84	−15	53.1	122	**40**	30	02	29	** **	**	34	38
8	297	04.8		18.6	52	54.1 83	−16	05.2	121	**35**	31	6 00	25	** **	**	44	41
9	312	04.9		17.6	67	21.4 83		17.2	120	**30**	31	5 59	23	23 50	67	9 52	44
10	327	05.1		16.6	81	48.6 82		29.1	119	**20**	30	55	17	32	63	10 08	48
11	342	05.2	−6	15.7	96	15.8 82	−16	40.8	117	**10 N**	5 27	5 52	6 13	23 17	59	10 21	52
12	357	05.3	−6	14.7	110	42.9 81	−16	52.5	117	**0**	5 23	5 48	6 08	23 02	57	10 33	56
13	12	05.5		13.7	125	10.0 81	−17	04.1	116	**10 S**	18	43	6 04	22 48	54	46	59
14	27	05.6		12.8	139	37.0 80		15.5	114	**20**	11	37	5 59	33	50	10 59	63
15	42	05.7		11.8	154	04.0 80		26.8	113	**30**	5 00	29	53	15	47	11 15	67
16	57	05.9		10.8	168	30.9 79		38.1	113	**35**	4 54	24	50	22 05	44	24	70
17	72	06.0	−6	09.9	182	57.7 78	−17	49.2	111	**40**	4 46	5 18	5 46	21 54	41	11 34	73
18	87	06.2	−6	08.9	197	24.5 78	−18	00.2	110	**45**	4 36	5 11	5 41	21 41	37	11 46	77
19	102	06.3		07.9	211	51.3 78		11.1	109	**50**	23	5 03	36	24	34	12 01	82
20	117	06.4		07.0	226	18.0 77		21.9	108	**52**	16	4 59	33	17	31	08	84
21	132	06.6		06.0	240	44.6 76		32.5	106	**54**	09	54	31	21 08	29	16	86
22	147	06.7		05.0	255	11.2 76		43.0	105	**56**	4 01	49	28	20 59	26	24	90
23	162	06.9		04.1	269	37.7 75	−18	53.5	105	**58**	3 52	43	24	48	22	34	94
24	177	07.0	−6	03.1	284	04.2 75	−19	03.8	103	**60 S**	3 41	4 37	5 20	20 36	18	12 45	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.0			Mag: −2.0			Mag: +0.7		
	13ʰ 09ᵐ.9		PMG: 11ʰ 53ᵐ			PMG: 17ʰ 01ᵐ			PMG: 10ʰ 30ᵐ			PMG: 9ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	161	58.5	181	44.0	−9 50.0	104	34.5	+21 32.8	202	03.2	−16 12.4	210	37.9	−18 30.8
1	177	01.0	196	43.5	48.9	119	35.4	33.1	217	05.1	12.3	225	40.1	30.7
2	192	03.4	211	43.0	47.8	134	36.3	33.4	232	07.0	12.1	240	42.3	30.6
3	207	05.9	226	42.6	46.6	149	37.3	33.8	247	08.9	11.9	255	44.5	30.6
4	222	08.3	241	42.1	45.5	164	38.2	34.1	262	10.8	11.8	270	46.7	30.5
5	237	10.8	256	41.6	−9 44.3	179	39.2	+21 34.4	277	12.7	−16 11.6	285	48.9	−18 30.4
6	252	13.3	271	41.1	−9 43.2	194	40.1	+21 34.7	292	14.6	−16 11.4	300	51.1	−18 30.4
7	267	15.7	286	40.6	42.0	209	41.1	35.0	307	16.5	11.3	315	53.3	30.3
8	282	18.2	301	40.2	40.9	224	42.0	35.3	322	18.4	11.1	330	55.5	30.2
9	297	20.7	316	39.7	39.7	239	43.0	35.6	337	20.3	10.9	345	57.7	30.2
10	312	23.1	331	39.2	38.6	254	43.9	36.0	352	22.2	10.8	0	59.9	30.1
11	327	25.6	346	38.7	−9 37.4	269	44.8	+21 36.3	7	24.1	−16 10.6	16	02.1	−18 30.0
12	342	28.1	1	38.2	−9 36.3	284	45.8	+21 36.6	22	26.0	−16 10.4	31	04.3	−18 30.0
13	357	30.5	16	37.8	35.1	299	46.7	36.9	37	27.9	10.3	46	06.5	29.9
14	12	33.0	31	37.3	34.0	314	47.7	37.2	52	29.8	10.1	61	08.7	29.8
15	27	35.5	46	36.8	32.8	329	48.6	37.5	67	31.7	09.9	76	10.9	29.8
16	42	37.9	61	36.3	31.7	344	49.5	37.8	82	33.7	09.8	91	13.1	29.7
17	57	40.4	76	35.9	−9 30.5	359	50.5	+21 38.2	97	35.6	−16 09.6	106	15.3	−18 29.6
18	72	42.8	91	35.4	−9 29.4	14	51.4	+21 38.5	112	37.5	−16 09.4	121	17.5	−18 29.6
19	87	45.3	106	34.9	28.2	29	52.4	38.8	127	39.4	09.3	136	19.7	29.5
20	102	47.8	121	34.4	27.1	44	53.3	39.1	142	41.3	09.1	151	21.9	29.5
21	117	50.2	136	34.0	25.9	59	54.2	39.4	157	43.2	08.9	166	24.1	29.4
22	132	52.7	151	33.5	24.7	74	55.2	39.7	172	45.1	08.8	181	26.3	29.3
23	147	55.2	166	33.0	23.6	89	56.1	40.0	187	47.0	08.6	196	28.5	29.3
24	162	57.6	181	32.5	−9 22.4	104	57.1	+21 40.4	202	48.9	−16 08.4	211	30.7	−18 29.2
Dif	—			−5	+12		+9	+3		+19	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 21^{d}.2		PHE	4^{h}: 59′.3								
	PMG: 12^{h} 11^{m}.4		SD: 16′.2			12^{h}: 59′.2								
			PMG: 5^{h} 16^{m}			20^{h}: 59′.0								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	177 07.0	−6 03.1	284 04.2	74	−19 03.8	101	**60 N**	17 38	18 19	19 08	1 39	97	8 40	22
1	192 07.1	02.1	298 30.6	74	13.9	101	**58**	41	20	05	25	91	8 55	27
2	207 07.3	01.2	312 57.0	74	24.0	101	**56**	43	20	03	13	87	9 08	30
3	222 07.4	−6 00.2	327 23.3	73	33.9	99	**54**	45	21	01	1 02	85	19	33
4	237 07.6	−5 59.3	341 49.6	73	43.7	98	**52**	47	21	19 00	0 53	82	29	36
5	252 07.7	−5 58.3	356 15.8	72	−19 53.4	97	**50**	17 49	18 21	18 59	0 45	79	9 38	38
6	267 07.8	−5 57.3	10 42.0	72	−20 02.9	95	**45**	17 53	18 22	18 56	0 27	75	9 57	41
7	282 08.0	56.4	25 08.1	71	12.3	94	**40**	56	23	55	13	72	10 12	45
8	297 08.1	55.4	39 34.2	71	21.6	93	**35**	17 59	25	54	0 01	69	25	47
9	312 08.3	54.4	54 00.2	70	30.8	92	**30**	18 02	26	54	** **	**	36	49
10	327 08.4	53.5	68 26.2	70	39.8	90	**20**	07	29	54	** **	**	10 56	52
11	342 08.6	−5 52.5	82 52.1	69	−20 48.7	89	**10 N**	18 11	18 32	18 56	** **	**	11 13	55
12	357 08.7	−5 51.5	97 18.0	69	−20 57.4	87	**0**	18 15	18 35	19 00	23 59	58	11 29	58
13	12 08.8	50.5	111 43.8	68	−21 06.0	86	**10 S**	19	40	05	42	56	11 45	60
14	27 09.0	49.6	126 09.6	68	14.5	85	**20**	23	46	11	23	54	12 02	63
15	42 09.1	48.6	140 35.3	67	22.9	84	**30**	29	53	21	23 02	52	22	66
16	57 09.3	47.6	155 01.0	67	31.1	82	**35**	32	18 57	27	22 49	51	34	68
17	72 09.4	−5 46.7	169 26.6	66	−21 39.1	80	**40**	18 35	19 03	19 35	22 35	49	12 47	70
18	87 09.6	−5 45.7	183 52.2	66	−21 47.0	79	**45**	18 39	19 09	19 45	22 18	47	13 03	73
19	102 09.7	44.7	198 17.8	66	−21 54.8	78	**50**	44	17	19 57	21 58	43	23	76
20	117 09.8	43.8	212 43.3	65	−22 02.5	77	**52**	46	21	20 03	48	41	32	78
21	132 10.0	42.8	227 08.7	64	10.0	75	**54**	49	25	10	37	39	42	81
22	147 10.1	41.8	241 34.1	64	17.3	73	**56**	52	30	17	25	36	13 54	84
23	162 10.3	40.9	255 59.5	64	24.5	72	**58**	55	36	26	21 10	34	14 08	87
24	177 10.4	−5 39.9	270 24.9	64	−22 31.6	71	**60 S**	18 58	19 42	20 36	20 54	29	14 24	92

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.0		Mag: −2.0		Mag: +0.7	
	13^{h} 06^{m}.0	PMG: 11^{h} 54^{m}		PMG: 16^{h} 59^{m}		PMG: 10^{h} 27^{m}		PMG: 9^{h} 53^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	162 57.6	181 32.5	−9 22.4	104 57.1	+21 40.4	202 48.9	−16 08.4	211 30.7	−18 29.2
1	178 00.1	196 32.1	21.3	119 58.0	40.7	217 50.8	08.3	226 32.9	29.1
2	193 02.6	211 31.6	20.1	134 58.9	41.0	232 52.7	08.1	241 35.1	29.1
3	208 05.0	226 31.1	19.0	149 59.9	41.3	247 54.6	07.9	256 37.3	29.0
4	223 07.5	241 30.6	17.8	165 00.8	41.6	262 56.5	07.8	271 39.5	28.9
5	238 09.9	256 30.2	−9 16.7	180 01.8	+21 41.9	277 58.4	−16 07.6	286 41.7	−18 28.9
6	253 12.4	271 29.7	−9 15.5	195 02.7	+21 42.2	293 00.3	−16 07.4	301 43.9	−18 28.8
7	268 14.9	286 29.2	14.3	210 03.6	42.5	308 02.2	07.3	316 46.1	28.7
8	283 17.3	301 28.7	13.2	225 04.6	42.8	323 04.1	07.1	331 48.3	28.7
9	298 19.8	316 28.3	12.0	240 05.5	43.2	338 06.0	06.9	346 50.5	28.6
10	313 22.3	331 27.8	10.9	255 06.5	43.5	353 08.0	06.8	1 52.7	28.5
11	328 24.7	346 27.3	−9 09.7	270 07.4	+21 43.8	8 09.9	−16 06.6	16 54.9	−18 28.5
12	343 27.2	1 26.9	−9 08.5	285 08.3	+21 44.1	23 11.8	−16 06.4	31 57.1	−18 28.4
13	358 29.7	16 26.4	07.4	300 09.3	44.4	38 13.7	06.3	46 59.3	28.4
14	13 32.1	31 25.9	06.2	315 10.2	44.7	53 15.6	06.1	62 01.4	28.3
15	28 34.6	46 25.5	05.1	330 11.1	45.0	68 17.5	05.9	77 03.6	28.2
16	43 37.1	61 25.0	03.9	345 12.1	45.3	83 19.4	05.8	92 05.8	28.2
17	58 39.5	76 24.5	−9 02.7	0 13.0	+21 45.6	98 21.3	−16 05.6	107 08.0	−18 28.1
18	73 42.0	91 24.0	−9 01.6	15 13.9	+21 45.9	113 23.2	−16 05.4	122 10.2	−18 28.0
19	88 44.4	106 23.6	−9 00.4	30 14.9	46.2	128 25.1	05.3	137 12.4	28.0
20	103 46.9	121 23.1	−8 59.2	45 15.8	46.6	143 27.0	05.1	152 14.6	27.9
21	118 49.4	136 22.6	58.1	60 16.8	46.9	158 28.9	05.0	167 16.8	27.8
22	133 51.8	151 22.2	56.9	75 17.7	47.2	173 30.8	04.8	182 19.0	27.8
23	148 54.3	166 21.7	55.7	90 18.6	47.5	188 32.7	04.6	197 21.2	27.7
24	163 56.8	181 21.2	−8 54.6	105 19.6	+21 47.8	203 34.7	−16 04.5	212 23.4	−18 27.6
Dif	—	−5	+12	+9	+3	+19	+2	+22	+1

UT	SOL SD: 16′.1 PMG: 12h 11m.2				LUNA Edad: 22d.2 SD: 16′.1 PMG: 6h 13m PHE: 4h: 58′.9; 12h: 58′.7; 20h: 58′.6 Rº: 58m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	177	10.4	−5	39.9	270	24.9	−22	31.6	**60 N**	5 14	6 02	6 43	3 16	84	9 02	38
1	192	10.6		38.9	284	50.2 63		38.5 69	**58**	16	02	41	2 56	81	22	41
2	207	10.7		38.0	299	15.4 62		45.3 68	**56**	18	01	38	40	78	38	44
3	222	10.9		37.0	313	40.7 63		51.9 66	**54**	20	01	36	27	75	9 52	46
4	237	11.0		36.0	328	05.9 62	−22	58.3 64	**52**	22	01	34	15	74	10 05	47
5	252	11.1	−5	35.0	342	31.0 61	−23	04.7 64	**50**	5 23	6 00	6 33	2 04	73	10 16	48
6	267	11.3	−5	34.1	356	56.2 62	−23	10.8 61	**45**	5 26	6 00	6 29	1 42	70	10 38	51
7	282	11.4		33.1	11	21.3 61		16.9 61	**40**	27	5 59	26	25	67	10 57	52
8	297	11.6		32.1	25	46.3 60		22.7 58	**35**	28	58	23	1 10	66	11 12	54
9	312	11.7		31.2	40	11.4 61		28.4 57	**30**	29	56	20	0 57	64	25	55
10	327	11.9		30.2	54	36.4 60		34.0 56	**20**	28	54	16	35	62	11 48	56
11	342	12.0	−5	29.2	69	01.3 59	−23	39.4 54	**10 N**	5 26	5 51	6 12	0 16	61	12 08	58
12	357	12.2	−5	28.3	83	26.3 60	−23	44.7 53	**0**	5 23	5 47	6 08	** **	**	12 27	58
13	12	12.3		27.3	97	51.2 59		49.8 51	**10 S**	18	43	04	** **	**	12 45	60
14	27	12.5		26.3	112	16.1 59		54.7 49	**20**	11	37	6 00	** **	**	13 05	61
15	42	12.6		25.3	126	41.0 59	−23	59.5 48	**30**	5 02	30	5 54	23 54	57	28	63
16	57	12.8		24.4	141	05.9 59	−24	04.1 46	**35**	4 56	26	51	40	56	42	63
17	72	12.9	−5	23.4	155	30.7 58	−24	08.6 45	**40**	4 48	5 21	5 48	23 24	56	13 57	64
18	87	13.0	−5	22.4	169	55.5 58	−24	12.9 43	**45**	4 39	5 14	5 44	23 05	55	14 16	65
19	102	13.2		21.5	184	20.3 58		17.1 42	**50**	26	06	39	22 41	54	39	67
20	117	13.3		20.5	198	45.1 58		21.1 40	**52**	20	5 02	37	29	54	14 50	68
21	132	13.5		19.5	213	09.9 58		25.0 39	**54**	14	4 58	35	16	53	15 03	69
22	147	13.6		18.5	227	34.7 58		28.7 37	**56**	4 06	53	32	22 01	52	18	70
23	162	13.8		17.6	241	59.4 57		32.2 35	**58**	3 57	48	29	21 44	50	35	72
24	177	13.9	−5	16.6	256	24.2 58	−24	35.6 34	**60 S**	3 47	4 42	5 25	21 23	48	15 56	74

UT	ARIES PMG 13h 02m.1		VENUS Mag: −3.9 PMG: 11h 55m			MARTE Mag: +1.0 PMG: 16h 58m			JÚPITER Mag: −2.0 PMG: 10h 24m			SATURNO Mag: +0.7 PMG: 9h 49m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	163	56.8	181	21.2	−8 54.6	105	19.6	+21 47.8	203	34.7	−16 04.5	212	23.4	−18 27.6
1	178	59.2	196	20.8	53.4	120	20.5	48.1	218	36.6	04.3	227	25.6	27.6
2	194	01.7	211	20.3	52.2	135	21.4	48.4	233	38.5	04.1	242	27.8	27.5
3	209	04.2	226	19.9	51.1	150	22.4	48.7	248	40.4	04.0	257	30.0	27.5
4	224	06.6	241	19.4	49.9	165	23.3	49.0	263	42.3	03.8	272	32.2	27.4
5	239	09.1	256	18.9	−8 48.7	180	24.2	+21 49.3	278	44.2	−16 03.6	287	34.4	−18 27.3
6	254	11.6	271	18.5	−8 47.6	195	25.2	+21 49.6	293	46.1	−16 03.5	302	36.6	−18 27.3
7	269	14.0	286	18.0	46.4	210	26.1	49.9	308	48.0	03.3	317	38.8	27.2
8	284	16.5	301	17.5	45.2	225	27.0	50.2	323	49.9	03.1	332	41.0	27.1
9	299	18.9	316	17.1	44.1	240	28.0	50.5	338	51.8	03.0	347	43.2	27.1
10	314	21.4	331	16.6	42.9	255	28.9	50.8	353	53.7	02.8	2	45.5	27.0
11	329	23.9	346	16.1	−8 41.7	270	29.8	+21 51.1	8	55.6	−16 02.6	17	47.7	−18 26.9
12	344	26.3	1	15.7	−8 40.6	285	30.8	+21 51.5	23	57.6	−16 02.5	32	49.9	−18 26.9
13	359	28.8	16	15.2	39.4	300	31.7	51.8	38	59.5	02.3	47	52.1	26.8
14	14	31.3	31	14.8	38.2	315	32.6	52.1	54	01.4	02.1	62	54.3	26.7
15	29	33.7	46	14.3	37.0	330	33.5	52.4	69	03.3	02.0	77	56.5	26.7
16	44	36.2	61	13.8	35.9	345	34.5	52.7	84	05.2	01.8	92	58.7	26.6
17	59	38.7	76	13.4	−8 34.7	0	35.4	+21 53.0	99	07.1	−16 01.6	108	00.9	−18 26.6
18	74	41.1	91	12.9	−8 33.5	15	36.3	+21 53.3	114	09.0	−16 01.5	123	03.1	−18 26.5
19	89	43.6	106	12.5	32.4	30	37.3	53.6	129	10.9	01.3	138	05.3	26.4
20	104	46.1	121	12.0	31.2	45	38.2	53.9	144	12.8	01.1	153	07.5	26.4
21	119	48.5	136	11.5	30.0	60	39.1	54.2	159	14.7	01.0	168	09.7	26.3
22	134	51.0	151	11.1	28.8	75	40.1	54.5	174	16.6	00.8	183	11.9	26.2
23	149	53.4	166	10.6	27.7	90	41.0	54.8	189	18.6	00.6	198	14.1	26.2
24	164	55.9	181	10.2	−8 26.5	105	41.9	+21 55.1	204	20.5	−16 00.5	213	16.3	−18 26.1
Dif	—			−5	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 23^{d}.2		PHE	4^{h}: 58′.4									
	PMG: 12^{h} 10^{m}.9				SD: 15′.9			12^{h}: 58′.2									
					PMG: 7^{h} 11^{m}			20^{h}: 58′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	177	13.9	−5	16.6	256	24.2	−24	35.6		**60 N**	17 43	18 24	19 13	4 40	62	9 40	59
1	192	14.1		15.6	270	48.9 57		38.8	32	**58**	45	24	10	4 17	62	10 03	60
2	207	14.2		14.6	285	13.6 57		41.8	30	**56**	47	24	07	3 58	61	22	60
3	222	14.4		13.7	299	38.3 57		44.7	29	**54**	49	24	05	42	61	38	60
4	237	14.5		12.7	314	03.1 58		47.5	28	**52**	51	24	04	29	61	10 52	60
5	252	14.7	−5	11.7	328	27.8 57	−24	50.0	25	**50**	17 52	18 25	19 02	3 17	60	11 04	60
6	267	14.8	−5	10.8	342	52.5 57	−24	52.5	25	**45**	17 56	18 25	18 59	2 52	60	11 29	59
7	282	15.0		09.8	357	17.2 57		54.7	22	**40**	17 58	26	57	32	60	11 49	59
8	297	15.1		08.8	11	42.0 58		56.8	21	**35**	18 01	26	56	16	60	12 06	59
9	312	15.3		07.8	26	06.7 57	−24	58.8	20	**30**	03	27	55	2 01	60	20	59
10	327	15.4		06.9	40	31.4 57	−25	00.5	17	**20**	07	29	55	1 37	60	12 44	59
11	342	15.6	−5	05.9	54	56.2 58	−25	02.1	16	**10 N**	18 11	18 32	18 56	1 17	59	13 06	58
12	357	15.7	−5	04.9	69	20.9 57	−25	03.6	15	**0**	18 14	18 35	18 59	0 57	59	13 25	58
13	12	15.9		03.9	83	45.7 58		04.9	13	**10 S**	18	39	19 03	38	58	13 45	58
14	27	16.0		03.0	98	10.4 57		06.0	11	**20**	22	44	10	0 17	58	14 06	58
15	42	16.2		02.0	112	35.2 58		07.0	10	**30**	26	50	19	** **	**	31	56
16	57	16.3	−5	01.0	127	00.0 58		07.8	8	**35**	29	54	24	** **	**	14 45	56
17	72	16.5	−5	00.0	141	24.9 59	−25	08.5	7	**40**	18 32	18 59	19 32	** **	**	15 01	57
18	87	16.6	−4	59.1	155	49.7 58	−25	09.0	5	**45**	18 36	19 05	19 41	** **	**	15 21	56
19	102	16.8		58.1	170	14.6 59		09.4	4	**50**	40	13	52	23 35	64	46	55
20	117	16.9		57.1	184	39.4 58		09.5	1	**52**	42	16	19 58	23	65	15 58	54
21	132	17.1		56.1	199	04.3 59		09.6	1	**54**	44	20	20 04	23 09	66	16 12	53
22	147	17.2		55.2	213	29.3 60		09.4	2	**56**	47	25	11	22 53	67	28	52
23	162	17.4		54.2	227	54.2 59		09.1	3	**58**	49	30	20	34	69	16 47	51
24	177	17.5	−4	53.2	242	19.2 60	−25	08.7	4	**60 S**	18 52	19 35	20 29	22 11	70	17 10	50

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.0			Mag: −2.0			Mag: +0.7		
	12^{h} 58^{m}.1		PMG: 11^{h} 56^{m}			PMG: 16^{h} 56^{m}			PMG: 10^{h} 21^{m}			PMG: 9^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	164	55.9	181	10.2	−8 26.5	105	41.9	+21 55.1	204	20.5	−16 00.5	213	16.3	−18 26.1
1	179	58.4	196	09.7	25.3	120	42.9	55.4	219	22.4	00.3	228	18.5	26.0
2	195	00.8	211	09.3	24.1	135	43.8	55.7	234	24.3	−16 00.1	243	20.7	26.0
3	210	03.3	226	08.8	23.0	150	44.7	56.0	249	26.2	−16 00.0	258	22.9	25.9
4	225	05.8	241	08.3	21.8	165	45.6	56.3	264	28.1	−15 59.8	273	25.1	25.9
5	240	08.2	256	07.9	−8 20.6	180	46.6	+21 56.6	279	30.0	−15 59.6	288	27.3	−18 25.8
6	255	10.7	271	07.4	−8 19.4	195	47.5	+21 56.9	294	31.9	−15 59.5	303	29.5	−18 25.7
7	270	13.2	286	07.0	18.2	210	48.4	57.2	309	33.8	59.3	318	31.7	25.7
8	285	15.6	301	06.5	17.1	225	49.4	57.5	324	35.8	59.1	333	33.9	25.6
9	300	18.1	316	06.1	15.9	240	50.3	57.8	339	37.7	59.0	348	36.1	25.5
10	315	20.5	331	05.6	14.7	255	51.2	58.1	354	39.6	58.8	3	38.3	25.5
11	330	23.0	346	05.2	−8 13.5	270	52.1	+21 58.4	9	41.5	−15 58.6	18	40.5	−18 25.4
12	345	25.5	1	04.7	−8 12.3	285	53.1	+21 58.7	24	43.4	−15 58.5	33	42.7	−18 25.3
13	0	27.9	16	04.2	11.2	300	54.0	59.0	39	45.3	58.3	48	44.9	25.3
14	15	30.4	31	03.8	10.0	315	54.9	59.3	54	47.2	58.1	63	47.1	25.2
15	30	32.9	46	03.3	08.8	330	55.8	59.6	69	49.1	58.0	78	49.3	25.2
16	45	35.3	61	02.9	07.6	345	56.8	+21 59.9	84	51.0	57.8	93	51.5	25.1
17	60	37.8	76	02.4	−8 06.4	0	57.7	+22 00.2	99	53.0	−15 57.6	108	53.7	−18 25.0
18	75	40.3	91	02.0	−8 05.3	15	58.6	+22 00.5	114	54.9	−15 57.5	123	55.9	−18 25.0
19	90	42.7	106	01.5	04.1	30	59.5	00.8	129	56.8	57.3	138	58.1	24.9
20	105	45.2	121	01.1	02.9	46	00.5	01.1	144	58.7	57.1	154	00.3	24.8
21	120	47.7	136	00.6	01.7	61	01.4	01.4	160	00.6	57.0	169	02.5	24.8
22	135	50.1	151	00.2	−8 00.5	76	02.3	01.7	175	02.5	56.8	184	04.7	24.7
23	150	52.6	165	59.7	−7 59.3	91	03.2	02.0	190	04.4	56.6	199	06.9	24.6
24	165	55.0	180	59.3	−7 58.2	106	04.2	+22 02.3	205	06.3	−15 56.5	214	09.1	−18 24.6
Dif	—			−5	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 24ᵈ.2		PHE	4ʰ: 57′.9									
	PMG: 12ʰ 10ᵐ.7				SD: 15′.8			12ʰ: 57′.7									
					PMG: 8ʰ 10ᵐ			20ʰ: 57′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	17.5	−4	53.2	242	19.2	−25	08.7		**60 N**	5 08	5 56	6 37	5 42	38	10 39	80
1	192	17.7		52.2	256	44.2	60	08.1	6	**58**	11	56	35	5 19	41	11 03	76
2	207	17.9		51.3	271	09.3	61	07.3	8	**56**	13	56	33	4 59	44	22	73
3	222	18.0		50.3	285	34.4	61	06.4	9	**54**	15	56	31	43	46	38	71
4	237	18.2		49.3	299	59.5	61	05.3	11	**52**	17	56	30	30	46	11 52	69
5	252	18.3	−4	48.3	314	24.7	62	−25 04.1	12	**50**	5 19	5 56	6 28	4 17	48	12 04	68
6	267	18.5	−4	47.4	328	49.8	61	−25 02.7	14	**45**	5 22	5 56	6 25	3 52	50	12 28	67
7	282	18.6		46.4	343	15.1	63	−25 01.2	15	**40**	24	55	22	32	52	12 48	64
8	297	18.8		45.4	357	40.3	62	−24 59.5	17	**35**	26	55	20	16	52	13 05	62
9	312	18.9		44.4	12	05.7	64	57.7	18	**30**	26	54	18	3 01	54	19	61
10	327	19.1		43.5	26	31.0	63	55.7	20	**20**	27	52	14	2 37	55	13 43	60
11	342	19.2	−4	42.5	40	56.4	64	−24 53.5	22	**10 N**	5 25	5 50	6 11	2 16	56	14 04	58
12	357	19.4	−4	41.5	55	21.9	65	−24 51.2	23	**0**	5 23	5 47	6 07	1 56	57	14 23	56
13	12	19.5		40.5	69	47.4	65	48.8	24	**10 S**	18	43	04	36	58	14 43	54
14	27	19.7		39.6	84	12.9	65	46.2	26	**20**	12	38	6 00	1 15	59	15 04	52
15	42	19.9		38.6	98	38.5	66	43.4	28	**30**	5 03	32	5 56	0 51	60	27	51
16	57	20.0		37.6	113	04.2	67	40.6	28	**35**	4 58	28	53	36	61	41	49
17	72	20.2	−4	36.6	127	29.9	67	−24 37.5	31	**40**	4 51	5 23	5 50	0 20	62	15 58	47
18	87	20.3	−4	35.6	141	55.6	67	−24 34.3	32	**45**	4 42	5 17	5 47	0 00	63	16 17	45
19	102	20.5		34.7	156	21.4	68	31.0	33	**50**	30	10	43	** **	**	41	42
20	117	20.6		33.7	170	47.3	69	27.5	35	**52**	25	06	41	** **	**	16 52	41
21	132	20.8		32.7	185	13.2	69	23.9	36	**54**	18	5 02	39	** **	**	17 05	39
22	147	20.9		31.7	199	39.2	70	20.1	38	**56**	11	4 58	36	** **	**	20	37
23	162	21.1		30.8	214	05.3	71	16.2	39	**58**	4 03	53	34	23 43	80	17 38	34
24	177	21.2	−4	29.8	228	31.4	71	−24 12.1	41	**60 S**	3 54	4 47	5 31	23 21	85	18 00	29

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.0			Mag: −2.0			Mag: +0.7		
	12ʰ 54ᵐ.2		PMG: 11ʰ 56ᵐ			PMG: 16ʰ 55ᵐ			PMG: 10ʰ 18ᵐ			PMG: 9ʰ 42ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	165	55.0	180	59.3	−7 58.2	106	04.2	+22 02.3	205	06.3	−15 56.5	214	09.1	−18 24.6
1	180	57.5	195	58.8	57.0	121	05.1	02.6	220	08.2	56.3	229	11.4	24.5
2	196	00.0	210	58.4	55.8	136	06.0	02.9	235	10.2	56.1	244	13.6	24.5
3	211	02.4	225	57.9	54.6	151	06.9	03.2	250	12.1	56.0	259	15.8	24.4
4	226	04.9	240	57.5	53.4	166	07.9	03.5	265	14.0	55.8	274	18.0	24.3
5	241	07.4	255	57.0	−7 52.2	181	08.8	+22 03.8	280	15.9	−15 55.6	289	20.2	−18 24.3
6	256	09.8	270	56.6	−7 51.0	196	09.7	+22 04.0	295	17.8	−15 55.5	304	22.4	−18 24.2
7	271	12.3	285	56.1	49.9	211	10.6	04.3	310	19.7	55.3	319	24.6	24.1
8	286	14.8	300	55.7	48.7	226	11.6	04.6	325	21.6	55.1	334	26.8	24.1
9	301	17.2	315	55.2	47.5	241	12.5	04.9	340	23.6	55.0	349	29.0	24.0
10	316	19.7	330	54.8	46.3	256	13.4	05.2	355	25.5	54.8	4	31.2	23.9
11	331	22.2	345	54.3	−7 45.1	271	14.3	+22 05.5	10	27.4	−15 54.6	19	33.4	−18 23.9
12	346	24.6	0	53.9	−7 43.9	286	15.2	+22 05.8	25	29.3	−15 54.5	34	35.6	−18 23.8
13	1	27.1	15	53.5	42.7	301	16.2	06.1	40	31.2	54.3	49	37.8	23.8
14	16	29.5	30	53.0	41.5	316	17.1	06.4	55	33.1	54.1	64	40.0	23.7
15	31	32.0	45	52.6	40.3	331	18.0	06.7	70	35.0	54.0	79	42.2	23.6
16	46	34.5	60	52.1	39.2	346	18.9	07.0	85	36.9	53.8	94	44.4	23.6
17	61	36.9	75	51.7	−7 38.0	1	19.9	+22 07.3	100	38.9	−15 53.6	109	46.6	−18 23.5
18	76	39.4	90	51.2	−7 36.8	16	20.8	+22 07.6	115	40.8	−15 53.5	124	48.8	−18 23.4
19	91	41.9	105	50.8	35.6	31	21.7	07.9	130	42.7	53.3	139	51.0	23.4
20	106	44.3	120	50.3	34.4	46	22.6	08.2	145	44.6	53.1	154	53.2	23.3
21	121	46.8	135	49.9	33.2	61	23.5	08.5	160	46.5	53.0	169	55.5	23.3
22	136	49.3	150	49.5	32.0	76	24.5	08.7	175	48.4	52.8	184	57.7	23.2
23	151	51.7	165	49.0	30.8	91	25.4	09.0	190	50.3	52.6	199	59.9	23.1
24	166	54.2	180	48.6	−7 29.6	106	26.3	+22 09.3	205	52.3	−15 52.5	215	02.1	−18 23.1
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 25ᵈ.2		PHE	4ʰ: 57′.4								
	PMG: 12ʰ 10ᵐ.5		SD: 15′.7			12ʰ: 57′.2								
			PMG: 9ʰ 06ᵐ			20ʰ: 57′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	177 21.2	−4 29.8	228 31.4	71	−24 12.1	42	**60 N**	17 48	18 29	19 18	6 20	22	11 59	89
1	192 21.4	28.8	242 57.5	73	07.9	43	**58**	50	29	15	6 00	26	12 19	84
2	207 21.6	27.8	257 23.8	73	−24 03.6	45	**56**	51	28	12	5 43	30	35	81
3	222 21.7	26.8	271 50.1	73	−23 59.1	46	**54**	53	28	09	29	32	12 49	78
4	237 21.9	25.9	286 16.4	73	54.5	47	**52**	54	28	07	16	35	13 01	76
5	252 22.0	−4 24.9	300 42.9	75	−23 49.8	47	**50**	17 56	18 28	19 05	5 05	37	13 12	73
6	267 22.2	−4 23.9	315 09.4	75	−23 44.9	49	**45**	17 58	18 28	19 02	4 42	40	13 35	69
7	282 22.3	22.9	329 35.9	75	39.9	50	**40**	18 01	28	18 59	24	43	13 52	67
8	297 22.5	22.0	344 02.6	77	34.7	52	**35**	03	28	57	4 08	45	14 07	64
9	312 22.7	21.0	358 29.3	77	29.4	53	**30**	05	28	56	3 55	46	20	62
10	327 22.8	20.0	12 56.1	78	24.0	54	**20**	08	30	55	32	49	14 43	58
11	342 23.0	−4 19.0	27 22.9	78	−23 18.4	56	**10 N**	18 11	18 32	18 56	3 12	52	15 02	55
12	357 23.1	−4 18.0	41 49.9	80	−23 12.8	56	**0**	18 14	18 34	18 59	2 53	54	15 19	53
13	12 23.3	17.1	56 16.9	80	06.9	59	**10 S**	17	38	19 02	34	57	37	50
14	27 23.4	16.1	70 43.9	80	−23 01.0	59	**20**	20	42	08	2 14	59	15 56	47
15	42 23.6	15.1	85 11.1	82	−22 54.9	61	**30**	24	48	16	1 51	62	16 18	43
16	57 23.8	14.1	99 38.3	82	48.7	62	**35**	26	52	22	37	64	30	42
17	72 23.9	−4 13.1	114 05.6	83	−22 42.4	63	**40**	18 29	18 56	19 28	1 22	65	16 45	39
18	87 24.1	−4 12.2	128 33.0	84	−22 36.0	64	**45**	18 32	19 02	19 37	1 03	68	17 02	36
19	102 24.2	11.2	143 00.5	85	29.4	66	**50**	36	08	48	0 39	71	23	32
20	117 24.4	10.2	157 28.0	85	22.7	67	**52**	37	12	53	28	73	33	30
21	132 24.6	09.2	171 55.6	86	15.9	68	**54**	39	15	19 59	15	75	44	28
22	147 24.7	08.2	186 23.3	87	09.0	69	**56**	41	19	20 05	0 00	78	17 57	25
23	162 24.9	07.3	200 51.1	88	−22 01.9	71	**58**	44	24	13	** **	**	18 12	21
24	177 25.0	−4 06.3	215 18.9	88	−21 54.8	71	**60 S**	18 46	19 29	20 22	** **	**	18 29	17

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.0		Mag: −2.0		Mag: +0.7	
	12ʰ 50ᵐ.3	PMG: 11ʰ 57ᵐ		PMG: 16ʰ 53ᵐ		PMG: 10ʰ 15ᵐ		PMG: 9ʰ 38ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	166 54.2	180 48.6	−7 29.6	106 26.3	+22 09.3	205 52.3	−15 52.5	215 02.1	−18 23.1
1	181 56.7	195 48.1	28.4	121 27.2	09.6	220 54.2	52.3	230 04.3	23.0
2	196 59.1	210 47.7	27.2	136 28.1	09.9	235 56.1	52.2	245 06.5	22.9
3	212 01.6	225 47.2	26.0	151 29.1	10.2	250 58.0	52.0	260 08.7	22.9
4	227 04.0	240 46.8	24.8	166 30.0	10.5	265 59.9	51.8	275 10.9	22.8
5	242 06.5	255 46.4	−7 23.7	181 30.9	+22 10.8	281 01.8	−15 51.7	290 13.1	−18 22.7
6	257 09.0	270 45.9	−7 22.5	196 31.8	+22 11.1	296 03.8	−15 51.5	305 15.3	−18 22.7
7	272 11.4	285 45.5	21.3	211 32.7	11.4	311 05.7	51.3	320 17.5	22.6
8	287 13.9	300 45.0	20.1	226 33.6	11.7	326 07.6	51.2	335 19.7	22.6
9	302 16.4	315 44.6	18.9	241 34.6	11.9	341 09.5	51.0	350 21.9	22.5
10	317 18.8	330 44.2	17.7	256 35.5	12.2	356 11.4	50.8	5 24.1	22.4
11	332 21.3	345 43.7	−7 16.5	271 36.4	+22 12.5	11 13.3	−15 50.7	20 26.3	−18 22.4
12	347 23.8	0 43.3	−7 15.3	286 37.3	+22 12.8	26 15.2	−15 50.5	35 28.6	−18 22.3
13	2 26.2	15 42.8	14.1	301 38.2	13.1	41 17.2	50.3	50 30.8	22.2
14	17 28.7	30 42.4	12.9	316 39.2	13.4	56 19.1	50.2	65 33.0	22.2
15	32 31.1	45 42.0	11.7	331 40.1	13.7	71 21.0	50.0	80 35.2	22.1
16	47 33.6	60 41.5	10.5	346 41.0	14.0	86 22.9	49.8	95 37.4	22.1
17	62 36.1	75 41.1	−7 09.3	1 41.9	+22 14.3	101 24.8	−15 49.7	110 39.6	−18 22.0
18	77 38.5	90 40.7	−7 08.1	16 42.8	+22 14.5	116 26.7	−15 49.5	125 41.8	−18 21.9
19	92 41.0	105 40.2	06.9	31 43.7	14.8	131 28.7	49.3	140 44.0	21.9
20	107 43.5	120 39.8	05.7	46 44.7	15.1	146 30.6	49.2	155 46.2	21.8
21	122 45.9	135 39.3	04.5	61 45.6	15.4	161 32.5	49.0	170 48.4	21.7
22	137 48.4	150 38.9	03.3	76 46.5	15.7	176 34.4	48.8	185 50.6	21.7
23	152 50.9	165 38.5	02.1	91 47.4	16.0	191 36.3	48.7	200 52.8	21.6
24	167 53.3	180 38.0	−7 00.9	106 48.3	+22 16.3	206 38.2	−15 48.5	215 55.0	−18 21.6
Dif	—	−4	+12	+9	+3	+19	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 26^{d}.2		PHE	4^{h}: 56′.9									
	PMG: 12^{h} 10^{m}.2				SD: 15′.5			12^{h}: 56′.7									
					PMG: 10^{h} 00^{m}			20^{h}: 56′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	177	25.0	−4	06.3	215	18.9	−21	54.8		**60 N**	5 02	5 50	6 31	6 42	13	13 28	90
1	192	25.2		05.3	229	46.9 90		47.5	73	**58**	05	51	30	26	17	43	86
2	207	25.4		04.3	244	14.9 90		40.1	74	**56**	08	51	28	13	20	13 56	82
3	222	25.5		03.3	258	43.0 91		32.6	75	**54**	11	51	27	6 01	24	14 07	79
4	237	25.7		02.4	273	11.2 92		24.9	77	**52**	13	52	25	5 51	26	17	76
5	252	25.8	−4	01.4	287	39.4 92	−21	17.2	77	**50**	5 15	5 52	6 24	5 42	28	14 25	75
6	267	26.0	−4	00.4	302	07.8 94	−21	09.4	78	**45**	5 18	5 52	6 22	5 22	33	14 44	69
7	282	26.2	−3	59.4	316	36.2 94	−21	01.4	80	**40**	21	52	19	5 07	35	14 59	66
8	297	26.3		58.4	331	04.7 95	−20	53.4	80	**35**	23	52	17	4 53	38	15 11	63
9	312	26.5		57.5	345	33.3 96		45.2	82	**30**	24	52	16	41	41	22	61
10	327	26.6		56.5	0	02.0 97		36.9	83	**20**	25	51	13	21	45	41	56
11	342	26.8	−3	55.5	14	30.8 98	−20	28.5	84	**10 N**	5 24	5 49	6 10	4 04	48	15 57	53
12	357	27.0	−3	54.5	28	59.6 98	−20	20.1	84	**0**	5 22	5 46	6 07	3 47	51	16 12	49
13	12	27.1		53.5	43	28.5 99		11.5	86	**10 S**	18	43	04	31	54	27	46
14	27	27.3		52.6	57	57.6 101	−20	02.8	87	**20**	13	39	6 01	3 13	57	16 43	42
15	42	27.4		51.6	72	26.7 101	−19	54.0	88	**30**	05	33	5 57	2 53	61	17 01	38
16	57	27.6		50.6	86	55.8 101		45.1	89	**35**	5 00	29	55	41	63	12	35
17	72	27.8	−3	49.6	101	25.1 103	−19	36.2	89	**40**	4 53	5 25	5 52	2 27	66	17 24	33
18	87	27.9	−3	48.6	115	54.4 103	−19	27.1	91	**45**	4 45	5 20	5 49	2 11	69	17 38	29
19	102	28.1		47.6	130	23.9 105		17.9	92	**50**	34	13	46	1 50	74	17 55	25
20	117	28.3		46.7	144	53.4 105	−19	08.7	92	**52**	29	10	44	41	76	18 03	23
21	132	28.4		45.7	159	23.0 106	−18	59.3	94	**54**	23	06	42	30	78	12	20
22	147	28.6		44.7	173	52.7 107		49.9	94	**56**	16	5 02	40	18	81	22	18
23	162	28.7		43.7	188	22.4 107		40.3	96	**58**	09	4 58	38	1 03	85	33	15
24	177	28.9	−3	42.7	202	52.3 109	−18	30.7	96	**60 S**	4 00	4 53	5 36	0 46	90	18 46	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.0			Mag: −2.0			Mag: +0.7		
	12^{h} 46^{m}.3		PMG: 11^{h} 58^{m}			PMG: 16^{h} 52^{m}			PMG: 10^{h} 12^{m}			PMG: 9^{h} 35^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	167	53.3	180	38.0	−7 00.9	106	48.3	+22 16.3	206	38.2	−15 48.5	215	55.0	−18 21.6
1	182	55.8	195	37.6	−6 59.7	121	49.2	16.5	221	40.2	48.3	230	57.3	21.5
2	197	58.3	210	37.2	58.5	136	50.1	16.8	236	42.1	48.2	245	59.5	21.4
3	213	00.7	225	36.7	57.3	151	51.1	17.1	251	44.0	48.0	261	01.7	21.4
4	228	03.2	240	36.3	56.1	166	52.0	17.4	266	45.9	47.8	276	03.9	21.3
5	243	05.6	255	35.9	−6 54.9	181	52.9	+22 17.7	281	47.8	−15 47.7	291	06.1	−18 21.2
6	258	08.1	270	35.4	−6 53.7	196	53.8	+22 18.0	296	49.8	−15 47.5	306	08.3	−18 21.2
7	273	10.6	285	35.0	52.5	211	54.7	18.3	311	51.7	47.3	321	10.5	21.1
8	288	13.0	300	34.6	51.3	226	55.6	18.5	326	53.6	47.2	336	12.7	21.1
9	303	15.5	315	34.1	50.1	241	56.5	18.8	341	55.5	47.0	351	14.9	21.0
10	318	18.0	330	33.7	48.9	256	57.5	19.1	356	57.4	46.8	6	17.1	20.9
11	333	20.4	345	33.3	−6 47.7	271	58.4	+22 19.4	11	59.3	−15 46.7	21	19.3	−18 20.9
12	348	22.9	0	32.8	−6 46.5	286	59.3	+22 19.7	27	01.3	−15 46.5	36	21.6	−18 20.8
13	3	25.4	15	32.4	45.2	302	00.2	20.0	42	03.2	46.3	51	23.8	20.7
14	18	27.8	30	32.0	44.0	317	01.1	20.2	57	05.1	46.2	66	26.0	20.7
15	33	30.3	45	31.5	42.8	332	02.0	20.5	72	07.0	46.0	81	28.2	20.6
16	48	32.8	60	31.1	41.6	347	02.9	20.8	87	08.9	45.9	96	30.4	20.6
17	63	35.2	75	30.7	−6 40.4	2	03.8	+22 21.1	102	10.9	−15 45.7	111	32.6	−18 20.5
18	78	37.7	90	30.2	−6 39.2	17	04.7	+22 21.4	117	12.8	−15 45.5	126	34.8	−18 20.4
19	93	40.1	105	29.8	38.0	32	05.7	21.7	132	14.7	45.4	141	37.0	20.4
20	108	42.6	120	29.4	36.8	47	06.6	21.9	147	16.6	45.2	156	39.2	20.3
21	123	45.1	135	28.9	35.6	62	07.5	22.2	162	18.5	45.0	171	41.4	20.2
22	138	47.5	150	28.5	34.4	77	08.4	22.5	177	20.5	44.9	186	43.7	20.2
23	153	50.0	165	28.1	33.2	92	09.3	22.8	192	22.4	44.7	201	45.9	20.1
24	168	52.5	180	27.7	−6 32.0	107	10.2	+22 23.1	207	24.3	−15 44.5	216	48.1	−18 20.1
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 09m.9				LUNA Edad: 27d.2 SD: 15′.4 PMG: 10h 50m PHE 4h: 56′.4; 12h: 56′.2; 20h: 56′.1 Rº: 47m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	28.9	−3	42.7	202	52.3	−18	30.7	**60 N**	17 53	18 34	19 23	6 55	8	14 58	88
1	192	29.1		41.8	217	22.2 109		21.0 97	**58**	54	33	19	43	12	15 09	83
2	207	29.2		40.8	231	52.2 110		11.2 98	**56**	56	33	16	33	16	18	80
3	222	29.4		39.8	246	22.3 111	−18	01.3 99	**54**	57	32	13	25	17	26	77
4	237	29.6		38.8	260	52.5 112	−17	51.4 99	**52**	58	31	11	17	20	33	75
5	252	29.7	−3	37.8	275	22.7 112	−17	41.3 101	**50**	17 59	18 31	19 09	6 10	22	15 40	72
6	267	29.9	−3	36.8	289	53.1 114	−17	31.2 101	**45**	18 01	18 30	19 04	5 55	26	15 53	68
7	282	30.0		35.9	304	23.5 114		21.0 102	**40**	03	30	19 01	42	30	16 05	64
8	297	30.2		34.9	318	54.0 115		10.7 103	**35**	04	30	18 59	31	34	14	62
9	312	30.4		33.9	333	24.6 116	−17	00.4 103	**30**	06	30	57	22	36	23	58
10	327	30.5		32.9	347	55.2 116	−16	49.9 105	**20**	08	30	56	5 06	40	37	54
11	342	30.7	−3	31.9	2	26.0 118	−16	39.4 105	**10 N**	18 11	18 32	18 56	4 52	44	16 50	50
12	357	30.9	−3	30.9	16	56.8 118	−16	28.8 106	**0**	18 13	18 34	18 58	4 38	48	17 01	46
13	12	31.0		30.0	31	27.7 119		18.2 106	**10 S**	16	37	19 01	25	51	13	42
14	27	31.2		29.0	45	58.7 120	−16	07.4 108	**20**	18	40	06	4 10	55	25	39
15	42	31.4		28.0	60	29.7 120	−15	56.6 108	**30**	22	46	14	3 54	59	39	34
16	57	31.5		27.0	75	00.9 122		45.8 108	**35**	24	49	19	44	62	47	32
17	72	31.7	−3	26.0	89	32.1 122	−15	34.8 110	**40**	18 26	18 53	19 25	3 33	65	17 57	28
18	87	31.9	−3	25.0	104	03.3 122	−15	23.8 110	**45**	18 28	18 58	19 33	3 20	69	18 07	25
19	102	32.0		24.1	118	34.7 124		12.8 110	**50**	31	19 04	43	3 04	74	20	20
20	117	32.2		23.1	133	06.1 124	−15	01.6 112	**52**	33	07	48	2 57	75	26	18
21	132	32.3		22.1	147	37.6 125	−14	50.5 111	**54**	34	10	53	48	79	32	16
22	147	32.5		21.1	162	09.2 126		39.2 113	**56**	36	14	19 59	39	81	40	13
23	162	32.7		20.1	176	40.9 127		27.9 113	**58**	38	18	20 07	28	85	48	10
24	177	32.8	−3	19.1	191	12.6 127	−14	16.5 114	**60 S**	18 40	19 23	20 15	2 16	88	18 57	7

UT	ARIES PMG 12h 42m.4		VENUS Mag: −3.9 PMG: 11h 58m			MARTE Mag: +1.1 PMG: 16h 50m			JÚPITER Mag: −2.0 PMG: 10h 09m			SATURNO Mag: +0.7 PMG: 9h 31m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	168	52.5	180	27.7	−6 32.0	107	10.2	+22 23.1	207	24.3	−15 44.5	216	48.1	−18 20.1
1	183	54.9	195	27.2	30.8	122	11.1	23.3	222	26.2	44.4	231	50.3	20.0
2	198	57.4	210	26.8	29.6	137	12.0	23.6	237	28.1	44.2	246	52.5	19.9
3	213	59.9	225	26.4	28.3	152	12.9	23.9	252	30.1	44.0	261	54.7	19.9
4	229	02.3	240	25.9	27.1	167	13.9	24.2	267	32.0	43.9	276	56.9	19.8
5	244	04.8	255	25.5	−6 25.9	182	14.8	+22 24.5	282	33.9	−15 43.7	291	59.1	−18 19.7
6	259	07.2	270	25.1	−6 24.7	197	15.7	+22 24.7	297	35.8	−15 43.5	307	01.3	−18 19.7
7	274	09.7	285	24.7	23.5	212	16.6	25.0	312	37.7	43.4	322	03.5	19.6
8	289	12.2	300	24.2	22.3	227	17.5	25.3	327	39.7	43.2	337	05.8	19.6
9	304	14.6	315	23.8	21.1	242	18.4	25.6	342	41.6	43.0	352	08.0	19.5
10	319	17.1	330	23.4	19.9	257	19.3	25.9	357	43.5	42.9	7	10.2	19.4
11	334	19.6	345	23.0	−6 18.7	272	20.2	+22 26.1	12	45.4	−15 42.7	22	12.4	−18 19.4
12	349	22.0	0	22.5	−6 17.4	287	21.1	+22 26.4	27	47.3	−15 42.5	37	14.6	−18 19.3
13	4	24.5	15	22.1	16.2	302	22.0	26.7	42	49.3	42.4	52	16.8	19.3
14	19	27.0	30	21.7	15.0	317	22.9	27.0	57	51.2	42.2	67	19.0	19.2
15	34	29.4	45	21.3	13.8	332	23.8	27.2	72	53.1	42.0	82	21.2	19.1
16	49	31.9	60	20.8	12.6	347	24.7	27.5	87	55.0	41.9	97	23.5	19.1
17	64	34.4	75	20.4	−6 11.4	2	25.7	+22 27.8	102	56.9	−15 41.7	112	25.7	−18 19.0
18	79	36.8	90	20.0	−6 10.2	17	26.6	+22 28.1	117	58.9	−15 41.5	127	27.9	−18 18.9
19	94	39.3	105	19.6	08.9	32	27.5	28.4	133	00.8	41.4	142	30.1	18.9
20	109	41.7	120	19.1	07.7	47	28.4	28.6	148	02.7	41.2	157	32.3	18.8
21	124	44.2	135	18.7	06.5	62	29.3	28.9	163	04.6	41.1	172	34.5	18.8
22	139	46.7	150	18.3	05.3	77	30.2	29.2	178	06.6	40.9	187	36.7	18.7
23	154	49.1	165	17.9	04.1	92	31.1	29.5	193	08.5	40.7	202	38.9	18.6
24	169	51.6	180	17.4	−6 02.9	107	32.0	+22 29.7	208	10.4	−15 40.6	217	41.2	−18 18.6
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 28ᵈ.2		PHE	4ʰ: 55′.9								
	PMG: 12ʰ 09ᵐ.7				SD: 15′.3			12ʰ: 55′.8								
					PMG: 11ʰ 37ᵐ			20ʰ: 55′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	32.8	−3	19.1	191	12.6	−14	16.5	**60 N**	4 55	5 44	6 25	7 03	6	16 26	84
1	192	33.0		18.2	205	44.4 128	−14	05.1 114	**58**	4 59	45	24	6 55	9	32	81
2	207	33.2		17.2	220	16.3 129	−13	53.6 115	**56**	5 03	46	23	49	11	38	78
3	222	33.3		16.2	234	48.2 129		42.0 116	**54**	06	47	22	42	15	43	75
4	237	33.5		15.2	249	20.2 130		30.4 116	**52**	08	47	21	37	17	48	73
5	252	33.7	−3	14.2	263	52.3 131	−13	18.8 116	**50**	5 10	5 48	6 20	6 32	19	16 52	71
6	267	33.8	−3	13.2	278	24.5 132	−13	07.1 117	**45**	5 15	5 49	6 18	6 21	23	17 01	67
7	282	34.0		12.2	292	56.7 132	−12	55.3 118	**40**	18	49	16	12	27	09	62
8	297	34.2		11.3	307	29.0 133		43.5 118	**35**	20	49	15	6 05	29	16	59
9	312	34.3		10.3	322	01.3 133		31.6 119	**30**	22	49	13	5 58	32	21	57
10	327	34.5		09.3	336	33.7 134		19.7 119	**20**	23	49	11	46	37	31	52
11	342	34.7	−3	08.3	351	06.2 135	−12	07.8 119	**10 N**	5 23	5 48	6 09	5 36	40	17 40	47
12	357	34.8	−3	07.3	5	38.8 136	−11	55.8 120	**0**	5 22	5 46	6 06	5 26	44	17 47	44
13	12	35.0		06.3	20	11.4 136		43.7 121	**10 S**	19	43	04	16	48	17 55	40
14	27	35.2		05.4	34	44.1 137		31.6 121	**20**	14	39	6 01	5 05	53	18 04	35
15	42	35.3		04.4	49	16.8 137		19.5 121	**30**	06	34	5 58	4 53	58	13	31
16	57	35.5		03.4	63	49.6 138	−11	07.3 122	**35**	5 01	31	57	46	60	19	28
17	72	35.7	−3	02.4	78	22.5 139	−10	55.1 122	**40**	4 55	5 27	5 55	4 38	64	18 25	25
18	87	35.8	−3	01.4	92	55.4 139	−10	42.8 123	**45**	4 48	5 23	5 52	4 29	67	18 32	21
19	102	36.0	−3	00.4	107	28.4 140		30.5 123	**50**	38	17	49	18	71	40	18
20	117	36.2	−2	59.4	122	01.4 140		18.2 123	**52**	33	14	48	12	74	44	16
21	132	36.4		58.5	136	34.5 141	−10	05.8 124	**54**	27	10	46	07	76	48	14
22	147	36.5		57.5	151	07.7 142	−9	53.4 124	**56**	21	07	45	4 00	79	53	11
23	162	36.7		56.5	165	40.9 142		41.0 124	**58**	14	5 03	43	3 53	82	18 58	9
24	177	36.9	−2	55.5	180	14.2 143	−9	28.5 125	**60 S**	4 06	4 58	5 41	3 44	86	19 04	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12ʰ 38ᵐ.5		PMG: 11ʰ 59ᵐ			PMG: 16ʰ 49ᵐ			PMG: 10ʰ 06ᵐ			PMG: 9ʰ 28ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	169	51.6	180	17.4	−6 02.9	107	32.0	+22 29.7	208	10.4	−15 40.6	217	41.2	−18 18.6
1	184	54.1	195	17.0	01.7	122	32.9	30.0	223	12.3	40.4	232	43.4	18.5
2	199	56.5	210	16.6	−6 00.4	137	33.8	30.3	238	14.2	40.2	247	45.6	18.5
3	214	59.0	225	16.2	−5 59.2	152	34.7	30.6	253	16.2	40.1	262	47.8	18.4
4	230	01.5	240	15.8	58.0	167	35.6	30.8	268	18.1	39.9	277	50.0	18.3
5	245	03.9	255	15.3	−5 56.8	182	36.5	+22 31.1	283	20.0	−15 39.7	292	52.2	−18 18.3
6	260	06.4	270	14.9	−5 55.6	197	37.4	+22 31.4	298	21.9	−15 39.6	307	54.4	−18 18.2
7	275	08.9	285	14.5	54.4	212	38.3	31.7	313	23.9	39.4	322	56.6	18.1
8	290	11.3	300	14.1	53.1	227	39.2	31.9	328	25.8	39.2	337	58.9	18.1
9	305	13.8	315	13.7	51.9	242	40.1	32.2	343	27.7	39.1	353	01.1	18.0
10	320	16.2	330	13.2	50.7	257	41.0	32.5	358	29.6	38.9	8	03.3	18.0
11	335	18.7	345	12.8	−5 49.5	272	41.9	+22 32.7	13	31.5	−15 38.7	23	05.5	−18 17.9
12	350	21.2	0	12.4	−5 48.3	287	42.9	+22 33.0	28	33.5	−15 38.6	38	07.7	−18 17.8
13	5	23.6	15	12.0	47.0	302	43.8	33.3	43	35.4	38.4	53	09.9	17.8
14	20	26.1	30	11.6	45.8	317	44.7	33.6	58	37.3	38.2	68	12.1	17.7
15	35	28.6	45	11.1	44.6	332	45.6	33.8	73	39.2	38.1	83	14.4	17.7
16	50	31.0	60	10.7	43.4	347	46.5	34.1	88	41.2	37.9	98	16.6	17.6
17	65	33.5	75	10.3	−5 42.2	2	47.4	+22 34.4	103	43.1	−15 37.7	113	18.8	−18 17.5
18	80	36.0	90	09.9	−5 40.9	17	48.3	+22 34.7	118	45.0	−15 37.6	128	21.0	−18 17.5
19	95	38.4	105	09.5	39.7	32	49.2	34.9	133	46.9	37.4	143	23.2	17.4
20	110	40.9	120	09.0	38.5	47	50.1	35.2	148	48.9	37.3	158	25.4	17.3
21	125	43.3	135	08.6	37.3	62	51.0	35.5	163	50.8	37.1	173	27.6	17.3
22	140	45.8	150	08.2	36.1	77	51.9	35.7	178	52.7	36.9	188	29.9	17.2
23	155	48.3	165	07.8	34.8	92	52.8	36.0	193	54.6	36.8	203	32.1	17.2
24	170	50.7	180	07.4	−5 33.6	107	53.7	+22 36.3	208	56.6	−15 36.6	218	34.3	−18 17.1
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 29^{d}.2		PHE	4^{h}: 55′.5								
	PMG: 12^{h} 09^{m}.4				SD: 15′.1			12^{h}: 55′.3								
					PMG: 12^{h} 21^{m}			20^{h}: 55′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	177	36.9	−2	55.5	180	14.2	−9	28.5	**60 N**	17 58	18 39	19 28	7 09	4	17 50	81
1	192	37.0		54.5	194	47.5 143		16.0 125	**58**	17 59	38	24	04	8	53	78
2	207	37.2		53.5	209	20.9 144	−9	03.5 125	**56**	18 00	37	20	7 00	10	56	75
3	222	37.4		52.5	223	54.3 144	−8	50.9 126	**54**	01	36	17	6 57	12	17 58	74
4	237	37.5		51.6	238	27.8 145		38.3 126	**52**	01	35	14	54	14	18 01	71
5	252	37.7	−2	50.6	253	01.3 145	−8	25.7 126	**50**	18 02	18 34	19 12	6 51	16	18 03	69
6	267	37.9	−2	49.6	267	34.9 146	−8	13.0 127	**45**	18 04	18 33	19 07	6 44	21	18 08	64
7	282	38.0		48.6	282	08.5 146	−8	00.3 127	**40**	05	32	03	39	24	11	61
8	297	38.2		47.6	296	42.2 147	−7	47.6 127	**35**	06	31	19 01	34	27	15	57
9	312	38.4		46.6	311	16.0 148		34.9 127	**30**	07	31	18 59	30	30	18	54
10	327	38.6		45.6	325	49.7 147		22.2 127	**20**	09	31	57	23	34	23	50
11	342	38.7	−2	44.7	340	23.6 149	−7	09.4 128	**10 N**	18 11	18 32	18 56	6 16	39	18 27	46
12	357	38.9	−2	43.7	354	57.4 148	−6	56.6 128	**0**	18 13	18 33	18 57	6 10	43	18 31	42
13	12	39.1		42.7	9	31.4 150		43.8 128	**10 S**	15	36	19 00	6 04	47	35	38
14	27	39.2		41.7	24	05.3 149		30.9 129	**20**	17	39	04	5 58	51	39	34
15	42	39.4		40.7	38	39.3 150		18.1 128	**30**	19	43	11	51	55	44	29
16	57	39.6		39.7	53	13.4 151	−6	05.2 129	**35**	21	46	16	46	59	47	26
17	72	39.7	−2	38.7	67	47.5 151	−5	52.3 129	**40**	18 23	18 50	19 22	5 42	61	18 50	23
18	87	39.9	−2	37.8	82	21.6 151	−5	39.4 129	**45**	18 25	18 54	19 29	5 36	65	18 53	21
19	102	40.1		36.8	96	55.7 151		26.5 129	**50**	27	18 59	38	29	70	18 58	16
20	117	40.3		35.8	111	30.0 153		13.6 129	**52**	28	19 02	43	26	72	19 00	14
21	132	40.4		34.8	126	04.2 152	−5	00.6 130	**54**	29	05	48	23	74	02	12
22	147	40.6		33.8	140	38.5 153	−4	47.7 129	**56**	31	08	19 54	19	76	04	10
23	162	40.8		32.8	155	12.8 153		34.7 130	**58**	32	12	20 00	15	79	07	7
24	177	40.9	−2	31.8	169	47.1 153	−4	21.7 130	**60 S**	18 34	19 16	20 08	5 10	82	19 09	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12^{h} 34^{m}.6		PMG: 12^{h} 00^{m}			PMG: 16^{h} 47^{m}			PMG: 10^{h} 03^{m}			PMG: 9^{h} 24^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	170	50.7	180	07.4	−5 33.6	107	53.7	+22 36.3	208	56.6	−15 36.6	218	34.3	−18 17.1
1	185	53.2	195	07.0	32.4	122	54.6	36.5	223	58.5	36.4	233	36.5	17.0
2	200	55.7	210	06.5	31.2	137	55.5	36.8	239	00.4	36.3	248	38.7	17.0
3	215	58.1	225	06.1	29.9	152	56.4	37.1	254	02.3	36.1	263	40.9	16.9
4	231	00.6	240	05.7	28.7	167	57.3	37.3	269	04.3	35.9	278	43.2	16.9
5	246	03.1	255	05.3	−5 27.5	182	58.2	+22 37.6	284	06.2	−15 35.8	293	45.4	−18 16.8
6	261	05.5	270	04.9	−5 26.3	197	59.1	+22 37.9	299	08.1	−15 35.6	308	47.6	−18 16.7
7	276	08.0	285	04.5	25.1	213	00.0	38.2	314	10.0	35.4	323	49.8	16.7
8	291	10.5	300	04.1	23.8	228	00.9	38.4	329	12.0	35.3	338	52.0	16.6
9	306	12.9	315	03.6	22.6	243	01.8	38.7	344	13.9	35.1	353	54.2	16.6
10	321	15.4	330	03.2	21.4	258	02.7	39.0	359	15.8	34.9	8	56.4	16.5
11	336	17.8	345	02.8	−5 20.2	273	03.6	+22 39.2	14	17.7	−15 34.8	23	58.7	−18 16.4
12	351	20.3	0	02.4	−5 18.9	288	04.5	+22 39.5	29	19.7	−15 34.6	39	00.9	−18 16.4
13	6	22.8	15	02.0	17.7	303	05.4	39.8	44	21.6	34.4	54	03.1	16.3
14	21	25.2	30	01.6	16.5	318	06.3	40.0	59	23.5	34.3	69	05.3	16.2
15	36	27.7	45	01.2	15.3	333	07.2	40.3	74	25.4	34.1	84	07.5	16.2
16	51	30.2	60	00.7	14.0	348	08.1	40.6	89	27.4	34.0	99	09.7	16.1
17	66	32.6	75	00.3	−5 12.8	3	09.0	+22 40.8	104	29.3	−15 33.8	114	12.0	−18 16.1
18	81	35.1	89	59.9	−5 11.6	18	09.9	+22 41.1	119	31.2	−15 33.6	129	14.2	−18 16.0
19	96	37.6	104	59.5	10.3	33	10.8	41.4	134	33.2	33.5	144	16.4	15.9
20	111	40.0	119	59.1	09.1	48	11.7	41.6	149	35.1	33.3	159	18.6	15.9
21	126	42.5	134	58.7	07.9	63	12.6	41.9	164	37.0	33.1	174	20.8	15.8
22	141	44.9	149	58.3	06.7	78	13.4	42.1	179	38.9	33.0	189	23.0	15.8
23	156	47.4	164	57.9	05.4	93	14.3	42.4	194	40.9	32.8	204	25.3	15.7
24	171	49.9	179	57.4	−5 04.2	108	15.2	+22 42.7	209	42.8	−15 32.6	219	27.5	−18 15.6
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 0ᵈ.6		PHE	4ʰ: 55′.0									
	PMG: 12ʰ 09ᵐ.1				SD: 15′.0			12ʰ: 54′.9									
					PMG: 13ʰ 03ᵐ			20ʰ: 54′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	40.9	−2	31.8	169	47.1	−4	21.7		**60 N**	4 49	5 38	6 19	7 13	5	19 11	80
1	192	41.1		30.8	184	21.5 154	−4	08.7	130	**58**	54	39	18	12	7	11	77
2	207	41.3		29.9	198	55.9 154	−3	55.7	130	**56**	4 57	41	18	10	10	11	75
3	222	41.5		28.9	213	30.4 155		42.7	130	**54**	5 01	42	17	09	12	12	71
4	237	41.6		27.9	228	04.9 155		29.7	130	**52**	03	43	16	08	14	12	69
5	252	41.8	−2	26.9	242	39.4 155	−3	16.7	130	**50**	5 06	5 43	6 16	7 07	16	19 12	67
6	267	42.0	−2	25.9	257	13.9 155	−3	03.6	131	**45**	5 11	5 45	6 14	7 05	19	19 12	63
7	282	42.1		24.9	271	48.5 156	−2	50.6	130	**40**	15	46	13	03	23	12	60
8	297	42.3		23.9	286	23.1 156		37.6	130	**35**	17	47	12	01	26	12	57
9	312	42.5		23.0	300	57.7 156		24.5	131	**30**	19	47	11	7 00	29	12	54
10	327	42.7		22.0	315	32.4 157	−2	11.5	130	**20**	22	47	09	6 57	34	13	49
11	342	42.8	−2	21.0	330	07.1 157	−1	58.5	130	**10 N**	5 22	5 47	6 08	6 55	38	19 13	45
12	357	43.0	−2	20.0	344	41.8 157	−1	45.4	131	**0**	5 21	5 45	6 06	6 53	41	19 13	41
13	12	43.2		19.0	359	16.5 157		32.4	130	**10 S**	19	43	04	51	45	13	37
14	27	43.4		18.0	13	51.3 158		19.4	130	**20**	14	40	02	49	49	13	33
15	42	43.5		17.0	28	26.0 157	−1	06.3	131	**30**	08	36	6 00	46	54	13	29
16	57	43.7		16.0	43	00.8 158	−0	53.3	130	**35**	5 03	33	5 58	45	57	13	26
17	72	43.9	−2	15.1	57	35.7 159	−0	40.3	130	**40**	4 58	5 30	5 57	6 43	60	19 13	24
18	87	44.0	−2	14.1	72	10.5 158	−0	27.2	131	**45**	4 50	5 25	5 55	6 41	64	19 14	19
19	102	44.2		13.1	86	45.3 158		14.2	130	**50**	41	20	52	39	68	14	15
20	117	44.4		12.1	101	20.2 159	−0	01.2	130	**52**	37	17	51	38	70	14	13
21	132	44.6		11.1	115	55.1 159	+0	11.8	130	**54**	32	14	50	37	72	14	11
22	147	44.7		10.1	130	30.0 159		24.8	130	**56**	26	11	49	35	75	14	9
23	162	44.9		09.1	145	04.9 159		37.8	130	**58**	19	08	47	34	77	14	7
24	177	45.1	−2	08.1	159	39.8 159	+0	50.7	129	**60 S**	4 12	5 03	5 46	6 32	81	19 14	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12ʰ 30ᵐ.6		PMG: 12ʰ 00ᵐ			PMG: 16ʰ 46ᵐ			PMG: 10ʰ 00ᵐ			PMG: 9ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	171	49.9	179	57.4	−5 04.2	108	15.2	+22 42.7	209	42.8	−15 32.6	219	27.5	−18 15.6
1	186	52.3	194	57.0	03.0	123	16.1	42.9	224	44.7	32.5	234	29.7	15.6
2	201	54.8	209	56.6	01.8	138	17.0	43.2	239	46.6	32.3	249	31.9	15.5
3	216	57.3	224	56.2	−5 00.5	153	17.9	43.5	254	48.6	32.1	264	34.1	15.5
4	231	59.7	239	55.8	−4 59.3	168	18.8	43.7	269	50.5	32.0	279	36.4	15.4
5	247	02.2	254	55.4	−4 58.1	183	19.7	+22 44.0	284	52.4	−15 31.8	294	38.6	−18 15.3
6	262	04.7	269	55.0	−4 56.8	198	20.6	+22 44.3	299	54.4	−15 31.6	309	40.8	−18 15.3
7	277	07.1	284	54.6	55.6	213	21.5	44.5	314	56.3	31.5	324	43.0	15.2
8	292	09.6	299	54.2	54.4	228	22.4	44.8	329	58.2	31.3	339	45.2	15.2
9	307	12.1	314	53.8	53.1	243	23.3	45.0	345	00.1	31.2	354	47.4	15.1
10	322	14.5	329	53.3	51.9	258	24.2	45.3	0	02.1	31.0	9	49.7	15.0
11	337	17.0	344	52.9	−4 50.7	273	25.1	+22 45.6	15	04.0	−15 30.8	24	51.9	−18 15.0
12	352	19.4	359	52.5	−4 49.5	288	26.0	+22 45.8	30	05.9	−15 30.7	39	54.1	−18 14.9
13	7	21.9	14	52.1	48.2	303	26.9	46.1	45	07.9	30.5	54	56.3	14.9
14	22	24.4	29	51.7	47.0	318	27.8	46.4	60	09.8	30.3	69	58.5	14.8
15	37	26.8	44	51.3	45.8	333	28.7	46.6	75	11.7	30.2	85	00.8	14.7
16	52	29.3	59	50.9	44.5	348	29.6	46.9	90	13.7	30.0	100	03.0	14.7
17	67	31.8	74	50.5	−4 43.3	3	30.5	+22 47.1	105	15.6	−15 29.8	115	05.2	−18 14.6
18	82	34.2	89	50.1	−4 42.1	18	31.3	+22 47.4	120	17.5	−15 29.7	130	07.4	−18 14.6
19	97	36.7	104	49.7	40.8	33	32.2	47.7	135	19.4	29.5	145	09.6	14.5
20	112	39.2	119	49.3	39.6	48	33.1	47.9	150	21.4	29.3	160	11.9	14.4
21	127	41.6	134	48.9	38.4	63	34.0	48.2	165	23.3	29.2	175	14.1	14.4
22	142	44.1	149	48.5	37.1	78	34.9	48.4	180	25.2	29.0	190	16.3	14.3
23	157	46.5	164	48.0	35.9	93	35.8	48.7	195	27.2	28.8	205	18.5	14.3
24	172	49.0	179	47.6	−4 34.7	108	36.7	+22 48.9	210	29.1	−15 28.7	220	20.7	−18 14.2
Dif	—				−4			+9 +3			+19 +2			+22 +1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1 PMG: 12h 08m.9				Edad: 1d.6 SD: 14′.9 PMG: 13h 44m		PHE 4h: 54′.7 12h: 54′.6 20h: 54′.5 Rº: 41m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	177	45.1	−2	08.1	159	39.8	+0	50.7	**60 N**	18 03	18 44	19 33	7 18	4	20 31	80
1	192	45.3		07.2	174	14.8 160	+1	03.7 130	**58**	03	42	29	19	7	28	77
2	207	45.4		06.2	188	49.8 160		16.7 130	**56**	04	41	25	20	9	26	74
3	222	45.6		05.2	203	24.7 159		29.6 129	**54**	04	40	21	21	12	23	72
4	237	45.8		04.2	217	59.7 160		42.5 129	**52**	05	38	18	22	14	21	70
5	252	46.0	−2	03.2	232	34.7 160	+1	55.4 129	**50**	18 05	18 37	19 15	7 23	15	20 19	68
6	267	46.1	−2	02.2	247	09.7 160	+2	08.3 129	**45**	18 06	18 35	19 10	7 24	20	20 15	63
7	282	46.3		01.2	261	44.7 160		21.2 129	**40**	07	34	05	26	23	12	59
8	297	46.5	−2	00.2	276	19.7 160		34.1 129	**35**	08	33	02	27	27	09	56
9	312	46.7	−1	59.3	290	54.7 160		47.0 129	**30**	08	32	19 00	29	28	06	54
10	327	46.8		58.3	305	29.8 161	+2	59.8 128	**20**	10	32	18 57	31	33	20 02	49
11	342	47.0	−1	57.3	320	04.8 160	+3	12.6 128	**10 N**	18 11	18 32	18 56	7 33	37	19 58	45
12	357	47.2	−1	56.3	334	39.8 160	+3	25.4 128	**0**	18 12	18 33	18 57	7 34	41	19 54	41
13	12	47.4		55.3	349	14.8 160		38.2 128	**10 S**	13	34	18 59	36	45	50	38
14	27	47.5		54.3	3	49.9 161	+3	51.0 128	**20**	15	37	19 03	38	49	46	34
15	42	47.7		53.3	18	24.9 160	+4	03.7 127	**30**	17	41	09	40	54	42	29
16	57	47.9		52.3	33	00.0 161		16.4 127	**35**	18	43	13	42	56	39	27
17	72	48.1	−1	51.3	47	35.0 160	+4	29.1 127	**40**	18 19	18 46	19 18	7 43	60	19 37	23
18	87	48.2	−1	50.4	62	10.0 160	+4	41.8 127	**45**	18 21	18 50	19 25	7 45	63	19 33	21
19	102	48.4		49.4	76	45.1 161	+4	54.4 126	**50**	23	55	33	47	67	29	16
20	117	48.6		48.4	91	20.1 160	+5	07.0 126	**52**	24	18 57	38	48	69	27	15
21	132	48.8		47.4	105	55.1 160		19.6 126	**54**	25	19 00	42	49	72	25	13
22	147	48.9		46.4	120	30.2 161		32.2 126	**56**	26	03	48	50	74	23	10
23	162	49.1		45.4	135	05.2 160		44.8 126	**58**	27	06	19 54	51	77	21	7
24	177	49.3	−1	44.4	149	40.2 160	+5	57.3 125	**60 S**	18 28	19 10	20 01	7 53	80	19 18	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 12h 26m.7		Mag: −3.9 PMG: 12h 01m			Mag: +1.1 PMG: 16h 45m			Mag: −2.0 PMG: 9h 57m			Mag: +0.7 PMG: 9h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	172	49.0	179	47.6	−4 34.7	108	36.7	+22 48.9	210	29.1	−15 28.7	220	20.7	−18 14.2
1	187	51.5	194	47.2	33.4	123	37.6	49.2	225	31.0	28.5	235	23.0	14.1
2	202	53.9	209	46.8	32.2	138	38.5	49.5	240	33.0	28.4	250	25.2	14.1
3	217	56.4	224	46.4	31.0	153	39.4	49.7	255	34.9	28.2	265	27.4	14.0
4	232	58.9	239	46.0	29.7	168	40.3	50.0	270	36.8	28.0	280	29.6	14.0
5	248	01.3	254	45.6	−4 28.5	183	41.2	+22 50.2	285	38.7	−15 27.9	295	31.8	−18 13.9
6	263	03.8	269	45.2	−4 27.3	198	42.1	+22 50.5	300	40.7	−15 27.7	310	34.1	−18 13.8
7	278	06.3	284	44.8	26.0	213	42.9	50.7	315	42.6	27.5	325	36.3	13.8
8	293	08.7	299	44.4	24.8	228	43.8	51.0	330	44.5	27.4	340	38.5	13.7
9	308	11.2	314	44.0	23.5	243	44.7	51.3	345	46.5	27.2	355	40.7	13.7
10	323	13.7	329	43.6	22.3	258	45.6	51.5	0	48.4	27.0	10	42.9	13.6
11	338	16.1	344	43.2	−4 21.1	273	46.5	+22 51.8	15	50.3	−15 26.9	25	45.2	−18 13.5
12	353	18.6	359	42.8	−4 19.8	288	47.4	+22 52.0	30	52.3	−15 26.7	40	47.4	−18 13.5
13	8	21.0	14	42.4	18.6	303	48.3	52.3	45	54.2	26.5	55	49.6	13.4
14	23	23.5	29	42.0	17.4	318	49.2	52.5	60	56.1	26.4	70	51.8	13.4
15	38	26.0	44	41.6	16.1	333	50.1	52.8	75	58.1	26.2	85	54.0	13.3
16	53	28.4	59	41.2	14.9	348	51.0	53.0	91	00.0	26.1	100	56.3	13.2
17	68	30.9	74	40.8	−4 13.7	3	51.8	+22 53.3	106	01.9	−15 25.9	115	58.5	−18 13.2
18	83	33.4	89	40.4	−4 12.4	18	52.7	+22 53.6	121	03.9	−15 25.7	131	00.7	−18 13.1
19	98	35.8	104	40.0	11.2	33	53.6	53.8	136	05.8	25.6	146	02.9	13.1
20	113	38.3	119	39.6	09.9	48	54.5	54.1	151	07.7	25.4	161	05.1	13.0
21	128	40.8	134	39.2	08.7	63	55.4	54.3	166	09.7	25.2	176	07.4	12.9
22	143	43.2	149	38.8	07.5	78	56.3	54.6	181	11.6	25.1	191	09.6	12.9
23	158	45.7	164	38.4	06.2	93	57.2	54.8	196	13.5	24.9	206	11.8	12.8
24	173	48.1	179	38.0	−4 05.0	108	58.1	+22 55.1	211	15.5	−15 24.7	221	14.0	−18 12.8
Dif	—			−4	+12		+9	+3		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 2ᵈ.6		PHE	4ʰ: 54′.4								
	PMG: 12ʰ 08ᵐ.6				SD: 14′.8			12ʰ: 54′.3								
					PMG: 14ʰ 25ᵐ			20ʰ: 54′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	177	49.3	−1	44.4	149	40.2	+5	57.3	**60 N**	4 43	5 32	6 13	7 22	5	21 51	81
1	192	49.5		43.4	164	15.2 160	+6	09.8 125	**58**	48	34	13	26	8	45	77
2	207	49.7		42.5	178	50.2 160		22.2 124	**56**	52	35	12	29	11	40	74
3	222	49.8		41.5	193	25.2 160		34.7 125	**54**	55	37	12	33	13	35	71
4	237	50.0		40.5	208	00.1 159		47.1 124	**52**	4 59	38	12	36	15	31	69
5	252	50.2	−1	39.5	222	35.1 160	+6	59.4 123	**50**	5 01	5 39	6 11	7 38	17	21 27	67
6	267	50.4	−1	38.5	237	10.1 160	+7	11.8 124	**45**	5 07	5 41	6 10	7 44	21	21 18	63
7	282	50.5		37.5	251	45.0 159		24.1 123	**40**	11	43	10	49	25	11	60
8	297	50.7		36.5	266	19.9 159		36.3 122	**35**	15	44	09	54	27	05	57
9	312	50.9		35.5	280	54.8 159	+7	48.6 123	**30**	17	45	09	7 57	30	21 00	54
10	327	51.1		34.5	295	29.7 159	+8	00.8 122	**20**	20	45	07	8 04	34	20 51	49
11	342	51.2	−1	33.6	310	04.6 159	+8	12.9 121	**10 N**	5 21	5 45	6 06	8 10	38	20 43	46
12	357	51.4	−1	32.6	324	39.5 159	+8	25.1 122	**0**	5 21	5 45	6 05	8 15	42	20 35	43
13	12	51.6		31.6	339	14.3 158		37.2 121	**10 S**	19	43	04	21	45	28	39
14	27	51.8		30.6	353	49.2 159	+8	49.2 120	**20**	15	41	03	27	49	20	35
15	42	52.0		29.6	8	24.0 158	+9	01.2 120	**30**	09	37	01	34	54	11	31
16	57	52.1		28.6	22	58.8 158		13.2 120	**35**	05	35	6 00	38	56	06	28
17	72	52.3	−1	27.6	37	33.6 158	+9	25.2 120	**40**	5 00	5 32	5 59	8 43	59	20 00	26
18	87	52.5	−1	26.6	52	08.3 157	+9	37.1 119	**45**	4 53	5 28	5 57	8 48	63	19 54	22
19	102	52.7		25.6	66	43.0 157	+9	48.9 118	**50**	45	23	56	54	68	45	18
20	117	52.9		24.7	81	17.7 157	+10	00.7 118	**52**	41	21	55	8 57	70	42	16
21	132	53.0		23.7	95	52.4 157		12.5 118	**54**	36	18	54	9 01	71	38	14
22	147	53.2		22.7	110	27.1 157		24.2 117	**56**	31	16	53	04	74	33	12
23	162	53.4		21.7	125	01.7 156		35.9 117	**58**	24	12	52	08	77	28	9
24	177	53.6	−1	20.7	139	36.3 156	+10	47.6 117	**60 S**	4 17	5 09	5 51	9 13	80	19 23	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12ʰ 22ᵐ.8		PMG: 12ʰ 02ᵐ			PMG: 16ʰ 43ᵐ			PMG: 9ʰ 54ᵐ			PMG: 9ʰ 14ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	173	48.1	179	38.0	−4 05.0	108	58.1	+22 55.1	211	15.5	−15 24.7	221	14.0	−18 12.8
1	188	50.6	194	37.6	03.8	123	58.9	55.3	226	17.4	24.6	236	16.3	12.7
2	203	53.1	209	37.2	02.5	138	59.8	55.6	241	19.3	24.4	251	18.5	12.6
3	218	55.5	224	36.8	−4 01.3	154	00.7	55.8	256	21.3	24.3	266	20.7	12.6
4	233	58.0	239	36.4	−4 00.0	169	01.6	56.1	271	23.2	24.1	281	22.9	12.5
5	249	00.5	254	36.0	−3 58.8	184	02.5	+22 56.3	286	25.1	−15 23.9	296	25.1	−18 12.5
6	264	02.9	269	35.6	−3 57.6	199	03.4	+22 56.6	301	27.1	−15 23.8	311	27.4	−18 12.4
7	279	05.4	284	35.2	56.3	214	04.3	56.8	316	29.0	23.6	326	29.6	12.3
8	294	07.9	299	34.8	55.1	229	05.2	57.1	331	30.9	23.4	341	31.8	12.3
9	309	10.3	314	34.4	53.8	244	06.0	57.3	346	32.9	23.3	356	34.0	12.2
10	324	12.8	329	34.0	52.6	259	06.9	57.6	1	34.8	23.1	11	36.3	12.2
11	339	15.3	344	33.6	−3 51.4	274	07.8	+22 57.8	16	36.7	−15 22.9	26	38.5	−18 12.1
12	354	17.7	359	33.2	−3 50.1	289	08.7	+22 58.1	31	38.7	−15 22.8	41	40.7	−18 12.0
13	9	20.2	14	32.8	48.9	304	09.6	58.3	46	40.6	22.6	56	42.9	12.0
14	24	22.6	29	32.4	47.6	319	10.5	58.6	61	42.5	22.4	71	45.2	11.9
15	39	25.1	44	32.0	46.4	334	11.4	58.8	76	44.5	22.3	86	47.4	11.9
16	54	27.6	59	31.6	45.1	349	12.2	59.1	91	46.4	22.1	101	49.6	11.8
17	69	30.0	74	31.2	−3 43.9	4	13.1	+22 59.3	106	48.3	−15 22.0	116	51.8	−18 11.7
18	84	32.5	89	30.8	−3 42.7	19	14.0	+22 59.6	121	50.3	−15 21.8	131	54.1	−18 11.7
19	99	35.0	104	30.4	41.4	34	14.9	+22 59.8	136	52.2	21.6	146	56.3	11.6
20	114	37.4	119	30.0	40.2	49	15.8	+23 00.1	151	54.1	21.5	161	58.5	11.6
21	129	39.9	134	29.6	38.9	64	16.7	00.3	166	56.1	21.3	177	00.7	11.5
22	144	42.4	149	29.2	37.7	79	17.5	00.6	181	58.0	21.1	192	03.0	11.4
23	159	44.8	164	28.8	36.5	94	18.4	00.8	196	59.9	21.0	207	05.2	11.4
24	174	47.3	179	28.4	−3 35.2	109	19.3	+23 01.1	212	01.9	−15 20.8	222	07.4	−18 11.3
Dif	—			−4	+12		+9	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 3ᵈ.6		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 08ᵐ.3				SD: 14′.8			12ʰ: 54′.1									
					PMG: 15ʰ 07ᵐ			20ʰ: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	53.6	−1	20.7	139	36.3	+10	47.6		**60 N**	18 08	18 49	19 39	7 27	7	23 12	81
1	192	53.7		19.7	154	10.9 156	+10	59.2	116	**58**	08	47	34	34	10	23 02	78
2	207	53.9		18.7	168	45.5 156	+11	10.7	115	**56**	08	45	29	40	13	22 54	74
3	222	54.1		17.7	183	20.0 155		22.2	115	**54**	08	43	25	46	15	46	72
4	237	54.3		16.7	197	54.5 155		33.7	115	**52**	08	42	22	51	17	40	69
5	252	54.5	−1	15.8	212	29.0 155	+11	45.1	114	**50**	18 08	18 41	19 19	7 55	20	22 34	67
6	267	54.6	−1	14.8	227	03.4 154	+11	56.4	113	**45**	18 09	18 38	19 12	8 05	24	22 21	63
7	282	54.8		13.8	241	37.8 154	+12	07.8	114	**40**	09	36	08	14	26	11	59
8	297	55.0		12.8	256	12.2 154		19.0	112	**35**	09	35	04	21	29	22 02	57
9	312	55.2		11.8	270	46.5 153		30.2	112	**30**	10	34	19 01	27	32	21 54	55
10	327	55.4		10.8	285	20.9 154		41.4	112	**20**	10	32	18 58	38	36	40	51
11	342	55.5	−1	09.8	299	55.1 152	+12	52.5	111	**10 N**	18 11	18 32	18 56	8 48	40	21 29	47
12	357	55.7	−1	08.8	314	29.4 153	+13	03.6	111	**0**	18 12	18 32	18 56	8 57	43	21 18	44
13	12	55.9		07.8	329	03.6 152		14.6	110	**10 S**	12	33	18 58	9 06	47	21 07	41
14	27	56.1		06.9	343	37.8 152		25.5	109	**20**	13	35	19 01	16	50	20 55	38
15	42	56.3		05.9	358	11.9 151		36.4	109	**30**	14	38	06	28	54	42	33
16	57	56.4		04.9	12	46.0 151		47.2	108	**35**	15	40	10	34	57	34	31
17	72	56.6	−1	03.9	27	20.1 151	+13	58.0	108	**40**	18 16	18 43	19 15	9 42	60	20 26	28
18	87	56.8	−1	02.9	41	54.1 150	+14	08.7	107	**45**	18 17	18 46	19 21	9 51	63	20 16	25
19	102	57.0		01.9	56	28.1 150		19.4	107	**50**	18	51	29	10 02	67	20 03	22
20	117	57.2	−1	00.9	71	02.0 149		30.0	106	**52**	19	53	33	07	69	19 58	19
21	132	57.3	−0	59.9	85	35.9 149		40.6	106	**54**	20	55	37	12	72	52	17
22	147	57.5		58.9	100	09.8 149	+14	51.1	105	**56**	20	18 58	42	18	75	45	14
23	162	57.7		58.0	114	43.6 148	+15	01.5	104	**58**	21	19 00	48	25	78	37	12
24	177	57.9	−0	57.0	129	17.4 148	+15	11.9	104	**60 S**	18 22	19 04	19 54	10 33	81	19 28	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12ʰ 18ᵐ.8		PMG: 12ʰ 02ᵐ			PMG: 16ʰ 42ᵐ			PMG: 9ʰ 51ᵐ			PMG: 9ʰ 10ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	174	47.3	179	28.4	−3 35.2	109	19.3	+23 01.1	212	01.9	−15 20.8	222	07.4	−18 11.3
1	189	49.8	194	28.0	34.0	124	20.2	01.3	227	03.8	20.6	237	09.6	11.3
2	204	52.2	209	27.6	32.7	139	21.1	01.6	242	05.8	20.5	252	11.9	11.2
3	219	54.7	224	27.2	31.5	154	22.0	01.8	257	07.7	20.3	267	14.1	11.2
4	234	57.1	239	26.8	30.2	169	22.8	02.1	272	09.6	20.2	282	16.3	11.1
5	249	59.6	254	26.4	−3 29.0	184	23.7	+23 02.3	287	11.6	−15 20.0	297	18.5	−18 11.0
6	265	02.1	269	26.0	−3 27.7	199	24.6	+23 02.5	302	13.5	−15 19.8	312	20.8	−18 11.0
7	280	04.5	284	25.6	26.5	214	25.5	02.8	317	15.4	19.7	327	23.0	10.9
8	295	07.0	299	25.2	25.3	229	26.4	03.0	332	17.4	19.5	342	25.2	10.9
9	310	09.5	314	24.8	24.0	244	27.3	03.3	347	19.3	19.3	357	27.4	10.8
10	325	11.9	329	24.4	22.8	259	28.1	03.5	2	21.3	19.2	12	29.7	10.7
11	340	14.4	344	24.0	−3 21.5	274	29.0	+23 03.8	17	23.2	−15 19.0	27	31.9	−18 10.7
12	355	16.9	359	23.6	−3 20.3	289	29.9	+23 04.0	32	25.1	−15 18.8	42	34.1	−18 10.6
13	10	19.3	14	23.2	19.0	304	30.8	04.3	47	27.1	18.7	57	36.3	10.6
14	25	21.8	29	22.8	17.8	319	31.7	04.5	62	29.0	18.5	72	38.6	10.5
15	40	24.2	44	22.4	16.5	334	32.5	04.7	77	30.9	18.4	87	40.8	10.4
16	55	26.7	59	22.1	15.3	349	33.4	05.0	92	32.9	18.2	102	43.0	10.4
17	70	29.2	74	21.7	−3 14.0	4	34.3	+23 05.2	107	34.8	−15 18.0	117	45.2	−18 10.3
18	85	31.6	89	21.3	−3 12.8	19	35.2	+23 05.5	122	36.8	−15 17.9	132	47.5	−18 10.3
19	100	34.1	104	20.9	11.6	34	36.1	05.7	137	38.7	17.7	147	49.7	10.2
20	115	36.6	119	20.5	10.3	49	37.0	06.0	152	40.6	17.5	162	51.9	10.2
21	130	39.0	134	20.1	09.1	64	37.8	06.2	167	42.6	17.4	177	54.1	10.1
22	145	41.5	149	19.7	07.8	79	38.7	06.4	182	44.5	17.2	192	56.4	10.0
23	160	44.0	164	19.3	06.6	94	39.6	06.7	197	46.4	17.1	207	58.6	10.0
24	175	46.4	179	18.9	−3 05.3	109	40.5	+23 06.9	212	48.4	−15 16.9	223	00.8	−18 09.9
Dif	—			−4	+12		+9	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 4ᵈ.6		PHE	4ʰ: 54′.1									
	PMG: 12ʰ 08ᵐ.0				SD: 14′.7			12ʰ: 54′.1									
					PMG: 15ʰ 51ᵐ			20ʰ: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	177	57.9	−0	57.0	129	17.4	+15	11.9		**60 N**	4 36	5 26	6 07	7 34	10	** **	**
1	192	58.1		56.0	143	51.1 147		22.2	103	**58**	42	28	07	44	14	** **	**
2	207	58.2		55.0	158	24.8 147		32.4	102	**56**	46	30	07	7 53	17	** **	**
3	222	58.4		54.0	172	58.4 146		42.6	102	**54**	50	32	07	8 01	19	23 58	71
4	237	58.6		53.0	187	32.0 146	+15	52.7	101	**52**	54	33	07	08	22	49	69
5	252	58.8	−0	52.0	202	05.6 146	+16	02.8	101	**50**	4 57	5 35	6 07	8 15	23	23 41	67
6	267	59.0	−0	51.0	216	39.1 145	+16	12.8	100	**45**	5 03	5 38	6 07	8 29	27	23 24	63
7	282	59.1		50.0	231	12.6 145		22.7	99	**40**	08	40	07	40	31	23 10	60
8	297	59.3		49.1	245	46.0 144		32.5	98	**35**	12	41	06	50	34	22 59	57
9	312	59.5		48.1	260	19.4 144		42.3	98	**30**	15	42	06	8 59	35	49	55
10	327	59.7		47.1	274	52.7 143	+16	52.0	97	**20**	18	44	06	9 14	39	31	52
11	342	59.9	−0	46.1	289	26.0 143	+17	01.7	97	**10 N**	5 20	5 44	6 05	9 28	42	22 16	49
12	358	00.1	−0	45.1	303	59.2 142	+17	11.3	96	**0**	5 20	5 44	6 05	9 40	45	22 02	46
13	13	00.2		44.1	318	32.4 142		20.8	95	**10 S**	19	43	04	9 53	48	21 48	43
14	28	00.4		43.1	333	05.5 141		30.2	94	**20**	16	41	03	10 06	52	33	40
15	43	00.6		42.1	347	38.6 141		39.6	94	**30**	10	38	02	22	55	15	38
16	58	00.8		41.1	2	11.6 140		48.9	93	**35**	07	36	02	31	57	21 05	36
17	73	01.0	−0	40.2	16	44.6 140	+17	58.1	92	**40**	5 02	5 34	6 01	10 42	59	20 54	33
18	88	01.1	−0	39.2	31	17.5 139	+18	07.3	92	**45**	4 56	5 31	6 00	10 54	63	20 41	30
19	103	01.3		38.2	45	50.4 139		16.3	90	**50**	48	26	5 59	11 09	67	25	26
20	118	01.5		37.2	60	23.2 138		25.3	90	**52**	44	24	58	16	69	17	24
21	133	01.7		36.2	74	55.9 137		34.3	90	**54**	40	22	58	24	71	20 09	22
22	148	01.9		35.2	89	28.6 137		43.1	88	**56**	35	20	57	33	74	19 59	20
23	163	02.1		34.2	104	01.3 137	+18	51.9	88	**58**	30	17	56	43	77	49	16
24	178	02.2	−0	33.2	118	33.9 136	+19	00.6	87	**60 S**	4 23	5 14	5 55	11 54	82	19 36	12

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.1			Mag: −2.0			Mag: +0.7		
	12ʰ 14ᵐ.9		PMG: 12ʰ 03ᵐ			PMG: 16ʰ 40ᵐ			PMG: 9ʰ 48ᵐ			PMG: 9ʰ 07ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	175	46.4	179	18.9	−3 05.3	109	40.5	+23 06.9	212	48.4	−15 16.9	223	00.8	−18 09.9
1	190	48.9	194	18.5	04.1	124	41.3	07.2	227	50.3	16.7	238	03.1	09.9
2	205	51.4	209	18.1	02.8	139	42.2	07.4	242	52.3	16.6	253	05.3	09.8
3	220	53.8	224	17.7	01.6	154	43.1	07.6	257	54.2	16.4	268	07.5	09.7
4	235	56.3	239	17.3	−3 00.3	169	44.0	07.9	272	56.1	16.2	283	09.7	09.7
5	250	58.7	254	16.9	−2 59.1	184	44.9	+23 08.1	287	58.1	−15 16.1	298	12.0	−18 09.6
6	266	01.2	269	16.6	−2 57.8	199	45.7	+23 08.4	303	00.0	−15 15.9	313	14.2	−18 09.6
7	281	03.7	284	16.2	56.6	214	46.6	08.6	318	02.0	15.7	328	16.4	09.5
8	296	06.1	299	15.8	55.3	229	47.5	08.8	333	03.9	15.6	343	18.6	09.5
9	311	08.6	314	15.4	54.1	244	48.4	09.1	348	05.8	15.4	358	20.9	09.4
10	326	11.1	329	15.0	52.8	259	49.3	09.3	3	07.8	15.3	13	23.1	09.3
11	341	13.5	344	14.6	−2 51.6	274	50.1	+23 09.6	18	09.7	−15 15.1	28	25.3	−18 09.3
12	356	16.0	359	14.2	−2 50.3	289	51.0	+23 09.8	33	11.7	−15 14.9	43	27.6	−18 09.2
13	11	18.5	14	13.8	49.1	304	51.9	10.0	48	13.6	14.8	58	29.8	09.2
14	26	20.9	29	13.4	47.9	319	52.8	10.3	63	15.5	14.6	73	32.0	09.1
15	41	23.4	44	13.0	46.6	334	53.6	10.5	78	17.5	14.4	88	34.2	09.0
16	56	25.8	59	12.6	45.4	349	54.5	10.7	93	19.4	14.3	103	36.5	09.0
17	71	28.3	74	12.2	−2 44.1	4	55.4	+23 11.0	108	21.4	−15 14.1	118	38.7	−18 08.9
18	86	30.8	89	11.9	−2 42.9	19	56.3	+23 11.2	123	23.3	−15 14.0	133	40.9	−18 08.9
19	101	33.2	104	11.5	41.6	34	57.1	11.5	138	25.2	13.8	148	43.2	08.8
20	116	35.7	119	11.1	40.4	49	58.0	11.7	153	27.2	13.6	163	45.4	08.8
21	131	38.2	134	10.7	39.1	64	58.9	11.9	168	29.1	13.5	178	47.6	08.7
22	146	40.6	149	10.3	37.9	79	59.8	12.2	183	31.1	13.3	193	49.9	08.6
23	161	43.1	164	09.9	36.6	95	00.7	12.4	198	33.0	13.1	208	52.1	08.6
24	176	45.6	179	09.5	−2 35.4	110	01.5	+23 12.6	213	35.0	−15 13.0	223	54.3	−18 08.5
Dif	—			−4	+12		+9	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 5^{d}.6		PHE	4^{h}: 54′.2									
	PMG: 12^{h} 07^{m}.7				SD: 14′.7			12^{h}: 54′.2									
					PMG: 16^{h} 37^{m}			20^{h}: 54′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Puesta de Sol	Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	178	02.2	−0	33.2	118	33.9	+19	00.6		**60 N**	18 13	18 54	19 44	7 44	15	0 33	81
1	193	02.4		32.2	133	06.4 135		09.2	86	**58**	12	52	38	7 58	20	20	76
2	208	02.6		31.3	147	38.9 135		17.7	85	**56**	12	49	33	8 10	23	0 08	73
3	223	02.8		30.3	162	11.4 135		26.2	85	**54**	12	47	29	20	26	** **	**
4	238	03.0		29.3	176	43.7 133		34.5	83	**52**	12	45	25	30	27	** **	**
5	253	03.2	−0	28.3	191	16.0 133	+19	42.8	83	**50**	18 12	18 44	19 22	8 38	30	** **	**
6	268	03.3	−0	27.3	205	48.3 133	+19	51.0	82	**45**	18 11	18 41	19 15	8 56	33	** **	**
7	283	03.5		26.3	220	20.5 132	+19	59.2	82	**40**	11	38	10	9 11	36	** **	**
8	298	03.7		25.3	234	52.7 132	+20	07.2	80	**35**	11	36	06	24	37	23 56	57
9	313	03.9		24.3	249	24.8 131		15.1	79	**30**	11	35	19 03	34	40	44	55
10	328	04.1		23.3	263	56.8 130		23.0	79	**20**	11	33	18 58	9 53	43	23	53
11	343	04.3	−0	22.4	278	28.8 130	+20	30.8	78	**10 N**	18 11	18 32	18 56	10 10	45	23 05	51
12	358	04.4	−0	21.4	293	00.7 129	+20	38.5	77	**0**	18 11	18 32	18 56	10 25	48	22 48	49
13	13	04.6		20.4	307	32.5 128		46.1	76	**10 S**	11	32	57	41	50	31	47
14	28	04.8		19.4	322	04.3 128	+20	53.6	75	**20**	12	34	18 59	10 58	52	22 13	45
15	43	05.0		18.4	336	36.1 128	+21	01.1	75	**30**	12	36	19 04	11 17	55	21 53	42
16	58	05.2		17.4	351	07.8 127		08.4	73	**35**	12	38	07	28	58	41	40
17	73	05.4	−0	16.4	5	39.4 126	+21	15.6	72	**40**	18 13	18 40	19 11	11 41	60	21 27	39
18	88	05.5	−0	15.4	20	10.9 125	+21	22.8	72	**45**	18 13	18 43	19 17	11 57	62	21 11	36
19	103	05.7		14.4	34	42.4 125		29.9	71	**50**	14	46	24	12 16	66	20 51	33
20	118	05.9		13.5	49	13.9 125		36.8	69	**52**	14	48	28	25	67	41	32
21	133	06.1		12.5	63	45.3 124		43.7	69	**54**	15	50	32	35	70	31	29
22	148	06.3		11.5	78	16.6 123		50.5	68	**56**	15	52	36	12 47	72	19	27
23	163	06.5		10.5	92	47.9 123	+21	57.2	67	**58**	16	55	42	13 00	75	20 05	24
24	178	06.6	−0	09.5	107	19.1 122	+22	03.8	66	**60 S**	18 16	18 58	19 48	13 16	80	19 48	20

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12^{h} 11^{m}.0		PMG: 12^{h} 04^{m}			PMG: 16^{h} 39^{m}			PMG: 9^{h} 44^{m}			PMG: 9^{h} 03^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	176	45.6	179	09.5	−2 35.4	110	01.5	+23 12.6	213	35.0	−15 13.0	223	54.3	−18 08.5
1	191	48.0	194	09.1	34.1	125	02.4	12.9	228	36.9	12.8	238	56.5	08.5
2	206	50.5	209	08.7	32.9	140	03.3	13.1	243	38.8	12.7	253	58.8	08.4
3	221	53.0	224	08.4	31.6	155	04.2	13.3	258	40.8	12.5	269	01.0	08.3
4	236	55.4	239	08.0	30.3	170	05.0	13.6	273	42.7	12.3	284	03.2	08.3
5	251	57.9	254	07.6	−2 29.1	185	05.9	+23 13.8	288	44.7	−15 12.2	299	05.5	−18 08.2
6	267	00.3	269	07.2	−2 27.8	200	06.8	+23 14.0	303	46.6	−15 12.0	314	07.7	−18 08.2
7	282	02.8	284	06.8	26.6	215	07.7	14.3	318	48.6	11.8	329	09.9	08.1
8	297	05.3	299	06.4	25.3	230	08.5	14.5	333	50.5	11.7	344	12.2	08.1
9	312	07.7	314	06.0	24.1	245	09.4	14.7	348	52.4	11.5	359	14.4	08.0
10	327	10.2	329	05.6	22.8	260	10.3	15.0	3	54.4	11.3	14	16.6	07.9
11	342	12.7	344	05.2	−2 21.6	275	11.1	+23 15.2	18	56.3	−15 11.2	29	18.8	−18 07.9
12	357	15.1	359	04.9	−2 20.3	290	12.0	+23 15.4	33	58.3	−15 11.0	44	21.1	−18 07.8
13	12	17.6	14	04.5	19.1	305	12.9	15.7	49	00.2	10.9	59	23.3	07.8
14	27	20.1	29	04.1	17.8	320	13.8	15.9	64	02.2	10.7	74	25.5	07.7
15	42	22.5	44	03.7	16.6	335	14.6	16.1	79	04.1	10.5	89	27.8	07.7
16	57	25.0	59	03.3	15.3	350	15.5	16.4	94	06.0	10.4	104	30.0	07.6
17	72	27.5	74	02.9	−2 14.1	5	16.4	+23 16.6	109	08.0	−15 10.2	119	32.2	−18 07.5
18	87	29.9	89	02.5	−2 12.8	20	17.3	+23 16.8	124	09.9	−15 10.0	134	34.5	−18 07.5
19	102	32.4	104	02.1	11.6	35	18.1	17.1	139	11.9	09.9	149	36.7	07.4
20	117	34.8	119	01.8	10.3	50	19.0	17.3	154	13.8	09.7	164	38.9	07.4
21	132	37.3	134	01.4	09.1	65	19.9	17.5	169	15.8	09.6	179	41.2	07.3
22	147	39.8	149	01.0	07.8	80	20.7	17.7	184	17.7	09.4	194	43.4	07.3
23	162	42.2	164	00.6	06.6	95	21.6	18.0	199	19.7	09.2	209	45.6	07.2
24	177	44.7	179	00.2	−2 05.3	110	22.5	+23 18.2	214	21.6	−15 09.1	224	47.9	−18 07.1
Dif	—			−4	+13		+9	+2		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 07.m4				LUNA Edad: 6.d6 SD: 14′.8 PMG: 17h 25m PHE 4h: 54′.4 12h: 54′.5 20h: 54′.6 Rº: 50m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	06.6	−0	09.5	107	19.1	+22	03.8	**60 N**	4 30	5 20	6 01	7 59	26	1 54	76
1	193	06.8		08.5	121	50.2 121		10.3 65	**58**	36	22	02	8 18	29	36	72
2	208	07.0		07.5	136	21.3 121		16.7 64	**56**	41	25	02	33	32	21	70
3	223	07.2		06.5	150	52.3 120		23.0 63	**54**	45	27	02	46	35	1 09	67
4	238	07.4		05.6	165	23.3 120		29.2 62	**52**	49	29	02	8 57	37	0 58	65
5	253	07.6	−0	04.6	179	54.2 119	+22	35.3 61	**50**	4 52	5 30	6 03	9 08	37	0 48	63
6	268	07.7	−0	03.6	194	25.0 118	+22	41.3 60	**45**	4 59	5 34	6 03	9 29	40	0 27	61
7	283	07.9		02.6	208	55.8 118		47.2 59	**40**	5 05	36	03	9 47	42	0 10	59
8	298	08.1		01.6	223	26.5 117		53.0 58	**35**	09	38	04	10 01	44	** **	**
9	313	08.3	−0	00.6	237	57.2 117	+22	58.7 57	**30**	12	40	04	14	45	** **	**
10	328	08.5	+0	00.4	252	27.8 116	+23	04.3 56	**20**	16	42	04	36	47	** **	**
11	343	08.7	+0	01.4	266	58.3 115	+23	09.8 55	**10 N**	5 19	5 43	6 04	10 55	49	23 56	52
12	358	08.9	+0	02.4	281	28.8 115	+23	15.2 54	**0**	5 19	5 43	6 04	11 13	50	23 37	51
13	13	09.0		03.3	295	59.2 114		20.5 53	**10 S**	19	43	04	31	51	23 18	50
14	28	09.2		04.3	310	29.6 114		25.7 52	**20**	16	42	04	11 50	53	22 58	49
15	43	09.4		05.3	324	59.9 113		30.7 50	**30**	12	40	03	12 12	55	35	47
16	58	09.6		06.3	339	30.1 112		35.7 50	**35**	08	38	03	26	56	21	47
17	73	09.8	+0	07.3	354	00.3 112	+23	40.5 48	**40**	5 04	5 36	6 03	12 41	57	22 06	45
18	88	10.0	+0	08.3	8	30.5 112	+23	45.3 48	**45**	4 59	5 33	6 03	12 59	59	21 47	44
19	103	10.2		09.3	23	00.5 110		49.9 46	**50**	52	30	02	13 22	61	24	42
20	118	10.3		10.3	37	30.5 110		54.5 46	**52**	48	28	02	32	63	13	41
21	133	10.5		11.2	52	00.5 110	+23	58.9 44	**54**	44	26	01	45	64	21 00	40
22	148	10.7		12.2	66	30.4 109	+24	03.2 43	**56**	40	24	01	13 59	66	20 46	38
23	163	10.9		13.2	81	00.2 108		07.4 42	**58**	35	22	01	14 15	69	29	36
24	178	11.1	+0	14.2	95	30.0 108	+24	11.4 40	**60 S**	4 29	5 19	6 00	14 36	71	20 08	33

UT	ARIES PMG 12h 07.m0		VENUS Mag: −4.0 PMG: 12h 04m			MARTE Mag: +1.2 PMG: 16h 38m			JÚPITER Mag: −2.1 PMG: 9h 41m			SATURNO Mag: +0.8 PMG: 8h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	177	44.7	179	00.2	−2 05.3	110	22.5	+23 18.2	214	21.6	−15 09.1	224	47.9	−18 07.1
1	192	47.2	193	59.8	04.1	125	23.4	18.4	229	23.5	08.9	239	50.1	07.1
2	207	49.6	208	59.4	02.8	140	24.2	18.7	244	25.5	08.8	254	52.3	07.0
3	222	52.1	223	59.1	01.5	155	25.1	18.9	259	27.4	08.6	269	54.6	07.0
4	237	54.6	238	58.7	−2 00.3	170	26.0	19.1	274	29.4	08.4	284	56.8	06.9
5	252	57.0	253	58.3	−1 59.0	185	26.8	+23 19.3	289	31.3	−15 08.3	299	59.0	−18 06.9
6	267	59.5	268	57.9	−1 57.8	200	27.7	+23 19.6	304	33.3	−15 08.1	315	01.3	−18 06.8
7	283	02.0	283	57.5	56.5	215	28.6	19.8	319	35.2	07.9	330	03.5	06.7
8	298	04.4	298	57.1	55.3	230	29.5	20.0	334	37.2	07.8	345	05.7	06.7
9	313	06.9	313	56.7	54.0	245	30.3	20.2	349	39.1	07.6	0	08.0	06.6
10	328	09.3	328	56.4	52.8	260	31.2	20.5	4	41.1	07.5	15	10.2	06.6
11	343	11.8	343	56.0	−1 51.5	275	32.1	+23 20.7	19	43.0	−15 07.3	30	12.4	−18 06.5
12	358	14.3	358	55.6	−1 50.3	290	32.9	+23 20.9	34	44.9	−15 07.1	45	14.7	−18 06.5
13	13	16.7	13	55.2	49.0	305	33.8	21.2	49	46.9	07.0	60	16.9	06.4
14	28	19.2	28	54.8	47.7	320	34.7	21.4	64	48.8	06.8	75	19.1	06.3
15	43	21.7	43	54.4	46.5	335	35.5	21.6	79	50.8	06.6	90	21.4	06.3
16	58	24.1	58	54.0	45.2	350	36.4	21.8	94	52.7	06.5	105	23.6	06.2
17	73	26.6	73	53.7	−1 44.0	5	37.3	+23 22.1	109	54.7	−15 06.3	120	25.8	−18 06.2
18	88	29.1	88	53.3	−1 42.7	20	38.2	+23 22.3	124	56.6	−15 06.2	135	28.1	−18 06.1
19	103	31.5	103	52.9	41.5	35	39.0	22.5	139	58.6	06.0	150	30.3	06.1
20	118	34.0	118	52.5	40.2	50	39.9	22.7	155	00.5	05.8	165	32.5	06.0
21	133	36.4	133	52.1	39.0	65	40.8	22.9	170	02.5	05.7	180	34.8	05.9
22	148	38.9	148	51.7	37.7	80	41.6	23.2	185	04.4	05.5	195	37.0	05.9
23	163	41.4	163	51.4	36.4	95	42.5	23.4	200	06.4	05.3	210	39.2	05.8
24	178	43.8	178	51.0	−1 35.2	110	43.4	+23 23.6	215	08.3	−15 05.2	225	41.5	−18 05.8
Dif	—			−4	+13		+9	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 7ᵈ.6		PHE	4ʰ: 54′.8									
	PMG: 12ʰ 07ᵐ.1				SD: 14′.9			12ʰ: 55′.0									
					PMG: 18ʰ 15ᵐ			20ʰ: 55′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	178	11.1	+0	14.2	95	30.0	+24	11.4		**60 N**	18 17	18 59	19 50	8 25	43	3 10	64
1	193	11.3		15.2	109	59.8 108		15.4	40	**58**	17	56	43	8 47	45	2 48	63
2	208	11.5		16.2	124	29.4 106		19.3	39	**56**	16	53	38	9 05	46	31	60
3	223	11.6		17.2	138	59.0 106		23.0	37	**54**	16	51	33	21	46	16	59
4	238	11.8		18.2	153	28.6 106		26.6	36	**52**	15	49	29	34	47	2 03	59
5	253	12.0	+0	19.1	167	58.1 105	+24	30.1	35	**50**	18 15	18 47	19 25	9 45	48	1 51	58
6	268	12.2	+0	20.1	182	27.6 105	+24	33.5	34	**45**	18 14	18 43	19 18	10 09	49	1 28	56
7	283	12.4		21.1	196	57.0 104		36.8	33	**40**	13	40	12	29	49	1 09	55
8	298	12.6		22.1	211	26.3 103		39.9	31	**35**	13	38	07	45	50	0 53	55
9	313	12.8		23.1	225	55.6 103		43.0	31	**30**	12	36	19 04	10 59	51	39	54
10	328	12.9		24.1	240	24.9 103		45.9	29	**20**	11	33	18 59	11 23	51	0 16	53
11	343	13.1	+0	25.1	254	54.1 102	+24	48.7	28	**10 N**	18 11	18 32	18 56	11 44	51	**	**
12	358	13.3	+0	26.1	269	23.2 101	+24	51.3	26	**0**	18 10	18 31	18 55	12 03	52	**	**
13	13	13.5		27.0	283	52.3 101		53.9	26	**10 S**	10	31	55	22	53	**	**
14	28	13.7		28.0	298	21.3 100		56.3	24	**20**	10	32	18 57	12 43	53	23 47	53
15	43	13.9		29.0	312	50.3 100	+24	58.6	23	**30**	10	34	19 01	13 07	54	22	54
16	58	14.1		30.0	327	19.3 100	+25	00.8	22	**35**	10	35	04	22	53	23 08	53
17	73	14.2	+0	31.0	341	48.2 99	+25	02.9	21	**40**	18 10	18 37	19 08	13 38	54	22 51	54
18	88	14.4	+0	32.0	356	17.0 98	+25	04.8	19	**45**	18 10	18 39	19 13	13 58	54	22 31	54
19	103	14.6		33.0	10	45.8 98		06.6	18	**50**	10	42	20	14 23	55	22 06	54
20	118	14.8		34.0	25	14.6 98		08.3	17	**52**	10	43	23	35	55	21 54	54
21	133	15.0		34.9	39	43.3 97		09.9	16	**54**	10	45	27	14 49	55	40	54
22	148	15.2		35.9	54	11.9 96		11.3	14	**56**	10	47	31	15 05	55	24	54
23	163	15.4		36.9	68	40.6 97		12.6	13	**58**	10	49	36	24	55	21 05	53
24	178	15.6	+0	37.9	83	09.1 95	+25	13.8	12	**60 S**	18 10	18 51	19 41	15 47	56	20 41	53

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.2			Mag: −2.1			Mag: +0.8		
	12ʰ 03ᵐ.1		PMG: 12ʰ 05ᵐ			PMG: 16ʰ 36ᵐ			PMG: 9ʰ 38ᵐ			PMG: 8ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	178	43.8	178	51.0	−1 35.2	110	43.4	+23 23.6	215	08.3	−15 05.2	225	41.5	−18 05.8
1	193	46.3	193	50.6	33.9	125	44.2	23.8	230	10.3	05.0	240	43.7	05.7
2	208	48.8	208	50.2	32.7	140	45.1	24.1	245	12.2	04.9	255	45.9	05.7
3	223	51.2	223	49.8	31.4	155	46.0	24.3	260	14.2	04.7	270	48.2	05.6
4	238	53.7	238	49.4	30.2	170	46.8	24.5	275	16.1	04.5	285	50.4	05.5
5	253	56.2	253	49.1	−1 28.9	185	47.7	+23 24.7	290	18.1	−15 04.4	300	52.6	−18 05.5
6	268	58.6	268	48.7	−1 27.7	200	48.6	+23 25.0	305	20.0	−15 04.2	315	54.9	−18 05.4
7	284	01.1	283	48.3	26.4	215	49.4	25.2	320	22.0	04.1	330	57.1	05.4
8	299	03.6	298	47.9	25.1	230	50.3	25.4	335	23.9	03.9	345	59.4	05.3
9	314	06.0	313	47.5	23.9	245	51.2	25.6	350	25.9	03.7	1	01.6	05.3
10	329	08.5	328	47.1	22.6	260	52.0	25.8	5	27.8	03.6	16	03.8	05.2
11	344	10.9	343	46.8	−1 21.4	275	52.9	+23 26.1	20	29.8	−15 03.4	31	06.1	−18 05.1
12	359	13.4	358	46.4	−1 20.1	290	53.8	+23 26.3	35	31.7	−15 03.2	46	08.3	−18 05.1
13	14	15.9	13	46.0	18.9	305	54.6	26.5	50	33.6	03.1	61	10.5	05.0
14	29	18.3	28	45.6	17.6	320	55.5	26.7	65	35.6	02.9	76	12.8	05.0
15	44	20.8	43	45.2	16.3	335	56.4	26.9	80	37.5	02.8	91	15.0	04.9
16	59	23.3	58	44.8	15.1	350	57.2	27.2	95	39.5	02.6	106	17.2	04.9
17	74	25.7	73	44.5	−1 13.8	5	58.1	+23 27.4	110	41.4	−15 02.4	121	19.5	−18 04.8
18	89	28.2	88	44.1	−1 12.6	20	59.0	+23 27.6	125	43.4	−15 02.3	136	21.7	−18 04.8
19	104	30.7	103	43.7	11.3	35	59.8	27.8	140	45.4	02.1	151	24.0	04.7
20	119	33.1	118	43.3	10.1	51	00.7	28.0	155	47.3	02.0	166	26.2	04.6
21	134	35.6	133	42.9	08.8	66	01.6	28.2	170	49.3	01.8	181	28.4	04.6
22	149	38.1	148	42.6	07.5	81	02.4	28.5	185	51.2	01.6	196	30.7	04.5
23	164	40.5	163	42.2	06.3	96	03.3	28.7	200	53.2	01.5	211	32.9	04.5
24	179	43.0	178	41.8	−1 05.0	111	04.2	+23 28.9	215	55.1	−15 01.3	226	35.1	−18 04.4
Dif	—			−4	+13		+9	+2		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 06.m8				LUNA Edad: 8.d6 SD: 15′.0 PMG: 19h 08m PHE: 4h: 55′.4; 12h: 55′.6; 20h: 55′.8 Rº: 54m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	15.6	+0	37.9	83	09.1	+25	13.8	**60 N**	4 23	5 14	5 55	9 08	65	4 14	47
1	193	15.7		38.9	97	37.7 96		14.8 10	**58**	30	17	56	32	63	3 51	47
2	208	15.9		39.9	112	06.2 95		15.8 10	**56**	35	19	57	9 51	62	31	49
3	223	16.1		40.9	126	34.6 94		16.6 8	**54**	40	22	57	10 07	61	15	50
4	238	16.3		41.9	141	03.1 95		17.2 6	**52**	44	24	58	21	60	3 02	49
5	253	16.5	+0	42.8	155	31.4 93	+25	17.8 6	**50**	4 48	5 26	5 58	10 33	60	2 49	51
6	268	16.7	+0	43.8	169	59.8 94	+25	18.2 4	**45**	4 56	5 30	5 59	10 58	59	2 24	51
7	283	16.9		44.8	184	28.1 93		18.4 2	**40**	5 01	33	6 00	11 18	58	2 04	52
8	298	17.1		45.8	198	56.3 92		18.6 2	**35**	06	36	01	35	57	1 48	51
9	313	17.2		46.8	213	24.6 93		18.6 0	**30**	10	37	01	11 50	56	33	52
10	328	17.4		47.8	227	52.8 92		18.5 1	**20**	15	40	02	12 14	55	1 09	52
11	343	17.6	+0	48.8	242	20.9 91	+25	18.2 3	**10 N**	5 18	5 42	6 03	12 35	55	0 48	52
12	358	17.8	+0	49.7	256	49.0 91	+25	17.8 4	**0**	5 19	5 43	6 04	12 55	54	0 28	53
13	13	18.0		50.7	271	17.1 91		17.3 5	**10 S**	19	43	04	13 15	53	0 08	53
14	28	18.2		51.7	285	45.2 91		16.7 6	**20**	17	42	04	13 36	52	** **	**
15	43	18.4		52.7	300	13.2 90		15.9 8	**30**	13	41	05	14 01	50	** **	**
16	58	18.5		53.7	314	41.2 90		15.0 9	**35**	10	40	05	15	50	** **	**
17	73	18.7	+0	54.7	329	09.2 90	+25	13.9 11	**40**	5 06	5 38	6 05	14 32	49	23 45	61
18	88	18.9	+0	55.7	343	37.2 90	+25	12.7 12	**45**	5 01	5 36	6 05	14 52	48	23 25	62
19	103	19.1		56.6	358	05.1 89		11.4 13	**50**	4 55	33	05	15 18	45	23 00	64
20	118	19.3		57.6	12	33.0 89		09.9 15	**52**	52	32	05	30	45	22 48	65
21	133	19.5		58.6	27	00.9 89		08.3 16	**54**	48	30	05	15 44	44	34	67
22	148	19.7	+0	59.6	41	28.7 88		06.6 17	**56**	44	28	05	16 00	42	22 18	68
23	163	19.9	+1	00.6	55	56.5 88		04.7 19	**58**	39	26	05	19	41	21 58	71
24	178	20.1	+1	01.6	70	24.3 88	+25	02.7 20	**60 S**	4 34	5 24	6 05	16 43	38	21 34	74

UT	ARIES PMG 11h 59.m2		VENUS Mag: −4.0 PMG: 12h 06m			MARTE Mag: +1.2 PMG: 16h 35m			JÚPITER Mag: −2.1 PMG: 9h 35m			SATURNO Mag: +0.8 PMG: 8h 52m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	179	43.0	178	41.8	−1 05.0	111	04.2	+23 28.9	215	55.1	−15 01.3	226	35.1	−18 04.4
1	194	45.4	193	41.4	03.8	126	05.0	29.1	230	57.1	01.1	241	37.4	04.4
2	209	47.9	208	41.0	02.5	141	05.9	29.3	245	59.0	01.0	256	39.6	04.3
3	224	50.4	223	40.6	−1 01.3	156	06.7	29.5	261	01.0	00.8	271	41.9	04.2
4	239	52.8	238	40.3	−1 00.0	171	07.6	29.8	276	02.9	00.7	286	44.1	04.2
5	254	55.3	253	39.9	−0 58.7	186	08.5	+23 30.0	291	04.9	−15 00.5	301	46.3	−18 04.1
6	269	57.8	268	39.5	−0 57.5	201	09.3	+23 30.2	306	06.8	−15 00.3	316	48.6	−18 04.1
7	285	00.2	283	39.1	56.2	216	10.2	30.4	321	08.8	−15 00.2	331	50.8	04.0
8	300	02.7	298	38.7	55.0	231	11.1	30.6	336	10.7	−15 00.0	346	53.0	04.0
9	315	05.2	313	38.4	53.7	246	11.9	30.8	351	12.7	−14 59.9	1	55.3	03.9
10	330	07.6	328	38.0	52.4	261	12.8	31.0	6	14.6	59.7	16	57.5	03.9
11	345	10.1	343	37.6	−0 51.2	276	13.6	+23 31.3	21	16.6	−14 59.5	31	59.8	−18 03.8
12	0	12.6	358	37.2	−0 49.9	291	14.5	+23 31.5	36	18.5	−14 59.4	47	02.0	−18 03.7
13	15	15.0	13	36.8	48.7	306	15.4	31.7	51	20.5	59.2	62	04.2	03.7
14	30	17.5	28	36.5	47.4	321	16.2	31.9	66	22.4	59.1	77	06.5	03.6
15	45	19.9	43	36.1	46.2	336	17.1	32.1	81	24.4	58.9	92	08.7	03.6
16	60	22.4	58	35.7	44.9	351	18.0	32.3	96	26.3	58.7	107	11.0	03.5
17	75	24.9	73	35.3	−0 43.6	6	18.8	+23 32.5	111	28.3	−14 58.6	122	13.2	−18 03.5
18	90	27.3	88	34.9	−0 42.4	21	19.7	+23 32.8	126	30.2	−14 58.4	137	15.4	−18 03.4
19	105	29.8	103	34.6	41.1	36	20.5	33.0	141	32.2	58.2	152	17.7	03.4
20	120	32.3	118	34.2	39.9	51	21.4	33.2	156	34.2	58.1	167	19.9	03.3
21	135	34.7	133	33.8	38.6	66	22.3	33.4	171	36.1	57.9	182	22.2	03.2
22	150	37.2	148	33.4	37.3	81	23.1	33.6	186	38.1	57.8	197	24.4	03.2
23	165	39.7	163	33.0	36.1	96	24.0	33.8	201	40.0	57.6	212	26.6	03.1
24	180	42.1	178	32.7	−0 34.8	111	24.8	+23 34.0	216	42.0	−14 57.4	227	28.9	−18 03.1
Dif	—			−4	+13		+9	+2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 9^{d}.6		PHE	4^{h}: 56′.1									
	PMG: 12^{h} 06^{m}.5				SD: 15′.2			12^{h}: 56′.3									
					PMG: 20^{h} 02^{m}			20^{h}: 56′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	20.1	+1	01.6	70	24.3	+25	02.7		**60 N**	18 22	19 04	19 55	10 13	82	5 01	29
1	193	20.2		02.6	84	52.1 88	+25	00.6	21	**58**	21	19 01	48	35	78	4 38	34
2	208	20.4		03.5	99	19.9 88	+24	58.3	23	**56**	20	18 58	42	10 53	75	20	36
3	223	20.6		04.5	113	47.6 87		55.9	24	**54**	19	55	37	11 08	73	4 05	38
4	238	20.8		05.5	128	15.3 87		53.3	26	**52**	19	52	33	21	71	3 51	40
5	253	21.0	+1	06.5	142	43.0 87	+24	50.6	27	**50**	18 18	18 50	19 29	11 33	69	3 40	41
6	268	21.2	+1	07.5	157	10.7 87	+24	47.8	28	**45**	18 16	18 46	19 20	11 57	66	3 15	44
7	283	21.4		08.5	171	38.4 87		44.9	29	**40**	15	42	14	12 16	64	2 56	46
8	298	21.6		09.5	186	06.1 87		41.8	31	**35**	14	40	09	32	62	39	48
9	313	21.7		10.4	200	33.7 86		38.5	33	**30**	13	37	05	12 46	60	25	49
10	328	21.9		11.4	215	01.3 86		35.1	34	**20**	12	34	19 00	13 09	58	2 01	51
11	343	22.1	+1	12.4	229	29.0 87	+24	31.6	35	**10 N**	18 11	18 32	18 56	13 30	56	1 40	53
12	358	22.3	+1	13.4	243	56.6 86	+24	28.0	36	**0**	18 10	18 30	18 54	13 49	54	1 21	53
13	13	22.5		14.4	258	24.2 86		24.2	38	**10 S**	09	30	54	14 08	51	1 01	55
14	28	22.7		15.4	272	51.8 86		20.2	40	**20**	08	30	56	28	49	0 40	57
15	43	22.9		16.4	287	19.3 85		16.2	40	**30**	07	31	18 59	14 51	47	16	58
16	58	23.1		17.3	301	46.9 86		12.0	42	**35**	07	32	19 01	15 05	45	0 01	60
17	73	23.3	+1	18.3	316	14.5 86	+24	07.6	44	**40**	18 06	18 33	19 05	15 21	43	** **	**
18	88	23.4	+1	19.3	330	42.1 86	+24	03.1	45	**45**	18 06	18 35	19 09	15 40	41	** **	**
19	103	23.6		20.3	345	09.6 85	+23	58.5	46	**50**	05	37	15	16 03	38	** **	**
20	118	23.8		21.3	359	37.2 86		53.7	48	**52**	05	39	18	15	35	23 53	75
21	133	24.0		22.3	14	04.7 85		48.8	49	**54**	05	40	21	28	33	41	77
22	148	24.2		23.2	28	32.3 86		43.8	50	**56**	05	42	25	16 42	31	26	81
23	163	24.4		24.2	42	59.8 85		38.6	52	**58**	04	43	30	17 00	27	23 09	84
24	178	24.6	+1	25.2	57	27.4 86	+23	33.3	53	**60 S**	18 04	18 45	19 35	17 21	22	22 48	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.2			Mag: −2.1			Mag: +0.8		
	11^{h} 55^{m}.2		PMG: 12^{h} 06^{m}			PMG: 16^{h} 33^{m}			PMG: 9^{h} 32^{m}			PMG: 8^{h} 49^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	180	42.1	178	32.7	−0 34.8	111	24.8	+23 34.0	216	42.0	−14 57.4	227	28.9	−18 03.1
1	195	44.6	193	32.3	33.6	126	25.7	34.2	231	43.9	57.3	242	31.1	03.0
2	210	47.0	208	31.9	32.3	141	26.6	34.4	246	45.9	57.1	257	33.4	03.0
3	225	49.5	223	31.5	31.0	156	27.4	34.7	261	47.8	57.0	272	35.6	02.9
4	240	52.0	238	31.1	29.8	171	28.3	34.9	276	49.8	56.8	287	37.8	02.9
5	255	54.4	253	30.8	−0 28.5	186	29.2	+23 35.1	291	51.7	−14 56.6	302	40.1	−18 02.8
6	270	56.9	268	30.4	−0 27.3	201	30.0	+23 35.3	306	53.7	−14 56.5	317	42.3	−18 02.7
7	285	59.4	283	30.0	26.0	216	30.9	35.5	321	55.7	56.3	332	44.6	02.7
8	301	01.8	298	29.6	24.8	231	31.7	35.7	336	57.6	56.2	347	46.8	02.6
9	316	04.3	313	29.2	23.5	246	32.6	35.9	351	59.6	56.0	2	49.0	02.6
10	331	06.8	328	28.9	22.2	261	33.4	36.1	7	01.5	55.8	17	51.3	02.5
11	346	09.2	343	28.5	−0 21.0	276	34.3	+23 36.3	22	03.5	−14 55.7	32	53.5	−18 02.5
12	1	11.7	358	28.1	−0 19.7	291	35.2	+23 36.5	37	05.4	−14 55.5	47	55.8	−18 02.4
13	16	14.2	13	27.7	18.5	306	36.0	36.7	52	07.4	55.4	62	58.0	02.4
14	31	16.6	28	27.4	17.2	321	36.9	36.9	67	09.3	55.2	78	00.3	02.3
15	46	19.1	43	27.0	15.9	336	37.7	37.2	82	11.3	55.0	93	02.5	02.2
16	61	21.5	58	26.6	14.7	351	38.6	37.4	97	13.3	54.9	108	04.7	02.2
17	76	24.0	73	26.2	−0 13.4	6	39.5	+23 37.6	112	15.2	−14 54.7	123	07.0	−18 02.1
18	91	26.5	88	25.8	−0 12.2	21	40.3	+23 37.8	127	17.2	−14 54.6	138	09.2	−18 02.1
19	106	28.9	103	25.5	10.9	36	41.2	38.0	142	19.1	54.4	153	11.5	02.0
20	121	31.4	118	25.1	09.6	51	42.0	38.2	157	21.1	54.2	168	13.7	02.0
21	136	33.9	133	24.7	08.4	66	42.9	38.4	172	23.0	54.1	183	16.0	01.9
22	151	36.3	148	24.3	07.1	81	43.8	38.6	187	25.0	53.9	198	18.2	01.9
23	166	38.8	163	23.9	05.9	96	44.6	38.8	202	27.0	53.8	213	20.4	01.8
24	181	41.3	178	23.6	−0 04.6	111	45.5	+23 39.0	217	28.9	−14 53.6	228	22.7	−18 01.8
Dif	—			−4	+13		+9	+2		+20	+2		+22	+1

UT	SOL SD: 16′.0 PMG: 12h 06m.2				LUNA Edad: 10d.6 SD: 15′.5 PMG: 20h 55m PHE: 4h: 56′.9; 12h: 57′.2; 20h: 57′.5 Rº: 53m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	24.6	+1	25.2	57	27.4 86	+23	33.3 54	**60 N**	4 16	5 07	5 49	11 35	93	5 30	18
1	193	24.8		26.2	71	55.0 85		27.9 56	**58**	23	11	50	11 53	88	5 12	22
2	208	24.9		27.2	86	22.5 86		22.3 57	**56**	29	14	51	12 08	84	4 56	27
3	223	25.1		28.2	100	50.1 85		16.6 59	**54**	35	17	52	21	81	43	29
4	238	25.3		29.2	115	17.6 86		10.7 60	**52**	39	19	53	32	79	31	32
5	253	25.5	+1	30.1	129	45.2 86	+23	04.7 61	**50**	4 43	5 22	5 54	12 42	77	4 21	33
6	268	25.7	+1	31.1	144	12.8 86	+22	58.6 63	**45**	4 52	5 26	5 55	13 03	72	3 59	38
7	283	25.9		32.1	158	40.4 86		52.3 64	**40**	4 58	30	57	20	69	42	40
8	298	26.1		33.1	173	07.9 85		45.9 65	**35**	5 03	33	58	34	66	27	43
9	313	26.3		34.1	187	35.5 86		39.4 67	**30**	07	35	5 59	13 46	64	3 14	45
10	328	26.5		35.1	202	03.1 86		32.7 68	**20**	13	39	6 01	14 07	60	2 52	48
11	343	26.6	+1	36.0	216	30.7 86	+22	25.9 69	**10 N**	5 16	5 41	6 02	14 26	56	2 33	51
12	358	26.8	+1	37.0	230	58.4 87	+22	19.0 71	**0**	5 18	5 42	6 03	14 43	53	2 14	54
13	13	27.0		38.0	245	26.0 86		11.9 72	**10 S**	19	43	04	14 59	51	1 56	57
14	28	27.2		39.0	259	53.6 86	+22	04.7 74	**20**	17	43	05	15 17	47	37	59
15	43	27.4		40.0	274	21.3 87	+21	57.3 74	**30**	14	42	06	38	43	14	62
16	58	27.6		41.0	288	48.9 86		49.9 74	**35**	12	41	06	15 50	41	1 01	64
17	73	27.8	+1	41.9	303	16.6 87	+21	42.3 76	**40**	5 09	5 40	6 07	16 04	38	0 46	66
18	88	28.0	+1	42.9	317	44.3 87	+21	34.5 78	**45**	5 04	5 38	6 08	16 21	34	0 27	70
19	103	28.2		43.9	332	12.0 87		26.6 79	**50**	4 58	36	08	41	30	0 04	73
20	118	28.3		44.9	346	39.7 87		18.6 80	**52**	55	35	09	16 50	28	** **	**
21	133	28.5		45.9	1	07.5 88		10.5 81	**54**	52	34	09	17 01	25	** **	**
22	148	28.7		46.9	15	35.2 87	+21	02.2 83	**56**	48	32	09	13	22	** **	**
23	163	28.9		47.8	30	03.0 88	+20	53.9 83	**58**	44	31	10	27	19	** **	**
24	178	29.1	+1	48.8	44	30.7 87	+20	45.3 86	**60 S**	4 39	5 29	6 10	17 43	14	** **	**

UT	ARIES PMG 11h 51m.3		VENUS Mag: −4.0 PMG: 12h 07m			MARTE Mag: +1.2 PMG: 16h 32m			JÚPITER Mag: −2.1 PMG: 9h 29m			SATURNO Mag: +0.8 PMG: 8h 45m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	181	41.3	178	23.6	−0 04.6	111	45.5	+23 39.0	217	28.9	−14 53.6	228	22.7	−18 01.8
1	196	43.7	193	23.2	03.3	126	46.3	39.2	232	30.9	53.4	243	24.9	01.7
2	211	46.2	208	22.8	02.1	141	47.2	39.4	247	32.8	53.3	258	27.2	01.6
3	226	48.7	223	22.4	−0 00.8	156	48.0	39.6	262	34.8	53.1	273	29.4	01.6
4	241	51.1	238	22.1	+0 00.4	171	48.9	39.8	277	36.7	53.0	288	31.7	01.5
5	256	53.6	253	21.7	+0 01.7	186	49.7	+23 40.0	292	38.7	−14 52.8	303	33.9	−18 01.5
6	271	56.0	268	21.3	+0 03.0	201	50.6	+23 40.2	307	40.7	−14 52.6	318	36.1	−18 01.4
7	286	58.5	283	20.9	04.2	216	51.5	40.4	322	42.6	52.5	333	38.4	01.4
8	302	01.0	298	20.5	05.5	231	52.3	40.6	337	44.6	52.3	348	40.6	01.3
9	317	03.4	313	20.2	06.7	246	53.2	40.8	352	46.5	52.2	3	42.9	01.3
10	332	05.9	328	19.8	08.0	261	54.0	41.0	7	48.5	52.0	18	45.1	01.2
11	347	08.4	343	19.4	+0 09.3	276	54.9	+23 41.2	22	50.5	−14 51.8	33	47.4	−18 01.2
12	2	10.8	358	19.0	+0 10.5	291	55.7	+23 41.4	37	52.4	−14 51.7	48	49.6	−18 01.1
13	17	13.3	13	18.7	11.8	306	56.6	41.6	52	54.4	51.5	63	51.9	01.0
14	32	15.8	28	18.3	13.0	321	57.5	41.8	67	56.3	51.4	78	54.1	01.0
15	47	18.2	43	17.9	14.3	336	58.3	42.0	82	58.3	51.2	93	56.3	00.9
16	62	20.7	58	17.5	15.6	351	59.2	42.2	98	00.2	51.0	108	58.6	00.9
17	77	23.1	73	17.1	+0 16.8	7	00.0	+23 42.4	113	02.2	−14 50.9	124	00.8	−18 00.8
18	92	25.6	88	16.8	+0 18.1	22	00.9	+23 42.6	128	04.2	−14 50.7	139	03.1	−18 00.8
19	107	28.1	103	16.4	19.3	37	01.7	42.8	143	06.1	50.6	154	05.3	00.7
20	122	30.5	118	16.0	20.6	52	02.6	43.0	158	08.1	50.4	169	07.6	00.7
21	137	33.0	133	15.6	21.9	67	03.4	43.2	173	10.0	50.2	184	09.8	00.6
22	152	35.5	148	15.3	23.1	82	04.3	43.4	188	12.0	50.1	199	12.1	00.6
23	167	37.9	163	14.9	24.4	97	05.1	43.6	203	14.0	49.9	214	14.3	00.5
24	182	40.4	178	14.5	+0 25.6	112	06.0	+23 43.8	218	15.9	−14 49.8	229	16.5	−18 00.4
Dif	—		−4		+13	+9		+2	+20		+2	+22		+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 11ᵈ.6		PHE	4ʰ: 57′.8								
	PMG: 12ʰ 05ᵐ.9		SD: 15′.7			12ʰ: 58′.1								
			PMG: 21ʰ 48ᵐ			20ʰ: 58′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	178 29.1	+1 48.8	44 30.7	88	+20 45.3	86	**60 N**	18 27	19 09	20 01	13 08	97	5 48	12
1	193 29.3	49.8	58 58.5	89	36.7	88	**58**	26	05	19 53	21	93	34	16
2	208 29.5	50.8	73 26.4	88	27.9	89	**56**	24	19 02	47	32	89	23	19
3	223 29.7	51.8	87 54.2	88	19.0	89	**54**	23	18 59	41	42	86	12	22
4	238 29.9	52.7	102 22.0	88	10.0	90	**52**	22	56	37	51	83	5 03	25
5	253 30.1	+1 53.7	116 49.9	89	+20 00.8	92	**50**	18 21	18 54	19 32	13 59	80	4 54	28
6	268 30.2	+1 54.7	131 17.8	89	+19 51.5	93	**45**	18 19	18 48	19 23	14 15	76	4 37	31
7	283 30.4	55.7	145 45.7	89	42.1	94	**40**	17	44	16	29	71	22	36
8	298 30.6	56.7	160 13.6	89	32.6	95	**35**	16	41	11	40	68	4 10	38
9	313 30.8	57.7	174 41.6	90	23.0	96	**30**	15	39	06	14 50	66	3 59	41
10	328 31.0	58.6	189 09.5	89	13.2	98	**20**	12	34	19 00	15 07	61	40	46
11	343 31.2	+1 59.6	203 37.5	90	+19 03.3	99	**10 N**	18 11	18 32	18 56	15 22	56	3 24	49
12	358 31.4	+2 00.6	218 05.5	90	+18 53.3	100	**0**	18 09	18 30	18 54	15 36	52	3 08	53
13	13 31.6	01.6	232 33.6	91	43.1	102	**10 S**	08	29	53	15 50	48	2 53	56
14	28 31.8	02.6	247 01.6	90	32.9	102	**20**	06	28	54	16 04	45	36	60
15	43 31.9	03.5	261 29.7	91	22.5	104	**30**	05	29	56	21	40	16	65
16	58 32.1	04.5	275 57.8	91	12.0	105	**35**	04	29	18 59	31	37	2 05	67
17	73 32.3	+2 05.5	290 25.9	91	+18 01.4	106	**40**	18 03	18 30	19 01	16 42	34	1 52	70
18	88 32.5	+2 06.5	304 54.0	91	+17 50.7	107	**45**	18 02	18 31	19 05	16 55	30	1 37	74
19	103 32.7	07.5	319 22.2	92	39.8	109	**50**	01	33	11	17 11	25	17	79
20	118 32.9	08.5	333 50.4	92	28.9	109	**52**	00	34	13	18	23	1 08	82
21	133 33.1	09.4	348 18.6	92	17.8	111	**54**	18 00	35	16	26	20	0 58	84
22	148 33.3	10.4	2 46.8	92	+17 06.6	112	**56**	17 59	36	20	35	17	47	87
23	163 33.5	11.4	17 15.1	93	+16 55.3	113	**58**	59	38	24	46	13	33	91
24	178 33.7	+2 12.4	31 43.3	92	+16 43.9	114	**60 S**	17 58	18 39	19 28	17 57	10	0 17	96

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: +1.2		Mag: −2.1		Mag: +0.8	
	11ʰ 47ᵐ.4	PMG: 12ʰ 07ᵐ		PMG: 16ʰ 31ᵐ		PMG: 9ʰ 26ᵐ		PMG: 8ʰ 42ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	182 40.4	178 14.5	+0 25.6	112 06.0	+23 43.8	218 15.9	−14 49.8	229 16.5	−18 00.4
1	197 42.9	193 14.1	26.9	127 06.9	44.0	233 17.9	49.6	244 18.8	00.4
2	212 45.3	208 13.7	28.2	142 07.7	44.2	248 19.9	49.4	259 21.0	00.3
3	227 47.8	223 13.4	29.4	157 08.6	44.4	263 21.8	49.3	274 23.3	00.3
4	242 50.3	238 13.0	30.7	172 09.4	44.6	278 23.8	49.1	289 25.5	00.2
5	257 52.7	253 12.6	+0 31.9	187 10.3	+23 44.8	293 25.7	−14 49.0	304 27.8	−18 00.2
6	272 55.2	268 12.2	+0 33.2	202 11.1	+23 45.0	308 27.7	−14 48.8	319 30.0	−18 00.1
7	287 57.6	283 11.9	34.5	217 12.0	45.2	323 29.7	48.6	334 32.3	−18 00.1
8	303 00.1	298 11.5	35.7	232 12.8	45.4	338 31.6	48.5	349 34.5	−18 00.0
9	318 02.6	313 11.1	37.0	247 13.7	45.6	353 33.6	48.3	4 36.8	−18 00.0
10	333 05.0	328 10.7	38.2	262 14.5	45.8	8 35.5	48.2	19 39.0	−17 59.9
11	348 07.5	343 10.4	+0 39.5	277 15.4	+23 46.0	23 37.5	−14 48.0	34 41.3	−17 59.9
12	3 10.0	358 10.0	+0 40.8	292 16.2	+23 46.2	38 39.5	−14 47.9	49 43.5	−17 59.8
13	18 12.4	13 09.6	42.0	307 17.1	46.4	53 41.4	47.7	64 45.8	59.7
14	33 14.9	28 09.2	43.3	322 17.9	46.6	68 43.4	47.5	79 48.0	59.7
15	48 17.4	43 08.8	44.6	337 18.8	46.8	83 45.4	47.4	94 50.2	59.6
16	63 19.8	58 08.5	45.8	352 19.6	47.0	98 47.3	47.2	109 52.5	59.6
17	78 22.3	73 08.1	+0 47.1	7 20.5	+23 47.2	113 49.3	−14 47.1	124 54.7	−17 59.5
18	93 24.8	88 07.7	+0 48.3	22 21.3	+23 47.3	128 51.2	−14 46.9	139 57.0	−17 59.5
19	108 27.2	103 07.3	49.6	37 22.2	47.5	143 53.2	46.7	154 59.2	59.4
20	123 29.7	118 07.0	50.9	52 23.1	47.7	158 55.2	46.6	170 01.5	59.4
21	138 32.1	133 06.6	52.1	67 23.9	47.9	173 57.1	46.4	185 03.7	59.3
22	153 34.6	148 06.2	53.4	82 24.8	48.1	188 59.1	46.3	200 06.0	59.3
23	168 37.1	163 05.8	54.6	97 25.6	48.3	204 01.1	46.1	215 08.2	59.2
24	183 39.5	178 05.5	+0 55.9	112 26.5	+23 48.5	219 03.0	−14 45.9	230 10.5	−17 59.2
Dif	—	−4	+13	+9	+2	+20	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 12^{d}.6		PHE	4^{h}: 58′.7									
	PMG: 12^{h} 05^{m}.6				SD: 16′.0			12^{h}: 59′.0									
					PMG: 22^{h} 41^{m}			20^{h}: 59′.3									
	hG ☉		Dec		hG ☾	Dif		Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′		°	′	°	h m	h m	h m	h m	m	h m	m
0	178	33.7	+2	12.4	31	43.3	93	+16	43.9	**60 N**	4 10	5 01	5 43	14 45	99	6 00	8
1	193	33.8		13.4	46	11.6	93		32.4	115 **58**	17	05	45	14 54	95	5 50	12
2	208	34.0		14.3	60	39.9	93		20.8	116 **56**	24	09	46	15 01	92	42	15
3	223	34.2		15.3	75	08.3	94	+16	09.1	117 **54**	29	12	47	08	88	34	18
4	238	34.4		16.3	89	36.6	93	+15	57.2	119 **52**	34	15	48	14	85	28	20
5	253	34.6	+2	17.3	104	05.0	94	+15	45.3	119 **50**	4 39	5 17	5 50	15 19	83	5 22	23
6	268	34.8	+2	18.3	118	33.4	94	+15	33.3	120 **45**	4 48	5 22	5 52	15 31	77	5 08	28
7	283	35.0		19.2	133	01.8	94		21.1	122 **40**	4 55	26	54	40	74	4 58	31
8	298	35.2		20.2	147	30.3	95	+15	08.9	122 **35**	5 00	30	55	48	70	48	35
9	313	35.4		21.2	161	58.8	95	+14	56.5	124 **30**	05	33	57	15 56	66	40	38
10	328	35.5		22.2	176	27.3	95		44.0	125 **20**	11	37	5 59	16 08	61	26	43
11	343	35.7	+2	23.2	190	55.8	95	+14	31.5	125 **10 N**	5 15	5 40	6 01	16 18	57	4 13	48
12	358	35.9	+2	24.1	205	24.3	95	+14	18.9	126 **0**	5 18	5 42	6 02	16 28	52	4 01	52
13	13	36.1		25.1	219	52.9	96	+14	06.1	128 **10 S**	19	43	04	38	48	3 49	56
14	28	36.3		26.1	234	21.4	95	+13	53.3	128 **20**	18	43	05	16 49	42	36	61
15	43	36.5		27.1	248	50.0	96		40.3	130 **30**	16	43	07	17 01	37	21	66
16	58	36.7		28.1	263	18.6	96		27.3	130 **35**	13	43	08	08	34	12	69
17	73	36.9	+2	29.0	277	47.3	97	+13	14.2	131 **40**	5 11	5 42	6 09	17 16	30	3 02	73
18	88	37.1	+2	30.0	292	15.9	96	+13	01.0	132 **45**	5 07	5 41	6 10	17 25	26	2 51	77
19	103	37.3		31.0	306	44.6	97	+12	47.7	133 **50**	5 02	39	11	36	21	36	82
20	118	37.4		32.0	321	13.3	97		34.3	134 **52**	4 59	38	12	41	19	30	84
21	133	37.6		33.0	335	42.0	97		20.8	135 **54**	56	37	13	46	17	22	88
22	148	37.8		33.9	350	10.7	97	+12	07.2	136 **56**	53	36	13	52	14	14	90
23	163	38.0		34.9	4	39.4	97	+11	53.6	136 **58**	49	35	14	17 59	11	2 04	95
24	178	38.2	+2	35.9	19	08.2	98	+11	39.9	137 **60 S**	4 44	5 34	6 15	18 07	7	1 53	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.2			Mag: −2.1			Mag: +0.8		
	11^{h} 43^{m}.4		PMG: 12^{h} 08^{m}			PMG: 16^{h} 29^{m}			PMG: 9^{h} 23^{m}			PMG: 8^{h} 38^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	183	39.5	178	05.5	+0 55.9	112	26.5	+23 48.5	219	03.0	−14 45.9	230	10.5	−17 59.2
1	198	42.0	193	05.1	57.2	127	27.3	48.7	234	05.0	45.8	245	12.7	59.1
2	213	44.5	208	04.7	58.4	142	28.2	48.9	249	07.0	45.6	260	15.0	59.1
3	228	46.9	223	04.3	+0 59.7	157	29.0	49.1	264	08.9	45.5	275	17.2	59.0
4	243	49.4	238	03.9	+1 00.9	172	29.9	49.3	279	10.9	45.3	290	19.5	58.9
5	258	51.9	253	03.6	+1 02.2	187	30.7	+23 49.5	294	12.9	−14 45.2	305	21.7	−17 58.9
6	273	54.3	268	03.2	+1 03.5	202	31.6	+23 49.6	309	14.8	−14 45.0	320	24.0	−17 58.8
7	288	56.8	283	02.8	04.7	217	32.4	49.8	324	16.8	44.8	335	26.2	58.8
8	303	59.2	298	02.4	06.0	232	33.3	50.0	339	18.7	44.7	350	28.5	58.7
9	319	01.7	313	02.1	07.2	247	34.1	50.2	354	20.7	44.5	5	30.7	58.7
10	334	04.2	328	01.7	08.5	262	35.0	50.4	9	22.7	44.4	20	33.0	58.6
11	349	06.6	343	01.3	+1 09.8	277	35.8	+23 50.6	24	24.6	−14 44.2	35	35.2	−17 58.6
12	4	09.1	358	00.9	+1 11.0	292	36.7	+23 50.8	39	26.6	−14 44.0	50	37.5	−17 58.5
13	19	11.6	13	00.6	12.3	307	37.5	51.0	54	28.6	43.9	65	39.7	58.5
14	34	14.0	28	00.2	13.5	322	38.4	51.2	69	30.5	43.7	80	42.0	58.4
15	49	16.5	42	59.8	14.8	337	39.2	51.3	84	32.5	43.6	95	44.2	58.4
16	64	19.0	57	59.4	16.1	352	40.1	51.5	99	34.5	43.4	110	46.5	58.3
17	79	21.4	72	59.0	+1 17.3	7	40.9	+23 51.7	114	36.4	−14 43.2	125	48.7	−17 58.3
18	94	23.9	87	58.7	+1 18.6	22	41.7	+23 51.9	129	38.4	−14 43.1	140	51.0	−17 58.2
19	109	26.4	102	58.3	19.8	37	42.6	52.1	144	40.4	42.9	155	53.2	58.1
20	124	28.8	117	57.9	21.1	52	43.4	52.3	159	42.3	42.8	170	55.5	58.1
21	139	31.3	132	57.5	22.4	67	44.3	52.5	174	44.3	42.6	185	57.7	58.0
22	154	33.7	147	57.2	23.6	82	45.1	52.7	189	46.3	42.5	201	00.0	58.0
23	169	36.2	162	56.8	24.9	97	46.0	52.8	204	48.2	42.3	216	02.2	57.9
24	184	38.7	177	56.4	+1 26.1	112	46.8	+23 53.0	219	50.2	−14 42.1	231	04.5	−17 57.9
Dif	—		−4		+13	+8		+2	+20		+2	+23		+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 13^{d}.6		PHE	4^{h}: 59′.6								
	PMG: 12^{h} 05^{m}.3				SD: 16′.2			12^{h}: 59′.8								
					PMG: 23^{h} 32^{m}			20^{h}: 60′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	178	38.2	+2	35.9	19	08.2	+11	39.9	**60 N**	18 32	19 14	20 06	16 24	100	6 08	6
1	193	38.4		36.9	33	37.0 98		26.0 139	**58**	30	10	19 59	29	96	6 02	10
2	208	38.6		37.8	48	05.8 98	+11	12.1 139	**56**	28	06	52	33	92	5 57	13
3	223	38.8		38.8	62	34.6 98	+10	58.2 139	**54**	27	03	46	36	90	52	16
4	238	39.0		39.8	77	03.4 98		44.1 141	**52**	26	19 00	40	39	87	48	19
5	253	39.2	+2	40.8	91	32.2 98	+10	30.0 141	**50**	18 24	18 57	19 36	16 42	85	5 45	20
6	268	39.3	+2	41.8	106	01.1 99	+10	15.8 142	**45**	18 22	18 51	19 26	16 48	79	5 36	26
7	283	39.5		42.7	120	29.9 98	+10	01.5 143	**40**	19	47	19	54	74	29	30
8	298	39.7		43.7	134	58.8 99	+9	47.2 143	**35**	17	43	13	16 58	71	23	34
9	313	39.9		44.7	149	27.7 99		32.8 144	**30**	16	40	08	17 02	67	18	37
10	328	40.1		45.7	163	56.6 99		18.3 145	**20**	13	35	19 01	09	61	09	42
11	343	40.3	+2	46.6	178	25.5 99	+9	03.7 146	**10 N**	18 11	18 32	18 56	17 15	56	5 01	47
12	358	40.5	+2	47.6	192	54.4 99	+8	49.1 146	**0**	18 09	18 29	18 53	17 20	52	4 53	51
13	13	40.7		48.6	207	23.4 100		34.4 147	**10 S**	07	28	52	26	46	45	56
14	28	40.9		49.6	221	52.3 99		19.6 148	**20**	05	27	52	31	42	37	61
15	43	41.0		50.6	236	21.2 99	+8	04.8 148	**30**	02	26	54	38	36	27	67
16	58	41.2		51.5	250	50.2 100	+7	50.0 148	**35**	01	26	56	42	33	21	70
17	73	41.4	+2	52.5	265	19.2 100	+7	35.0 150	**40**	18 00	18 27	18 58	17 46	29	4 15	74
18	88	41.6	+2	53.5	279	48.1 99	+7	20.0 150	**45**	17 58	18 28	19 02	17 51	25	4 08	78
19	103	41.8		54.5	294	17.1 100	+7	05.0 150	**50**	57	29	06	17 57	20	3 58	84
20	118	42.0		55.4	308	46.1 100	+6	49.9 151	**52**	56	29	09	18 00	17	54	86
21	133	42.2		56.4	323	15.1 100		34.7 152	**54**	55	30	11	03	15	50	88
22	148	42.4		57.4	337	44.1 100		19.5 152	**56**	54	31	14	06	12	44	92
23	163	42.6		58.4	352	13.0 99	+6	04.3 152	**58**	53	32	18	10	9	39	95
24	178	42.8	+2	59.3	6	42.0 100	+5	49.0 153	**60 S**	17 52	18 33	19 22	18 14	6	3 32	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.2			Mag: −2.1			Mag: +0.8		
	11^{h} 39^{m}.5		PMG: 12^{h} 09^{m}			PMG: 16^{h} 28^{m}			PMG: 9^{h} 19^{m}			PMG: 8^{h} 34^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	184	38.7	177	56.4	+1 26.1	112	46.8	+23 53.0	219	50.2	−14 42.1	231	04.5	−17 57.9
1	199	41.1	192	56.0	27.4	127	47.7	53.2	234	52.2	42.0	246	06.7	57.8
2	214	43.6	207	55.7	28.7	142	48.5	53.4	249	54.1	41.8	261	09.0	57.8
3	229	46.1	222	55.3	29.9	157	49.4	53.6	264	56.1	41.7	276	11.2	57.7
4	244	48.5	237	54.9	31.2	172	50.2	53.8	279	58.1	41.5	291	13.5	57.7
5	259	51.0	252	54.5	+1 32.4	187	51.1	+23 53.9	295	00.0	−14 41.4	306	15.7	−17 57.6
6	274	53.5	267	54.1	+1 33.7	202	51.9	+23 54.1	310	02.0	−14 41.2	321	18.0	−17 57.6
7	289	55.9	282	53.8	34.9	217	52.8	54.3	325	04.0	41.0	336	20.2	57.5
8	304	58.4	297	53.4	36.2	232	53.6	54.5	340	05.9	40.9	351	22.5	57.5
9	320	00.9	312	53.0	37.5	247	54.5	54.7	355	07.9	40.7	6	24.8	57.4
10	335	03.3	327	52.6	38.7	262	55.3	54.9	10	09.9	40.6	21	27.0	57.4
11	350	05.8	342	52.3	+1 40.0	277	56.2	+23 55.0	25	11.9	−14 40.4	36	29.3	−17 57.3
12	5	08.2	357	51.9	+1 41.2	292	57.0	+23 55.2	40	13.8	−14 40.2	51	31.5	−17 57.3
13	20	10.7	12	51.5	42.5	307	57.8	55.4	55	15.8	40.1	66	33.8	57.2
14	35	13.2	27	51.1	43.8	322	58.7	55.6	70	17.8	39.9	81	36.0	57.2
15	50	15.6	42	50.8	45.0	337	59.5	55.8	85	19.7	39.8	96	38.3	57.1
16	65	18.1	57	50.4	46.3	353	00.4	56.0	100	21.7	39.6	111	40.5	57.0
17	80	20.6	72	50.0	+1 47.5	8	01.2	+23 56.1	115	23.7	−14 39.5	126	42.8	−17 57.0
18	95	23.0	87	49.6	+1 48.8	23	02.1	+23 56.3	130	25.6	−14 39.3	141	45.0	−17 56.9
19	110	25.5	102	49.2	50.1	38	02.9	56.5	145	27.6	39.1	156	47.3	56.9
20	125	28.0	117	48.9	51.3	53	03.8	56.7	160	29.6	39.0	171	49.5	56.8
21	140	30.4	132	48.5	52.6	68	04.6	56.9	175	31.6	38.8	186	51.8	56.8
22	155	32.9	147	48.1	53.8	83	05.5	57.0	190	33.5	38.7	201	54.0	56.7
23	170	35.3	162	47.7	55.1	98	06.3	57.2	205	35.5	38.5	216	56.3	56.7
24	185	37.8	177	47.4	+1 56.3	113	07.1	+23 57.4	220	37.5	−14 38.4	231	58.6	−17 56.6
Dif	—			−4	+13		+8	+2		+20	+2		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 14^{d}.6		PHE	4^{h}: 60′.2									
	PMG: 12^{h} 05^{m}.0				SD: 16′.4			12^{h}: 60′.4									
					PMG: **^{h} **^{m}			20^{h}: 60′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	42.8	+2	59.3	6	42.0	+5	49.0		**60 N**	4 03	4 55	5 37	18 04	102	6 14	6
1	193	42.9	+3	00.3	21	11.0 ^{100}		33.6 ^{154}		**58**	11	4 59	39	05	97	12	9
2	208	43.1		01.3	35	40.0 ^{100}		18.2 ^{154}		**56**	18	5 03	41	05	94	10	12
3	223	43.3		02.3	50	09.0 ^{100}	+5	02.8 ^{154}		**54**	24	07	42	06	91	08	15
4	238	43.5		03.3	64	38.0 ^{100}	+4	47.3 ^{155}		**52**	29	10	44	06	88	07	17
5	253	43.7	+3	04.2	79	07.0 ^{100}	+4	31.8 ^{155}		**50**	4 34	5 13	5 45	18 07	85	6 05	20
6	268	43.9	+3	05.2	93	36.0 ^{100}	+4	16.2 ^{156}		**45**	4 44	5 19	5 48	18 07	80	6 02	25
7	283	44.1		06.2	108	05.0 ^{100}	+4	00.6 ^{156}		**40**	51	23	50	08	75	5 59	29
8	298	44.3		07.2	122	33.9 ^{99}	+3	45.0 ^{156}		**35**	4 57	27	52	09	71	57	32
9	313	44.5		08.1	137	02.9 ^{100}		29.3 ^{157}		**30**	5 02	30	54	09	68	55	36
10	328	44.7		09.1	151	31.9 ^{100}	+3	13.6 ^{157}		**20**	09	35	5 57	10	62	51	42
11	343	44.8	+3	10.1	166	00.8 ^{99}	+2	57.9 ^{157}		**10 N**	5 14	5 38	6 00	18 11	57	5 48	46
12	358	45.0	+3	11.1	180	29.8 ^{100}	+2	42.1 ^{158}		**0**	5 17	5 41	6 02	18 12	52	5 44	52
13	13	45.2		12.0	194	58.7 ^{99}		26.3 ^{158}		**10 S**	18	43	04	12	48	41	57
14	28	45.4		13.0	209	27.7 ^{100}	+2	10.5 ^{158}		**20**	18	44	06	13	42	38	61
15	43	45.6		14.0	223	56.6 ^{99}	+1	54.7 ^{158}		**30**	17	44	08	14	37	34	67
16	58	45.8		15.0	238	25.5 ^{99}		38.8 ^{159}		**35**	15	44	10	15	33	31	71
17	73	46.0	+3	15.9	252	54.4 ^{99}	+1	23.0 ^{158}		**40**	5 13	5 44	6 11	18 15	30	5 29	75
18	88	46.2	+3	16.9	267	23.3 ^{99}	+1	07.1 ^{159}		**45**	5 09	5 43	6 13	18 16	25	5 26	79
19	103	46.4		17.9	281	52.2 ^{99}	+0	51.2 ^{159}		**50**	05	42	15	17	20	22	85
20	118	46.5		18.8	296	21.1 ^{99}		35.2 ^{160}		**52**	03	42	15	17	18	20	88
21	133	46.7		19.8	310	49.9 ^{98}		19.3 ^{159}		**54**	5 00	41	16	18	15	18	91
22	148	46.9		20.8	325	18.7 ^{98}	+0	03.4 ^{159}		**56**	4 57	40	17	18	13	16	94
23	163	47.1		21.8	339	47.5 ^{98}	−0	12.6 ^{160}		**58**	54	39	19	19	9	14	97
24	178	47.3	+3	22.7	354	16.3 ^{98}	−0	28.5 ^{159}		**60 S**	4 50	5 38	6 20	18 20	5	5 11	101

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 35^{m}.6		PMG: 12^{h} 09^{m}			PMG: 16^{h} 27^{m}			PMG: 9^{h} 16^{m}			PMG: 8^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	185	37.8	177	47.4	+1 56.3	113	07.1	+23 57.4	220	37.5	−14 38.4	231	58.6	−17 56.6
1	200	40.3	192	47.0	57.6	128	08.0	57.6	235	39.4	38.2	247	00.8	56.6
2	215	42.7	207	46.6	+1 58.9	143	08.8	57.7	250	41.4	38.0	262	03.1	56.5
3	230	45.2	222	46.2	+2 00.1	158	09.7	57.9	265	43.4	37.9	277	05.3	56.5
4	245	47.7	237	45.8	01.4	173	10.5	58.1	280	45.3	37.7	292	07.6	56.4
5	260	50.1	252	45.5	+2 02.6	188	11.4	+23 58.3	295	47.3	−14 37.6	307	09.8	−17 56.4
6	275	52.6	267	45.1	+2 03.9	203	12.2	+23 58.5	310	49.3	−14 37.4	322	12.1	−17 56.3
7	290	55.1	282	44.7	05.2	218	13.1	58.6	325	51.3	37.3	337	14.3	56.3
8	305	57.5	297	44.3	06.4	233	13.9	58.8	340	53.2	37.1	352	16.6	56.2
9	321	00.0	312	44.0	07.7	248	14.7	59.0	355	55.2	36.9	7	18.9	56.2
10	336	02.5	327	43.6	08.9	263	15.6	59.2	10	57.2	36.8	22	21.1	56.1
11	351	04.9	342	43.2	+2 10.2	278	16.4	+23 59.3	25	59.2	−14 36.6	37	23.4	−17 56.1
12	6	07.4	357	42.8	+2 11.4	293	17.3	+23 59.5	41	01.1	−14 36.5	52	25.6	−17 56.0
13	21	09.8	12	42.4	12.7	308	18.1	59.7	56	03.1	36.3	67	27.9	56.0
14	36	12.3	27	42.1	14.0	323	19.0	+23 59.9	71	05.1	36.2	82	30.1	55.9
15	51	14.8	42	41.7	15.2	338	19.8	+24 00.0	86	07.0	36.0	97	32.4	55.9
16	66	17.2	57	41.3	16.5	353	20.6	+24 00.2	101	09.0	35.8	112	34.6	55.8
17	81	19.7	72	40.9	+2 17.7	8	21.5	+24 00.4	116	11.0	−14 35.7	127	36.9	−17 55.7
18	96	22.2	87	40.6	+2 19.0	23	22.3	+24 00.6	131	13.0	−14 35.5	142	39.2	−17 55.7
19	111	24.6	102	40.2	20.2	38	23.2	00.7	146	14.9	35.4	157	41.4	55.6
20	126	27.1	117	39.8	21.5	53	24.0	00.9	161	16.9	35.2	172	43.7	55.6
21	141	29.6	132	39.4	22.8	68	24.9	01.1	176	18.9	35.1	187	45.9	55.5
22	156	32.0	147	39.0	24.0	83	25.7	01.3	191	20.9	34.9	202	48.2	55.5
23	171	34.5	162	38.7	25.3	98	26.5	01.4	206	22.8	34.7	217	50.4	55.4
24	186	36.9	177	38.3	+2 26.5	113	27.4	+24 01.6	221	24.8	−14 34.6	232	52.7	−17 55.4
Dif	—			−4	+13		+8	+2		+20	+2		+23	+1

UT	SOL SD: 16′.0 PMG: 12h 04m.7				LUNA Edad: 15d.6 SD: 16′.5 PMG: 0h 24m PHE 4h: 60′.7 12h: 60′.8 20h: 60′.8 Rº: 52m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	47.3	+3	22.7	354	16.3	−0	28.5	**60 N**	18 37	19 20	20 12	19 46	103	6 20	6
1	193	47.5		23.7	8	45.1 98	−0	44.5 160	**58**	35	15	20 04	42	100	21	10
2	208	47.7		24.7	23	13.9 98	−1	00.5 160	**56**	33	10	19 56	39	96	22	13
3	223	47.9		25.7	37	42.6 97		16.5 160	**54**	31	07	50	37	92	23	16
4	238	48.1		26.6	52	11.3 97		32.4 159	**52**	29	03	44	34	90	24	18
5	253	48.2	+3	27.6	66	40.0 97	−1	48.4 160	**50**	18 27	19 00	19 39	19 32	87	6 25	20
6	268	48.4	+3	28.6	81	08.7 97	−2	04.4 160	**45**	18 24	18 54	19 29	19 27	81	6 27	25
7	283	48.6		29.6	95	37.3 96		20.3 159	**40**	21	49	21	23	77	28	30
8	298	48.8		30.5	110	06.0 97		36.3 160	**35**	19	44	14	20	73	29	34
9	313	49.0		31.5	124	34.5 95	−2	52.2 159	**30**	17	41	09	17	69	31	37
10	328	49.2		32.5	139	03.1 96	−3	08.2 160	**20**	14	36	19 01	12	63	33	42
11	343	49.4	+3	33.4	153	31.7 96	−3	24.1 159	**10 N**	18 11	18 32	18 56	19 08	58	6 34	48
12	358	49.6	+3	34.4	168	00.2 95	−3	40.0 159	**0**	18 08	18 29	18 53	19 04	53	6 36	53
13	13	49.8		35.4	182	28.6 94	−3	55.9 159	**10 S**	05	26	51	19 00	48	38	57
14	28	49.9		36.4	196	57.1 95	−4	11.7 158	**20**	03	25	50	18 55	44	39	63
15	43	50.1		37.3	211	25.5 94		27.6 159	**30**	18 00	24	52	51	38	41	69
16	58	50.3		38.3	225	53.9 94		43.4 158	**35**	17 58	24	53	48	35	42	72
17	73	50.5	+3	39.3	240	22.3 94	−4	59.2 158	**40**	17 57	18 24	18 55	18 45	31	6 44	76
18	88	50.7	+3	40.3	254	50.6 93	−5	15.0 158	**45**	17 55	18 24	18 58	18 41	27	6 45	81
19	103	50.9		41.2	269	18.9 93		30.7 157	**50**	52	24	19 02	37	22	47	86
20	118	51.1		42.2	283	47.1 92	−5	46.5 158	**52**	51	25	04	35	20	48	88
21	133	51.3		43.2	298	15.3 92	−6	02.2 157	**54**	50	25	06	33	17	49	91
22	148	51.5		44.1	312	43.5 92		17.8 156	**56**	49	26	09	31	14	50	94
23	163	51.6		45.1	327	11.7 92		33.4 156	**58**	47	26	12	28	11	51	98
24	178	51.8	+3	46.1	341	39.8 91	−6	49.0 156	**60 S**	17 46	18 27	19 16	18 25	7	6 52	102

UT	ARIES PMG 11h 31m.6		VENUS Mag: −4.0 PMG: 12h 10m			MARTE Mag: +1.3 PMG: 16h 25m			JÚPITER Mag: −2.1 PMG: 9h 13m			SATURNO Mag: +0.8 PMG: 8h 27m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	186	36.9	177	38.3	+2 26.5	113	27.4	+24 01.6	221	24.8	−14 34.6	232	52.7	−17 55.4
1	201	39.4	192	37.9	27.8	128	28.2	01.8	236	26.8	34.4	247	55.0	55.3
2	216	41.9	207	37.5	29.0	143	29.1	01.9	251	28.8	34.3	262	57.2	55.3
3	231	44.3	222	37.2	30.3	158	29.9	02.1	266	30.7	34.1	277	59.5	55.2
4	246	46.8	237	36.8	31.6	173	30.7	02.3	281	32.7	34.0	293	01.7	55.2
5	261	49.3	252	36.4	+2 32.8	188	31.6	+24 02.5	296	34.7	−14 33.8	308	04.0	−17 55.1
6	276	51.7	267	36.0	+2 34.1	203	32.4	+24 02.6	311	36.7	−14 33.6	323	06.2	−17 55.1
7	291	54.2	282	35.6	35.3	218	33.3	02.8	326	38.6	33.5	338	08.5	55.0
8	306	56.7	297	35.3	36.6	233	34.1	03.0	341	40.6	33.3	353	10.8	55.0
9	321	59.1	312	34.9	37.8	248	34.9	03.1	356	42.6	33.2	8	13.0	54.9
10	337	01.6	327	34.5	39.1	263	35.8	03.3	11	44.6	33.0	23	15.3	54.9
11	352	04.1	342	34.1	+2 40.4	278	36.6	+24 03.5	26	46.5	−14 32.9	38	17.5	−17 54.8
12	7	06.5	357	33.7	+2 41.6	293	37.5	+24 03.6	41	48.5	−14 32.7	53	19.8	−17 54.8
13	22	09.0	12	33.4	42.9	308	38.3	03.8	56	50.5	32.6	68	22.1	54.7
14	37	11.4	27	33.0	44.1	323	39.1	04.0	71	52.5	32.4	83	24.3	54.7
15	52	13.9	42	32.6	45.4	338	40.0	04.2	86	54.4	32.2	98	26.6	54.6
16	67	16.4	57	32.2	46.6	353	40.8	04.3	101	56.4	32.1	113	28.8	54.6
17	82	18.8	72	31.9	+2 47.9	8	41.7	+24 04.5	116	58.4	−14 31.9	128	31.1	−17 54.5
18	97	21.3	87	31.5	+2 49.1	23	42.5	+24 04.7	132	00.4	−14 31.8	143	33.3	−17 54.5
19	112	23.8	102	31.1	50.4	38	43.3	04.8	147	02.3	31.6	158	35.6	54.4
20	127	26.2	117	30.7	51.7	53	44.2	05.0	162	04.3	31.5	173	37.9	54.4
21	142	28.7	132	30.3	52.9	68	45.0	05.2	177	06.3	31.3	188	40.1	54.3
22	157	31.2	147	30.0	54.2	83	45.9	05.3	192	08.3	31.1	203	42.4	54.3
23	172	33.6	162	29.6	55.4	98	46.7	05.5	207	10.2	31.0	218	44.6	54.2
24	187	36.1	177	29.2	+2 56.7	113	47.5	+24 05.7	222	12.2	−14 30.8	233	46.9	−17 54.2
Dif	—			−4	+13		+8	+2		+20	+2		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 16^{d}.6		PHE	4^{h}: 60′.9									
	PMG: 12^{h} 04^{m}.4				SD: 16′.6			12^{h}: 60′.8									
					PMG: 1^{h} 16^{m}			20^{h}: 60′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	51.8	+3	46.1	341	39.8	90	−6	49.0	156	**60 N**	3 56	4 48	5 31	21 29	105	6 26	8
1	193	52.0		47.0	356	07.8	90	−7	04.6	155	**58**	4 04	53	33	22	100	31	11
2	208	52.2		48.0	10	35.8	90		20.1	154	**56**	12	4 58	36	15	96	35	15
3	223	52.4		49.0	25	03.8	90		35.5	154	**54**	18	5 02	37	09	93	39	18
4	238	52.6		50.0	39	31.8	90	−7	50.9	154	**52**	24	05	39	21 04	89	42	21
5	253	52.8	+3	50.9	53	59.7	89	−8	06.3	154	**50**	4 29	5 08	5 41	20 59	87	6 45	24
6	268	53.0	+3	51.9	68	27.5	88	−8	21.6	153	**45**	4 40	5 15	5 44	20 48	82	6 52	29
7	283	53.1		52.9	82	55.3	88		36.9	153	**40**	48	20	47	40	77	6 58	33
8	298	53.3		53.8	97	23.1	88	−8	52.1	152	**35**	4 54	24	50	33	73	7 03	37
9	313	53.5		54.8	111	50.8	87	−9	07.3	152	**30**	5 00	28	52	26	70	08	39
10	328	53.7		55.8	126	18.5	87		22.4	151	**20**	07	33	55	15	65	15	46
11	343	53.9	+3	56.7	140	46.1	86	−9	37.4	150	**10 N**	5 13	5 37	5 58	20 06	60	7 22	50
12	358	54.1	+3	57.7	155	13.7	86	−9	52.4	150	**0**	5 16	5 40	6 01	19 57	56	7 29	54
13	13	54.3		58.7	169	41.3	86	−10	07.3	149	**10 S**	18	43	04	48	52	35	59
14	28	54.5	+3	59.7	184	08.7	84		22.2	149	**20**	19	45	07	39	47	42	64
15	43	54.7	+4	00.6	198	36.2	85		37.0	148	**30**	18	46	10	29	41	50	70
16	58	54.8		01.6	213	03.6	84	−10	51.7	147	**35**	17	46	11	23	38	7 54	73
17	73	55.0	+4	02.6	227	30.9	83	−11	06.4	147	**40**	5 15	5 46	6 13	19 16	35	8 00	77
18	88	55.2	+4	03.5	241	58.2	83	−11	21.0	146	**45**	5 12	5 46	6 15	19 08	31	8 06	81
19	103	55.4		04.5	256	25.4	82		35.5	145	**50**	08	46	18	18 59	25	13	87
20	118	55.6		05.5	270	52.6	82	−11	49.9	144	**52**	06	45	19	55	22	16	90
21	133	55.8		06.4	285	19.8	82	−12	04.3	144	**54**	04	45	20	50	20	20	93
22	148	56.0		07.4	299	46.8	80		18.6	143	**56**	5 01	44	21	45	17	24	96
23	163	56.2		08.4	314	13.9	81		32.8	142	**58**	4 58	44	23	39	13	29	100
24	178	56.3	+4	09.3	328	40.9	80	−12	46.9	141	**60 S**	4 55	5 43	6 25	18 32	10	8 34	104

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 27^{m}.7		PMG: 12^{h} 10^{m}			PMG: 16^{h} 24^{m}			PMG: 9^{h} 10^{m}			PMG: 8^{h} 24^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	187	36.1	177	29.2	+2 56.7	113	47.5	+24 05.7	222	12.2	−14 30.8	233	46.9	−17 54.2
1	202	38.5	192	28.8	57.9	128	48.4	05.8	237	14.2	30.7	248	49.2	54.1
2	217	41.0	207	28.4	+2 59.2	143	49.2	06.0	252	16.2	30.5	263	51.4	54.1
3	232	43.5	222	28.1	+3 00.4	158	50.1	06.2	267	18.2	30.4	278	53.7	54.0
4	247	45.9	237	27.7	01.7	173	50.9	06.3	282	20.1	30.2	293	56.0	54.0
5	262	48.4	252	27.3	+3 02.9	188	51.7	+24 06.5	297	22.1	−14 30.1	308	58.2	−17 53.9
6	277	50.9	267	26.9	+3 04.2	203	52.6	+24 06.6	312	24.1	−14 29.9	324	00.5	−17 53.9
7	292	53.3	282	26.5	05.5	218	53.4	06.8	327	26.1	29.7	339	02.7	53.8
8	307	55.8	297	26.2	06.7	233	54.2	07.0	342	28.1	29.6	354	05.0	53.8
9	322	58.3	312	25.8	08.0	248	55.1	07.1	357	30.0	29.4	9	07.3	53.7
10	338	00.7	327	25.4	09.2	263	55.9	07.3	12	32.0	29.3	24	09.5	53.7
11	353	03.2	342	25.0	+3 10.5	278	56.8	+24 07.5	27	34.0	−14 29.1	39	11.8	−17 53.6
12	8	05.7	357	24.6	+3 11.7	293	57.6	+24 07.6	42	36.0	−14 29.0	54	14.0	−17 53.6
13	23	08.1	12	24.3	13.0	308	58.4	07.8	57	38.0	28.8	69	16.3	53.5
14	38	10.6	27	23.9	14.2	323	59.3	07.9	72	39.9	28.7	84	18.6	53.5
15	53	13.0	42	23.5	15.5	339	00.1	08.1	87	41.9	28.5	99	20.8	53.4
16	68	15.5	57	23.1	16.7	354	00.9	08.3	102	43.9	28.3	114	23.1	53.4
17	83	18.0	72	22.7	+3 18.0	9	01.8	+24 08.4	117	45.9	−14 28.2	129	25.4	−17 53.3
18	98	20.4	87	22.4	+3 19.2	24	02.6	+24 08.6	132	47.8	−14 28.0	144	27.6	−17 53.3
19	113	22.9	102	22.0	20.5	39	03.5	08.8	147	49.8	27.9	159	29.9	53.2
20	128	25.4	117	21.6	21.7	54	04.3	08.9	162	51.8	27.7	174	32.1	53.2
21	143	27.8	132	21.2	23.0	69	05.1	09.1	177	53.8	27.6	189	34.4	53.1
22	158	30.3	147	20.8	24.3	84	06.0	09.2	192	55.8	27.4	204	36.7	53.1
23	173	32.8	162	20.4	25.5	99	06.8	09.4	207	57.8	27.3	219	38.9	53.0
24	188	35.2	177	20.1	+3 26.8	114	07.6	+24 09.6	222	59.7	−14 27.1	234	41.2	−17 53.0
Dif	—			−4	+13		+8	+2		+20	+2		+23	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 17^{d}.6		PHE	4^{h}: 60′.7									
	PMG: 12^{h} 04^{m}.1				SD: 16′.6			12^{h}: 60′.6									
					PMG: 2^{h} 10^{m}			20^{h}: 60′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	56.3	+4	09.3	328	40.9	−12	46.9		**60 N**	18 42	19 25	20 18	23 14	104	6 34	11
1	193	56.5		10.3	343	07.8 79	−13	01.0	141	**58**	39	19	09	23 02	98	42	16
2	208	56.7		11.3	357	34.6 78		14.9	139	**56**	37	15	20 01	22 51	94	50	19
3	223	56.9		12.2	12	01.5 79		28.8	139	**54**	34	10	19 54	42	90	6 57	22
4	238	57.1		13.2	26	28.2 77		42.6	138	**52**	32	07	48	33	88	7 03	25
5	253	57.3	+4	14.2	40	54.9 77	−13	56.3	137	**50**	18 31	19 03	19 43	22 26	85	7 09	28
6	268	57.5	+4	15.1	55	21.6 77	−14	09.9	136	**45**	18 27	18 56	19 32	22 10	80	7 21	33
7	283	57.7		16.1	69	48.2 76		23.4	135	**40**	23	51	23	21 57	76	31	37
8	298	57.8		17.1	84	14.7 75		36.8	134	**35**	21	46	16	46	73	40	40
9	313	58.0		18.0	98	41.2 75	−14	50.1	133	**30**	18	42	10	36	70	7 47	44
10	328	58.2		19.0	113	07.6 74	−15	03.3	132	**20**	14	36	19 02	20	66	8 01	48
11	343	58.4	+4	20.0	127	34.0 74	−15	16.4	131	**10 N**	18 11	18 32	18 56	21 06	62	8 12	53
12	358	58.6	+4	20.9	142	00.3 73	−15	29.4	130	**0**	18 07	18 28	18 52	20 53	58	8 23	57
13	13	58.8		21.9	156	26.5 72		42.3	129	**10 S**	04	25	50	40	54	34	61
14	28	59.0		22.9	170	52.7 72	−15	55.1	128	**20**	18 01	23	49	26	50	8 46	65
15	43	59.2		23.8	185	18.9 72	−16	07.8	127	**30**	17 58	21	49	10	46	9 00	70
16	58	59.3		24.8	199	45.0 71		20.4	126	**35**	56	21	50	20 01	43	07	74
17	73	59.5	+4	25.8	214	11.0 70	−16	32.8	124	**40**	17 53	18 20	18 52	19 51	40	9 17	76
18	88	59.7	+4	26.7	228	37.0 70	−16	45.2	124	**45**	17 51	18 20	18 54	19 39	36	9 27	81
19	103	59.9		27.7	243	02.9 69	−16	57.4	122	**50**	48	20	58	24	32	40	86
20	119	00.1		28.7	257	28.7 68	−17	09.6	122	**52**	47	20	18 59	17	30	46	89
21	134	00.3		29.6	271	54.5 68		21.6	120	**54**	45	20	19 01	10	26	9 53	92
22	149	00.5		30.6	286	20.3 68		33.5	119	**56**	44	21	04	19 02	23	10 00	96
23	164	00.6		31.6	300	46.0 67		45.2	117	**58**	42	21	06	18 52	20	09	99
24	179	00.8	+4	32.5	315	11.6 66	−17	56.9	117	**60 S**	17 40	18 21	19 09	18 42	14	10 18	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 23^{m}.8		PMG: 12^{h} 11^{m}			PMG: 16^{h} 23^{m}			PMG: 9^{h} 07^{m}			PMG: 8^{h} 20^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	188	35.2	177	20.1	+3 26.8	114	07.6	+24 09.6	222	59.7	−14 27.1	234	41.2	−17 53.0
1	203	37.7	192	19.7	28.0	129	08.5	09.7	238	01.7	26.9	249	43.5	52.9
2	218	40.1	207	19.3	29.3	144	09.3	09.9	253	03.7	26.8	264	45.7	52.9
3	233	42.6	222	18.9	30.5	159	10.1	10.0	268	05.7	26.6	279	48.0	52.8
4	248	45.1	237	18.5	31.8	174	11.0	10.2	283	07.7	26.5	294	50.2	52.8
5	263	47.5	252	18.2	+3 33.0	189	11.8	+24 10.3	298	09.6	−14 26.3	309	52.5	−17 52.7
6	278	50.0	267	17.8	+3 34.3	204	12.7	+24 10.5	313	11.6	−14 26.2	324	54.8	−17 52.7
7	293	52.5	282	17.4	35.5	219	13.5	10.7	328	13.6	26.0	339	57.0	52.6
8	308	54.9	297	17.0	36.8	234	14.3	10.8	343	15.6	25.9	354	59.3	52.6
9	323	57.4	312	16.6	38.0	249	15.2	11.0	358	17.6	25.7	10	01.6	52.5
10	338	59.9	327	16.2	39.3	264	16.0	11.1	13	19.6	25.6	25	03.8	52.5
11	354	02.3	342	15.9	+3 40.5	279	16.8	+24 11.3	28	21.5	−14 25.4	40	06.1	−17 52.4
12	9	04.8	357	15.5	+3 41.8	294	17.7	+24 11.4	43	23.5	−14 25.2	55	08.4	−17 52.4
13	24	07.3	12	15.1	43.0	309	18.5	11.6	58	25.5	25.1	70	10.6	52.3
14	39	09.7	27	14.7	44.3	324	19.3	11.8	73	27.5	24.9	85	12.9	52.3
15	54	12.2	42	14.3	45.5	339	20.2	11.9	88	29.5	24.8	100	15.2	52.2
16	69	14.6	57	14.0	46.8	354	21.0	12.1	103	31.5	24.6	115	17.4	52.2
17	84	17.1	72	13.6	+3 48.0	9	21.8	+24 12.2	118	33.4	−14 24.5	130	19.7	−17 52.1
18	99	19.6	87	13.2	+3 49.3	24	22.7	+24 12.4	133	35.4	−14 24.3	145	21.9	−17 52.1
19	114	22.0	102	12.8	50.5	39	23.5	12.5	148	37.4	24.2	160	24.2	52.0
20	129	24.5	117	12.4	51.8	54	24.3	12.7	163	39.4	24.0	175	26.5	52.0
21	144	27.0	132	12.0	53.0	69	25.2	12.8	178	41.4	23.9	190	28.7	51.9
22	159	29.4	147	11.7	54.3	84	26.0	13.0	193	43.4	23.7	205	31.0	51.9
23	174	31.9	162	11.3	55.5	99	26.8	13.1	208	45.3	23.5	220	33.3	51.8
24	189	34.4	177	10.9	+3 56.8	114	27.7	+24 13.3	223	47.3	−14 23.4	235	35.5	−17 51.8
Dif	—			−4	+13		+8	+2		+20	+2		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 18^{d}.6		PHE	4^{h}: 60′.4									
	PMG: 12^{h} 03^{m}.8				SD: 16′.5			12^{h}: 60′.2									
					PMG: 3^{h} 06^{m}			20^{h}: 60′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	179	00.8	+4	32.5	315	11.6	−17	56.9		**60 N**	3 49	4 42	5 25	** **	**	6 45	18
1	194	01.0		33.5	329	37.2 66	−18	08.4	115	**58**	3 58	47	28	** **	**	6 58	23
2	209	01.2		34.5	344	02.7 65		19.8	114	**56**	4 06	52	30	** **	**	7 09	28
3	224	01.4		35.4	358	28.2 65		31.1	113	**54**	13	4 57	33	** **	**	19	31
4	239	01.6		36.4	12	53.6 64		42.2	111	**52**	19	5 00	35	** **	**	28	34
5	254	01.8	+4	37.3	27	18.9 63	−18	53.2	110	**50**	4 24	5 04	5 36	23 51	78	7 37	35
6	269	01.9	+4	38.3	41	44.2 63	−19	04.1	109	**45**	4 36	5 11	5 41	23 30	74	7 54	40
7	284	02.1		39.3	56	09.5 63		14.9	108	**40**	44	17	44	23 13	72	8 08	44
8	299	02.3		40.2	70	34.7 62		25.5	106	**35**	51	21	47	22 59	69	20	47
9	314	02.5		41.2	84	59.8 61		36.0	105	**30**	4 57	25	49	46	68	31	49
10	329	02.7		42.2	99	24.9 61		46.3	103	**20**	5 06	31	54	26	64	8 49	53
11	344	02.9	+4	43.1	113	50.0 61	−19	56.5	102	**10 N**	5 12	5 36	5 57	22 08	62	9 05	56
12	359	03.1	+4	44.1	128	15.0 60	−20	06.6	101	**0**	5 16	5 40	6 01	21 51	60	9 20	59
13	14	03.2		45.1	142	39.9 59		16.5	99	**10 S**	18	43	04	34	58	35	62
14	29	03.4		46.0	157	04.8 59		26.3	98	**20**	19	45	07	21 16	55	9 51	66
15	44	03.6		47.0	171	29.7 59		36.0	97	**30**	19	47	11	20 56	52	10 10	69
16	59	03.8		47.9	185	54.5 58		45.5	95	**35**	18	48	13	44	50	21	71
17	74	04.0	+4	48.9	200	19.2 57	−20	54.8	93	**40**	5 17	5 48	6 15	20 31	47	10 33	74
18	89	04.2	+4	49.9	214	43.9 57	−21	04.1	93	**45**	5 14	5 48	6 18	20 15	44	10 48	78
19	104	04.4		50.8	229	08.6 57		13.1	90	**50**	11	49	21	19 56	40	11 06	82
20	119	04.5		51.8	243	33.2 56		22.0	89	**52**	09	49	22	47	38	15	84
21	134	04.7		52.8	257	57.8 56		30.8	88	**54**	07	49	24	36	36	25	86
22	149	04.9		53.7	272	22.4 56		39.4	86	**56**	05	48	26	25	33	36	90
23	164	05.1		54.7	286	46.8 54		47.9	85	**58**	03	48	27	19 12	29	11 48	94
24	179	05.3	+4	55.6	301	11.3 55	−21	56.2	83	**60 S**	5 00	5 48	6 29	18 56	24	12 03	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 19^{m}.8		PMG: 12^{h} 12^{m}			PMG: 16^{h} 21^{m}			PMG: 9^{h} 04^{m}			PMG: 8^{h} 16^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	189	34.4	177	10.9	+3 56.8	114	27.7	+24 13.3	223	47.3	−14 23.4	235	35.5	−17 51.8
1	204	36.8	192	10.5	58.0	129	28.5	13.4	238	49.3	23.2	250	37.8	51.7
2	219	39.3	207	10.1	+3 59.3	144	29.3	13.6	253	51.3	23.1	265	40.1	51.7
3	234	41.8	222	09.7	+4 00.5	159	30.2	13.7	268	53.3	22.9	280	42.3	51.6
4	249	44.2	237	09.3	01.8	174	31.0	13.9	283	55.3	22.8	295	44.6	51.6
5	264	46.7	252	09.0	+4 03.0	189	31.8	+24 14.0	298	57.3	−14 22.6	310	46.9	−17 51.5
6	279	49.1	267	08.6	+4 04.3	204	32.7	+24 14.2	313	59.2	−14 22.5	325	49.1	−17 51.5
7	294	51.6	282	08.2	05.5	219	33.5	14.3	329	01.2	22.3	340	51.4	51.4
8	309	54.1	297	07.8	06.8	234	34.3	14.5	344	03.2	22.2	355	53.7	51.4
9	324	56.5	312	07.4	08.0	249	35.2	14.6	359	05.2	22.0	10	55.9	51.3
10	339	59.0	327	07.0	09.3	264	36.0	14.8	14	07.2	21.8	25	58.2	51.3
11	355	01.5	342	06.7	+4 10.5	279	36.8	+24 14.9	29	09.2	−14 21.7	41	00.5	−17 51.2
12	10	03.9	357	06.3	+4 11.8	294	37.7	+24 15.1	44	11.2	−14 21.5	56	02.7	−17 51.2
13	25	06.4	12	05.9	13.0	309	38.5	15.2	59	13.1	21.4	71	05.0	51.1
14	40	08.9	27	05.5	14.2	324	39.3	15.4	74	15.1	21.2	86	07.3	51.1
15	55	11.3	42	05.1	15.5	339	40.2	15.5	89	17.1	21.1	101	09.6	51.0
16	70	13.8	57	04.7	16.7	354	41.0	15.7	104	19.1	20.9	116	11.8	51.0
17	85	16.3	72	04.3	+4 18.0	9	41.8	+24 15.8	119	21.1	−14 20.8	131	14.1	−17 50.9
18	100	18.7	87	04.0	+4 19.2	24	42.7	+24 16.0	134	23.1	−14 20.6	146	16.4	−17 50.9
19	115	21.2	102	03.6	20.5	39	43.5	16.1	149	25.1	20.5	161	18.6	50.8
20	130	23.6	117	03.2	21.7	54	44.3	16.3	164	27.1	20.3	176	20.9	50.8
21	145	26.1	132	02.8	23.0	69	45.1	16.4	179	29.0	20.2	191	23.2	50.8
22	160	28.6	147	02.4	24.2	84	46.0	16.6	194	31.0	20.0	206	25.4	50.7
23	175	31.0	162	02.0	25.5	99	46.8	16.7	209	33.0	19.8	221	27.7	50.7
24	190	33.5	177	01.6	+4 26.7	114	47.6	+24 16.9	224	35.0	−14 19.7	236	30.0	−17 50.6
Dif	—			−4	+12		+8	+1		+20	+2		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 19^{d}.6		PHE	4^{h}: 59′.8									
	PMG: 12^{h} 03^{m}.5				SD: 16′.3			12^{h}: 59′.6									
					PMG: 4^{h} 05^{m}			20^{h}: 59′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	179	05.3	+4	55.6	301	11.3	−21	56.2		**60 N**	18 47	19 30	20 24	0 58	93	7 03	31
1	194	05.5		56.6	315	35.7 54	−22	04.4	82	**58**	43	24	14	40	88	21	36
2	209	05.7		57.6	330	00.1 54		12.4	80	**56**	41	19	20 06	25	85	37	39
3	224	05.8		58.5	344	24.4 53		20.3	79	**54**	38	14	19 59	12	82	7 50	42
4	239	06.0	+4	59.5	358	48.8 54		28.0	77	**52**	36	10	52	0 01	79	8 02	44
5	254	06.2	+5	00.4	13	13.0 52	−22	35.5	75	**50**	18 34	19 07	19 46	** **	**	8 12	46
6	269	06.4	+5	01.4	27	37.3 53	−22	42.9	74	**45**	18 29	18 59	19 34	** **	**	8 34	49
7	284	06.6		02.4	42	01.5 52		50.1	72	**40**	25	53	25	** **	**	8 52	51
8	299	06.8		03.3	56	25.7 52	−22	57.2	71	**35**	22	48	18	** **	**	9 07	52
9	314	07.0		04.3	70	49.8 51	−23	04.1	69	**30**	19	44	12	23 54	63	20	54
10	329	07.1		05.2	85	13.9 51		10.8	67	**20**	15	37	19 03	30	62	9 42	56
11	344	07.3	+5	06.2	99	38.0 51	−23	17.4	66	**10 N**	18 11	18 32	18 56	23 10	61	10 01	59
12	359	07.5	+5	07.2	114	02.1 51	−23	23.9	65	**0**	18 07	18 28	18 52	22 51	60	10 19	60
13	14	07.7		08.1	128	26.1 50		30.1	62	**10 S**	18 03	24	49	32	59	37	62
14	29	07.9		09.1	142	50.2 51		36.2	61	**20**	17 59	21	47	22 11	58	10 57	63
15	44	08.1		10.0	157	14.2 50		42.2	60	**30**	55	19	47	21 48	56	11 19	66
16	59	08.2		11.0	171	38.2 50		47.9	57	**35**	53	18	47	34	56	32	67
17	74	08.4	+5	12.0	186	02.1 49	−23	53.5	56	**40**	17 50	18 17	18 49	21 18	55	11 47	69
18	89	08.6	+5	12.9	200	26.1 50	−23	59.0	55	**45**	17 47	18 17	18 50	20 59	54	12 06	70
19	104	08.8		13.9	214	50.0 49	−24	04.3	53	**50**	44	16	53	36	52	28	73
20	119	09.0		14.8	229	14.0 50		09.4	51	**52**	42	16	55	25	51	39	74
21	134	09.2		15.8	243	37.9 49		14.3	49	**54**	40	16	56	20 12	50	12 51	76
22	149	09.3		16.7	258	01.8 49		19.1	48	**56**	38	15	18 58	19 58	47	13 06	77
23	164	09.5		17.7	272	25.7 49		23.7	46	**58**	36	15	19 01	41	45	22	80
24	179	09.7	+5	18.7	286	49.6 49	−24	28.1	44	**60 S**	17 34	18 15	19 03	19 20	42	13 42	84

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 15^{m}.9		PMG: 12^{h} 12^{m}			PMG: 16^{h} 20^{m}			PMG: 9^{h} 00^{m}			PMG: 8^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	190	33.5	177	01.6	+4 26.7	114	47.6	+24 16.9	224	35.0	−14 19.7	236	30.0	−17 50.6
1	205	36.0	192	01.3	28.0	129	48.5	17.0	239	37.0	19.5	251	32.2	50.6
2	220	38.4	207	00.9	29.2	144	49.3	17.2	254	39.0	19.4	266	34.5	50.5
3	235	40.9	222	00.5	30.4	159	50.1	17.3	269	41.0	19.2	281	36.8	50.5
4	250	43.4	237	00.1	31.7	174	51.0	17.4	284	43.0	19.1	296	39.0	50.4
5	265	45.8	251	59.7	+4 32.9	189	51.8	+24 17.6	299	44.9	−14 18.9	311	41.3	−17 50.4
6	280	48.3	266	59.3	+4 34.2	204	52.6	+24 17.7	314	46.9	−14 18.8	326	43.6	−17 50.3
7	295	50.7	281	58.9	35.4	219	53.4	17.9	329	48.9	18.6	341	45.9	50.3
8	310	53.2	296	58.5	36.7	234	54.3	18.0	344	50.9	18.5	356	48.1	50.2
9	325	55.7	311	58.2	37.9	249	55.1	18.2	359	52.9	18.3	11	50.4	50.2
10	340	58.1	326	57.8	39.2	264	55.9	18.3	14	54.9	18.2	26	52.7	50.1
11	356	00.6	341	57.4	+4 40.4	279	56.8	+24 18.5	29	56.9	−14 18.0	41	54.9	−17 50.1
12	11	03.1	356	57.0	+4 41.6	294	57.6	+24 18.6	44	58.9	−14 17.9	56	57.2	−17 50.0
13	26	05.5	11	56.6	42.9	309	58.4	18.7	60	00.9	17.7	71	59.5	50.0
14	41	08.0	26	56.2	44.1	324	59.3	18.9	75	02.9	17.6	87	01.8	49.9
15	56	10.5	41	55.8	45.4	340	00.1	19.0	90	04.8	17.4	102	04.0	49.9
16	71	12.9	56	55.4	46.6	355	00.9	19.2	105	06.8	17.2	117	06.3	49.8
17	86	15.4	71	55.1	+4 47.9	10	01.7	+24 19.3	120	08.8	−14 17.1	132	08.6	−17 49.8
18	101	17.9	86	54.7	+4 49.1	25	02.6	+24 19.4	135	10.8	−14 16.9	147	10.8	−17 49.7
19	116	20.3	101	54.3	50.3	40	03.4	19.6	150	12.8	16.8	162	13.1	49.7
20	131	22.8	116	53.9	51.6	55	04.2	19.7	165	14.8	16.6	177	15.4	49.6
21	146	25.2	131	53.5	52.8	70	05.1	19.9	180	16.8	16.5	192	17.7	49.6
22	161	27.7	146	53.1	54.1	85	05.9	20.0	195	18.8	16.3	207	19.9	49.6
23	176	30.2	161	52.7	55.3	100	06.7	20.1	210	20.8	16.2	222	22.2	49.5
24	191	32.6	176	52.3	+4 56.6	115	07.5	+24 20.3	225	22.8	−14 16.0	237	24.5	−17 49.5
Dif	—			−4	+12		+8	+1		+20	+2		+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0 PMG: 12h 03m.2				Edad: 20d.6 SD: 16′.1 PMG: 5h 05m		PHE 4h: 59′.1 12h: 58′.9 20h: 58′.7 Rº: 60m									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	09.7	+5	18.7	286	49.6	−24	28.1	**60 N**	3 41	4 36	5 19	2 31	72	7 34	54
1	194	09.9		19.6	301	13.5 49		32.4 43	**58**	3 51	42	22	2 08	70	7 57	55
2	209	10.1		20.6	315	37.3 48		36.5 41	**56**	4 00	47	25	1 50	68	8 16	56
3	224	10.3		21.5	330	01.2 49		40.5 40	**54**	07	51	28	34	67	32	57
4	239	10.4		22.5	344	25.1 49		44.2 37	**52**	14	56	30	20	67	46	57
5	254	10.6	+5	23.4	358	49.0 49	−24	47.8 36	**50**	4 20	4 59	5 32	1 09	66	8 58	57
6	269	10.8	+5	24.4	13	12.9 49	−24	51.3 35	**45**	4 32	5 07	5 37	0 44	65	9 23	58
7	284	11.0		25.4	27	36.8 49		54.5 32	**40**	41	13	41	25	64	43	58
8	299	11.2		26.3	42	00.7 49	−24	57.6 31	**35**	48	18	44	0 08	64	9 59	59
9	314	11.4		27.3	56	24.6 49	−25	00.6 30	**30**	4 55	23	47	** **	**	10 14	59
10	329	11.5		28.2	70	48.5 49		03.3 27	**20**	5 04	30	52	** **	**	10 38	60
11	344	11.7	+5	29.2	85	12.5 50	−25	05.9 26	**10 N**	5 10	5 35	5 56	** **	**	11 00	59
12	359	11.9	+5	30.1	99	36.4 49	−25	08.4 25	**0**	5 15	5 39	6 00	23 51	58	11 19	60
13	14	12.1		31.1	114	00.4 50		10.6 22	**10 S**	18	43	04	31	59	11 39	60
14	29	12.3		32.0	128	24.4 50		12.7 21	**20**	20	46	08	23 09	60	12 00	60
15	44	12.5		33.0	142	48.4 50		14.6 19	**30**	20	48	12	22 44	61	25	59
16	59	12.6		34.0	157	12.4 50		16.4 18	**35**	20	49	14	30	61	39	60
17	74	12.8	+5	34.9	171	36.4 50	−25	18.0 16	**40**	5 19	5 50	6 17	22 13	61	12 56	59
18	89	13.0	+5	35.9	186	00.5 51	−25	19.4 14	**45**	5 17	5 51	6 20	21 53	62	13 16	59
19	104	13.2		36.8	200	24.6 51		20.6 12	**50**	14	52	24	28	62	41	59
20	119	13.4		37.8	214	48.7 51		21.7 11	**52**	13	52	26	16	62	13 53	59
21	134	13.5		38.7	229	12.9 52		22.6 9	**54**	11	52	28	21 02	63	14 07	59
22	149	13.7		39.7	243	37.1 52		23.4 8	**56**	09	52	30	20 45	64	23	59
23	164	13.9		40.6	258	01.3 52		24.0 6	**58**	07	53	32	26	64	14 42	59
24	179	14.1	+5	41.6	272	25.6 53	−25	24.4 4	**60 S**	5 04	5 53	6 34	20 02	65	15 06	58

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 11h 12m.0		Mag: −4.0 PMG: 12h 13m			Mag: +1.3 PMG: 16h 19m			Mag: −2.1 PMG: 8h 57m			Mag: +0.8 PMG: 8h 09m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	191	32.6	176	52.3	+4 56.6	115	07.5	+24 20.3	225	22.8	−14 16.0	237	24.5	−17 49.5
1	206	35.1	191	51.9	57.8	130	08.4	20.4	240	24.8	15.9	252	26.7	49.4
2	221	37.6	206	51.6	+4 59.0	145	09.2	20.6	255	26.8	15.7	267	29.0	49.4
3	236	40.0	221	51.2	+5 00.3	160	10.0	20.7	270	28.7	15.6	282	31.3	49.3
4	251	42.5	236	50.8	01.5	175	10.8	20.8	285	30.7	15.4	297	33.6	49.3
5	266	45.0	251	50.4	+5 02.8	190	11.7	+24 21.0	300	32.7	−14 15.3	312	35.8	−17 49.2
6	281	47.4	266	50.0	+5 04.0	205	12.5	+24 21.1	315	34.7	−14 15.1	327	38.1	−17 49.2
7	296	49.9	281	49.6	05.2	220	13.3	21.3	330	36.7	15.0	342	40.4	49.1
8	311	52.4	296	49.2	06.5	235	14.2	21.4	345	38.7	14.8	357	42.7	49.1
9	326	54.8	311	48.8	07.7	250	15.0	21.5	0	40.7	14.7	12	44.9	49.0
10	341	57.3	326	48.4	09.0	265	15.8	21.7	15	42.7	14.5	27	47.2	49.0
11	356	59.7	341	48.0	+5 10.2	280	16.6	+24 21.8	30	44.7	−14 14.3	42	49.5	−17 48.9
12	12	02.2	356	47.6	+5 11.4	295	17.5	+24 21.9	45	46.7	−14 14.2	57	51.7	−17 48.9
13	27	04.7	11	47.3	12.7	310	18.3	22.1	60	48.7	14.0	72	54.0	48.8
14	42	07.1	26	46.9	13.9	325	19.1	22.2	75	50.7	13.9	87	56.3	48.8
15	57	09.6	41	46.5	15.2	340	19.9	22.3	90	52.7	13.7	102	58.6	48.7
16	72	12.1	56	46.1	16.4	355	20.8	22.5	105	54.7	13.6	118	00.8	48.7
17	87	14.5	71	45.7	+5 17.6	10	21.6	+24 22.6	120	56.7	−14 13.4	133	03.1	−17 48.7
18	102	17.0	86	45.3	+5 18.9	25	22.4	+24 22.7	135	58.7	−14 13.3	148	05.4	−17 48.6
19	117	19.5	101	44.9	20.1	40	23.2	22.9	151	00.7	13.1	163	07.7	48.6
20	132	21.9	116	44.5	21.4	55	24.1	23.0	166	02.6	13.0	178	09.9	48.5
21	147	24.4	131	44.1	22.6	70	24.9	23.1	181	04.6	12.8	193	12.2	48.5
22	162	26.9	146	43.7	23.8	85	25.7	23.3	196	06.6	12.7	208	14.5	48.4
23	177	29.3	161	43.3	25.1	100	26.5	23.4	211	08.6	12.5	223	16.8	48.4
24	192	31.8	176	42.9	+5 26.3	115	27.4	+24 23.5	226	10.6	−14 12.4	238	19.0	−17 48.3
Dif	—			−4	+12		+8	+1		+20	+2		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 21^{d}.6		PHE	4^{h}: 58′.4									
	PMG: 12^{h} 02^{m}.9				SD: 15′.9			12^{h}: 58′.2									
					PMG: 6^{h} 05^{m}			20^{h}: 57′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	14.1	+5	41.6	272	25.6	−25	24.4		**60 N**	18 52	19 35	20 31	3 43	44	8 28	76
1	194	14.3		42.5	286	49.9 53		24.6	2	**58**	48	29	20	3 18	47	8 52	73
2	209	14.5		43.5	301	14.2 53		24.7	1	**56**	45	23	11	2 58	49	9 12	71
3	224	14.6		44.4	315	38.6 54		24.7	0	**54**	42	18	20 03	41	51	29	69
4	239	14.8		45.4	330	03.0 54		24.4	3	**52**	39	14	19 56	27	52	43	68
5	254	15.0	+5	46.4	344	27.5 55	−25	24.0	4	**50**	18 37	19 10	19 50	2 15	52	9 55	67
6	269	15.2	+5	47.3	358	52.0 55	−25	23.5	5	**45**	18 32	19 02	19 37	1 49	54	10 21	65
7	284	15.4		48.3	13	16.5 55		22.8	7	**40**	27	18 55	28	29	54	41	64
8	299	15.5		49.2	27	41.2 57		21.9	9	**35**	24	49	20	1 12	55	10 58	63
9	314	15.7		50.2	42	05.8 56		20.8	11	**30**	21	45	13	0 57	56	11 13	61
10	329	15.9		51.1	56	30.5 57		19.6	12	**20**	15	37	19 03	32	57	38	59
11	344	16.1	+5	52.1	70	55.3 58	−25	18.3	13	**10 N**	18 10	18 32	18 56	0 11	57	11 59	58
12	359	16.3	+5	53.0	85	20.1 58	−25	16.8	15	**0**	18 06	18 27	18 51	** **	**	12 19	57
13	14	16.4		54.0	99	45.0 59		15.1	17	**10 S**	18 02	23	48	** **	**	12 39	55
14	29	16.6		54.9	114	09.9 59		13.2	19	**20**	17 58	20	45	** **	**	13 00	54
15	44	16.8		55.9	128	34.9 60		11.3	19	**30**	53	17	45	23 45	62	24	53
16	59	17.0		56.8	142	59.9 60		09.1	22	**35**	50	15	45	31	63	39	51
17	74	17.2	+5	57.8	157	25.0 61	−25	06.8	23	**40**	17 47	18 14	18 45	23 14	65	13 55	50
18	89	17.3	+5	58.7	171	50.2 62	−25	04.4	24	**45**	17 44	18 13	18 47	22 55	67	14 15	48
19	104	17.5	+5	59.7	186	15.4 62	−25	01.8	26	**50**	39	12	49	30	70	40	46
20	119	17.7	+6	00.6	200	40.7 63	−24	59.0	28	**52**	38	11	50	18	72	14 52	45
21	134	17.9		01.6	215	06.1 64		56.1	29	**54**	35	11	52	22 05	73	15 06	43
22	149	18.1		02.5	229	31.5 64		53.1	30	**56**	33	10	53	21 49	76	22	40
23	164	18.2		03.5	243	57.0 65		49.8	33	**58**	31	10	55	30	79	15 41	37
24	179	18.4	+6	04.4	258	22.6 66	−24	46.5	33	**60 S**	17 28	18 09	18 57	21 07	83	16 04	34

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.3			Mag: −2.1			Mag: +0.8		
	11^{h} 08^{m}.1		PMG: 12^{h} 13^{m}			PMG: 16^{h} 17^{m}			PMG: 8^{h} 54^{m}			PMG: 8^{h} 06^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	192	31.8	176	42.9	+5 26.3	115	27.4	+24 23.5	226	10.6	−14 12.4	238	19.0	−17 48.3
1	207	34.2	191	42.5	27.5	130	28.2	23.7	241	12.6	12.2	253	21.3	48.3
2	222	36.7	206	42.2	28.8	145	29.0	23.8	256	14.6	12.1	268	23.6	48.2
3	237	39.2	221	41.8	30.0	160	29.9	23.9	271	16.6	11.9	283	25.9	48.2
4	252	41.6	236	41.4	31.2	175	30.7	24.1	286	18.6	11.8	298	28.1	48.1
5	267	44.1	251	41.0	+5 32.5	190	31.5	+24 24.2	301	20.6	−14 11.6	313	30.4	−17 48.1
6	282	46.6	266	40.6	+5 33.7	205	32.3	+24 24.3	316	22.6	−14 11.5	328	32.7	−17 48.0
7	297	49.0	281	40.2	35.0	220	33.1	24.5	331	24.6	11.3	343	35.0	48.0
8	312	51.5	296	39.8	36.2	235	34.0	24.6	346	26.6	11.2	358	37.2	48.0
9	327	54.0	311	39.4	37.4	250	34.8	24.7	1	28.6	11.0	13	39.5	47.9
10	342	56.4	326	39.0	38.7	265	35.6	24.9	16	30.6	10.9	28	41.8	47.9
11	357	58.9	341	38.6	+5 39.9	280	36.4	+24 25.0	31	32.6	−14 10.7	43	44.1	−17 47.8
12	13	01.4	356	38.2	+5 41.1	295	37.3	+24 25.1	46	34.6	−14 10.6	58	46.4	−17 47.8
13	28	03.8	11	37.8	42.4	310	38.1	25.2	61	36.6	10.4	73	48.6	47.7
14	43	06.3	26	37.4	43.6	325	38.9	25.4	76	38.6	10.3	88	50.9	47.7
15	58	08.7	41	37.0	44.8	340	39.7	25.5	91	40.6	10.1	103	53.2	47.6
16	73	11.2	56	36.6	46.1	355	40.6	25.6	106	42.6	09.9	118	55.5	47.6
17	88	13.7	71	36.2	+5 47.3	10	41.4	+24 25.8	121	44.6	−14 09.8	133	57.7	−17 47.5
18	103	16.1	86	35.8	+5 48.5	25	42.2	+24 25.9	136	46.6	−14 09.6	149	00.0	−17 47.5
19	118	18.6	101	35.4	49.8	40	43.0	26.0	151	48.6	09.5	164	02.3	47.4
20	133	21.1	116	35.0	51.0	55	43.9	26.1	166	50.6	09.3	179	04.6	47.4
21	148	23.5	131	34.6	52.2	70	44.7	26.3	181	52.6	09.2	194	06.9	47.4
22	163	26.0	146	34.2	53.5	85	45.5	26.4	196	54.6	09.0	209	09.1	47.3
23	178	28.5	161	33.8	54.7	100	46.3	26.5	211	56.6	08.9	224	11.4	47.3
24	193	30.9	176	33.5	+5 55.9	115	47.2	+24 26.6	226	58.6	−14 08.7	239	13.7	−17 47.2
Dif	—			−4	+12		+8	+1		+20	+2		+23	0

UT	SOL SD: 16′.0 PMG: 12h 02m.6				LUNA Edad: 22d.6 SD: 15′.7 PMG: 7h 03m PHE 4h: 57′.7; 12h: 57′.4; 20h: 57′.2 Rº: 54m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	18.4	+6	04.4	258	22.6	−24	46.5	**60 N**	3 34	4 29	5 13	4 27	25	9 44	88
1	194	18.6		05.4	272	48.2 66		43.0 35	**58**	45	36	17	4 05	29	10 05	83
2	209	18.8		06.3	287	14.0 68		39.4 36	**56**	3 54	41	20	3 47	33	23	79
3	224	19.0		07.3	301	39.8 68		35.6 38	**54**	4 02	46	23	32	35	38	77
4	239	19.1		08.2	316	05.6 68		31.6 40	**52**	09	51	25	19	37	10 51	74
5	254	19.3	+6	09.2	330	31.6 70	−24	27.6 40	**50**	4 15	4 55	5 28	3 07	39	11 02	73
6	269	19.5	+6	10.1	344	57.6 70	−24	23.3 43	**45**	4 28	5 03	5 33	2 43	42	11 26	69
7	284	19.7		11.1	359	23.7 71		19.0 43	**40**	37	10	38	23	45	11 45	66
8	299	19.9		12.0	13	49.9 72		14.5 45	**35**	45	16	41	2 07	47	12 01	63
9	314	20.0		13.0	28	16.1 72		09.8 47	**30**	4 52	20	45	1 53	49	14	62
10	329	20.2		13.9	42	42.4 73		05.1 47	**20**	5 02	28	50	29	51	37	59
11	344	20.4	+6	14.9	57	08.9 75	−24	00.2 49	**10 N**	5 09	5 34	5 55	1 08	54	12 57	56
12	359	20.6	+6	15.8	71	35.4 75	−23	55.1 51	**0**	5 14	5 39	5 59	0 49	55	13 16	53
13	14	20.7		16.7	86	01.9 75		49.9 52	**10 S**	18	43	6 04	30	57	34	52
14	29	20.9		17.7	100	28.6 77		44.6 53	**20**	20	46	08	0 09	59	13 54	49
15	44	21.1		18.6	114	55.3 77		39.2 54	**30**	21	49	13	** **	**	14 17	45
16	59	21.3		19.6	129	22.2 79		33.6 56	**35**	21	51	16	** **	**	30	43
17	74	21.5	+6	20.5	143	49.1 79	−23	27.9 57	**40**	5 21	5 52	6 19	** **	**	14 45	41
18	89	21.6	+6	21.5	158	16.1 80	−23	22.1 58	**45**	5 19	5 53	6 23	** **	**	15 03	39
19	104	21.8		22.4	172	43.2 81		16.1 60	**50**	17	55	27	23 40	73	26	34
20	119	22.0		23.4	187	10.4 82		10.0 61	**52**	16	55	29	30	75	37	32
21	134	22.2		24.3	201	37.6 82	−23	03.8 62	**54**	15	56	31	18	78	15 49	30
22	149	22.4		25.3	216	05.0 84	−22	57.5 63	**56**	13	56	34	23 05	80	16 02	28
23	164	22.5		26.2	230	32.4 84		51.0 65	**58**	11	57	36	22 49	85	18	24
24	179	22.7	+6	27.2	244	59.9 85	−22	44.4 66	**60 S**	5 09	5 57	6 39	22 30	90	16 38	19

UT	ARIES PMG 11h 04m.1		VENUS Mag: −3.9 PMG: 12h 14m			MARTE Mag: +1.3 PMG: 16h 16m			JÚPITER Mag: −2.1 PMG: 8h 51m			SATURNO Mag: +0.8 PMG: 8h 02m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	193	30.9	176	33.5	+5 55.9	115	47.2	+24 26.6	226	58.6	−14 08.7	239	13.7	−17 47.2
1	208	33.4	191	33.1	57.2	130	48.0	26.8	242	00.6	08.6	254	16.0	47.2
2	223	35.8	206	32.7	58.4	145	48.8	26.9	257	02.6	08.4	269	18.2	47.1
3	238	38.3	221	32.3	+5 59.6	160	49.6	27.0	272	04.6	08.3	284	20.5	47.1
4	253	40.8	236	31.9	+6 00.9	175	50.4	27.1	287	06.6	08.1	299	22.8	47.0
5	268	43.2	251	31.5	+6 02.1	190	51.3	+24 27.3	302	08.6	−14 08.0	314	25.1	−17 47.0
6	283	45.7	266	31.1	+6 03.3	205	52.1	+24 27.4	317	10.6	−14 07.8	329	27.4	−17 46.9
7	298	48.2	281	30.7	04.5	220	52.9	27.5	332	12.6	07.7	344	29.6	46.9
8	313	50.6	296	30.3	05.8	235	53.7	27.6	347	14.6	07.5	359	31.9	46.8
9	328	53.1	311	29.9	07.0	250	54.6	27.8	2	16.6	07.4	14	34.2	46.8
10	343	55.6	326	29.5	08.2	265	55.4	27.9	17	18.6	07.2	29	36.5	46.8
11	358	58.0	341	29.1	+6 09.5	280	56.2	+24 28.0	32	20.6	−14 07.1	44	38.8	−17 46.7
12	14	00.5	356	28.7	+6 10.7	295	57.0	+24 28.1	47	22.6	−14 06.9	59	41.0	−17 46.7
13	29	03.0	11	28.3	11.9	310	57.8	28.2	62	24.6	06.8	74	43.3	46.6
14	44	05.4	26	27.9	13.2	325	58.7	28.4	77	26.6	06.6	89	45.6	46.6
15	59	07.9	41	27.5	14.4	340	59.5	28.5	92	28.6	06.5	104	47.9	46.5
16	74	10.3	56	27.1	15.6	356	00.3	28.6	107	30.6	06.3	119	50.2	46.5
17	89	12.8	71	26.7	+6 16.8	11	01.1	+24 28.7	122	32.6	−14 06.2	134	52.4	−17 46.4
18	104	15.3	86	26.3	+6 18.1	26	01.9	+24 28.9	137	34.6	−14 06.0	149	54.7	−17 46.4
19	119	17.7	101	25.9	19.3	41	02.8	29.0	152	36.6	05.9	164	57.0	46.3
20	134	20.2	116	25.5	20.5	56	03.6	29.1	167	38.6	05.7	179	59.3	46.3
21	149	22.7	131	25.1	21.7	71	04.4	29.2	182	40.6	05.6	195	01.6	46.3
22	164	25.1	146	24.7	23.0	86	05.2	29.3	197	42.6	05.4	210	03.9	46.2
23	179	27.6	161	24.3	24.2	101	06.0	29.5	212	44.6	05.3	225	06.1	46.2
24	194	30.1	176	23.9	+6 25.4	116	06.9	+24 29.6	227	46.6	−14 05.1	240	08.4	−17 46.1
Dif	—			−4	+12		+8	+1		+20	+2		+23	0

UT	SOL SD: 16′.0 PMG: 12h 02m.3		LUNA Edad: 23d.6 SD: 15′.6 PMG: 7h 57m PHE 4h: 57′.0; 12h: 56′.8; 20h: 56′.6 Rº: 51m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	179 22.7	+6 27.2	244 59.9		−22 44.4		**60 N**	18 56	19 41	20 37	4 52	14	11 12	90
1	194 22.9	28.1	259 27.6	87	37.7	67	**58**	52	34	26	34	19	28	86
2	209 23.1	29.0	273 55.3	87	30.9	68	**56**	49	28	16	20	22	42	82
3	224 23.2	30.0	288 23.1	88	24.0	69	**54**	46	22	07	4 07	25	11 55	78
4	239 23.4	30.9	302 50.9	88	16.9	71	**52**	43	18	20 00	3 56	28	12 05	76
5	254 23.6	+6 31.9	317 18.9	90	−22 09.7	72	**50**	18 40	19 13	19 54	3 46	30	12 15	74
6	269 23.8	+6 32.8	331 47.0	91	−22 02.5	72	**45**	18 34	19 04	19 40	3 25	34	12 35	69
7	284 23.9	33.8	346 15.1	91	−21 55.1	74	**40**	29	18 57	30	3 08	37	12 51	66
8	299 24.1	34.7	0 43.4	93	47.5	76	**35**	25	51	21	2 54	40	13 04	63
9	314 24.3	35.6	15 11.7	93	39.9	76	**30**	22	46	15	42	41	16	61
10	329 24.5	36.6	29 40.1	94	32.2	77	**20**	16	38	19 04	20	46	36	57
11	344 24.7	+6 37.5	44 08.7	96	−21 24.4	78	**10 N**	18 10	18 32	18 56	2 02	48	13 53	53
12	359 24.8	+6 38.5	58 37.3	96	−21 16.4	80	**0**	18 06	18 26	18 51	1 44	52	14 09	50
13	14 25.0	39.4	73 06.0	97	08.4	80	**10 S**	18 01	22	46	27	54	26	46
14	29 25.2	40.4	87 34.8	98	−21 00.2	82	**20**	17 56	18	44	1 08	58	14 43	43
15	44 25.4	41.3	102 03.6	98	−20 52.0	82	**30**	51	14	42	0 47	61	15 02	39
16	59 25.5	42.2	116 32.6	100	43.6	84	**35**	47	13	42	34	63	13	37
17	74 25.7	+6 43.2	131 01.7	101	−20 35.1	85	**40**	17 44	18 11	18 42	0 19	66	15 26	34
18	89 25.9	+6 44.1	145 30.8	101	−20 26.6	85	**45**	17 40	18 09	18 43	0 02	69	15 42	30
19	104 26.1	45.1	160 00.1	103	17.9	87	**50**	35	08	45	** **	**	16 00	26
20	119 26.2	46.0	174 29.4	103	09.2	87	**52**	33	07	46	** **	**	09	24
21	134 26.4	47.0	188 58.8	104	−20 00.3	89	**54**	31	06	47	** **	**	19	21
22	149 26.6	47.9	203 28.3	105	−19 51.4	89	**56**	28	05	48	** **	**	30	19
23	164 26.8	48.8	217 57.9	106	42.3	91	**58**	25	04	50	** **	**	42	16
24	179 26.9	+6 49.8	232 27.6	107	−19 33.2	91	**60 S**	17 22	18 04	18 52	** **	**	16 57	11

UT	ARIES PMG 11h 00m.2	VENUS Mag: −3.9 PMG: 12h 15m		MARTE Mag: +1.4 PMG: 16h 15m		JÚPITER Mag: −2.1 PMG: 8h 48m		SATURNO Mag: +0.8 PMG: 7h 58m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	194 30.1	176 23.9	+6 25.4	116 06.9	+24 29.6	227 46.6	−14 05.1	240 08.4	−17 46.1
1	209 32.5	191 23.5	26.7	131 07.7	29.7	242 48.6	05.0	255 10.7	46.1
2	224 35.0	206 23.1	27.9	146 08.5	29.8	257 50.6	04.8	270 13.0	46.0
3	239 37.5	221 22.7	29.1	161 09.3	29.9	272 52.6	04.7	285 15.3	46.0
4	254 39.9	236 22.3	30.3	176 10.2	30.0	287 54.6	04.5	300 17.5	45.9
5	269 42.4	251 21.9	+6 31.6	191 11.0	+24 30.2	302 56.6	−14 04.4	315 19.8	−17 45.9
6	284 44.8	266 21.4	+6 32.8	206 11.8	+24 30.3	317 58.6	−14 04.2	330 22.1	−17 45.9
7	299 47.3	281 21.0	34.0	221 12.6	30.4	333 00.6	04.1	345 24.4	45.8
8	314 49.8	296 20.6	35.2	236 13.4	30.5	348 02.6	03.9	0 26.7	45.8
9	329 52.2	311 20.2	36.5	251 14.2	30.6	3 04.7	03.8	15 29.0	45.7
10	344 54.7	326 19.8	37.7	266 15.1	30.7	18 06.7	03.6	30 31.2	45.7
11	359 57.2	341 19.4	+6 38.9	281 15.9	+24 30.9	33 08.7	−14 03.5	45 33.5	−17 45.6
12	14 59.6	356 19.0	+6 40.1	296 16.7	+24 31.0	48 10.7	−14 03.3	60 35.8	−17 45.6
13	30 02.1	11 18.6	41.4	311 17.5	31.1	63 12.7	03.2	75 38.1	45.5
14	45 04.6	26 18.2	42.6	326 18.3	31.2	78 14.7	03.0	90 40.4	45.5
15	60 07.0	41 17.8	43.8	341 19.2	31.3	93 16.7	02.9	105 42.7	45.5
16	75 09.5	56 17.4	45.0	356 20.0	31.4	108 18.7	02.7	120 44.9	45.4
17	90 11.9	71 17.0	+6 46.2	11 20.8	+24 31.6	123 20.7	−14 02.6	135 47.2	−17 45.4
18	105 14.4	86 16.6	+6 47.5	26 21.6	+24 31.7	138 22.7	−14 02.4	150 49.5	−17 45.3
19	120 16.9	101 16.2	48.7	41 22.4	31.8	153 24.7	02.3	165 51.8	45.3
20	135 19.3	116 15.8	49.9	56 23.3	31.9	168 26.7	02.1	180 54.1	45.2
21	150 21.8	131 15.4	51.1	71 24.1	32.0	183 28.7	02.0	195 56.4	45.2
22	165 24.3	146 15.0	52.3	86 24.9	32.1	198 30.7	01.9	210 58.6	45.1
23	180 26.7	161 14.6	53.6	101 25.7	32.2	213 32.7	01.7	226 00.9	45.1
24	195 29.2	176 14.2	+6 54.8	116 26.5	+24 32.3	228 34.7	−14 01.6	241 03.2	−17 45.1
Dif	—	−4	+12	+8	+1	+20	+1	+23	0

UT	SOL SD: 16′.0 PMG: 12h 02m.1				LUNA Edad: 24d.6 SD: 15′.4 PMG: 8h 48m PHE: 4h: 56′.4; 12h: 56′.2; 20h: 56′.0 Rº: 47m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	26.9	+6	49.8	232	27.6	−19	33.2	**60 N**	3 27	4 23	5 07	5 06	8	12 42	88
1	194	27.1		50.7	246	57.4 108		24.0 92	**58**	38	30	11	4 53	13	12 54	83
2	209	27.3		51.7	261	27.3 109		14.7 93	**56**	48	36	15	42	16	13 04	80
3	224	27.5		52.6	275	57.2 109	−19	05.3 94	**54**	3 56	41	18	32	19	13	78
4	239	27.6		53.5	290	27.3 111	−18	55.8 95	**52**	4 04	46	21	24	21	21	75
5	254	27.8	+6	54.5	304	57.4 111	−18	46.2 96	**50**	4 10	4 50	5 24	4 16	23	13 29	72
6	269	28.0	+6	55.4	319	27.6 112	−18	36.6 96	**45**	4 24	4 59	5 29	3 59	28	13 44	68
7	284	28.2		56.3	333	58.0 114		26.8 98	**40**	34	5 07	34	45	31	13 57	64
8	299	28.3		57.3	348	28.3 113		17.0 98	**35**	43	13	39	34	34	14 07	61
9	314	28.5		58.2	2	58.8 115	−18	07.1 99	**30**	4 49	18	42	23	37	17	58
10	329	28.7	+6	59.2	17	29.4 116	−17	57.1 100	**20**	5 00	26	48	3 06	41	33	53
11	344	28.9	+7	00.1	32	00.0 116	−17	47.1 100	**10 N**	5 08	5 33	5 54	2 50	45	14 46	50
12	359	29.0	+7	01.0	46	30.8 118	−17	36.9 102	**0**	5 14	5 38	5 59	2 36	48	14 59	47
13	14	29.2		02.0	61	01.6 118		26.7 102	**10 S**	18	43	6 04	21	52	15 12	43
14	29	29.4		02.9	75	32.5 119		16.4 103	**20**	21	47	09	2 06	55	26	39
15	44	29.5		03.9	90	03.5 120	−17	06.0 104	**30**	23	50	14	1 48	59	41	35
16	59	29.7		04.8	104	34.5 120	−16	55.6 104	**35**	23	52	18	37	62	15 50	32
17	74	29.9	+7	05.7	119	05.7 122	−16	45.1 105	**40**	5 23	5 54	6 21	1 25	65	16 00	29
18	89	30.1	+7	06.7	133	36.9 122	−16	34.5 106	**45**	5 22	5 56	6 25	1 11	69	16 12	25
19	104	30.2		07.6	148	08.2 123		23.8 107	**50**	20	58	30	0 53	74	26	21
20	119	30.4		08.5	162	39.6 124		13.1 107	**52**	19	59	32	45	76	33	19
21	134	30.6		09.5	177	11.1 125	−16	02.3 108	**54**	18	5 59	35	36	78	40	17
22	149	30.8		10.4	191	42.6 125	−15	51.5 108	**56**	17	6 00	38	26	80	49	13
23	164	30.9		11.3	206	14.3 127		40.5 110	**58**	16	01	41	14	84	16 58	11
24	179	31.1	+7	12.3	220	46.0 127	−15	29.6 109	**60 S**	5 14	6 02	6 44	0 00	88	17 08	8

UT	ARIES PMG 10h 56m.3		VENUS Mag: −3.9 PMG: 12h 15m			MARTE Mag: +1.4 PMG: 16h 13m			JÚPITER Mag: −2.1 PMG: 8h 45m			SATURNO Mag: +0.8 PMG: 7h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	195	29.2	176	14.2	+6 54.8	116	26.5	+24 32.3	228	34.7	−14 01.6	241	03.2	−17 45.1
1	210	31.7	191	13.8	56.0	131	27.3	32.5	243	36.8	01.4	256	05.5	45.0
2	225	34.1	206	13.4	57.2	146	28.2	32.6	258	38.8	01.3	271	07.8	45.0
3	240	36.6	221	12.9	58.4	161	29.0	32.7	273	40.8	01.1	286	10.1	44.9
4	255	39.1	236	12.5	+6 59.7	176	29.8	32.8	288	42.8	01.0	301	12.4	44.9
5	270	41.5	251	12.1	+7 00.9	191	30.6	+24 32.9	303	44.8	−14 00.8	316	14.6	−17 44.8
6	285	44.0	266	11.7	+7 02.1	206	31.4	+24 33.0	318	46.8	−14 00.7	331	16.9	−17 44.8
7	300	46.4	281	11.3	03.3	221	32.3	33.1	333	48.8	00.5	346	19.2	44.7
8	315	48.9	296	10.9	04.5	236	33.1	33.2	348	50.8	00.4	1	21.5	44.7
9	330	51.4	311	10.5	05.8	251	33.9	33.3	3	52.8	00.2	16	23.8	44.7
10	345	53.8	326	10.1	07.0	266	34.7	33.4	18	54.8	−14 00.1	31	26.1	44.6
11	0	56.3	341	09.7	+7 08.2	281	35.5	+24 33.6	33	56.8	−13 59.9	46	28.4	−17 44.6
12	15	58.8	356	09.3	+7 09.4	296	36.3	+24 33.7	48	58.8	−13 59.8	61	30.6	−17 44.5
13	31	01.2	11	08.9	10.6	311	37.2	33.8	64	00.9	59.6	76	32.9	44.5
14	46	03.7	26	08.5	11.8	326	38.0	33.9	79	02.9	59.5	91	35.2	44.4
15	61	06.2	41	08.0	13.1	341	38.8	34.0	94	04.9	59.3	106	37.5	44.4
16	76	08.6	56	07.6	14.3	356	39.6	34.1	109	06.9	59.2	121	39.8	44.4
17	91	11.1	71	07.2	+7 15.5	11	40.4	+24 34.2	124	08.9	−13 59.0	136	42.1	−17 44.3
18	106	13.6	86	06.8	+7 16.7	26	41.2	+24 34.3	139	10.9	−13 58.9	151	44.4	−17 44.3
19	121	16.0	101	06.4	17.9	41	42.1	34.4	154	12.9	58.7	166	46.7	44.2
20	136	18.5	116	06.0	19.1	56	42.9	34.5	169	14.9	58.6	181	48.9	44.2
21	151	20.9	131	05.6	20.4	71	43.7	34.6	184	16.9	58.4	196	51.2	44.1
22	166	23.4	146	05.2	21.6	86	44.5	34.7	199	18.9	58.3	211	53.5	44.1
23	181	25.9	161	04.8	22.8	101	45.3	34.8	214	21.0	58.1	226	55.8	44.0
24	196	28.3	176	04.3	+7 24.0	116	46.1	+24 34.9	229	23.0	−13 58.0	241	58.1	−17 44.0
Dif	—			−4	+12		+8	+1		+20	+1		+23	0

UT	SOL SD: 16′.0 PMG: 12h 01m.8		LUNA Edad: 25d.6 SD: 15′.2 PMG: 9h 35m PHE 4h: 55′.8; 12h: 55′.6; 20h: 55′.5 Rº: 44m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	179 31.1	+7 12.3	220 46.0		−15 29.6		**60 N**	19 01	19 46	20 43	5 14	6	14 10	84
1	194 31.3	13.2	235 17.7	127	18.5	111	**58**	18 57	39	31	5 06	9	17	81
2	209 31.4	14.1	249 49.6	129	−15 07.4	111	**56**	53	32	21	4 58	12	24	78
3	224 31.6	15.1	264 21.5	129	−14 56.2	112	**54**	49	26	12	51	14	31	75
4	239 31.8	16.0	278 53.5	130	45.0	112	**52**	46	21	20 04	45	16	36	73
5	254 32.0	+7 17.0	293 25.6	131	−14 33.7	113	**50**	18 43	19 17	19 57	4 39	19	14 41	71
6	269 32.1	+7 17.9	307 57.7	131	−14 22.3	114	**45**	18 37	19 07	19 43	4 27	23	14 52	66
7	284 32.3	18.8	322 30.0	133	−14 10.9	114	**40**	31	18 59	32	16	27	15 01	62
8	299 32.5	19.8	337 02.3	133	−13 59.5	114	**35**	27	53	23	08	29	08	59
9	314 32.7	20.7	351 34.6	133	48.0	115	**30**	23	47	16	4 00	32	15	56
10	329 32.8	21.6	6 07.1	135	36.4	116	**20**	16	39	19 05	3 47	37	26	52
11	344 33.0	+7 22.6	20 39.6	135	−13 24.8	116	**10 N**	18 10	18 32	18 56	3 35	41	15 36	48
12	359 33.2	+7 23.5	35 12.1	135	−13 13.1	117	**0**	18 05	18 26	18 50	3 24	45	15 46	43
13	14 33.3	24.4	49 44.8	137	−13 01.4	117	**10 S**	18 00	21	45	13	48	15 55	40
14	29 33.5	25.4	64 17.5	137	−12 49.6	118	**20**	17 54	16	42	3 01	52	16 05	35
15	44 33.7	26.3	78 50.2	137	37.8	118	**30**	48	12	40	2 47	57	16	31
16	59 33.9	27.2	93 23.1	139	25.9	119	**35**	45	10	39	39	60	22	28
17	74 34.0	+7 28.1	107 56.0	139	−12 14.0	119	**40**	17 41	18 08	18 39	2 30	63	16 29	25
18	89 34.2	+7 29.1	122 28.9	139	−12 02.0	120	**45**	17 36	18 06	18 40	2 20	66	16 37	22
19	104 34.4	30.0	137 02.0	141	−11 50.0	120	**50**	31	03	41	07	71	47	18
20	119 34.5	30.9	151 35.0	140	38.0	120	**52**	29	02	41	2 01	73	52	16
21	134 34.7	31.9	166 08.2	142	25.9	121	**54**	26	01	42	1 54	76	16 57	13
22	149 34.9	32.8	180 41.4	142	13.8	121	**56**	23	18 00	43	46	79	17 02	12
23	164 35.0	33.7	195 14.7	143	−11 01.6	122	**58**	20	17 59	44	38	82	09	8
24	179 35.2	+7 34.7	209 48.0	143	−10 49.4	122	**60 S**	17 16	17 58	18 46	1 28	86	17 16	5

UT	ARIES PMG 10h 52m.3	VENUS Mag: −3.9 PMG: 12h 16m		MARTE Mag: +1.4 PMG: 16h 12m		JÚPITER Mag: −2.1 PMG: 8h 41m		SATURNO Mag: +0.8 PMG: 7h 51m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	196 28.3	176 04.3	+7 24.0	116 46.1	+24 34.9	229 23.0	−13 58.0	241 58.1	−17 44.0
1	211 30.8	191 03.9	25.2	131 47.0	35.1	244 25.0	57.8	257 00.4	44.0
2	226 33.3	206 03.5	26.4	146 47.8	35.2	259 27.0	57.7	272 02.7	43.9
3	241 35.7	221 03.1	27.6	161 48.6	35.3	274 29.0	57.6	287 05.0	43.9
4	256 38.2	236 02.7	28.8	176 49.4	35.4	289 31.0	57.4	302 07.3	43.8
5	271 40.7	251 02.3	+7 30.1	191 50.2	+24 35.5	304 33.0	−13 57.3	317 09.5	−17 43.8
6	286 43.1	266 01.9	+7 31.3	206 51.0	+24 35.6	319 35.0	−13 57.1	332 11.8	−17 43.7
7	301 45.6	281 01.5	32.5	221 51.8	35.7	334 37.1	57.0	347 14.1	43.7
8	316 48.0	296 01.0	33.7	236 52.7	35.8	349 39.1	56.8	2 16.4	43.7
9	331 50.5	311 00.6	34.9	251 53.5	35.9	4 41.1	56.7	17 18.7	43.6
10	346 53.0	326 00.2	36.1	266 54.3	36.0	19 43.1	56.5	32 21.0	43.6
11	1 55.4	340 59.8	+7 37.3	281 55.1	+24 36.1	34 45.1	−13 56.4	47 23.3	−17 43.5
12	16 57.9	355 59.4	+7 38.5	296 55.9	+24 36.2	49 47.1	−13 56.2	62 25.6	−17 43.5
13	32 00.4	10 59.0	39.7	311 56.7	36.3	64 49.1	56.1	77 27.9	43.4
14	47 02.8	25 58.6	41.0	326 57.5	36.4	79 51.1	55.9	92 30.1	43.4
15	62 05.3	40 58.1	42.2	341 58.4	36.5	94 53.2	55.8	107 32.4	43.4
16	77 07.8	55 57.7	43.4	356 59.2	36.6	109 55.2	55.6	122 34.7	43.3
17	92 10.2	70 57.3	+7 44.6	12 00.0	+24 36.7	124 57.2	−13 55.5	137 37.0	−17 43.3
18	107 12.7	85 56.9	+7 45.8	27 00.8	+24 36.8	139 59.2	−13 55.3	152 39.3	−17 43.2
19	122 15.2	100 56.5	47.0	42 01.6	36.9	155 01.2	55.2	167 41.6	43.2
20	137 17.6	115 56.1	48.2	57 02.4	37.0	170 03.2	55.1	182 43.9	43.1
21	152 20.1	130 55.6	49.4	72 03.2	37.1	185 05.3	54.9	197 46.2	43.1
22	167 22.5	145 55.2	50.6	87 04.1	37.2	200 07.3	54.8	212 48.5	43.1
23	182 25.0	160 54.8	51.8	102 04.9	37.3	215 09.3	54.6	227 50.8	43.0
24	197 27.5	175 54.4	+7 53.0	117 05.7	+24 37.4	230 11.3	−13 54.5	242 53.1	−17 43.0
Dif	—	−4	+12	+8	+1	+20	+1	+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 26^{d}.6		PHE	4^{h}: 55′.3									
	PMG: 12^{h} 01^{m}.5				SD: 15′.1			12^{h}: 55′.2									
					PMG: 10^{h} 19^{m}			20^{h}: 55′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	179	35.2	+7	34.7	209	48.0	−10	49.4		**60 N**	3 19	4 16	5 01	5 20	5	15 34	81
1	194	35.4		35.6	224	21.4 144		37.1	123	**58**	31	24	05	15	7	38	79
2	209	35.6		36.5	238	54.8 144		24.9	122	**56**	42	30	09	10	10	42	76
3	224	35.7		37.5	253	28.3 145		12.5	124	**54**	50	36	13	05	13	46	73
4	239	35.9		38.4	268	01.9 146	−10	00.2	123	**52**	3 58	41	16	5 01	15	49	71
5	254	36.1	+7	39.3	282	35.5 146	−9	47.8	124	**50**	4 05	4 46	5 19	4 58	16	15 52	68
6	269	36.2	+7	40.2	297	09.1 146	−9	35.4	124	**45**	4 20	4 56	5 26	4 50	21	15 58	64
7	284	36.4		41.2	311	42.8 147		22.9	125	**40**	31	5 04	31	43	24	16 03	61
8	299	36.6		42.1	326	16.6 148	−9	10.4	125	**35**	40	10	36	37	28	07	58
9	314	36.7		43.0	340	50.4 148	−8	57.9	125	**30**	47	16	40	32	30	11	55
10	329	36.9		44.0	355	24.3 149		45.3	126	**20**	4 58	24	47	24	34	18	50
11	344	37.1	+7	44.9	9	58.2 149	−8	32.8	125	**10 N**	5 07	5 32	5 53	4 16	39	16 24	46
12	359	37.2	+7	45.8	24	32.1 149	−8	20.2	126	**0**	5 13	5 37	5 58	4 09	42	16 29	42
13	14	37.4		46.7	39	06.1 150	−8	07.5	127	**10 S**	18	42	6 04	4 01	47	35	37
14	29	37.6		47.7	53	40.2 151	−7	54.9	126	**20**	21	47	09	3 53	51	40	34
15	44	37.7		48.6	68	14.3 151		42.2	127	**30**	24	51	16	44	56	47	29
16	59	37.9		49.5	82	48.4 151		29.5	127	**35**	24	54	19	39	58	50	27
17	74	38.1	+7	50.4	97	22.6 152	−7	16.7	128	**40**	5 25	5 56	6 23	3 33	62	16 54	24
18	89	38.3	+7	51.4	111	56.8 152	−7	04.0	127	**45**	5 24	5 58	6 28	3 26	65	16 59	20
19	104	38.4		52.3	126	31.1 153	−6	51.2	128	**50**	23	6 01	33	18	70	17 05	16
20	119	38.6		53.2	141	05.4 153		38.4	128	**52**	23	02	36	14	72	08	13
21	134	38.8		54.1	155	39.8 154		25.6	128	**54**	22	03	39	10	74	10	12
22	149	38.9		55.1	170	14.1 153	−6	12.7	129	**56**	21	04	42	05	77	14	9
23	164	39.1		56.0	184	48.6 155	−5	59.9	128	**58**	20	05	45	3 00	79	17	7
24	179	39.3	+7	56.9	199	23.0 154	−5	47.0	129	**60 S**	5 19	6 07	6 49	2 54	83	17 21	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.4			Mag: −2.1			Mag: +0.8		
	10^{h} 48^{m}.4		PMG: 12^{h} 17^{m}			PMG: 16^{h} 11^{m}			PMG: 8^{h} 38^{m}			PMG: 7^{h} 47^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	197	27.5	175	54.4	+7 53.0	117	05.7	+24 37.4	230	11.3	−13 54.5	242	53.1	−17 43.0
1	212	29.9	190	54.0	54.2	132	06.5	37.5	245	13.3	54.3	257	55.3	42.9
2	227	32.4	205	53.6	55.5	147	07.3	37.6	260	15.3	54.2	272	57.6	42.9
3	242	34.9	220	53.1	56.7	162	08.1	37.7	275	17.3	54.0	287	59.9	42.8
4	257	37.3	235	52.7	57.9	177	08.9	37.8	290	19.4	53.9	303	02.2	42.8
5	272	39.8	250	52.3	+7 59.1	192	09.8	+24 37.9	305	21.4	−13 53.7	318	04.5	−17 42.8
6	287	42.3	265	51.9	+8 00.3	207	10.6	+24 38.0	320	23.4	−13 53.6	333	06.8	−17 42.7
7	302	44.7	280	51.5	01.5	222	11.4	38.1	335	25.4	53.4	348	09.1	42.7
8	317	47.2	295	51.0	02.7	237	12.2	38.2	350	27.4	53.3	3	11.4	42.6
9	332	49.6	310	50.6	03.9	252	13.0	38.3	5	29.4	53.1	18	13.7	42.6
10	347	52.1	325	50.2	05.1	267	13.8	38.4	20	31.5	53.0	33	16.0	42.6
11	2	54.6	340	49.8	+8 06.3	282	14.6	+24 38.5	35	33.5	−13 52.9	48	18.3	−17 42.5
12	17	57.0	355	49.4	+8 07.5	297	15.4	+24 38.6	50	35.5	−13 52.7	63	20.6	−17 42.5
13	32	59.5	10	48.9	08.7	312	16.3	38.6	65	37.5	52.6	78	22.9	42.4
14	48	02.0	25	48.5	09.9	327	17.1	38.7	80	39.5	52.4	93	25.2	42.4
15	63	04.4	40	48.1	11.1	342	17.9	38.8	95	41.5	52.3	108	27.4	42.3
16	78	06.9	55	47.7	12.3	357	18.7	38.9	110	43.6	52.1	123	29.7	42.3
17	93	09.4	70	47.3	+8 13.5	12	19.5	+24 39.0	125	45.6	−13 52.0	138	32.0	−17 42.3
18	108	11.8	85	46.8	+8 14.7	27	20.3	+24 39.1	140	47.6	−13 51.8	153	34.3	−17 42.2
19	123	14.3	100	46.4	15.9	42	21.1	39.2	155	49.6	51.7	168	36.6	42.2
20	138	16.8	115	46.0	17.1	57	21.9	39.3	170	51.6	51.5	183	38.9	42.1
21	153	19.2	130	45.6	18.3	72	22.8	39.4	185	53.7	51.4	198	41.2	42.1
22	168	21.7	145	45.2	19.5	87	23.6	39.5	200	55.7	51.2	213	43.5	42.1
23	183	24.1	160	44.7	20.7	102	24.4	39.6	215	57.7	51.1	228	45.8	42.0
24	198	26.6	175	44.3	+8 21.9	117	25.2	+24 39.7	230	59.7	−13 51.0	243	48.1	−17 42.0
Dif	—			−4	+12		+8	+1		+20	+1		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 27ᵈ.6		PHE	4ʰ: 54′.9									
	PMG: 12ʰ 01ᵐ.2				SD: 15′.0			12ʰ: 54′.8									
					PMG: 11ʰ 01ᵐ			20ʰ: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	39.3	+7	56.9	199	23.0	−5	47.0		**60 N**	19 06	19 51	20 50	5 25	3	16 55	81
1	194	39.4		57.8	213	57.5 155		34.1 129		**58**	19 01	43	37	22	7	57	77
2	209	39.6		58.8	228	32.0 155		21.2 129		**56**	18 57	36	26	20	9	58	74
3	224	39.8	+7	59.7	243	06.6 156	−5	08.3 129		**54**	53	30	17	18	11	16 59	72
4	239	39.9	+8	00.6	257	41.2 156	−4	55.4 129		**52**	49	25	08	16	13	17 00	69
5	254	40.1	+8	01.5	272	15.8 156	−4	42.4 130		**50**	18 46	19 20	20 01	5 14	16	17 00	68
6	269	40.3	+8	02.5	286	50.5 157	−4	29.5 129		**45**	18 39	19 10	19 46	5 11	19	17 02	63
7	284	40.4		03.4	301	25.2 157		16.5 130		**40**	34	19 01	34	07	23	04	59
8	299	40.6		04.3	315	59.9 157	−4	03.5 130		**35**	29	18 54	25	05	26	05	56
9	314	40.8		05.2	330	34.7 158	−3	50.5 130		**30**	24	49	17	5 02	29	06	54
10	329	40.9		06.2	345	09.5 158		37.5 130		**20**	17	39	19 05	4 58	33	08	49
11	344	41.1	+8	07.1	359	44.3 158	−3	24.5 130		**10 N**	18 10	18 32	18 56	4 55	37	17 10	44
12	359	41.3	+8	08.0	14	19.1 158	−3	11.5 130		**0**	18 05	18 25	18 50	4 51	41	17 11	41
13	14	41.4		08.9	28	54.0 159	−2	58.5 130		**10 S**	17 59	20	44	48	45	12	38
14	29	41.6		09.8	43	28.8 158		45.5 130		**20**	53	15	41	44	49	14	33
15	44	41.7		10.8	58	03.7 159		32.4 131		**30**	46	10	38	40	54	16	28
16	59	41.9		11.7	72	38.7 160		19.4 130		**35**	42	08	37	37	57	17	26
17	74	42.1	+8	12.6	87	13.6 159	−2	06.4 130		**40**	17 38	18 05	18 36	4 35	60	17 18	23
18	89	42.2	+8	13.5	101	48.6 160	−1	53.3 131		**45**	17 33	18 02	18 36	4 31	64	17 19	19
19	104	42.4		14.5	116	23.6 160		40.3 130		**50**	27	17 59	37	28	68	21	15
20	119	42.6		15.4	130	58.6 160		27.2 131		**52**	24	58	37	26	70	21	14
21	134	42.7		16.3	145	33.6 160		14.2 130		**54**	21	57	38	24	72	22	11
22	149	42.9		17.2	160	08.7 161	−1	01.2 130		**56**	18	55	38	22	74	23	9
23	164	43.1		18.1	174	43.7 160	−0	48.1 131		**58**	14	54	39	19	78	24	7
24	179	43.2	+8	19.0	189	18.8 161	−0	35.1 130		**60 S**	17 10	17 52	18 40	4 17	80	17 25	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.4			Mag: −2.1			Mag: +0.8		
	10ʰ 44ᵐ.5		PMG: 12ʰ 17ᵐ			PMG: 16ʰ 09ᵐ			PMG: 8ʰ 35ᵐ			PMG: 7ʰ 44ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	198	26.6	175	44.3	+8 21.9	117	25.2	+24 39.7	230	59.7	−13 51.0	243	48.1	−17 42.0
1	213	29.1	190	43.9	23.1	132	26.0	39.8	246	01.7	50.8	258	50.4	41.9
2	228	31.5	205	43.5	24.3	147	26.8	39.9	261	03.8	50.7	273	52.7	41.9
3	243	34.0	220	43.0	25.5	162	27.6	39.9	276	05.8	50.5	288	55.0	41.8
4	258	36.5	235	42.6	26.7	177	28.4	40.0	291	07.8	50.4	303	57.3	41.8
5	273	38.9	250	42.2	+8 27.9	192	29.2	+24 40.1	306	09.8	−13 50.2	318	59.6	−17 41.8
6	288	41.4	265	41.8	+8 29.1	207	30.1	+24 40.2	321	11.8	−13 50.1	334	01.9	−17 41.7
7	303	43.9	280	41.3	30.3	222	30.9	40.3	336	13.9	49.9	349	04.2	41.7
8	318	46.3	295	40.9	31.5	237	31.7	40.4	351	15.9	49.8	4	06.5	41.6
9	333	48.8	310	40.5	32.7	252	32.5	40.5	6	17.9	49.7	19	08.8	41.6
10	348	51.3	325	40.1	33.9	267	33.3	40.6	21	19.9	49.5	34	11.1	41.6
11	3	53.7	340	39.6	+8 35.1	282	34.1	+24 40.7	36	21.9	−13 49.4	49	13.3	−17 41.5
12	18	56.2	355	39.2	+8 36.3	297	34.9	+24 40.7	51	24.0	−13 49.2	64	15.6	−17 41.5
13	33	58.6	10	38.8	37.5	312	35.7	40.8	66	26.0	49.1	79	17.9	41.4
14	49	01.1	25	38.4	38.7	327	36.5	40.9	81	28.0	48.9	94	20.2	41.4
15	64	03.6	40	37.9	39.8	342	37.3	41.0	96	30.0	48.8	109	22.5	41.3
16	79	06.0	55	37.5	41.0	357	38.2	41.1	111	32.1	48.6	124	24.8	41.3
17	94	08.5	70	37.1	+8 42.2	12	39.0	+24 41.2	126	34.1	−13 48.5	139	27.1	−17 41.3
18	109	11.0	85	36.6	+8 43.4	27	39.8	+24 41.3	141	36.1	−13 48.3	154	29.4	−17 41.2
19	124	13.4	100	36.2	44.6	42	40.6	41.4	156	38.1	48.2	169	31.7	41.2
20	139	15.9	115	35.8	45.8	57	41.4	41.4	171	40.1	48.1	184	34.0	41.1
21	154	18.4	130	35.4	47.0	72	42.2	41.5	186	42.2	47.9	199	36.3	41.1
22	169	20.8	145	34.9	48.2	87	43.0	41.6	201	44.2	47.8	214	38.6	41.1
23	184	23.3	160	34.5	49.4	102	43.8	41.7	216	46.2	47.6	229	40.9	41.0
24	199	25.7	175	34.1	+8 50.6	117	44.6	+24 41.8	231	48.2	−13 47.5	244	43.2	−17 41.0
Dif	—			−4	+12		+8	+1		+20	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 28^{d}.6		PHE	4^{h}: 54′.6									
	PMG: 12^{h} 01^{m}.0				SD: 14′.9			12^{h}: 54′.5									
					PMG: 11^{h} 42^{m}			20^{h}: 54′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	179	43.2	+8	19.0	189	18.8	−0	35.1		**60 N**	3 11	4 10	4 55	5 28	4	18 16	79
1	194	43.4		20.0	203	53.9^{161}		22.1^{130}		**58**	24	18	5 00	29	6	14	76
2	209	43.6		20.9	218	29.0^{161}	−0	09.0^{131}		**56**	35	25	04	29	9	12	74
3	224	43.7		21.8	233	04.1^{161}	+0	04.0^{130}		**54**	45	31	08	29	11	11	71
4	239	43.9		22.7	247	39.2^{161}		17.0^{130}		**52**	3 53	37	12	29	14	09	70
5	254	44.0	+8	23.6	262	14.4^{162}	+0	30.0^{130}		**50**	4 00	4 42	5 15	5 30	15	18 08	67
6	269	44.2	+8	24.6	276	49.5^{161}	+0	43.0^{130}		**45**	4 15	4 52	5 22	5 30	19	18 05	63
7	284	44.4		25.5	291	24.7^{162}	+0	56.0^{130}		**40**	27	5 00	28	30	23	03	60
8	299	44.5		26.4	305	59.9^{162}	+1	09.0^{130}		**35**	37	07	33	31	25	01	57
9	314	44.7		27.3	320	35.0^{161}		22.0^{130}		**30**	45	13	38	31	28	18 00	53
10	329	44.9		28.2	335	10.2^{162}		35.0^{130}		**20**	4 57	23	45	31	33	17 57	49
11	344	45.0	+8	29.1	349	45.4^{162}	+1	47.9^{129}		**10 N**	5 06	5 30	5 52	5 32	37	17 54	45
12	359	45.2	+8	30.1	4	20.6^{162}	+2	00.9^{130}		**0**	5 13	5 37	5 58	5 32	41	17 52	41
13	14	45.4		31.0	18	55.8^{162}		13.8^{129}		**10 S**	18	42	6 04	33	44	50	37
14	29	45.5		31.9	33	31.0^{162}		26.7^{129}		**20**	22	48	10	33	49	47	33
15	44	45.7		32.8	48	06.2^{162}		39.6^{129}		**30**	25	53	17	34	53	44	29
16	59	45.8		33.7	62	41.4^{162}	+2	52.5^{129}		**35**	26	55	21	34	56	43	26
17	74	46.0	+8	34.6	77	16.6^{162}	+3	05.4^{129}		**40**	5 26	5 58	6 25	5 35	59	17 41	23
18	89	46.2	+8	35.6	91	51.8^{162}	+3	18.2^{128}		**45**	5 27	6 01	6 30	5 35	63	17 38	20
19	104	46.3		36.5	106	27.0^{162}		31.1^{129}		**50**	26	04	36	36	67	36	15
20	119	46.5		37.4	121	02.2^{162}		43.9^{128}		**52**	26	05	39	36	69	35	13
21	134	46.6		38.3	135	37.4^{162}	+3	56.7^{128}		**54**	26	06	42	36	72	33	12
22	149	46.8		39.2	150	12.6^{162}	+4	09.5^{128}		**56**	25	08	46	36	74	32	9
23	164	47.0		40.1	164	47.8^{162}		22.3^{128}		**58**	24	10	49	37	77	31	6
24	179	47.1	+8	41.0	179	23.0^{162}	+4	35.0^{127}		**60 S**	5 23	6 11	6 54	5 37	80	17 29	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.4			Mag: −2.2			Mag: +0.8		
	10^{h} 40^{m}.5		PMG: 12^{h} 18^{m}			PMG: 16^{h} 08^{m}			PMG: 8^{h} 32^{m}			PMG: 7^{h} 40^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	199	25.7	175	34.1	+8 50.6	117	44.6	+24 41.8	231	48.2	−13 47.5	244	43.2	−17 41.0
1	214	28.2	190	33.6	51.8	132	45.4	41.9	246	50.3	47.3	259	45.5	40.9
2	229	30.7	205	33.2	53.0	147	46.3	41.9	261	52.3	47.2	274	47.8	40.9
3	244	33.1	220	32.8	54.1	162	47.1	42.0	276	54.3	47.0	289	50.1	40.9
4	259	35.6	235	32.3	55.3	177	47.9	42.1	291	56.3	46.9	304	52.4	40.8
5	274	38.1	250	31.9	+8 56.5	192	48.7	+24 42.2	306	58.4	−13 46.8	319	54.7	−17 40.8
6	289	40.5	265	31.5	+8 57.7	207	49.5	+24 42.3	322	00.4	−13 46.6	334	57.0	−17 40.7
7	304	43.0	280	31.1	+8 58.9	222	50.3	42.4	337	02.4	46.5	349	59.3	40.7
8	319	45.5	295	30.6	+9 00.1	237	51.1	42.4	352	04.4	46.3	5	01.6	40.7
9	334	47.9	310	30.2	01.3	252	51.9	42.5	7	06.5	46.2	20	03.9	40.6
10	349	50.4	325	29.8	02.5	267	52.7	42.6	22	08.5	46.0	35	06.2	40.6
11	4	52.9	340	29.3	+9 03.7	282	53.5	+24 42.7	37	10.5	−13 45.9	50	08.5	−17 40.5
12	19	55.3	355	28.9	+9 04.8	297	54.3	+24 42.8	52	12.5	−13 45.8	65	10.8	−17 40.5
13	34	57.8	10	28.5	06.0	312	55.2	42.9	67	14.6	45.6	80	13.1	40.5
14	50	00.2	25	28.0	07.2	327	56.0	42.9	82	16.6	45.5	95	15.4	40.4
15	65	02.7	40	27.6	08.4	342	56.8	43.0	97	18.6	45.3	110	17.7	40.4
16	80	05.2	55	27.2	09.6	357	57.6	43.1	112	20.6	45.2	125	20.0	40.3
17	95	07.6	70	26.7	+9 10.8	12	58.4	+24 43.2	127	22.7	−13 45.0	140	22.3	−17 40.3
18	110	10.1	85	26.3	+9 12.0	27	59.2	+24 43.3	142	24.7	−13 44.9	155	24.6	−17 40.3
19	125	12.6	100	25.9	13.1	43	00.0	43.3	157	26.7	44.7	170	26.9	40.2
20	140	15.0	115	25.4	14.3	58	00.8	43.4	172	28.8	44.6	185	29.2	40.2
21	155	17.5	130	25.0	15.5	73	01.6	43.5	187	30.8	44.5	200	31.5	40.1
22	170	20.0	145	24.5	16.7	88	02.4	43.6	202	32.8	44.3	215	33.8	40.1
23	185	22.4	160	24.1	17.9	103	03.2	43.6	217	34.8	44.2	230	36.1	40.1
24	200	24.9	175	23.7	+9 19.1	118	04.0	+24 43.7	232	36.9	−13 44.0	245	38.4	−17 40.0
Dif	—			−4	+12		+8	+1		+20	+1		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 29ᵈ.6		PHE	4ʰ: 54′.3								
	PMG: 12ʰ 00ᵐ.7		SD: 14′.8			12ʰ: 54′.2								
			PMG: 12ʰ 23ᵐ			20ʰ: 54′.2								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	179 47.1	+8 41.0	179 23.0		+4 35.0		**60 N**	19 11	19 57	20 57	5 32	5	19 35	81
1	194 47.3	41.9	193 58.2	162	+4 47.7	127	**58**	06	48	43	35	8	30	78
2	209 47.5	42.9	208 33.3	161	+5 00.4	127	**56**	19 01	41	31	38	10	26	74
3	224 47.6	43.8	223 08.5	162	13.1	127	**54**	18 57	34	21	40	13	22	72
4	239 47.8	44.7	237 43.7	162	25.8	127	**52**	53	29	13	43	14	19	69
5	254 47.9	+8 45.6	252 18.8	161	+5 38.4	126	**50**	18 49	19 23	20 05	5 45	16	19 15	68
6	269 48.1	+8 46.5	266 54.0	162	+5 51.0	126	**45**	18 42	19 12	19 49	5 49	20	19 08	63
7	284 48.3	47.4	281 29.1	161	+6 03.6	126	**40**	36	19 03	37	53	24	19 03	59
8	299 48.4	48.3	296 04.2	161	16.1	125	**35**	30	18 56	27	56	27	18 58	56
9	314 48.6	49.2	310 39.3	161	28.6	125	**30**	25	50	19	5 59	29	53	54
10	329 48.7	50.2	325 14.4	161	41.1	125	**20**	17	40	19 06	6 04	34	46	49
11	344 48.9	+8 51.1	339 49.5	161	+6 53.6	125	**10 N**	18 10	18 32	18 57	6 09	37	18 39	46
12	359 49.1	+8 52.0	354 24.5	160	+7 06.0	124	**0**	18 04	18 25	18 49	6 13	41	18 33	42
13	14 49.2	52.9	8 59.6	161	18.4	124	**10 S**	17 58	19	44	17	45	27	38
14	29 49.4	53.8	23 34.6	160	30.8	124	**20**	51	13	39	22	49	20	35
15	44 49.5	54.7	38 09.6	160	43.2	124	**30**	44	08	36	27	54	13	30
16	59 49.7	55.6	52 44.6	160	+7 55.5	123	**35**	39	05	34	30	57	09	27
17	74 49.8	+8 56.5	67 19.6	160	+8 07.7	122	**40**	17 35	18 02	18 33	6 34	59	18 04	24
18	89 50.0	+8 57.4	81 54.6	160	+8 20.0	123	**45**	17 29	17 59	18 33	6 38	63	17 58	21
19	104 50.2	58.3	96 29.5	159	32.2	122	**50**	23	55	33	43	67	51	17
20	119 50.3	+8 59.2	111 04.4	159	44.4	122	**52**	20	54	33	45	70	48	15
21	134 50.5	+9 00.2	125 39.3	159	+8 56.5	121	**54**	16	52	33	48	71	45	13
22	149 50.6	01.1	140 14.2	159	+9 08.6	121	**56**	13	50	33	50	75	41	11
23	164 50.8	02.0	154 49.0	158	20.6	120	**58**	09	49	34	54	77	37	8
24	179 51.0	+9 02.9	169 23.9	159	+9 32.7	121	**60 S**	17 04	17 47	18 35	6 57	80	17 33	5

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.4		Mag: −2.2		Mag: +0.7	
	10ʰ 36ᵐ.6	PMG: 12ʰ 19ᵐ		PMG: 16ʰ 07ᵐ		PMG: 8ʰ 28ᵐ		PMG: 7ʰ 36ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	200 24.9	175 23.7	+9 19.1	118 04.0	+24 43.7	232 36.9	−13 44.0	245 38.4	−17 40.0
1	215 27.3	190 23.2	20.2	133 04.8	43.8	247 38.9	43.9	260 40.7	40.0
2	230 29.8	205 22.8	21.4	148 05.7	43.9	262 40.9	43.7	275 43.0	39.9
3	245 32.3	220 22.4	22.6	163 06.5	44.0	277 43.0	43.6	290 45.3	39.9
4	260 34.7	235 21.9	23.8	178 07.3	44.0	292 45.0	43.5	305 47.6	39.9
5	275 37.2	250 21.5	+9 25.0	193 08.1	+24 44.1	307 47.0	−13 43.3	320 49.9	−17 39.8
6	290 39.7	265 21.0	+9 26.1	208 08.9	+24 44.2	322 49.0	−13 43.2	335 52.2	−17 39.8
7	305 42.1	280 20.6	27.3	223 09.7	44.3	337 51.1	43.0	350 54.5	39.7
8	320 44.6	295 20.2	28.5	238 10.5	44.3	352 53.1	42.9	5 56.8	39.7
9	335 47.1	310 19.7	29.7	253 11.3	44.4	7 55.1	42.7	20 59.1	39.7
10	350 49.5	325 19.3	30.9	268 12.1	44.5	22 57.2	42.6	36 01.4	39.6
11	5 52.0	340 18.9	+9 32.0	283 12.9	+24 44.6	37 59.2	−13 42.5	51 03.7	−17 39.6
12	20 54.5	355 18.4	+9 33.2	298 13.7	+24 44.6	53 01.2	−13 42.3	66 06.0	−17 39.5
13	35 56.9	10 18.0	34.4	313 14.5	44.7	68 03.2	42.2	81 08.4	39.5
14	50 59.4	25 17.5	35.6	328 15.3	44.8	83 05.3	42.0	96 10.7	39.5
15	66 01.8	40 17.1	36.7	343 16.1	44.8	98 07.3	41.9	111 13.0	39.4
16	81 04.3	55 16.7	37.9	358 17.0	44.9	113 09.3	41.7	126 15.3	39.4
17	96 06.8	70 16.2	+9 39.1	13 17.8	+24 45.0	128 11.4	−13 41.6	141 17.6	−17 39.3
18	111 09.2	85 15.8	+9 40.3	28 18.6	+24 45.1	143 13.4	−13 41.5	156 19.9	−17 39.3
19	126 11.7	100 15.3	41.4	43 19.4	45.1	158 15.4	41.3	171 22.2	39.3
20	141 14.2	115 14.9	42.6	58 20.2	45.2	173 17.5	41.2	186 24.5	39.2
21	156 16.6	130 14.4	43.8	73 21.0	45.3	188 19.5	41.0	201 26.8	39.2
22	171 19.1	145 14.0	45.0	88 21.8	45.4	203 21.5	40.9	216 29.1	39.2
23	186 21.6	160 13.6	46.1	103 22.6	45.4	218 23.6	40.8	231 31.4	39.1
24	201 24.0	175 13.1	+9 47.3	118 23.4	+24 45.5	233 25.6	−13 40.6	246 33.7	−17 39.1
Dif	—	−4	+12	+8	+1	+20	+1	+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 0ᵈ.9		PHE	4ʰ: 54′.1								
	PMG: 12ʰ 00ᵐ.5				SD: 14′.7			12ʰ: 54′.1								
					PMG: 13ʰ 05ᵐ			20ʰ: 54′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	51.0	+9	02.9	169	23.9	+9	32.7	**60 N**	3 03	4 03	4 49	5 37	5	20 56	82
1	194	51.1		03.8	183	58.7 158		44.6 119	**58**	17	12	54	43	8	48	78
2	209	51.3		04.7	198	33.4 157	+9	56.6 120	**56**	29	19	4 59	48	11	40	75
3	224	51.4		05.6	213	08.2 158	+10	08.5 119	**54**	39	26	5 04	53	14	34	72
4	239	51.6		06.5	227	42.9 157		20.3 118	**52**	48	32	07	5 57	16	28	70
5	254	51.7	+9	07.4	242	17.6 157	+10	32.1 118	**50**	3 56	4 37	5 11	6 01	18	20 23	67
6	269	51.9	+9	08.3	256	52.3 157	+10	43.9 118	**45**	4 11	4 48	5 19	6 09	23	20 11	64
7	284	52.1		09.2	271	26.9 156	+10	55.6 117	**40**	24	4 57	25	17	25	20 02	60
8	299	52.2		10.1	286	01.5 156	+11	07.3 117	**35**	34	5 05	31	23	28	19 54	57
9	314	52.4		11.0	300	36.1 156		19.0 117	**30**	42	11	35	28	31	47	55
10	329	52.5		11.9	315	10.7 156		30.6 116	**20**	4 55	21	44	38	35	35	50
11	344	52.7	+9	12.8	329	45.2 155	+11	42.1 115	**10 N**	5 04	5 29	5 51	6 46	39	19 25	46
12	359	52.8	+9	13.7	344	19.7 155	+11	53.6 115	**0**	5 12	5 36	5 57	6 54	43	19 15	43
13	14	53.0		14.6	358	54.1 154	+12	05.1 115	**10 S**	18	42	6 04	7 02	46	19 05	40
14	29	53.1		15.6	13	28.5 154		16.5 114	**20**	22	48	10	11	50	18 55	36
15	44	53.3		16.5	28	02.9 154		27.8 113	**30**	26	54	18	21	54	43	32
16	59	53.5		17.4	42	37.3 154		39.1 113	**35**	27	5 57	22	27	56	36	30
17	74	53.6	+9	18.3	57	11.6 153	+12	50.3 112	**40**	5 28	6 00	6 27	7 33	60	18 28	27
18	89	53.8	+9	19.2	71	45.9 153	+13	01.5 112	**45**	5 29	6 03	6 33	7 41	63	18 19	24
19	104	53.9		20.1	86	20.1 152		12.7 112	**50**	29	07	39	50	68	08	20
20	119	54.1		21.0	100	54.3 152		23.8 111	**52**	29	08	43	55	69	18 03	18
21	134	54.2		21.9	115	28.5 152		34.8 110	**54**	29	10	46	7 59	72	17 58	15
22	149	54.4		22.8	130	02.6 151		45.8 110	**56**	29	12	50	8 05	74	52	13
23	164	54.5		23.7	144	36.7 151	+13	56.7 109	**58**	28	14	54	11	77	45	10
24	179	54.7	+9	24.6	159	10.8 151	+14	07.6 109	**60 S**	5 28	6 16	6 58	8 17	82	17 38	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.4			Mag: −2.2			Mag: +0.7		
	10ʰ 32ᵐ.7		PMG: 12ʰ 19ᵐ			PMG: 16ʰ 06ᵐ			PMG: 8ʰ 25ᵐ			PMG: 7ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	201	24.0	175	13.1	+9 47.3	118	23.4	+24 45.5	233	25.6	−13 40.6	246	33.7	−17 39.1
1	216	26.5	190	12.7	48.5	133	24.2	45.6	248	27.6	40.5	261	36.0	39.0
2	231	28.9	205	12.2	49.7	148	25.0	45.6	263	29.7	40.3	276	38.3	39.0
3	246	31.4	220	11.8	50.8	163	25.8	45.7	278	31.7	40.2	291	40.6	39.0
4	261	33.9	235	11.3	52.0	178	26.6	45.8	293	33.7	40.0	306	42.9	38.9
5	276	36.3	250	10.9	+9 53.2	193	27.4	+24 45.8	308	35.8	−13 39.9	321	45.2	−17 38.9
6	291	38.8	265	10.4	+9 54.3	208	28.2	+24 45.9	323	37.8	−13 39.8	336	47.5	−17 38.8
7	306	41.3	280	10.0	55.5	223	29.0	46.0	338	39.8	39.6	351	49.8	38.8
8	321	43.7	295	09.6	56.7	238	29.8	46.0	353	41.9	39.5	6	52.1	38.8
9	336	46.2	310	09.1	57.9	253	30.6	46.1	8	43.9	39.3	21	54.5	38.7
10	351	48.7	325	08.7	+9 59.0	268	31.5	46.2	23	45.9	39.2	36	56.8	38.7
11	6	51.1	340	08.2	+10 00.2	283	32.3	+24 46.3	38	48.0	−13 39.0	51	59.1	−17 38.7
12	21	53.6	355	07.8	+10 01.4	298	33.1	+24 46.3	53	50.0	−13 38.9	67	01.4	−17 38.6
13	36	56.1	10	07.3	02.5	313	33.9	46.4	68	52.0	38.8	82	03.7	38.6
14	51	58.5	25	06.9	03.7	328	34.7	46.5	83	54.1	38.6	97	06.0	38.5
15	67	01.0	40	06.4	04.9	343	35.5	46.5	98	56.1	38.5	112	08.3	38.5
16	82	03.4	55	06.0	06.0	358	36.3	46.6	113	58.1	38.3	127	10.6	38.5
17	97	05.9	70	05.5	+10 07.2	13	37.1	+24 46.7	129	00.2	−13 38.2	142	12.9	−17 38.4
18	112	08.4	85	05.1	+10 08.4	28	37.9	+24 46.7	144	02.2	−13 38.1	157	15.2	−17 38.4
19	127	10.8	100	04.6	09.5	43	38.7	46.8	159	04.2	37.9	172	17.5	38.3
20	142	13.3	115	04.2	10.7	58	39.5	46.8	174	06.3	37.8	187	19.8	38.3
21	157	15.8	130	03.7	11.9	73	40.3	46.9	189	08.3	37.6	202	22.1	38.3
22	172	18.2	145	03.3	13.0	88	41.1	47.0	204	10.4	37.5	217	24.5	38.2
23	187	20.7	160	02.8	14.2	103	41.9	47.0	219	12.4	37.4	232	26.8	38.2
24	202	23.2	175	02.4	+10 15.3	118	42.7	+24 47.1	234	14.4	−13 37.2	247	29.1	−17 38.2
Dif	—			−4	+12		+8	+1		+20	+1		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 1^{d}.9		PHE	4^{h}: 54′.0									
	PMG: 12^{h} 00^{m}.2				SD: 14′.7			12^{h}: 54′.0									
					PMG: 13^{h} 47^{m}			20^{h}: 54′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	54.7	+9	24.6	159	10.8	+14	07.6		**60 N**	19 16	20 02	21 04	5 42	8	22 18	82
1	194	54.9		25.5	173	44.8 150		18.4	108	**58**	10	19 53	20 49	51	12	22 06	77
2	209	55.0		26.4	188	18.8 150		29.1	107	**56**	05	45	37	5 59	15	21 55	74
3	224	55.2		27.3	202	52.7 149		39.8	107	**54**	19 00	38	26	6 07	17	46	71
4	239	55.3		28.2	217	26.6 149	+14	50.5	107	**52**	18 56	32	17	13	20	38	69
5	254	55.5	+9	29.1	232	00.4 148	+15	01.1	106	**50**	18 53	19 27	20 09	6 19	22	21 30	68
6	269	55.6	+9	30.0	246	34.2 148	+15	11.6	105	**45**	18 44	19 15	19 52	6 32	25	21 15	63
7	284	55.8		30.9	261	08.0 148		22.0	104	**40**	38	19 06	39	42	29	21 02	60
8	299	55.9		31.8	275	41.7 147		32.4	104	**35**	32	18 58	29	51	32	20 51	57
9	314	56.1		32.7	290	15.4 147		42.7	103	**30**	27	51	20	6 59	34	42	55
10	329	56.2		33.6	304	49.0 146	+15	53.0	103	**20**	18	40	19 07	7 13	38	25	52
11	344	56.4	+9	34.5	319	22.6 146	+16	03.2	102	**10 N**	18 11	18 32	18 57	7 25	42	20 11	49
12	359	56.5	+9	35.4	333	56.1 145	+16	13.3	101	**0**	18 04	18 25	18 49	7 37	44	19 58	45
13	14	56.7		36.3	348	29.6 145		23.4	101	**10 S**	17 57	18	43	7 48	48	45	42
14	29	56.8		37.2	3	03.1 145		33.4	100	**20**	50	12	38	8 01	51	31	39
15	44	57.0		38.0	17	36.5 144		43.3	99	**30**	42	06	34	15	55	15	36
16	59	57.1		38.9	32	09.8 143	+16	53.2	99	**35**	37	18 02	32	23	58	19 06	33
17	74	57.3	+9	39.8	46	43.1 143	+17	03.0	98	**40**	17 32	17 59	18 31	8 33	60	18 55	31
18	89	57.5	+9	40.7	61	16.4 143	+17	12.7	97	**45**	17 26	17 55	18 29	8 44	64	18 43	28
19	104	57.6		41.6	75	49.6 142		22.4	97	**50**	19	51	29	8 58	67	28	24
20	119	57.8		42.5	90	22.7 141		31.9	95	**52**	15	50	29	9 04	70	21	22
21	134	57.9		43.4	104	55.9 142		41.4	95	**54**	12	48	29	11	72	13	20
22	149	58.1		44.3	119	28.9 140	+17	50.9	95	**56**	08	46	29	19	75	18 05	17
23	164	58.2		45.2	134	01.9 140	+18	00.2	93	**58**	17 04	43	29	28	78	17 55	14
24	179	58.4	+9	46.1	148	34.9 140	+18	09.5	93	**60 S**	16 59	17 41	18 29	9 39	82	17 44	10

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.4			Mag: −2.2			Mag: +0.7		
	10^{h} 28^{m}.7		PMG: 12^{h} 20^{m}			PMG: 16^{h} 04^{m}			PMG: 8^{h} 22^{m}			PMG: 7^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	202	23.2	175	02.4	+10 15.3	118	42.7	+24 47.1	234	14.4	−13 37.2	247	29.1	−17 38.2
1	217	25.6	190	01.9	16.5	133	43.5	47.2	249	16.5	37.1	262	31.4	38.1
2	232	28.1	205	01.5	17.7	148	44.3	47.2	264	18.5	36.9	277	33.7	38.1
3	247	30.6	220	01.0	18.8	163	45.1	47.3	279	20.5	36.8	292	36.0	38.0
4	262	33.0	235	00.6	20.0	178	45.9	47.4	294	22.6	36.7	307	38.3	38.0
5	277	35.5	250	00.1	+10 21.2	193	46.7	+24 47.4	309	24.6	−13 36.5	322	40.6	−17 38.0
6	292	37.9	264	59.7	+10 22.3	208	47.5	+24 47.5	324	26.7	−13 36.4	337	42.9	−17 37.9
7	307	40.4	279	59.2	23.5	223	48.3	47.5	339	28.7	36.2	352	45.2	37.9
8	322	42.9	294	58.8	24.6	238	49.1	47.6	354	30.7	36.1	7	47.5	37.9
9	337	45.3	309	58.3	25.8	253	50.0	47.7	9	32.8	36.0	22	49.9	37.8
10	352	47.8	324	57.9	27.0	268	50.8	47.7	24	34.8	35.8	37	52.2	37.8
11	7	50.3	339	57.4	+10 28.1	283	51.6	+24 47.8	39	36.8	−13 35.7	52	54.5	−17 37.7
12	22	52.7	354	56.9	+10 29.3	298	52.4	+24 47.8	54	38.9	−13 35.5	67	56.8	−17 37.7
13	37	55.2	9	56.5	30.4	313	53.2	47.9	69	40.9	35.4	82	59.1	37.7
14	52	57.7	24	56.0	31.6	328	54.0	48.0	84	43.0	35.2	98	01.4	37.6
15	68	00.1	39	55.6	32.7	343	54.8	48.0	99	45.0	35.1	113	03.7	37.6
16	83	02.6	54	55.1	33.9	358	55.6	48.1	114	47.0	35.0	128	06.0	37.6
17	98	05.0	69	54.7	+10 35.1	13	56.4	+24 48.1	129	49.1	−13 34.8	143	08.3	−17 37.5
18	113	07.5	84	54.2	+10 36.2	28	57.2	+24 48.2	144	51.1	−13 34.7	158	10.7	−17 37.5
19	128	10.0	99	53.8	37.4	43	58.0	48.3	159	53.2	34.6	173	13.0	37.4
20	143	12.4	114	53.3	38.5	58	58.8	48.3	174	55.2	34.4	188	15.3	37.4
21	158	14.9	129	52.8	39.7	73	59.6	48.4	189	57.2	34.3	203	17.6	37.4
22	173	17.4	144	52.4	40.8	89	00.4	48.4	204	59.3	34.1	218	19.9	37.3
23	188	19.8	159	51.9	42.0	104	01.2	48.5	220	01.3	34.0	233	22.2	37.3
24	203	22.3	174	51.5	+10 43.1	119	02.0	+24 48.5	235	03.4	−13 33.9	248	24.5	−17 37.3
Dif	—			−5	+12		+8	+1		+20	+1		+23	0

UT	SOL SD: 15′.9 PMG: 12h 00m.0				LUNA Edad: 2d.9 SD: 14′.7 PMG: 14h 32m PHE: 4h: 54′.0; 12h: 54′.0; 20h: 54′.1 Rº: 47m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	58.4	+9	46.1	148	34.9	+18	09.5	**60 N**	2 55	3 57	4 43	5 50	13	23 40	78
1	194	58.5		47.0	163	07.8 139		18.7 92	**58**	3 10	4 06	49	6 03	17	23	75
2	209	58.7		47.9	177	40.6 138		27.9 92	**56**	23	14	54	14	20	23 09	72
3	224	58.8		48.8	192	13.4 138		36.9 90	**54**	33	21	4 59	24	23	22 57	69
4	239	59.0		49.7	206	46.2 138		45.9 90	**52**	43	27	5 03	33	25	47	66
5	254	59.1	+9	50.6	221	18.9 137	+18	54.8 89	**50**	3 51	4 33	5 07	6 41	26	22 38	64
6	269	59.3	+9	51.5	235	51.5 136	+19	03.7 89	**45**	4 07	4 45	5 15	6 57	31	22 18	61
7	284	59.4		52.4	250	24.1 136		12.4 87	**40**	21	4 54	22	7 11	34	22 02	59
8	299	59.6		53.2	264	56.6 135		21.1 87	**35**	31	5 02	28	23	36	21 48	57
9	314	59.7		54.1	279	29.1 135		29.7 86	**30**	40	09	33	33	38	37	55
10	329	59.9		55.0	294	01.6 135		38.2 85	**20**	4 53	19	42	7 51	41	17	52
11	345	00.0	+9	55.9	308	33.9 133	+19	46.6 84	**10 N**	5 03	5 28	5 50	8 07	44	21 00	50
12	0	00.2	+9	56.8	323	06.3 134	+19	54.9 83	**0**	5 11	5 36	5 57	8 21	47	20 43	48
13	15	00.3		57.7	337	38.5 132	+20	03.2 83	**10 S**	18	42	6 04	36	49	27	46
14	30	00.5		58.6	352	10.8 133		11.3 81	**20**	23	49	11	8 52	52	20 10	43
15	45	00.6	+9	59.5	6	42.9 131		19.4 81	**30**	27	55	19	9 10	55	19 51	40
16	60	00.8	+10	00.4	21	15.0 131		27.4 80	**35**	29	5 58	24	21	57	39	38
17	75	00.9	+10	01.3	35	47.1 131	+20	35.3 79	**40**	5 30	6 02	6 29	9 33	60	19 26	36
18	90	01.0	+10	02.2	50	19.1 130	+20	43.1 78	**45**	5 31	6 05	6 35	9 48	62	19 11	33
19	105	01.2		03.0	64	51.0 129		50.9 78	**50**	32	10	43	10 05	67	18 52	30
20	120	01.3		03.9	79	22.9 129	+20	58.5 76	**52**	32	12	46	14	68	43	28
21	135	01.5		04.8	93	54.7 128	+21	06.1 76	**54**	32	14	50	23	71	33	26
22	150	01.6		05.7	108	26.5 128		13.5 74	**56**	33	16	54	34	73	22	23
23	165	01.8		06.6	122	58.2 127		20.9 74	**58**	32	18	6 58	10 46	77	18 09	20
24	180	01.9	+10	07.5	137	29.9 127	+21	28.2 73	**60 S**	5 32	6 20	7 03	11 01	81	17 54	16

UT	ARIES PMG 10h 24m.8		VENUS Mag: −3.9 PMG: 12h 21m			MARTE Mag: +1.4 PMG: 16h 03m			JÚPITER Mag: −2.2 PMG: 8h 19m			SATURNO Mag: +0.7 PMG: 7h 25m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	203	22.3	174	51.5	+10 43.1	119	02.0	+24 48.5	235	03.4	−13 33.9	248	24.5	−17 37.3
1	218	24.8	189	51.0	44.3	134	02.8	48.6	250	05.4	33.7	263	26.8	37.2
2	233	27.2	204	50.5	45.4	149	03.6	48.7	265	07.4	33.6	278	29.1	37.2
3	248	29.7	219	50.1	46.6	164	04.4	48.7	280	09.5	33.4	293	31.5	37.1
4	263	32.2	234	49.6	47.7	179	05.2	48.8	295	11.5	33.3	308	33.8	37.1
5	278	34.6	249	49.2	+10 48.9	194	06.0	+24 48.8	310	13.6	−13 33.2	323	36.1	−17 37.1
6	293	37.1	264	48.7	+10 50.0	209	06.8	+24 48.9	325	15.6	−13 33.0	338	38.4	−17 37.0
7	308	39.5	279	48.2	51.2	224	07.6	48.9	340	17.7	32.9	353	40.7	37.0
8	323	42.0	294	47.8	52.3	239	08.4	49.0	355	19.7	32.7	8	43.0	37.0
9	338	44.5	309	47.3	53.5	254	09.2	49.0	10	21.7	32.6	23	45.3	36.9
10	353	46.9	324	46.9	54.6	269	10.0	49.1	25	23.8	32.5	38	47.7	36.9
11	8	49.4	339	46.4	+10 55.8	284	10.8	+24 49.1	40	25.8	−13 32.3	53	50.0	−17 36.9
12	23	51.9	354	45.9	+10 56.9	299	11.6	+24 49.2	55	27.9	−13 32.2	68	52.3	−17 36.8
13	38	54.3	9	45.5	58.1	314	12.4	49.2	70	29.9	32.0	83	54.6	36.8
14	53	56.8	24	45.0	+10 59.2	329	13.2	49.3	85	32.0	31.9	98	56.9	36.7
15	68	59.3	39	44.5	+11 00.4	344	14.0	49.4	100	34.0	31.8	113	59.2	36.7
16	84	01.7	54	44.1	01.5	359	14.8	49.4	115	36.0	31.6	129	01.5	36.7
17	99	04.2	69	43.6	+11 02.7	14	15.6	+24 49.5	130	38.1	−13 31.5	144	03.9	−17 36.6
18	114	06.7	84	43.2	+11 03.8	29	16.4	+24 49.5	145	40.1	−13 31.4	159	06.2	−17 36.6
19	129	09.1	99	42.7	05.0	44	17.2	49.6	160	42.2	31.2	174	08.5	36.6
20	144	11.6	114	42.2	06.1	59	18.0	49.6	175	44.2	31.1	189	10.8	36.5
21	159	14.0	129	41.8	07.2	74	18.8	49.7	190	46.3	30.9	204	13.1	36.5
22	174	16.5	144	41.3	08.4	89	19.6	49.7	205	48.3	30.8	219	15.4	36.5
23	189	19.0	159	40.8	09.5	104	20.4	49.8	220	50.4	30.7	234	17.7	36.4
24	204	21.4	174	40.4	+11 10.7	119	21.2	+24 49.8	235	52.4	−13 30.5	249	20.1	−17 36.4
Dif	—			−5	+11		+8	+1		+20	+1		+23	0

UT	SOL SD: 15′.9 PMG: 11h 59m.8				LUNA Edad: 3d.9 SD: 14′.7 PMG: 15h 19m PHE 4h: 54′.1; 12h: 54′.2; 20h: 54′.3 Rº: 50m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	01.9	+10	07.5	137	29.9	+21	28.2	**60 N**	19 21	20 08	21 11	6 03	21	** **	**
1	195	02.1		08.4	152	01.5 126		35.4 72	**58**	15	19 58	20 55	20	25	** **	**
2	210	02.2		09.3	166	33.1 126		42.5 71	**56**	09	50	42	34	28	** **	**
3	225	02.4		10.1	181	04.6 125		49.5 70	**54**	04	43	31	47	30	** **	**
4	240	02.5		11.0	195	36.0 124	+21	56.4 69	**52**	19 00	36	21	6 58	32	23 53	62
5	255	02.7	+10	11.9	210	07.4 124	+22	03.2 68	**50**	18 56	19 30	20 13	7 07	34	23 42	60
6	270	02.8	+10	12.8	224	38.7 123	+22	09.9 67	**45**	18 47	19 18	19 55	7 28	37	23 19	58
7	285	03.0		13.7	239	10.0 123		16.5 66	**40**	40	08	42	45	39	23 01	56
8	300	03.1		14.6	253	41.2 122		23.0 65	**35**	33	19 00	31	7 59	41	22 45	56
9	315	03.3		15.5	268	12.4 122		29.4 64	**30**	28	18 53	22	8 11	43	32	54
10	330	03.4		16.3	282	43.5 121		35.7 63	**20**	19	41	19 08	32	45	22 09	53
11	345	03.5	+10	17.2	297	14.6 121	+22	42.0 63	**10 N**	18 11	18 32	18 57	8 51	47	21 50	51
12	0	03.7	+10	18.1	311	45.6 120	+22	48.1 61	**0**	18 03	18 24	18 49	9 08	49	21 31	50
13	15	03.8		19.0	326	16.5 119	+22	54.1 60	**10 S**	17 56	17	42	25	51	21 13	48
14	30	04.0		19.9	340	47.4 119	+23	00.0 59	**20**	48	10	36	9 44	52	20 53	47
15	45	04.1		20.8	355	18.3 119	+23	05.8 58	**30**	39	04	31	10 05	55	31	45
16	60	04.3		21.6	9	49.1 118		11.5 57	**35**	34	18 00	29	18	56	17	44
17	75	04.4	+10	22.5	24	19.8 117	+23	17.1 56	**40**	17 29	17 56	18 28	10 33	58	20 02	43
18	90	04.6	+10	23.4	38	50.5 117	+23	22.6 55	**45**	17 22	17 52	18 26	10 50	60	19 44	41
19	105	04.7		24.3	53	21.1 116		28.0 54	**50**	15	48	25	11 12	63	22	38
20	120	04.8		25.2	67	51.7 116		33.3 53	**52**	11	45	25	22	65	19 11	37
21	135	05.0		26.0	82	22.2 115		38.5 52	**54**	07	43	24	34	66	18 59	35
22	150	05.1		26.9	96	52.7 115		43.6 51	**56**	17 03	41	24	11 47	69	45	33
23	165	05.3		27.8	111	23.1 114		48.5 49	**58**	16 58	38	24	12 03	72	29	30
24	180	05.4	+10	28.7	125	53.5 114	+23	53.4 49	**60 S**	16 53	17 36	18 24	12 22	76	18 10	26

UT	ARIES PMG 10h 20m.9		VENUS Mag: −3.9 PMG: 12h 22m			MARTE Mag: +1.4 PMG: 16h 02m			JÚPITER Mag: −2.2 PMG: 8h 15m			SATURNO Mag: +0.7 PMG: 7h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	204	21.4	174	40.4	+11 10.7	119	21.2	+24 49.8	235	52.4	−13 30.5	249	20.1	−17 36.4
1	219	23.9	189	39.9	11.8	134	22.0	49.9	250	54.5	30.4	264	22.4	36.3
2	234	26.4	204	39.4	13.0	149	22.8	49.9	265	56.5	30.2	279	24.7	36.3
3	249	28.8	219	39.0	14.1	164	23.6	50.0	280	58.5	30.1	294	27.0	36.3
4	264	31.3	234	38.5	15.2	179	24.4	50.0	296	00.6	30.0	309	29.3	36.2
5	279	33.8	249	38.0	+11 16.4	194	25.2	+24 50.1	311	02.6	−13 29.8	324	31.6	−17 36.2
6	294	36.2	264	37.6	+11 17.5	209	26.0	+24 50.1	326	04.7	−13 29.7	339	34.0	−17 36.2
7	309	38.7	279	37.1	18.7	224	26.8	50.1	341	06.7	29.6	354	36.3	36.1
8	324	41.1	294	36.6	19.8	239	27.6	50.2	356	08.8	29.4	9	38.6	36.1
9	339	43.6	309	36.1	20.9	254	28.4	50.2	11	10.8	29.3	24	40.9	36.1
10	354	46.1	324	35.7	22.1	269	29.2	50.3	26	12.9	29.1	39	43.2	36.0
11	9	48.5	339	35.2	+11 23.2	284	30.0	+24 50.3	41	14.9	−13 29.0	54	45.5	−17 36.0
12	24	51.0	354	34.7	+11 24.3	299	30.8	+24 50.4	56	17.0	−13 28.9	69	47.9	−17 36.0
13	39	53.5	9	34.3	25.5	314	31.6	50.4	71	19.0	28.7	84	50.2	35.9
14	54	55.9	24	33.8	26.6	329	32.4	50.5	86	21.1	28.6	99	52.5	35.9
15	69	58.4	39	33.3	27.8	344	33.2	50.5	101	23.1	28.5	114	54.8	35.8
16	85	00.9	54	32.8	28.9	359	34.0	50.6	116	25.2	28.3	129	57.1	35.8
17	100	03.3	69	32.4	+11 30.0	14	34.8	+24 50.6	131	27.2	−13 28.2	144	59.4	−17 35.8
18	115	05.8	84	31.9	+11 31.2	29	35.6	+24 50.6	146	29.3	−13 28.0	160	01.8	−17 35.7
19	130	08.3	99	31.4	32.3	44	36.4	50.7	161	31.3	27.9	175	04.1	35.7
20	145	10.7	114	31.0	33.4	59	37.2	50.7	176	33.4	27.8	190	06.4	35.7
21	160	13.2	129	30.5	34.6	74	38.0	50.8	191	35.4	27.6	205	08.7	35.6
22	175	15.6	144	30.0	35.7	89	38.8	50.8	206	37.5	27.5	220	11.0	35.6
23	190	18.1	159	29.5	36.8	104	39.6	50.9	221	39.5	27.4	235	13.4	35.6
24	205	20.6	174	29.1	+11 38.0	119	40.4	+24 50.9	236	41.6	−13 27.2	250	15.7	−17 35.5
Dif	—			−5	+11		+8	0		+20	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 4ᵈ.9		PHE	4ʰ: 54′.3									
	PMG: 11ʰ 59ᵐ.5				SD: 14′.8			12ʰ: 54′.5									
					PMG: 16ʰ 09ᵐ			20ʰ: 54′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	05.4	+10	28.7	125	53.5	+23	53.4		**60 N**	2 47	3 50	4 37	6 24	35	0 59	69
1	195	05.6		29.6	140	23.8 113	+23	58.1	47	**58**	3 03	4 00	44	6 45	38	38	66
2	210	05.7		30.4	154	54.1 113	+24	02.8	47	**56**	16	09	49	7 02	40	21	64
3	225	05.8		31.3	169	24.3 112		07.3	45	**54**	28	16	54	17	41	0 06	63
4	240	06.0		32.2	183	54.5 112		11.7	44	**52**	37	23	4 59	30	42	** **	**
5	255	06.1	+10	33.1	198	24.6 111	+24	16.0	43	**50**	3 46	4 28	5 03	7 41	44	** **	**
6	270	06.3	+10	34.0	212	54.7 111	+24	20.2	42	**45**	4 04	4 41	5 12	8 05	45	** **	**
7	285	06.4		34.8	227	24.7 110		24.3	41	**40**	17	51	19	24	46	23 57	53
8	300	06.6		35.7	241	54.6 109		28.3	40	**35**	28	4 59	25	40	47	41	52
9	315	06.7		36.6	256	24.6 110		32.1	38	**30**	37	5 06	31	8 54	47	26	53
10	330	06.8		37.5	270	54.5 109		35.9	38	**20**	4 51	18	40	9 17	49	23 02	52
11	345	07.0	+10	38.3	285	24.3 108	+24	39.5	36	**10 N**	5 02	5 27	5 49	9 38	49	22 41	51
12	0	07.1	+10	39.2	299	54.1 108	+24	43.0	35	**0**	5 11	5 35	5 56	9 57	50	22 21	51
13	15	07.3		40.1	314	23.8 107		46.4	34	**10 S**	18	42	6 04	10 16	51	22 01	51
14	30	07.4		41.0	328	53.5 107		49.6	32	**20**	23	49	12	10 36	53	21 40	51
15	45	07.6		41.8	343	23.2 107		52.8	32	**30**	28	5 56	20	11 00	54	16	50
16	60	07.7		42.7	357	52.8 106		55.8	30	**35**	30	6 00	25	14	55	21 01	50
17	75	07.8	+10	43.6	12	22.3 105	+24	58.8	30	**40**	5 32	6 04	6 31	11 31	55	20 45	49
18	90	08.0	+10	44.5	26	51.9 106	+25	01.6	28	**45**	5 34	6 08	6 38	11 50	56	20 25	49
19	105	08.1		45.3	41	21.3 104		04.2	26	**50**	35	13	46	12 15	57	20 00	48
20	120	08.3		46.2	55	50.8 105		06.8	26	**52**	35	15	49	27	57	19 48	48
21	135	08.4		47.1	70	20.2 104		09.2	24	**54**	36	17	53	40	58	34	48
22	150	08.5		48.0	84	49.5 103		11.6	24	**56**	36	19	6 58	12 56	59	19 18	47
23	165	08.7		48.8	99	18.8 103		13.8	22	**58**	36	22	7 02	13 15	60	18 59	46
24	180	08.8	+10	49.7	113	48.1 103	+25	15.8	20	**60 S**	5 37	6 25	7 08	13 38	62	18 36	44

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	10ʰ 16ᵐ.9		PMG: 12ʰ 22ᵐ			PMG: 16ʰ 00ᵐ			PMG: 8ʰ 12ᵐ			PMG: 7ʰ 18ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	205	20.6	174	29.1	+11 38.0	119	40.4	+24 50.9	236	41.6	−13 27.2	250	15.7	−17 35.5
1	220	23.0	189	28.6	39.1	134	41.2	50.9	251	43.6	27.1	265	18.0	35.5
2	235	25.5	204	28.1	40.2	149	42.0	51.0	266	45.7	26.9	280	20.3	35.5
3	250	28.0	219	27.6	41.3	164	42.8	51.0	281	47.7	26.8	295	22.6	35.4
4	265	30.4	234	27.2	42.5	179	43.6	51.1	296	49.8	26.7	310	25.0	35.4
5	280	32.9	249	26.7	+11 43.6	194	44.4	+24 51.1	311	51.8	−13 26.5	325	27.3	−17 35.4
6	295	35.4	264	26.2	+11 44.7	209	45.2	+24 51.2	326	53.9	−13 26.4	340	29.6	−17 35.3
7	310	37.8	279	25.7	45.9	224	46.0	51.2	341	55.9	26.3	355	31.9	35.3
8	325	40.3	294	25.2	47.0	239	46.8	51.2	356	58.0	26.1	10	34.2	35.3
9	340	42.8	309	24.8	48.1	254	47.6	51.3	12	00.0	26.0	25	36.6	35.2
10	355	45.2	324	24.3	49.2	269	48.4	51.3	27	02.1	25.9	40	38.9	35.2
11	10	47.7	339	23.8	+11 50.4	284	49.2	+24 51.4	42	04.1	−13 25.7	55	41.2	−17 35.1
12	25	50.1	354	23.3	+11 51.5	299	50.0	+24 51.4	57	06.2	−13 25.6	70	43.5	−17 35.1
13	40	52.6	9	22.8	52.6	314	50.8	51.4	72	08.2	25.4	85	45.8	35.1
14	55	55.1	24	22.4	53.7	329	51.6	51.5	87	10.3	25.3	100	48.2	35.0
15	70	57.5	39	21.9	54.9	344	52.4	51.5	102	12.3	25.2	115	50.5	35.0
16	86	00.0	54	21.4	56.0	359	53.2	51.5	117	14.4	25.0	130	52.8	35.0
17	101	02.5	69	20.9	+11 57.1	14	54.0	+24 51.6	132	16.4	−13 24.9	145	55.1	−17 34.9
18	116	04.9	84	20.4	+11 58.2	29	54.8	+24 51.6	147	18.5	−13 24.8	160	57.5	−17 34.9
19	131	07.4	99	20.0	+11 59.4	44	55.6	51.7	162	20.5	24.6	175	59.8	34.9
20	146	09.9	114	19.5	+12 00.5	59	56.4	51.7	177	22.6	24.5	191	02.1	34.8
21	161	12.3	129	19.0	01.6	74	57.2	51.7	192	24.7	24.4	206	04.4	34.8
22	176	14.8	144	18.5	02.7	89	58.0	51.8	207	26.7	24.2	221	06.7	34.8
23	191	17.3	159	18.0	03.8	104	58.8	51.8	222	28.8	24.1	236	09.1	34.7
24	206	19.7	174	17.5	+12 05.0	119	59.6	+24 51.8	237	30.8	−13 24.0	251	11.4	−17 34.7
Dif	—			−5	+11		+8	0		+21	+1		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 5^{d}.9		PHE	4^{h}: 54′.7									
	PMG: 11^{h} 59^{m}.3				SD: 14′.9			12^{h}: 54′.9									
					PMG: 17^{h} 00^{m}			20^{h}: 55′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Puesta de Sol	Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	180	08.8	+10	49.7	113	48.1	+25	15.8		**60 N**	19 26	20 14	21 19	6 59	54	2 08	53
1	195	09.0		50.6	128	17.4 103		17.8	20	**58**	19	20 03	21 02	7 23	54	1 44	53
2	210	09.1		51.5	142	46.6 102		19.6	18	**56**	13	19 54	20 48	42	54	25	52
3	225	09.2		52.3	157	15.7 101		21.3	17	**54**	08	47	36	7 58	55	1 09	52
4	240	09.4		53.2	171	44.9 102		22.9	16	**52**	19 03	40	26	8 12	54	0 55	52
5	255	09.5	+10	54.1	186	14.0 101	+25	24.4	15	**50**	18 59	19 33	20 17	8 25	53	0 42	53
6	270	09.6	+10	54.9	200	43.0 100	+25	25.7	13	**45**	18 49	19 20	19 58	8 50	53	0 17	53
7	285	09.8		55.8	215	12.1 101		26.9	12	**40**	42	10	44	9 10	53	** **	**
8	300	09.9		56.7	229	41.1 100		28.0	11	**35**	35	19 01	33	27	53	** **	**
9	315	10.1		57.6	244	10.0 99		28.9	9	**30**	29	18 54	23	9 41	53	** **	**
10	330	10.2		58.4	258	39.0 100		29.8	9	**20**	19	42	19 08	10 06	53	23 54	50
11	345	10.3	+10	59.3	273	07.9 99	+25	30.5	7	**10 N**	18 11	18 32	18 57	10 27	53	23 32	52
12	0	10.5	+11	00.2	287	36.8 99	+25	31.1	6	**0**	18 03	18 24	18 48	10 47	53	23 12	53
13	15	10.6		01.0	302	05.6 98		31.5	4	**10 S**	17 55	16	41	11 07	52	22 52	54
14	30	10.7		01.9	316	34.4 98		31.8	3	**20**	47	09	35	29	51	31	54
15	45	10.9		02.8	331	03.2 98		32.0	2	**30**	37	18 02	29	11 54	51	22 06	55
16	60	11.0		03.6	345	32.0 98		32.1	1	**35**	32	17 58	27	12 09	50	21 51	56
17	75	11.2	+11	04.5	0	00.7 97	+25	32.0	1	**40**	17 26	17 53	18 25	12 26	49	21 34	57
18	90	11.3	+11	05.4	14	29.4 97	+25	31.8	2	**45**	17 19	17 49	18 23	12 46	49	21 14	58
19	105	11.4		06.2	28	58.1 97		31.5	3	**50**	11	44	21	13 12	48	20 48	59
20	120	11.6		07.1	43	26.8 97		31.1	4	**52**	07	41	21	24	48	36	60
21	135	11.7		08.0	57	55.4 96		30.5	6	**54**	17 03	39	20	38	48	22	60
22	150	11.8		08.8	72	24.1 97		29.8	7	**56**	16 58	36	19	13 55	46	20 05	62
23	165	12.0		09.7	86	52.7 96		29.0	8	**58**	53	33	19	14 15	45	19 45	63
24	180	12.1	+11	10.6	101	21.2 95	+25	28.0	10	**60 S**	16 47	17 30	18 19	14 40	43	19 20	65

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	10^{h} 13^{m}.0		PMG: 12^{h} 23^{m}			PMG: 15^{h} 59^{m}			PMG: 8^{h} 09^{m}			PMG: 7^{h} 14^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	206	19.7	174	17.5	+12 05.0	119	59.6	+24 51.8	237	30.8	−13 24.0	251	11.4	−17 34.7
1	221	22.2	189	17.1	06.1	135	00.4	51.9	252	32.9	23.8	266	13.7	34.7
2	236	24.6	204	16.6	07.2	150	01.2	51.9	267	34.9	23.7	281	16.0	34.6
3	251	27.1	219	16.1	08.3	165	02.0	51.9	282	37.0	23.5	296	18.4	34.6
4	266	29.6	234	15.6	09.4	180	02.8	52.0	297	39.0	23.4	311	20.7	34.6
5	281	32.0	249	15.1	+12 10.5	195	03.6	+24 52.0	312	41.1	−13 23.3	326	23.0	−17 34.5
6	296	34.5	264	14.6	+12 11.7	210	04.4	+24 52.0	327	43.2	−13 23.1	341	25.3	−17 34.5
7	311	37.0	279	14.2	12.8	225	05.2	52.1	342	45.2	23.0	356	27.7	34.5
8	326	39.4	294	13.7	13.9	240	06.0	52.1	357	47.3	22.9	11	30.0	34.4
9	341	41.9	309	13.2	15.0	255	06.8	52.1	12	49.3	22.7	26	32.3	34.4
10	356	44.4	324	12.7	16.1	270	07.6	52.2	27	51.4	22.6	41	34.6	34.4
11	11	46.8	339	12.2	+12 17.2	285	08.4	+24 52.2	42	53.4	−13 22.5	56	37.0	−17 34.3
12	26	49.3	354	11.7	+12 18.3	300	09.2	+24 52.2	57	55.5	−13 22.3	71	39.3	−17 34.3
13	41	51.7	9	11.2	19.5	315	10.0	52.3	72	57.6	22.2	86	41.6	34.3
14	56	54.2	24	10.7	20.6	330	10.8	52.3	87	59.6	22.1	101	43.9	34.2
15	71	56.7	39	10.2	21.7	345	11.6	52.3	103	01.7	21.9	116	46.3	34.2
16	86	59.1	54	09.8	22.8	0	12.4	52.4	118	03.7	21.8	131	48.6	34.2
17	102	01.6	69	09.3	+12 23.9	15	13.2	+24 52.4	133	05.8	−13 21.7	146	50.9	−17 34.1
18	117	04.1	84	08.8	+12 25.0	30	14.0	+24 52.4	148	07.8	−13 21.5	161	53.2	−17 34.1
19	132	06.5	99	08.3	26.1	45	14.8	52.5	163	09.9	21.4	176	55.6	34.1
20	147	09.0	114	07.8	27.2	60	15.6	52.5	178	12.0	21.3	191	57.9	34.0
21	162	11.5	129	07.3	28.3	75	16.4	52.5	193	14.0	21.1	207	00.2	34.0
22	177	13.9	144	06.8	29.5	90	17.2	52.5	208	16.1	21.0	222	02.5	34.0
23	192	16.4	159	06.3	30.6	105	18.0	52.6	223	18.1	20.9	237	04.9	33.9
24	207	18.9	174	05.8	+12 31.7	120	18.8	+24 52.6	238	20.2	−13 20.7	252	07.2	−17 33.9
Dif	—		−5		+11	+8		0	+21		+1	+23		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 6ᵈ.9		PHE	4ʰ: 55′.3									
	PMG: 11ʰ 59ᵐ.1				SD: 15′.0			12ʰ: 55′.5									
					PMG: 17ʰ 52ᵐ			20ʰ: 55′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	12.1	+11	10.6	101	21.2	+25	28.0		**60 N**	2 39	3 44	4 31	7 53	75	3 01	34
1	195	12.2		11.4	115	49.8 96		26.9	11	**58**	2 56	3 54	38	8 17	71	2 37	37
2	210	12.4		12.3	130	18.4 96		25.7	12	**56**	3 10	4 03	44	36	69	17	40
3	225	12.5		13.2	144	46.9 95		24.3	14	**54**	22	11	50	8 53	66	2 01	42
4	240	12.7		14.0	159	15.4 95		22.8	15	**52**	32	18	54	9 06	66	1 47	43
5	255	12.8	+11	14.9	173	43.9 95	+25	21.2	16	**50**	3 41	4 24	4 59	9 18	65	1 35	44
6	270	12.9	+11	15.7	188	12.4 95	+25	19.4	18	**45**	4 00	4 37	5 08	9 43	62	1 10	46
7	285	13.1		16.6	202	40.9 95		17.6	18	**40**	14	48	16	10 03	60	0 50	47
8	300	13.2		17.5	217	09.3 94		15.5	21	**35**	25	4 57	23	20	59	33	48
9	315	13.3		18.3	231	37.8 95		13.4	21	**30**	35	5 04	29	34	58	0 19	48
10	330	13.5		19.2	246	06.2 94		11.1	23	**20**	4 50	16	39	10 59	55	** **	**
11	345	13.6	+11	20.1	260	34.6 94	+25	08.7	24	**10 N**	5 01	5 26	5 48	11 20	54	** **	**
12	0	13.7	+11	20.9	275	03.0 94	+25	06.2	25	**0**	5 10	5 35	5 56	11 40	52	** **	**
13	15	13.9		21.8	289	31.4 94		03.5	27	**10 S**	18	42	6 04	11 59	51	23 46	54
14	30	14.0		22.6	303	59.8 94	+25	00.7	28	**20**	24	50	12	12 20	49	25	57
15	45	14.1		23.5	318	28.2 94	+24	57.7	30	**30**	29	5 57	22	45	47	23 01	60
16	60	14.3		24.4	332	56.6 94		54.7	30	**35**	32	6 01	27	12 59	46	22 47	61
17	75	14.4	+11	25.2	347	25.0 94	+24	51.5	32	**40**	5 34	6 06	6 33	13 15	45	22 31	63
18	90	14.5	+11	26.1	1	53.4 94	+24	48.1	34	**45**	5 36	6 10	6 40	13 35	43	22 12	65
19	105	14.7		26.9	16	21.8 94		44.6	35	**50**	38	16	49	14 00	40	21 47	69
20	120	14.8		27.8	30	50.1 93		41.0	36	**52**	39	18	53	12	38	36	70
21	135	14.9		28.7	45	18.5 94		37.3	37	**54**	39	20	6 57	26	36	22	72
22	150	15.1		29.5	59	46.9 94		33.4	39	**56**	40	23	7 02	14 41	34	21 07	74
23	165	15.2		30.4	74	15.2 93		29.4	40	**58**	40	26	07	15 00	31	20 48	78
24	180	15.3	+11	31.2	88	43.6 94	+24	25.3	41	**60 S**	5 41	6 29	7 13	15 23	27	20 25	82

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	10ʰ 09ᵐ.1		PMG: 12ʰ 24ᵐ			PMG: 15ʰ 58ᵐ			PMG: 8ʰ 06ᵐ			PMG: 7ʰ 10ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	207	18.9	174	05.8	+12 31.7	120	18.8	+24 52.6	238	20.2	−13 20.7	252	07.2	−17 33.9
1	222	21.3	189	05.3	32.8	135	19.6	52.6	253	22.3	20.6	267	09.5	33.9
2	237	23.8	204	04.8	33.9	150	20.4	52.7	268	24.3	20.5	282	11.8	33.8
3	252	26.2	219	04.3	35.0	165	21.2	52.7	283	26.4	20.3	297	14.2	33.8
4	267	28.7	234	03.9	36.1	180	22.0	52.7	298	28.4	20.2	312	16.5	33.8
5	282	31.2	249	03.4	+12 37.2	195	22.8	+24 52.7	313	30.5	−13 20.1	327	18.8	−17 33.7
6	297	33.6	264	02.9	+12 38.3	210	23.6	+24 52.8	328	32.6	−13 19.9	342	21.1	−17 33.7
7	312	36.1	279	02.4	39.4	225	24.4	52.8	343	34.6	19.8	357	23.5	33.7
8	327	38.6	294	01.9	40.5	240	25.2	52.8	358	36.7	19.6	12	25.8	33.6
9	342	41.0	309	01.4	41.6	255	25.9	52.8	13	38.7	19.5	27	28.1	33.6
10	357	43.5	324	00.9	42.7	270	26.7	52.9	28	40.8	19.4	42	30.5	33.6
11	12	46.0	339	00.4	+12 43.8	285	27.5	+24 52.9	43	42.9	−13 19.2	57	32.8	−17 33.5
12	27	48.4	353	59.9	+12 44.9	300	28.3	+24 52.9	58	44.9	−13 19.1	72	35.1	−17 33.5
13	42	50.9	8	59.4	46.0	315	29.1	52.9	73	47.0	19.0	87	37.4	33.5
14	57	53.4	23	58.9	47.1	330	29.9	53.0	88	49.0	18.8	102	39.8	33.4
15	72	55.8	38	58.4	48.2	345	30.7	53.0	103	51.1	18.7	117	42.1	33.4
16	87	58.3	53	57.9	49.3	0	31.5	53.0	118	53.2	18.6	132	44.4	33.4
17	103	00.7	68	57.4	+12 50.4	15	32.3	+24 53.0	133	55.2	−13 18.4	147	46.8	−17 33.3
18	118	03.2	83	56.9	+12 51.5	30	33.1	+24 53.1	148	57.3	−13 18.3	162	49.1	−17 33.3
19	133	05.7	98	56.4	52.6	45	33.9	53.1	163	59.4	18.2	177	51.4	33.3
20	148	08.1	113	55.9	53.7	60	34.7	53.1	179	01.4	18.1	192	53.7	33.2
21	163	10.6	128	55.4	54.8	75	35.5	53.1	194	03.5	17.9	207	56.1	33.2
22	178	13.1	143	54.9	55.9	90	36.3	53.1	209	05.6	17.8	222	58.4	33.2
23	193	15.5	158	54.4	57.0	105	37.1	53.2	224	07.6	17.7	238	00.7	33.2
24	208	18.0	173	53.9	+12 58.1	120	37.9	+24 53.2	239	09.7	−13 17.5	253	03.1	−17 33.1
Dif	—			−5	+11		+8	0		+21	+1		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 7^{d}.9		PHE	4^{h}: 55′.9									
	PMG: 11^{h} 58^{m}.9				SD: 15′.2			12^{h}: 56′.2									
					PMG: 18^{h} 45^{m}			20^{h}: 56′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′			h m	h m	h m	h m	m	h m	m
0	180	15.3	+11	31.2	88	43.6	+24	25.3		**60 N**	19 31	20 19	21 27	9 08	87	3 35	21
1	195	15.4		32.1	103	12.0 94		21.1	42	**58**	24	20 08	21 08	28	83	3 14	26
2	210	15.6		32.9	117	40.3 93		16.7	44	**56**	17	19 59	20 53	45	79	2 57	29
3	225	15.7		33.8	132	08.7 94		12.1	46	**54**	12	51	41	9 59	76	43	31
4	240	15.8		34.7	146	37.1 94		07.5	46	**52**	07	43	30	10 12	73	30	34
5	255	16.0	+11	35.5	161	05.5 94	+24	02.7	48	**50**	19 02	19 37	20 21	10 23	71	2 19	35
6	270	16.1	+11	36.4	175	33.9 94	+23	57.8	49	**45**	18 52	19 23	20 01	10 45	68	1 56	38
7	285	16.2		37.2	190	02.3 94		52.7	51	**40**	44	12	19 46	11 03	66	37	41
8	300	16.4		38.1	204	30.6 93		47.6	51	**35**	37	19 03	35	19	63	21	44
9	315	16.5		38.9	218	59.1 95		42.2	54	**30**	30	18 55	25	32	61	1 07	46
10	330	16.6		39.8	233	27.5 94		36.8	54	**20**	20	43	19 09	11 54	58	0 44	48
11	345	16.7	+11	40.6	247	55.9 94	+23	31.2	56	**10 N**	18 11	18 32	18 57	12 14	55	0 24	50
12	0	16.9	+11	41.5	262	24.3 94	+23	25.5	57	**0**	18 02	18 23	18 48	12 32	52	0 05	52
13	15	17.0		42.3	276	52.7 94		19.7	58	**10 S**	17 54	15	40	12 50	50	** **	**
14	30	17.1		43.2	291	21.2 95		13.7	60	**20**	45	18 07	33	13 09	47	** **	**
15	45	17.3		44.0	305	49.6 94		07.7	60	**30**	35	17 59	27	32	43	** **	**
16	60	17.4		44.9	320	18.1 95	+23	01.4	63	**35**	29	55	25	13 45	41	23 48	65
17	75	17.5	+11	45.8	334	46.6 95	+22	55.1	63	**40**	17 23	17 51	18 22	14 00	38	23 34	67
18	90	17.6	+11	46.6	349	15.1 95	+22	48.6	65	**45**	17 16	17 46	18 20	14 18	35	23 17	70
19	105	17.8		47.5	3	43.6 95		42.0	66	**50**	07	40	18	40	31	22 56	74
20	120	17.9		48.3	18	12.1 95		35.3	67	**52**	17 03	37	17	14 50	30	46	77
21	135	18.0		49.2	32	40.6 95		28.4	69	**54**	16 58	35	16	15 02	27	34	80
22	150	18.2		50.0	47	09.2 96		21.4	70	**56**	53	32	15	15	25	21	83
23	165	18.3		50.9	61	37.7 95		14.3	71	**58**	48	29	14	31	21	22 06	86
24	180	18.4	+11	51.7	76	06.3 96	+22	07.1	72	**60 S**	16 42	17 25	18 13	15 50	16	21 47	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	10^{h} 05^{m}.1		PMG: 12^{h} 25^{m}			PMG: 15^{h} 57^{m}			PMG: 8^{h} 02^{m}			PMG: 7^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	208	18.0	173	53.9	+12 58.1	120	37.9	+24 53.2	239	09.7	−13 17.5	253	03.1	−17 33.1
1	223	20.5	188	53.4	+12 59.2	135	38.7	53.2	254	11.7	17.4	268	05.4	33.1
2	238	22.9	203	52.9	+13 00.3	150	39.5	53.2	269	13.8	17.3	283	07.7	33.1
3	253	25.4	218	52.4	01.4	165	40.3	53.2	284	15.9	17.1	298	10.1	33.0
4	268	27.9	233	51.9	02.4	180	41.1	53.3	299	17.9	17.0	313	12.4	33.0
5	283	30.3	248	51.4	+13 03.5	195	41.9	+24 53.3	314	20.0	−13 16.9	328	14.7	−17 33.0
6	298	32.8	263	50.9	+13 04.6	210	42.7	+24 53.3	329	22.1	−13 16.7	343	17.0	−17 32.9
7	313	35.2	278	50.4	05.7	225	43.5	53.3	344	24.1	16.6	358	19.4	32.9
8	328	37.7	293	49.9	06.8	240	44.3	53.3	359	26.2	16.5	13	21.7	32.9
9	343	40.2	308	49.4	07.9	255	45.1	53.4	14	28.3	16.3	28	24.0	32.8
10	358	42.6	323	48.9	09.0	270	45.9	53.4	29	30.3	16.2	43	26.4	32.8
11	13	45.1	338	48.3	+13 10.1	285	46.7	+24 53.4	44	32.4	−13 16.1	58	28.7	−17 32.8
12	28	47.6	353	47.8	+13 11.2	300	47.5	+24 53.4	59	34.5	−13 15.9	73	31.0	−17 32.7
13	43	50.0	8	47.3	12.2	315	48.2	53.4	74	36.5	15.8	88	33.4	32.7
14	58	52.5	23	46.8	13.3	330	49.0	53.4	89	38.6	15.7	103	35.7	32.7
15	73	55.0	38	46.3	14.4	345	49.8	53.5	104	40.7	15.5	118	38.0	32.6
16	88	57.4	53	45.8	15.5	0	50.6	53.5	119	42.7	15.4	133	40.4	32.6
17	103	59.9	68	45.3	+13 16.6	15	51.4	+24 53.5	134	44.8	−13 15.3	148	42.7	−17 32.6
18	119	02.3	83	44.8	+13 17.7	30	52.2	+24 53.5	149	46.9	−13 15.1	163	45.0	−17 32.5
19	134	04.8	98	44.3	18.8	45	53.0	53.5	164	48.9	15.0	178	47.4	32.5
20	149	07.3	113	43.8	19.8	60	53.8	53.5	179	51.0	14.9	193	49.7	32.5
21	164	09.7	128	43.3	20.9	75	54.6	53.6	194	53.1	14.7	208	52.0	32.5
22	179	12.2	143	42.7	22.0	90	55.4	53.6	209	55.1	14.6	223	54.4	32.4
23	194	14.7	158	42.2	23.1	105	56.2	53.6	224	57.2	14.5	238	56.7	32.4
24	209	17.1	173	41.7	+13 24.2	120	57.0	+24 53.6	239	59.3	−13 14.4	253	59.0	−17 32.4
Dif	—			−5	+11		+8	0		+21	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 8ᵈ.9 SD: 15′.4		PHE	4ʰ: 56′.8 12ʰ: 57′.1 20ʰ: 57′.4									
	PMG: 11ʰ 58ᵐ.7				PMG: 19ʰ 36ᵐ			Rº: 52ᵐ									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	18.4	+11	51.7	76	06.3	+22	07.1		**60 N**	2 30	3 37	4 26	10 35	94	3 56	13
1	195	18.5		52.5	90	34.9 96	+21	59.7	74	**58**	2 48	48	33	10 51	89	40	17
2	210	18.7		53.4	105	03.5 96		52.2	75	**56**	3 03	3 58	39	11 04	85	26	21
3	225	18.8		54.2	119	32.1 96		44.6	76	**54**	16	4 06	45	15	82	14	24
4	240	18.9		55.1	134	00.7 96		36.9	77	**52**	27	13	50	25	80	3 04	26
5	255	19.0	+11	55.9	148	29.4 97	+21	29.0	79	**50**	3 36	4 20	4 55	11 34	77	2 54	29
6	270	19.2	+11	56.8	162	58.0 96	+21	21.0	80	**45**	3 56	4 34	5 05	11 53	73	2 34	33
7	285	19.3		57.6	177	26.7 97		12.9	81	**40**	4 11	45	13	12 09	68	18	36
8	300	19.4		58.5	191	55.4 97	+21	04.7	82	**35**	23	4 54	20	22	65	2 05	39
9	315	19.5	+11	59.3	206	24.1 97	+20	56.3	84	**30**	33	5 02	27	33	63	1 53	41
10	330	19.7	+12	00.2	220	52.9 98		47.8	85	**20**	4 48	15	37	12 52	59	32	45
11	345	19.8	+12	01.0	235	21.6 97	+20	39.2	86	**10 N**	5 00	5 25	5 47	13 09	54	1 14	49
12	0	19.9	+12	01.9	249	50.4 98	+20	30.5	87	**0**	5 10	5 34	5 55	13 24	51	0 57	52
13	15	20.0		02.7	264	19.2 98		21.7	88	**10 S**	18	42	6 04	40	47	40	55
14	30	20.2		03.6	278	48.0 98		12.7	90	**20**	24	50	13	13 56	44	22	58
15	45	20.3		04.4	293	16.9 99	+20	03.6	91	**30**	30	5 58	23	14 15	40	0 01	62
16	60	20.4		05.2	307	45.7 98	+19	54.4	92	**35**	33	6 03	29	26	37	** **	**
17	75	20.5	+12	06.1	322	14.6 99	+19	45.1	93	**40**	5 36	6 07	6 35	14 38	35	** **	**
18	90	20.7	+12	06.9	336	43.5 99	+19	35.7	94	**45**	5 38	6 13	6 43	14 53	31	** **	**
19	105	20.8		07.8	351	12.4 99		26.1	96	**50**	41	18	52	15 11	26	** **	**
20	120	20.9		08.6	5	41.3 99		16.5	96	**52**	42	21	6 56	20	23	** **	**
21	135	21.0		09.5	20	10.2 99	+19	06.7	98	**54**	43	24	7 00	29	21	23 54	84
22	150	21.2		10.3	34	39.2 100	+18	56.8	99	**56**	43	27	06	40	18	44	87
23	165	21.3		11.1	49	08.2 100		46.8	100	**58**	44	30	11	15 52	14	32	91
24	180	21.4	+12	12.0	63	37.2 100	+18	36.7	101	**60 S**	5 45	6 34	7 18	16 06	10	23 19	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	10ʰ 01ᵐ.2		PMG: 12ʰ 26ᵐ			PMG: 15ʰ 55ᵐ			PMG: 7ʰ 59ᵐ			PMG: 7ʰ 03ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	209	17.1	173	41.7	+13 24.2	120	57.0	+24 53.6	239	59.3	−13 14.4	253	59.0	−17 32.4
1	224	19.6	188	41.2	25.2	135	57.8	53.6	255	01.3	14.2	269	01.4	32.3
2	239	22.1	203	40.7	26.3	150	58.6	53.6	270	03.4	14.1	284	03.7	32.3
3	254	24.5	218	40.2	27.4	165	59.4	53.6	285	05.5	14.0	299	06.0	32.3
4	269	27.0	233	39.7	28.5	181	00.2	53.7	300	07.6	13.8	314	08.4	32.2
5	284	29.5	248	39.2	+13 29.6	196	01.0	+24 53.7	315	09.6	−13 13.7	329	10.7	−17 32.2
6	299	31.9	263	38.7	+13 30.6	211	01.8	+24 53.7	330	11.7	−13 13.6	344	13.0	−17 32.2
7	314	34.4	278	38.1	31.7	226	02.6	53.7	345	13.8	13.4	359	15.4	32.1
8	329	36.8	293	37.6	32.8	241	03.4	53.7	0	15.8	13.3	14	17.7	32.1
9	344	39.3	308	37.1	33.9	256	04.2	53.7	15	17.9	13.2	29	20.0	32.1
10	359	41.8	323	36.6	34.9	271	05.0	53.7	30	20.0	13.0	44	22.4	32.1
11	14	44.2	338	36.1	+13 36.0	286	05.7	+24 53.7	45	22.1	−13 12.9	59	24.7	−17 32.0
12	29	46.7	353	35.6	+13 37.1	301	06.5	+24 53.7	60	24.1	−13 12.8	74	27.1	−17 32.0
13	44	49.2	8	35.0	38.2	316	07.3	53.8	75	26.2	12.7	89	29.4	32.0
14	59	51.6	23	34.5	39.2	331	08.1	53.8	90	28.3	12.5	104	31.7	31.9
15	74	54.1	38	34.0	40.3	346	08.9	53.8	105	30.3	12.4	119	34.1	31.9
16	89	56.6	53	33.5	41.4	1	09.7	53.8	120	32.4	12.3	134	36.4	31.9
17	104	59.0	68	33.0	+13 42.5	16	10.5	+24 53.8	135	34.5	−13 12.1	149	38.7	−17 31.8
18	120	01.5	83	32.5	+13 43.5	31	11.3	+24 53.8	150	36.6	−13 12.0	164	41.1	−17 31.8
19	135	04.0	98	31.9	44.6	46	12.1	53.8	165	38.6	11.9	179	43.4	31.8
20	150	06.4	113	31.4	45.7	61	12.9	53.8	180	40.7	11.7	194	45.7	31.8
21	165	08.9	128	30.9	46.7	76	13.7	53.8	195	42.8	11.6	209	48.1	31.7
22	180	11.3	143	30.4	47.8	91	14.5	53.8	210	44.8	11.5	224	50.4	31.7
23	195	13.8	158	29.9	48.9	106	15.3	53.8	225	46.9	11.4	239	52.8	31.7
24	210	16.3	173	29.3	+13 49.9	121	16.1	+24 53.8	240	49.0	−13 11.2	254	55.1	−17 31.6
Dif	—			−5	+11		+8	0		+21	+1		+23	0

UT	SOL SD: 15′.9 PMG: 11h 58m.5				LUNA Edad: 9d.9 SD: 15′.7 PMG: 20h 28m PHE 4h: 57′.7; 12h: 58′.0; 20h: 58′.3 Rº: 50m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	21.4	+12	12.0	63	37.2	+18	36.7	**60 N**	19 36	20 25	21 35	12 09	96	4 09	8
1	195	21.5		12.8	78	06.2 100		26.4 103	**58**	28	14	21 15	20	92	3 57	13
2	210	21.7		13.7	92	35.3 101		16.1 103	**56**	21	20 04	20 59	29	89	47	16
3	225	21.8		14.5	107	04.3 100	+18	05.6 105	**54**	15	19 55	46	37	86	38	19
4	240	21.9		15.3	121	33.4 101	+17	55.0 106	**52**	10	47	34	45	82	30	21
5	255	22.0	+12	16.2	136	02.5 101	+17	44.4 106	**50**	19 05	19 40	20 25	12 51	81	3 23	23
6	270	22.1	+12	17.0	150	31.6 101	+17	33.6 108	**45**	18 54	19 26	20 04	13 06	75	3 07	29
7	285	22.3		17.9	165	00.8 102		22.7 109	**40**	46	14	19 49	17	71	2 54	33
8	300	22.4		18.7	179	29.9 101		11.6 111	**35**	38	19 05	36	27	67	44	35
9	315	22.5		19.5	193	59.1 102	+17	00.5 111	**30**	32	18 57	26	36	64	34	38
10	330	22.6		20.4	208	28.3 102	+16	49.3 112	**20**	21	43	19 10	13 51	59	17	43
11	345	22.7	+12	21.2	222	57.5 102	+16	38.0 113	**10 N**	18 11	18 32	18 58	14 03	55	2 03	47
12	0	22.9	+12	22.0	237	26.7 102	+16	26.6 114	**0**	18 02	18 23	18 48	14 15	51	1 49	51
13	15	23.0		22.9	251	56.0 103		15.0 116	**10 S**	17 53	14	39	27	47	35	55
14	30	23.1		23.7	266	25.2 102	+16	03.4 116	**20**	44	18 06	32	40	42	20	59
15	45	23.2		24.5	280	54.5 103	+15	51.6 118	**30**	33	17 58	26	14 55	37	1 03	63
16	60	23.3		25.4	295	23.8 103		39.8 118	**35**	27	53	23	15 03	34	0 53	66
17	75	23.5	+12	26.2	309	53.1 103	+15	27.8 120	**40**	17 20	17 48	18 20	15 13	30	0 41	70
18	90	23.6	+12	27.0	324	22.5 104	+15	15.8 120	**45**	17 12	17 43	18 17	15 24	27	0 27	74
19	105	23.7		27.9	338	51.8 103	+15	03.7 121	**50**	17 03	36	14	37	22	10	79
20	120	23.8		28.7	353	21.2 104	+14	51.4 123	**52**	16 59	33	13	43	20	0 03	81
21	135	23.9		29.6	7	50.6 104		39.1 123	**54**	54	30	12	50	17	** **	**
22	150	24.1		30.4	22	19.9 103		26.7 124	**56**	49	27	11	15 58	14	** **	**
23	165	24.2		31.2	36	49.4 105		14.1 126	**58**	43	24	10	16 06	11	** **	**
24	180	24.3	+12	32.0	51	18.8 104	+14	01.5 126	**60 S**	16 36	17 20	18 08	16 16	7	** **	**

UT	ARIES PMG 9h 57m.3		VENUS Mag: −3.9 PMG: 12h 26m			MARTE Mag: +1.5 PMG: 15h 54m			JÚPITER Mag: −2.2 PMG: 7h 56m			SATURNO Mag: +0.7 PMG: 6h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	210	16.3	173	29.3	+13 49.9	121	16.1	+24 53.8	240	49.0	−13 11.2	254	55.1	−17 31.6
1	225	18.7	188	28.8	51.0	136	16.9	53.8	255	51.1	11.1	269	57.4	31.6
2	240	21.2	203	28.3	52.1	151	17.7	53.9	270	53.1	11.0	284	59.8	31.6
3	255	23.7	218	27.8	53.1	166	18.5	53.9	285	55.2	10.8	300	02.1	31.5
4	270	26.1	233	27.2	54.2	181	19.3	53.9	300	57.3	10.7	315	04.4	31.5
5	285	28.6	248	26.7	+13 55.3	196	20.1	+24 53.9	315	59.4	−13 10.6	330	06.8	−17 31.5
6	300	31.1	263	26.2	+13 56.3	211	20.8	+24 53.9	331	01.4	−13 10.5	345	09.1	−17 31.5
7	315	33.5	278	25.7	57.4	226	21.6	53.9	346	03.5	10.3	0	11.5	31.4
8	330	36.0	293	25.1	58.4	241	22.4	53.9	1	05.6	10.2	15	13.8	31.4
9	345	38.4	308	24.6	+13 59.5	256	23.2	53.9	16	07.7	10.1	30	16.1	31.4
10	0	40.9	323	24.1	+14 00.6	271	24.0	53.9	31	09.7	09.9	45	18.5	31.3
11	15	43.4	338	23.6	+14 01.6	286	24.8	+24 53.9	46	11.8	−13 09.8	60	20.8	−17 31.3
12	30	45.8	353	23.0	+14 02.7	301	25.6	+24 53.9	61	13.9	−13 09.7	75	23.2	−17 31.3
13	45	48.3	8	22.5	03.7	316	26.4	53.9	76	16.0	09.5	90	25.5	31.2
14	60	50.8	23	22.0	04.8	331	27.2	53.9	91	18.0	09.4	105	27.8	31.2
15	75	53.2	38	21.5	05.9	346	28.0	53.9	106	20.1	09.3	120	30.2	31.2
16	90	55.7	53	20.9	06.9	1	28.8	53.9	121	22.2	09.2	135	32.5	31.2
17	105	58.2	68	20.4	+14 08.0	16	29.6	+24 53.9	136	24.3	−13 09.0	150	34.9	−17 31.1
18	121	00.6	83	19.9	+14 09.0	31	30.4	+24 53.9	151	26.4	−13 08.9	165	37.2	−17 31.1
19	136	03.1	98	19.4	10.1	46	31.2	53.9	166	28.4	08.8	180	39.5	31.1
20	151	05.6	113	18.8	11.1	61	32.0	53.9	181	30.5	08.6	195	41.9	31.0
21	166	08.0	128	18.3	12.2	76	32.8	53.9	196	32.6	08.5	210	44.2	31.0
22	181	10.5	143	17.8	13.3	91	33.6	53.9	211	34.7	08.4	225	46.6	31.0
23	196	12.9	158	17.2	14.3	106	34.4	53.9	226	36.7	08.3	240	48.9	31.0
24	211	15.4	173	16.7	+14 15.4	121	35.1	+24 53.9	241	38.8	−13 08.1	255	51.2	−17 30.9
Dif	—			−5	+11		+8	0		+21	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 10^{d}.9		PHE	4^{h}: 58′.6									
	PMG: 11^{h} 58^{m}.3				SD: 15′.9			12^{h}: 59′.0									
					PMG: 21^{h} 18^{m}			20^{h}: 59′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	180	24.3	+12	32.0	51	18.8	+14	01.5		**60 N**	2 21	3 31	4 20	13 45	98	4 17	7
1	195	24.4		32.9	65	48.2 104	+13	48.8 127		**58**	41	42	28	52	94	10	10
2	210	24.5		33.7	80	17.6 104		36.0 128		**56**	2 57	3 52	34	13 58	90	4 03	13
3	225	24.6		34.5	94	47.1 105		23.1 129		**54**	3 10	4 01	41	14 03	87	3 57	16
4	240	24.8		35.4	109	16.6 105	+13	10.1 130		**52**	22	09	46	07	85	51	19
5	255	24.9	+12	36.2	123	46.1 105	+12	57.0 131		**50**	3 32	4 16	4 51	14 12	82	3 46	21
6	270	25.0	+12	37.0	138	15.5 104	+12	43.9 131		**45**	3 52	4 30	5 02	14 21	77	3 36	25
7	285	25.1		37.9	152	45.0 105		30.6 133		**40**	4 07	42	11	28	73	27	29
8	300	25.2		38.7	167	14.5 105		17.3 133		**35**	20	4 52	18	34	69	19	33
9	315	25.3		39.5	181	44.1 106	+12	03.8 135		**30**	30	5 00	25	40	66	12	36
10	330	25.5		40.4	196	13.6 105	+11	50.3 135		**20**	47	13	36	50	60	3 00	42
11	345	25.6	+12	41.2	210	43.1 105	+11	36.7 136		**10 N**	4 59	5 24	5 46	14 58	55	2 50	46
12	0	25.7	+12	42.0	225	12.7 106	+11	23.1 136		**0**	5 09	5 34	5 55	15 06	51	2 40	50
13	15	25.8		42.8	239	42.2 105	+11	09.3 138		**10 S**	18	42	6 04	14	46	30	54
14	30	25.9		43.7	254	11.8 106	+10	55.5 138		**20**	25	5 51	13	22	41	19	59
15	45	26.0		44.5	268	41.3 105		41.6 139		**30**	31	6 00	24	32	35	2 06	65
16	60	26.2		45.3	283	10.9 106		27.6 140		**35**	35	04	30	37	33	1 59	68
17	75	26.3	+12	46.1	297	40.4 105	+10	13.5 141		**40**	5 38	6 09	6 37	15 43	29	1 51	71
18	90	26.4	+12	47.0	312	10.0 106	+9	59.4 141		**45**	5 41	6 15	6 45	15 51	24	1 41	76
19	105	26.5		47.8	326	39.6 106		45.2 142		**50**	43	21	55	15 59	20	29	81
20	120	26.6		48.6	341	09.2 106		30.9 143		**52**	45	24	6 59	16 03	18	24	83
21	135	26.7		49.4	355	38.7 105		16.5 144		**54**	46	27	7 04	07	15	18	86
22	150	26.8		50.3	10	08.3 106	+9	02.1 144		**56**	47	31	10	12	12	11	89
23	165	27.0		51.1	24	37.9 106	+8	47.6 145		**58**	48	34	16	17	10	1 03	93
24	180	27.1	+12	51.9	39	07.4 105	+8	33.1 145		**60 S**	5 50	6 38	7 22	16 23	6	0 54	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	9^{h} 53^{m}.3		PMG: 12^{h} 27^{m}			PMG: 15^{h} 53^{m}			PMG: 7^{h} 52^{m}			PMG: 6^{h} 56^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	211	15.4	173	16.7	+14 15.4	121	35.1	+24 53.9	241	38.8	−13 08.1	255	51.2	−17 30.9
1	226	17.9	188	16.2	16.4	136	35.9	53.9	256	40.9	08.0	270	53.6	30.9
2	241	20.3	203	15.6	17.5	151	36.7	53.9	271	43.0	07.9	285	55.9	30.9
3	256	22.8	218	15.1	18.5	166	37.5	53.9	286	45.1	07.8	300	58.3	30.8
4	271	25.3	233	14.6	19.6	181	38.3	53.9	301	47.1	07.6	316	00.6	30.8
5	286	27.7	248	14.0	+14 20.6	196	39.1	+24 53.9	316	49.2	−13 07.5	331	02.9	−17 30.8
6	301	30.2	263	13.5	+14 21.7	211	39.9	+24 53.9	331	51.3	−13 07.4	346	05.3	−17 30.8
7	316	32.7	278	13.0	22.7	226	40.7	53.9	346	53.4	07.2	1	07.6	30.7
8	331	35.1	293	12.4	23.8	241	41.5	53.9	1	55.5	07.1	16	10.0	30.7
9	346	37.6	308	11.9	24.8	256	42.3	53.9	16	57.5	07.0	31	12.3	30.7
10	1	40.1	323	11.4	25.9	271	43.1	53.9	31	59.6	06.9	46	14.7	30.6
11	16	42.5	338	10.8	+14 26.9	286	43.9	+24 53.9	47	01.7	−13 06.7	61	17.0	−17 30.6
12	31	45.0	353	10.3	+14 27.9	301	44.7	+24 53.9	62	03.8	−13 06.6	76	19.3	−17 30.6
13	46	47.4	8	09.8	29.0	316	45.5	53.9	77	05.9	06.5	91	21.7	30.6
14	61	49.9	23	09.2	30.0	331	46.3	53.9	92	07.9	06.3	106	24.0	30.5
15	76	52.4	38	08.7	31.1	346	47.1	53.9	107	10.0	06.2	121	26.4	30.5
16	91	54.8	53	08.1	32.1	1	47.8	53.9	122	12.1	06.1	136	28.7	30.5
17	106	57.3	68	07.6	+14 33.2	16	48.6	+24 53.9	137	14.2	−13 06.0	151	31.1	−17 30.4
18	121	59.8	83	07.1	+14 34.2	31	49.4	+24 53.9	152	16.3	−13 05.8	166	33.4	−17 30.4
19	137	02.2	98	06.5	35.2	46	50.2	53.9	167	18.4	05.7	181	35.8	30.4
20	152	04.7	113	06.0	36.3	61	51.0	53.8	182	20.4	05.6	196	38.1	30.4
21	167	07.2	128	05.4	37.3	76	51.8	53.8	197	22.5	05.5	211	40.4	30.3
22	182	09.6	143	04.9	38.4	91	52.6	53.8	212	24.6	05.3	226	42.8	30.3
23	197	12.1	158	04.4	39.4	106	53.4	53.8	227	26.7	05.2	241	45.1	30.3
24	212	14.5	173	03.8	+14 40.4	121	54.2	+24 53.8	242	28.8	−13 05.1	256	47.5	−17 30.2
Dif	—			−5	+10		+8	0		+21	+1		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 11^{d}.9		PHE	4^{h}: 59′.6								
	PMG: 11^{h} 58^{m}.1				SD: 16′.2			12^{h}: 59′.9								
					PMG: 22^{h} 09^{m}			20^{h}: 60′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	27.1	+12	51.9	39	07.4	+8	33.1	**60 N**	19 41	20 31	21 43	15 23	100	4 24	5
1	195	27.2		52.7	53	37.0 106		18.4 147	**58**	33	19	22	26	96	20	8
2	210	27.3		53.6	68	06.6 106	+8	03.7 147	**56**	26	20 08	21 05	28	93	16	12
3	225	27.4		54.4	82	36.1 105	+7	49.0 147	**54**	19	19 59	20 51	30	90	13	14
4	240	27.5		55.2	97	05.7 106		34.2 148	**52**	13	51	39	32	87	10	17
5	255	27.6	+12	56.0	111	35.2 105	+7	19.3 149	**50**	19 08	19 44	20 29	15 34	84	4 07	20
6	270	27.7	+12	56.8	126	04.8 106	+7	04.3 150	**45**	18 57	19 29	20 08	15 38	79	4 01	25
7	285	27.9		57.7	140	34.3 105	+6	49.3 150	**40**	48	17	19 51	41	74	3 56	29
8	300	28.0		58.5	155	03.9 106		34.3 150	**35**	40	19 07	38	43	71	52	32
9	315	28.1	+12	59.3	169	33.4 105		19.2 151	**30**	33	18 58	28	46	67	48	36
10	330	28.2	+13	00.1	184	02.9 105	+6	04.0 152	**20**	21	44	19 11	50	61	42	41
11	345	28.3	+13	00.9	198	32.4 105	+5	48.8 152	**10 N**	18 11	18 33	18 58	15 53	56	3 36	46
12	0	28.4	+13	01.8	213	01.9 105	+5	33.5 153	**0**	18 01	18 23	18 47	15 57	51	3 30	51
13	15	28.5		02.6	227	31.3 104		18.2 153	**10 S**	17 52	14	39	16 00	46	24	56
14	30	28.6		03.4	242	00.8 105	+5	02.8 154	**20**	42	18 05	31	03	42	18	61
15	45	28.7		04.2	256	30.2 104	+4	47.4 154	**30**	31	17 56	24	07	36	11	66
16	60	28.9		05.0	270	59.7 105		32.0 154	**35**	25	51	20	10	32	07	70
17	75	29.0	+13	05.9	285	29.1 104	+4	16.5 155	**40**	17 18	17 45	18 17	16 12	29	3 02	74
18	90	29.1	+13	06.7	299	58.5 104	+4	00.9 156	**45**	17 09	17 39	18 14	16 15	25	2 57	78
19	105	29.2		07.5	314	27.9 104	+3	45.3 156	**50**	16 59	33	11	19	19	50	84
20	120	29.3		08.3	328	57.2 103		29.7 156	**52**	55	30	09	21	17	47	86
21	135	29.4		09.1	343	26.6 104	+3	14.0 157	**54**	49	26	08	22	15	44	89
22	150	29.5		09.9	357	55.9 103	+2	58.3 157	**56**	44	23	06	24	12	40	92
23	165	29.6		10.7	12	25.2 103		42.6 157	**58**	38	19	05	27	8	36	95
24	180	29.7	+13	11.6	26	54.5 103	+2	26.8 158	**60 S**	16 30	17 15	18 03	16 29	5	2 31	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	9^{h} 49^{m}.4		PMG: 12^{h} 28^{m}			PMG: 15^{h} 52^{m}			PMG: 7^{h} 49^{m}			PMG: 6^{h} 52^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	212	14.5	173	03.8	+14 40.4	121	54.2	+24 53.8	242	28.8	−13 05.1	256	47.5	−17 30.2
1	227	17.0	188	03.3	41.5	136	55.0	53.8	257	30.9	05.0	271	49.8	30.2
2	242	19.5	203	02.7	42.5	151	55.8	53.8	272	32.9	04.8	286	52.2	30.2
3	257	21.9	218	02.2	43.5	166	56.6	53.8	287	35.0	04.7	301	54.5	30.2
4	272	24.4	233	01.7	44.6	181	57.4	53.8	302	37.1	04.6	316	56.9	30.1
5	287	26.9	248	01.1	+14 45.6	196	58.2	+24 53.8	317	39.2	−13 04.4	331	59.2	−17 30.1
6	302	29.3	263	00.6	+14 46.6	211	59.0	+24 53.8	332	41.3	−13 04.3	347	01.5	−17 30.1
7	317	31.8	278	00.0	47.7	226	59.7	53.8	347	43.4	04.2	2	03.9	30.1
8	332	34.3	292	59.5	48.7	242	00.5	53.7	2	45.4	04.1	17	06.2	30.0
9	347	36.7	307	58.9	49.7	257	01.3	53.7	17	47.5	03.9	32	08.6	30.0
10	2	39.2	322	58.4	50.8	272	02.1	53.7	32	49.6	03.8	47	10.9	30.0
11	17	41.7	337	57.8	+14 51.8	287	02.9	+24 53.7	47	51.7	−13 03.7	62	13.3	−17 29.9
12	32	44.1	352	57.3	+14 52.8	302	03.7	+24 53.7	62	53.8	−13 03.6	77	15.6	−17 29.9
13	47	46.6	7	56.7	53.9	317	04.5	53.7	77	55.9	03.4	92	18.0	29.9
14	62	49.0	22	56.2	54.9	332	05.3	53.7	92	58.0	03.3	107	20.3	29.9
15	77	51.5	37	55.6	55.9	347	06.1	53.7	108	00.0	03.2	122	22.7	29.8
16	92	54.0	52	55.1	56.9	2	06.9	53.7	123	02.1	03.1	137	25.0	29.8
17	107	56.4	67	54.6	+14 58.0	17	07.7	+24 53.6	138	04.2	−13 02.9	152	27.4	−17 29.8
18	122	58.9	82	54.0	+14 59.0	32	08.5	+24 53.6	153	06.3	−13 02.8	167	29.7	−17 29.8
19	138	01.4	97	53.5	+15 00.0	47	09.3	53.6	168	08.4	02.7	182	32.1	29.7
20	153	03.8	112	52.9	+15 01.1	62	10.1	53.6	183	10.5	02.6	197	34.4	29.7
21	168	06.3	127	52.4	02.1	77	10.9	53.6	198	12.6	02.4	212	36.8	29.7
22	183	08.8	142	51.8	03.1	92	11.6	53.6	213	14.7	02.3	227	39.1	29.6
23	198	11.2	157	51.3	04.1	107	12.4	53.6	228	16.7	02.2	242	41.5	29.6
24	213	13.7	172	50.7	+15 05.1	122	13.2	+24 53.5	243	18.8	−13 02.1	257	43.8	−17 29.6
Dif	—		−5		+10	+8		0	+21		+1	+23		0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 12^{d}.9		PHE	4^{h}: 60′.4								
	PMG: 11^{h} 57^{m}.9				SD: 16′.4			12^{h}: 60′.6								
					PMG: 23^{h} 00^{m}			20^{h}: 60′.8								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	29.7	+13	11.6	26	54.5	+2	26.8	**60 N**	2 12	3 24	4 14	17 03	104	4 29	5
1	195	29.8		12.4	41	23.7 102	+2	11.0 158	**58**	33	36	22	02	99	28	9
2	210	29.9		13.2	55	52.9 102	+1	55.2 158	**56**	2 50	47	30	01	96	28	12
3	225	30.1		14.0	70	22.1 102		39.4 158	**54**	3 04	3 56	36	17 00	93	27	15
4	240	30.2		14.8	84	51.3 102		23.5 159	**52**	16	4 04	42	16 59	90	27	17
5	255	30.3	+13	15.6	99	20.5 102	+1	07.6 159	**50**	3 27	4 12	4 47	16 58	87	4 27	19
6	270	30.4	+13	16.4	113	49.6 101	+0	51.6 160	**45**	3 48	4 27	4 58	16 57	81	4 26	24
7	285	30.5		17.3	128	18.7 101		35.7 159	**40**	4 04	39	5 08	55	77	25	29
8	300	30.6		18.1	142	47.7 100		19.7 160	**35**	17	49	16	54	72	24	33
9	315	30.7		18.9	157	16.7 100	+0	03.7 160	**30**	28	4 58	23	53	69	24	36
10	330	30.8		19.7	171	45.7 100	−0	12.3 160	**20**	45	5 12	35	51	63	23	41
11	345	30.9	+13	20.5	186	14.7 100	−0	28.3 160	**10 N**	4 58	5 23	5 45	16 49	58	4 22	47
12	0	31.0	+13	21.3	200	43.6 99	−0	44.4 161	**0**	5 09	5 33	5 55	16 48	53	4 21	51
13	15	31.1		22.1	215	12.5 99	−1	00.4 160	**10 S**	18	43	6 04	46	48	20	56
14	30	31.2		22.9	229	41.3 98		16.5 161	**20**	25	5 51	14	45	43	19	62
15	45	31.3		23.7	244	10.2 99		32.5 160	**30**	33	6 01	25	43	37	17	68
16	60	31.4		24.5	258	38.9 97	−1	48.6 161	**35**	36	06	32	42	34	17	71
17	75	31.5	+13	25.3	273	07.7 98	−2	04.7 161	**40**	5 39	6 11	6 39	16 41	30	4 16	75
18	90	31.6	+13	26.2	287	36.4 97	−2	20.7 160	**45**	5 43	6 17	6 48	16 40	25	4 15	80
19	105	31.8		27.0	302	05.0 96		36.8 161	**50**	46	24	6 58	38	21	14	85
20	120	31.9		27.8	316	33.6 96	−2	52.9 161	**52**	48	27	7 03	38	18	13	88
21	135	32.0		28.6	331	02.2 96	−3	09.0 161	**54**	49	31	08	37	15	13	90
22	150	32.1		29.4	345	30.7 95		25.0 160	**56**	51	34	13	36	13	12	94
23	165	32.2		30.2	359	59.2 95		41.1 161	**58**	52	38	20	35	10	11	98
24	180	32.3	+13	31.0	14	27.6 94	−3	57.1 160	**60 S**	5 54	6 43	7 27	16 34	6	4 10	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	9^{h} 45^{m}.5		PMG: 12^{h} 29^{m}			PMG: 15^{h} 50^{m}			PMG: 7^{h} 46^{m}			PMG: 6^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	213	13.7	172	50.7	+15 05.1	122	13.2	+24 53.5	243	18.8	−13 02.1	257	43.8	−17 29.6
1	228	16.1	187	50.1	06.2	137	14.0	53.5	258	20.9	01.9	272	46.1	29.6
2	243	18.6	202	49.6	07.2	152	14.8	53.5	273	23.0	01.8	287	48.5	29.5
3	258	21.1	217	49.0	08.2	167	15.6	53.5	288	25.1	01.7	302	50.8	29.5
4	273	23.5	232	48.5	09.2	182	16.4	53.5	303	27.2	01.6	317	53.2	29.5
5	288	26.0	247	47.9	+15 10.2	197	17.2	+24 53.5	318	29.3	−13 01.4	332	55.5	−17 29.5
6	303	28.5	262	47.4	+15 11.3	212	18.0	+24 53.4	333	31.4	−13 01.3	347	57.9	−17 29.4
7	318	30.9	277	46.8	12.3	227	18.8	53.4	348	33.5	01.2	3	00.2	29.4
8	333	33.4	292	46.3	13.3	242	19.6	53.4	3	35.5	01.1	18	02.6	29.4
9	348	35.9	307	45.7	14.3	257	20.4	53.4	18	37.6	00.9	33	04.9	29.4
10	3	38.3	322	45.2	15.3	272	21.2	53.4	33	39.7	00.8	48	07.3	29.3
11	18	40.8	337	44.6	+15 16.3	287	22.0	+24 53.4	48	41.8	−13 00.7	63	09.6	−17 29.3
12	33	43.3	352	44.0	+15 17.4	302	22.7	+24 53.3	63	43.9	−13 00.6	78	12.0	−17 29.3
13	48	45.7	7	43.5	18.4	317	23.5	53.3	78	46.0	00.4	93	14.3	29.2
14	63	48.2	22	42.9	19.4	332	24.3	53.3	93	48.1	00.3	108	16.7	29.2
15	78	50.6	37	42.4	20.4	347	25.1	53.3	108	50.2	00.2	123	19.0	29.2
16	93	53.1	52	41.8	21.4	2	25.9	53.3	123	52.3	−13 00.1	138	21.4	29.2
17	108	55.6	67	41.2	+15 22.4	17	26.7	+24 53.2	138	54.4	−13 00.0	153	23.8	−17 29.1
18	123	58.0	82	40.7	+15 23.4	32	27.5	+24 53.2	153	56.5	−12 59.8	168	26.1	−17 29.1
19	139	00.5	97	40.1	24.4	47	28.3	53.2	168	58.6	59.7	183	28.5	29.1
20	154	03.0	112	39.6	25.4	62	29.1	53.2	184	00.6	59.6	198	30.8	29.1
21	169	05.4	127	39.0	26.5	77	29.9	53.2	199	02.7	59.5	213	33.2	29.0
22	184	07.9	142	38.4	27.5	92	30.7	53.1	214	04.8	59.3	228	35.5	29.0
23	199	10.4	157	37.9	28.5	107	31.5	53.1	229	06.9	59.2	243	37.9	29.0
24	214	12.8	172	37.3	+15 29.5	122	32.3	+24 53.1	244	09.0	−12 59.1	258	40.2	−17 29.0
Dif	—			−6	+10		+8	0		+21	+1		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 13^{d}.9		PHE	4^{h}: 61′.0								
	PMG: 11^{h} 57^{m}.8				SD: 16′.6			12^{h}: 61′.1								
					PMG: 23^{h} 54^{m}			20^{h}: 61′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	32.3	+13	31.0	14	27.6	−3	57.1	**60 N**	19 46	20 37	21 52	18 47	107	4 34	7
1	195	32.4		31.8	28	56.0 94	−4	13.2 161	**58**	37	24	29	41	103	37	10
2	210	32.5		32.6	43	24.3 93		29.2 160	**56**	30	13	21 11	37	98	40	13
3	225	32.6		33.4	57	52.6 93	−4	45.2 160	**54**	23	20 03	20 56	33	95	42	16
4	240	32.7		34.2	72	20.8 92	−5	01.2 160	**52**	17	19 55	44	29	92	44	19
5	255	32.8	+13	35.0	86	49.0 92	−5	17.2 160	**50**	19 11	19 47	20 33	18 25	89	4 46	22
6	270	32.9	+13	35.8	101	17.1 91	−5	33.1 159	**45**	18 59	19 31	20 11	18 18	83	4 50	27
7	285	33.0		36.6	115	45.2 91	−5	49.1 160	**40**	50	19	19 54	12	78	54	31
8	300	33.1		37.4	130	13.2 90	−6	05.0 159	**35**	41	19 08	40	06	75	4 57	35
9	315	33.2		38.2	144	41.2 90		20.9 159	**30**	34	18 59	29	18 02	71	5 00	38
10	330	33.3		39.0	159	09.1 89		36.7 158	**20**	22	45	19 12	17 54	65	04	45
11	345	33.4	+13	39.8	173	37.0 89	−6	52.5 158	**10 N**	18 11	18 33	18 58	17 47	60	5 09	49
12	0	33.5	+13	40.6	188	04.8 88	−7	08.3 158	**0**	18 01	18 22	18 47	17 41	55	5 12	55
13	15	33.6		41.4	202	32.5 87		24.1 158	**10 S**	17 51	13	38	34	51	16	59
14	30	33.7		42.2	217	00.2 87		39.8 157	**20**	41	18 04	30	28	46	21	64
15	45	33.8		43.0	231	27.8 86	−7	55.5 157	**30**	29	17 54	22	20	40	25	70
16	60	33.9		43.8	245	55.4 86	−8	11.1 156	**35**	23	49	18	16	37	28	74
17	75	34.0	+13	44.6	260	22.9 85	−8	26.7 156	**40**	17 15	17 43	18 15	17 11	33	5 31	78
18	90	34.1	+13	45.4	274	50.3 84	−8	42.3 156	**45**	17 06	17 36	18 11	17 05	29	5 35	82
19	105	34.2		46.2	289	17.7 84	−8	57.8 155	**50**	16 56	29	07	16 59	23	39	88
20	120	34.3		47.0	303	45.0 83	−9	13.2 154	**52**	51	26	06	56	21	41	91
21	135	34.4		47.8	318	12.2 82		28.7 155	**54**	45	22	04	52	19	43	94
22	150	34.5		48.6	332	39.4 82		44.0 153	**56**	39	19	02	49	15	46	97
23	165	34.6		49.4	347	06.5 81	−9	59.3 153	**58**	33	14	18 01	45	11	49	100
24	180	34.7	+13	50.2	1	33.6 81	−10	14.5 152	**60 S**	16 25	17 10	17 59	16 40	8	5 52	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	9^{h} 41^{m}.6		PMG: 12^{h} 30^{m}			PMG: 15^{h} 49^{m}			PMG: 7^{h} 42^{m}			PMG: 6^{h} 44^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	214	12.8	172	37.3	+15 29.5	122	32.3	+24 53.1	244	09.0	−12 59.1	258	40.2	−17 29.0
1	229	15.3	187	36.8	30.5	137	33.1	53.1	259	11.1	59.0	273	42.6	28.9
2	244	17.8	202	36.2	31.5	152	33.8	53.1	274	13.2	58.8	288	44.9	28.9
3	259	20.2	217	35.6	32.5	167	34.6	53.0	289	15.3	58.7	303	47.3	28.9
4	274	22.7	232	35.1	33.5	182	35.4	53.0	304	17.4	58.6	318	49.6	28.9
5	289	25.1	247	34.5	+15 34.5	197	36.2	+24 53.0	319	19.5	−12 58.5	333	52.0	−17 28.8
6	304	27.6	262	33.9	+15 35.5	212	37.0	+24 53.0	334	21.6	−12 58.3	348	54.3	−17 28.8
7	319	30.1	277	33.4	36.5	227	37.8	52.9	349	23.7	58.2	3	56.7	28.8
8	334	32.5	292	32.8	37.5	242	38.6	52.9	4	25.8	58.1	18	59.0	28.8
9	349	35.0	307	32.2	38.5	257	39.4	52.9	19	27.9	58.0	34	01.4	28.7
10	4	37.5	322	31.7	39.5	272	40.2	52.9	34	30.0	57.9	49	03.7	28.7
11	19	39.9	337	31.1	+15 40.5	287	41.0	+24 52.8	49	32.1	−12 57.7	64	06.1	−17 28.7
12	34	42.4	352	30.5	+15 41.5	302	41.8	+24 52.8	64	34.2	−12 57.6	79	08.5	−17 28.7
13	49	44.9	7	30.0	42.5	317	42.6	52.8	79	36.3	57.5	94	10.8	28.6
14	64	47.3	22	29.4	43.5	332	43.4	52.8	94	38.3	57.4	109	13.2	28.6
15	79	49.8	37	28.8	44.5	347	44.1	52.7	109	40.4	57.2	124	15.5	28.6
16	94	52.2	52	28.3	45.5	2	44.9	52.7	124	42.5	57.1	139	17.9	28.6
17	109	54.7	67	27.7	+15 46.5	17	45.7	+24 52.7	139	44.6	−12 57.0	154	20.2	−17 28.5
18	124	57.2	82	27.1	+15 47.5	32	46.5	+24 52.6	154	46.7	−12 56.9	169	22.6	−17 28.5
19	139	59.6	97	26.5	48.5	47	47.3	52.6	169	48.8	56.8	184	24.9	28.5
20	155	02.1	112	26.0	49.5	62	48.1	52.6	184	50.9	56.6	199	27.3	28.5
21	170	04.6	127	25.4	50.4	77	48.9	52.6	199	53.0	56.5	214	29.7	28.4
22	185	07.0	142	24.8	51.4	92	49.7	52.5	214	55.1	56.4	229	32.0	28.4
23	200	09.5	157	24.3	52.4	107	50.5	52.5	229	57.2	56.3	244	34.4	28.4
24	215	12.0	172	23.7	+15 53.4	122	51.3	+24 52.5	244	59.3	−12 56.1	259	36.7	−17 28.4
Dif	—			−6	+10		+8	0		+21	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 14^{d}.9		PHE	4^{h}: 61′.3									
	PMG: 11^{h} 57^{m}.6				SD: 16′.7			12^{h}: 61′.4									
					PMG: **^{h} **^{m}			20^{h}: 61′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	34.7	+13	50.2	1	33.6	−10	14.5		**60 N**	2 02	3 17	4 09	20 34	109	4 41	8
1	195	34.8		51.0	16	00.6	80	29.7	152	**58**	25	31	17	24	103	47	13
2	210	34.9		51.8	30	27.5	79	44.8	151	**56**	44	42	25	15	99	53	17
3	225	35.0		52.6	44	54.3	78	−10 59.9	151	**54**	2 59	3 51	32	08	95	4 58	21
4	240	35.1		53.4	59	21.1	78	−11 14.9	150	**52**	3 11	4 00	38	20 01	92	5 03	23
5	255	35.2	+13	54.2	73	47.8	77	−11 29.8	149	**50**	3 22	4 08	4 43	19 54	90	5 08	25
6	270	35.3	+13	55.0	88	14.5	77	−11 44.7	149	**45**	3 44	4 23	4 55	19 41	84	5 17	31
7	285	35.4		55.8	102	41.0	75	−11 59.5	148	**40**	4 01	36	5 05	30	80	25	35
8	300	35.5		56.6	117	07.5	75	−12 14.2	147	**35**	15	47	13	21	76	32	39
9	315	35.6		57.3	131	33.9	74	28.8	146	**30**	26	4 56	21	19 13	73	38	42
10	330	35.7		58.1	146	00.3	74	43.4	146	**20**	43	5 10	33	18 59	68	49	47
11	345	35.8	+13	58.9	160	26.6	73	−12 57.8	144	**10 N**	4 57	5 22	5 44	18 47	63	5 58	52
12	0	35.9	+13	59.7	174	52.8	72	−13 12.2	144	**0**	5 08	5 33	5 54	18 36	59	6 07	57
13	15	36.0	+14	00.5	189	18.9	71	26.5	143	**10 S**	18	43	6 04	25	55	15	62
14	30	36.0		01.3	203	45.0	71	40.8	143	**20**	26	5 52	15	14	50	25	66
15	45	36.1		02.1	218	11.0	70	−13 54.9	141	**30**	34	6 02	27	18 00	45	35	72
16	60	36.2		02.9	232	36.9	69	−14 08.9	140	**35**	37	07	33	17 53	42	42	75
17	75	36.3	+14	03.7	247	02.7	68	−14 22.9	140	**40**	5 41	6 13	6 41	17 44	38	6 49	79
18	90	36.4	+14	04.5	261	28.5	68	−14 36.7	138	**45**	5 45	6 20	6 50	17 34	34	6 57	84
19	105	36.5		05.2	275	54.2	67	−14 50.5	138	**50**	49	27	7 01	22	29	7 07	90
20	120	36.6		06.0	290	19.8	66	−15 04.2	137	**52**	51	30	06	17	26	12	92
21	135	36.7		06.8	304	45.3	65	17.7	135	**54**	52	34	11	11	23	17	95
22	150	36.8		07.6	319	10.8	65	31.2	135	**56**	54	38	17	17 04	20	23	99
23	165	36.9		08.4	333	36.2	64	44.5	133	**58**	56	42	24	16 56	16	29	103
24	180	37.0	+14	09.2	348	01.5	63	−15 57.8	133	**60 S**	5 58	6 47	7 32	16 48	11	7 37	108

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	9^{h} 37^{m}.6		PMG: 12^{h} 31^{m}			PMG: 15^{h} 48^{m}			PMG: 7^{h} 39^{m}			PMG: 6^{h} 41^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	215	12.0	172	23.7	+15 53.4	122	51.3	+24 52.5	244	59.3	−12 56.1	259	36.7	−17 28.4
1	230	14.4	187	23.1	54.4	137	52.1	52.4	260	01.4	56.0	274	39.1	28.3
2	245	16.9	202	22.5	55.4	152	52.9	52.4	275	03.5	55.9	289	41.4	28.3
3	260	19.4	217	22.0	56.4	167	53.7	52.4	290	05.6	55.8	304	43.8	28.3
4	275	21.8	232	21.4	57.4	182	54.4	52.4	305	07.7	55.7	319	46.1	28.3
5	290	24.3	247	20.8	+15 58.4	197	55.2	+24 52.3	320	09.8	−12 55.5	334	48.5	−17 28.2
6	305	26.7	262	20.2	+15 59.3	212	56.0	+24 52.3	335	11.9	−12 55.4	349	50.9	−17 28.2
7	320	29.2	277	19.7	+16 00.3	227	56.8	52.3	350	14.0	55.3	4	53.2	28.2
8	335	31.7	292	19.1	01.3	242	57.6	52.2	5	16.1	55.2	19	55.6	28.2
9	350	34.1	307	18.5	02.3	257	58.4	52.2	20	18.2	55.1	34	57.9	28.1
10	5	36.6	322	17.9	03.3	272	59.2	52.2	35	20.3	54.9	50	00.3	28.1
11	20	39.1	337	17.3	+16 04.3	288	00.0	+24 52.1	50	22.4	−12 54.8	65	02.7	−17 28.1
12	35	41.5	352	16.8	+16 05.2	303	00.8	+24 52.1	65	24.5	−12 54.7	80	05.0	−17 28.1
13	50	44.0	7	16.2	06.2	318	01.6	52.1	80	26.6	54.6	95	07.4	28.0
14	65	46.5	22	15.6	07.2	333	02.4	52.0	95	28.7	54.4	110	09.7	28.0
15	80	48.9	37	15.0	08.2	348	03.2	52.0	110	30.8	54.3	125	12.1	28.0
16	95	51.4	52	14.4	09.2	3	04.0	52.0	125	32.9	54.2	140	14.4	28.0
17	110	53.8	67	13.9	+16 10.1	18	04.7	+24 51.9	140	35.0	−12 54.1	155	16.8	−17 27.9
18	125	56.3	82	13.3	+16 11.1	33	05.5	+24 51.9	155	37.1	−12 54.0	170	19.2	−17 27.9
19	140	58.8	97	12.7	12.1	48	06.3	51.9	170	39.2	53.8	185	21.5	27.9
20	156	01.2	112	12.1	13.1	63	07.1	51.8	185	41.3	53.7	200	23.9	27.9
21	171	03.7	127	11.5	14.0	78	07.9	51.8	200	43.4	53.6	215	26.2	27.8
22	186	06.2	142	10.9	15.0	93	08.7	51.8	215	45.5	53.5	230	28.6	27.8
23	201	08.6	157	10.4	16.0	108	09.5	51.7	230	47.6	53.4	245	31.0	27.8
24	216	11.1	172	09.8	+16 17.0	123	10.3	+24 51.7	245	49.8	−12 53.2	260	33.3	−17 27.8
Dif	—			−6	+10		+8	0		+21	+1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 15.d9		PHE	4h: 61′.3								
	PMG: 11h 57.m5		SD: 16′.7			12h: 61′.2								
			PMG: 0h 50m			20h: 61′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 37.0	+14 09.2	348 01.5	63	−15 57.8	131	**60 N**	19 51	20 43	22 02	22 23	104	4 49	14
1	195 37.1	10.0	2 26.8	61	−16 10.9	130	**58**	42	29	21 37	22 07	99	5 00	20
2	210 37.2	10.8	16 51.9	61	23.9	130	**56**	34	18	17	21 54	94	10	23
3	225 37.3	11.5	31 17.0	61	36.9	130	**54**	27	20 07	21 01	43	90	19	26
4	240 37.4	12.3	45 42.1	61	−16 49.7	128	**52**	20	19 59	20 48	33	87	26	30
5	255 37.4	+14 13.1	60 07.0	59	−17 02.3	126	**50**	19 14	19 51	20 37	21 24	85	5 33	33
6	270 37.5	+14 13.9	74 31.9	59	−17 14.9	126	**45**	19 02	19 34	20 14	21 05	81	5 48	38
7	285 37.6	14.7	88 56.7	58	27.4	125	**40**	18 52	21	19 56	20 50	77	6 00	42
8	300 37.7	15.5	103 21.4	57	39.7	123	**35**	43	10	42	37	74	11	45
9	315 37.8	16.2	117 46.1	57	−17 51.9	122	**30**	36	19 01	31	26	72	20	48
10	330 37.9	17.0	132 10.7	56	−18 04.0	121	**20**	23	18 46	19 13	20 07	68	36	53
11	345 38.0	+14 17.8	146 35.2	55	−18 15.9	119	**10 N**	18 11	18 33	18 58	19 50	65	6 50	57
12	0 38.1	+14 18.6	160 59.6	54	−18 27.7	118	**0**	18 01	18 22	18 47	19 35	61	7 04	60
13	15 38.2	19.4	175 24.0	54	39.4	117	**10 S**	17 51	12	37	20	58	17	64
14	30 38.3	20.1	189 48.3	53	−18 51.0	116	**20**	40	18 02	28	19 04	54	31	68
15	45 38.4	20.9	204 12.5	52	−19 02.4	114	**30**	27	17 52	20	18 45	51	47	73
16	60 38.4	21.7	218 36.7	52	13.7	113	**35**	20	46	16	35	48	7 57	75
17	75 38.5	+14 22.5	233 00.8	51	−19 24.8	111	**40**	17 12	17 40	18 12	18 22	46	8 08	79
18	90 38.6	+14 23.3	247 24.8	50	−19 35.8	110	**45**	17 03	17 34	18 08	18 08	42	8 21	83
19	105 38.7	24.0	261 48.8	50	46.7	109	**50**	16 52	26	04	17 51	37	37	88
20	120 38.8	24.8	276 12.7	49	−19 57.4	107	**52**	47	22	02	43	35	44	91
21	135 38.9	25.6	290 36.5	48	−20 08.0	106	**54**	41	18	18 00	34	32	8 52	94
22	150 39.0	26.4	305 00.3	48	18.4	104	**56**	35	14	17 58	24	28	9 02	97
23	165 39.1	27.2	319 24.0	47	28.7	103	**58**	28	10	56	17 12	25	12	102
24	180 39.2	+14 27.9	333 47.6	46	−20 38.8	101	**60 S**	16 20	17 05	17 54	16 59	19	9 25	107

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.5		Mag: −2.3		Mag: +0.7	
	9h 33.m7	PMG: 12h 32m		PMG: 15h 46m		PMG: 7h 36m		PMG: 6h 37m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	216 11.1	172 09.8	+16 17.0	123 10.3	+24 51.7	245 49.8	−12 53.2	260 33.3	−17 27.8
1	231 13.6	187 09.2	17.9	138 11.1	51.6	260 51.9	53.1	275 35.7	27.8
2	246 16.0	202 08.6	18.9	153 11.9	51.6	275 54.0	53.0	290 38.0	27.7
3	261 18.5	217 08.0	19.9	168 12.7	51.6	290 56.1	52.9	305 40.4	27.7
4	276 21.0	232 07.4	20.8	183 13.5	51.5	305 58.2	52.8	320 42.8	27.7
5	291 23.4	247 06.8	+16 21.8	198 14.3	+24 51.5	321 00.3	−12 52.6	335 45.1	−17 27.7
6	306 25.9	262 06.3	+16 22.8	213 15.0	+24 51.5	336 02.4	−12 52.5	350 47.5	−17 27.6
7	321 28.3	277 05.7	23.8	228 15.8	51.4	351 04.5	52.4	5 49.8	27.6
8	336 30.8	292 05.1	24.7	243 16.6	51.4	6 06.6	52.3	20 52.2	27.6
9	351 33.3	307 04.5	25.7	258 17.4	51.3	21 08.7	52.2	35 54.6	27.6
10	6 35.7	322 03.9	26.7	273 18.2	51.3	36 10.8	52.0	50 56.9	27.5
11	21 38.2	337 03.3	+16 27.6	288 19.0	+24 51.3	51 12.9	−12 51.9	65 59.3	−17 27.5
12	36 40.7	352 02.7	+16 28.6	303 19.8	+24 51.2	66 15.0	−12 51.8	81 01.7	−17 27.5
13	51 43.1	7 02.1	29.5	318 20.6	51.2	81 17.1	51.7	96 04.0	27.5
14	66 45.6	22 01.5	30.5	333 21.4	51.1	96 19.2	51.6	111 06.4	27.5
15	81 48.1	37 00.9	31.5	348 22.2	51.1	111 21.3	51.5	126 08.7	27.4
16	96 50.5	52 00.4	32.4	3 23.0	51.1	126 23.4	51.3	141 11.1	27.4
17	111 53.0	66 59.8	+16 33.4	18 23.8	+24 51.0	141 25.5	−12 51.2	156 13.5	−17 27.4
18	126 55.5	81 59.2	+16 34.3	33 24.6	+24 51.0	156 27.7	−12 51.1	171 15.8	−17 27.4
19	141 57.9	96 58.6	35.3	48 25.3	50.9	171 29.8	51.0	186 18.2	27.3
20	157 00.4	111 58.0	36.3	63 26.1	50.9	186 31.9	50.9	201 20.6	27.3
21	172 02.8	126 57.4	37.2	78 26.9	50.9	201 34.0	50.7	216 22.9	27.3
22	187 05.3	141 56.8	38.2	93 27.7	50.8	216 36.1	50.6	231 25.3	27.3
23	202 07.8	156 56.2	39.1	108 28.5	50.8	231 38.2	50.5	246 27.6	27.2
24	217 10.2	171 55.6	+16 40.1	123 29.3	+24 50.7	246 40.3	−12 50.4	261 30.0	−17 27.2
Dif	—	−6	+10	+8	0	+21	+1	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 16^{d}.9		PHE	4^{h}: 61′.0									
	PMG: 11^{h} 57^{m}.3				SD: 16′.6			12^{h}: 60′.8									
					PMG: 1^{h} 49^{m}			20^{h}: 60′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	39.2	+14	27.9	333	47.6	−20	38.8		**60 N**	1 52	3 11	4 03	** **	**	5 03	25
1	195	39.2		28.7	348	11.2 46		48.8	100	**58**	2 17	25	12	23 46	82	20	30
2	210	39.3		29.5	2	34.7 45	−20	58.6	98	**56**	37	36	20	28	80	33	35
3	225	39.4		30.3	16	58.2 45	−21	08.3	97	**54**	2 53	47	28	13	78	45	38
4	240	39.5		31.0	31	21.6 44		17.8	95	**52**	3 06	3 56	34	23 00	76	5 56	40
5	255	39.6	+14	31.8	45	44.9 43	−21	27.1	93	**50**	3 17	4 04	4 40	22 49	75	6 06	42
6	270	39.7	+14	32.6	60	08.2 43	−21	36.3	92	**45**	3 40	4 20	4 52	22 26	72	6 26	46
7	285	39.8		33.4	74	31.5 43		45.4	91	**40**	3 58	33	5 02	22 07	70	42	50
8	300	39.8		34.1	88	54.6 41	−21	54.3	89	**35**	4 12	44	11	21 51	69	6 56	52
9	315	39.9		34.9	103	17.8 42	−22	03.0	87	**30**	24	4 54	19	38	67	7 08	54
10	330	40.0		35.7	117	40.9 41		11.5	85	**20**	42	5 09	32	21 15	65	29	57
11	345	40.1	+14	36.4	132	03.9 40	−22	19.9	84	**10 N**	4 56	5 22	5 43	20 55	64	7 47	60
12	0	40.2	+14	37.2	146	26.9 40	−22	28.1	82	**0**	5 08	5 33	5 54	20 36	63	8 04	62
13	15	40.3		38.0	160	49.9 40		36.2	81	**10 S**	18	43	6 04	20 18	61	21	64
14	30	40.4		38.8	175	12.8 39		44.1	79	**20**	27	5 53	15	19 58	59	8 39	67
15	45	40.4		39.5	189	35.6 38		51.8	77	**30**	35	6 03	28	36	57	9 00	70
16	60	40.5		40.3	203	58.5 39	−22	59.4	76	**35**	39	09	35	23	55	12	73
17	75	40.6	+14	41.1	218	21.3 38	−23	06.7	73	**40**	5 43	6 15	6 43	19 08	54	9 27	74
18	90	40.7	+14	41.8	232	44.0 37	−23	14.0	73	**45**	5 47	6 22	6 53	18 50	52	9 44	77
19	105	40.8		42.6	247	06.7 37		21.0	70	**50**	52	30	7 04	28	49	10 05	80
20	120	40.9		43.4	261	29.4 37		27.8	68	**52**	53	33	09	18	46	15	82
21	135	40.9		44.1	275	52.1 37		34.5	67	**54**	55	37	15	18 06	45	26	85
22	150	41.0		44.9	290	14.7 36		41.0	65	**56**	5 57	42	21	17 52	43	39	87
23	165	41.1		45.7	304	37.3 36		47.4	64	**58**	6 00	46	29	37	39	10 54	91
24	180	41.2	+14	46.4	318	59.9 36	−23	53.5	61	**60 S**	6 02	6 51	7 37	17 18	34	11 12	96

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.5			Mag: −2.3			Mag: +0.7		
	9^{h} 29^{m}.8		PMG: 12^{h} 33^{m}			PMG: 15^{h} 45^{m}			PMG: 7^{h} 32^{m}			PMG: 6^{h} 33^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	217	10.2	171	55.6	+16 40.1	123	29.3	+24 50.7	246	40.3	−12 50.4	261	30.0	−17 27.2
1	232	12.7	186	55.0	41.0	138	30.1	50.7	261	42.4	50.3	276	32.4	27.2
2	247	15.2	201	54.4	42.0	153	30.9	50.6	276	44.5	50.1	291	34.7	27.2
3	262	17.6	216	53.8	43.0	168	31.7	50.6	291	46.6	50.0	306	37.1	27.2
4	277	20.1	231	53.2	43.9	183	32.5	50.5	306	48.7	49.9	321	39.5	27.1
5	292	22.6	246	52.6	+16 44.9	198	33.3	+24 50.5	321	50.8	−12 49.8	336	41.8	−17 27.1
6	307	25.0	261	52.0	+16 45.8	213	34.1	+24 50.5	336	53.0	−12 49.7	351	44.2	−17 27.1
7	322	27.5	276	51.4	46.8	228	34.8	50.4	351	55.1	49.6	6	46.6	27.1
8	337	30.0	291	50.8	47.7	243	35.6	50.4	6	57.2	49.4	21	48.9	27.0
9	352	32.4	306	50.2	48.7	258	36.4	50.3	21	59.3	49.3	36	51.3	27.0
10	7	34.9	321	49.6	49.6	273	37.2	50.3	37	01.4	49.2	51	53.7	27.0
11	22	37.3	336	49.0	+16 50.6	288	38.0	+24 50.2	52	03.5	−12 49.1	66	56.0	−17 27.0
12	37	39.8	351	48.4	+16 51.5	303	38.8	+24 50.2	67	05.6	−12 49.0	81	58.4	−17 27.0
13	52	42.3	6	47.8	52.4	318	39.6	50.1	82	07.7	48.9	97	00.8	26.9
14	67	44.7	21	47.2	53.4	333	40.4	50.1	97	09.8	48.7	112	03.1	26.9
15	82	47.2	36	46.6	54.3	348	41.2	50.0	112	12.0	48.6	127	05.5	26.9
16	97	49.7	51	46.0	55.3	3	42.0	50.0	127	14.1	48.5	142	07.9	26.9
17	112	52.1	66	45.4	+16 56.2	18	42.8	+24 49.9	142	16.2	−12 48.4	157	10.2	−17 26.8
18	127	54.6	81	44.8	+16 57.2	33	43.6	+24 49.9	157	18.3	−12 48.3	172	12.6	−17 26.8
19	142	57.1	96	44.2	58.1	48	44.3	49.8	172	20.4	48.1	187	15.0	26.8
20	157	59.5	111	43.6	+16 59.0	63	45.1	49.8	187	22.5	48.0	202	17.3	26.8
21	173	02.0	126	43.0	+17 00.0	78	45.9	49.7	202	24.6	47.9	217	19.7	26.8
22	188	04.5	141	42.4	+17 00.9	93	46.7	49.7	217	26.7	47.8	232	22.1	26.7
23	203	06.9	156	41.8	01.9	108	47.5	49.6	232	28.9	47.7	247	24.4	26.7
24	218	09.4	171	41.2	+17 02.8	123	48.3	+24 49.6	247	31.0	−12 47.6	262	26.8	−17 26.7
Dif	—			−6	+9		+8	0		+21	+1		+24	0

UT	SOL SD: 15′.9 PMG: 11h 57m.2				☽ LUNA Edad: 17d.9 SD: 16′.5 PMG: 2h 51m PHE 4h: 60′.4; 12h: 60′.1; 20h: 59′.9 Rº: 63m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	41.2	+14	46.4	318	59.9	−23	53.5	**60 N**	19 56	20 49	22 12	0 07	86	5 28	45
1	195	41.3		47.2	333	22.5 36	−23	59.5 60	**58**	46	35	21 44	** **	**	5 50	48
2	210	41.3		48.0	347	45.0 35	−24	05.3 58	**56**	38	22	23	** **	**	6 08	51
3	225	41.4		48.7	2	07.5 35		11.0 57	**54**	30	12	21 07	** **	**	23	53
4	240	41.5		49.5	16	30.0 35		16.4 54	**52**	24	20 02	20 53	** **	**	36	54
5	255	41.6	+14	50.3	30	52.5 35	−24	21.7 53	**50**	19 17	19 54	20 41	** **	**	6 48	55
6	270	41.7	+14	51.0	45	15.0 35	−24	26.8 51	**45**	19 04	19 37	20 17	23 38	60	7 12	57
7	285	41.8		51.8	59	37.5 35		31.7 49	**40**	18 54	23	19 59	17	61	32	57
8	300	41.8		52.6	73	59.9 34		36.4 47	**35**	45	12	44	23 00	61	7 48	59
9	315	41.9		53.3	88	22.4 35		40.9 45	**30**	37	19 02	32	22 45	61	8 02	59
10	330	42.0		54.1	102	44.8 34		45.3 44	**20**	23	18 46	19 13	22 20	62	26	61
11	345	42.1	+14	54.8	117	07.3 35	−24	49.5 42	**10 N**	18 12	18 33	18 59	21 59	61	8 47	61
12	0	42.2	+14	55.6	131	29.7 34	−24	53.5 40	**0**	18 01	18 22	18 47	21 39	61	9 06	62
13	15	42.2		56.4	145	52.1 34	−24	57.3 38	**10 S**	17 50	12	37	21 19	61	25	64
14	30	42.3		57.1	160	14.6 35	−25	00.9 36	**20**	38	18 01	27	20 57	62	9 46	64
15	45	42.4		57.9	174	37.1 35		04.4 35	**30**	26	17 50	19	33	61	10 10	65
16	60	42.5		58.6	188	59.5 34		07.7 33	**35**	18	44	14	18	62	25	65
17	75	42.5	+14	59.4	203	22.0 35	−25	10.7 30	**40**	17 10	17 38	18 10	20 02	61	10 41	66
18	90	42.6	+15	00.2	217	44.5 35	−25	13.6 29	**45**	17 00	17 31	18 06	19 42	61	11 01	66
19	105	42.7		00.9	232	07.0 35		16.4 28	**50**	16 48	22	18 01	17	60	25	68
20	120	42.8		01.7	246	29.6 36		18.9 25	**52**	43	19	17 59	19 04	61	37	68
21	135	42.9		02.4	260	52.1 35		21.3 24	**54**	37	15	57	18 51	60	11 51	68
22	150	42.9		03.2	275	14.7 36		23.5 22	**56**	30	10	54	35	59	12 06	70
23	165	43.0		04.0	289	37.3 36		25.4 19	**58**	23	05	52	18 16	59	25	71
24	180	43.1	+15	04.7	303	59.9 36	−25	27.3 19	**60 S**	16 14	17 00	17 49	17 52	58	12 48	72

UT	ARIES PMG 9h 25m.8		VENUS Mag: −3.9 PMG: 12h 34m			MARTE Mag: +1.6 PMG: 15h 44m			JÚPITER Mag: −2.3 PMG: 7h 29m			SATURNO Mag: +0.7 PMG: 6h 29m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	218	09.4	171	41.2	+17 02.8	123	48.3	+24 49.6	247	31.0	−12 47.6	262	26.8	−17 26.7
1	233	11.8	186	40.6	03.7	138	49.1	49.5	262	33.1	47.4	277	29.2	26.7
2	248	14.3	201	39.9	04.7	153	49.9	49.5	277	35.2	47.3	292	31.5	26.7
3	263	16.8	216	39.3	05.6	168	50.7	49.4	292	37.3	47.2	307	33.9	26.6
4	278	19.2	231	38.7	06.5	183	51.5	49.4	307	39.4	47.1	322	36.3	26.6
5	293	21.7	246	38.1	+17 07.5	198	52.3	+24 49.3	322	41.6	−12 47.0	337	38.6	−17 26.6
6	308	24.2	261	37.5	+17 08.4	213	53.1	+24 49.3	337	43.7	−12 46.9	352	41.0	−17 26.6
7	323	26.6	276	36.9	09.3	228	53.9	49.2	352	45.8	46.8	7	43.4	26.5
8	338	29.1	291	36.3	10.3	243	54.6	49.2	7	47.9	46.6	22	45.7	26.5
9	353	31.6	306	35.7	11.2	258	55.4	49.1	22	50.0	46.5	37	48.1	26.5
10	8	34.0	321	35.1	12.1	273	56.2	49.1	37	52.1	46.4	52	50.5	26.5
11	23	36.5	336	34.4	+17 13.1	288	57.0	+24 49.0	52	54.2	−12 46.3	67	52.8	−17 26.5
12	38	38.9	351	33.8	+17 14.0	303	57.8	+24 49.0	67	56.4	−12 46.2	82	55.2	−17 26.4
13	53	41.4	6	33.2	14.9	318	58.6	48.9	82	58.5	46.1	97	57.6	26.4
14	68	43.9	21	32.6	15.8	333	59.4	48.8	98	00.6	45.9	113	00.0	26.4
15	83	46.3	36	32.0	16.8	349	00.2	48.8	113	02.7	45.8	128	02.3	26.4
16	98	48.8	51	31.4	17.7	4	01.0	48.7	128	04.8	45.7	143	04.7	26.4
17	113	51.3	66	30.8	+17 18.6	19	01.8	+24 48.7	143	06.9	−12 45.6	158	07.1	−17 26.3
18	128	53.7	81	30.1	+17 19.5	34	02.6	+24 48.6	158	09.1	−12 45.5	173	09.4	−17 26.3
19	143	56.2	96	29.5	20.5	49	03.4	48.6	173	11.2	45.4	188	11.8	26.3
20	158	58.7	111	28.9	21.4	64	04.1	48.5	188	13.3	45.2	203	14.2	26.3
21	174	01.1	126	28.3	22.3	79	04.9	48.4	203	15.4	45.1	218	16.6	26.3
22	189	03.6	141	27.7	23.2	94	05.7	48.4	218	17.5	45.0	233	18.9	26.2
23	204	06.1	156	27.1	24.1	109	06.5	48.3	233	19.7	44.9	248	21.3	26.2
24	219	08.5	171	26.4	+17 25.1	124	07.3	+24 48.3	248	21.8	−12 44.8	263	23.7	−17 26.2
Dif	—			−6	+9		+8	−1		+21	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 18^{d}.9		PHE	4^{h}: 59′.6									
	PMG: 11^{h} 57^{m}.1				SD: 16′.3			12^{h}: 59′.3									
					PMG: 3^{h} 54^{m}			20^{h}: 59′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	43.1	+15	04.7	303	59.9	−25	27.3		**60 N**	1 42	3 04	3 58	1 33	56	6 13	71
1	195	43.2		05.5	318	22.6 37		28.9	16	**58**	2 09	19	4 07	1 08	57	38	70
2	210	43.2		06.2	332	45.3 37		30.4	15	**56**	30	31	16	0 48	58	6 59	68
3	225	43.3		07.0	347	08.0 37		31.6	12	**54**	2 47	42	23	31	59	7 16	67
4	240	43.4		07.7	1	30.8 38		32.7	11	**52**	3 01	3 51	30	16	60	30	67
5	255	43.5	+15	08.5	15	53.6 38	−25	33.6	9	**50**	3 13	4 00	4 36	0 04	59	7 43	66
6	270	43.5	+15	09.2	30	16.4 38	−25	34.4	8	**45**	3 37	4 17	4 49	** **	**	8 09	65
7	285	43.6		10.0	44	39.3 39		34.9	5	**40**	3 55	31	5 00	** **	**	29	65
8	300	43.7		10.7	59	02.2 39		35.3	4	**35**	4 10	42	09	** **	**	8 47	63
9	315	43.8		11.5	73	25.2 40		35.5	2	**30**	22	4 52	17	23 46	53	9 01	63
10	330	43.8		12.2	87	48.3 41		35.5	0	**20**	41	5 08	31	22	55	27	61
11	345	43.9	+15	13.0	102	11.3 40	−25	35.4	1	**10 N**	4 55	5 21	5 43	23 00	57	9 48	61
12	0	44.0	+15	13.7	116	34.5 42	−25	35.1	3	**0**	5 07	5 32	5 54	22 40	59	10 08	61
13	15	44.1		14.5	130	57.7 42		34.6	5	**10 S**	18	43	6 05	22 20	60	29	59
14	30	44.1		15.3	145	20.9 42		33.9	7	**20**	27	5 53	16	21 59	62	10 50	59
15	45	44.2		16.0	159	44.2 43		33.0	9	**30**	36	6 04	29	34	64	11 15	57
16	60	44.3		16.7	174	07.6 44		32.0	10	**35**	40	10	37	20	64	30	56
17	75	44.3	+15	17.5	188	31.0 44	−25	30.8	12	**40**	5 45	6 17	6 45	21 03	66	11 47	55
18	90	44.4	+15	18.2	202	54.5 45	−25	29.5	13	**45**	5 49	6 24	6 55	20 43	67	12 07	54
19	105	44.5		19.0	217	18.1 46		27.9	16	**50**	54	33	7 07	17	70	33	52
20	120	44.6		19.7	231	41.7 46		26.2	17	**52**	56	36	12	20 05	71	45	52
21	135	44.6		20.5	246	05.4 47		24.4	18	**54**	5 59	41	18	19 51	72	12 59	50
22	150	44.7		21.2	260	29.2 48		22.3	21	**56**	6 01	45	25	34	75	13 16	48
23	165	44.8		22.0	274	53.0 48		20.2	21	**58**	03	50	33	19 15	77	13 36	46
24	180	44.8	+15	22.7	289	16.9 49	−25	17.8	24	**60 S**	6 06	6 56	7 41	18 50	81	14 00	43

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	9^{h} 21^{m}.9		PMG: 12^{h} 35^{m}			PMG: 15^{h} 43^{m}			PMG: 7^{h} 25^{m}			PMG: 6^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	219	08.5	171	26.4	+17 25.1	124	07.3	+24 48.3	248	21.8	−12 44.8	263	23.7	−17 26.2
1	234	11.0	186	25.8	26.0	139	08.1	48.2	263	23.9	44.7	278	26.0	26.2
2	249	13.4	201	25.2	26.9	154	08.9	48.2	278	26.0	44.6	293	28.4	26.2
3	264	15.9	216	24.6	27.8	169	09.7	48.1	293	28.1	44.4	308	30.8	26.1
4	279	18.4	231	24.0	28.7	184	10.5	48.0	308	30.3	44.3	323	33.2	26.1
5	294	20.8	246	23.3	+17 29.6	199	11.3	+24 48.0	323	32.4	−12 44.2	338	35.5	−17 26.1
6	309	23.3	261	22.7	+17 30.6	214	12.1	+24 47.9	338	34.5	−12 44.1	353	37.9	−17 26.1
7	324	25.8	276	22.1	31.5	229	12.9	47.9	353	36.6	44.0	8	40.3	26.1
8	339	28.2	291	21.5	32.4	244	13.6	47.8	8	38.7	43.9	23	42.6	26.0
9	354	30.7	306	20.8	33.3	259	14.4	47.7	23	40.9	43.8	38	45.0	26.0
10	9	33.2	321	20.2	34.2	274	15.2	47.7	38	43.0	43.6	53	47.4	26.0
11	24	35.6	336	19.6	+17 35.1	289	16.0	+24 47.6	53	45.1	−12 43.5	68	49.8	−17 26.0
12	39	38.1	351	19.0	+17 36.0	304	16.8	+24 47.6	68	47.2	−12 43.4	83	52.1	−17 26.0
13	54	40.6	6	18.3	36.9	319	17.6	47.5	83	49.3	43.3	98	54.5	25.9
14	69	43.0	21	17.7	37.9	334	18.4	47.4	98	51.5	43.2	113	56.9	25.9
15	84	45.5	36	17.1	38.8	349	19.2	47.4	113	53.6	43.1	128	59.3	25.9
16	99	47.9	51	16.5	39.7	4	20.0	47.3	128	55.7	43.0	144	01.6	25.9
17	114	50.4	66	15.8	+17 40.6	19	20.8	+24 47.2	143	57.8	−12 42.8	159	04.0	−17 25.9
18	129	52.9	81	15.2	+17 41.5	34	21.6	+24 47.2	159	00.0	−12 42.7	174	06.4	−17 25.8
19	144	55.3	96	14.6	42.4	49	22.4	47.1	174	02.1	42.6	189	08.8	25.8
20	159	57.8	111	14.0	43.3	64	23.1	47.1	189	04.2	42.5	204	11.1	25.8
21	175	00.3	126	13.3	44.2	79	23.9	47.0	204	06.3	42.4	219	13.5	25.8
22	190	02.7	141	12.7	45.1	94	24.7	46.9	219	08.5	42.3	234	15.9	25.8
23	205	05.2	156	12.1	46.0	109	25.5	46.9	234	10.6	42.2	249	18.3	25.7
24	220	07.7	171	11.4	+17 46.9	124	26.3	+24 46.8	249	12.7	−12 42.1	264	20.6	−17 25.7
Dif	—			−6	+9		+8	−1		+21	+1		+24	0

UT	SOL SD: 15′.9 PMG: 11h 57m.0				LUNA Edad: 19d.9 SD: 16′.0 PMG: 4h 55m PHE 4h: 58′.7; 12h: 58′.4; 20h: 58′.1 Rº: 57m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	44.8	+15	22.7	289	16.9	−25	17.8	**60 N**	20 01	20 55	22 23	2 29	31	7 24	88
1	195	44.9		23.5	303	40.9 50		15.3 25	**58**	19 51	40	21 52	2 05	36	7 48	83
2	210	45.0		24.2	318	05.0 51		12.6 27	**56**	42	27	30	1 46	39	8 07	80
3	225	45.1		25.0	332	29.2 52		09.7 29	**54**	34	16	21 12	30	41	23	77
4	240	45.1		25.7	346	53.4 52		06.7 30	**52**	27	20 06	20 58	16	43	37	75
5	255	45.2	+15	26.5	1	17.7 53	−25	03.6 31	**50**	19 21	19 57	20 45	1 03	45	8 49	73
6	270	45.3	+15	27.2	15	42.1 54	−25	00.2 34	**45**	19 07	19 40	20 20	0 38	48	9 14	70
7	285	45.3		27.9	30	06.6 55	−24	56.8 34	**40**	18 56	25	20 01	18	50	34	67
8	300	45.4		28.7	44	31.2 56		53.1 37	**35**	46	14	19 46	0 01	51	9 50	65
9	315	45.5		29.4	58	55.9 57		49.3 38	**30**	38	19 04	34	** **	**	10 04	64
10	330	45.5		30.2	73	20.6 57		45.4 39	**20**	24	18 47	19 14	** **	**	28	61
11	345	45.6	+15	30.9	87	45.5 59	−24	41.3 41	**10 N**	18 12	18 34	18 59	23 57	51	10 49	59
12	0	45.7	+15	31.6	102	10.4 59	−24	37.1 42	**0**	18 00	18 22	18 47	23 39	54	11 09	56
13	15	45.7		32.4	116	35.4 60		32.7 44	**10 S**	17 49	11	36	20	57	28	54
14	30	45.8		33.1	131	00.5 61		28.1 46	**20**	37	18 00	26	23 01	59	11 49	51
15	45	45.9		33.9	145	25.8 63		23.4 47	**30**	24	17 49	17	22 38	63	12 12	49
16	60	45.9		34.6	159	51.1 63		18.6 48	**35**	16	42	13	24	65	26	47
17	75	46.0	+15	35.3	174	16.5 64	−24	13.6 50	**40**	17 07	17 36	18 08	22 09	67	12 42	45
18	90	46.1	+15	36.1	188	42.0 65	−24	08.5 51	**45**	16 57	17 28	18 03	21 50	71	13 01	43
19	105	46.1		36.8	203	07.6 66	−24	03.3 52	**50**	45	19	17 58	27	75	25	39
20	120	46.2		37.6	217	33.3 67	−23	57.9 54	**52**	39	15	55	16	76	37	36
21	135	46.3		38.3	231	59.1 68		52.3 56	**54**	33	11	53	21 03	79	13 49	35
22	150	46.3		39.0	246	25.1 70		46.6 57	**56**	26	06	51	20 49	82	14 04	32
23	165	46.4		39.8	260	51.1 70		40.8 58	**58**	18	17 01	48	32	85	22	28
24	180	46.5	+15	40.5	275	17.2 71	−23	34.9 59	**60 S**	16 09	16 55	17 45	20 11	91	14 43	23

UT	ARIES PMG 9h 18m.0		VENUS Mag: −3.9 PMG: 12h 36m			MARTE Mag: +1.6 PMG: 15h 41m			JÚPITER Mag: −2.3 PMG: 7h 22m			SATURNO Mag: +0.7 PMG: 6h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	220	07.7	171	11.4	+17 46.9	124	26.3	+24 46.8	249	12.7	−12 42.1	264	20.6	−17 25.7
1	235	10.1	186	10.8	47.8	139	27.1	46.7	264	14.8	41.9	279	23.0	25.7
2	250	12.6	201	10.2	48.7	154	27.9	46.7	279	17.0	41.8	294	25.4	25.7
3	265	15.1	216	09.5	49.6	169	28.7	46.6	294	19.1	41.7	309	27.8	25.7
4	280	17.5	231	08.9	50.5	184	29.5	46.5	309	21.2	41.6	324	30.1	25.6
5	295	20.0	246	08.3	+17 51.4	199	30.3	+24 46.5	324	23.3	−12 41.5	339	32.5	−17 25.6
6	310	22.4	261	07.6	+17 52.3	214	31.1	+24 46.4	339	25.5	−12 41.4	354	34.9	−17 25.6
7	325	24.9	276	07.0	53.2	229	31.9	46.3	354	27.6	41.3	9	37.3	25.6
8	340	27.4	291	06.4	54.1	244	32.6	46.3	9	29.7	41.2	24	39.6	25.6
9	355	29.8	306	05.7	55.0	259	33.4	46.2	24	31.8	41.0	39	42.0	25.5
10	10	32.3	321	05.1	55.8	274	34.2	46.1	39	34.0	40.9	54	44.4	25.5
11	25	34.8	336	04.5	+17 56.7	289	35.0	+24 46.1	54	36.1	−12 40.8	69	46.8	−17 25.5
12	40	37.2	351	03.8	+17 57.6	304	35.8	+24 46.0	69	38.2	−12 40.7	84	49.2	−17 25.5
13	55	39.7	6	03.2	58.5	319	36.6	45.9	84	40.3	40.6	99	51.5	25.5
14	70	42.2	21	02.6	+17 59.4	334	37.4	45.9	99	42.5	40.5	114	53.9	25.5
15	85	44.6	36	01.9	+18 00.3	349	38.2	45.8	114	44.6	40.4	129	56.3	25.4
16	100	47.1	51	01.3	01.2	4	39.0	45.7	129	46.7	40.3	144	58.7	25.4
17	115	49.6	66	00.6	+18 02.1	19	39.8	+24 45.6	144	48.9	−12 40.1	160	01.0	−17 25.4
18	130	52.0	81	00.0	+18 03.0	34	40.6	+24 45.6	159	51.0	−12 40.0	175	03.4	−17 25.4
19	145	54.5	95	59.4	03.8	49	41.4	45.5	174	53.1	39.9	190	05.8	25.4
20	160	56.9	110	58.7	04.7	64	42.2	45.4	189	55.2	39.8	205	08.2	25.3
21	175	59.4	125	58.1	05.6	79	42.9	45.4	204	57.4	39.7	220	10.6	25.3
22	191	01.9	140	57.4	06.5	94	43.7	45.3	219	59.5	39.6	235	12.9	25.3
23	206	04.3	155	56.8	07.4	109	44.5	45.2	235	01.6	39.5	250	15.3	25.3
24	221	06.8	170	56.2	+18 08.2	124	45.3	+24 45.1	250	03.8	−12 39.4	265	17.7	−17 25.3
Dif	—			−6	+9		+8	−1		+21	+1		+24	0

UT	SOL SD: 15′.9 PMG: 11h 56m.9				LUNA Edad: 20d.9 SD: 15′.8 PMG: 5h 52m PHE 4h: 57′.8; 12h: 57′.5; 20h: 57′.2 Rº: 53m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	46.5	+15	40.5	275	17.2	−23	34.9	**60 N**	1 30	2 58	3 52	3 00	17	8 52	93
1	195	46.5		41.2	289	43.4 72		28.8 61	**58**	2 01	3 13	4 02	2 41	21	9 11	87
2	210	46.6		42.0	304	09.7 73		22.6 62	**56**	23	26	11	25	25	27	83
3	225	46.7		42.7	318	36.2 75		16.3 63	**54**	41	37	19	2 11	28	40	80
4	240	46.7		43.4	333	02.7 75		09.8 65	**52**	2 56	47	26	1 59	31	9 52	77
5	255	46.8	+15	44.2	347	29.3 76	−23	03.2 66	**50**	3 08	3 56	4 33	1 48	33	10 02	75
6	270	46.8	+15	44.9	1	56.1 78	−22	56.5 67	**45**	3 33	4 14	4 46	1 26	37	10 24	70
7	285	46.9		45.6	16	22.9 78		49.7 68	**40**	3 52	28	4 58	1 08	40	41	67
8	300	47.0		46.4	30	49.9 80		42.7 70	**35**	4 07	40	5 07	0 52	43	10 55	65
9	315	47.0		47.1	45	16.9 80		35.6 71	**30**	20	4 50	15	39	45	11 08	62
10	330	47.1		47.8	59	44.1 82		28.4 72	**20**	39	5 06	30	0 17	48	29	59
11	345	47.2	+15	48.6	74	11.4 83	−22	21.1 73	**10 N**	4 54	5 20	5 42	** **	**	11 48	55
12	0	47.2	+15	49.3	88	38.7 83	−22	13.6 75	**0**	5 07	5 32	5 53	** **	**	12 05	52
13	15	47.3		50.0	103	06.2 85	−22	06.1 75	**10 S**	18	43	6 05	** **	**	22	49
14	30	47.3		50.7	117	33.8 86	−21	58.4 77	**20**	28	5 54	17	** **	**	12 40	46
15	45	47.4		51.5	132	01.5 87		50.6 78	**30**	37	6 05	30	23 41	60	13 01	42
16	60	47.5		52.2	146	29.3 88		42.7 79	**35**	42	12	38	29	64	13	40
17	75	47.5	+15	52.9	160	57.2 89	−21	34.7 80	**40**	5 46	6 19	6 47	23 16	67	13 27	37
18	90	47.6	+15	53.7	175	25.2 90	−21	26.6 81	**45**	5 51	6 26	6 57	23 01	70	13 44	33
19	105	47.6		54.4	189	53.4 92		18.4 82	**50**	57	35	7 10	22 42	74	14 04	29
20	120	47.7		55.1	204	21.6 92		10.1 83	**52**	5 59	39	16	32	77	13	27
21	135	47.8		55.8	218	49.9 93	−21	01.7 84	**54**	6 02	44	22	22	80	24	24
22	150	47.8		56.6	233	18.4 95	−20	53.1 86	**56**	04	49	29	22 11	82	36	21
23	165	47.9		57.3	247	46.9 95		44.5 86	**58**	07	6 54	37	21 57	87	14 50	18
24	180	47.9	+15	58.0	262	15.6 97	−20	35.8 87	**60 S**	6 10	7 00	7 46	21 42	91	15 06	14

UT	ARIES PMG 9h 14m.0		VENUS Mag: −3.9 PMG: 12h 37m			MARTE Mag: +1.6 PMG: 15h 40m			JÚPITER Mag: −2.3 PMG: 7h 19m			SATURNO Mag: +0.7 PMG: 6h 18m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	221	06.8	170	56.2	+18 08.2	124	45.3	+24 45.1	250	03.8	−12 39.4	265	17.7	−17 25.3
1	236	09.3	185	55.5	09.1	139	46.1	45.1	265	05.9	39.3	280	20.1	25.3
2	251	11.7	200	54.9	10.0	154	46.9	45.0	280	08.0	39.1	295	22.5	25.2
3	266	14.2	215	54.2	10.9	169	47.7	44.9	295	10.2	39.0	310	24.8	25.2
4	281	16.7	230	53.6	11.8	184	48.5	44.9	310	12.3	38.9	325	27.2	25.2
5	296	19.1	245	52.9	+18 12.6	199	49.3	+24 44.8	325	14.4	−12 38.8	340	29.6	−17 25.2
6	311	21.6	260	52.3	+18 13.5	214	50.1	+24 44.7	340	16.5	−12 38.7	355	32.0	−17 25.2
7	326	24.1	275	51.7	14.4	229	50.9	44.6	355	18.7	38.6	10	34.4	25.1
8	341	26.5	290	51.0	15.3	244	51.7	44.6	10	20.8	38.5	25	36.7	25.1
9	356	29.0	305	50.4	16.1	259	52.4	44.5	25	22.9	38.4	40	39.1	25.1
10	11	31.4	320	49.7	17.0	274	53.2	44.4	40	25.1	38.3	55	41.5	25.1
11	26	33.9	335	49.1	+18 17.9	289	54.0	+24 44.3	55	27.2	−12 38.1	70	43.9	−17 25.1
12	41	36.4	350	48.4	+18 18.7	304	54.8	+24 44.3	70	29.3	−12 38.0	85	46.3	−17 25.1
13	56	38.8	5	47.8	19.6	319	55.6	44.2	85	31.5	37.9	100	48.6	25.0
14	71	41.3	20	47.1	20.5	334	56.4	44.1	100	33.6	37.8	115	51.0	25.0
15	86	43.8	35	46.5	21.4	349	57.2	44.0	115	35.7	37.7	130	53.4	25.0
16	101	46.2	50	45.8	22.2	4	58.0	43.9	130	37.9	37.6	145	55.8	25.0
17	116	48.7	65	45.2	+18 23.1	19	58.8	+24 43.9	145	40.0	−12 37.5	160	58.2	−17 25.0
18	131	51.2	80	44.5	+18 24.0	34	59.6	+24 43.8	160	42.1	−12 37.4	176	00.6	−17 25.0
19	146	53.6	95	43.9	24.8	50	00.4	43.7	175	44.3	37.3	191	02.9	24.9
20	161	56.1	110	43.2	25.7	65	01.2	43.6	190	46.4	37.2	206	05.3	24.9
21	176	58.5	125	42.6	26.5	80	02.0	43.6	205	48.5	37.0	221	07.7	24.9
22	192	01.0	140	41.9	27.4	95	02.7	43.5	220	50.7	36.9	236	10.1	24.9
23	207	03.5	155	41.3	28.3	110	03.5	43.4	235	52.8	36.8	251	12.5	24.9
24	222	05.9	170	40.6	+18 29.1	125	04.3	+24 43.3	250	55.0	−12 36.7	266	14.8	−17 24.9
Dif	—			−6	+9		+8	−1		+21	+1		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 21^{d}.9		PHE	4^{h}: 57′.0									
	PMG: 11^{h} 56^{m}.8				SD: 15′.6			12^{h}: 56′.7									
					PMG: 6^{h} 45^{m}			20^{h}: 56′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	47.9	+15	58.0	262	15.6	−20	35.8		**60 N**	20 06	21 01	22 35	3 17	9	10 25	90
1	195	48.0		58.7	276	44.4 98		26.9	89	**58**	19 55	20 45	22 01	3 02	14	38	86
2	210	48.1	+15	59.5	291	13.2 98		18.0	89	**56**	46	32	21 37	2 50	17	10 50	82
3	225	48.1	+16	00.2	305	42.2 100	−20	09.0	90	**54**	38	20	18	39	20	11 00	79
4	240	48.2		00.9	320	11.3 101	−19	59.9	91	**52**	30	10	21 02	30	22	09	76
5	255	48.2	+16	01.6	334	40.4 101	−19	50.7	92	**50**	19 24	20 01	20 49	2 21	25	11 17	74
6	270	48.3	+16	02.3	349	09.7 103	−19	41.4	93	**45**	19 09	19 42	20 23	2 03	29	11 34	69
7	285	48.3		03.1	3	39.1 104		32.0	94	**40**	18 58	28	20 04	1 48	33	11 48	66
8	300	48.4		03.8	18	08.6 105		22.5	95	**35**	48	15	19 48	35	36	12 00	62
9	315	48.5		04.5	32	38.2 106		12.9	96	**30**	39	19 05	36	24	38	10	60
10	330	48.5		05.2	47	07.9 107	−19	03.3	96	**20**	25	18 48	15	1 05	43	28	55
11	345	48.6	+16	05.9	61	37.7 108	−18	53.5	98	**10 N**	18 12	18 34	19 00	0 48	46	12 43	51
12	0	48.6	+16	06.7	76	07.6 109	−18	43.7	98	**0**	18 00	18 22	18 47	0 33	49	12 57	48
13	15	48.7		07.4	90	37.6 110		33.8	99	**10 S**	17 49	18 10	36	17	53	13 11	44
14	30	48.7		08.1	105	07.7 111		23.8	100	**20**	36	17 59	25	0 00	57	26	40
15	45	48.8		08.8	119	37.9 112		13.7	101	**30**	22	47	16	** **	**	43	36
16	60	48.8		09.5	134	08.2 113	−18	03.6	101	**35**	14	41	11	** **	**	13 53	33
17	75	48.9	+16	10.2	148	38.6 114	−17	53.3	103	**40**	17 05	17 33	18 06	** **	**	14 04	30
18	90	49.0	+16	11.0	163	09.0 114	−17	43.0	103	**45**	16 54	17 25	18 00	** **	**	14 17	26
19	105	49.0		11.7	177	39.6 116		32.7	103	**50**	42	16	17 55	23 56	73	33	22
20	120	49.1		12.4	192	10.3 117		22.2	105	**52**	36	12	52	49	75	40	20
21	135	49.1		13.1	206	41.1 118		11.7	105	**54**	29	07	50	42	77	48	18
22	150	49.2		13.8	221	11.9 118	−17	01.1	106	**56**	22	17 02	47	33	80	14 57	15
23	165	49.2		14.5	235	42.9 120	−16	50.4	107	**58**	14	16 57	44	24	83	15 08	12
24	180	49.3	+16	15.3	250	13.9 120	−16	39.7	107	**60 S**	16 04	16 51	17 41	23 13	87	15 20	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	9^{h} 10^{m}.1		PMG: 12^{h} 38^{m}			PMG: 15^{h} 39^{m}			PMG: 7^{h} 15^{m}			PMG: 6^{h} 14^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	222	05.9	170	40.6	+18 29.1	125	04.3	+24 43.3	250	55.0	−12 36.7	266	14.8	−17 24.9
1	237	08.4	185	39.9	30.0	140	05.1	43.2	265	57.1	36.6	281	17.2	24.8
2	252	10.9	200	39.3	30.9	155	05.9	43.2	280	59.2	36.5	296	19.6	24.8
3	267	13.3	215	38.6	31.7	170	06.7	43.1	296	01.4	36.4	311	22.0	24.8
4	282	15.8	230	38.0	32.6	185	07.5	43.0	311	03.5	36.3	326	24.4	24.8
5	297	18.3	245	37.3	+18 33.4	200	08.3	+24 42.9	326	05.6	−12 36.2	341	26.8	−17 24.8
6	312	20.7	260	36.7	+18 34.3	215	09.1	+24 42.8	341	07.8	−12 36.1	356	29.2	−17 24.7
7	327	23.2	275	36.0	35.1	230	09.9	42.8	356	09.9	36.0	11	31.5	24.7
8	342	25.7	290	35.4	36.0	245	10.7	42.7	11	12.0	35.8	26	33.9	24.7
9	357	28.1	305	34.7	36.8	260	11.5	42.6	26	14.2	35.7	41	36.3	24.7
10	12	30.6	320	34.0	37.7	275	12.2	42.5	41	16.3	35.6	56	38.7	24.7
11	27	33.0	335	33.4	+18 38.5	290	13.0	+24 42.4	56	18.5	−12 35.5	71	41.1	−17 24.7
12	42	35.5	350	32.7	+18 39.4	305	13.8	+24 42.3	71	20.6	−12 35.4	86	43.5	−17 24.7
13	57	38.0	5	32.1	40.2	320	14.6	42.3	86	22.7	35.3	101	45.8	24.6
14	72	40.4	20	31.4	41.1	335	15.4	42.2	101	24.9	35.2	116	48.2	24.6
15	87	42.9	35	30.7	41.9	350	16.2	42.1	116	27.0	35.1	131	50.6	24.6
16	102	45.4	50	30.1	42.8	5	17.0	42.0	131	29.2	35.0	146	53.0	24.6
17	117	47.8	65	29.4	+18 43.6	20	17.8	+24 41.9	146	31.3	−12 34.9	161	55.4	−17 24.6
18	132	50.3	80	28.7	+18 44.5	35	18.6	+24 41.8	161	33.4	−12 34.8	176	57.8	−17 24.6
19	147	52.8	95	28.1	45.3	50	19.4	41.8	176	35.6	34.7	192	00.2	24.5
20	162	55.2	110	27.4	46.2	65	20.2	41.7	191	37.7	34.5	207	02.6	24.5
21	177	57.7	125	26.8	47.0	80	21.0	41.6	206	39.9	34.4	222	04.9	24.5
22	193	00.2	140	26.1	47.9	95	21.8	41.5	221	42.0	34.3	237	07.3	24.5
23	208	02.6	155	25.4	48.7	110	22.5	41.4	236	44.1	34.2	252	09.7	24.5
24	223	05.1	170	24.8	+18 49.5	125	23.3	+24 41.3	251	46.3	−12 34.1	267	12.1	−17 24.5
Dif	—			−7	+9		+8	−1		+21	+1		+24	0

UT	SOL SD: 15′.9 PMG: 11h 56m.7				LUNA Edad: 22d.9 SD: 15′.3 PMG: 7h 33m PHE 4h: 56′.2; 12h: 56′.0; 20h: 55′.7 Rº: 45m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	49.3	+16	15.3	250	13.9	−16	39.7	**60 N**	1 17	2 51	3 47	3 26	6	11 55	85
1	195	49.3		16.0	264	45.1 122		28.9 108	**58**	1 52	3 07	3 58	16	10	12 04	82
2	210	49.4		16.7	279	16.3 122		18.1 108	**56**	2 16	21	4 07	3 07	13	12	79
3	225	49.4		17.4	293	47.6 123	−16	07.1 110	**54**	35	33	15	2 59	16	19	76
4	240	49.5		18.1	308	19.1 125	−15	56.1 110	**52**	2 51	43	23	52	18	25	74
5	255	49.5	+16	18.8	322	50.6 125	−15	45.1 110	**50**	3 04	3 52	4 29	2 46	20	12 31	71
6	270	49.6	+16	19.5	337	22.2 126	−15	34.0 111	**45**	3 30	4 11	4 43	2 32	24	12 43	67
7	285	49.6		20.2	351	53.8 126		22.8 112	**40**	3 49	25	4 55	21	28	12 54	62
8	300	49.7		20.9	6	25.6 128		11.5 113	**35**	4 05	38	5 05	11	31	13 02	60
9	315	49.7		21.7	20	57.4 128	−15	00.2 113	**30**	18	4 48	14	2 02	34	10	57
10	330	49.8		22.4	35	29.4 130	−14	48.9 113	**20**	38	5 05	29	1 48	38	23	52
11	345	49.8	+16	23.1	50	01.4 130	−14	37.5 114	**10 N**	4 54	5 19	5 41	1 34	43	13 34	48
12	0	49.9	+16	23.8	64	33.5 131	−14	26.0 115	**0**	5 07	5 32	5 53	1 22	46	13 45	44
13	15	49.9		24.5	79	05.6 131		14.5 115	**10 S**	18	43	6 05	1 10	49	13 55	40
14	30	50.0		25.2	93	37.9 133	−14	02.9 116	**20**	28	5 55	17	0 57	53	14 06	37
15	45	50.0		25.9	108	10.2 133	−13	51.3 116	**30**	38	6 07	32	41	59	19	31
16	60	50.1		26.6	122	42.6 134		39.6 117	**35**	43	13	40	33	60	26	29
17	75	50.1	+16	27.3	137	15.1 135	−13	27.9 117	**40**	5 48	6 20	6 49	0 23	64	14 34	26
18	90	50.2	+16	28.0	151	47.7 136	−13	16.2 117	**45**	5 54	6 29	7 00	0 11	67	14 43	23
19	105	50.2		28.7	166	20.3 136	−13	04.3 119	**50**	5 59	38	13	** **	**	14 55	18
20	120	50.3		29.4	180	53.1 138	−12	52.5 118	**52**	6 02	42	19	** **	**	15 00	16
21	135	50.3		30.1	195	25.8 137		40.6 119	**54**	05	47	25	** **	**	06	14
22	150	50.4		30.8	209	58.7 139		28.6 120	**56**	07	52	33	** **	**	12	12
23	165	50.4		31.5	224	31.6 139		16.6 120	**58**	10	6 58	41	** **	**	20	8
24	180	50.5	+16	32.2	239	04.6 140	−12	04.6 120	**60 S**	6 14	7 04	7 51	** **	**	15 28	5

UT	ARIES PMG 9h 06m.2		VENUS Mag: −3.9 PMG: 12h 39m			MARTE Mag: +1.6 PMG: 15h 38m			JÚPITER Mag: −2.3 PMG: 7h 12m			SATURNO Mag: +0.7 PMG: 6h 10m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	223	05.1	170	24.8	+18 49.5	125	23.3	+24 41.3	251	46.3	−12 34.1	267	12.1	−17 24.5
1	238	07.5	185	24.1	50.4	140	24.1	41.2	266	48.4	34.0	282	14.5	24.4
2	253	10.0	200	23.4	51.2	155	24.9	41.2	281	50.6	33.9	297	16.9	24.4
3	268	12.5	215	22.8	52.1	170	25.7	41.1	296	52.7	33.8	312	19.3	24.4
4	283	14.9	230	22.1	52.9	185	26.5	41.0	311	54.8	33.7	327	21.6	24.4
5	298	17.4	245	21.4	+18 53.7	200	27.3	+24 40.9	326	57.0	−12 33.6	342	24.0	−17 24.4
6	313	19.9	260	20.8	+18 54.6	215	28.1	+24 40.8	341	59.1	−12 33.5	357	26.4	−17 24.4
7	328	22.3	275	20.1	55.4	230	28.9	40.7	357	01.3	33.4	12	28.8	24.3
8	343	24.8	290	19.4	56.2	245	29.7	40.6	12	03.4	33.3	27	31.2	24.3
9	358	27.3	305	18.7	57.1	260	30.5	40.5	27	05.6	33.2	42	33.6	24.3
10	13	29.7	320	18.1	57.9	275	31.3	40.4	42	07.7	33.0	57	36.0	24.3
11	28	32.2	335	17.4	+18 58.7	290	32.1	+24 40.4	57	09.8	−12 32.9	72	38.4	−17 24.3
12	43	34.6	350	16.7	+18 59.6	305	32.8	+24 40.3	72	12.0	−12 32.8	87	40.8	−17 24.3
13	58	37.1	5	16.1	+19 00.4	320	33.6	40.2	87	14.1	32.7	102	43.1	24.3
14	73	39.6	20	15.4	01.2	335	34.4	40.1	102	16.3	32.6	117	45.5	24.2
15	88	42.0	35	14.7	02.0	350	35.2	40.0	117	18.4	32.5	132	47.9	24.2
16	103	44.5	50	14.0	02.9	5	36.0	39.9	132	20.6	32.4	147	50.3	24.2
17	118	47.0	65	13.4	+19 03.7	20	36.8	+24 39.8	147	22.7	−12 32.3	162	52.7	−17 24.2
18	133	49.4	80	12.7	+19 04.5	35	37.6	+24 39.7	162	24.9	−12 32.2	177	55.1	−17 24.2
19	148	51.9	95	12.0	05.3	50	38.4	39.6	177	27.0	32.1	192	57.5	24.2
20	163	54.4	110	11.3	06.2	65	39.2	39.5	192	29.1	32.0	207	59.9	24.2
21	178	56.8	125	10.7	07.0	80	40.0	39.4	207	31.3	31.9	223	02.3	24.1
22	193	59.3	140	10.0	07.8	95	40.8	39.3	222	33.4	31.8	238	04.7	24.1
23	209	01.8	155	09.3	08.6	110	41.6	39.3	237	35.6	31.7	253	07.1	24.1
24	224	04.2	170	08.6	+19 09.4	125	42.4	+24 39.2	252	37.7	−12 31.6	268	09.4	−17 24.1
Dif	—			−7	+8		+8	−1		+21	+1		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 23.d9		PHE	4h: 55′.5								
	PMG: 11h 56.m6				SD: 15′.2			12h: 55′.3								
					PMG: 8h 18m			20h: 55′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	50.5	+16	32.2	239	04.6	−12	04.6	**60 N**	20 11	21 08	22 49	3 32	5	13 20	82
1	195	50.5		32.9	253	37.7 141	−11	52.5 121	**58**	19 59	20 51	22 09	26	7	26	79
2	210	50.6		33.6	268	10.9 142		40.4 121	**56**	50	36	21 43	20	10	31	76
3	225	50.6		34.3	282	44.1 142		28.2 122	**54**	41	24	23	15	12	35	73
4	240	50.6		35.0	297	17.3 142		16.0 122	**52**	33	14	21 07	10	15	39	71
5	255	50.7	+16	35.7	311	50.7 144	−11	03.8 122	**50**	19 27	20 04	20 53	3 06	17	13 42	69
6	270	50.7	+16	36.4	326	24.1 144	−10	51.5 123	**45**	19 12	19 45	20 27	2 56	22	13 50	65
7	285	50.8		37.1	340	57.6 145		39.2 123	**40**	19 00	30	20 06	49	24	13 56	61
8	300	50.8		37.8	355	31.1 145		26.9 123	**35**	18 50	17	19 50	42	28	14 02	58
9	315	50.9		38.5	10	04.7 146		14.5 124	**30**	41	19 06	37	36	30	07	55
10	330	50.9		39.2	24	38.3 146	−10	02.1 124	**20**	25	18 49	16	26	35	15	50
11	345	51.0	+16	39.9	39	12.0 147	−9	49.6 125	**10 N**	18 12	18 34	19 00	2 17	39	14 22	46
12	0	51.0	+16	40.6	53	45.8 148	−9	37.2 124	**0**	18 00	18 22	18 47	2 08	43	14 29	42
13	15	51.0		41.3	68	19.6 148		24.7 125	**10 S**	17 48	18 10	35	1 59	47	35	39
14	30	51.1		42.0	82	53.5 149	−9	12.1 126	**20**	35	17 58	25	50	51	43	34
15	45	51.1		42.7	97	27.5 150	−8	59.6 125	**30**	21	46	14	40	55	50	30
16	60	51.2		43.4	112	01.4 149		47.0 126	**35**	12	39	09	33	59	14 55	27
17	75	51.2	+16	44.1	126	35.5 151	−8	34.4 126	**40**	17 03	17 31	18 04	1 27	61	15 00	24
18	90	51.3	+16	44.8	141	09.6 151	−8	21.8 126	**45**	16 52	17 23	17 58	1 18	66	15 06	20
19	105	51.3		45.5	155	43.7 151	−8	09.1 127	**50**	38	13	52	09	70	13	16
20	120	51.3		46.2	170	17.9 152	−7	56.4 127	**52**	32	09	49	1 04	72	16	14
21	135	51.4		46.9	184	52.2 153		43.7 127	**54**	25	17 04	46	0 59	74	20	12
22	150	51.4		47.6	199	26.5 153		31.0 127	**56**	18	16 59	43	53	77	24	9
23	165	51.5		48.2	214	00.8 153		18.2 128	**58**	16 09	53	40	47	80	28	7
24	180	51.5	+16	48.9	228	35.2 154	−7	05.4 128	**60 S**	15 59	16 46	17 37	0 40	83	15 33	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	9h 02.m2		PMG: 12h 40m			PMG: 15h 36m			PMG: 7h 08m			PMG: 6h 06m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	224	04.2	170	08.6	+19 09.4	125	42.4	+24 39.2	252	37.7	−12 31.6	268	09.4	−17 24.1
1	239	06.7	185	08.0	10.3	140	43.1	39.1	267	39.9	31.5	283	11.8	24.1
2	254	09.1	200	07.3	11.1	155	43.9	39.0	282	42.0	31.4	298	14.2	24.1
3	269	11.6	215	06.6	11.9	170	44.7	38.9	297	44.2	31.2	313	16.6	24.0
4	284	14.1	230	05.9	12.7	185	45.5	38.8	312	46.3	31.1	328	19.0	24.0
5	299	16.5	245	05.2	+19 13.5	200	46.3	+24 38.7	327	48.5	−12 31.0	343	21.4	−17 24.0
6	314	19.0	260	04.6	+19 14.3	215	47.1	+24 38.6	342	50.6	−12 30.9	358	23.8	−17 24.0
7	329	21.5	275	03.9	15.2	230	47.9	38.5	357	52.8	30.8	13	26.2	24.0
8	344	23.9	290	03.2	16.0	245	48.7	38.4	12	54.9	30.7	28	28.6	24.0
9	359	26.4	305	02.5	16.8	260	49.5	38.3	27	57.1	30.6	43	31.0	24.0
10	14	28.9	320	01.8	17.6	275	50.3	38.2	42	59.2	30.5	58	33.4	23.9
11	29	31.3	335	01.2	+19 18.4	290	51.1	+24 38.1	58	01.4	−12 30.4	73	35.8	−17 23.9
12	44	33.8	350	00.5	+19 19.2	305	51.9	+24 38.0	73	03.5	−12 30.3	88	38.2	−17 23.9
13	59	36.3	4	59.8	20.0	320	52.7	37.9	88	05.7	30.2	103	40.5	23.9
14	74	38.7	19	59.1	20.8	335	53.5	37.8	103	07.8	30.1	118	42.9	23.9
15	89	41.2	34	58.4	21.6	350	54.2	37.7	118	10.0	30.0	133	45.3	23.9
16	104	43.6	49	57.7	22.4	5	55.0	37.6	133	12.1	29.9	148	47.7	23.9
17	119	46.1	64	57.0	+19 23.2	20	55.8	+24 37.5	148	14.3	−12 29.8	163	50.1	−17 23.8
18	134	48.6	79	56.4	+19 24.0	35	56.6	+24 37.4	163	16.4	−12 29.7	178	52.5	−17 23.8
19	149	51.0	94	55.7	24.8	50	57.4	37.3	178	18.6	29.6	193	54.9	23.8
20	164	53.5	109	55.0	25.6	65	58.2	37.2	193	20.7	29.5	208	57.3	23.8
21	179	56.0	124	54.3	26.4	80	59.0	37.1	208	22.9	29.4	223	59.7	23.8
22	194	58.4	139	53.6	27.2	95	59.8	37.0	223	25.0	29.3	239	02.1	23.8
23	210	00.9	154	52.9	28.0	111	00.6	36.9	238	27.2	29.2	254	04.5	23.8
24	225	03.4	169	52.2	+19 28.8	126	01.4	+24 36.8	253	29.3	−12 29.1	269	06.9	−17 23.8
Dif	—			−7	+8		+8	−1		+21	+1		+24	0

UT	SOL SD: 15′.9 PMG: 11h 56m.5				LUNA Edad: 24d.9 SD: 15′.0 PMG: 9h 01m PHE: 4h: 55′.0; 12h: 54′.9; 20h: 54′.7 Rº: 41m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	51.5	+16	48.9	228	35.2	−7	05.4	**60 N**	1 03	2 45	3 42	3 37	3	14 42	80
1	195	51.5		49.6	243	09.6 154	−6	52.7 127	**58**	1 43	3 02	3 53	33	7	45	77
2	210	51.6		50.3	257	44.1 155		39.8 129	**56**	2 09	16	4 03	30	9	47	74
3	225	51.6		51.0	272	18.6 155		27.0 128	**54**	29	28	11	27	12	48	72
4	240	51.7		51.7	286	53.2 156		14.2 128	**52**	45	39	19	25	13	50	70
5	255	51.7	+16	52.4	301	27.8 156	−6	01.3 129	**50**	2 59	3 48	4 26	3 23	15	14 51	68
6	270	51.7	+16	53.1	316	02.4 156	−5	48.4 129	**45**	3 26	4 08	4 41	3 18	19	14 55	63
7	285	51.8		53.8	330	37.1 157		35.5 129	**40**	3 46	23	4 53	13	23	14 57	60
8	300	51.8		54.4	345	11.8 157		22.6 129	**35**	4 02	36	5 03	10	25	15 00	56
9	315	51.9		55.1	359	46.6 158	−5	09.7 129	**30**	16	4 46	12	06	29	02	53
10	330	51.9		55.8	14	21.4 158	−4	56.8 129	**20**	37	5 04	27	3 01	33	05	49
11	345	51.9	+16	56.5	28	56.2 158	−4	43.8 130	**10 N**	4 53	5 19	5 41	2 56	37	15 08	45
12	0	52.0	+16	57.2	43	31.0 158	−4	30.9 129	**0**	5 06	5 31	5 53	2 51	41	15 11	41
13	15	52.0		57.9	58	05.9 159		17.9 130	**10 S**	18	43	6 05	46	45	14	37
14	30	52.1		58.5	72	40.8 159	−4	04.9 130	**20**	29	5 55	18	41	49	17	32
15	45	52.1		59.2	87	15.8 160	−3	52.0 129	**30**	39	6 08	33	35	54	20	28
16	60	52.1	+16	59.9	101	50.8 160		39.0 130	**35**	44	15	41	32	57	22	25
17	75	52.2	+17	00.6	116	25.8 160	−3	26.0 130	**40**	5 50	6 22	6 51	2 28	60	15 24	22
18	90	52.2	+17	01.3	131	00.8 160	−3	13.0 130	**45**	5 56	6 31	7 02	2 24	63	15 26	19
19	105	52.2		02.0	145	35.9 161	−3	00.0 130	**50**	6 02	41	16	19	68	29	15
20	120	52.3		02.6	160	11.0 161	−2	47.0 130	**52**	05	45	22	16	70	30	14
21	135	52.3		03.3	174	46.1 161		33.9 131	**54**	08	50	29	13	73	32	11
22	150	52.3		04.0	189	21.2 161		20.9 130	**56**	11	6 56	37	10	75	33	9
23	165	52.4		04.7	203	56.4 162	−2	07.9 130	**58**	14	7 02	45	07	78	35	7
24	180	52.4	+17	05.4	218	31.5 161	−1	54.9 130	**60 S**	6 17	7 08	7 56	2 03	81	15 37	4

UT	ARIES PMG 8h 58m.3		VENUS Mag: −3.9 PMG: 12h 41m			MARTE Mag: +1.6 PMG: 15h 35m			JÚPITER Mag: −2.3 PMG: 7h 05m			SATURNO Mag: +0.7 PMG: 6h 03m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	225	03.4	169	52.2	+19 28.8	126	01.4	+24 36.8	253	29.3	−12 29.1	269	06.9	−17 23.8
1	240	05.8	184	51.5	29.6	141	02.2	36.7	268	31.5	29.0	284	09.3	23.7
2	255	08.3	199	50.9	30.4	156	03.0	36.6	283	33.6	28.9	299	11.7	23.7
3	270	10.7	214	50.2	31.2	171	03.8	36.5	298	35.8	28.7	314	14.1	23.7
4	285	13.2	229	49.5	32.0	186	04.5	36.4	313	37.9	28.6	329	16.5	23.7
5	300	15.7	244	48.8	+19 32.8	201	05.3	+24 36.3	328	40.1	−12 28.5	344	18.9	−17 23.7
6	315	18.1	259	48.1	+19 33.6	216	06.1	+24 36.2	343	42.2	−12 28.4	359	21.3	−17 23.7
7	330	20.6	274	47.4	34.4	231	06.9	36.1	358	44.4	28.3	14	23.7	23.7
8	345	23.1	289	46.7	35.2	246	07.7	36.0	13	46.6	28.2	29	26.1	23.6
9	0	25.5	304	46.0	36.0	261	08.5	35.9	28	48.7	28.1	44	28.5	23.6
10	15	28.0	319	45.3	36.8	276	09.3	35.8	43	50.9	28.0	59	30.9	23.6
11	30	30.5	334	44.6	+19 37.6	291	10.1	+24 35.7	58	53.0	−12 27.9	74	33.2	−17 23.6
12	45	32.9	349	43.9	+19 38.3	306	10.9	+24 35.6	73	55.2	−12 27.8	89	35.6	−17 23.6
13	60	35.4	4	43.2	39.1	321	11.7	35.5	88	57.3	27.7	104	38.0	23.6
14	75	37.9	19	42.5	39.9	336	12.5	35.4	103	59.5	27.6	119	40.4	23.6
15	90	40.3	34	41.8	40.7	351	13.3	35.3	119	01.6	27.5	134	42.8	23.6
16	105	42.8	49	41.1	41.5	6	14.1	35.2	134	03.8	27.4	149	45.2	23.5
17	120	45.2	64	40.4	+19 42.3	21	14.9	+24 35.1	149	06.0	−12 27.3	164	47.6	−17 23.5
18	135	47.7	79	39.7	+19 43.0	36	15.7	+24 35.0	164	08.1	−12 27.2	179	50.0	−17 23.5
19	150	50.2	94	39.0	43.8	51	16.4	34.8	179	10.3	27.1	194	52.4	23.5
20	165	52.6	109	38.4	44.6	66	17.2	34.7	194	12.4	27.0	209	54.8	23.5
21	180	55.1	124	37.7	45.4	81	18.0	34.6	209	14.6	26.9	224	57.2	23.5
22	195	57.6	139	37.0	46.2	96	18.8	34.5	224	16.7	26.8	239	59.6	23.5
23	211	00.0	154	36.3	46.9	111	19.6	34.4	239	18.9	26.7	255	02.0	23.5
24	226	02.5	169	35.6	+19 47.7	126	20.4	+24 34.3	254	21.1	−12 26.6	270	04.4	−17 23.4
Dif	—			−7	+8		+8	−1		+22	+1		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.5				LUNA Edad: 25d.9 SD: 14′.9 PMG: 9h 42m PHE 4h: 54′.6; 12h: 54′.5; 20h: 54′.4 Rº: 40m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	52.4	+17	05.4	218	31.5	−1	54.9	**60 N**	20 16	21 14	23 07	3 40	4	16 02	80
1	195	52.4		06.0	233	06.7 162		41.9 130	**58**	20 04	20 56	22 19	40	6	02	76
2	210	52.5		06.7	247	42.0 163		28.8 131	**56**	19 54	41	21 50	39	9	01	73
3	225	52.5		07.4	262	17.2 162		15.8 130	**54**	45	28	29	39	11	00	71
4	240	52.5		08.1	276	52.5 163	−1	02.8 130	**52**	37	17	21 12	38	13	16 00	69
5	255	52.6	+17	08.7	291	27.7 162	−0	49.8 130	**50**	19 30	20 08	20 58	3 38	15	15 59	67
6	270	52.6	+17	09.4	306	03.0 163	−0	36.7 131	**45**	19 14	19 48	20 30	3 37	19	15 58	62
7	285	52.6		10.1	320	38.3 163		23.7 130	**40**	19 02	32	20 09	36	22	57	59
8	300	52.7		10.8	335	13.6 163	−0	10.7 130	**35**	18 51	19	19 52	35	26	56	56
9	315	52.7		11.4	349	49.0 164	+0	02.3 130	**30**	42	19 08	39	35	28	55	53
10	330	52.7		12.1	4	24.3 163		15.3 130	**20**	26	18 50	17	34	32	54	48
11	345	52.8	+17	12.8	18	59.7 164	+0	28.3 130	**10 N**	18 13	18 35	19 01	3 33	37	15 53	44
12	0	52.8	+17	13.5	33	35.0 163	+0	41.3 130	**0**	18 00	18 22	18 47	3 32	41	15 52	40
13	15	52.8		14.1	48	10.4 164	+0	54.2 129	**10 S**	17 47	18 09	35	31	45	51	36
14	30	52.9		14.8	62	45.8 164	+1	07.2 130	**20**	34	17 57	24	30	49	49	33
15	45	52.9		15.5	77	21.1 163		20.2 130	**30**	19	44	13	29	54	48	28
16	60	52.9		16.2	91	56.5 164		33.1 129	**35**	10	37	07	29	56	47	26
17	75	53.0	+17	16.8	106	31.9 164	+1	46.1 130	**40**	17 01	17 29	18 02	3 28	59	15 46	23
18	90	53.0	+17	17.5	121	07.3 164	+1	59.0 129	**45**	16 49	17 20	17 56	3 27	63	15 45	19
19	105	53.0		18.2	135	42.7 164	+2	11.9 129	**50**	35	10	49	27	67	44	15
20	120	53.0		18.8	150	18.1 164		24.8 129	**52**	29	06	46	26	69	44	13
21	135	53.1		19.5	164	53.5 164		37.7 129	**54**	22	17 00	43	26	71	43	11
22	150	53.1		20.2	179	28.9 164	+2	50.6 129	**56**	14	16 55	40	25	74	42	9
23	165	53.1		20.8	194	04.3 164	+3	03.4 128	**58**	16 05	49	36	25	76	42	6
24	180	53.2	+17	21.5	208	39.8 165	+3	16.3 129	**60 S**	15 54	16 42	17 33	3 24	80	15 41	3

UT	ARIES PMG 8h 54m.4		VENUS Mag: −3.9 PMG: 12h 42m			MARTE Mag: +1.6 PMG: 15h 34m			JÚPITER Mag: −2.3 PMG: 7h 02m			SATURNO Mag: +0.7 PMG: 5h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	226	02.5	169	35.6	+19 47.7	126	20.4	+24 34.3	254	21.1	−12 26.6	270	04.4	−17 23.4
1	241	05.0	184	34.8	48.5	141	21.2	34.2	269	23.2	26.5	285	06.8	23.4
2	256	07.4	199	34.1	49.3	156	22.0	34.1	284	25.4	26.4	300	09.2	23.4
3	271	09.9	214	33.4	50.0	171	22.8	34.0	299	27.5	26.3	315	11.6	23.4
4	286	12.3	229	32.7	50.8	186	23.6	33.9	314	29.7	26.2	330	14.0	23.4
5	301	14.8	244	32.0	+19 51.6	201	24.4	+24 33.8	329	31.8	−12 26.1	345	16.4	−17 23.4
6	316	17.3	259	31.3	+19 52.3	216	25.2	+24 33.7	344	34.0	−12 26.0	0	18.8	−17 23.4
7	331	19.7	274	30.6	53.1	231	26.0	33.5	359	36.2	25.9	15	21.2	23.4
8	346	22.2	289	29.9	53.9	246	26.8	33.4	14	38.3	25.8	30	23.6	23.3
9	1	24.7	304	29.2	54.7	261	27.6	33.3	29	40.5	25.7	45	26.0	23.3
10	16	27.1	319	28.5	55.4	276	28.3	33.2	44	42.6	25.6	60	28.4	23.3
11	31	29.6	334	27.8	+19 56.2	291	29.1	+24 33.1	59	44.8	−12 25.5	75	30.8	−17 23.3
12	46	32.1	349	27.1	+19 57.0	306	29.9	+24 33.0	74	47.0	−12 25.4	90	33.2	−17 23.3
13	61	34.5	4	26.4	57.7	321	30.7	32.9	89	49.1	25.3	105	35.6	23.3
14	76	37.0	19	25.7	58.5	336	31.5	32.8	104	51.3	25.2	120	38.0	23.3
15	91	39.5	34	25.0	+19 59.2	351	32.3	32.7	119	53.5	25.1	135	40.4	23.3
16	106	41.9	49	24.3	+20 00.0	6	33.1	32.5	134	55.6	25.0	150	42.8	23.3
17	121	44.4	64	23.6	+20 00.8	21	33.9	+24 32.4	149	57.8	−12 24.9	165	45.2	−17 23.2
18	136	46.8	79	22.9	+20 01.5	36	34.7	+24 32.3	164	59.9	−12 24.8	180	47.6	−17 23.2
19	151	49.3	94	22.1	02.3	51	35.5	32.2	180	02.1	24.7	195	50.0	23.2
20	166	51.8	109	21.4	03.0	66	36.3	32.1	195	04.3	24.6	210	52.4	23.2
21	181	54.2	124	20.7	03.8	81	37.1	32.0	210	06.4	24.5	225	54.9	23.2
22	196	56.7	139	20.0	04.5	96	37.9	31.9	225	08.6	24.4	240	57.3	23.2
23	211	59.2	154	19.3	05.3	111	38.7	31.7	240	10.8	24.3	255	59.7	23.2
24	227	01.6	169	18.6	+20 06.1	126	39.5	+24 31.6	255	12.9	−12 24.2	271	02.1	−17 23.2
Dif	—			−7	+8		+8	−1		+22	+1		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.4				LUNA Edad: 26d.9 SD: 14′.8 PMG: 10h 22m PHE 4h: 54′.3; 12h: 54′.2; 20h: 54′.1 Rº: 41m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	53.2	+17	21.5	208	39.8	+3	16.3	**60 N**	0 45	2 38	3 37	3 44	4	17 22	80
1	195	53.2		22.2	223	15.2 164		29.1 128	**58**	1 33	2 56	48	46	7	18	77
2	210	53.2		22.8	237	50.6 164		41.9 128	**56**	2 02	3 11	3 59	48	9	14	74
3	225	53.2		23.5	252	25.9 163	+3	54.7 128	**54**	23	24	4 08	50	11	11	72
4	240	53.3		24.2	267	01.3 164	+4	07.5 128	**52**	40	35	16	51	14	09	69
5	255	53.3	+17	24.8	281	36.7 164	+4	20.3 128	**50**	2 55	3 45	4 23	3 53	15	17 06	67
6	270	53.3	+17	25.5	296	12.1 164	+4	33.0 127	**45**	3 23	4 05	4 38	3 56	19	17 00	63
7	285	53.4		26.2	310	47.5 164		45.7 127	**40**	3 44	21	4 51	3 58	23	16 56	59
8	300	53.4		26.8	325	22.8 163	+4	58.4 127	**35**	4 00	34	5 01	4 01	26	52	56
9	315	53.4		27.5	339	58.2 164	+5	11.1 127	**30**	14	4 45	11	03	28	48	54
10	330	53.4		28.1	354	33.5 163		23.7 126	**20**	35	5 03	26	06	33	42	49
11	345	53.5	+17	28.8	9	08.9 164	+5	36.4 127	**10 N**	4 52	5 18	5 40	4 10	37	16 37	45
12	0	53.5	+17	29.5	23	44.2 163	+5	49.0 126	**0**	5 06	5 31	5 53	4 13	40	16 32	41
13	15	53.5		30.1	38	19.5 163	+6	01.5 125	**10 S**	18	44	6 06	16	44	27	38
14	30	53.5		30.8	52	54.8 163		14.1 126	**20**	29	5 56	19	19	49	22	34
15	45	53.6		31.4	67	30.1 163		26.6 125	**30**	40	6 09	34	23	53	16	29
16	60	53.6		32.1	82	05.3 162		39.1 125	**35**	46	16	43	25	56	13	26
17	75	53.6	+17	32.8	96	40.6 163	+6	51.6 125	**40**	5 52	6 24	6 53	4 27	59	16 09	23
18	90	53.6	+17	33.4	111	15.8 162	+7	04.0 124	**45**	5 58	6 33	7 04	4 30	63	16 04	21
19	105	53.7		34.1	125	51.0 162		16.4 124	**50**	6 04	43	19	34	67	15 59	16
20	120	53.7		34.7	140	26.2 162		28.8 124	**52**	07	48	25	35	69	57	14
21	135	53.7		35.4	155	01.4 162		41.2 124	**54**	11	53	32	37	71	54	12
22	150	53.7		36.0	169	36.5 161	+7	53.5 123	**56**	14	6 59	40	39	74	51	10
23	165	53.8		36.7	184	11.7 162	+8	05.8 123	**58**	17	7 05	7 50	41	77	48	7
24	180	53.8	+17	37.4	198	46.8 161	+8	18.0 122	**60 S**	6 21	7 12	8 00	4 44	79	15 44	4

UT	ARIES PMG 8h 50m.4		VENUS Mag: −3.9 PMG: 12h 43m			MARTE Mag: +1.6 PMG: 15h 33m			JÚPITER Mag: −2.3 PMG: 6h 58m			SATURNO Mag: +0.7 PMG: 5h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	227	01.6	169	18.6	+20 06.1	126	39.5	+24 31.6	255	12.9	−12 24.2	271	02.1	−17 23.2
1	242	04.1	184	17.9	06.8	141	40.2	31.5	270	15.1	24.1	286	04.5	23.1
2	257	06.6	199	17.2	07.6	156	41.0	31.4	285	17.2	24.0	301	06.9	23.1
3	272	09.0	214	16.5	08.3	171	41.8	31.3	300	19.4	23.9	316	09.3	23.1
4	287	11.5	229	15.7	09.1	186	42.6	31.2	315	21.6	23.8	331	11.7	23.1
5	302	13.9	244	15.0	+20 09.8	201	43.4	+24 31.1	330	23.7	−12 23.7	346	14.1	−17 23.1
6	317	16.4	259	14.3	+20 10.6	216	44.2	+24 30.9	345	25.9	−12 23.6	1	16.5	−17 23.1
7	332	18.9	274	13.6	11.3	231	45.0	30.8	0	28.1	23.5	16	18.9	23.1
8	347	21.3	289	12.9	12.1	246	45.8	30.7	15	30.2	23.4	31	21.3	23.1
9	2	23.8	304	12.2	12.8	261	46.6	30.6	30	32.4	23.3	46	23.7	23.1
10	17	26.3	319	11.4	13.5	276	47.4	30.5	45	34.6	23.2	61	26.1	23.0
11	32	28.7	334	10.7	+20 14.3	291	48.2	+24 30.3	60	36.7	−12 23.1	76	28.5	−17 23.0
12	47	31.2	349	10.0	+20 15.0	306	49.0	+24 30.2	75	38.9	−12 23.0	91	30.9	−17 23.0
13	62	33.7	4	09.3	15.8	321	49.8	30.1	90	41.1	22.9	106	33.3	23.0
14	77	36.1	19	08.6	16.5	336	50.6	30.0	105	43.2	22.8	121	35.7	23.0
15	92	38.6	34	07.9	17.2	351	51.4	29.9	120	45.4	22.7	136	38.1	23.0
16	107	41.1	49	07.1	18.0	6	52.2	29.7	135	47.6	22.6	151	40.5	23.0
17	122	43.5	64	06.4	+20 18.7	21	53.0	+24 29.6	150	49.7	−12 22.5	166	42.9	−17 23.0
18	137	46.0	79	05.7	+20 19.5	36	53.7	+24 29.5	165	51.9	−12 22.4	181	45.4	−17 23.0
19	152	48.4	94	05.0	20.2	51	54.5	29.4	180	54.1	22.3	196	47.8	23.0
20	167	50.9	109	04.2	20.9	66	55.3	29.3	195	56.3	22.2	211	50.2	22.9
21	182	53.4	124	03.5	21.7	81	56.1	29.1	210	58.4	22.1	226	52.6	22.9
22	197	55.8	139	02.8	22.4	96	56.9	29.0	226	00.6	22.0	241	55.0	22.9
23	212	58.3	154	02.1	23.1	111	57.7	28.9	241	02.8	21.9	256	57.4	22.9
24	228	00.8	169	01.4	+20 23.9	126	58.5	+24 28.8	256	04.9	−12 21.8	271	59.8	−17 22.9
Dif	—			−7	+7		+8	−1		+22	+1		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 27.d9		PHE	4h: 54′.1								
	PMG: 11h 56.m4				SD: 14′.7			12h: 54′.0								
					PMG: 11h 03m			20h: 54′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	53.8	+17	37.4	198	46.8	+8	18.0	**60 N**	20 20	21 21	23 35	3 48	5	18 42	81
1	195	53.8		38.0	213	21.9 161		30.3 123	**58**	20 08	21 01	22 29	53	8	35	78
2	210	53.8		38.7	227	56.9 160		42.4 121	**56**	19 58	20 46	21 57	3 57	11	28	75
3	225	53.8		39.3	242	32.0 161	+8	54.6 122	**54**	48	33	35	4 01	13	23	72
4	240	53.9		40.0	257	07.0 160	+9	06.7 121	**52**	40	21	17	05	15	18	69
5	255	53.9	+17	40.6	271	42.0 160	+9	18.8 121	**50**	19 33	20 11	21 02	4 08	17	18 13	68
6	270	53.9	+17	41.3	286	16.9 159	+9	30.8 120	**45**	19 17	19 50	20 33	4 15	22	18 03	63
7	285	53.9		41.9	300	51.9 160		42.8 120	**40**	19 04	34	20 11	21	25	17 55	60
8	300	53.9		42.6	315	26.8 159	+9	54.8 120	**35**	18 53	21	19 54	27	27	48	57
9	315	54.0		43.2	330	01.7 159	+10	06.7 119	**30**	43	19 09	40	31	30	42	54
10	330	54.0		43.9	344	36.5 158		18.6 119	**20**	27	18 50	18	39	35	31	50
11	345	54.0	+17	44.5	359	11.3 158	+10	30.5 119	**10 N**	18 13	18 35	19 01	4 47	38	17 22	46
12	0	54.0	+17	45.2	13	46.1 158	+10	42.3 118	**0**	18 00	18 22	18 47	4 53	42	17 13	43
13	15	54.0		45.8	28	20.9 158	+10	54.0 117	**10 S**	17 47	18 09	34	5 00	46	17 05	39
14	30	54.1		46.5	42	55.6 157	+11	05.8 118	**20**	33	17 56	23	08	49	16 56	35
15	45	54.1		47.1	57	30.3 157		17.4 116	**30**	18	43	12	16	54	45	31
16	60	54.1		47.8	72	05.0 157		29.1 117	**35**	17 09	36	06	21	56	39	29
17	75	54.1	+17	48.4	86	39.6 156	+11	40.6 115	**40**	16 59	17 27	18 00	5 26	60	16 32	26
18	90	54.1	+17	49.0	101	14.2 156	+11	52.2 116	**45**	16 47	17 18	17 54	5 33	63	16 25	22
19	105	54.2		49.7	115	48.7 155	+12	03.7 115	**50**	32	07	46	41	67	15	19
20	120	54.2		50.3	130	23.2 155		15.1 114	**52**	26	17 03	43	44	70	11	16
21	135	54.2		51.0	144	57.7 155		26.5 114	**54**	18	16 57	40	48	72	06	14
22	150	54.2		51.6	159	32.2 155		37.9 114	**56**	10	51	37	53	74	16 01	12
23	165	54.2		52.3	174	06.6 154	+12	49.2 113	**58**	16 00	45	33	5 58	77	15 55	9
24	180	54.2	+17	52.9	188	40.9 153	+13	00.4 112	**60 S**	15 50	16 38	17 29	6 03	81	15 48	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	8h 46.m5		PMG: 12h 45m			PMG: 15h 31m			PMG: 6h 55m			PMG: 5h 51m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	228	00.8	169	01.4	+20 23.9	126	58.5	+24 28.8	256	04.9	−12 21.8	271	59.8	−17 22.9
1	243	03.2	184	00.6	24.6	141	59.3	28.7	271	07.1	21.7	287	02.2	22.9
2	258	05.7	198	59.9	25.3	157	00.1	28.5	286	09.3	21.6	302	04.6	22.9
3	273	08.2	213	59.2	26.0	172	00.9	28.4	301	11.4	21.5	317	07.0	22.9
4	288	10.6	228	58.5	26.8	187	01.7	28.3	316	13.6	21.4	332	09.4	22.9
5	303	13.1	243	57.7	+20 27.5	202	02.5	+24 28.2	331	15.8	−12 21.3	347	11.8	−17 22.9
6	318	15.6	258	57.0	+20 28.2	217	03.3	+24 28.0	346	18.0	−12 21.2	2	14.2	−17 22.8
7	333	18.0	273	56.3	28.9	232	04.1	27.9	1	20.1	21.1	17	16.7	22.8
8	348	20.5	288	55.6	29.7	247	04.9	27.8	16	22.3	21.1	32	19.1	22.8
9	3	22.9	303	54.8	30.4	262	05.7	27.7	31	24.5	21.0	47	21.5	22.8
10	18	25.4	318	54.1	31.1	277	06.5	27.5	46	26.6	20.9	62	23.9	22.8
11	33	27.9	333	53.4	+20 31.8	292	07.3	+24 27.4	61	28.8	−12 20.8	77	26.3	−17 22.8
12	48	30.3	348	52.6	+20 32.6	307	08.0	+24 27.3	76	31.0	−12 20.7	92	28.7	−17 22.8
13	63	32.8	3	51.9	33.3	322	08.8	27.2	91	33.2	20.6	107	31.1	22.8
14	78	35.3	18	51.2	34.0	337	09.6	27.0	106	35.3	20.5	122	33.5	22.8
15	93	37.7	33	50.4	34.7	352	10.4	26.9	121	37.5	20.4	137	35.9	22.8
16	108	40.2	48	49.7	35.4	7	11.2	26.8	136	39.7	20.3	152	38.3	22.7
17	123	42.7	63	49.0	+20 36.1	22	12.0	+24 26.7	151	41.9	−12 20.2	167	40.7	−17 22.7
18	138	45.1	78	48.3	+20 36.8	37	12.8	+24 26.5	166	44.0	−12 20.1	182	43.2	−17 22.7
19	153	47.6	93	47.5	37.6	52	13.6	26.4	181	46.2	20.0	197	45.6	22.7
20	168	50.0	108	46.8	38.3	67	14.4	26.3	196	48.4	19.9	212	48.0	22.7
21	183	52.5	123	46.1	39.0	82	15.2	26.1	211	50.6	19.8	227	50.4	22.7
22	198	55.0	138	45.3	39.7	97	16.0	26.0	226	52.7	19.7	242	52.8	22.7
23	213	57.4	153	44.6	40.4	112	16.8	25.9	241	54.9	19.6	257	55.2	22.7
24	228	59.9	168	43.9	+20 41.1	127	17.6	+24 25.8	256	57.1	−12 19.5	272	57.6	−17 22.7
Dif	—			−7	+7		+8	−1		+22	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 28^{d}.9		PHE	4^{h}: 54′.0									
	PMG: 11^{h} 56^{m}.4				SD: 14′.7			12^{h}: 53′.9									
					PMG: 11^{h} 46^{m}			20^{h}: 53′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	54.2	+17	52.9	188	40.9	+13	00.4		**60 N**	0 17	2 32	3 32	3 53	6	20 03	83
1	195	54.3		53.5	203	15.3 154		11.6	112	**58**	1 23	2 51	44	4 01	10	19 53	78
2	210	54.3		54.2	217	49.6 153		22.7	111	**56**	1 55	3 06	3 55	08	13	43	75
3	225	54.3		54.8	232	23.8 152		33.8	111	**54**	2 17	20	4 04	14	16	35	72
4	240	54.3		55.5	246	58.0 152		44.9	111	**52**	35	31	12	20	18	27	70
5	255	54.3	+17	56.1	261	32.2 152	+13	55.9	110	**50**	2 50	3 41	4 20	4 25	20	19 21	67
6	270	54.3	+17	56.7	276	06.3 151	+14	06.8	109	**45**	3 19	4 02	4 36	4 37	24	19 06	64
7	285	54.3		57.4	290	40.4 151		17.7	109	**40**	41	18	4 49	46	28	18 55	60
8	300	54.4		58.0	305	14.4 150		28.5	108	**35**	3 58	32	5 00	4 54	30	45	57
9	315	54.4		58.7	319	48.4 150		39.2	107	**30**	4 12	4 43	09	5 01	33	36	55
10	330	54.4		59.3	334	22.3 149	+14	49.9	107	**20**	34	5 02	26	14	37	21	51
11	345	54.4	+17	59.9	348	56.2 149	+15	00.6	107	**10 N**	4 52	5 18	5 40	5 25	40	18 08	48
12	0	54.4	+18	00.6	3	30.1 149	+15	11.1	105	**0**	5 06	5 31	5 53	5 35	44	17 56	45
13	15	54.4		01.2	18	03.9 148		21.7	106	**10 S**	18	44	6 06	46	47	44	42
14	30	54.4		01.8	32	37.6 147		32.1	104	**20**	30	5 57	20	5 57	50	31	38
15	45	54.5		02.5	47	11.4 148		42.5	104	**30**	41	6 10	35	6 10	54	16	35
16	60	54.5		03.1	61	45.0 146	+15	52.8	103	**35**	47	18	44	17	57	17 08	32
17	75	54.5	+18	03.7	76	18.6 146	+16	03.1	103	**40**	5 53	6 26	6 55	6 26	60	16 58	30
18	90	54.5	+18	04.4	90	52.2 146	+16	13.3	102	**45**	6 00	6 35	7 07	6 36	63	16 47	26
19	105	54.5		05.0	105	25.7 145		23.5	102	**50**	07	46	21	48	68	34	22
20	120	54.5		05.6	119	59.2 145		33.5	100	**52**	10	51	28	6 54	70	27	20
21	135	54.5		06.3	134	32.6 144		43.5	100	**54**	13	6 56	36	7 00	72	20	18
22	150	54.5		06.9	149	06.0 144	+16	53.5	100	**56**	17	7 02	44	07	75	13	15
23	165	54.5		07.5	163	39.3 143	+17	03.3	98	**58**	21	09	7 54	15	78	16 04	12
24	180	54.6	+18	08.2	178	12.6 143	+17	13.1	98	**60 S**	6 25	7 16	8 05	7 24	82	15 54	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	8^{h} 42^{m}.6		PMG: 12^{h} 46^{m}			PMG: 15^{h} 30^{m}			PMG: 6^{h} 51^{m}			PMG: 5^{h} 47^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	228	59.9	168	43.9	+20 41.1	127	17.6	+24 25.8	256	57.1	−12 19.5	272	57.6	−17 22.7
1	244	02.4	183	43.1	41.8	142	18.4	25.6	271	59.3	19.4	288	00.0	22.7
2	259	04.8	198	42.4	42.5	157	19.2	25.5	287	01.4	19.3	303	02.4	22.7
3	274	07.3	213	41.6	43.2	172	20.0	25.4	302	03.6	19.2	318	04.9	22.6
4	289	09.8	228	40.9	43.9	187	20.8	25.2	317	05.8	19.1	333	07.3	22.6
5	304	12.2	243	40.2	+20 44.6	202	21.6	+24 25.1	332	08.0	−12 19.0	348	09.7	−17 22.6
6	319	14.7	258	39.4	+20 45.3	217	22.4	+24 25.0	347	10.1	−12 18.9	3	12.1	−17 22.6
7	334	17.2	273	38.7	46.0	232	23.2	24.8	2	12.3	18.9	18	14.5	22.6
8	349	19.6	288	38.0	46.7	247	23.9	24.7	17	14.5	18.8	33	16.9	22.6
9	4	22.1	303	37.2	47.4	262	24.7	24.6	32	16.7	18.7	48	19.3	22.6
10	19	24.5	318	36.5	48.1	277	25.5	24.4	47	18.9	18.6	63	21.8	22.6
11	34	27.0	333	35.7	+20 48.8	292	26.3	+24 24.3	62	21.0	−12 18.5	78	24.2	−17 22.6
12	49	29.5	348	35.0	+20 49.5	307	27.1	+24 24.2	77	23.2	−12 18.4	93	26.6	−17 22.6
13	64	31.9	3	34.3	50.2	322	27.9	24.0	92	25.4	18.3	108	29.0	22.6
14	79	34.4	18	33.5	50.9	337	28.7	23.9	107	27.6	18.2	123	31.4	22.6
15	94	36.9	33	32.8	51.6	352	29.5	23.8	122	29.8	18.1	138	33.8	22.5
16	109	39.3	48	32.0	52.3	7	30.3	23.6	137	31.9	18.0	153	36.2	22.5
17	124	41.8	63	31.3	+20 53.0	22	31.1	+24 23.5	152	34.1	−12 17.9	168	38.6	−17 22.5
18	139	44.3	78	30.5	+20 53.7	37	31.9	+24 23.4	167	36.3	−12 17.8	183	41.1	−17 22.5
19	154	46.7	93	29.8	54.4	52	32.7	23.2	182	38.5	17.7	198	43.5	22.5
20	169	49.2	108	29.1	55.1	67	33.5	23.1	197	40.7	17.6	213	45.9	22.5
21	184	51.7	123	28.3	55.7	82	34.3	23.0	212	42.8	17.5	228	48.3	22.5
22	199	54.1	138	27.6	56.4	97	35.1	22.8	227	45.0	17.4	243	50.7	22.5
23	214	56.6	153	26.8	57.1	112	35.9	22.7	242	47.2	17.3	258	53.1	22.5
24	229	59.0	168	26.1	+20 57.8	127	36.7	+24 22.6	257	49.4	−12 17.3	273	55.6	−17 22.5
Dif	—			−7	+7		+8	−1		+22	+1		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.4				LUNA Edad: 29d.9 SD: 14′.7 PMG: 12h 30m PHE 4h: 53′.9; 12h: 54′.0; 20h: 54′.0 Rº: 46m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	54.6	+18	08.2	178	12.6	+17	13.1	**60 N**	20 25	21 27	** **	3 59	11	21 26	81
1	195	54.6		08.8	192	45.8 142		22.9 98	**58**	12	21 07	22 40	4 11	15	21 11	76
2	210	54.6		09.4	207	18.9 141		32.5 96	**56**	20 01	20 50	22 05	21	18	20 58	73
3	225	54.6		10.0	221	52.0 141		42.1 96	**54**	19 52	37	21 41	30	20	47	70
4	240	54.6		10.7	236	25.1 141	+17	51.6 95	**52**	43	25	22	38	23	37	68
5	255	54.6	+18	11.3	250	58.1 140	+18	01.1 95	**50**	19 35	20 14	21 06	4 45	25	20 28	67
6	270	54.6	+18	11.9	265	31.1 140	+18	10.4 93	**45**	19 19	19 53	20 36	5 01	28	20 10	62
7	285	54.6		12.6	280	04.0 139		19.7 93	**40**	19 06	36	20 14	14	31	19 55	60
8	300	54.6		13.2	294	36.8 138		29.0 93	**35**	18 54	22	19 56	24	35	42	58
9	315	54.6		13.8	309	09.6 138		38.1 91	**30**	45	19 11	42	34	36	31	56
10	330	54.7		14.4	323	42.3 137		47.2 91	**20**	28	18 51	19	5 51	40	19 12	53
11	345	54.7	+18	15.1	338	15.0 137	+18	56.1 89	**10 N**	18 13	18 36	19 02	6 05	43	18 56	50
12	0	54.7	+18	15.7	352	47.6 136	+19	05.1 90	**0**	18 00	18 22	18 47	6 19	46	18 41	47
13	15	54.7		16.3	7	20.2 136		13.9 88	**10 S**	17 47	18 09	34	33	48	26	44
14	30	54.7		16.9	21	52.7 135		22.6 87	**20**	32	17 56	22	6 47	52	18 09	42
15	45	54.7		17.5	36	25.2 135		31.3 87	**30**	16	42	11	7 04	56	17 51	38
16	60	54.7		18.2	50	57.6 134		39.9 86	**35**	17 07	34	18 04	14	58	40	37
17	75	54.7	+18	18.8	65	29.9 133	+19	48.4 85	**40**	16 57	17 26	17 58	7 26	60	17 28	34
18	90	54.7	+18	19.4	80	02.2 133	+19	56.8 84	**45**	16 44	17 16	17 51	7 39	64	17 13	32
19	105	54.7		20.0	94	34.5 133	+20	05.1 83	**50**	29	05	44	7 56	67	16 56	27
20	120	54.7		20.6	109	06.7 132		13.4 83	**52**	22	17 00	41	8 04	69	47	26
21	135	54.7		21.3	123	38.8 131		21.6 82	**54**	15	16 54	37	12	72	38	23
22	150	54.7		21.9	138	10.9 131		29.6 80	**56**	16 06	48	34	22	75	28	20
23	165	54.7		22.5	152	42.9 130		37.6 80	**58**	15 56	41	30	33	78	16	17
24	180	54.7	+18	23.1	167	14.8 129	+20	45.5 79	**60 S**	15 45	16 34	17 25	8 46	83	16 02	13

UT	ARIES PMG 8h 38m.6		VENUS Mag: −3.9 PMG: 12h 47m			MARTE Mag: +1.6 PMG: 15h 29m			JÚPITER Mag: −2.3 PMG: 6h 48m			SATURNO Mag: +0.7 PMG: 5h 43m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	229	59.0	168	26.1	+20 57.8	127	36.7	+24 22.6	257	49.4	−12 17.3	273	55.6	−17 22.5
1	245	01.5	183	25.3	58.5	142	37.5	22.4	272	51.6	17.2	288	58.0	22.5
2	260	04.0	198	24.6	59.2	157	38.3	22.3	287	53.7	17.1	304	00.4	22.5
3	275	06.4	213	23.8	+20 59.8	172	39.1	22.2	302	55.9	17.0	319	02.8	22.5
4	290	08.9	228	23.1	+21 00.5	187	39.9	22.0	317	58.1	16.9	334	05.2	22.4
5	305	11.4	243	22.3	+21 01.2	202	40.7	+24 21.9	333	00.3	−12 16.8	349	07.6	−17 22.4
6	320	13.8	258	21.6	+21 01.9	217	41.5	+24 21.7	348	02.5	−12 16.7	4	10.1	−17 22.4
7	335	16.3	273	20.8	02.6	232	42.2	21.6	3	04.7	16.6	19	12.5	22.4
8	350	18.8	288	20.1	03.2	247	43.0	21.5	18	06.8	16.5	34	14.9	22.4
9	5	21.2	303	19.4	03.9	262	43.8	21.3	33	09.0	16.4	49	17.3	22.4
10	20	23.7	318	18.6	04.6	277	44.6	21.2	48	11.2	16.3	64	19.7	22.4
11	35	26.1	333	17.8	+21 05.2	292	45.4	+24 21.0	63	13.4	−12 16.2	79	22.1	−17 22.4
12	50	28.6	348	17.1	+21 05.9	307	46.2	+24 20.9	78	15.6	−12 16.1	94	24.6	−17 22.4
13	65	31.1	3	16.3	06.6	322	47.0	20.8	93	17.8	16.1	109	27.0	22.4
14	80	33.5	18	15.6	07.3	337	47.8	20.6	108	20.0	16.0	124	29.4	22.4
15	95	36.0	33	14.8	07.9	352	48.6	20.5	123	22.1	15.9	139	31.8	22.4
16	110	38.5	48	14.1	08.6	7	49.4	20.3	138	24.3	15.8	154	34.2	22.4
17	125	40.9	63	13.3	+21 09.3	22	50.2	+24 20.2	153	26.5	−12 15.7	169	36.6	−17 22.3
18	140	43.4	78	12.6	+21 09.9	37	51.0	+24 20.1	168	28.7	−12 15.6	184	39.1	−17 22.3
19	155	45.9	93	11.8	10.6	52	51.8	19.9	183	30.9	15.5	199	41.5	22.3
20	170	48.3	108	11.1	11.3	67	52.6	19.8	198	33.1	15.4	214	43.9	22.3
21	185	50.8	123	10.3	11.9	82	53.4	19.6	213	35.3	15.3	229	46.3	22.3
22	200	53.3	138	09.6	12.6	97	54.2	19.5	228	37.4	15.2	244	48.7	22.3
23	215	55.7	153	08.8	13.2	112	55.0	19.3	243	39.6	15.1	259	51.2	22.3
24	230	58.2	168	08.0	+21 13.9	127	55.8	+24 19.2	258	41.8	−12 15.0	274	53.6	−17 22.3
Dif	—			−8	+7		+8	−1		+22	+1		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.3				LUNA Edad: 1d.2 SD: 14′.7 PMG: 13h 16m PHE 4h: 54′.0; 12h: 54′.1; 20h: 54′.1 Rº: 49m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	54.7	+18	23.1	167	14.8	+20	45.5	**60 N**	** **	2 25	3 27	4 10	17	22 47	74
1	195	54.7		23.7	181	46.7 129	+20	53.3 78	**58**	1 12	2 45	40	26	21	27	70
2	210	54.7		24.3	196	18.6 129	+21	01.1 78	**56**	1 47	3 02	3 51	39	25	22 11	67
3	225	54.7		25.0	210	50.4 128		08.7 76	**54**	2 12	15	4 00	4 50	28	21 57	65
4	240	54.8		25.6	225	22.1 127		16.2 75	**52**	31	27	09	5 01	29	45	64
5	255	54.8	+18	26.2	239	53.8 127	+21	23.7 75	**50**	2 46	3 38	4 17	5 10	31	21 35	62
6	270	54.8	+18	26.8	254	25.4 126	+21	31.0 73	**45**	3 16	3 59	4 33	5 29	35	21 12	60
7	285	54.8		27.4	268	57.0 126		38.3 73	**40**	39	4 16	47	45	37	20 55	57
8	300	54.8		28.0	283	28.5 125		45.5 72	**35**	3 56	30	4 58	5 59	39	40	56
9	315	54.8		28.6	297	59.9 124		52.6 71	**30**	4 11	4 42	5 08	6 10	41	27	55
10	330	54.8		29.3	312	31.3 124	+21	59.5 69	**20**	33	5 01	25	31	43	20 05	52
11	345	54.8	+18	29.9	327	02.7 124	+22	06.4 69	**10 N**	4 51	5 17	5 39	6 48	46	19 46	50
12	0	54.8	+18	30.5	341	33.9 122	+22	13.2 68	**0**	5 06	5 31	5 53	7 05	48	19 28	49
13	15	54.8		31.1	356	05.2 123		19.9 67	**10 S**	19	44	6 06	21	51	19 10	48
14	30	54.8		31.7	10	36.3 121		26.5 66	**20**	31	5 57	20	7 39	53	18 51	46
15	45	54.8		32.3	25	07.5 122		33.0 65	**30**	42	6 11	37	8 00	55	29	44
16	60	54.8		32.9	39	38.5 120		39.4 64	**35**	49	19	46	12	57	17	42
17	75	54.8	+18	33.5	54	09.5 120	+22	45.6 62	**40**	5 55	6 28	6 57	8 26	59	18 02	40
18	90	54.8	+18	34.1	68	40.5 120	+22	51.8 62	**45**	6 02	6 37	7 09	8 43	61	17 45	38
19	105	54.8		34.7	83	11.4 119	+22	57.9 61	**50**	09	49	24	9 03	65	23	35
20	120	54.8		35.3	97	42.2 118	+23	03.9 60	**52**	13	54	31	13	66	13	34
21	135	54.8		35.9	112	13.0 118		09.8 59	**54**	16	6 59	39	24	69	17 01	32
22	150	54.8		36.5	126	43.8 118		15.5 57	**56**	20	7 06	48	37	71	16 48	30
23	165	54.8		37.2	141	14.5 117		21.2 57	**58**	24	13	7 58	9 51	75	33	27
24	180	54.8	+18	37.8	155	45.1 116	+23	26.8 56	**60 S**	6 28	7 20	8 09	10 09	79	16 15	22

UT	ARIES PMG 8h 34m.7		VENUS Mag: −3.9 PMG: 12h 48m				MARTE Mag: +1.6 PMG: 15h 27m				JÚPITER Mag: −2.3 PMG: 6h 44m				SATURNO Mag: +0.7 PMG: 5h 40m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	230	58.2	168	08.0	+21	13.9	127	55.8	+24	19.2	258	41.8	−12	15.0	274	53.6	−17	22.3
1	246	00.6	183	07.3		14.6	142	56.6		19.1	273	44.0		15.0	289	56.0		22.3
2	261	03.1	198	06.5		15.2	157	57.4		18.9	288	46.2		14.9	304	58.4		22.3
3	276	05.6	213	05.8		15.9	172	58.2		18.8	303	48.4		14.8	320	00.8		22.3
4	291	08.0	228	05.0		16.5	187	59.0		18.6	318	50.6		14.7	335	03.3		22.3
5	306	10.5	243	04.3	+21	17.2	202	59.8	+24	18.5	333	52.8	−12	14.6	350	05.7	−17	22.3
6	321	13.0	258	03.5	+21	17.8	218	00.6	+24	18.3	348	55.0	−12	14.5	5	08.1	−17	22.3
7	336	15.4	273	02.7		18.5	233	01.4		18.2	3	57.1		14.4	20	10.5		22.3
8	351	17.9	288	02.0		19.1	248	02.2		18.0	18	59.3		14.3	35	12.9		22.3
9	6	20.4	303	01.2		19.8	263	03.0		17.9	34	01.5		14.2	50	15.4		22.2
10	21	22.8	318	00.5		20.4	278	03.8		17.8	49	03.7		14.1	65	17.8		22.2
11	36	25.3	332	59.7	+21	21.1	293	04.6	+24	17.6	64	05.9	−12	14.1	80	20.2	−17	22.2
12	51	27.8	347	58.9	+21	21.7	308	05.3	+24	17.5	79	08.1	−12	14.0	95	22.6	−17	22.2
13	66	30.2	2	58.2		22.4	323	06.1		17.3	94	10.3		13.9	110	25.1		22.2
14	81	32.7	17	57.4		23.0	338	06.9		17.2	109	12.5		13.8	125	27.5		22.2
15	96	35.1	32	56.7		23.7	353	07.7		17.0	124	14.7		13.7	140	29.9		22.2
16	111	37.6	47	55.9		24.3	8	08.5		16.9	139	16.9		13.6	155	32.3		22.2
17	126	40.1	62	55.1	+21	25.0	23	09.3	+24	16.7	154	19.1	−12	13.5	170	34.7	−17	22.2
18	141	42.5	77	54.4	+21	25.6	38	10.1	+24	16.6	169	21.2	−12	13.4	185	37.2	−17	22.2
19	156	45.0	92	53.6		26.2	53	10.9		16.4	184	23.4		13.3	200	39.6		22.2
20	171	47.5	107	52.8		26.9	68	11.7		16.3	199	25.6		13.2	215	42.0		22.2
21	186	49.9	122	52.1		27.5	83	12.5		16.1	214	27.8		13.2	230	44.4		22.2
22	201	52.4	137	51.3		28.2	98	13.3		16.0	229	30.0		13.1	245	46.9		22.2
23	216	54.9	152	50.5		28.8	113	14.1		15.8	244	32.2		13.0	260	49.3		22.2
24	231	57.3	167	49.8	+21	29.4	128	14.9	+24	15.7	259	34.4	−12	12.9	275	51.7	−17	22.2
Dif	—			−8		+6		+8		−1		+22		+1		+24		0

UT	SOL SD: 15′.8 PMG: 11h 56m.4				LUNA Edad: 2d.2 SD: 14′.7 PMG: 14h 05m PHE 4h: 54′.2; 12h: 54′.2; 20h: 54′.3 Rº: 50m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	54.8	+18	37.8	155	45.1 116	+23	26.8 54	**60 N**	20 30	21 34	** **	4 27	29	** **	**
1	195	54.8		38.4	170	15.7 116		32.2 54	**58**	17	21 12	22 52	4 47	33	23 37	58
2	210	54.8		39.0	184	46.2 115		37.6 54	**56**	20 05	20 55	22 12	5 04	35	18	57
3	225	54.8		39.6	199	16.7 115		42.8 52	**54**	19 55	41	21 46	18	37	23 02	57
4	240	54.8		40.2	213	47.2 115		48.0 52	**52**	46	28	26	30	39	22 49	55
5	255	54.8	+18	40.8	228	17.5 113	+23	53.0 50	**50**	19 38	20 18	21 10	5 41	40	22 37	55
6	270	54.8	+18	41.4	242	47.9 114	+23	57.9 49	**45**	19 21	19 56	20 39	6 04	42	22 12	54
7	285	54.8		42.0	257	18.2 113	+24	02.7 48	**40**	19 08	38	20 16	22	44	21 52	54
8	300	54.8		42.6	271	48.4 112		07.4 47	**35**	18 56	24	19 58	38	45	36	53
9	315	54.8		43.2	286	18.6 112		12.0 46	**30**	46	19 12	43	6 51	46	21 22	52
10	330	54.7		43.8	300	48.7 111		16.5 45	**20**	29	18 52	20	7 14	48	20 57	53
11	345	54.7	+18	44.4	315	18.8 111	+24	20.8 43	**10 N**	18 14	18 36	19 02	7 34	49	20 36	52
12	0	54.7	+18	45.0	329	48.9 111	+24	25.1 43	**0**	18 00	18 22	18 47	7 53	50	20 17	51
13	15	54.7		45.6	344	18.9 110		29.2 41	**10 S**	17 46	18 08	34	8 12	51	19 58	50
14	30	54.7		46.2	358	48.9 110		33.2 40	**20**	32	17 55	22	32	53	37	49
15	45	54.7		46.7	13	18.8 109		37.1 39	**30**	15	41	09	8 55	54	19 13	48
16	60	54.7		47.3	27	48.6 108		40.9 38	**35**	17 06	33	18 03	9 09	55	18 59	47
17	75	54.7	+18	47.9	42	18.5 109	+24	44.6 37	**40**	16 55	17 24	17 57	9 25	56	18 42	47
18	90	54.7	+18	48.5	56	48.3 108	+24	48.1 35	**45**	16 42	17 14	17 49	9 44	57	18 23	46
19	105	54.7		49.1	71	18.0 107		51.6 35	**50**	27	17 02	42	10 08	59	17 58	45
20	120	54.7		49.7	85	47.7 107		54.9 33	**52**	19	16 57	38	19	61	47	44
21	135	54.7		50.3	100	17.4 107	+24	58.1 32	**54**	11	51	35	33	61	33	43
22	150	54.7		50.9	114	47.0 106	+25	01.2 31	**56**	16 02	45	31	10 48	62	18	41
23	165	54.7		51.5	129	16.6 106		04.1 29	**58**	15 52	38	26	11 06	64	17 00	39
24	180	54.7	+18	52.1	143	46.1 105	+25	07.0 29	**60 S**	15 41	16 30	17 22	11 28	68	16 37	37

UT	ARIES PMG 8h 30m.8		VENUS Mag: −3.9 PMG: 12h 49m			MARTE Mag: +1.6 PMG: 15h 26m			JÚPITER Mag: −2.4 PMG: 6h 41m			SATURNO Mag: +0.7 PMG: 5h 36m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	231	57.3	167	49.8	+21 29.4	128	14.9	+24 15.7	259	34.4	−12 12.9	275	51.7	−17 22.2
1	246	59.8	182	49.0	30.1	143	15.7	15.5	274	36.6	12.8	290	54.1	22.2
2	262	02.3	197	48.2	30.7	158	16.5	15.4	289	38.8	12.7	305	56.6	22.1
3	277	04.7	212	47.5	31.3	173	17.3	15.2	304	41.0	12.6	320	59.0	22.1
4	292	07.2	227	46.7	32.0	188	18.1	15.1	319	43.2	12.5	336	01.4	22.1
5	307	09.6	242	45.9	+21 32.6	203	18.9	+24 14.9	334	45.4	−12 12.4	351	03.8	−17 22.1
6	322	12.1	257	45.2	+21 33.2	218	19.7	+24 14.8	349	47.6	−12 12.4	6	06.3	−17 22.1
7	337	14.6	272	44.4	33.8	233	20.5	14.6	4	49.8	12.3	21	08.7	22.1
8	352	17.0	287	43.6	34.5	248	21.3	14.5	19	52.0	12.2	36	11.1	22.1
9	7	19.5	302	42.8	35.1	263	22.1	14.3	34	54.2	12.1	51	13.5	22.1
10	22	22.0	317	42.1	35.7	278	22.9	14.2	49	56.4	12.0	66	16.0	22.1
11	37	24.4	332	41.3	+21 36.3	293	23.7	+24 14.0	64	58.6	−12 11.9	81	18.4	−17 22.1
12	52	26.9	347	40.5	+21 37.0	308	24.5	+24 13.8	80	00.8	−12 11.8	96	20.8	−17 22.1
13	67	29.4	2	39.8	37.6	323	25.3	13.7	95	03.0	11.7	111	23.2	22.1
14	82	31.8	17	39.0	38.2	338	26.1	13.5	110	05.2	11.7	126	25.7	22.1
15	97	34.3	32	38.2	38.8	353	26.9	13.4	125	07.3	11.6	141	28.1	22.1
16	112	36.7	47	37.4	39.4	8	27.7	13.2	140	09.5	11.5	156	30.5	22.1
17	127	39.2	62	36.7	+21 40.1	23	28.5	+24 13.1	155	11.7	−12 11.4	171	32.9	−17 22.1
18	142	41.7	77	35.9	+21 40.7	38	29.3	+24 12.9	170	13.9	−12 11.3	186	35.4	−17 22.1
19	157	44.1	92	35.1	41.3	53	30.1	12.8	185	16.1	11.2	201	37.8	22.1
20	172	46.6	107	34.3	41.9	68	30.9	12.6	200	18.3	11.1	216	40.2	22.1
21	187	49.1	122	33.6	42.5	83	31.7	12.4	215	20.5	11.0	231	42.6	22.1
22	202	51.5	137	32.8	43.1	98	32.5	12.3	230	22.7	11.0	246	45.1	22.1
23	217	54.0	152	32.0	43.7	113	33.3	12.1	245	24.9	10.9	261	47.5	22.0
24	232	56.5	167	31.2	+21 44.4	128	34.1	+24 12.0	260	27.1	−12 10.8	276	49.9	−17 22.0
Dif	—			−8	+6		+8	−2		+22	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 3ᵈ.2		PHE	4ʰ: 54′.4									
	PMG: 11ʰ 56ᵐ.4				SD: 14′.8			12ʰ: 54′.5									
					PMG: 14ʰ 55ᵐ			20ʰ: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	54.7	+18	52.1	143	46.1	+25	07.0		**60 N**	** **	2 19	3 22	4 56	48	0 01	59
1	195	54.7		52.7	158	15.6 105		09.7	27	**58**	1 00	40	35	5 20	48	** **	**
2	210	54.7		53.3	172	45.1 105		12.3	26	**56**	1 40	2 57	47	39	49	** **	**
3	225	54.6		53.9	187	14.5 104		14.8	25	**54**	2 06	3 11	3 57	5 55	50	23 59	45
4	240	54.6		54.4	201	43.9 104		17.1	23	**52**	26	24	4 06	6 09	50	44	46
5	255	54.6	+18	55.0	216	13.3 104	+25	19.4	23	**50**	2 42	3 35	4 14	6 21	50	23 32	47
6	270	54.6	+18	55.6	230	42.6 103	+25	21.5	21	**45**	3 13	3 57	4 31	6 46	51	23 06	48
7	285	54.6		56.2	245	11.9 103		23.5	20	**40**	36	4 14	45	7 06	51	22 46	49
8	300	54.6		56.8	259	41.2 103		25.4	19	**35**	3 54	28	4 56	23	51	29	49
9	315	54.6		57.4	274	10.5 103		27.1	17	**30**	4 09	4 40	5 07	7 37	51	22 14	50
10	330	54.6		58.0	288	39.7 102		28.7	16	**20**	32	5 00	24	8 02	51	21 50	50
11	345	54.6	+18	58.5	303	08.8 101	+25	30.2	15	**10 N**	4 50	5 17	5 39	8 23	52	21 28	51
12	0	54.6	+18	59.1	317	38.0 102	+25	31.6	14	**0**	5 06	5 31	5 53	8 43	52	21 08	52
13	15	54.6	+18	59.7	332	07.1 101		32.9	13	**10 S**	19	44	6 07	9 03	52	20 48	52
14	30	54.5	+19	00.3	346	36.2 101		34.0	11	**20**	31	5 58	21	25	51	26	53
15	45	54.5		00.9	1	05.3 101		35.0	10	**30**	44	6 13	38	9 49	52	20 01	53
16	60	54.5		01.5	15	34.3 100		35.9	9	**35**	50	21	48	10 04	51	19 46	54
17	75	54.5	+19	02.0	30	03.4 101	+25	36.6	7	**40**	5 57	6 29	6 58	10 21	51	19 29	54
18	90	54.5	+19	02.6	44	32.4 100	+25	37.2	6	**45**	6 04	6 39	7 11	10 41	52	19 09	54
19	105	54.5		03.2	59	01.4 100		37.7	5	**50**	12	51	27	11 07	51	18 43	55
20	120	54.5		03.8	73	30.3 99		38.1	4	**52**	15	6 57	34	20	50	31	55
21	135	54.5		04.4	87	59.3 100		38.3	2	**54**	19	7 02	42	34	51	18 16	56
22	150	54.5		04.9	102	28.2 99		38.4	1	**56**	23	09	7 51	11 50	51	17 59	57
23	165	54.4		05.5	116	57.1 99		38.4	0	**58**	27	16	8 02	12 10	51	39	57
24	180	54.4	+19	06.1	131	26.0 99	+25	38.3	1	**60 S**	6 32	7 24	8 14	12 36	49	17 14	58

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.7		
	8ʰ 26ᵐ.8		PMG: 12ʰ 51ᵐ			PMG: 15ʰ 25ᵐ			PMG: 6ʰ 37ᵐ			PMG: 5ʰ 32ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	232	56.5	167	31.2	+21 44.4	128	34.1	+24 12.0	260	27.1	−12 10.8	276	49.9	−17 22.0
1	247	58.9	182	30.4	45.0	143	34.9	11.8	275	29.3	10.7	291	52.4	22.0
2	263	01.4	197	29.7	45.6	158	35.7	11.7	290	31.5	10.6	306	54.8	22.0
3	278	03.9	212	28.9	46.2	173	36.5	11.5	305	33.7	10.5	321	57.2	22.0
4	293	06.3	227	28.1	46.8	188	37.3	11.3	320	35.9	10.4	336	59.6	22.0
5	308	08.8	242	27.3	+21 47.4	203	38.1	+24 11.2	335	38.1	−12 10.4	352	02.1	−17 22.0
6	323	11.2	257	26.6	+21 48.0	218	38.9	+24 11.0	350	40.3	−12 10.3	7	04.5	−17 22.0
7	338	13.7	272	25.8	48.6	233	39.7	10.9	5	42.6	10.2	22	06.9	22.0
8	353	16.2	287	25.0	49.2	248	40.5	10.7	20	44.8	10.1	37	09.4	22.0
9	8	18.6	302	24.2	49.8	263	41.3	10.5	35	47.0	10.0	52	11.8	22.0
10	23	21.1	317	23.4	50.4	278	42.1	10.4	50	49.2	09.9	67	14.2	22.0
11	38	23.6	332	22.6	+21 51.0	293	42.9	+24 10.2	65	51.4	−12 09.8	82	16.6	−17 22.0
12	53	26.0	347	21.9	+21 51.6	308	43.7	+24 10.1	80	53.6	−12 09.8	97	19.1	−17 22.0
13	68	28.5	2	21.1	52.2	323	44.5	09.9	95	55.8	09.7	112	21.5	22.0
14	83	31.0	17	20.3	52.8	338	45.3	09.7	110	58.0	09.6	127	23.9	22.0
15	98	33.4	32	19.5	53.4	353	46.1	09.6	126	00.2	09.5	142	26.4	22.0
16	113	35.9	47	18.7	54.0	8	46.9	09.4	141	02.4	09.4	157	28.8	22.0
17	128	38.4	62	17.9	+21 54.6	23	47.7	+24 09.3	156	04.6	−12 09.3	172	31.2	−17 22.0
18	143	40.8	77	17.2	+21 55.1	38	48.5	+24 09.1	171	06.8	−12 09.2	187	33.7	−17 22.0
19	158	43.3	92	16.4	55.7	53	49.3	08.9	186	09.0	09.2	202	36.1	22.0
20	173	45.7	107	15.6	56.3	68	50.1	08.8	201	11.2	09.1	217	38.5	22.0
21	188	48.2	122	14.8	56.9	83	50.9	08.6	216	13.4	09.0	232	41.0	22.0
22	203	50.7	137	14.0	57.5	98	51.6	08.4	231	15.6	08.9	247	43.4	22.0
23	218	53.1	152	13.2	58.1	113	52.4	08.3	246	17.8	08.8	262	45.8	22.0
24	233	55.6	167	12.4	+21 58.7	128	53.2	+24 08.1	261	20.0	−12 08.7	277	48.2	−17 22.0
Dif	—			−8	+6		+8	−2		+22	+1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 4ᵈ.2		PHE	4ʰ: 54′.8								
	PMG: 11ʰ 56ᵐ.4		SD: 14′.9			12ʰ: 55′.0								
			PMG: 15ʰ 47ᵐ			20ʰ: 55′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	180 54.4	+19 06.1	131 26.0	98	+25 38.3	3	**60 N**	20 35	21 40	** **	5 44	67	1 00	39
1	195 54.4	06.7	145 54.8	99	38.0	4	**58**	21	18	23 07	6 08	65	0 35	42
2	210 54.4	07.2	160 23.7	98	37.6	5	**56**	20 09	21 00	22 20	28	63	0 15	44
3	225 54.4	07.8	174 52.5	99	37.1	7	**54**	19 59	20 45	21 52	45	62	** **	**
4	240 54.4	08.4	189 21.4	98	36.4	8	**52**	49	32	31	6 59	61	** **	**
5	255 54.4	+19 09.0	203 50.2	98	+25 35.6	9	**50**	19 41	20 21	21 14	7 11	60	** **	**
6	270 54.3	+19 09.5	218 19.0	98	+25 34.7	10	**45**	19 24	19 58	20 42	7 37	58	23 54	41
7	285 54.3	10.1	232 47.8	98	33.7	12	**40**	19 10	40	19	7 57	57	35	42
8	300 54.3	10.7	247 16.6	98	32.5	13	**35**	18 58	26	20 00	8 14	56	18	45
9	315 54.3	11.3	261 45.3	97	31.2	14	**30**	47	19 13	19 45	28	56	23 04	46
10	330 54.3	11.8	276 14.1	98	29.8	16	**20**	29	18 53	21	8 53	54	22 40	48
11	345 54.3	+19 12.4	290 42.9	98	+25 28.2	17	**10 N**	18 14	18 37	19 03	9 15	53	22 19	50
12	0 54.3	+19 13.0	305 11.6	97	+25 26.5	18	**0**	18 00	18 22	18 47	9 35	51	22 00	51
13	15 54.2	13.5	319 40.4	98	24.7	19	**10 S**	17 46	18 08	34	9 55	50	21 40	53
14	30 54.2	14.1	334 09.1	97	22.8	21	**20**	31	17 54	21	10 16	49	21 19	55
15	45 54.2	14.7	348 37.9	98	20.7	22	**30**	14	39	08	41	48	20 54	58
16	60 54.2	15.2	3 06.6	97	18.5	24	**35**	17 04	31	18 02	10 55	47	40	58
17	75 54.2	+19 15.8	17 35.3	97	+25 16.1	26	**40**	16 53	17 22	17 55	11 12	46	20 23	60
18	90 54.2	+19 16.4	32 04.1	98	+25 13.7	27	**45**	16 40	17 12	17 48	11 33	44	20 03	62
19	105 54.1	16.9	46 32.8	97	11.1	29	**50**	24	17 00	39	11 58	42	19 38	65
20	120 54.1	17.5	61 01.6	98	08.4	30	**52**	17	16 54	36	12 10	41	26	66
21	135 54.1	18.1	75 30.3	97	05.5	31	**54**	16 08	48	32	25	39	19 12	67
22	150 54.1	18.6	89 59.0	97	+25 02.5	31	**56**	15 59	42	28	12 41	37	18 56	69
23	165 54.1	19.2	104 27.8	98	+24 59.4	32	**58**	48	34	23	13 01	34	36	72
24	180 54.0	+19 19.8	118 56.6	98	+24 56.2		**60 S**	15 36	16 26	17 18	13 25	31	18 12	76

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.7		Mag: −2.4		Mag: +0.7	
	8ʰ 22ᵐ.9	PMG: 12ʰ 52ᵐ		PMG: 15ʰ 24ᵐ		PMG: 6ʰ 34ᵐ		PMG: 5ʰ 28ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	233 55.6	167 12.4	+21 58.7	128 53.2	+24 08.1	261 20.0	−12 08.7	277 48.2	−17 22.0
1	248 58.1	182 11.7	59.3	143 54.0	07.9	276 22.2	08.7	292 50.7	22.0
2	264 00.5	197 10.9	+21 59.8	158 54.8	07.8	291 24.4	08.6	307 53.1	21.9
3	279 03.0	212 10.1	+22 00.4	173 55.6	07.6	306 26.6	08.5	322 55.5	21.9
4	294 05.5	227 09.3	01.0	188 56.4	07.4	321 28.9	08.4	337 58.0	21.9
5	309 07.9	242 08.5	+22 01.6	203 57.2	+24 07.3	336 31.1	−12 08.3	353 00.4	−17 21.9
6	324 10.4	257 07.7	+22 02.2	218 58.0	+24 07.1	351 33.3	−12 08.2	8 02.8	−17 21.9
7	339 12.9	272 06.9	02.7	233 58.8	06.9	6 35.5	08.1	23 05.3	21.9
8	354 15.3	287 06.1	03.3	248 59.6	06.8	21 37.7	08.1	38 07.7	21.9
9	9 17.8	302 05.3	03.9	264 00.4	06.6	36 39.9	08.0	53 10.1	21.9
10	24 20.2	317 04.6	04.5	279 01.2	06.4	51 42.1	07.9	68 12.6	21.9
11	39 22.7	332 03.8	+22 05.0	294 02.0	+24 06.3	66 44.3	−12 07.8	83 15.0	−17 21.9
12	54 25.2	347 03.0	+22 05.6	309 02.8	+24 06.1	81 46.5	−12 07.7	98 17.4	−17 21.9
13	69 27.6	2 02.2	06.2	324 03.6	05.9	96 48.7	07.7	113 19.9	21.9
14	84 30.1	17 01.4	06.7	339 04.5	05.8	111 50.9	07.6	128 22.3	21.9
15	99 32.6	32 00.6	07.3	354 05.3	05.6	126 53.2	07.5	143 24.7	21.9
16	114 35.0	46 59.8	07.9	9 06.1	05.4	141 55.4	07.4	158 27.2	21.9
17	129 37.5	61 59.0	+22 08.4	24 06.9	+24 05.3	156 57.6	−12 07.3	173 29.6	−17 21.9
18	144 40.0	76 58.2	+22 09.0	39 07.7	+24 05.1	171 59.8	−12 07.2	188 32.1	−17 21.9
19	159 42.4	91 57.4	09.6	54 08.5	04.9	187 02.0	07.2	203 34.5	21.9
20	174 44.9	106 56.6	10.1	69 09.3	04.8	202 04.2	07.1	218 36.9	21.9
21	189 47.4	121 55.8	10.7	84 10.1	04.6	217 06.4	07.0	233 39.4	21.9
22	204 49.8	136 55.0	11.3	99 10.9	04.4	232 08.6	06.9	248 41.8	21.9
23	219 52.3	151 54.2	11.8	114 11.7	04.2	247 10.8	06.8	263 44.2	21.9
24	234 54.7	166 53.4	+22 12.4	129 12.5	+24 04.1	262 13.1	−12 06.7	278 46.7	−17 21.9
Dif	—	−8	+6	+8	−2	+22	+1	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 5ᵈ.2		PHE	4ʰ: 55′.3									
	PMG: 11ʰ 56ᵐ.4				SD: 15′.0			12ʰ: 55′.5									
					PMG: 16ʰ 39ᵐ			20ʰ: 55′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	180	54.0	+19	19.8	118	56.6	+24	56.2		**60 N**	** **	2 12	3 17	6 51	83	1 39	25
1	195	54.0		20.3	133	25.3 97		52.8	34	**58**	0 45	35	31	7 13	78	1 17	29
2	210	54.0		20.9	147	54.1 98		49.3	35	**56**	1 32	2 53	43	31	75	0 59	32
3	225	54.0		21.5	162	22.9 98		45.7	36	**54**	2 00	3 07	3 54	7 47	71	44	34
4	240	54.0		22.0	176	51.6 97		41.9	38	**52**	21	20	4 03	8 00	69	30	36
5	255	53.9	+19	22.6	191	20.4 98	+24	38.1	38	**50**	2 38	3 31	4 11	8 11	68	0 19	37
6	270	53.9	+19	23.1	205	49.2 98	+24	34.0	41	**45**	3 10	3 54	4 29	8 35	65	** **	**
7	285	53.9		23.7	220	18.0 98		29.9	41	**40**	34	4 12	43	8 54	62	** **	**
8	300	53.9		24.3	234	46.9 99		25.6	43	**35**	3 52	27	4 55	9 10	60	** **	**
9	315	53.9		24.8	249	15.7 98		21.3	43	**30**	4 08	39	5 05	24	58	23 50	41
10	330	53.8		25.4	263	44.6 99		16.7	46	**20**	31	4 59	23	9 47	56	28	45
11	345	53.8	+19	25.9	278	13.4 98	+24	12.1	46	**10 N**	4 50	5 16	5 39	10 08	53	23 09	48
12	0	53.8	+19	26.5	292	42.3 99	+24	07.3	48	**0**	5 05	5 31	5 53	10 26	52	22 51	51
13	15	53.8		27.0	307	11.2 99	+24	02.4	49	**10 S**	19	45	6 07	10 45	49	33	54
14	30	53.8		27.6	321	40.1 99	+23	57.4	50	**20**	32	5 59	22	11 05	47	22 14	56
15	45	53.7		28.2	336	09.0 99		52.3	51	**30**	45	6 14	39	29	43	21 52	59
16	60	53.7		28.7	350	38.0 100		47.0	53	**35**	51	22	6 49	42	42	38	62
17	75	53.7	+19	29.3	5	06.9 99	+23	41.6	54	**40**	5 58	6 31	7 00	11 58	40	21 23	64
18	90	53.7	+19	29.8	19	35.9 100	+23	36.1	55	**45**	6 06	6 41	7 14	12 17	37	21 05	67
19	105	53.6		30.4	34	04.9 100		30.4	57	**50**	14	54	30	40	34	20 43	71
20	120	53.6		30.9	48	33.9 100		24.6	58	**52**	18	6 59	37	12 51	32	32	73
21	135	53.6		31.5	63	02.9 100		18.7	59	**54**	22	7 05	46	13 04	29	19	76
22	150	53.6		32.0	77	32.0 101		12.7	60	**56**	26	12	7 55	18	27	20 05	79
23	165	53.6		32.6	92	01.0 100		06.6	61	**58**	30	19	8 06	35	24	19 48	83
24	180	53.5	+19	33.1	106	30.1 101	+23	00.3	63	**60 S**	6 35	7 28	8 18	13 56	18	19 28	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	8ʰ 19ᵐ.0		PMG: 12ʰ 53ᵐ			PMG: 15ʰ 22ᵐ			PMG: 6ʰ 30ᵐ			PMG: 5ʰ 24ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	234	54.7	166	53.4	+22 12.4	129	12.5	+24 04.1	262	13.1	−12 06.7	278	46.7	−17 21.9
1	249	57.2	181	52.6	12.9	144	13.3	03.9	277	15.3	06.7	293	49.1	21.9
2	264	59.7	196	51.8	13.5	159	14.1	03.7	292	17.5	06.6	308	51.5	21.9
3	280	02.1	211	51.0	14.0	174	14.9	03.6	307	19.7	06.5	323	54.0	21.9
4	295	04.6	226	50.2	14.6	189	15.7	03.4	322	21.9	06.4	338	56.4	21.9
5	310	07.1	241	49.4	+22 15.2	204	16.5	+24 03.2	337	24.1	−12 06.3	353	58.8	−17 21.9
6	325	09.5	256	48.6	+22 15.7	219	17.3	+24 03.0	352	26.3	−12 06.3	9	01.3	−17 21.9
7	340	12.0	271	47.8	16.3	234	18.1	02.9	7	28.6	06.2	24	03.7	21.9
8	355	14.5	286	47.0	16.8	249	18.9	02.7	22	30.8	06.1	39	06.2	21.9
9	10	16.9	301	46.2	17.4	264	19.7	02.5	37	33.0	06.0	54	08.6	21.9
10	25	19.4	316	45.4	17.9	279	20.5	02.3	52	35.2	05.9	69	11.0	21.9
11	40	21.9	331	44.6	+22 18.5	294	21.3	+24 02.2	67	37.4	−12 05.8	84	13.5	−17 21.9
12	55	24.3	346	43.8	+22 19.0	309	22.1	+24 02.0	82	39.6	−12 05.8	99	15.9	−17 21.9
13	70	26.8	1	43.0	19.5	324	22.9	01.8	97	41.9	05.7	114	18.4	21.9
14	85	29.2	16	42.2	20.1	339	23.7	01.6	112	44.1	05.6	129	20.8	21.9
15	100	31.7	31	41.4	20.6	354	24.5	01.5	127	46.3	05.5	144	23.2	21.9
16	115	34.2	46	40.6	21.2	9	25.3	01.3	142	48.5	05.4	159	25.7	21.9
17	130	36.6	61	39.8	+22 21.7	24	26.1	+24 01.1	157	50.7	−12 05.4	174	28.1	−17 21.9
18	145	39.1	76	39.0	+22 22.2	39	26.9	+24 00.9	172	52.9	−12 05.3	189	30.5	−17 21.9
19	160	41.6	91	38.2	22.8	54	27.7	00.8	187	55.2	05.2	204	33.0	21.9
20	175	44.0	106	37.4	23.3	69	28.5	00.6	202	57.4	05.1	219	35.4	21.9
21	190	46.5	121	36.6	23.9	84	29.3	00.4	217	59.6	05.0	234	37.9	21.9
22	205	49.0	136	35.8	24.4	99	30.1	00.2	233	01.8	05.0	249	40.3	21.9
23	220	51.4	151	35.0	24.9	114	30.9	+24 00.1	248	04.0	04.9	264	42.7	21.9
24	235	53.9	166	34.2	+22 25.5	129	31.7	+23 59.9	263	06.2	−12 04.8	279	45.2	−17 21.9
Dif	—			−8	+5		+8	−2		+22	+1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 6^{d}.2		PHE	4^{h}: 55′.9								
	PMG: 11^{h} 56^{m}.5		SD: 15′.2			12^{h}: 56′.1								
			PMG: 17^{h} 30^{m}			20^{h}: 56′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 53.5	+19 33.1	106 30.1		+23 00.3		**60 N**	20 39	21 47	** **	8 14	90	2 04	14
1	195 53.5	33.7	120 59.2	101	+22 53.9	64	**58**	25	23	23 27	31	85	1 46	19
2	210 53.5	34.2	135 28.4	102	47.4	65	**56**	13	21 04	22 29	46	81	31	22
3	225 53.5	34.8	149 57.5	101	40.8	66	**54**	20 02	20 49	21 58	8 58	79	18	25
4	240 53.4	35.3	164 26.7	102	34.0	68	**52**	19 52	36	36	9 09	76	1 06	28
5	255 53.4	+19 35.9	178 55.9	102	+22 27.2	68	**50**	19 44	20 24	21 18	9 19	74	0 56	30
6	270 53.4	+19 36.4	193 25.1	102	+22 20.2	70	**45**	19 26	20 01	20 45	9 40	69	0 35	34
7	285 53.4	37.0	207 54.4	103	13.0	72	**40**	19 11	19 42	21	9 56	66	17	37
8	300 53.3	37.5	222 23.7	103	+22 05.8	72	**35**	18 59	27	20 02	10 10	63	0 03	39
9	315 53.3	38.0	236 53.0	103	+21 58.5	73	**30**	48	19 15	19 47	22	61	** **	**
10	330 53.3	38.6	251 22.3	103	51.0	75	**20**	30	18 54	22	10 43	57	** **	**
11	345 53.2	+19 39.1	265 51.6	103	+21 43.4	76	**10 N**	18 15	18 37	19 03	11 01	53	23 57	46
12	0 53.2	+19 39.7	280 21.0	104	+21 35.7	77	**0**	18 00	18 22	18 48	11 18	50	23 42	49
13	15 53.2	40.2	294 50.4	104	27.9	78	**10 S**	17 46	18 08	34	34	47	27	53
14	30 53.2	40.8	309 19.8	104	19.9	80	**20**	30	17 54	20	11 52	44	23 10	57
15	45 53.1	41.3	323 49.3	105	11.9	80	**30**	13	38	07	12 12	40	22 51	62
16	60 53.1	41.8	338 18.8	105	+21 03.7	82	**35**	17 03	30	18 01	24	38	40	64
17	75 53.1	+19 42.4	352 48.3	105	+20 55.4	83	**40**	16 51	17 21	17 54	12 38	34	22 27	67
18	90 53.1	+19 42.9	7 17.8	105	+20 47.0	84	**45**	16 38	17 10	17 46	12 54	31	22 12	71
19	105 53.0	43.5	21 47.4	106	38.5	85	**50**	21	16 58	37	13 14	26	21 54	75
20	120 53.0	44.0	36 17.0	106	29.9	86	**52**	14	52	34	23	25	45	77
21	135 53.0	44.5	50 46.6	106	21.2	87	**54**	16 05	46	30	33	23	35	80
22	150 52.9	45.1	65 16.2	106	12.3	89	**56**	15 56	39	25	45	19	24	83
23	165 52.9	45.6	79 45.9	107	+20 03.4	89	**58**	45	31	20	13 59	15	21 11	87
24	180 52.9	+19 46.1	94 15.6	107	+19 54.3	91	**60 S**	15 32	16 23	17 15	14 14	12	20 55	92

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.7		Mag: −2.4		Mag: +0.6	
	8^{h} 15^{m}.1	PMG: 12^{h} 54^{m}		PMG: 15^{h} 21^{m}		PMG: 6^{h} 27^{m}		PMG: 5^{h} 20^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	235 53.9	166 34.2	+22 25.5	129 31.7	+23 59.9	263 06.2	−12 04.8	279 45.2	−17 21.9
1	250 56.3	181 33.4	26.0	144 32.5	59.7	278 08.5	04.7	294 47.6	21.9
2	265 58.8	196 32.6	26.5	159 33.3	59.5	293 10.7	04.6	309 50.1	21.9
3	281 01.3	211 31.8	27.1	174 34.1	59.3	308 12.9	04.6	324 52.5	21.9
4	296 03.7	226 31.0	27.6	189 34.9	59.2	323 15.1	04.5	339 54.9	21.9
5	311 06.2	241 30.2	+22 28.1	204 35.7	+23 59.0	338 17.3	−12 04.4	354 57.4	−17 21.9
6	326 08.7	256 29.4	+22 28.6	219 36.5	+23 58.8	353 19.6	−12 04.3	9 59.8	−17 21.9
7	341 11.1	271 28.5	29.2	234 37.3	58.6	8 21.8	04.2	25 02.3	21.9
8	356 13.6	286 27.7	29.7	249 38.1	58.4	23 24.0	04.2	40 04.7	21.9
9	11 16.1	301 26.9	30.2	264 38.9	58.3	38 26.2	04.1	55 07.2	21.9
10	26 18.5	316 26.1	30.7	279 39.7	58.1	53 28.5	04.0	70 09.6	21.9
11	41 21.0	331 25.3	+22 31.2	294 40.5	+23 57.9	68 30.7	−12 03.9	85 12.0	−17 21.9
12	56 23.5	346 24.5	+22 31.8	309 41.3	+23 57.7	83 32.9	−12 03.9	100 14.5	−17 21.9
13	71 25.9	1 23.7	32.3	324 42.1	57.5	98 35.1	03.8	115 16.9	21.9
14	86 28.4	16 22.9	32.8	339 42.9	57.3	113 37.3	03.7	130 19.4	21.9
15	101 30.8	31 22.1	33.3	354 43.7	57.2	128 39.6	03.6	145 21.8	21.9
16	116 33.3	46 21.3	33.8	9 44.5	57.0	143 41.8	03.5	160 24.2	21.9
17	131 35.8	61 20.4	+22 34.3	24 45.3	+23 56.8	158 44.0	−12 03.5	175 26.7	−17 21.9
18	146 38.2	76 19.6	+22 34.9	39 46.1	+23 56.6	173 46.2	−12 03.4	190 29.1	−17 21.9
19	161 40.7	91 18.8	35.4	54 46.9	56.4	188 48.5	03.3	205 31.6	21.9
20	176 43.2	106 18.0	35.9	69 47.8	56.2	203 50.7	03.2	220 34.0	21.9
21	191 45.6	121 17.2	36.4	84 48.6	56.1	218 52.9	03.2	235 36.5	21.9
22	206 48.1	136 16.4	36.9	99 49.4	55.9	233 55.1	03.1	250 38.9	21.9
23	221 50.6	151 15.6	37.4	114 50.2	55.7	248 57.4	03.0	265 41.4	21.9
24	236 53.0	166 14.7	+22 37.9	129 51.0	+23 55.5	263 59.6	−12 02.9	280 43.8	−17 21.9
Dif	—	−8	+5	+8	−2	+22	+1	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 7ᵈ.2		PHE	4ʰ: 56′.6									
	PMG: 11ʰ 56ᵐ.5				SD: 15′.4			12ʰ: 56′.9									
					PMG: 18ʰ 20ᵐ			20ʰ: 57′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	180	52.9	+19	46.1	94	15.6	+19	54.3		**60 N**	** **	2 06	3 13	9 44	92	2 18	10
1	195	52.8		46.7	108	45.3 107		45.1	92	**58**	0 25	29	27	9 56	89	2 05	13
2	210	52.8		47.2	123	15.0 107		35.8	93	**56**	1 24	2 48	40	10 07	85	1 53	17
3	225	52.8		47.7	137	44.8 108		26.4	94	**54**	1 54	3 04	3 51	17	81	43	20
4	240	52.8		48.3	152	14.6 108		16.9	95	**52**	2 16	17	4 00	25	79	34	22
5	255	52.7	+19	48.8	166	44.4 108	+19	07.3	96	**50**	2 34	3 28	4 09	10 33	76	1 26	24
6	270	52.7	+19	49.3	181	14.3 109	+18	57.6	97	**45**	3 07	3 52	4 27	10 49	72	1 09	28
7	285	52.7		49.9	195	44.1 108		47.8	98	**40**	32	4 10	41	11 02	68	0 54	33
8	300	52.6		50.4	210	14.0 109		37.8	100	**35**	3 51	25	4 54	13	65	42	36
9	315	52.6		50.9	224	44.0 110		27.8	100	**30**	4 06	38	5 04	23	62	31	39
10	330	52.6		51.5	239	13.9 109		17.7	101	**20**	31	4 59	23	40	57	0 13	42
11	345	52.5	+19	52.0	253	43.9 110	+18	07.4	103	**10 N**	4 50	5 16	5 38	11 54	53	** **	**
12	0	52.5	+19	52.5	268	13.9 110	+17	57.1	103	**0**	5 05	5 31	5 53	12 08	49	** **	**
13	15	52.5		53.1	282	43.9 110		46.6	105	**10 S**	19	45	6 07	21	46	** **	**
14	30	52.4		53.6	297	14.0 111		36.1	105	**20**	33	5 59	23	36	41	** **	**
15	45	52.4		54.1	311	44.1 111		25.4	107	**30**	46	6 15	40	12 52	37	23 53	62
16	60	52.4		54.6	326	14.2 111		14.7	107	**35**	5 52	23	6 51	13 02	34	44	65
17	75	52.3	+19	55.2	340	44.3 111	+17	03.8	109	**40**	6 00	6 33	7 02	13 12	31	23 34	69
18	90	52.3	+19	55.7	355	14.5 112	+16	52.9	109	**45**	6 07	6 43	7 16	13 25	27	23 23	72
19	105	52.3		56.2	9	44.6 111		41.8	111	**50**	16	6 56	32	40	23	09	78
20	120	52.2		56.7	24	14.8 112		30.7	111	**52**	20	7 02	40	48	20	23 02	80
21	135	52.2		57.3	38	45.1 113		19.5	112	**54**	24	08	49	13 56	17	22 55	83
22	150	52.2		57.8	53	15.3 112	+16	08.1	114	**56**	29	15	7 58	14 04	15	47	86
23	165	52.1		58.3	67	45.6 113	+15	56.7	114	**58**	33	23	8 09	14	12	38	89
24	180	52.1	+19	58.8	82	15.9 113	+15	45.2	115	**60 S**	6 39	7 31	8 22	14 26	7	22 27	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	8ʰ 11ᵐ.1		PMG: 12ʰ 56ᵐ			PMG: 15ʰ 20ᵐ			PMG: 6ʰ 23ᵐ			PMG: 5ʰ 16ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	236	53.0	166	14.7	+22 37.9	129	51.0	+23 55.5	263	59.6	−12 02.9	280	43.8	−17 21.9
1	251	55.5	181	13.9	38.4	144	51.8	55.3	279	01.8	02.8	295	46.2	21.9
2	266	58.0	196	13.1	38.9	159	52.6	55.1	294	04.0	02.8	310	48.7	21.9
3	282	00.4	211	12.3	39.4	174	53.4	55.0	309	06.3	02.7	325	51.1	21.9
4	297	02.9	226	11.5	39.9	189	54.2	54.8	324	08.5	02.6	340	53.6	21.9
5	312	05.3	241	10.7	+22 40.4	204	55.0	+23 54.6	339	10.7	−12 02.5	355	56.0	−17 21.9
6	327	07.8	256	09.8	+22 40.9	219	55.8	+23 54.4	354	12.9	−12 02.5	10	58.5	−17 21.9
7	342	10.3	271	09.0	41.4	234	56.6	54.2	9	15.2	02.4	26	00.9	21.9
8	357	12.7	286	08.2	41.9	249	57.4	54.0	24	17.4	02.3	41	03.4	21.9
9	12	15.2	301	07.4	42.4	264	58.2	53.8	39	19.6	02.2	56	05.8	21.9
10	27	17.7	316	06.6	42.9	279	59.0	53.6	54	21.9	02.2	71	08.3	21.9
11	42	20.1	331	05.8	+22 43.4	294	59.8	+23 53.5	69	24.1	−12 02.1	86	10.7	−17 21.9
12	57	22.6	346	04.9	+22 43.9	310	00.6	+23 53.3	84	26.3	−12 02.0	101	13.1	−17 21.9
13	72	25.1	1	04.1	44.4	325	01.4	53.1	99	28.5	01.9	116	15.6	21.9
14	87	27.5	16	03.3	44.9	340	02.2	52.9	114	30.8	01.8	131	18.0	21.9
15	102	30.0	31	02.5	45.4	355	03.0	52.7	129	33.0	01.8	146	20.5	21.9
16	117	32.4	46	01.7	45.9	10	03.8	52.5	144	35.2	01.7	161	22.9	21.9
17	132	34.9	61	00.8	+22 46.3	25	04.6	+23 52.3	159	37.5	−12 01.6	176	25.4	−17 21.9
18	147	37.4	76	00.0	+22 46.8	40	05.4	+23 52.1	174	39.7	−12 01.5	191	27.8	−17 21.9
19	162	39.8	90	59.2	47.3	55	06.2	51.9	189	41.9	01.5	206	30.3	21.9
20	177	42.3	105	58.4	47.8	70	07.0	51.7	204	44.2	01.4	221	32.7	21.9
21	192	44.8	120	57.5	48.3	85	07.9	51.6	219	46.4	01.3	236	35.2	21.9
22	207	47.2	135	56.7	48.8	100	08.7	51.4	234	48.6	01.2	251	37.6	21.9
23	222	49.7	150	55.9	49.2	115	09.5	51.2	249	50.9	01.2	266	40.1	21.9
24	237	52.2	165	55.1	+22 49.7	130	10.3	+23 51.0	264	53.1	−12 01.1	281	42.5	−17 21.9
Dif	—			−8	+5		+8	−2		+22	+1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 8ᵈ.2		PHE	4ʰ: 57′.5								
	PMG: 11ʰ 56ᵐ.6		SD: 15′.6			12ʰ: 57′.8								
			PMG: 19ʰ 09ᵐ			20ʰ: 58′.1								
						Rº: 48ᵐ								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 52.1	+19 58.8	82 15.9		+15 45.2		60 N	20 44	21 53	** **	11 16	94	2 28	6
1	195 52.1	59.3	96 46.2	113	33.5	117	58	29	28	** **	25	90	18	10
2	210 52.0	+19 59.9	111 16.5	113	21.8	117	56	16	21 09	22 37	32	86	10	13
3	225 52.0	+20 00.4	125 46.8	113	+15 10.0	118	54	20 05	20 53	22 04	38	84	2 03	16
4	240 52.0	00.9	140 17.2	114	+14 58.1	119	52	19 55	39	21 41	44	81	1 56	19
5	255 51.9	+20 01.4	154 47.6	114	+14 46.2	119	50	19 46	20 27	21 22	11 49	79	1 50	21
6	270 51.9	+20 01.9	169 18.0	114	+14 34.1	121	45	19 28	20 03	20 48	12 01	73	1 37	26
7	285 51.8	02.5	183 48.4	114	21.9	122	40	13	19 44	23	10	69	27	29
8	300 51.8	03.0	198 18.9	115	+14 09.7	122	35	19 01	29	20 04	18	66	18	32
9	315 51.8	03.5	212 49.3	114	+13 57.4	123	30	18 50	19 16	19 48	25	63	1 10	35
10	330 51.7	04.0	227 19.8	115	44.9	125	20	31	18 55	23	37	57	0 55	41
11	345 51.7	+20 04.5	241 50.3	115	+13 32.4	125	10 N	18 15	18 38	19 04	12 47	53	0 43	45
12	0 51.7	+20 05.0	256 20.8	115	+13 19.8	126	0	18 00	18 22	18 48	12 57	49	0 31	49
13	15 51.6	05.5	270 51.3	115	+13 07.2	126	10 S	17 45	18 08	33	13 07	44	20	53
14	30 51.6	06.1	285 21.8	115	+12 54.4	128	20	30	17 53	20	17	40	0 07	57
15	45 51.5	06.6	299 52.3	115	41.6	128	30	12	38	07	29	35	** **	**
16	60 51.5	07.1	314 22.9	116	28.7	129	35	17 02	29	18 00	36	31	** **	**
17	75 51.5	+20 07.6	328 53.4	115	+12 15.7	130	40	16 50	17 19	17 52	13 43	29	** **	**
18	90 51.4	+20 08.1	343 24.0	116	+12 02.6	131	45	16 36	17 08	17 44	13 52	25	** **	**
19	105 51.4	08.6	357 54.6	116	+11 49.5	131	50	19	16 55	35	14 03	20	** **	**
20	120 51.3	09.1	12 25.2	116	36.2	133	52	11	50	31	08	17	** **	**
21	135 51.3	09.6	26 55.8	116	22.9	133	54	16 02	43	27	13	15	** **	**
22	150 51.3	10.1	41 26.4	116	+11 09.5	134	56	15 52	36	23	19	13	** **	**
23	165 51.2	10.7	55 57.0	116	+10 56.1	134	58	41	28	18	26	9	** **	**
24	180 51.2	+20 11.2	70 27.6	116	+10 42.6	135	60 S	15 28	16 19	17 12	14 33	6	** **	**

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.7		Mag: −2.4		Mag: +0.6	
	8ʰ 07ᵐ.2	PMG: 12ʰ 57ᵐ		PMG: 15ʰ 18ᵐ		PMG: 6ʰ 20ᵐ		PMG: 5ʰ 12ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	237 52.2	165 55.1	+22 49.7	130 10.3	+23 51.0	264 53.1	−12 01.1	281 42.5	−17 21.9
1	252 54.6	180 54.3	50.2	145 11.1	50.8	279 55.3	01.0	296 45.0	21.9
2	267 57.1	195 53.4	50.7	160 11.9	50.6	294 57.5	00.9	311 47.4	21.9
3	282 59.6	210 52.6	51.1	175 12.7	50.4	309 59.8	00.9	326 49.9	21.9
4	298 02.0	225 51.8	51.6	190 13.5	50.2	325 02.0	00.8	341 52.3	21.9
5	313 04.5	240 51.0	+22 52.1	205 14.3	+23 50.0	340 04.2	−12 00.7	356 54.8	−17 21.9
6	328 06.9	255 50.1	+22 52.6	220 15.1	+23 49.8	355 06.5	−12 00.6	11 57.2	−17 21.9
7	343 09.4	270 49.3	53.0	235 15.9	49.6	10 08.7	00.6	26 59.7	21.9
8	358 11.9	285 48.5	53.5	250 16.7	49.4	25 10.9	00.5	42 02.1	21.9
9	13 14.3	300 47.7	54.0	265 17.5	49.2	40 13.2	00.4	57 04.6	21.9
10	28 16.8	315 46.8	54.4	280 18.3	49.0	55 15.4	00.4	72 07.0	21.9
11	43 19.3	330 46.0	+22 54.9	295 19.1	+23 48.8	70 17.7	−12 00.3	87 09.5	−17 21.9
12	58 21.7	345 45.2	+22 55.4	310 19.9	+23 48.7	85 19.9	−12 00.2	102 11.9	−17 21.9
13	73 24.2	0 44.3	55.8	325 20.7	48.5	100 22.1	00.1	117 14.4	21.9
14	88 26.7	15 43.5	56.3	340 21.5	48.3	115 24.4	−12 00.1	132 16.8	21.9
15	103 29.1	30 42.7	56.8	355 22.4	48.1	130 26.6	−12 00.0	147 19.3	21.9
16	118 31.6	45 41.9	57.2	10 23.2	47.9	145 28.8	−11 59.9	162 21.7	21.9
17	133 34.1	60 41.0	+22 57.7	25 24.0	+23 47.7	160 31.1	−11 59.8	177 24.2	−17 21.9
18	148 36.5	75 40.2	+22 58.1	40 24.8	+23 47.5	175 33.3	−11 59.8	192 26.6	−17 21.9
19	163 39.0	90 39.4	58.6	55 25.6	47.3	190 35.5	59.7	207 29.1	21.9
20	178 41.4	105 38.5	59.1	70 26.4	47.1	205 37.8	59.6	222 31.5	21.9
21	193 43.9	120 37.7	+22 59.5	85 27.2	46.9	220 40.0	59.5	237 34.0	21.9
22	208 46.4	135 36.9	+23 00.0	100 28.0	46.7	235 42.3	59.5	252 36.4	21.9
23	223 48.8	150 36.0	+23 00.4	115 28.8	46.5	250 44.5	59.4	267 38.9	21.9
24	238 51.3	165 35.2	+23 00.9	130 29.6	+23 46.3	265 46.7	−11 59.3	282 41.3	−17 21.9
Dif	—	−8	+5	+8	−2	+22	+1	+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 9ᵈ.2		PHE	4ʰ: 58′.4								
	PMG: 11ʰ 56ᵐ.6				SD: 15′.9			12ʰ: 58′.7								
					PMG: 19ʰ 57ᵐ			20ʰ: 59′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	51.2	+20	11.2	70	27.6	+10	42.6	**60 N**	** **	1 59	3 09	12 50	96	2 34	5
1	195	51.1		11.7	84	58.3 117		29.0 136	**58**	** **	2 24	24	55	92	28	9
2	210	51.1		12.2	99	28.9 116		15.3 137	**56**	1 15	2 44	37	12 58	89	23	12
3	225	51.1		12.7	113	59.5 116	+10	01.6 137	**54**	1 48	3 00	48	13 02	86	19	14
4	240	51.0		13.2	128	30.1 116	+9	47.8 138	**52**	2 12	14	3 57	05	83	15	17
5	255	51.0	+20	13.7	143	00.8 117	+9	33.9 139	**50**	2 30	3 26	4 06	13 08	81	2 11	19
6	270	50.9	+20	14.2	157	31.4 116	+9	19.9 140	**45**	3 05	3 50	4 25	13 14	76	2 03	24
7	285	50.9		14.7	172	02.0 116	+9	05.9 140	**40**	30	4 08	40	19	71	1 56	28
8	300	50.9		15.2	186	32.7 117	+8	51.8 141	**35**	3 49	24	4 52	24	67	50	31
9	315	50.8		15.7	201	03.3 116		37.7 141	**30**	4 05	37	5 03	28	64	45	34
10	330	50.8		16.2	215	33.9 116		23.5 142	**20**	30	4 58	22	34	59	36	39
11	345	50.7	+20	16.7	230	04.6 117	+8	09.2 143	**10 N**	4 49	5 16	5 38	13 40	54	1 28	44
12	0	50.7	+20	17.2	244	35.2 116	+7	54.9 143	**0**	5 05	5 31	5 53	13 46	49	1 20	49
13	15	50.6		17.7	259	05.8 116		40.5 144	**10 S**	20	5 46	6 08	51	45	13	53
14	30	50.6		18.2	273	36.4 116		26.1 144	**20**	33	6 00	24	13 57	40	1 04	58
15	45	50.5		18.7	288	07.0 116	+7	11.6 145	**30**	47	16	42	14 04	34	0 55	63
16	60	50.5		19.2	302	37.6 116	+6	57.1 145	**35**	5 54	25	6 52	07	31	49	67
17	75	50.5	+20	19.7	317	08.2 116	+6	42.4 147	**40**	6 01	6 34	7 04	14 12	27	0 43	70
18	90	50.4	+20	20.2	331	38.7 115	+6	27.8 146	**45**	6 09	6 45	7 18	14 17	23	0 35	75
19	105	50.4		20.7	346	09.3 116	+6	13.1 147	**50**	18	6 58	35	23	18	27	79
20	120	50.3		21.2	0	39.9 116	+5	58.3 148	**52**	22	7 04	43	25	17	22	82
21	135	50.3		21.7	15	10.4 115		43.5 148	**54**	27	11	7 52	28	14	18	84
22	150	50.2		22.2	29	40.9 115		28.6 149	**56**	31	18	8 02	32	11	13	87
23	165	50.2		22.7	44	11.4 115	+5	13.7 149	**58**	36	26	13	35	8	07	91
24	180	50.1	+20	23.2	58	41.9 115	+4	58.7 150	**60 S**	6 42	7 35	8 26	14 39	5	0 01	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	8ʰ 03ᵐ.3		PMG: 12ʰ 58ᵐ			PMG: 15ʰ 17ᵐ			PMG: 6ʰ 16ᵐ			PMG: 5ʰ 08ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	238	51.3	165	35.2	+23 00.9	130	29.6	+23 46.3	265	46.7	−11 59.3	282	41.3	−17 21.9
1	253	53.8	180	34.4	01.3	145	30.4	46.1	280	49.0	59.3	297	43.8	21.9
2	268	56.2	195	33.6	01.8	160	31.2	45.9	295	51.2	59.2	312	46.2	22.0
3	283	58.7	210	32.7	02.2	175	32.0	45.7	310	53.5	59.1	327	48.7	22.0
4	299	01.2	225	31.9	02.7	190	32.8	45.5	325	55.7	59.0	342	51.1	22.0
5	314	03.6	240	31.1	+23 03.1	205	33.6	+23 45.3	340	57.9	−11 59.0	357	53.6	−17 22.0
6	329	06.1	255	30.2	+23 03.6	220	34.5	+23 45.1	356	00.2	−11 58.9	12	56.0	−17 22.0
7	344	08.5	270	29.4	04.0	235	35.3	44.9	11	02.4	58.8	27	58.5	22.0
8	359	11.0	285	28.6	04.4	250	36.1	44.7	26	04.7	58.8	43	01.0	22.0
9	14	13.5	300	27.7	04.9	265	36.9	44.5	41	06.9	58.7	58	03.4	22.0
10	29	15.9	315	26.9	05.3	280	37.7	44.3	56	09.1	58.6	73	05.9	22.0
11	44	18.4	330	26.0	+23 05.8	295	38.5	+23 44.1	71	11.4	−11 58.5	88	08.3	−17 22.0
12	59	20.9	345	25.2	+23 06.2	310	39.3	+23 43.9	86	13.6	−11 58.5	103	10.8	−17 22.0
13	74	23.3	0	24.4	06.6	325	40.1	43.7	101	15.9	58.4	118	13.2	22.0
14	89	25.8	15	23.5	07.1	340	40.9	43.5	116	18.1	58.3	133	15.7	22.0
15	104	28.3	30	22.7	07.5	355	41.7	43.3	131	20.3	58.3	148	18.1	22.0
16	119	30.7	45	21.9	07.9	10	42.5	43.1	146	22.6	58.2	163	20.6	22.0
17	134	33.2	60	21.0	+23 08.4	25	43.3	+23 42.9	161	24.8	−11 58.1	178	23.0	−17 22.0
18	149	35.7	75	20.2	+23 08.8	40	44.1	+23 42.7	176	27.1	−11 58.0	193	25.5	−17 22.0
19	164	38.1	90	19.4	09.2	55	44.9	42.4	191	29.3	58.0	208	28.0	22.0
20	179	40.6	105	18.5	09.7	70	45.8	42.2	206	31.6	57.9	223	30.4	22.0
21	194	43.0	120	17.7	10.1	85	46.6	42.0	221	33.8	57.8	238	32.9	22.0
22	209	45.5	135	16.8	10.5	100	47.4	41.8	236	36.0	57.8	253	35.3	22.0
23	224	48.0	150	16.0	10.9	115	48.2	41.6	251	38.3	57.7	268	37.8	22.0
24	239	50.4	165	15.2	+23 11.4	130	49.0	+23 41.4	266	40.5	−11 57.6	283	40.2	−17 22.0
Dif	—			−8	+4		+8	−2		+22	+1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 10^{d}.2		PHE	4^{h}: 59′.3								
	PMG: 11^{h} 56^{m}.7		SD: 16′.1			12^{h}: 59′.6								
			PMG: 20^{h} 46^{m}			20^{h}: 59′.8								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	180 50.1	+20 23.2	58 41.9		+4 58.7		**60 N**	20 48	22 00	** **	14 26	99	2 39	5
1	195 50.1	23.6	73 12.4	115	43.7	150	**58**	33	21 33	** **	27	95	37	8
2	210 50.1	24.1	87 42.8	114	28.7	150	**56**	20	21 13	22 47	27	92	35	11
3	225 50.0	24.6	102 13.2	114	+4 13.6	151	**54**	20 08	20 56	22 10	28	88	33	14
4	240 50.0	25.1	116 43.6	114	+3 58.4	152	**52**	19 58	42	21 46	28	86	32	16
5	255 49.9	+20 25.6	131 14.0	114	+3 43.3	151	**50**	19 49	20 30	21 26	14 29	83	2 30	18
6	270 49.9	+20 26.1	145 44.4	114	+3 28.0	153	**45**	19 30	20 05	20 51	14 30	78	2 27	23
7	285 49.8	26.6	160 14.7	113	+3 12.8	152	**40**	15	19 46	25	30	74	24	27
8	300 49.8	27.1	174 45.0	113	+2 57.5	153	**35**	19 02	31	20 06	31	70	21	32
9	315 49.7	27.6	189 15.3	113	42.2	153	**30**	18 51	19 18	19 50	32	66	19	35
10	330 49.7	28.0	203 45.6	113	26.8	154	**20**	32	18 56	24	33	60	15	40
11	345 49.6	+20 28.5	218 15.8	112	+2 11.4	154	**10 N**	18 15	18 38	19 05	14 34	55	2 12	45
12	0 49.6	+20 29.0	232 46.0	112	+1 56.0	154	**0**	18 00	18 22	18 48	14 35	50	2 09	49
13	15 49.5	29.5	247 16.1	111	40.5	155	**10 S**	17 45	18 08	33	36	45	06	54
14	30 49.5	30.0	261 46.3	112	25.0	155	**20**	29	17 53	20	37	40	2 02	59
15	45 49.4	30.5	276 16.4	111	+1 09.5	155	**30**	11	37	18 06	38	35	1 58	65
16	60 49.4	31.0	290 46.4	110	+0 54.0	155	**35**	17 00	28	17 59	38	32	56	68
17	75 49.3	+20 31.4	305 16.5	111	+0 38.4	156	**40**	16 48	17 18	17 51	14 39	28	1 53	72
18	90 49.3	+20 31.9	319 46.5	110	+0 22.9	155	**45**	16 34	17 07	17 43	14 40	24	1 50	76
19	105 49.2	32.4	334 16.4	109	+0 07.3	156	**50**	17	16 53	34	41	19	46	82
20	120 49.2	32.9	348 46.3	109	−0 08.4	157	**52**	09	47	29	42	16	44	85
21	135 49.1	33.4	3 16.2	109	24.0	156	**54**	16 00	41	25	42	14	42	87
22	150 49.1	33.8	17 46.0	108	39.7	157	**56**	15 50	33	20	43	11	40	90
23	165 49.0	34.3	32 15.8	108	−0 55.3	156	**58**	38	25	15	43	9	38	93
24	180 49.0	+20 34.8	46 45.6	108	−1 11.0	157	**60 S**	15 24	16 16	17 10	14 44	5	1 35	97

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.7		Mag: −2.4		Mag: +0.6	
	7^{h} 59^{m}.3	PMG: 13^{h} 00^{m}		PMG: 15^{h} 16^{m}		PMG: 6^{h} 12^{m}		PMG: 5^{h} 04^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	239 50.4	165 15.2	+23 11.4	130 49.0	+23 41.4	266 40.5	−11 57.6	283 40.2	−17 22.0
1	254 52.9	180 14.3	11.8	145 49.8	41.2	281 42.8	57.5	298 42.7	22.0
2	269 55.4	195 13.5	12.2	160 50.6	41.0	296 45.0	57.5	313 45.1	22.0
3	284 57.8	210 12.6	12.6	175 51.4	40.8	311 47.3	57.4	328 47.6	22.0
4	300 00.3	225 11.8	13.1	190 52.2	40.6	326 49.5	57.3	343 50.1	22.0
5	315 02.8	240 11.0	+23 13.5	205 53.0	+23 40.4	341 51.8	−11 57.3	358 52.5	−17 22.1
6	330 05.2	255 10.1	+23 13.9	220 53.8	+23 40.2	356 54.0	−11 57.2	13 55.0	−17 22.1
7	345 07.7	270 09.3	14.3	235 54.6	40.0	11 56.3	57.1	28 57.4	22.1
8	0 10.2	285 08.4	14.7	250 55.5	39.8	26 58.5	57.1	43 59.9	22.1
9	15 12.6	300 07.6	15.1	265 56.3	39.6	42 00.8	57.0	59 02.4	22.1
10	30 15.1	315 06.8	15.5	280 57.1	39.3	57 03.0	56.9	74 04.8	22.1
11	45 17.5	330 05.9	+23 16.0	295 57.9	+23 39.1	72 05.3	−11 56.9	89 07.3	−17 22.1
12	60 20.0	345 05.1	+23 16.4	310 58.7	+23 38.9	87 07.5	−11 56.8	104 09.7	−17 22.1
13	75 22.5	0 04.2	16.8	325 59.5	38.7	102 09.8	56.7	119 12.2	22.1
14	90 24.9	15 03.4	17.2	341 00.3	38.5	117 12.0	56.6	134 14.6	22.1
15	105 27.4	30 02.5	17.6	356 01.1	38.3	132 14.2	56.6	149 17.1	22.1
16	120 29.9	45 01.7	18.0	11 01.9	38.1	147 16.5	56.5	164 19.6	22.1
17	135 32.3	60 00.9	+23 18.4	26 02.7	+23 37.9	162 18.7	−11 56.4	179 22.0	−17 22.1
18	150 34.8	75 00.0	+23 18.8	41 03.6	+23 37.7	177 21.0	−11 56.4	194 24.5	−17 22.1
19	165 37.3	89 59.2	19.2	56 04.4	37.5	192 23.2	56.3	209 26.9	22.1
20	180 39.7	104 58.3	19.6	71 05.2	37.2	207 25.5	56.2	224 29.4	22.1
21	195 42.2	119 57.5	20.0	86 06.0	37.0	222 27.7	56.2	239 31.9	22.1
22	210 44.6	134 56.6	20.4	101 06.8	36.8	237 30.0	56.1	254 34.3	22.1
23	225 47.1	149 55.8	20.8	116 07.6	36.6	252 32.3	56.0	269 36.8	22.1
24	240 49.6	164 54.9	+23 21.2	131 08.4	+23 36.4	267 34.5	−11 56.0	284 39.2	−17 22.1
Dif	—	−8	+4	+8	−2	+22	+1	+25	0

UT	SOL SD: 15′.8 PMG: 11h 56m.8				LUNA Edad: 11d.2 SD: 16′.3 PMG: 21h 37m PHE 4h: 60′.1 12h: 60′.4 20h: 60′.6 Rº: 54m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	49.0	+20	34.8	46	45.6	−1	11.0	**60 N**	** **	1 53	3 05	16 05	103	2 44	5
1	195	48.9		35.3	61	15.3 107		26.7 157	**58**	** **	2 19	20	16 02	99	45	9
2	210	48.9		35.7	75	44.9 106		42.4 157	**56**	1 06	40	33	15 59	95	46	12
3	225	48.8		36.2	90	14.5 106	−1	58.2 158	**54**	1 43	2 57	45	56	93	47	15
4	240	48.8		36.7	104	44.1 106	−2	13.9 157	**52**	2 07	3 11	3 55	54	89	48	17
5	255	48.7	+20	37.2	119	13.6 105	−2	29.6 157	**50**	2 27	3 23	4 04	15 52	87	2 48	20
6	270	48.7	+20	37.6	133	43.1 105	−2	45.4 158	**45**	3 02	3 48	4 23	15 48	81	2 50	25
7	285	48.6		38.1	148	12.5 104	−3	01.1 157	**40**	28	4 07	38	44	76	51	29
8	300	48.6		38.6	162	41.8 103		16.8 157	**35**	3 48	23	4 51	41	72	53	32
9	315	48.5		39.1	177	11.1 103		32.6 158	**30**	4 04	36	5 02	38	69	54	36
10	330	48.5		39.5	191	40.4 103	−3	48.3 157	**20**	29	4 57	21	33	63	55	42
11	345	48.4	+20	40.0	206	09.6 102	−4	04.0 157	**10 N**	4 49	5 15	5 38	15 29	58	2 57	47
12	0	48.3	+20	40.5	220	38.7 101	−4	19.8 158	**0**	5 05	5 31	5 53	15 25	53	2 58	52
13	15	48.3		40.9	235	07.8 101		35.5 157	**10 S**	20	5 46	6 08	21	49	3 00	56
14	30	48.2		41.4	249	36.8 100	−4	51.2 157	**20**	34	6 01	24	17	44	01	62
15	45	48.2		41.9	264	05.8 100	−5	06.9 157	**30**	48	17	43	13	37	03	67
16	60	48.1		42.4	278	34.6 98		22.6 157	**35**	5 55	26	6 53	10	35	04	71
17	75	48.1	+20	42.8	293	03.5 99	−5	38.3 157	**40**	6 03	6 36	7 06	15 07	31	3 05	75
18	90	48.0	+20	43.3	307	32.2 97	−5	53.9 156	**45**	6 11	6 47	7 20	15 04	26	3 06	80
19	105	48.0		43.8	322	00.9 97	−6	09.6 157	**50**	20	7 01	37	15 00	21	08	85
20	120	47.9		44.2	336	29.6 97		25.2 156	**52**	25	07	46	14 58	19	09	87
21	135	47.9		44.7	350	58.1 95		40.8 156	**54**	29	13	7 55	56	16	09	90
22	150	47.8		45.2	5	26.6 95	−6	56.3 155	**56**	34	21	8 05	54	13	10	93
23	165	47.7		45.6	19	55.1 95	−7	11.9 156	**58**	39	29	17	52	10	11	97
24	180	47.7	+20	46.1	34	23.4 93	−7	27.4 155	**60 S**	6 45	7 38	8 30	14 49	6	3 12	101

UT	ARIES PMG 7h 55m.4		VENUS Mag: −3.9 PMG: 13h 01m			MARTE Mag: +1.7 PMG: 15h 15m			JÚPITER Mag: −2.4 PMG: 6h 09m			SATURNO Mag: +0.6 PMG: 5h 01m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	240	49.6	164	54.9	+23 21.2	131	08.4	+23 36.4	267	34.5	−11 56.0	284	39.2	−17 22.1
1	255	52.0	179	54.1	21.6	146	09.2	36.2	282	36.8	55.9	299	41.7	22.1
2	270	54.5	194	53.2	22.0	161	10.0	36.0	297	39.0	55.8	314	44.2	22.2
3	285	57.0	209	52.4	22.4	176	10.8	35.8	312	41.3	55.8	329	46.6	22.2
4	300	59.4	224	51.6	22.8	191	11.6	35.5	327	43.5	55.7	344	49.1	22.2
5	316	01.9	239	50.7	+23 23.2	206	12.5	+23 35.3	342	45.8	−11 55.6	359	51.5	−17 22.2
6	331	04.4	254	49.9	+23 23.6	221	13.3	+23 35.1	357	48.0	−11 55.6	14	54.0	−17 22.2
7	346	06.8	269	49.0	23.9	236	14.1	34.9	12	50.3	55.5	29	56.5	22.2
8	1	09.3	284	48.2	24.3	251	14.9	34.7	27	52.5	55.4	44	58.9	22.2
9	16	11.8	299	47.3	24.7	266	15.7	34.5	42	54.8	55.4	60	01.4	22.2
10	31	14.2	314	46.5	25.1	281	16.5	34.3	57	57.0	55.3	75	03.9	22.2
11	46	16.7	329	45.6	+23 25.5	296	17.3	+23 34.0	72	59.3	−11 55.2	90	06.3	−17 22.2
12	61	19.1	344	44.8	+23 25.9	311	18.1	+23 33.8	88	01.5	−11 55.2	105	08.8	−17 22.2
13	76	21.6	359	43.9	26.2	326	18.9	33.6	103	03.8	55.1	120	11.2	22.2
14	91	24.1	14	43.1	26.6	341	19.8	33.4	118	06.1	55.0	135	13.7	22.2
15	106	26.5	29	42.2	27.0	356	20.6	33.2	133	08.3	55.0	150	16.2	22.2
16	121	29.0	44	41.4	27.4	11	21.4	33.0	148	10.6	54.9	165	18.6	22.2
17	136	31.5	59	40.5	+23 27.8	26	22.2	+23 32.7	163	12.8	−11 54.8	180	21.1	−17 22.2
18	151	33.9	74	39.7	+23 28.1	41	23.0	+23 32.5	178	15.1	−11 54.8	195	23.6	−17 22.2
19	166	36.4	89	38.8	28.5	56	23.8	32.3	193	17.3	54.7	210	26.0	22.2
20	181	38.9	104	38.0	28.9	71	24.6	32.1	208	19.6	54.6	225	28.5	22.3
21	196	41.3	119	37.1	29.3	86	25.4	31.9	223	21.9	54.6	240	31.0	22.3
22	211	43.8	134	36.3	29.6	101	26.2	31.6	238	24.1	54.5	255	33.4	22.3
23	226	46.2	149	35.4	30.0	116	27.1	31.4	253	26.4	54.4	270	35.9	22.3
24	241	48.7	164	34.6	+23 30.4	131	27.9	+23 31.2	268	28.6	−11 54.4	285	38.3	−17 22.3
Dif	—			−8	+4		+8	−2		+23	+1		+25	0

UT	SOL				☾ LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 12ᵈ.2		PHE	4ʰ: 60′.8									
	PMG: 11ʰ 56ᵐ.9				SD: 16′.5			12ʰ: 61′.0									
					PMG: 22ʰ 31ᵐ			20ʰ: 61′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′		h m	h m	h m	h m	m	h m	m
0	180	47.7	+20	46.1	34	23.4		−7	27.4	**60 N**	20 53	22 07	** **	17 48	109	2 49	7
1	195	47.6		46.5	48	51.7	93		42.9	155 **58**	36	21 39	** **	41	103	54	11
2	210	47.6		47.0	63	19.9	92	−7	58.3	154 **56**	23	17	22 57	34	99	2 58	14
3	225	47.5		47.5	77	48.1	92	−8	13.8	155 **54**	11	21 00	22 16	29	95	3 02	17
4	240	47.5		47.9	92	16.1	90		29.2	154 **52**	20 01	20 46	21 50	23	93	05	20
5	255	47.4	+20	48.4	106	44.1	90	−8	44.5	153 **50**	19 52	20 33	21 30	17 19	89	3 08	23
6	270	47.3	+20	48.8	121	12.0	89	−8	59.8	153 **45**	19 32	20 08	20 54	17 09	83	3 15	28
7	285	47.3		49.3	135	39.9	89	−9	15.1	153 **40**	17	19 48	28	17 00	79	20	33
8	300	47.2		49.8	150	07.6	87		30.3	152 **35**	19 04	32	20 07	16 53	75	25	36
9	315	47.2		50.2	164	35.3	87	−9	45.5	152 **30**	18 52	19 19	19 51	47	72	30	39
10	330	47.1		50.7	179	02.9	86	−10	00.6	151 **20**	33	18 57	25	36	66	37	45
11	345	47.1	+20	51.1	193	30.4	85	−10	15.7	151 **10 N**	18 16	18 39	19 05	16 27	61	3 44	50
12	0	47.0	+20	51.6	207	57.9	85	−10	30.8	151 **0**	18 00	18 23	18 48	16 18	57	3 50	55
13	15	46.9		52.0	222	25.2	83	−10	45.7	149 **10 S**	17 45	18 08	33	10	52	3 56	60
14	30	46.9		52.5	236	52.5	83	−11	00.7	150 **20**	29	17 52	19	16 01	47	4 03	64
15	45	46.8		52.9	251	19.7	82		15.5	148 **30**	17 10	36	18 05	15 50	42	10	71
16	60	46.8		53.4	265	46.8	81		30.4	149 **35**	16 59	27	17 58	45	38	15	73
17	75	46.7	+20	53.9	280	13.8	80	−11	45.1	147 **40**	16 47	17 17	17 50	15 38	35	4 20	77
18	90	46.6	+20	54.3	294	40.8	80	−11	59.8	147 **45**	16 33	17 05	17 41	15 30	31	4 26	82
19	105	46.6		54.8	309	07.6	78	−12	14.4	146 **50**	15	16 52	32	21	26	33	88
20	120	46.5		55.2	323	34.4	78		29.0	146 **52**	16 06	45	28	17	23	36	91
21	135	46.5		55.7	338	01.0	76		43.4	144 **54**	15 57	39	23	12	20	39	94
22	150	46.4		56.1	352	27.6	76	−12	57.8	144 **56**	47	31	18	07	17	43	98
23	165	46.3		56.6	6	54.1	75	−13	12.2	144 **58**	35	23	13	15 02	13	48	101
24	180	46.3	+20	57.0	21	20.5	74	−13	26.4	142 **60 S**	15 21	16 13	17 07	14 55	9	4 53	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	7ʰ 51ᵐ.5		PMG: 13ʰ 02ᵐ			PMG: 15ʰ 13ᵐ			PMG: 6ʰ 05ᵐ			PMG: 4ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	241	48.7	164	34.6	+23 30.4	131	27.9	+23 31.2	268	28.6	−11 54.4	285	38.3	−17 22.3
1	256	51.2	179	33.7	30.7	146	28.7	31.0	283	30.9	54.3	300	40.8	22.3
2	271	53.6	194	32.8	31.1	161	29.5	30.8	298	33.1	54.2	315	43.3	22.3
3	286	56.1	209	32.0	31.5	176	30.3	30.6	313	35.4	54.2	330	45.7	22.3
4	301	58.6	224	31.1	31.8	191	31.1	30.3	328	37.7	54.1	345	48.2	22.3
5	317	01.0	239	30.3	+23 32.2	206	31.9	+23 30.1	343	39.9	−11 54.0	0	50.7	−17 22.3
6	332	03.5	254	29.4	+23 32.5	221	32.7	+23 29.9	358	42.2	−11 54.0	15	53.1	−17 22.3
7	347	06.0	269	28.6	32.9	236	33.6	29.7	13	44.4	53.9	30	55.6	22.3
8	2	08.4	284	27.7	33.3	251	34.4	29.4	28	46.7	53.9	45	58.1	22.3
9	17	10.9	299	26.9	33.6	266	35.2	29.2	43	49.0	53.8	61	00.5	22.3
10	32	13.4	314	26.0	34.0	281	36.0	29.0	58	51.2	53.7	76	03.0	22.3
11	47	15.8	329	25.2	+23 34.3	296	36.8	+23 28.8	73	53.5	−11 53.7	91	05.5	−17 22.4
12	62	18.3	344	24.3	+23 34.7	311	37.6	+23 28.6	88	55.7	−11 53.6	106	07.9	−17 22.4
13	77	20.7	359	23.4	35.0	326	38.4	28.3	103	58.0	53.5	121	10.4	22.4
14	92	23.2	14	22.6	35.4	341	39.2	28.1	119	00.3	53.5	136	12.9	22.4
15	107	25.7	29	21.7	35.7	356	40.1	27.9	134	02.5	53.4	151	15.3	22.4
16	122	28.1	44	20.9	36.1	11	40.9	27.7	149	04.8	53.3	166	17.8	22.4
17	137	30.6	59	20.0	+23 36.4	26	41.7	+23 27.4	164	07.1	−11 53.3	181	20.3	−17 22.4
18	152	33.1	74	19.2	+23 36.8	41	42.5	+23 27.2	179	09.3	−11 53.2	196	22.7	−17 22.4
19	167	35.5	89	18.3	37.1	56	43.3	27.0	194	11.6	53.1	211	25.2	22.4
20	182	38.0	104	17.4	37.5	71	44.1	26.8	209	13.9	53.1	226	27.7	22.4
21	197	40.5	119	16.6	37.8	86	44.9	26.5	224	16.1	53.0	241	30.1	22.4
22	212	42.9	134	15.7	38.2	101	45.7	26.3	239	18.4	53.0	256	32.6	22.4
23	227	45.4	149	14.9	38.5	116	46.6	26.1	254	20.6	52.9	271	35.1	22.4
24	242	47.9	164	14.0	+23 38.8	131	47.4	+23 25.9	269	22.9	−11 52.8	286	37.6	−17 22.4
Dif	—			−9	+4		+8	−2		+23	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 13^{d}.2		PHE	4^{h}: 61′.2									
	PMG: 11^{h} 57^{m}.0				SD: 16′.7			12^{h}: 61′.3									
					PMG: 23^{h} 29^{m}			20^{h}: 61′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	46.3	+20	57.0	21	20.5	−13	26.4		**60 N**	** **	1 47	3 01	19 37	109	2 56	11
1	195	46.2		57.5	35	46.8	73	40.6	142	**58**	** **	2 15	17	24	104	3 05	15
2	210	46.1		57.9	50	13.1	73	−13 54.7	141	**56**	0 57	36	31	13	99	12	20
3	225	46.1		58.3	64	39.2	71	−14 08.7	140	**54**	1 37	2 53	42	19 04	95	19	23
4	240	46.0		58.8	79	05.2	70	22.7	140	**52**	2 03	3 08	3 53	18 56	92	25	26
5	255	46.0	+20	59.2	93	31.2	70	−14 36.5	138	**50**	2 23	3 20	4 02	18 48	89	3 31	28
6	270	45.9	+20	59.7	107	57.0	68	−14 50.3	138	**45**	3 00	3 46	4 21	18 32	84	3 43	33
7	285	45.8	+21	00.1	122	22.8	68	−15 04.0	137	**40**	26	4 05	37	19	80	3 53	38
8	300	45.8		00.6	136	48.5	67	17.5	135	**35**	3 46	21	4 50	18 08	76	4 01	42
9	315	45.7		01.0	151	14.1	66	31.0	135	**30**	4 03	35	5 02	17 59	73	09	45
10	330	45.6		01.4	165	39.5	64	44.4	134	**20**	28	4 57	21	42	69	22	50
11	345	45.6	+21	01.9	180	04.9	64	−15 57.7	133	**10 N**	4 49	5 15	5 38	17 28	65	4 34	54
12	0	45.5	+21	02.3	194	30.2	63	−16 10.8	131	**0**	5 05	5 31	5 53	17 15	61	4 45	58
13	15	45.5		02.8	208	55.4	62	23.9	131	**10 S**	20	5 46	6 09	17 02	57	4 56	62
14	30	45.4		03.2	223	20.6	62	36.9	130	**20**	35	6 02	25	16 48	53	5 07	68
15	45	45.3		03.6	237	45.6	60	−16 49.8	129	**30**	49	18	44	32	48	21	72
16	60	45.3		04.1	252	10.5	59	−17 02.5	127	**35**	5 56	27	6 55	23	45	28	76
17	75	45.2	+21	04.5	266	35.3	58	−17 15.1	126	**40**	6 04	6 37	7 07	16 13	42	5 37	80
18	90	45.1	+21	05.0	281	00.1	58	−17 27.7	126	**45**	6 13	6 49	7 22	16 01	38	5 48	84
19	105	45.1		05.4	295	24.7	56	40.1	124	**50**	22	7 03	40	15 47	32	6 01	89
20	120	45.0		05.8	309	49.3	56	−17 52.4	123	**52**	27	09	48	40	30	07	92
21	135	44.9		06.3	324	13.8	55	−18 04.5	121	**54**	31	16	7 58	32	27	13	96
22	150	44.9		06.7	338	38.1	53	16.6	121	**56**	36	24	8 08	24	24	21	99
23	165	44.8		07.1	353	02.4	53	28.5	119	**58**	42	32	20	15	19	29	104
24	180	44.7	+21	07.6	7	26.6	52	−18 40.3	118	**60 S**	6 48	7 42	8 34	15 04	15	6 38	109

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	7^{h} 47^{m}.5		PMG: 13^{h} 04^{m}			PMG: 15^{h} 12^{m}			PMG: 6^{h} 02^{m}			PMG: 4^{h} 53^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	242	47.9	164	14.0	+23 38.8	131	47.4	+23 25.9	269	22.9	−11 52.8	286	37.6	−17 22.4
1	257	50.3	179	13.1	39.2	146	48.2	25.6	284	25.2	52.8	301	40.0	22.5
2	272	52.8	194	12.3	39.5	161	49.0	25.4	299	27.4	52.7	316	42.5	22.5
3	287	55.2	209	11.4	39.9	176	49.8	25.2	314	29.7	52.6	331	45.0	22.5
4	302	57.7	224	10.6	40.2	191	50.6	25.0	329	32.0	52.6	346	47.4	22.5
5	318	00.2	239	09.7	+23 40.5	206	51.4	+23 24.7	344	34.2	−11 52.5	1	49.9	−17 22.5
6	333	02.6	254	08.8	+23 40.9	221	52.3	+23 24.5	359	36.5	−11 52.5	16	52.4	−17 22.5
7	348	05.1	269	08.0	41.2	236	53.1	24.3	14	38.8	52.4	31	54.8	22.5
8	3	07.6	284	07.1	41.5	251	53.9	24.0	29	41.0	52.3	46	57.3	22.5
9	18	10.0	299	06.3	41.8	266	54.7	23.8	44	43.3	52.3	61	59.8	22.5
10	33	12.5	314	05.4	42.2	281	55.5	23.6	59	45.6	52.2	77	02.3	22.5
11	48	15.0	329	04.5	+23 42.5	296	56.3	+23 23.4	74	47.8	−11 52.2	92	04.7	−17 22.5
12	63	17.4	344	03.7	+23 42.8	311	57.1	+23 23.1	89	50.1	−11 52.1	107	07.2	−17 22.5
13	78	19.9	359	02.8	43.2	326	58.0	22.9	104	52.4	52.0	122	09.7	22.5
14	93	22.4	14	02.0	43.5	341	58.8	22.7	119	54.6	52.0	137	12.1	22.6
15	108	24.8	29	01.1	43.8	356	59.6	22.4	134	56.9	51.9	152	14.6	22.6
16	123	27.3	44	00.2	44.1	12	00.4	22.2	149	59.2	51.8	167	17.1	22.6
17	138	29.7	58	59.4	+23 44.4	27	01.2	+23 22.0	165	01.5	−11 51.8	182	19.5	−17 22.6
18	153	32.2	73	58.5	+23 44.8	42	02.0	+23 21.7	180	03.7	−11 51.7	197	22.0	−17 22.6
19	168	34.7	88	57.6	45.1	57	02.8	21.5	195	06.0	51.7	212	24.5	22.6
20	183	37.1	103	56.8	45.4	72	03.7	21.3	210	08.3	51.6	227	27.0	22.6
21	198	39.6	118	55.9	45.7	87	04.5	21.0	225	10.5	51.5	242	29.4	22.6
22	213	42.1	133	55.0	46.0	102	05.3	20.8	240	12.8	51.5	257	31.9	22.6
23	228	44.5	148	54.2	46.3	117	06.1	20.6	255	15.1	51.4	272	34.4	22.6
24	243	47.0	163	53.3	+23 46.6	132	06.9	+23 20.4	270	17.4	−11 51.4	287	36.9	−17 22.6
Dif	—			−9	+3		+8	−2		+23	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 14^{d}.2		PHE	4^{h}: 61′.4								
	PMG: 11^{h} 57^{m}.1				SD: 16′.7			12^{h}: 61′.3								
					PMG: **^{h} **^{m}			20^{h}: 61′.3								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	44.7	+21	07.6	7	26.6	−18	40.3	**60 N**	20 57	22 13	** **	21 26	100	3 07	18
1	195	44.7		08.0	21	50.7 51	−18	52.0 117	**58**	40	21 44	** **	21 08	94	20	24
2	210	44.6		08.4	36	14.7 50	−19	03.5 115	**56**	26	21	23 08	20 52	91	32	28
3	225	44.5		08.9	50	38.6 49		14.9 114	**54**	14	21 04	22 22	39	87	42	31
4	240	44.5		09.3	65	02.5 49		26.2 113	**52**	20 03	20 49	21 55	28	84	51	34
5	255	44.4	+21	09.7	79	26.2 47	−19	37.3 111	**50**	19 54	20 36	21 34	20 17	83	3 59	37
6	270	44.3	+21	10.2	93	49.9 47	−19	48.3 110	**45**	19 34	20 10	20 56	19 56	79	4 16	42
7	285	44.3		10.6	108	13.5 46	−19	59.1 108	**40**	18	19 50	30	39	76	31	46
8	300	44.2		11.0	122	36.9 44	−20	09.8 107	**35**	19 05	34	20 09	24	74	43	49
9	315	44.1		11.4	137	00.3 44		20.4 106	**30**	18 53	19 20	19 52	19 12	72	4 54	51
10	330	44.1		11.9	151	23.7 44		30.8 104	**20**	34	18 58	26	18 51	69	5 12	56
11	345	44.0	+21	12.3	165	46.9 42	−20	41.1 103	**10 N**	18 16	18 39	19 06	18 33	66	5 28	59
12	0	43.9	+21	12.7	180	10.1 42	−20	51.2 101	**0**	18 01	18 23	18 49	18 16	63	5 43	63
13	15	43.9		13.1	194	33.1 40	−21	01.2 100	**10 S**	17 45	18 07	33	17 59	61	5 58	66
14	30	43.8		13.6	208	56.1 40		11.0 98	**20**	28	17 52	19	41	58	6 15	69
15	45	43.7		14.0	223	19.1 40		20.6 96	**30**	17 09	35	18 05	20	55	33	73
16	60	43.6		14.4	237	41.9 38		30.1 95	**35**	16 58	26	17 57	17 08	53	44	76
17	75	43.6	+21	14.8	252	04.7 38	−21	39.5 94	**40**	16 46	17 16	17 49	16 55	50	6 57	78
18	90	43.5	+21	15.3	266	27.4 37	−21	48.7 92	**45**	16 31	17 04	17 40	16 39	47	7 12	82
19	105	43.4		15.7	280	50.0 36	−21	57.7 90	**50**	13	16 50	30	19	43	30	87
20	120	43.4		16.1	295	12.6 36	−22	06.5 88	**52**	16 04	44	26	16 10	41	39	89
21	135	43.3		16.5	309	35.0 34		15.2 87	**54**	15 55	37	21	15 59	39	7 49	92
22	150	43.2		16.9	323	57.5 35		23.8 86	**56**	44	29	16	48	35	8 00	95
23	165	43.1		17.4	338	19.8 33		32.1 83	**58**	32	20	11	34	31	13	99
24	180	43.1	+21	17.8	352	42.1 33	−22	40.3 82	**60 S**	15 17	16 10	17 05	15 19	25	8 27	106

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	7^{h} 43^{m}.6		PMG: 13^{h} 05^{m}			PMG: 15^{h} 11^{m}			PMG: 5^{h} 58^{m}			PMG: 4^{h} 49^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	243	47.0	163	53.3	+23 46.6	132	06.9	+23 20.4	270	17.4	−11 51.4	287	36.9	−17 22.6
1	258	49.5	178	52.5	46.9	147	07.7	20.1	285	19.6	51.3	302	39.3	22.6
2	273	51.9	193	51.6	47.3	162	08.6	19.9	300	21.9	51.2	317	41.8	22.7
3	288	54.4	208	50.7	47.6	177	09.4	19.6	315	24.2	51.2	332	44.3	22.7
4	303	56.8	223	49.9	47.9	192	10.2	19.4	330	26.4	51.1	347	46.7	22.7
5	318	59.3	238	49.0	+23 48.2	207	11.0	+23 19.2	345	28.7	−11 51.1	2	49.2	−17 22.7
6	334	01.8	253	48.1	+23 48.5	222	11.8	+23 18.9	0	31.0	−11 51.0	17	51.7	−17 22.7
7	349	04.2	268	47.3	48.8	237	12.6	18.7	15	33.3	50.9	32	54.2	22.7
8	4	06.7	283	46.4	49.1	252	13.4	18.5	30	35.5	50.9	47	56.6	22.7
9	19	09.2	298	45.5	49.4	267	14.3	18.2	45	37.8	50.8	62	59.1	22.7
10	34	11.6	313	44.7	49.7	282	15.1	18.0	60	40.1	50.8	78	01.6	22.7
11	49	14.1	328	43.8	+23 50.0	297	15.9	+23 17.8	75	42.4	−11 50.7	93	04.1	−17 22.7
12	64	16.6	343	42.9	+23 50.3	312	16.7	+23 17.5	90	44.6	−11 50.6	108	06.5	−17 22.7
13	79	19.0	358	42.1	50.6	327	17.5	17.3	105	46.9	50.6	123	09.0	22.8
14	94	21.5	13	41.2	50.9	342	18.3	17.1	120	49.2	50.5	138	11.5	22.8
15	109	24.0	28	40.3	51.2	357	19.2	16.8	135	51.5	50.5	153	14.0	22.8
16	124	26.4	43	39.5	51.5	12	20.0	16.6	150	53.7	50.4	168	16.4	22.8
17	139	28.9	58	38.6	+23 51.7	27	20.8	+23 16.3	165	56.0	−11 50.3	183	18.9	−17 22.8
18	154	31.3	73	37.7	+23 52.0	42	21.6	+23 16.1	180	58.3	−11 50.3	198	21.4	−17 22.8
19	169	33.8	88	36.9	52.3	57	22.4	15.9	196	00.6	50.2	213	23.9	22.8
20	184	36.3	103	36.0	52.6	72	23.2	15.6	211	02.8	50.2	228	26.3	22.8
21	199	38.7	118	35.1	52.9	87	24.1	15.4	226	05.1	50.1	243	28.8	22.8
22	214	41.2	133	34.2	53.2	102	24.9	15.2	241	07.4	50.1	258	31.3	22.8
23	229	43.7	148	33.4	53.5	117	25.7	14.9	256	09.7	50.0	273	33.8	22.9
24	244	46.1	163	32.5	+23 53.7	132	26.5	+23 14.7	271	12.0	−11 49.9	288	36.3	−17 22.9
Dif	—			−9	+3		+8	−2		+23	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 15^{d}.2		PHE	4^{h}: 61′.2									
	PMG: 11^{h} 57^{m}.2				SD: 16′.7			12^{h}: 61′.0									
					PMG: 0^{h} 30^{m}			20^{h}: 60′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	180	43.1	+21	17.8	352	42.1	−22	40.3		**60 N**	** **	1 41	2 57	23 06	74	3 25	34
1	195	43.0		18.2	7	04.3 32		48.3	80	**58**	** **	2 10	3 14	22 42	72	3 44	39
2	210	42.9		18.6	21	26.5 32	−22	56.2	79	**56**	0 46	32	28	23	71	4 00	43
3	225	42.9		19.0	35	48.6 31	−23	03.8	76	**54**	1 31	2 50	40	22 06	71	13	46
4	240	42.8		19.4	50	10.7 31		11.3	75	**52**	1 59	3 05	3 50	21 52	70	25	48
5	255	42.7	+21	19.8	64	32.7 30	−23	18.7	74	**50**	2 20	3 18	4 00	21 40	70	4 36	50
6	270	42.6	+21	20.3	78	54.6 29	−23	25.8	71	**45**	2 58	3 44	4 20	21 15	69	4 58	53
7	285	42.6		20.7	93	16.5 29		32.8	70	**40**	3 24	4 04	36	20 55	68	5 17	55
8	300	42.5		21.1	107	38.4 29		39.6	68	**35**	3 45	20	4 49	38	68	32	57
9	315	42.4		21.5	122	00.2 28		46.2	66	**30**	4 02	34	5 01	24	67	5 45	58
10	330	42.4		21.9	136	21.9 27		52.6	64	**20**	28	4 57	21	20 00	66	6 08	60
11	345	42.3	+21	22.3	150	43.7 28	−23	58.8	62	**10 N**	4 48	5 15	5 38	19 39	65	6 27	63
12	0	42.2	+21	22.7	165	05.3 26	−24	04.9	61	**0**	5 06	5 31	5 54	19 19	64	6 46	64
13	15	42.1		23.1	179	27.0 27		10.8	59	**10 S**	21	5 47	6 09	19 00	63	7 04	66
14	30	42.1		23.6	193	48.6 26		16.5	57	**20**	35	6 02	26	18 39	62	24	67
15	45	42.0		24.0	208	10.2 26		22.0	55	**30**	50	19	45	15	61	7 46	70
16	60	41.9		24.4	222	31.7 25		27.3	53	**35**	5 57	29	6 56	18 01	61	8 00	71
17	75	41.8	+21	24.8	236	53.3 26	−24	32.4	51	**40**	6 06	6 39	7 09	17 45	60	8 15	73
18	90	41.8	+21	25.2	251	14.8 25	−24	37.3	49	**45**	6 14	6 51	7 24	17 26	58	8 34	74
19	105	41.7		25.6	265	36.2 24		42.1	48	**50**	24	7 05	42	17 02	56	8 57	77
20	120	41.6		26.0	279	57.7 25		46.7	46	**52**	29	11	7 51	16 51	55	9 08	78
21	135	41.5		26.4	294	19.1 24		51.0	43	**54**	34	18	8 00	38	54	21	80
22	150	41.5		26.8	308	40.6 25		55.2	42	**56**	39	26	11	23	52	35	82
23	165	41.4		27.2	323	02.0 24	−24	59.2	40	**58**	44	35	24	16 05	50	9 52	85
24	180	41.3	+21	27.6	337	23.4 24	−25	03.0	38	**60 S**	6 50	7 45	8 38	15 44	47	10 13	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.4			Mag: +0.6		
	7^{h} 39^{m}.7		PMG: 13^{h} 07^{m}			PMG: 15^{h} 09^{m}			PMG: 5^{h} 54^{m}			PMG: 4^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	244	46.1	163	32.5	+23 53.7	132	26.5	+23 14.7	271	12.0	−11 49.9	288	36.3	−17 22.9
1	259	48.6	178	31.6	54.0	147	27.3	14.4	286	14.2	49.9	303	38.7	22.9
2	274	51.1	193	30.8	54.3	162	28.1	14.2	301	16.5	49.8	318	41.2	22.9
3	289	53.5	208	29.9	54.6	177	29.0	14.0	316	18.8	49.8	333	43.7	22.9
4	304	56.0	223	29.0	54.9	192	29.8	13.7	331	21.1	49.7	348	46.2	22.9
5	319	58.5	238	28.2	+23 55.1	207	30.6	+23 13.5	346	23.4	−11 49.7	3	48.6	−17 22.9
6	335	00.9	253	27.3	+23 55.4	222	31.4	+23 13.2	1	25.6	−11 49.6	18	51.1	−17 22.9
7	350	03.4	268	26.4	55.7	237	32.2	13.0	16	27.9	49.5	33	53.6	22.9
8	5	05.8	283	25.5	56.0	252	33.1	12.8	31	30.2	49.5	48	56.1	22.9
9	20	08.3	298	24.7	56.2	267	33.9	12.5	46	32.5	49.4	63	58.6	23.0
10	35	10.8	313	23.8	56.5	282	34.7	12.3	61	34.8	49.4	79	01.0	23.0
11	50	13.2	328	22.9	+23 56.8	297	35.5	+23 12.0	76	37.0	−11 49.3	94	03.5	−17 23.0
12	65	15.7	343	22.1	+23 57.0	312	36.3	+23 11.8	91	39.3	−11 49.3	109	06.0	−17 23.0
13	80	18.2	358	21.2	57.3	327	37.1	11.5	106	41.6	49.2	124	08.5	23.0
14	95	20.6	13	20.3	57.6	342	38.0	11.3	121	43.9	49.1	139	10.9	23.0
15	110	23.1	28	19.4	57.8	357	38.8	11.1	136	46.2	49.1	154	13.4	23.0
16	125	25.6	43	18.6	58.1	12	39.6	10.8	151	48.5	49.0	169	15.9	23.0
17	140	28.0	58	17.7	+23 58.4	27	40.4	+23 10.6	166	50.7	−11 49.0	184	18.4	−17 23.0
18	155	30.5	73	16.8	+23 58.6	42	41.2	+23 10.3	181	53.0	−11 48.9	199	20.9	−17 23.0
19	170	33.0	88	15.9	58.9	57	42.1	10.1	196	55.3	48.9	214	23.3	23.1
20	185	35.4	103	15.1	59.1	72	42.9	09.8	211	57.6	48.8	229	25.8	23.1
21	200	37.9	118	14.2	59.4	87	43.7	09.6	226	59.9	48.8	244	28.3	23.1
22	215	40.3	133	13.3	59.7	102	44.5	09.3	242	02.2	48.7	259	30.8	23.1
23	230	42.8	148	12.4	+23 59.9	117	45.3	09.1	257	04.4	48.6	274	33.3	23.1
24	245	45.3	163	11.6	+24 00.2	132	46.2	+23 08.9	272	06.7	−11 48.6	289	35.7	−17 23.1
Dif	—			−9	+3		+8	−2		+23	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 16ᵈ.2		PHE	4ʰ: 60′.7								
	PMG: 11ʰ 57ᵐ.3				SD: 16′.5			12ʰ: 60′.4								
					PMG: 1ʰ 34ᵐ			20ʰ: 60′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	41.3	+21	27.6	337	23.4	−25	03.0	**60 N**	21 01	22 20	** **	** **	**	3 59	60
1	195	41.2		28.0	351	44.8 24		06.6 36	**58**	20 43	21 48	** **	23 54	47	4 23	62
2	210	41.2		28.4	6	06.2 24		10.1 35	**56**	29	25	23 21	34	49	43	62
3	225	41.1		28.8	20	27.6 24		13.3 32	**54**	17	21 07	22 28	17	51	4 59	63
4	240	41.0		29.2	34	49.0 24		16.3 30	**52**	20 06	20 52	21 59	23 02	53	5 13	63
5	255	40.9	+21	29.6	49	10.4 24	−25	19.2 29	**50**	19 56	20 39	21 38	22 50	53	5 26	63
6	270	40.8	+21	30.0	63	31.8 24	−25	21.8 26	**45**	19 36	20 12	20 59	22 24	55	5 51	64
7	285	40.8		30.4	77	53.3 25		24.3 25	**40**	20	19 52	32	22 03	57	6 12	63
8	300	40.7		30.8	92	14.7 24		26.5 22	**35**	19 06	35	20 11	21 46	58	29	63
9	315	40.6		31.2	106	36.2 25		28.6 21	**30**	18 54	19 21	19 54	31	59	6 43	64
10	330	40.5		31.6	120	57.6 24		30.5 19	**20**	34	18 58	27	21 06	60	7 08	64
11	345	40.5	+21	32.0	135	19.1 25	−25	32.2 17	**10 N**	18 17	18 40	19 06	20 44	61	7 30	63
12	0	40.4	+21	32.4	149	40.6 25	−25	33.7 15	**0**	18 01	18 23	18 49	20 23	63	7 50	64
13	15	40.3		32.8	164	02.2 26		35.0 13	**10 S**	17 45	18 08	34	20 03	63	8 10	64
14	30	40.2		33.2	178	23.8 26		36.1 11	**20**	28	17 52	19	19 41	65	31	64
15	45	40.1		33.6	192	45.4 26		37.1 10	**30**	17 09	35	18 04	16	66	8 56	64
16	60	40.1		34.0	207	07.0 26		37.8 7	**35**	16 58	25	17 56	19 02	65	9 11	63
17	75	40.0	+21	34.3	221	28.7 27	−25	38.3 5	**40**	16 45	17 15	17 48	18 45	66	9 28	63
18	90	39.9	+21	34.7	235	50.4 27	−25	38.7 4	**45**	16 30	17 03	17 39	18 24	68	9 48	63
19	105	39.8		35.1	250	12.2 28		38.9 2	**50**	11	16 48	29	17 58	69	10 14	62
20	120	39.7		35.5	264	34.0 28		38.9 0	**52**	16 02	42	24	46	69	26	62
21	135	39.7		35.9	278	55.8 28		38.7 2	**54**	15 53	35	20	32	70	41	60
22	150	39.6		36.3	293	17.7 29		38.3 4	**56**	42	27	14	17 15	71	10 57	60
23	165	39.5		36.7	307	39.7 30		37.7 6	**58**	29	18	09	16 55	72	11 17	59
24	180	39.4	+21	37.1	322	01.7 30	−25	36.9 8	**60 S**	15 14	16 08	17 02	16 31	73	11 42	58

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7ʰ 35ᵐ.7		PMG: 13ʰ 08ᵐ			PMG: 15ʰ 08ᵐ			PMG: 5ʰ 51ᵐ			PMG: 4ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	245	45.3	163	11.6	+24 00.2	132	46.2	+23 08.9	272	06.7	−11 48.6	289	35.7	−17 23.1
1	260	47.7	178	10.7	00.4	147	47.0	08.6	287	09.0	48.5	304	38.2	23.1
2	275	50.2	193	09.8	00.7	162	47.8	08.4	302	11.3	48.5	319	40.7	23.1
3	290	52.7	208	08.9	00.9	177	48.6	08.1	317	13.6	48.4	334	43.2	23.1
4	305	55.1	223	08.1	01.2	192	49.4	07.9	332	15.9	48.4	349	45.7	23.2
5	320	57.6	238	07.2	+24 01.4	207	50.2	+23 07.6	347	18.2	−11 48.3	4	48.2	−17 23.2
6	336	00.1	253	06.3	+24 01.7	222	51.1	+23 07.4	2	20.4	−11 48.3	19	50.6	−17 23.2
7	351	02.5	268	05.4	01.9	237	51.9	07.1	17	22.7	48.2	34	53.1	23.2
8	6	05.0	283	04.6	02.1	252	52.7	06.9	32	25.0	48.1	49	55.6	23.2
9	21	07.5	298	03.7	02.4	267	53.5	06.6	47	27.3	48.1	64	58.1	23.2
10	36	09.9	313	02.8	02.6	282	54.3	06.4	62	29.6	48.0	80	00.6	23.2
11	51	12.4	328	01.9	+24 02.9	297	55.2	+23 06.1	77	31.9	−11 48.0	95	03.0	−17 23.2
12	66	14.8	343	01.1	+24 03.1	312	56.0	+23 05.9	92	34.2	−11 47.9	110	05.5	−17 23.2
13	81	17.3	358	00.2	03.3	327	56.8	05.6	107	36.5	47.9	125	08.0	23.3
14	96	19.8	12	59.3	03.6	342	57.6	05.4	122	38.7	47.8	140	10.5	23.3
15	111	22.2	27	58.4	03.8	357	58.4	05.1	137	41.0	47.8	155	13.0	23.3
16	126	24.7	42	57.6	04.0	12	59.3	04.9	152	43.3	47.7	170	15.5	23.3
17	141	27.2	57	56.7	+24 04.3	28	00.1	+23 04.6	167	45.6	−11 47.7	185	17.9	−17 23.3
18	156	29.6	72	55.8	+24 04.5	43	00.9	+23 04.4	182	47.9	−11 47.6	200	20.4	−17 23.3
19	171	32.1	87	54.9	04.7	58	01.7	04.1	197	50.2	47.6	215	22.9	23.3
20	186	34.6	102	54.0	05.0	73	02.6	03.9	212	52.5	47.5	230	25.4	23.3
21	201	37.0	117	53.2	05.2	88	03.4	03.6	227	54.8	47.5	245	27.9	23.4
22	216	39.5	132	52.3	05.4	103	04.2	03.4	242	57.1	47.4	260	30.4	23.4
23	231	42.0	147	51.4	05.6	118	05.0	03.1	257	59.4	47.3	275	32.9	23.4
24	246	44.4	162	50.5	+24 05.9	133	05.8	+23 02.9	273	01.7	−11 47.3	290	35.3	−17 23.4
Dif	—			−9	+2		+8	−2		+23	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 17^{d}.2		PHE	4^{h}: 59′.9									
	PMG: 11^{h} 57^{m}.4				SD: 16′.4			12^{h}: 59′.6									
					PMG: 2^{h} 39^{m}			20^{h}: 59′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	180	39.4	+21	37.1	322	01.7	−25	36.9		**60 N**	** **	1 34	2 54	0 20	42	4 59	86
1	195	39.3		37.5	336	23.8 31		36.0	9	**58**	** **	2 06	3 11	** **	**	5 25	81
2	210	39.3		37.8	350	45.9 31		34.8	12	**56**	0 34	29	25	** **	**	5 45	78
3	225	39.2		38.2	5	08.1 32		33.5	13	**54**	1 26	2 47	38	** **	**	6 02	76
4	240	39.1		38.6	19	30.4 33		32.0	15	**52**	1 55	3 03	48	23 55	36	16	75
5	255	39.0	+21	39.0	33	52.7 33	−25	30.4	16	**50**	2 17	3 16	3 58	23 43	39	6 29	73
6	270	38.9	+21	39.4	48	15.1 34	−25	28.5	19	**45**	2 55	3 42	4 18	23 19	43	6 55	70
7	285	38.8		39.8	62	37.6 35		26.5	20	**40**	3 23	4 03	35	23 00	45	7 15	69
8	300	38.8		40.1	77	00.1 35		24.3	22	**35**	3 44	19	4 48	22 44	47	32	68
9	315	38.7		40.5	91	22.7 36		21.9	24	**30**	4 01	33	5 00	30	49	7 47	66
10	330	38.6		40.9	105	45.4 37		19.3	26	**20**	27	4 56	20	22 06	53	8 12	64
11	345	38.5	+21	41.3	120	08.2 38	−25	16.6	27	**10 N**	4 48	5 15	5 38	21 45	56	8 33	63
12	0	38.4	+21	41.7	134	31.1 39	−25	13.7	29	**0**	5 06	5 32	5 54	21 26	58	8 54	60
13	15	38.3		42.0	148	54.0 39		10.6	31	**10 S**	21	5 47	6 10	21 06	61	9 14	58
14	30	38.3		42.4	163	17.0 40		07.4	32	**20**	36	6 03	27	20 46	62	9 35	57
15	45	38.2		42.8	177	40.1 41		03.9	35	**30**	51	20	46	22	65	10 00	54
16	60	38.1		43.2	192	03.4 43	−25	00.4	35	**35**	5 59	30	6 57	20 07	68	14	53
17	75	38.0	+21	43.5	206	26.7 43	−24	56.6	38	**40**	6 07	6 40	7 10	19 51	70	10 31	51
18	90	37.9	+21	43.9	220	50.0 43	−24	52.7	39	**45**	6 16	6 53	7 26	19 32	72	10 51	49
19	105	37.8		44.3	235	13.5 45		48.6	41	**50**	26	7 07	44	19 07	76	11 16	46
20	120	37.8		44.7	249	37.1 46		44.4	42	**52**	31	13	7 53	18 55	78	28	44
21	135	37.7		45.0	264	00.8 47		40.0	44	**54**	36	21	8 03	42	80	41	43
22	150	37.6		45.4	278	24.6 48		35.4	46	**56**	41	29	14	26	83	11 57	40
23	165	37.5		45.8	292	48.5 49		30.7	47	**58**	47	38	27	18 07	87	12 16	37
24	180	37.4	+21	46.2	307	12.4 49	−24	25.8	49	**60 S**	6 53	7 48	8 42	17 44	92	12 40	31

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7^{h} 31^{m}.8		PMG: 13^{h} 09^{m}			PMG: 15^{h} 07^{m}			PMG: 5^{h} 47^{m}			PMG: 4^{h} 37^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	246	44.4	162	50.5	+24 05.9	133	05.8	+23 02.9	273	01.7	−11 47.3	290	35.3	−17 23.4
1	261	46.9	177	49.7	06.1	148	06.7	02.6	288	04.0	47.2	305	37.8	23.4
2	276	49.3	192	48.8	06.3	163	07.5	02.4	303	06.2	47.2	320	40.3	23.4
3	291	51.8	207	47.9	06.5	178	08.3	02.1	318	08.5	47.1	335	42.8	23.4
4	306	54.3	222	47.0	06.8	193	09.1	01.8	333	10.8	47.1	350	45.3	23.4
5	321	56.7	237	46.1	+24 07.0	208	09.9	+23 01.6	348	13.1	−11 47.0	5	47.8	−17 23.5
6	336	59.2	252	45.3	+24 07.2	223	10.8	+23 01.3	3	15.4	−11 47.0	20	50.2	−17 23.5
7	352	01.7	267	44.4	07.4	238	11.6	01.1	18	17.7	46.9	35	52.7	23.5
8	7	04.1	282	43.5	07.6	253	12.4	00.8	33	20.0	46.9	50	55.2	23.5
9	22	06.6	297	42.6	07.8	268	13.2	00.6	48	22.3	46.8	65	57.7	23.5
10	37	09.1	312	41.7	08.0	283	14.1	00.3	63	24.6	46.8	81	00.2	23.5
11	52	11.5	327	40.9	+24 08.3	298	14.9	+23 00.1	78	26.9	−11 46.7	96	02.7	−17 23.5
12	67	14.0	342	40.0	+24 08.5	313	15.7	+22 59.8	93	29.2	−11 46.7	111	05.2	−17 23.5
13	82	16.5	357	39.1	08.7	328	16.5	59.6	108	31.5	46.6	126	07.7	23.6
14	97	18.9	12	38.2	08.9	343	17.3	59.3	123	33.8	46.6	141	10.1	23.6
15	112	21.4	27	37.3	09.1	358	18.2	59.0	138	36.1	46.5	156	12.6	23.6
16	127	23.8	42	36.5	09.3	13	19.0	58.8	153	38.4	46.5	171	15.1	23.6
17	142	26.3	57	35.6	+24 09.5	28	19.8	+22 58.5	168	40.7	−11 46.4	186	17.6	−17 23.6
18	157	28.8	72	34.7	+24 09.7	43	20.6	+22 58.3	183	43.0	−11 46.4	201	20.1	−17 23.6
19	172	31.2	87	33.8	09.9	58	21.5	58.0	198	45.3	46.3	216	22.6	23.6
20	187	33.7	102	32.9	10.1	73	22.3	57.8	213	47.6	46.3	231	25.1	23.6
21	202	36.2	117	32.0	10.3	88	23.1	57.5	228	49.9	46.2	246	27.6	23.7
22	217	38.6	132	31.2	10.5	103	23.9	57.2	243	52.2	46.2	261	30.0	23.7
23	232	41.1	147	30.3	10.7	118	24.7	57.0	258	54.5	46.1	276	32.5	23.7
24	247	43.6	162	29.4	+24 10.9	133	25.6	+22 56.7	273	56.8	−11 46.1	291	35.0	−17 23.7
Dif	—			−9	+2		+8	−3		+23	+1		+25	0

UT	SOL SD: 15′.8 PMG: 11h 57m.6				☽ LUNA Edad: 18d.2 SD: 16′.1 PMG: 3h 40m PHE { 4h: 59′.0; 12h: 58′.7; 20h: 58′.4 Rº: 57m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	37.4	+21	46.2	307	12.4	−24	25.8	**60 N**	21 04	22 26	** **	1 02	22	6 25	95
1	195	37.3		46.5	321	36.5 51		20.8 50	**58**	20 47	21 53	** **	0 41	27	6 46	90
2	210	37.2		46.9	336	00.7 52		15.6 52	**56**	32	29	23 40	23	31	7 03	86
3	225	37.2		47.3	350	25.0 53		10.2 54	**54**	19	21 10	22 34	0 08	34	18	82
4	240	37.1		47.6	4	49.4 54	−24	04.7 55	**52**	20 08	20 55	22 04	** **	**	31	80
5	255	37.0	+21	48.0	19	13.9 55	−23	59.1 56	**50**	19 58	20 41	21 41	** **	**	7 42	78
6	270	36.9	+21	48.4	33	38.5 56	−23	53.3 58	**45**	19 38	20 14	21 01	** **	**	8 05	74
7	285	36.8		48.7	48	03.3 58		47.4 59	**40**	21	19 53	20 34	23 45	37	24	70
8	300	36.7		49.1	62	28.1 58		41.3 61	**35**	19 08	37	20 12	31	40	40	67
9	315	36.6		49.5	76	53.1 60		35.1 62	**30**	18 56	19 23	19 55	23 19	42	8 53	65
10	330	36.5		49.8	91	18.1 60		28.7 64	**20**	35	18 59	28	22 59	46	9 16	61
11	345	36.5	+21	50.2	105	43.3 62	−23	22.3 64	**10 N**	18 18	18 40	19 07	22 41	49	9 36	58
12	0	36.4	+21	50.6	120	08.6 63	−23	15.6 67	**0**	18 01	18 23	18 49	22 24	53	9 54	56
13	15	36.3		50.9	134	34.0 64		08.8 68	**10 S**	17 45	18 08	34	22 07	56	10 12	53
14	30	36.2		51.3	148	59.6 66	−23	01.9 69	**20**	28	17 52	19	21 48	60	32	49
15	45	36.1		51.6	163	25.2 66	−22	54.9 70	**30**	17 08	34	18 04	27	64	10 54	46
16	60	36.0		52.0	177	51.0 68		47.7 72	**35**	16 57	25	17 56	15	66	11 07	44
17	75	35.9	+21	52.4	192	16.9 69	−22	40.4 73	**40**	16 44	17 14	17 47	21 01	69	11 22	41
18	90	35.8	+21	52.7	206	42.9 70	−22	33.0 74	**45**	16 28	17 02	17 38	20 44	73	11 40	37
19	105	35.7		53.1	221	09.0 71		25.5 75	**50**	10	16 47	28	23	77	12 02	33
20	120	35.7		53.4	235	35.2 72		17.8 77	**52**	16 01	40	23	13	80	12	31
21	135	35.6		53.8	250	01.6 74		10.0 78	**54**	15 51	33	18	20 02	82	24	29
22	150	35.5		54.2	264	28.0 74	−22	02.1 79	**56**	39	25	13	19 49	85	37	26
23	165	35.4		54.5	278	54.6 76	−21	54.1 80	**58**	26	16	07	34	89	12 53	22
24	180	35.3	+21	54.9	293	21.3 77	−21	45.9 82	**60 S**	15 11	16 05	17 00	19 16	94	13 11	17

UT	ARIES PMG 7h 27m.9		VENUS Mag: −3.8 PMG: 13h 11m			MARTE Mag: +1.7 PMG: 15h 05m			JÚPITER Mag: −2.5 PMG: 5h 43m			SATURNO Mag: +0.6 PMG: 4h 33m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	247	43.6	162	29.4	+24 10.9	133	25.6	+22 56.7	273	56.8	−11 46.1	291	35.0	−17 23.7
1	262	46.0	177	28.5	11.1	148	26.4	56.5	288	59.1	46.0	306	37.5	23.7
2	277	48.5	192	27.6	11.3	163	27.2	56.2	304	01.4	46.0	321	40.0	23.7
3	292	51.0	207	26.8	11.5	178	28.0	55.9	319	03.7	45.9	336	42.5	23.7
4	307	53.4	222	25.9	11.6	193	28.9	55.7	334	06.0	45.9	351	45.0	23.7
5	322	55.9	237	25.0	+24 11.8	208	29.7	+22 55.4	349	08.3	−11 45.8	6	47.5	−17 23.8
6	337	58.3	252	24.1	+24 12.0	223	30.5	+22 55.2	4	10.6	−11 45.8	21	50.0	−17 23.8
7	353	00.8	267	23.2	12.2	238	31.3	54.9	19	12.9	45.7	36	52.5	23.8
8	8	03.3	282	22.3	12.4	253	32.2	54.6	34	15.2	45.7	51	54.9	23.8
9	23	05.7	297	21.5	12.6	268	33.0	54.4	49	17.5	45.6	66	57.4	23.8
10	38	08.2	312	20.6	12.8	283	33.8	54.1	64	19.8	45.6	81	59.9	23.8
11	53	10.7	327	19.7	+24 12.9	298	34.6	+22 53.8	79	22.1	−11 45.5	97	02.4	−17 23.8
12	68	13.1	342	18.8	+24 13.1	313	35.4	+22 53.6	94	24.4	−11 45.5	112	04.9	−17 23.9
13	83	15.6	357	17.9	13.3	328	36.3	53.3	109	26.7	45.4	127	07.4	23.9
14	98	18.1	12	17.0	13.5	343	37.1	53.1	124	29.0	45.4	142	09.9	23.9
15	113	20.5	27	16.2	13.7	358	37.9	52.8	139	31.3	45.3	157	12.4	23.9
16	128	23.0	42	15.3	13.8	13	38.7	52.5	154	33.6	45.3	172	14.9	23.9
17	143	25.4	57	14.4	+24 14.0	28	39.6	+22 52.3	169	35.9	−11 45.2	187	17.4	−17 23.9
18	158	27.9	72	13.5	+24 14.2	43	40.4	+22 52.0	184	38.2	−11 45.2	202	19.9	−17 23.9
19	173	30.4	87	12.6	14.3	58	41.2	51.7	199	40.5	45.1	217	22.3	24.0
20	188	32.8	102	11.7	14.5	73	42.0	51.5	214	42.8	45.1	232	24.8	24.0
21	203	35.3	117	10.9	14.7	88	42.9	51.2	229	45.1	45.0	247	27.3	24.0
22	218	37.8	132	10.0	14.9	103	43.7	50.9	244	47.4	45.0	262	29.8	24.0
23	233	40.2	147	09.1	15.0	118	44.5	50.7	259	49.7	44.9	277	32.3	24.0
24	248	42.7	162	08.2	+24 15.2	133	45.3	+22 50.4	274	52.0	−11 44.9	292	34.8	−17 24.0
Dif	—			−9	+2		+8	−3		+23	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 19^{d}.2		PHE	4^{h}: 58′.1									
	PMG: 11^{h} 57^{m}.7				SD: 15′.9			12^{h}: 57′.7									
					PMG: 4^{h} 37^{m}			20^{h}: 57′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	35.3	+21	54.9	293	21.3	−21	45.9		**60 N**	** **	1 29	2 51	1 24	12	8 00	94
1	195	35.2		55.2	307	48.2 79		37.6	83	**58**	** **	2 02	3 08	1 08	17	16	89
2	210	35.1		55.6	322	15.1 79		29.3	83	**56**	0 15	26	23	0 54	21	29	85
3	225	35.0		55.9	336	42.2 81		20.8	85	**54**	1 21	2 45	36	42	24	40	82
4	240	34.9		56.3	351	09.4 82		12.2	86	**52**	1 51	3 00	47	31	27	8 51	79
5	255	34.8	+21	56.6	5	36.7 83	−21	03.4	88	**50**	2 14	3 14	3 57	0 22	28	9 00	77
6	270	34.8	+21	57.0	20	04.1 84	−20	54.6	88	**45**	2 54	3 41	4 17	0 02	33	9 19	72
7	285	34.7		57.3	34	31.6 85		45.7	89	**40**	3 21	4 02	34	** **	**	34	68
8	300	34.6		57.7	48	59.3 87		36.7	90	**35**	3 43	18	4 48	** **	**	47	65
9	315	34.5		58.0	63	27.1 88		27.5	92	**30**	4 00	33	5 00	** **	**	9 58	63
10	330	34.4		58.4	77	55.0 89		18.3	92	**20**	27	4 56	20	23 45	40	10 17	58
11	345	34.3	+21	58.7	92	23.0 90	−20	08.9	94	**10 N**	4 48	5 15	5 38	23 30	45	10 34	54
12	0	34.2	+21	59.1	106	51.2 92	−19	59.5	94	**0**	5 06	5 32	5 54	23 17	48	10 50	50
13	15	34.1		59.4	121	19.4 92		50.0	95	**10 S**	22	5 48	6 10	23 03	52	11 05	47
14	30	34.0	+21	59.8	135	47.8 94		40.4	96	**20**	37	6 04	28	22 48	56	21	44
15	45	33.9	+22	00.1	150	16.3 95		30.6	98	**30**	5 52	21	47	31	61	40	39
16	60	33.8		00.5	164	44.9 96		20.8	98	**35**	6 00	31	6 59	21	64	11 51	36
17	75	33.7	+22	00.8	179	13.6 97	−19	10.9	99	**40**	6 08	6 42	7 12	22 10	67	12 03	33
18	90	33.6	+22	01.2	193	42.4 98	−19	00.9	100	**45**	6 17	6 54	7 27	21 57	70	12 17	30
19	105	33.5		01.5	208	11.4 100	−18	50.9	100	**50**	28	7 09	46	40	76	35	25
20	120	33.5		01.8	222	40.5 101		40.7	102	**52**	33	15	7 55	33	77	43	23
21	135	33.4		02.2	237	09.6 101		30.5	102	**54**	38	23	8 05	24	80	12 53	20
22	150	33.3		02.5	251	38.9 103		20.1	104	**56**	43	31	17	14	84	13 03	17
23	165	33.2		02.9	266	08.3 104	−18	09.7	104	**58**	49	40	30	21 03	87	15	14
24	180	33.1	+22	03.2	280	37.8 105	−17	59.2	105	**60 S**	6 56	7 51	8 45	20 50	92	13 28	10

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7^{h} 23^{m}.9		PMG: 13^{h} 12^{m}			PMG: 15^{h} 04^{m}			PMG: 5^{h} 40^{m}			PMG: 4^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	248	42.7	162	08.2	+24 15.2	133	45.3	+22 50.4	274	52.0	−11 44.9	292	34.8	−17 24.0
1	263	45.2	177	07.3	15.3	148	46.2	50.2	289	54.3	44.8	307	37.3	24.0
2	278	47.6	192	06.4	15.5	163	47.0	49.9	304	56.6	44.8	322	39.8	24.1
3	293	50.1	207	05.5	15.7	178	47.8	49.6	319	58.9	44.8	337	42.3	24.1
4	308	52.6	222	04.7	15.8	193	48.6	49.4	335	01.2	44.7	352	44.8	24.1
5	323	55.0	237	03.8	+24 16.0	208	49.5	+22 49.1	350	03.6	−11 44.7	7	47.3	−17 24.1
6	338	57.5	252	02.9	+24 16.1	223	50.3	+22 48.8	5	05.9	−11 44.6	22	49.8	−17 24.1
7	353	59.9	267	02.0	16.3	238	51.1	48.6	20	08.2	44.6	37	52.3	24.1
8	9	02.4	282	01.1	16.5	253	51.9	48.3	35	10.5	44.5	52	54.8	24.1
9	24	04.9	297	00.2	16.6	268	52.8	48.0	50	12.8	44.5	67	57.3	24.2
10	39	07.3	311	59.3	16.8	283	53.6	47.7	65	15.1	44.4	82	59.7	24.2
11	54	09.8	326	58.5	+24 16.9	298	54.4	+22 47.5	80	17.4	−11 44.4	98	02.2	−17 24.2
12	69	12.3	341	57.6	+24 17.1	313	55.2	+22 47.2	95	19.7	−11 44.3	113	04.7	−17 24.2
13	84	14.7	356	56.7	17.2	328	56.1	46.9	110	22.0	44.3	128	07.2	24.2
14	99	17.2	11	55.8	17.4	343	56.9	46.7	125	24.3	44.2	143	09.7	24.2
15	114	19.7	26	54.9	17.5	358	57.7	46.4	140	26.6	44.2	158	12.2	24.3
16	129	22.1	41	54.0	17.7	13	58.6	46.1	155	29.0	44.2	173	14.7	24.3
17	144	24.6	56	53.1	+24 17.8	28	59.4	+22 45.9	170	31.3	−11 44.1	188	17.2	−17 24.3
18	159	27.1	71	52.3	+24 17.9	44	00.2	+22 45.6	185	33.6	−11 44.1	203	19.7	−17 24.3
19	174	29.5	86	51.4	18.1	59	01.0	45.3	200	35.9	44.0	218	22.2	24.3
20	189	32.0	101	50.5	18.2	74	01.9	45.0	215	38.2	44.0	233	24.7	24.3
21	204	34.4	116	49.6	18.4	89	02.7	44.8	230	40.5	43.9	248	27.2	24.3
22	219	36.9	131	48.7	18.5	104	03.5	44.5	245	42.8	43.9	263	29.7	24.4
23	234	39.4	146	47.8	18.6	119	04.3	44.2	260	45.1	43.8	278	32.2	24.4
24	249	41.8	161	46.9	+24 18.8	134	05.2	+22 44.0	275	47.5	−11 43.8	293	34.7	−17 24.4
Dif	—			−9	+1		+8	−3		+23	0		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 20ᵈ.2		PHE	4ʰ: 57′.1								
	PMG: 11ʰ 57ᵐ.9				SD: 15′.6			12ʰ: 56′.8								
					PMG: 5ʰ 28ᵐ			20ʰ: 56′.5								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	33.1	+22	03.2	280	37.8	−17	59.2	**60 N**	21 08	22 33	** **	1 36	8	9 34	89
1	195	33.0		03.5	295	07.5 107		48.7 105	**58**	20 50	21 58	** **	25	11	45	85
2	210	32.9		03.9	309	37.2 107		38.0 107	**56**	35	33	** **	15	14	9 54	82
3	225	32.8		04.2	324	07.0 108		27.3 107	**54**	22	21 13	22 40	1 06	17	10 02	79
4	240	32.7		04.6	338	37.0 110		16.5 108	**52**	11	20 57	22 08	0 58	19	10	76
5	255	32.6	+22	04.9	353	07.1 111	−17	05.7 108	**50**	20 01	20 43	21 44	0 50	22	10 17	73
6	270	32.5	+22	05.2	7	37.2 111	−16	54.7 110	**45**	19 40	20 16	21 04	0 35	26	10 31	69
7	285	32.4		05.6	22	07.5 113		43.7 110	**40**	23	19 55	20 36	22	30	42	65
8	300	32.3		05.9	36	37.9 114		32.7 110	**35**	19 09	38	20 14	11	33	10 52	62
9	315	32.2		06.2	51	08.4 115		21.5 112	**30**	18 57	24	19 56	0 01	36	11 01	59
10	330	32.1		06.6	65	38.9 115	−16	10.3 112	**20**	36	19 00	29	** **	**	15	55
11	345	32.0	+22	06.9	80	09.6 117	−15	59.1 112	**10 N**	18 18	18 41	19 08	** **	**	11 28	50
12	0	31.9	+22	07.2	94	40.4 118	−15	47.7 114	**0**	18 02	18 24	18 50	** **	**	11 40	47
13	15	31.8		07.6	109	11.3 119		36.3 114	**10 S**	17 45	18 08	34	23 55	48	11 52	43
14	30	31.7		07.9	123	42.3 120		24.9 114	**20**	28	17 51	19	44	53	12 05	38
15	45	31.6		08.2	138	13.4 121		13.4 115	**30**	17 08	34	18 03	32	57	19	34
16	60	31.5		08.5	152	44.6 122	−15	01.8 116	**35**	16 56	24	17 55	25	60	27	31
17	75	31.4	+22	08.9	167	15.9 123	−14	50.2 116	**40**	16 43	17 13	17 47	23 17	63	12 36	28
18	90	31.3	+22	09.2	181	47.2 123	−14	38.5 117	**45**	16 27	17 01	17 37	23 07	67	12 47	24
19	105	31.2		09.5	196	18.7 125		26.8 117	**50**	16 08	16 46	27	22 56	72	13 00	20
20	120	31.1		09.9	210	50.3 126		15.0 118	**52**	15 59	39	22	50	74	06	18
21	135	31.0		10.2	225	21.9 126	−14	03.2 118	**54**	49	31	17	44	77	13	15
22	150	30.9		10.5	239	53.7 128	−13	51.3 119	**56**	37	23	11	38	79	20	13
23	165	30.8		10.8	254	25.5 128		39.3 120	**58**	24	14	17 05	30	83	29	9
24	180	30.7	+22	11.2	268	57.5 130	−13	27.4 119	**60 S**	15 09	16 03	16 59	22 22	86	13 38	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7ʰ 20ᵐ.0		PMG: 13ʰ 14ᵐ			PMG: 15ʰ 03ᵐ			PMG: 5ʰ 36ᵐ			PMG: 4ʰ 25ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	249	41.8	161	46.9	+24 18.8	134	05.2	+22 44.0	275	47.5	−11 43.8	293	34.7	−17 24.4
1	264	44.3	176	46.0	18.9	149	06.0	43.7	290	49.8	43.7	308	37.2	24.4
2	279	46.8	191	45.2	19.0	164	06.8	43.4	305	52.1	43.7	323	39.7	24.4
3	294	49.2	206	44.3	19.2	179	07.7	43.1	320	54.4	43.7	338	42.2	24.4
4	309	51.7	221	43.4	19.3	194	08.5	42.9	335	56.7	43.6	353	44.7	24.5
5	324	54.2	236	42.5	+24 19.4	209	09.3	+22 42.6	350	59.0	−11 43.6	8	47.2	−17 24.5
6	339	56.6	251	41.6	+24 19.6	224	10.1	+22 42.3	6	01.3	−11 43.5	23	49.7	−17 24.5
7	354	59.1	266	40.7	19.7	239	11.0	42.0	21	03.7	43.5	38	52.2	24.5
8	10	01.6	281	39.8	19.8	254	11.8	41.8	36	06.0	43.4	53	54.7	24.5
9	25	04.0	296	38.9	19.9	269	12.6	41.5	51	08.3	43.4	68	57.2	24.5
10	40	06.5	311	38.1	20.1	284	13.4	41.2	66	10.6	43.4	83	59.7	24.5
11	55	08.9	326	37.2	+24 20.2	299	14.3	+22 41.0	81	12.9	−11 43.3	99	02.2	−17 24.6
12	70	11.4	341	36.3	+24 20.3	314	15.1	+22 40.7	96	15.2	−11 43.3	114	04.7	−17 24.6
13	85	13.9	356	35.4	20.4	329	15.9	40.4	111	17.6	43.2	129	07.2	24.6
14	100	16.3	11	34.5	20.5	344	16.8	40.1	126	19.9	43.2	144	09.7	24.6
15	115	18.8	26	33.6	20.7	359	17.6	39.8	141	22.2	43.1	159	12.2	24.6
16	130	21.3	41	32.7	20.8	14	18.4	39.6	156	24.5	43.1	174	14.7	24.6
17	145	23.7	56	31.8	+24 20.9	29	19.2	+22 39.3	171	26.8	−11 43.1	189	17.2	−17 24.7
18	160	26.2	71	30.9	+24 21.0	44	20.1	+22 39.0	186	29.1	−11 43.0	204	19.7	−17 24.7
19	175	28.7	86	30.1	21.1	59	20.9	38.7	201	31.5	43.0	219	22.2	24.7
20	190	31.1	101	29.2	21.2	74	21.7	38.5	216	33.8	42.9	234	24.7	24.7
21	205	33.6	116	28.3	21.3	89	22.6	38.2	231	36.1	42.9	249	27.2	24.7
22	220	36.0	131	27.4	21.4	104	23.4	37.9	246	38.4	42.8	264	29.7	24.7
23	235	38.5	146	26.5	21.5	119	24.2	37.6	261	40.7	42.8	279	32.2	24.8
24	250	41.0	161	25.6	+24 21.7	134	25.0	+22 37.4	276	43.1	−11 42.8	294	34.7	−17 24.8
Dif	—			−9	+1		+8	−3		+23	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 21^{d}.2		PHE	4^{h}: 56′.3									
	PMG: 11^{h} 58^{m}.0				SD: 15′.4			12^{h}: 56′.0									
					PMG: 6^{h} 16^{m}			20^{h}: 55′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	30.7	+22	11.2	268	57.5	−13	27.4		**60 N**	** **	1 23	2 48	1 44	5	11 03	85
1	195	30.6		11.5	283	29.5	130	15.3	121	**58**	** **	1 58	3 06	36	8	10	81
2	210	30.5		11.8	298	01.6	131	−13 03.3	120	**56**	** **	2 23	21	29	11	16	78
3	225	30.4		12.1	312	33.8	132	−12 51.1	122	**54**	1 15	42	34	23	13	21	76
4	240	30.4		12.4	327	06.1	133	39.0	121	**52**	1 48	2 58	45	17	16	26	73
5	255	30.3	+22	12.8	341	38.4	133	−12 26.8	122	**50**	2 11	3 12	3 55	1 12	18	11 30	71
6	270	30.2	+22	13.1	356	10.9	135	−12 14.5	123	**45**	2 52	3 40	4 16	1 01	23	11 40	66
7	285	30.1		13.4	10	43.4	135	−12 02.2	123	**40**	3 20	4 01	33	0 52	26	47	63
8	300	30.0		13.7	25	16.0	136	−11 49.9	123	**35**	42	18	47	44	29	11 54	59
9	315	29.8		14.0	39	48.7	137	37.6	123	**30**	3 59	32	4 59	37	32	12 00	56
10	330	29.7		14.4	54	21.4	137	25.2	124	**20**	4 27	4 56	5 20	25	37	10	51
11	345	29.6	+22	14.7	68	54.3	139	−11 12.7	125	**10 N**	4 48	5 15	5 38	0 15	40	12 18	48
12	0	29.5	+22	15.0	83	27.2	139	−11 00.3	124	**0**	5 06	5 32	5 54	0 05	44	12 27	43
13	15	29.4		15.3	98	00.2	140	−10 47.8	125	**10 S**	22	5 48	6 11	** **	**	35	39
14	30	29.3		15.6	112	33.2	140	35.2	126	**20**	37	6 05	28	** **	**	43	35
15	45	29.2		15.9	127	06.4	142	22.7	125	**30**	5 53	22	6 48	** **	**	53	30
16	60	29.1		16.2	141	39.6	142	−10 10.1	126	**35**	6 01	32	7 00	** **	**	12 58	28
17	75	29.0	+22	16.5	156	12.9	143	−9 57.5	126	**40**	6 09	6 43	7 13	** **	**	13 04	25
18	90	28.9	+22	16.9	170	46.2	143	−9 44.8	127	**45**	6 19	6 56	7 29	** **	**	13 11	22
19	105	28.8		17.2	185	19.6	144	32.1	127	**50**	30	7 11	48	** **	**	20	17
20	120	28.7		17.5	199	53.1	145	19.4	127	**52**	34	17	7 57	** **	**	24	15
21	135	28.6		17.8	214	26.7	146	−9 06.7	127	**54**	40	25	8 08	** **	**	28	13
22	150	28.5		18.1	229	00.3	146	−8 53.9	128	**56**	45	33	19	23 57	76	33	10
23	165	28.4		18.4	243	33.9	146	41.1	128	**58**	51	43	33	53	79	38	8
24	180	28.3	+22	18.7	258	07.7	148	−8 28.3	128	**60 S**	6 58	7 53	8 48	23 48	82	13 44	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7^{h} 16^{m}.1		PMG: 13^{h} 15^{m}			PMG: 15^{h} 01^{m}			PMG: 5^{h} 32^{m}			PMG: 4^{h} 21^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	250	41.0	161	25.6	+24 21.7	134	25.0	+22 37.4	276	43.1	−11 42.8	294	34.7	−17 24.8
1	265	43.4	176	24.7	21.8	149	25.9	37.1	291	45.4	42.7	309	37.2	24.8
2	280	45.9	191	23.8	21.9	164	26.7	36.8	306	47.7	42.7	324	39.7	24.8
3	295	48.4	206	22.9	22.0	179	27.5	36.5	321	50.0	42.6	339	42.2	24.8
4	310	50.8	221	22.1	22.1	194	28.4	36.2	336	52.3	42.6	354	44.7	24.8
5	325	53.3	236	21.2	+24 22.2	209	29.2	+22 36.0	351	54.7	−11 42.5	9	47.2	−17 24.9
6	340	55.8	251	20.3	+24 22.3	224	30.0	+22 35.7	6	57.0	−11 42.5	24	49.7	−17 24.9
7	355	58.2	266	19.4	22.4	239	30.8	35.4	21	59.3	42.5	39	52.2	24.9
8	11	00.7	281	18.5	22.5	254	31.7	35.1	37	01.6	42.4	54	54.7	24.9
9	26	03.2	296	17.6	22.5	269	32.5	34.8	52	04.0	42.4	69	57.2	24.9
10	41	05.6	311	16.7	22.6	284	33.3	34.6	67	06.3	42.3	84	59.7	24.9
11	56	08.1	326	15.8	+24 22.7	299	34.2	+22 34.3	82	08.6	−11 42.3	100	02.2	−17 25.0
12	71	10.5	341	14.9	+24 22.8	314	35.0	+22 34.0	97	10.9	−11 42.3	115	04.7	−17 25.0
13	86	13.0	356	14.0	22.9	329	35.8	33.7	112	13.3	42.2	130	07.2	25.0
14	101	15.5	11	13.2	23.0	344	36.7	33.4	127	15.6	42.2	145	09.7	25.0
15	116	17.9	26	12.3	23.1	359	37.5	33.1	142	17.9	42.1	160	12.2	25.0
16	131	20.4	41	11.4	23.2	14	38.3	32.9	157	20.2	42.1	175	14.7	25.1
17	146	22.9	56	10.5	+24 23.3	29	39.2	+22 32.6	172	22.6	−11 42.1	190	17.2	−17 25.1
18	161	25.3	71	09.6	+24 23.3	44	40.0	+22 32.3	187	24.9	−11 42.0	205	19.7	−17 25.1
19	176	27.8	86	08.7	23.4	59	40.8	32.0	202	27.2	42.0	220	22.2	25.1
20	191	30.3	101	07.8	23.5	74	41.6	31.7	217	29.5	41.9	235	24.7	25.1
21	206	32.7	116	06.9	23.6	89	42.5	31.4	232	31.9	41.9	250	27.2	25.1
22	221	35.2	131	06.0	23.7	104	43.3	31.2	247	34.2	41.9	265	29.7	25.2
23	236	37.7	146	05.1	23.7	119	44.1	30.9	262	36.5	41.8	280	32.2	25.2
24	251	40.1	161	04.3	+24 23.8	134	45.0	+22 30.6	277	38.8	−11 41.8	295	34.7	−17 25.2
Dif	—		−9		+1	+8		−3	+23		0	+25		0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 22ᵈ.2		PHE	4ʰ: 55′.5								
	PMG: 11ʰ 58ᵐ.2				SD: 15′.2			12ʰ: 55′.3								
					PMG: 7ʰ 00ᵐ			20ʰ: 55′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	28.3	+22	18.7	258	07.7	−8	28.3	**60 N**	21 11	22 39	** **	1 49	3	12 28	81
1	195	28.2		19.0	272	41.5 148		15.5 128	**58**	20 53	22 02	** **	44	7	31	78
2	210	28.1		19.3	287	15.3 148	−8	02.7 128	**56**	37	21 36	** **	40	9	34	75
3	225	28.0		19.6	301	49.2 149	−7	49.8 129	**54**	24	16	22 46	36	12	37	72
4	240	27.9		19.9	316	23.2 150		36.9 129	**52**	13	21 00	22 12	33	14	39	70
5	255	27.8	+22	20.2	330	57.2 150	−7	24.0 129	**50**	20 03	20 46	21 48	1 30	16	12 41	69
6	270	27.7	+22	20.5	345	31.3 151	−7	11.1 129	**45**	19 41	20 18	21 06	1 24	20	12 46	64
7	285	27.6		20.8	0	05.5 152	−6	58.2 129	**40**	24	19 57	20 37	18	24	50	60
8	300	27.5		21.1	14	39.7 152		45.2 130	**35**	19 10	39	20 15	13	27	53	57
9	315	27.4		21.5	29	13.9 152		32.2 130	**30**	18 58	25	19 58	09	29	12 56	54
10	330	27.3		21.8	43	48.2 153		19.2 130	**20**	37	19 01	30	1 02	34	13 01	50
11	345	27.2	+22	22.1	58	22.5 153	−6	06.3 129	**10 N**	18 19	18 41	19 08	0 55	39	13 06	45
12	0	27.1	+22	22.4	72	56.9 154	−5	53.2 131	**0**	18 02	18 24	18 50	0 49	42	13 10	41
13	15	27.0		22.6	87	31.4 155		40.2 130	**10 S**	17 45	18 08	34	43	46	14	37
14	30	26.9		22.9	102	05.9 155		27.2 130	**20**	28	17 51	19	37	50	18	33
15	45	26.8		23.2	116	40.4 155		14.1 131	**30**	17 07	34	18 03	29	55	23	29
16	60	26.7		23.5	131	14.9 155	−5	01.1 130	**35**	16 56	24	17 55	25	58	26	26
17	75	26.5	+22	23.8	145	49.6 157	−4	48.0 131	**40**	16 42	17 12	17 46	0 20	61	13 29	23
18	90	26.4	+22	24.1	160	24.2 156	−4	35.0 130	**45**	16 26	17 00	17 37	0 14	65	13 33	19
19	105	26.3		24.4	174	58.9 157		21.9 131	**50**	16 07	16 45	26	08	69	37	15
20	120	26.2		24.7	189	33.6 157	−4	08.8 131	**52**	15 58	38	21	04	72	39	13
21	135	26.1		25.0	204	08.4 158	−3	55.7 131	**54**	47	30	16	0 01	74	41	11
22	150	26.0		25.3	218	43.2 158		42.6 131	**56**	36	22	10	** **	**	43	9
23	165	25.9		25.6	233	18.1 159		29.5 131	**58**	22	12	17 04	** **	**	46	6
24	180	25.8	+22	25.9	247	52.9 158	−3	16.4 131	**60 S**	15 06	16 02	16 57	** **	**	13 49	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7ʰ 12ᵐ.1		PMG: 13ʰ 17ᵐ			PMG: 15ʰ 00ᵐ			PMG: 5ʰ 29ᵐ			PMG: 4ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	251	40.1	161	04.3	+24 23.8	134	45.0	+22 30.6	277	38.8	−11 41.8	295	34.7	−17 25.2
1	266	42.6	176	03.4	23.9	149	45.8	30.3	292	41.2	41.7	310	37.2	25.2
2	281	45.0	191	02.5	24.0	164	46.6	30.0	307	43.5	41.7	325	39.7	25.2
3	296	47.5	206	01.6	24.0	179	47.5	29.7	322	45.8	41.7	340	42.3	25.2
4	311	50.0	221	00.7	24.1	194	48.3	29.4	337	48.2	41.6	355	44.8	25.3
5	326	52.4	235	59.8	+24 24.2	209	49.1	+22 29.2	352	50.5	−11 41.6	10	47.3	−17 25.3
6	341	54.9	250	58.9	+24 24.2	224	50.0	+22 28.9	7	52.8	−11 41.5	25	49.8	−17 25.3
7	356	57.4	265	58.0	24.3	239	50.8	28.6	22	55.1	41.5	40	52.3	25.3
8	11	59.8	280	57.1	24.4	254	51.6	28.3	37	57.5	41.5	55	54.8	25.3
9	27	02.3	295	56.2	24.4	269	52.5	28.0	52	59.8	41.4	70	57.3	25.4
10	42	04.8	310	55.4	24.5	284	53.3	27.7	68	02.1	41.4	85	59.8	25.4
11	57	07.2	325	54.5	+24 24.6	299	54.1	+22 27.4	83	04.5	−11 41.4	101	02.3	−17 25.4
12	72	09.7	340	53.6	+24 24.6	314	54.9	+22 27.1	98	06.8	−11 41.3	116	04.8	−17 25.4
13	87	12.1	355	52.7	24.7	329	55.8	26.9	113	09.1	41.3	131	07.3	25.4
14	102	14.6	10	51.8	24.7	344	56.6	26.6	128	11.5	41.2	146	09.8	25.4
15	117	17.1	25	50.9	24.8	359	57.4	26.3	143	13.8	41.2	161	12.3	25.5
16	132	19.5	40	50.0	24.9	14	58.3	26.0	158	16.1	41.2	176	14.8	25.5
17	147	22.0	55	49.1	+24 24.9	29	59.1	+22 25.7	173	18.5	−11 41.1	191	17.3	−17 25.5
18	162	24.5	70	48.2	+24 25.0	44	59.9	+22 25.4	188	20.8	−11 41.1	206	19.9	−17 25.5
19	177	26.9	85	47.3	25.0	60	00.8	25.1	203	23.1	41.1	221	22.4	25.5
20	192	29.4	100	46.5	25.1	75	01.6	24.8	218	25.5	41.0	236	24.9	25.6
21	207	31.9	115	45.6	25.1	90	02.4	24.5	233	27.8	41.0	251	27.4	25.6
22	222	34.3	130	44.7	25.2	105	03.3	24.2	248	30.1	40.9	266	29.9	25.6
23	237	36.8	145	43.8	25.2	120	04.1	24.0	263	32.5	40.9	281	32.4	25.6
24	252	39.3	160	42.9	+24 25.3	135	04.9	+22 23.7	278	34.8	−11 40.9	296	34.9	−17 25.6
Dif	—		−9		+1	+8		−3	+23		0	+25		0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 23^{d}.2		PHE	4^{h}: 54′.9								
	PMG: 11^{h} 58^{m}.4				SD: 15′.0			12^{h}: 54′.8								
					PMG: 7^{h} 41^{m}			20^{h}: 54′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	25.8	+22	25.9	247	52.9	−3	16.4	**60 N**	** **	1 17	2 45	1 52	4	13 49	79
1	195	25.7		26.2	262	27.9 160	−3	03.3 131	**58**	** **	1 54	3 04	51	6	49	77
2	210	25.6		26.5	277	02.8 159	−2	50.2 131	**56**	** **	2 20	19	49	9	49	74
3	225	25.5		26.8	291	37.8 160		37.1 131	**54**	1 10	40	32	48	11	49	72
4	240	25.4		27.0	306	12.8 160		24.0 131	**52**	1 45	2 57	44	47	13	49	70
5	255	25.3	+22	27.3	320	47.8 160	−2	10.9 131	**50**	2 09	3 11	3 54	1 46	15	13 50	67
6	270	25.2	+22	27.6	335	22.9 161	−1	57.8 131	**45**	2 50	3 38	4 15	1 44	18	13 50	63
7	285	25.0		27.9	349	58.0 161		44.7 131	**40**	3 19	4 00	32	42	22	50	59
8	300	24.9		28.2	4	33.1 161		31.6 131	**35**	41	17	46	40	25	50	56
9	315	24.8		28.5	19	08.2 161		18.5 131	**30**	3 59	32	4 59	38	29	50	54
10	330	24.7		28.8	33	43.4 162	−1	05.4 131	**20**	4 27	4 55	5 20	36	33	51	48
11	345	24.6	+22	29.0	48	18.6 162	−0	52.3 131	**10 N**	4 48	5 15	5 38	1 34	36	13 51	44
12	0	24.5	+22	29.3	62	53.8 162	−0	39.3 130	**0**	5 06	5 32	5 55	1 31	41	13 51	41
13	15	24.4		29.6	77	29.0 162		26.2 131	**10 S**	23	5 49	6 11	29	45	51	37
14	30	24.3		29.9	92	04.2 162		13.1 131	**20**	38	6 05	29	27	49	51	33
15	45	24.2		30.2	106	39.5 163	−0	00.1 130	**30**	5 53	23	6 49	24	54	52	28
16	60	24.1		30.5	121	14.8 163	+0	13.0 131	**35**	6 02	33	7 01	23	56	52	25
17	75	24.0	+22	30.7	135	50.1 163	+0	26.0 130	**40**	6 11	6 44	7 15	1 21	60	13 52	22
18	90	23.8	+22	31.0	150	25.4 163	+0	39.1 131	**45**	6 20	6 57	7 30	1 19	63	13 52	19
19	105	23.7		31.3	165	00.7 163	+0	52.1 130	**50**	31	7 12	50	17	67	52	15
20	120	23.6		31.6	179	36.0 163	+1	05.1 130	**52**	36	19	7 59	16	69	52	13
21	135	23.5		31.8	194	11.4 164		18.1 130	**54**	41	27	8 10	15	71	52	11
22	150	23.4		32.1	208	46.7 163		31.1 130	**56**	47	35	22	13	75	52	9
23	165	23.3		32.4	223	22.1 164		44.1 130	**58**	6 53	45	35	12	77	52	7
24	180	23.2	+22	32.7	237	57.5 164	+1	57.0 129	**60 S**	7 00	7 56	8 51	1 10	80	13 52	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	7^{h} 08^{m}.2		PMG: 13^{h} 18^{m}			PMG: 14^{h} 59^{m}			PMG: 5^{h} 25^{m}			PMG: 4^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	252	39.3	160	42.9	+24 25.3	135	04.9	+22 23.7	278	34.8	−11 40.9	296	34.9	−17 25.6
1	267	41.7	175	42.0	25.3	150	05.8	23.4	293	37.1	40.8	311	37.4	25.7
2	282	44.2	190	41.1	25.3	165	06.6	23.1	308	39.5	40.8	326	39.9	25.7
3	297	46.6	205	40.2	25.4	180	07.4	22.8	323	41.8	40.8	341	42.4	25.7
4	312	49.1	220	39.3	25.4	195	08.3	22.5	338	44.1	40.7	356	44.9	25.7
5	327	51.6	235	38.4	+24 25.5	210	09.1	+22 22.2	353	46.5	−11 40.7	11	47.5	−17 25.7
6	342	54.0	250	37.5	+24 25.5	225	09.9	+22 21.9	8	48.8	−11 40.7	26	50.0	−17 25.7
7	357	56.5	265	36.7	25.5	240	10.8	21.6	23	51.1	40.6	41	52.5	25.8
8	12	59.0	280	35.8	25.6	255	11.6	21.3	38	53.5	40.6	56	55.0	25.8
9	28	01.4	295	34.9	25.6	270	12.4	21.0	53	55.8	40.5	71	57.5	25.8
10	43	03.9	310	34.0	25.7	285	13.3	20.7	68	58.2	40.5	87	00.0	25.8
11	58	06.4	325	33.1	+24 25.7	300	14.1	+22 20.4	84	00.5	−11 40.5	102	02.5	−17 25.8
12	73	08.8	340	32.2	+24 25.7	315	14.9	+22 20.1	99	02.8	−11 40.4	117	05.0	−17 25.9
13	88	11.3	355	31.3	25.7	330	15.8	19.9	114	05.2	40.4	132	07.5	25.9
14	103	13.7	10	30.4	25.8	345	16.6	19.6	129	07.5	40.4	147	10.0	25.9
15	118	16.2	25	29.5	25.8	0	17.4	19.3	144	09.8	40.3	162	12.6	25.9
16	133	18.7	40	28.6	25.8	15	18.3	19.0	159	12.2	40.3	177	15.1	25.9
17	148	21.1	55	27.7	+24 25.9	30	19.1	+22 18.7	174	14.5	−11 40.3	192	17.6	−17 26.0
18	163	23.6	70	26.9	+24 25.9	45	20.0	+22 18.4	189	16.9	−11 40.2	207	20.1	−17 26.0
19	178	26.1	85	26.0	25.9	60	20.8	18.1	204	19.2	40.2	222	22.6	26.0
20	193	28.5	100	25.1	25.9	75	21.6	17.8	219	21.5	40.2	237	25.1	26.0
21	208	31.0	115	24.2	25.9	90	22.5	17.5	234	23.9	40.1	252	27.6	26.0
22	223	33.5	130	23.3	26.0	105	23.3	17.2	249	26.2	40.1	267	30.1	26.1
23	238	35.9	145	22.4	26.0	120	24.1	16.9	264	28.6	40.1	282	32.7	26.1
24	253	38.4	160	21.5	+24 26.0	135	25.0	+22 16.6	279	30.9	−11 40.0	297	35.2	−17 26.1
Dif	—			−9	0		+8	−3		+23	0		+25	0

UT	SOL SD: 15′.8 PMG: 11h 58m.5				LUNA Edad: 24d.2 SD: 14′.9 PMG: 8h 22m PHE 4h: 54′.5; 12h: 54′.4; 20h: 54′.3 Rº: 41m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	23.2	+22	32.7	237	57.5	+1	57.0	**60 N**	21 14	22 45	** **	1 56	3	15 08	80
1	195	23.1		32.9	252	32.9 164	+2	10.0 130	**58**	20 55	22 06	** **	57	6	06	76
2	210	23.0		33.2	267	08.2 163		22.9 129	**56**	40	21 39	** **	58	9	03	74
3	225	22.9		33.5	281	43.6 164		35.8 129	**54**	26	19	22 52	1 59	11	15 01	71
4	240	22.7		33.8	296	19.0 164	+2	48.7 129	**52**	15	21 02	22 15	2 00	13	14 59	69
5	255	22.6	+22	34.0	310	54.4 164	+3	01.6 129	**50**	20 04	20 48	21 50	2 01	15	14 57	67
6	270	22.5	+22	34.3	325	29.8 164	+3	14.5 129	**45**	19 43	20 20	21 08	2 02	20	14 53	62
7	285	22.4		34.6	340	05.2 164		27.4 129	**40**	26	19 58	20 39	04	23	49	59
8	300	22.3		34.8	354	40.6 164		40.2 128	**35**	19 11	41	20 17	05	26	46	56
9	315	22.2		35.1	9	16.1 165	+3	53.0 128	**30**	18 59	26	19 59	07	28	44	53
10	330	22.1		35.4	23	51.5 164	+4	05.8 128	**20**	37	19 02	31	09	32	39	49
11	345	22.0	+22	35.6	38	26.9 164	+4	18.6 128	**10 N**	18 19	18 42	19 09	2 10	37	14 35	45
12	0	21.8	+22	35.9	53	02.3 164	+4	31.3 127	**0**	18 02	18 25	18 51	2 12	41	14 32	40
13	15	21.7		36.2	67	37.6 163		44.0 127	**10 S**	17 45	18 08	34	14	44	28	37
14	30	21.6		36.4	82	13.0 164	+4	56.7 127	**20**	28	17 51	19	16	48	24	33
15	45	21.5		36.7	96	48.4 164	+5	09.4 127	**30**	17 07	33	18 03	18	53	20	28
16	60	21.4		37.0	111	23.8 164		22.1 127	**35**	16 55	23	17 55	19	56	17	26
17	75	21.3	+22	37.2	125	59.1 163	+5	34.7 126	**40**	16 42	17 12	17 46	2 21	59	14 14	23
18	90	21.2	+22	37.5	140	34.5 164	+5	47.3 126	**45**	16 26	16 59	17 36	2 22	63	14 11	20
19	105	21.1		37.8	155	09.8 163	+5	59.9 126	**50**	16 06	44	25	24	67	07	16
20	120	20.9		38.0	169	45.2 164	+6	12.5 126	**52**	15 57	37	20	25	69	05	14
21	135	20.8		38.3	184	20.5 163		25.0 125	**54**	46	29	15	26	72	03	12
22	150	20.7		38.5	198	55.8 163		37.5 125	**56**	34	20	09	28	73	14 01	9
23	165	20.6		38.8	213	31.1 163	+6	50.0 125	**58**	20	11	17 03	29	76	13 59	6
24	180	20.5	+22	39.1	228	06.4 163	+7	02.4 124	**60 S**	15 04	16 00	16 56	2 30	80	13 56	4

UT	ARIES PMG 7h 04m.3		VENUS Mag: −3.8 PMG: 13h 19m			MARTE Mag: +1.8 PMG: 14h 58m			JÚPITER Mag: −2.5 PMG: 5h 21m			SATURNO Mag: +0.5 PMG: 4h 09m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	253	38.4	160	21.5	+24 26.0	135	25.0	+22 16.6	279	30.9	−11 40.0	297	35.2	−17 26.1
1	268	40.9	175	20.6	26.0	150	25.8	16.3	294	33.3	40.0	312	37.7	26.1
2	283	43.3	190	19.7	26.0	165	26.6	16.0	309	35.6	40.0	327	40.2	26.1
3	298	45.8	205	18.8	26.0	180	27.5	15.7	324	37.9	39.9	342	42.7	26.2
4	313	48.2	220	18.0	26.0	195	28.3	15.4	339	40.3	39.9	357	45.2	26.2
5	328	50.7	235	17.1	+24 26.0	210	29.1	+22 15.1	354	42.6	−11 39.9	12	47.7	−17 26.2
6	343	53.2	250	16.2	+24 26.1	225	30.0	+22 14.8	9	45.0	−11 39.8	27	50.3	−17 26.2
7	358	55.6	265	15.3	26.1	240	30.8	14.5	24	47.3	39.8	42	52.8	26.2
8	13	58.1	280	14.4	26.1	255	31.6	14.2	39	49.7	39.8	57	55.3	26.3
9	29	00.6	295	13.5	26.1	270	32.5	13.9	54	52.0	39.7	72	57.8	26.3
10	44	03.0	310	12.6	26.1	285	33.3	13.6	69	54.3	39.7	88	00.3	26.3
11	59	05.5	325	11.7	+24 26.1	300	34.2	+22 13.3	84	56.7	−11 39.7	103	02.8	−17 26.3
12	74	08.0	340	10.8	+24 26.1	315	35.0	+22 13.0	99	59.0	−11 39.6	118	05.3	−17 26.3
13	89	10.4	355	09.9	26.1	330	35.8	12.7	115	01.4	39.6	133	07.9	26.4
14	104	12.9	10	09.1	26.1	345	36.7	12.4	130	03.7	39.6	148	10.4	26.4
15	119	15.4	25	08.2	26.1	0	37.5	12.1	145	06.1	39.5	163	12.9	26.4
16	134	17.8	40	07.3	26.1	15	38.3	11.8	160	08.4	39.5	178	15.4	26.4
17	149	20.3	55	06.4	+24 26.1	30	39.2	+22 11.5	175	10.8	−11 39.5	193	17.9	−17 26.5
18	164	22.7	70	05.5	+24 26.1	45	40.0	+22 11.2	190	13.1	−11 39.4	208	20.4	−17 26.5
19	179	25.2	85	04.6	26.1	60	40.9	10.9	205	15.5	39.4	223	22.9	26.5
20	194	27.7	100	03.7	26.0	75	41.7	10.6	220	17.8	39.4	238	25.5	26.5
21	209	30.1	115	02.8	26.0	90	42.5	10.3	235	20.2	39.3	253	28.0	26.5
22	224	32.6	130	01.9	26.0	105	43.4	10.0	250	22.5	39.3	268	30.5	26.6
23	239	35.1	145	01.0	26.0	120	44.2	09.7	265	24.9	39.3	283	33.0	26.6
24	254	37.5	160	00.2	+24 26.0	135	45.0	+22 09.4	280	27.2	−11 39.2	298	35.5	−17 26.6
Dif	—		−9		0	+8		−3	+23		0	+25		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 25^{d}.2		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 58^{m}.7				SD: 14′.8			12^{h}: 54′.1									
					PMG: 9^{h} 03^{m}			20^{h}: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	20.5	+22	39.1	228	06.4	+7	02.4		**60 N**	** **	1 12	2 43	1 59	5	16 28	81
1	195	20.4		39.3	242	41.6 162		14.8	124	**58**	** **	1 51	3 02	2 03	8	22	77
2	210	20.3		39.6	257	16.9 163		27.2	124	**56**	** **	2 18	17	07	10	17	74
3	225	20.1		39.8	271	52.1 162		39.6	124	**54**	1 05	38	31	10	12	12	72
4	240	20.0		40.1	286	27.3 162	+7	51.9	123	**52**	1 42	2 55	42	13	14	08	69
5	255	19.9	+22	40.3	301	02.5 162	+8	04.2	123	**50**	2 07	3 09	3 53	2 16	16	16 04	67
6	270	19.8	+22	40.6	315	37.7 162	+8	16.4	122	**45**	2 49	3 37	4 14	2 22	20	15 55	63
7	285	19.7		40.8	330	12.8 161		28.6	122	**40**	3 18	3 59	32	27	23	48	60
8	300	19.6		41.1	344	47.9 161		40.8	122	**35**	40	4 17	46	31	27	42	57
9	315	19.5		41.4	359	23.1 162	+8	53.0	122	**30**	3 58	31	4 59	35	29	37	54
10	330	19.3		41.6	13	58.1 160	+9	05.1	121	**20**	4 26	4 55	5 20	41	34	28	49
11	345	19.2	+22	41.9	28	33.2 161	+9	17.1	120	**10 N**	4 48	5 15	5 38	2 47	38	15 20	45
12	0	19.1	+22	42.1	43	08.2 160	+9	29.2	121	**0**	5 07	5 33	5 55	2 53	41	15 12	42
13	15	19.0		42.4	57	43.2 160		41.2	120	**10 S**	23	5 49	6 12	2 58	45	15 05	38
14	30	18.9		42.6	72	18.2 160	+9	53.1	119	**20**	39	6 06	30	3 04	49	14 57	35
15	45	18.8		42.8	86	53.1 159	+10	05.1	120	**30**	5 54	24	6 50	11	54	48	31
16	60	18.6		43.1	101	28.0 159		16.9	118	**35**	6 03	34	7 02	15	56	43	28
17	75	18.5	+22	43.3	116	02.9 159	+10	28.8	119	**40**	6 12	6 45	7 16	3 20	59	14 37	25
18	90	18.4	+22	43.6	130	37.8 159	+10	40.6	118	**45**	6 21	6 58	7 32	3 25	63	14 31	21
19	105	18.3		43.8	145	12.6 158	+10	52.3	117	**50**	33	7 14	7 52	31	67	23	17
20	120	18.2		44.1	159	47.4 158	+11	04.1	118	**52**	38	21	8 01	34	69	19	15
21	135	18.1		44.3	174	22.2 158		15.7	116	**54**	43	29	12	38	71	15	13
22	150	17.9		44.6	188	56.9 157		27.4	117	**56**	49	37	24	41	74	10	11
23	165	17.8		44.8	203	31.6 157		38.9	115	**58**	6 55	47	38	45	77	05	8
24	180	17.7	+22	45.0	218	06.2 156	+11	50.5	116	**60 S**	7 02	7 58	8 54	3 50	80	14 00	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.5			Mag: +0.5		
	7^{h} 00^{m}.3		PMG: 13^{h} 21^{m}			PMG: 14^{h} 56^{m}			PMG: 5^{h} 17^{m}			PMG: 4^{h} 05^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	254	37.5	160	00.2	+24 26.0	135	45.0	+22 09.4	280	27.2	−11 39.2	298	35.5	−17 26.6
1	269	40.0	174	59.3	26.0	150	45.9	09.1	295	29.6	39.2	313	38.0	26.6
2	284	42.5	189	58.4	26.0	165	46.7	08.8	310	31.9	39.2	328	40.6	26.6
3	299	44.9	204	57.5	25.9	180	47.6	08.5	325	34.3	39.2	343	43.1	26.7
4	314	47.4	219	56.6	25.9	195	48.4	08.2	340	36.6	39.1	358	45.6	26.7
5	329	49.8	234	55.7	+24 25.9	210	49.2	+22 07.8	355	39.0	−11 39.1	13	48.1	−17 26.7
6	344	52.3	249	54.8	+24 25.9	225	50.1	+22 07.5	10	41.3	−11 39.1	28	50.6	−17 26.7
7	359	54.8	264	53.9	25.9	240	50.9	07.2	25	43.7	39.0	43	53.2	26.7
8	14	57.2	279	53.0	25.8	255	51.7	06.9	40	46.0	39.0	58	55.7	26.8
9	29	59.7	294	52.2	25.8	270	52.6	06.6	55	48.4	39.0	73	58.2	26.8
10	45	02.2	309	51.3	25.8	285	53.4	06.3	70	50.7	38.9	89	00.7	26.8
11	60	04.6	324	50.4	+24 25.8	300	54.3	+22 06.0	85	53.1	−11 38.9	104	03.2	−17 26.8
12	75	07.1	339	49.5	+24 25.7	315	55.1	+22 05.7	100	55.4	−11 38.9	119	05.7	−17 26.9
13	90	09.6	354	48.6	25.7	330	55.9	05.4	115	57.8	38.9	134	08.3	26.9
14	105	12.0	9	47.7	25.7	345	56.8	05.1	131	00.1	38.8	149	10.8	26.9
15	120	14.5	24	46.8	25.6	0	57.6	04.8	146	02.5	38.8	164	13.3	26.9
16	135	17.0	39	45.9	25.6	15	58.4	04.5	161	04.8	38.8	179	15.8	26.9
17	150	19.4	54	45.0	+24 25.6	30	59.3	+22 04.2	176	07.2	−11 38.7	194	18.3	−17 27.0
18	165	21.9	69	44.2	+24 25.5	46	00.1	+22 03.9	191	09.6	−11 38.7	209	20.9	−17 27.0
19	180	24.3	84	43.3	25.5	61	01.0	03.5	206	11.9	38.7	224	23.4	27.0
20	195	26.8	99	42.4	25.5	76	01.8	03.2	221	14.3	38.7	239	25.9	27.0
21	210	29.3	114	41.5	25.4	91	02.6	02.9	236	16.6	38.6	254	28.4	27.1
22	225	31.7	129	40.6	25.4	106	03.5	02.6	251	19.0	38.6	269	30.9	27.1
23	240	34.2	144	39.7	25.3	121	04.3	02.3	266	21.3	38.6	284	33.5	27.1
24	255	36.7	159	38.8	+24 25.3	136	05.2	+22 02.0	281	23.7	−11 38.5	299	36.0	−17 27.1
Dif	—			−9	0		+8	−3		+24	0		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 26.ᵈ2		PHE	4ʰ: 54′.0								
	PMG: 11ʰ 58.ᵐ9				SD: 14′.7			12ʰ: 54′.0								
					PMG: 9ʰ 44ᵐ			20ʰ: 54′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	17.7	+22	45.0	218	06.2	+11	50.5	**60 N**	21 17	22 51	** **	2 04	6	17 49	82
1	195	17.6		45.3	232	40.9 157	+12	02.0 115	**58**	20 58	22 09	** **	11	9	39	79
2	210	17.5		45.5	247	15.4 155		13.4 114	**56**	42	21 42	** **	17	12	31	75
3	225	17.4		45.8	261	50.0 156		24.8 114	**54**	28	21	22 57	22	15	24	72
4	240	17.2		46.0	276	24.5 155		36.1 113	**52**	16	21 04	22 19	27	17	17	70
5	255	17.1	+22	46.2	290	59.0 155	+12	47.4 113	**50**	20 06	20 50	21 53	2 32	19	17 11	68
6	270	17.0	+22	46.5	305	33.4 154	+12	58.7 113	**45**	19 44	20 21	21 10	2 42	23	16 58	64
7	285	16.9		46.7	320	07.8 154	+13	09.9 112	**40**	27	19 59	20 40	50	27	48	60
8	300	16.8		47.0	334	42.1 153		21.0 111	**35**	12	42	18	2 58	29	39	57
9	315	16.7		47.2	349	16.4 153		32.1 111	**30**	19 00	27	20 00	3 04	32	31	55
10	330	16.5		47.4	3	50.7 153		43.1 110	**20**	18 38	19 03	19 32	15	36	17	51
11	345	16.4	+22	47.7	18	24.9 152	+13	54.1 110	**10 N**	18 20	18 43	19 10	3 25	39	16 05	48
12	0	16.3	+22	47.9	32	59.1 152	+14	05.0 109	**0**	18 03	18 25	18 51	3 34	43	15 54	44
13	15	16.2		48.1	47	33.2 151		15.9 109	**10 S**	17 46	18 08	35	43	47	43	41
14	30	16.1		48.4	62	07.3 151		26.7 108	**20**	28	17 52	19	3 53	50	32	37
15	45	15.9		48.6	76	41.4 151		37.5 108	**30**	17 07	33	18 03	4 05	54	19	33
16	60	15.8		48.8	91	15.4 150		48.2 107	**35**	16 55	23	17 55	11	57	11	31
17	75	15.7	+22	49.0	105	49.3 149	+14	58.8 106	**40**	16 41	17 12	17 46	4 19	60	15 02	28
18	90	15.6	+22	49.3	120	23.2 149	+15	09.4 106	**45**	16 25	16 59	17 36	4 28	63	14 52	25
19	105	15.5		49.5	134	57.1 149		19.9 105	**50**	16 05	43	24	38	68	40	21
20	120	15.3		49.7	149	30.9 148		30.4 105	**52**	15 56	36	19	43	70	34	19
21	135	15.2		50.0	164	04.6 147		40.8 104	**54**	45	28	14	49	72	28	16
22	150	15.1		50.2	178	38.3 147	+15	51.2 104	**56**	33	19	08	4 55	75	21	14
23	165	15.0		50.4	193	12.0 147	+16	01.4 102	**58**	19	16 10	17 02	5 02	78	13	11
24	180	14.9	+22	50.6	207	45.6 146	+16	11.6 102	**60 S**	15 02	15 58	16 54	5 10	82	14 05	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.5			Mag: +0.5		
	6ʰ 56.ᵐ4		PMG: 13ʰ 22ᵐ			PMG: 14ʰ 55ᵐ			PMG: 5ʰ 14ᵐ			PMG: 4ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	255	36.7	159	38.8	+24 25.3	136	05.2	+22 02.0	281	23.7	−11 38.5	299	36.0	−17 27.1
1	270	39.1	174	37.9	25.2	151	06.0	01.7	296	26.0	38.5	314	38.5	27.1
2	285	41.6	189	37.0	25.2	166	06.8	01.4	311	28.4	38.5	329	41.0	27.2
3	300	44.1	204	36.2	25.1	181	07.7	01.1	326	30.8	38.5	344	43.5	27.2
4	315	46.5	219	35.3	25.1	196	08.5	00.8	341	33.1	38.4	359	46.1	27.2
5	330	49.0	234	34.4	+24 25.0	211	09.4	+22 00.4	356	35.5	−11 38.4	14	48.6	−17 27.2
6	345	51.5	249	33.5	+24 25.0	226	10.2	+22 00.1	11	37.8	−11 38.4	29	51.1	−17 27.3
7	0	53.9	264	32.6	24.9	241	11.0	+21 59.8	26	40.2	38.3	44	53.6	27.3
8	15	56.4	279	31.7	24.9	256	11.9	59.5	41	42.6	38.3	59	56.2	27.3
9	30	58.8	294	30.8	24.8	271	12.7	59.2	56	44.9	38.3	74	58.7	27.3
10	46	01.3	309	29.9	24.8	286	13.6	58.9	71	47.3	38.3	90	01.2	27.3
11	61	03.8	324	29.1	+24 24.7	301	14.4	+21 58.6	86	49.6	−11 38.2	105	03.7	−17 27.4
12	76	06.2	339	28.2	+24 24.7	316	15.2	+21 58.3	101	52.0	−11 38.2	120	06.2	−17 27.4
13	91	08.7	354	27.3	24.6	331	16.1	57.9	116	54.4	38.2	135	08.8	27.4
14	106	11.2	9	26.4	24.5	346	16.9	57.6	131	56.7	38.2	150	11.3	27.4
15	121	13.6	24	25.5	24.5	1	17.8	57.3	146	59.1	38.1	165	13.8	27.5
16	136	16.1	39	24.6	24.4	16	18.6	57.0	162	01.4	38.1	180	16.3	27.5
17	151	18.6	54	23.7	+24 24.3	31	19.5	+21 56.7	177	03.8	−11 38.1	195	18.9	−17 27.5
18	166	21.0	69	22.9	+24 24.3	46	20.3	+21 56.4	192	06.2	−11 38.0	210	21.4	−17 27.5
19	181	23.5	84	22.0	24.2	61	21.1	56.1	207	08.5	38.0	225	23.9	27.6
20	196	25.9	99	21.1	24.1	76	22.0	55.7	222	10.9	38.0	240	26.4	27.6
21	211	28.4	114	20.2	24.1	91	22.8	55.4	237	13.2	38.0	255	29.0	27.6
22	226	30.9	129	19.3	24.0	106	23.7	55.1	252	15.6	37.9	270	31.5	27.6
23	241	33.3	144	18.4	23.9	121	24.5	54.8	267	18.0	37.9	285	34.0	27.6
24	256	35.8	159	17.5	+24 23.9	136	25.3	+21 54.5	282	20.3	−11 37.9	300	36.5	−17 27.7
Dif	—			−9	−1		+8	−3		+24	0		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 27.^{d}2		PHE	4^{h}: 54′.0								
	PMG: 11^{h} 59.^{m}1				SD: 14′.7			12^{h}: 54′.0								
					PMG: 10^{h} 28^{m}			20^{h}: 54′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	14.9	+22	50.6	207	45.6	+16	11.6	**60 N**	** **	1 07	2 41	2 10	9	19 11	82
1	195	14.7		50.9	222	19.2 146		21.8 102	**58**	** **	1 48	3 00	20	13	18 58	77
2	210	14.6		51.1	236	52.7 145		31.9 101	**56**	** **	2 16	16	29	16	46	74
3	225	14.5		51.3	251	26.1 144		41.9 100	**54**	1 01	37	30	37	19	36	71
4	240	14.4		51.5	265	59.5 144	+16	51.9 100	**52**	1 39	2 54	41	44	21	27	69
5	255	14.3	+22	51.8	280	32.8 143	+17	01.7 98	**50**	2 05	3 08	3 52	2 51	23	18 19	67
6	270	14.1	+22	52.0	295	06.1 143	+17	11.5 98	**45**	2 48	3 37	4 14	3 05	27	18 02	63
7	285	14.0		52.2	309	39.4 143		21.3 98	**40**	3 17	3 59	31	17	30	17 48	60
8	300	13.9		52.4	324	12.6 142		31.0 97	**35**	40	4 16	46	27	33	36	57
9	315	13.8		52.6	338	45.7 141		40.6 96	**30**	3 58	31	4 58	36	35	26	55
10	330	13.7		52.9	353	18.8 141		50.1 95	**20**	4 26	4 55	5 20	3 51	39	17 08	52
11	345	13.5	+22	53.1	7	51.8 140	+17	59.6 95	**10 N**	4 48	5 15	5 38	4 04	42	16 53	49
12	0	13.4	+22	53.3	22	24.7 139	+18	09.0 94	**0**	5 07	5 33	5 55	4 17	45	16 38	47
13	15	13.3		53.5	36	57.6 139		18.3 93	**10 S**	23	5 50	6 12	30	48	24	44
14	30	13.2		53.7	51	30.5 139		27.5 92	**20**	39	6 07	30	43	52	16 09	41
15	45	13.0		53.9	66	03.3 138		36.7 92	**30**	5 55	25	6 51	4 59	55	15 52	37
16	60	12.9		54.1	80	36.0 137		45.8 91	**35**	6 04	35	7 03	5 08	58	42	35
17	75	12.8	+22	54.4	95	08.7 137	+18	54.8 90	**40**	6 13	6 47	7 17	5 19	60	15 30	33
18	90	12.7	+22	54.6	109	41.3 136	+19	03.7 89	**45**	6 23	7 00	7 33	5 31	64	15 17	29
19	105	12.6		54.8	124	13.9 136		12.6 89	**50**	34	15	7 53	46	68	15 01	25
20	120	12.4		55.0	138	46.4 135		21.3 87	**52**	39	22	8 03	5 53	70	14 53	23
21	135	12.3		55.2	153	18.8 134		30.0 87	**54**	44	30	14	6 01	72	44	22
22	150	12.2		55.4	167	51.2 134		38.6 86	**56**	50	39	26	10	75	35	18
23	165	12.1		55.6	182	23.5 133		47.2 86	**58**	6 57	7 49	40	20	79	24	15
24	180	11.9	+22	55.8	196	55.8 133	+19	55.6 84	**60 S**	7 04	8 00	8 57	6 32	83	14 12	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.5			Mag: +0.5		
	6^{h} 52.^{m}5		PMG: 13^{h} 24^{m}			PMG: 14^{h} 53^{m}			PMG: 5^{h} 10^{m}			PMG: 3^{h} 57^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	256	35.8	159	17.5	+24 23.9	136	25.3	+21 54.5	282	20.3	−11 37.9	300	36.5	−17 27.7
1	271	38.3	174	16.7	23.8	151	26.2	54.2	297	22.7	37.9	315	39.1	27.7
2	286	40.7	189	15.8	23.7	166	27.0	53.8	312	25.1	37.8	330	41.6	27.7
3	301	43.2	204	14.9	23.6	181	27.9	53.5	327	27.4	37.8	345	44.1	27.7
4	316	45.7	219	14.0	23.5	196	28.7	53.2	342	29.8	37.8	0	46.6	27.8
5	331	48.1	234	13.1	+24 23.5	211	29.6	+21 52.9	357	32.2	−11 37.8	15	49.2	−17 27.8
6	346	50.6	249	12.2	+24 23.4	226	30.4	+21 52.6	12	34.5	−11 37.7	30	51.7	−17 27.8
7	1	53.1	264	11.3	23.3	241	31.2	52.3	27	36.9	37.7	45	54.2	27.8
8	16	55.5	279	10.5	23.2	256	32.1	51.9	42	39.3	37.7	60	56.7	27.9
9	31	58.0	294	09.6	23.1	271	32.9	51.6	57	41.6	37.7	75	59.3	27.9
10	47	00.4	309	08.7	23.0	286	33.8	51.3	72	44.0	37.6	91	01.8	27.9
11	62	02.9	324	07.8	+24 23.0	301	34.6	+21 51.0	87	46.4	−11 37.6	106	04.3	−17 27.9
12	77	05.4	339	06.9	+24 22.9	316	35.5	+21 50.7	102	48.7	−11 37.6	121	06.8	−17 28.0
13	92	07.8	354	06.0	22.8	331	36.3	50.3	117	51.1	37.6	136	09.4	28.0
14	107	10.3	9	05.1	22.7	346	37.1	50.0	132	53.5	37.5	151	11.9	28.0
15	122	12.8	24	04.3	22.6	1	38.0	49.7	147	55.8	37.5	166	14.4	28.0
16	137	15.2	39	03.4	22.5	16	38.8	49.4	162	58.2	37.5	181	16.9	28.0
17	152	17.7	54	02.5	+24 22.4	31	39.7	+21 49.1	178	00.6	−11 37.5	196	19.5	−17 28.1
18	167	20.2	69	01.6	+24 22.3	46	40.5	+21 48.7	193	02.9	−11 37.5	211	22.0	−17 28.1
19	182	22.6	84	00.7	22.2	61	41.4	48.4	208	05.3	37.4	226	24.5	28.1
20	197	25.1	98	59.8	22.1	76	42.2	48.1	223	07.7	37.4	241	27.1	28.1
21	212	27.6	113	59.0	22.0	91	43.0	47.8	238	10.1	37.4	256	29.6	28.2
22	227	30.0	128	58.1	21.9	106	43.9	47.5	253	12.4	37.4	271	32.1	28.2
23	242	32.5	143	57.2	21.8	121	44.7	47.1	268	14.8	37.3	286	34.6	28.2
24	257	34.9	158	56.3	+24 21.7	136	45.6	+21 46.8	283	17.2	−11 37.3	301	37.2	−17 28.2
Dif	—			−9	−1		+8	−3		+24	0		+25	0

UT	SOL SD: 15′.8 PMG: 11h 59m.3				LUNA Edad: 28d.2 SD: 14′.7 PMG: 11h 13m PHE 4h: 54′.0; 12h: 54′.1; 20h: 54′.1 Rº: 48m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	11.9	+22	55.8	196	55.8	+19	55.6	**60 N**	21 20	22 57	** **	2 19	14	20 33	78
1	195	11.8		56.0	211	28.0 132	+20	04.0 84	**58**	21 00	22 13	** **	33	19	15	73
2	210	11.7		56.2	226	00.2 132		12.3 83	**56**	20 44	21 45	** **	45	22	20 00	70
3	225	11.6		56.4	240	32.2 130		20.4 81	**54**	30	24	23 02	2 56	25	19 47	68
4	240	11.4		56.7	255	04.3 131		28.6 82	**52**	18	21 06	22 22	3 05	27	36	66
5	255	11.3	+22	56.9	269	36.2 129	+20	36.6 80	**50**	20 08	20 52	21 55	3 14	29	19 26	64
6	270	11.2	+22	57.1	284	08.2 130	+20	44.5 79	**45**	19 46	20 23	21 12	3 32	33	19 05	61
7	285	11.1		57.3	298	40.0 128	+20	52.3 78	**40**	28	20 01	20 42	3 47	35	18 48	59
8	300	11.0		57.5	313	11.8 128	+21	00.1 78	**35**	13	19 43	19	4 00	37	33	57
9	315	10.8		57.7	327	43.5 127		07.8 77	**30**	19 00	28	20 01	11	39	21	56
10	330	10.7		57.9	342	15.2 127		15.3 75	**20**	18 39	19 03	19 32	30	42	18 00	53
11	345	10.6	+22	58.1	356	46.8 126	+21	22.8 75	**10 N**	18 20	18 43	19 10	4 46	46	17 42	51
12	0	10.5	+22	58.3	11	18.4 126	+21	30.2 74	**0**	18 03	18 25	18 52	5 02	48	17 25	48
13	15	10.3		58.5	25	49.9 125		37.5 73	**10 S**	17 46	18 09	35	18	50	17 08	46
14	30	10.2		58.7	40	21.3 124		44.7 72	**20**	28	17 52	19	35	52	16 50	44
15	45	10.1		58.9	54	52.7 124		51.8 71	**30**	17 07	33	18 03	5 54	56	29	42
16	60	10.0		59.1	69	24.0 123	+21	58.8 70	**35**	16 55	23	17 54	6 06	57	17	40
17	75	09.8	+22	59.3	83	55.3 123	+22	05.7 69	**40**	16 41	17 11	17 45	6 19	60	16 03	38
18	90	09.7	+22	59.5	98	26.4 121	+22	12.6 69	**45**	16 25	16 58	17 35	6 35	62	15 46	36
19	105	09.6		59.7	112	57.6 122		19.3 67	**50**	16 04	43	24	6 54	66	26	33
20	120	09.5	+22	59.8	127	28.7 121		25.9 66	**52**	15 55	35	19	7 03	68	16	31
21	135	09.3	+23	00.0	141	59.7 120		32.4 65	**54**	44	27	13	13	70	15 06	28
22	150	09.2	+23	00.2	156	30.7 120		38.9 65	**56**	32	19	07	25	73	14 53	27
23	165	09.1		00.4	171	01.6 119		45.2 63	**58**	17	16 09	17 01	39	76	39	23
24	180	09.0	+23	00.6	185	32.4 118	+22	51.4 62	**60 S**	15 01	15 57	16 54	7 55	81	14 23	18

UT	ARIES PMG 6h 48m.6		VENUS Mag: −3.8 PMG: 13h 25m			MARTE Mag: +1.8 PMG: 14h 52m			JÚPITER Mag: −2.5 PMG: 5h 06m			SATURNO Mag: +0.5 PMG: 3h 53m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	257	34.9	158	56.3	+24 21.7	136	45.6	+21 46.8	283	17.2	−11 37.3	301	37.2	−17 28.2
1	272	37.4	173	55.4	21.6	151	46.4	46.5	298	19.5	37.3	316	39.7	28.3
2	287	39.9	188	54.5	21.5	166	47.3	46.2	313	21.9	37.3	331	42.2	28.3
3	302	42.3	203	53.7	21.4	181	48.1	45.8	328	24.3	37.2	346	44.8	28.3
4	317	44.8	218	52.8	21.3	196	49.0	45.5	343	26.7	37.2	1	47.3	28.3
5	332	47.3	233	51.9	+24 21.2	211	49.8	+21 45.2	358	29.0	−11 37.2	16	49.8	−17 28.4
6	347	49.7	248	51.0	+24 21.1	226	50.6	+21 44.9	13	31.4	−11 37.2	31	52.3	−17 28.4
7	2	52.2	263	50.1	20.9	241	51.5	44.5	28	33.8	37.2	46	54.9	28.4
8	17	54.7	278	49.3	20.8	256	52.3	44.2	43	36.2	37.1	61	57.4	28.4
9	32	57.1	293	48.4	20.7	271	53.2	43.9	58	38.5	37.1	76	59.9	28.5
10	47	59.6	308	47.5	20.6	286	54.0	43.6	73	40.9	37.1	92	02.5	28.5
11	63	02.1	323	46.6	+24 20.5	301	54.9	+21 43.2	88	43.3	−11 37.1	107	05.0	−17 28.5
12	78	04.5	338	45.7	+24 20.4	316	55.7	+21 42.9	103	45.7	−11 37.1	122	07.5	−17 28.5
13	93	07.0	353	44.8	20.2	331	56.6	42.6	118	48.0	37.0	137	10.1	28.6
14	108	09.4	8	44.0	20.1	346	57.4	42.3	133	50.4	37.0	152	12.6	28.6
15	123	11.9	23	43.1	20.0	1	58.3	41.9	148	52.8	37.0	167	15.1	28.6
16	138	14.4	38	42.2	19.9	16	59.1	41.6	163	55.2	37.0	182	17.6	28.6
17	153	16.8	53	41.3	+24 19.7	31	59.9	+21 41.3	178	57.5	−11 36.9	197	20.2	−17 28.7
18	168	19.3	68	40.4	+24 19.6	47	00.8	+21 41.0	193	59.9	−11 36.9	212	22.7	−17 28.7
19	183	21.8	83	39.6	19.5	62	01.6	40.6	209	02.3	36.9	227	25.2	28.7
20	198	24.2	98	38.7	19.4	77	02.5	40.3	224	04.7	36.9	242	27.8	28.7
21	213	26.7	113	37.8	19.2	92	03.3	40.0	239	07.0	36.9	257	30.3	28.8
22	228	29.2	128	36.9	19.1	107	04.2	39.6	254	09.4	36.8	272	32.8	28.8
23	243	31.6	143	36.0	19.0	122	05.0	39.3	269	11.8	36.8	287	35.4	28.8
24	258	34.1	158	35.2	+24 18.8	137	05.9	+21 39.0	284	14.2	−11 36.8	302	37.9	−17 28.8
Dif	—			−9	−1		+8	−3		+24	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 29^{d}.2		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 59^{m}.5				SD: 14′.7			12^{h}: 54′.3									
					PMG: 12^{h} 01^{m}			20^{h}: 54′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	180	09.0	+23	00.6	185	32.4	+22	51.4		**60 N**	** **	1 02	2 39	2 33	25	21 51	65
1	195	08.8		00.8	200	03.2	118 +22	57.5	61	**58**	** **	1 46	2 59	2 52	29	28	63
2	210	08.7		01.0	214	33.9	117 +23	03.5	60	**56**	** **	2 14	3 15	3 07	32	21 10	61
3	225	08.6		01.2	229	04.6	117	09.4	59	**54**	0 57	35	29	21	34	20 55	60
4	240	08.5		01.4	243	35.3	117	15.2	58	**52**	1 37	2 52	41	32	36	42	58
5	255	08.3	+23	01.6	258	05.8	115 +23	20.9	57	**50**	2 03	3 07	3 51	3 43	37	20 30	58
6	270	08.2	+23	01.7	272	36.3	115 +23	26.5	56	**45**	2 47	3 36	4 13	4 05	39	20 06	56
7	285	08.1		01.9	287	06.8	115	32.0	55	**40**	3 17	3 58	31	22	42	19 47	55
8	300	07.9		02.1	301	37.2	114	37.4	54	**35**	40	4 16	46	37	43	30	55
9	315	07.8		02.3	316	07.6	114	42.7	53	**30**	3 58	31	4 58	4 50	45	19 17	54
10	330	07.7		02.5	330	37.9	113	47.8	51	**20**	4 26	4 55	5 20	5 12	47	18 53	53
11	345	07.6	+23	02.7	345	08.1	112 +23	52.9	51	**10 N**	4 49	5 16	5 39	5 32	48	18 33	51
12	0	07.4	+23	02.9	359	38.3	112 +23	57.8	49	**0**	5 07	5 33	5 56	5 50	50	18 13	51
13	15	07.3		03.0	14	08.4	111 +24	02.6	48	**10 S**	24	5 50	6 13	6 08	51	17 54	50
14	30	07.2		03.2	28	38.5	111	07.4	48	**20**	40	6 07	31	27	53	34	49
15	45	07.1		03.4	43	08.6	111	12.0	46	**30**	5 56	26	6 52	6 50	55	17 11	47
16	60	06.9		03.6	57	38.6	110	16.5	45	**35**	6 04	36	7 04	7 03	56	16 57	46
17	75	06.8	+23	03.8	72	08.5	109 +24	20.8	43	**40**	6 14	6 48	7 18	7 19	57	16 41	45
18	90	06.7	+23	03.9	86	38.4	109 +24	25.1	43	**45**	6 24	7 01	7 34	7 37	59	16 22	44
19	105	06.6		04.1	101	08.2	108	29.2	41	**50**	35	17	7 55	8 00	62	15 59	41
20	120	06.4		04.3	115	38.0	108	33.3	41	**52**	40	24	8 04	11	63	47	41
21	135	06.3		04.5	130	07.8	108	37.2	39	**54**	46	32	15	23	65	34	40
22	150	06.2		04.6	144	37.5	107	41.0	38	**56**	52	41	28	38	66	20	37
23	165	06.0		04.8	159	07.2	107	44.7	37	**58**	6 58	7 51	42	8 55	69	15 02	36
24	180	05.9	+23	05.0	173	36.8	106 +24	48.3	36	**60 S**	7 06	8 02	8 59	9 16	72	14 41	32

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.5			Mag: +0.5		
	6^{h} 44^{m}.6		PMG: 13^{h} 26^{m}			PMG: 14^{h} 51^{m}			PMG: 5^{h} 02^{m}			PMG: 3^{h} 49^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	258	34.1	158	35.2	+24 18.8	137	05.9	+21 39.0	284	14.2	−11 36.8	302	37.9	−17 28.8
1	273	36.5	173	34.3	18.7	152	06.7	38.7	299	16.6	36.8	317	40.4	28.9
2	288	39.0	188	33.4	18.6	167	07.6	38.3	314	18.9	36.8	332	43.0	28.9
3	303	41.5	203	32.5	18.4	182	08.4	38.0	329	21.3	36.7	347	45.5	28.9
4	318	43.9	218	31.6	18.3	197	09.3	37.7	344	23.7	36.7	2	48.0	28.9
5	333	46.4	233	30.8	+24 18.2	212	10.1	+21 37.3	359	26.1	−11 36.7	17	50.6	−17 29.0
6	348	48.9	248	29.9	+24 18.0	227	10.9	+21 37.0	14	28.5	−11 36.7	32	53.1	−17 29.0
7	3	51.3	263	29.0	17.9	242	11.8	36.7	29	30.8	36.7	47	55.6	29.0
8	18	53.8	278	28.1	17.7	257	12.6	36.4	44	33.2	36.7	62	58.2	29.0
9	33	56.3	293	27.2	17.6	272	13.5	36.0	59	35.6	36.6	78	00.7	29.1
10	48	58.7	308	26.4	17.4	287	14.3	35.7	74	38.0	36.6	93	03.2	29.1
11	64	01.2	323	25.5	+24 17.3	302	15.2	+21 35.4	89	40.4	−11 36.6	108	05.8	−17 29.1
12	79	03.7	338	24.6	+24 17.1	317	16.0	+21 35.0	104	42.8	−11 36.6	123	08.3	−17 29.1
13	94	06.1	353	23.7	17.0	332	16.9	34.7	119	45.1	36.6	138	10.8	29.2
14	109	08.6	8	22.9	16.8	347	17.7	34.4	134	47.5	36.5	153	13.4	29.2
15	124	11.0	23	22.0	16.7	2	18.6	34.0	149	49.9	36.5	168	15.9	29.2
16	139	13.5	38	21.1	16.5	17	19.4	33.7	164	52.3	36.5	183	18.4	29.3
17	154	16.0	53	20.2	+24 16.4	32	20.3	+21 33.4	179	54.7	−11 36.5	198	21.0	−17 29.3
18	169	18.4	68	19.4	+24 16.2	47	21.1	+21 33.0	194	57.1	−11 36.5	213	23.5	−17 29.3
19	184	20.9	83	18.5	16.1	62	22.0	32.7	209	59.4	36.5	228	26.0	29.3
20	199	23.4	98	17.6	15.9	77	22.8	32.4	225	01.8	36.4	243	28.6	29.4
21	214	25.8	113	16.7	15.7	92	23.7	32.0	240	04.2	36.4	258	31.1	29.4
22	229	28.3	128	15.8	15.6	107	24.5	31.7	255	06.6	36.4	273	33.6	29.4
23	244	30.8	143	15.0	15.4	122	25.4	31.4	270	09.0	36.4	288	36.2	29.4
24	259	33.2	158	14.1	+24 15.3	137	26.2	+21 31.0	285	11.4	−11 36.4	303	38.7	−17 29.5
Dif	—		−9		−1	+8		−3	+24		0	+25		0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 30^{d}.2		PHE	4^{h}: 54′.4									
	PMG: 11^{h} 59^{m}.7				SD: 14′.8			12^{h}: 54′.5									
					PMG: 12^{h} 52^{m}			20^{h}: 54′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	05.9	+23	05.0	173	36.8	+24	48.3		**60 N**	21 22	23 02	** **	2 58	41	22 56	46
1	195	05.8		05.2	188	06.3 105		51.7	34	**58**	21 02	22 16	** **	3 21	43	31	47
2	210	05.7		05.3	202	35.9 106		55.0	33	**56**	20 46	21 47	** **	39	45	22 11	48
3	225	05.5		05.5	217	05.4 105	+24	58.2	32	**54**	32	25	23 07	3 55	45	21 55	48
4	240	05.4		05.7	231	34.8 104	+25	01.3	31	**52**	20	21 08	22 24	4 08	46	40	50
5	255	05.3	+23	05.9	246	04.2 104	+25	04.3	30	**50**	20 09	20 53	21 58	4 20	47	21 28	50
6	270	05.1	+23	06.0	260	33.6 104	+25	07.1	28	**45**	19 47	20 24	21 13	4 44	48	21 02	51
7	285	05.0		06.2	275	02.9 103		09.9	28	**40**	29	20 02	20 43	5 04	49	20 42	51
8	300	04.9		06.4	289	32.2 103		12.5	26	**35**	14	19 44	20	20	50	25	51
9	315	04.8		06.5	304	01.5 103		15.0	25	**30**	19 01	29	20 02	35	49	20 11	51
10	330	04.6		06.7	318	30.7 102		17.3	23	**20**	18 39	19 04	19 33	5 59	50	19 46	51
11	345	04.5	+23	06.9	332	59.9 102	+25	19.5	22	**10 N**	18 21	18 44	19 11	6 20	51	19 24	52
12	0	04.4	+23	07.0	347	29.0 101	+25	21.7	22	**0**	18 03	18 26	18 52	6 40	51	19 04	52
13	15	04.2		07.2	1	58.1 101		23.6	19	**10 S**	17 46	18 09	35	6 59	52	18 44	52
14	30	04.1		07.4	16	27.2 101		25.5	19	**20**	28	17 52	19	7 20	53	18 23	52
15	45	04.0		07.5	30	56.3 101		27.2	17	**30**	17 07	33	18 03	45	53	17 58	52
16	60	03.9		07.7	45	25.3 100		28.9	17	**35**	16 55	23	17 54	7 59	53	43	52
17	75	03.7	+23	07.9	59	54.3 100	+25	30.3	14	**40**	16 41	17 11	17 45	8 16	53	17 26	52
18	90	03.6	+23	08.0	74	23.3 100	+25	31.7	14	**45**	16 24	16 58	17 35	8 36	54	17 06	52
19	105	03.5		08.2	88	52.2 99		32.9	12	**50**	16 04	42	24	9 02	54	16 40	53
20	120	03.3		08.3	103	21.1 99		34.0	11	**52**	15 54	35	18	14	54	28	52
21	135	03.2		08.5	117	50.0 99		35.0	10	**54**	43	27	13	28	55	16 14	52
22	150	03.1		08.7	132	18.9 99		35.9	9	**56**	31	18	07	9 44	55	15 57	52
23	165	03.0		08.8	146	47.7 98		36.6	7	**58**	15 16	16 08	17 00	10 04	55	38	51
24	180	02.8	+23	09.0	161	16.6 99	+25	37.2	6	**60 S**	14 59	15 56	16 53	10 28	56	15 13	51

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6^{h} 40^{m}.7		PMG: 13^{h} 28^{m}			PMG: 14^{h} 49^{m}			PMG: 4^{h} 58^{m}			PMG: 3^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	259	33.2	158	14.1	+24 15.3	137	26.2	+21 31.0	285	11.4	−11 36.4	303	38.7	−17 29.5
1	274	35.7	173	13.2	15.1	152	27.1	30.7	300	13.8	36.3	318	41.3	29.5
2	289	38.2	188	12.3	14.9	167	27.9	30.4	315	16.1	36.3	333	43.8	29.5
3	304	40.6	203	11.5	14.8	182	28.8	30.0	330	18.5	36.3	348	46.3	29.5
4	319	43.1	218	10.6	14.6	197	29.6	29.7	345	20.9	36.3	3	48.9	29.6
5	334	45.5	233	09.7	+24 14.4	212	30.5	+21 29.3	0	23.3	−11 36.3	18	51.4	−17 29.6
6	349	48.0	248	08.8	+24 14.3	227	31.3	+21 29.0	15	25.7	−11 36.3	33	53.9	−17 29.6
7	4	50.5	263	08.0	14.1	242	32.2	28.7	30	28.1	36.3	48	56.5	29.7
8	19	52.9	278	07.1	13.9	257	33.0	28.3	45	30.5	36.2	63	59.0	29.7
9	34	55.4	293	06.2	13.7	272	33.9	28.0	60	32.9	36.2	79	01.6	29.7
10	49	57.9	308	05.4	13.6	287	34.7	27.7	75	35.3	36.2	94	04.1	29.7
11	65	00.3	323	04.5	+24 13.4	302	35.6	+21 27.3	90	37.6	−11 36.2	109	06.6	−17 29.8
12	80	02.8	338	03.6	+24 13.2	317	36.4	+21 27.0	105	40.0	−11 36.2	124	09.2	−17 29.8
13	95	05.3	353	02.7	13.0	332	37.3	26.7	120	42.4	36.2	139	11.7	29.8
14	110	07.7	8	01.9	12.8	347	38.1	26.3	135	44.8	36.1	154	14.2	29.8
15	125	10.2	23	01.0	12.7	2	39.0	26.0	150	47.2	36.1	169	16.8	29.9
16	140	12.7	38	00.1	12.5	17	39.8	25.6	165	49.6	36.1	184	19.3	29.9
17	155	15.1	52	59.2	+24 12.3	32	40.7	+21 25.3	180	52.0	−11 36.1	199	21.9	−17 29.9
18	170	17.6	67	58.4	+24 12.1	47	41.5	+21 25.0	195	54.4	−11 36.1	214	24.4	−17 29.9
19	185	20.0	82	57.5	11.9	62	42.4	24.6	210	56.8	36.1	229	26.9	30.0
20	200	22.5	97	56.6	11.7	77	43.2	24.3	225	59.2	36.1	244	29.5	30.0
21	215	25.0	112	55.8	11.5	92	44.1	23.9	241	01.6	36.0	259	32.0	30.0
22	230	27.4	127	54.9	11.4	107	44.9	23.6	256	04.0	36.0	274	34.6	30.1
23	245	29.9	142	54.0	11.2	122	45.8	23.3	271	06.3	36.0	289	37.1	30.1
24	260	32.4	157	53.1	+24 11.0	137	46.6	+21 22.9	286	08.7	−11 36.0	304	39.6	−17 30.1
Dif	—			−9	−2		+9	−3		+24	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 1ᵈ.5		PHE	4ʰ: 54′.7									
	PMG: 11ʰ 59ᵐ.9				SD: 14′.9			12ʰ: 54′.8									
					PMG: 13ʰ 44ᵐ			20ʰ: 55′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	02.8	+23	09.0	161	16.6	+25	37.2		**60 N**	** **	0 58	2 38	3 39	62	23 42	28
1	195	02.7		09.1	175	45.4 98		37.7	5	**58**	** **	1 44	2 57	4 04	60	23 18	33
2	210	02.6		09.3	190	14.2 98		38.0	3	**56**	** **	2 12	3 14	24	59	22 59	35
3	225	02.4		09.4	204	42.9 97		38.2	2	**54**	0 53	34	28	40	59	43	38
4	240	02.3		09.6	219	11.7 98		38.3	1	**52**	1 35	2 52	40	4 54	58	30	39
5	255	02.2	+23	09.7	233	40.4 97	+25	38.2	1	**50**	2 02	3 06	3 51	5 07	57	22 18	40
6	270	02.0	+23	09.9	248	09.1 97	+25	38.1	1	**45**	2 46	3 36	4 13	5 32	57	21 53	42
7	285	01.9		10.1	262	37.8 97		37.8	3	**40**	3 16	3 58	31	5 53	55	33	44
8	300	01.8		10.2	277	06.5 97		37.3	5	**35**	39	4 16	45	6 10	55	16	46
9	315	01.7		10.4	291	35.2 97		36.8	5	**30**	3 58	31	4 58	24	55	21 02	47
10	330	01.5		10.5	306	03.9 97		36.1	7	**20**	4 26	4 56	5 20	6 49	54	20 37	49
11	345	01.4	+23	10.7	320	32.5 96	+25	35.2	9	**10 N**	4 49	5 16	5 39	7 11	53	20 16	50
12	0	01.3	+23	10.8	335	01.2 97	+25	34.3	9	**0**	5 08	5 34	5 56	7 31	52	19 56	52
13	15	01.1		11.0	349	29.8 96		33.2	11	**10 S**	24	5 51	6 13	7 51	51	36	53
14	30	01.0		11.1	3	58.4 96		32.0	12	**20**	40	6 08	32	8 13	50	19 15	54
15	45	00.9		11.2	18	27.1 97		30.6	14	**30**	5 57	26	6 53	38	49	18 50	56
16	60	00.7		11.4	32	55.7 96		29.2	14	**35**	6 05	37	7 05	8 52	49	35	58
17	75	00.6	+23	11.5	47	24.3 96	+25	27.5	17	**40**	6 15	6 49	7 19	9 09	48	18 18	59
18	90	00.5	+23	11.7	61	52.9 96	+25	25.8	17	**45**	6 25	7 02	7 36	9 30	46	17 58	60
19	105	00.3		11.8	76	21.6 97		23.9	19	**50**	36	18	7 56	9 56	45	33	61
20	120	00.2		12.0	90	50.2 96		21.9	20	**52**	41	25	8 06	10 08	44	20	63
21	135	00.1		12.1	105	18.8 96		19.8	21	**54**	47	33	17	23	42	17 06	64
22	150	00.0		12.3	119	47.4 96		17.6	22	**56**	6 53	42	29	39	42	16 49	66
23	164	59.8		12.4	134	16.1 97		15.2	24	**58**	7 00	7 52	8 44	10 59	40	29	68
24	179	59.7	+23	12.5	148	44.7 96	+25	12.7	25	**60 S**	7 07	8 04	9 01	11 24	37	16 04	72

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 36ᵐ.8		PMG: 13ʰ 29ᵐ			PMG: 14ʰ 48ᵐ			PMG: 4ʰ 55ᵐ			PMG: 3ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	260	32.4	157	53.1	+24 11.0	137	46.6	+21 22.9	286	08.7	−11 36.0	304	39.6	−17 30.1
1	275	34.8	172	52.3	10.8	152	47.5	22.6	301	11.1	36.0	319	42.2	30.1
2	290	37.3	187	51.4	10.6	167	48.3	22.2	316	13.5	36.0	334	44.7	30.2
3	305	39.8	202	50.5	10.4	182	49.2	21.9	331	15.9	36.0	349	47.3	30.2
4	320	42.2	217	49.7	10.2	197	50.0	21.6	346	18.3	35.9	4	49.8	30.2
5	335	44.7	232	48.8	+24 10.0	212	50.9	+21 21.2	1	20.7	−11 35.9	19	52.3	−17 30.3
6	350	47.2	247	47.9	+24 09.8	227	51.7	+21 20.9	16	23.1	−11 35.9	34	54.9	−17 30.3
7	5	49.6	262	47.1	09.6	242	52.6	20.5	31	25.5	35.9	49	57.4	30.3
8	20	52.1	277	46.2	09.4	257	53.4	20.2	46	27.9	35.9	65	00.0	30.3
9	35	54.5	292	45.3	09.2	272	54.3	19.8	61	30.3	35.9	80	02.5	30.4
10	50	57.0	307	44.4	09.0	287	55.1	19.5	76	32.7	35.9	95	05.0	30.4
11	65	59.5	322	43.6	+24 08.8	302	56.0	+21 19.2	91	35.1	−11 35.8	110	07.6	−17 30.4
12	81	01.9	337	42.7	+24 08.6	317	56.8	+21 18.8	106	37.5	−11 35.8	125	10.1	−17 30.4
13	96	04.4	352	41.8	08.3	332	57.7	18.5	121	39.9	35.8	140	12.7	30.5
14	111	06.9	7	41.0	08.1	347	58.5	18.1	136	42.3	35.8	155	15.2	30.5
15	126	09.3	22	40.1	07.9	2	59.4	17.8	151	44.7	35.8	170	17.8	30.5
16	141	11.8	37	39.2	07.7	18	00.2	17.4	166	47.1	35.8	185	20.3	30.6
17	156	14.3	52	38.4	+24 07.5	33	01.1	+21 17.1	181	49.5	−11 35.8	200	22.8	−17 30.6
18	171	16.7	67	37.5	+24 07.3	48	02.0	+21 16.7	196	51.9	−11 35.8	215	25.4	−17 30.6
19	186	19.2	82	36.6	07.1	63	02.8	16.4	211	54.3	35.7	230	27.9	30.6
20	201	21.7	97	35.8	06.8	78	03.7	16.1	226	56.7	35.7	245	30.5	30.7
21	216	24.1	112	34.9	06.6	93	04.5	15.7	241	59.1	35.7	260	33.0	30.7
22	231	26.6	127	34.0	06.4	108	05.4	15.4	257	01.5	35.7	275	35.6	30.7
23	246	29.0	142	33.2	06.2	123	06.2	15.0	272	03.9	35.7	290	38.1	30.8
24	261	31.5	157	32.3	+24 06.0	138	07.1	+21 14.7	287	06.3	−11 35.7	305	40.6	−17 30.8
Dif	—		−9		−2	+9		−3	+24		0	+25		0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 2^{d}.5		PHE	4^{h}: 55′.1									
	PMG: 12^{h} 00^{m}.1				SD: 15′.0			12^{h}: 55′.3									
					PMG: 14^{h} 35^{m}			20^{h}: 55′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Puesta de Sol	Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	59.7	+23	12.5	148	44.7 96	+25	12.7	27	**60 N**	21 24	23 06	** **	4 41	79	** **	**
1	194	59.6		12.7	163	13.3 97		10.0	28	**58**	21 04	22 18	** **	5 04	75	23 51	21
2	209	59.4		12.8	177	42.0 96		07.2	29	**56**	20 47	21 49	** **	23	71	34	26
3	224	59.3		13.0	192	10.6 97		04.3	30	**54**	33	27	23 11	39	69	21	27
4	239	59.2		13.1	206	39.3 96	+25	01.3	32	**52**	21	21 09	22 27	5 52	68	23 09	30
5	254	59.0	+23	13.2	221	07.9 97	+24	58.1	33	**50**	20 10	20 54	21 59	6 04	66	22 58	32
6	269	58.9	+23	13.4	235	36.6 97	+24	54.8	34	**45**	19 48	20 25	21 14	6 29	63	22 35	36
7	284	58.8		13.5	250	05.3 97		51.4	35	**40**	30	20 03	20 44	6 48	61	17	39
8	299	58.6		13.6	264	34.0 97		47.9	37	**35**	15	19 45	21	7 05	59	22 02	41
9	314	58.5		13.8	279	02.7 97		44.2	38	**30**	19 02	29	20 03	19	58	21 49	42
10	329	58.4		13.9	293	31.4 97		40.4	40	**20**	18 40	19 05	19 34	7 43	55	26	46
11	344	58.2	+23	14.0	308	00.2 98	+24	36.4	40	**10 N**	18 21	18 44	19 11	8 04	53	21 06	49
12	359	58.1	+23	14.2	322	29.0 98	+24	32.4	40	**0**	18 04	18 26	18 53	8 23	51	20 48	51
13	14	58.0		14.3	336	57.7 97		28.2	42	**10 S**	17 46	18 09	36	8 42	50	29	54
14	29	57.8		14.4	351	26.5 98		23.9	43	**20**	28	17 52	20	9 03	47	20 09	56
15	44	57.7		14.6	5	55.3 98		19.4	45	**30**	17 07	33	18 03	27	45	19 46	59
16	59	57.6		14.7	20	24.2 99		14.8	46	**35**	16 55	23	17 55	41	43	33	60
17	74	57.4	+23	14.8	34	53.0 98	+24	10.1	47	**40**	16 41	17 11	17 45	9 57	42	19 17	63
18	89	57.3	+23	14.9	49	21.9 99	+24	05.3	48	**45**	16 24	16 58	17 35	10 16	40	18 58	66
19	104	57.2		15.1	63	50.8 99	+24	00.4	49	**50**	16 04	42	23	41	35	34	70
20	119	57.0		15.2	78	19.7 99	+23	55.3	51	**52**	15 54	35	18	10 52	34	23	71
21	134	56.9		15.3	92	48.6 99		50.1	52	**54**	43	26	13	11 05	33	18 10	73
22	149	56.8		15.4	107	17.6 100		44.8	53	**56**	30	17	06	21	29	17 55	76
23	164	56.6		15.6	121	46.6 100		39.3	55	**58**	15 16	16 07	17 00	11 39	26	37	80
24	179	56.5	+23	15.7	136	15.6 100	+23	33.8	55	**60 S**	14 58	15 56	16 52	12 01	21	17 16	84

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6^{h} 32^{m}.8		PMG: 13^{h} 31^{m}			PMG: 14^{h} 47^{m}			PMG: 4^{h} 51^{m}			PMG: 3^{h} 37^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	261	31.5	157	32.3	+24 06.0	138	07.1	+21 14.7	287	06.3	−11 35.7	305	40.6	−17 30.8
1	276	34.0	172	31.4	05.7	153	07.9	14.3	302	08.7	35.7	320	43.2	30.8
2	291	36.4	187	30.6	05.5	168	08.8	14.0	317	11.1	35.7	335	45.7	30.8
3	306	38.9	202	29.7	05.3	183	09.6	13.6	332	13.5	35.7	350	48.3	30.9
4	321	41.4	217	28.9	05.1	198	10.5	13.3	347	15.9	35.6	5	50.8	30.9
5	336	43.8	232	28.0	+24 04.8	213	11.3	+21 12.9	2	18.3	−11 35.6	20	53.4	−17 30.9
6	351	46.3	247	27.1	+24 04.6	228	12.2	+21 12.6	17	20.7	−11 35.6	35	55.9	−17 31.0
7	6	48.8	262	26.3	04.4	243	13.1	12.2	32	23.1	35.6	50	58.4	31.0
8	21	51.2	277	25.4	04.1	258	13.9	11.9	47	25.5	35.6	66	01.0	31.0
9	36	53.7	292	24.5	03.9	273	14.8	11.5	62	27.9	35.6	81	03.5	31.0
10	51	56.1	307	23.7	03.7	288	15.6	11.2	77	30.3	35.6	96	06.1	31.1
11	66	58.6	322	22.8	+24 03.4	303	16.5	+21 10.8	92	32.7	−11 35.6	111	08.6	−17 31.1
12	82	01.1	337	21.9	+24 03.2	318	17.3	+21 10.5	107	35.1	−11 35.6	126	11.2	−17 31.1
13	97	03.5	352	21.1	03.0	333	18.2	10.1	122	37.5	35.6	141	13.7	31.2
14	112	06.0	7	20.2	02.7	348	19.0	09.8	137	40.0	35.5	156	16.3	31.2
15	127	08.5	22	19.4	02.5	3	19.9	09.4	152	42.4	35.5	171	18.8	31.2
16	142	10.9	37	18.5	02.2	18	20.7	09.1	167	44.8	35.5	186	21.4	31.3
17	157	13.4	52	17.6	+24 02.0	33	21.6	+21 08.7	182	47.2	−11 35.5	201	23.9	−17 31.3
18	172	15.9	67	16.8	+24 01.8	48	22.5	+21 08.4	197	49.6	−11 35.5	216	26.4	−17 31.3
19	187	18.3	82	15.9	01.5	63	23.3	08.0	212	52.0	35.5	231	29.0	31.3
20	202	20.8	97	15.1	01.3	78	24.2	07.7	227	54.4	35.5	246	31.5	31.4
21	217	23.3	112	14.2	01.0	93	25.0	07.3	242	56.8	35.5	261	34.1	31.4
22	232	25.7	127	13.3	00.8	108	25.9	07.0	257	59.2	35.5	276	36.6	31.4
23	247	28.2	142	12.5	00.5	123	26.7	06.6	273	01.6	35.5	291	39.2	31.5
24	262	30.6	157	11.6	+24 00.3	138	27.6	+21 06.3	288	04.0	−11 35.5	306	41.7	−17 31.5
Dif	—			−9	−2		+9	−3		+24	0		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 3ᵈ.5		PHE	4ʰ: 55′.6								
	PMG: 12ʰ 00ᵐ.3				SD: 15′.1			12ʰ: 55′.7								
					PMG: 15ʰ 27ᵐ			20ʰ: 55′.9								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	56.5	+23	15.7	136	15.6	+23	33.8	**60 N**	** **	0 54	2 37	6 00	87	0 10	17
1	194	56.4		15.8	150	44.6 100		28.1 57	**58**	** **	1 42	2 57	19	82	** **	**
2	209	56.2		15.9	165	13.7 101		22.2 59	**56**	** **	2 11	3 13	34	80	** **	**
3	224	56.1		16.1	179	42.8 101		16.3 59	**54**	0 50	33	27	6 48	76	23 48	21
4	239	56.0		16.2	194	11.9 101		10.3 60	**52**	1 34	2 51	40	7 00	73	39	23
5	254	55.9	+23	16.3	208	41.1 102	+23	04.1 62	**50**	2 01	3 06	3 50	7 10	72	23 30	25
6	269	55.7	+23	16.4	223	10.2 101	+22	57.8 63	**45**	2 46	3 35	4 13	7 32	67	23 11	30
7	284	55.6		16.5	237	39.5 103		51.4 64	**40**	3 16	3 58	31	7 49	65	22 56	33
8	299	55.5		16.7	252	08.7 102		44.8 66	**35**	39	4 16	46	8 04	62	43	36
9	314	55.3		16.8	266	38.0 103		38.2 66	**30**	3 58	31	4 58	17	59	31	39
10	329	55.2		16.9	281	07.3 103		31.4 68	**20**	4 27	4 56	5 20	38	56	22 12	43
11	344	55.1	+23	17.0	295	36.6 103	+22	24.5 69	**10 N**	4 49	5 16	5 39	8 57	53	21 55	46
12	359	54.9	+23	17.1	310	06.0 104	+22	17.5 70	**0**	5 08	5 34	5 57	9 14	51	21 39	49
13	14	54.8		17.2	324	35.4 104		10.3 72	**10 S**	25	5 51	6 14	32	47	23	52
14	29	54.7		17.3	339	04.8 104	+22	03.1 72	**20**	41	6 08	32	9 50	45	21 05	56
15	44	54.5		17.5	353	34.2 104	+21	55.7 74	**30**	5 57	27	6 53	10 12	40	20 45	60
16	59	54.4		17.6	8	03.7 105		48.3 74	**35**	6 06	38	7 06	24	39	33	63
17	74	54.2	+23	17.7	22	33.3 106	+21	40.7 76	**40**	6 15	6 49	7 20	10 39	35	20 20	65
18	89	54.1	+23	17.8	37	02.8 105	+21	33.0 77	**45**	6 26	7 03	7 37	10 56	32	20 04	68
19	104	54.0		17.9	51	32.4 106		25.1 79	**50**	37	19	7 57	11 16	29	19 44	73
20	119	53.8		18.0	66	02.1 107		17.2 79	**52**	42	26	8 07	26	27	34	76
21	134	53.7		18.1	80	31.7 106		09.2 80	**54**	48	34	18	38	24	23	79
22	149	53.6		18.2	95	01.4 107	+21	01.0 82	**56**	6 54	43	31	11 50	21	19 11	81
23	164	53.4		18.3	109	31.2 108	+20	52.8 82	**58**	7 01	7 53	8 45	12 05	17	18 57	85
24	179	53.3	+23	18.4	124	00.9 107	+20	44.4 84	**60 S**	7 08	8 05	9 02	12 22	13	18 40	90

UT	ARIES		VENUS			MARTE		JÚPITER		SATURNO	
	PMG		Mag: −3.8			Mag: +1.8		Mag: −2.6		Mag: +0.5	
	6ʰ 28ᵐ.9		PMG: 13ʰ 32ᵐ			PMG: 14ʰ 45ᵐ		PMG: 4ʰ 47ᵐ		PMG: 3ʰ 33ᵐ	
	hG ♈		hG ♀	Dec		hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º	′	º	′	º ′	º	′	º ′	º ′	º ′	º ′
0	262	30.6	157	11.6	+24 00.3	138	27.6	+21 06.3	288 04.0	−11 35.5	306 41.7	−17 31.5
1	277	33.1	172	10.8	+24 00.0	153	28.4	05.9	303 06.4	35.4	321 44.3	31.5
2	292	35.6	187	09.9	+23 59.8	168	29.3	05.6	318 08.8	35.4	336 46.8	31.5
3	307	38.0	202	09.0	59.5	183	30.2	05.2	333 11.3	35.4	351 49.4	31.6
4	322	40.5	217	08.2	59.2	198	31.0	04.9	348 13.7	35.4	6 51.9	31.6
5	337	43.0	232	07.3	+23 59.0	213	31.9	+21 04.5	3 16.1	−11 35.4	21 54.5	−17 31.6
6	352	45.4	247	06.5	+23 58.7	228	32.7	+21 04.2	18 18.5	−11 35.4	36 57.0	−17 31.7
7	7	47.9	262	05.6	58.5	243	33.6	03.8	33 20.9	35.4	51 59.6	31.7
8	22	50.4	277	04.8	58.2	258	34.4	03.4	48 23.3	35.4	67 02.1	31.7
9	37	52.8	292	03.9	57.9	273	35.3	03.1	63 25.7	35.4	82 04.7	31.8
10	52	55.3	307	03.0	57.7	288	36.2	02.7	78 28.1	35.4	97 07.2	31.8
11	67	57.8	322	02.2	+23 57.4	303	37.0	+21 02.4	93 30.6	−11 35.4	112 09.8	−17 31.8
12	83	00.2	337	01.3	+23 57.1	318	37.9	+21 02.0	108 33.0	−11 35.4	127 12.3	−17 31.8
13	98	02.7	352	00.5	56.9	333	38.7	01.7	123 35.4	35.4	142 14.9	31.9
14	113	05.1	6	59.6	56.6	348	39.6	01.3	138 37.8	35.4	157 17.4	31.9
15	128	07.6	21	58.8	56.3	3	40.4	01.0	153 40.2	35.3	172 20.0	31.9
16	143	10.1	36	57.9	56.1	18	41.3	00.6	168 42.6	35.3	187 22.5	32.0
17	158	12.5	51	57.1	+23 55.8	33	42.2	+21 00.2	183 45.0	−11 35.3	202 25.1	−17 32.0
18	173	15.0	66	56.2	+23 55.5	48	43.0	+20 59.9	198 47.4	−11 35.3	217 27.6	−17 32.0
19	188	17.5	81	55.3	55.2	63	43.9	59.5	213 49.9	35.3	232 30.2	32.1
20	203	19.9	96	54.5	55.0	78	44.7	59.2	228 52.3	35.3	247 32.7	32.1
21	218	22.4	111	53.6	54.7	93	45.6	58.8	243 54.7	35.3	262 35.3	32.1
22	233	24.9	126	52.8	54.4	108	46.5	58.5	258 57.1	35.3	277 37.8	32.1
23	248	27.3	141	51.9	54.1	123	47.3	58.1	273 59.5	35.3	292 40.4	32.2
24	263	29.8	156	51.1	+23 53.9	138	48.2	+20 57.7	289 01.9	−11 35.3	307 42.9	−17 32.2
Dif	—			−9	−3		+9	−4		+24	0	+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 4ᵈ.5		PHE	4ʰ: 56′.1								
	PMG: 12ʰ 00ᵐ.6				SD: 15′.3			12ʰ: 56′.3								
					PMG: 16ʰ 16ᵐ			20ʰ: 56′.5								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	53.3	+23	18.4	124	00.9	+20	44.4	**60 N**	21 25	23 10	** **	7 27	91	0 27	10
1	194	53.2		18.5	138	30.8 109		35.9 85	**58**	21 05	22 20	** **	41	87	0 12	15
2	209	53.0		18.7	153	00.6 108		27.3 86	**56**	20 48	21 51	** **	7 54	82	** **	**
3	224	52.9		18.8	167	30.5 109		18.6 87	**54**	34	29	23 14	8 04	80	** **	**
4	239	52.8		18.9	182	00.4 109		09.8 88	**52**	22	21 11	22 28	13	77	** **	**
5	254	52.6	+23	19.0	196	30.4 110	+20	00.9 89	**50**	20 11	20 56	22 01	8 22	74	23 55	22
6	269	52.5	+23	19.1	211	00.3 109	+19	51.9 90	**45**	19 49	20 26	21 16	8 39	70	23 41	26
7	284	52.4		19.2	225	30.4 111		42.7 92	**40**	31	20 03	20 45	8 54	66	29	30
8	299	52.2		19.3	240	00.4 110		33.5 92	**35**	16	19 45	22	9 06	63	19	33
9	314	52.1		19.4	254	30.5 111		24.2 93	**30**	19 03	30	20 03	16	61	23 10	36
10	329	52.0		19.5	269	00.7 112		14.7 95	**20**	18 41	19 05	19 34	34	56	22 55	40
11	344	51.8	+23	19.6	283	30.8 111	+19	05.2 95	**10 N**	18 22	18 45	19 12	9 50	52	22 41	44
12	359	51.7	+23	19.7	298	01.0 112	+18	55.6 96	**0**	18 04	18 27	18 53	10 05	48	22 28	48
13	14	51.6		19.8	312	31.3 113		45.8 98	**10 S**	17 47	18 10	36	19	45	15	52
14	29	51.4		19.9	327	01.6 113		36.0 98	**20**	28	17 52	20	35	41	22 01	56
15	44	51.3		19.9	341	31.9 113		26.0 100	**30**	17 07	34	18 03	10 52	37	21 45	61
16	59	51.2		20.0	356	02.2 113		16.0 100	**35**	16 55	23	17 55	11 03	34	36	63
17	74	51.0	+23	20.1	10	32.6 114	+18	05.9 101	**40**	16 41	17 11	17 45	11 14	32	21 25	67
18	89	50.9	+23	20.2	25	03.0 114	+17	55.6 103	**45**	16 24	16 58	17 35	11 28	28	21 12	71
19	104	50.8		20.3	39	33.5 115		45.3 103	**50**	16 03	42	23	45	23	20 57	75
20	119	50.6		20.4	54	04.0 115		34.9 104	**52**	15 54	34	18	11 53	21	50	77
21	134	50.5		20.5	68	34.5 115		24.3 106	**54**	42	26	12	12 02	18	42	80
22	149	50.4		20.6	83	05.0 115		13.7 106	**56**	30	17	06	11	16	32	84
23	164	50.2		20.7	97	35.6 116	+17	03.0 107	**58**	15 15	16 07	17 00	22	13	22	87
24	179	50.1	+23	20.8	112	06.2 116	+16	52.2 108	**60 S**	14 58	15 55	16 52	12 35	9	20 10	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 25ᵐ.0		PMG: 13ʰ 33ᵐ			PMG: 14ʰ 44ᵐ			PMG: 4ʰ 43ᵐ			PMG: 3ʰ 29ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	263	29.8	156	51.1	+23 53.9	138	48.2	+20 57.7	289	01.9	−11 35.3	307	42.9	−17 32.2
1	278	32.3	171	50.2	53.6	153	49.0	57.4	304	04.4	35.3	322	45.5	32.2
2	293	34.7	186	49.4	53.3	168	49.9	57.0	319	06.8	35.3	337	48.0	32.3
3	308	37.2	201	48.5	53.0	183	50.7	56.7	334	09.2	35.3	352	50.6	32.3
4	323	39.6	216	47.7	52.7	198	51.6	56.3	349	11.6	35.3	7	53.1	32.3
5	338	42.1	231	46.8	+23 52.4	213	52.5	+20 55.9	4	14.0	−11 35.3	22	55.7	−17 32.4
6	353	44.6	246	46.0	+23 52.1	228	53.3	+20 55.6	19	16.5	−11 35.3	37	58.2	−17 32.4
7	8	47.0	261	45.1	51.9	243	54.2	55.2	34	18.9	35.3	53	00.8	32.4
8	23	49.5	276	44.3	51.6	258	55.0	54.9	49	21.3	35.3	68	03.3	32.5
9	38	52.0	291	43.4	51.3	273	55.9	54.5	64	23.7	35.2	83	05.9	32.5
10	53	54.4	306	42.6	51.0	288	56.8	54.1	79	26.1	35.2	98	08.4	32.5
11	68	56.9	321	41.7	+23 50.7	303	57.6	+20 53.8	94	28.6	−11 35.2	113	11.0	−17 32.6
12	83	59.4	336	40.9	+23 50.4	318	58.5	+20 53.4	109	31.0	−11 35.2	128	13.5	−17 32.6
13	99	01.8	351	40.0	50.1	333	59.3	53.1	124	33.4	35.2	143	16.1	32.6
14	114	04.3	6	39.2	49.8	349	00.2	52.7	139	35.8	35.2	158	18.6	32.6
15	129	06.7	21	38.3	49.5	4	01.1	52.3	154	38.2	35.2	173	21.2	32.7
16	144	09.2	36	37.5	49.2	19	01.9	52.0	169	40.7	35.2	188	23.7	32.7
17	159	11.7	51	36.6	+23 48.9	34	02.8	+20 51.6	184	43.1	−11 35.2	203	26.3	−17 32.7
18	174	14.1	66	35.8	+23 48.6	49	03.6	+20 51.2	199	45.5	−11 35.2	218	28.9	−17 32.8
19	189	16.6	81	34.9	48.3	64	04.5	50.9	214	47.9	35.2	233	31.4	32.8
20	204	19.1	96	34.1	48.0	79	05.4	50.5	229	50.3	35.2	248	34.0	32.8
21	219	21.5	111	33.2	47.7	94	06.2	50.2	244	52.8	35.2	263	36.5	32.9
22	234	24.0	126	32.4	47.4	109	07.1	49.8	259	55.2	35.2	278	39.1	32.9
23	249	26.5	141	31.5	47.1	124	07.9	49.4	274	57.6	35.2	293	41.6	32.9
24	264	28.9	156	30.7	+23 46.8	139	08.8	+20 49.1	290	00.0	−11 35.2	308	44.2	−17 33.0
Dif	—			−8	−3		+9	−4		+24	0		+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 5ᵈ.5		PHE	4ʰ: 56′.7								
	PMG: 12ʰ 00ᵐ.8				SD: 15′.4			12ʰ: 57′.0								
					PMG: 17ʰ 05ᵐ			20ʰ: 57′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	50.1	+23	20.8	112	06.2	+16	52.2	**60 N**	** **	0 52	2 36	8 58	91	0 37	7
1	194	50.0		20.9	126	36.9 117		41.3 109	**58**	** **	1 41	2 56	9 08	87	27	11
2	209	49.8		21.0	141	07.6 117		30.4 109	**56**	** **	2 11	3 13	16	84	18	14
3	224	49.7		21.0	155	38.3 117		19.3 111	**54**	0 47	33	27	24	81	09	17
4	239	49.5		21.1	170	09.1 118	+16	08.1 112	**52**	1 33	2 51	39	30	79	0 02	19
5	254	49.4	+23	21.2	184	39.8 117	+15	56.9 112	**50**	2 00	3 06	3 50	9 36	76	** **	**
6	269	49.3	+23	21.3	199	10.6 118	+15	45.5 114	**45**	2 46	3 35	4 13	9 49	71	** **	**
7	284	49.1		21.4	213	41.5 119		34.1 114	**40**	3 16	3 58	31	10 00	67	23 59	27
8	299	49.0		21.5	228	12.4 119		22.6 115	**35**	39	4 16	46	09	64	52	30
9	314	48.9		21.5	242	43.3 119	+15	11.0 116	**30**	3 58	31	4 59	17	61	46	33
10	329	48.7		21.6	257	14.2 119	+14	59.3 117	**20**	4 27	4 56	5 21	30	56	35	38
11	344	48.6	+23	21.7	271	45.1 119	+14	47.6 117	**10 N**	4 49	5 16	5 40	10 42	52	23 25	43
12	359	48.5	+23	21.8	286	16.1 120	+14	35.7 119	**0**	5 08	5 35	5 57	10 53	48	23 16	47
13	14	48.3		21.9	300	47.1 120		23.8 119	**10 S**	25	5 52	6 14	11 04	44	23 07	51
14	29	48.2		21.9	315	18.2 121	+14	11.8 120	**20**	41	6 09	33	16	39	22 57	56
15	44	48.1		22.0	329	49.3 121	+13	59.7 121	**30**	5 58	28	6 54	29	35	46	61
16	59	47.9		22.1	344	20.3 120		47.6 121	**35**	6 07	38	7 06	37	32	39	64
17	74	47.8	+23	22.2	358	51.5 122	+13	35.3 123	**40**	6 16	6 50	7 21	11 46	28	22 32	67
18	89	47.7	+23	22.3	13	22.6 121	+13	23.0 123	**45**	6 26	7 04	7 37	11 56	24	22 23	72
19	104	47.5		22.3	27	53.8 122	+13	10.6 124	**50**	38	20	7 58	12 08	20	12	77
20	119	47.4		22.4	42	24.9 121	+12	58.1 125	**52**	43	27	8 08	14	18	07	79
21	134	47.2		22.5	56	56.1 122		45.6 125	**54**	49	35	19	20	15	22 02	82
22	149	47.1		22.6	71	27.4 123		33.0 126	**56**	6 55	44	32	27	13	21 56	84
23	164	47.0		22.6	85	58.6 122		20.3 127	**58**	7 02	7 54	8 46	35	9	49	88
24	179	46.8	+23	22.7	100	29.9 123	+12	07.5 128	**60 S**	7 09	8 06	9 04	12 44	5	21 41	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 21ᵐ.0		PMG: 13ʰ 35ᵐ			PMG: 14ʰ 43ᵐ			PMG: 4ʰ 39ᵐ			PMG: 3ʰ 24ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	264	28.9	156	30.7	+23 46.8	139	08.8	+20 49.1	290	00.0	−11 35.2	308	44.2	−17 33.0
1	279	31.4	171	29.9	46.4	154	09.7	48.7	305	02.5	35.2	323	46.7	33.0
2	294	33.9	186	29.0	46.1	169	10.5	48.3	320	04.9	35.2	338	49.3	33.0
3	309	36.3	201	28.2	45.8	184	11.4	48.0	335	07.3	35.2	353	51.8	33.1
4	324	38.8	216	27.3	45.5	199	12.3	47.6	350	09.7	35.2	8	54.4	33.1
5	339	41.2	231	26.5	+23 45.2	214	13.1	+20 47.2	5	12.2	−11 35.2	23	56.9	−17 33.1
6	354	43.7	246	25.6	+23 44.9	229	14.0	+20 46.9	20	14.6	−11 35.2	38	59.5	−17 33.1
7	9	46.2	261	24.8	44.5	244	14.8	46.5	35	17.0	35.2	54	02.1	33.2
8	24	48.6	276	24.0	44.2	259	15.7	46.1	50	19.5	35.2	69	04.6	33.2
9	39	51.1	291	23.1	43.9	274	16.6	45.8	65	21.9	35.2	84	07.2	33.2
10	54	53.6	306	22.3	43.6	289	17.4	45.4	80	24.3	35.2	99	09.7	33.3
11	69	56.0	321	21.4	+23 43.3	304	18.3	+20 45.0	95	26.7	−11 35.2	114	12.3	−17 33.3
12	84	58.5	336	20.6	+23 42.9	319	19.1	+20 44.7	110	29.2	−11 35.2	129	14.8	−17 33.3
13	100	01.0	351	19.7	42.6	334	20.0	44.3	125	31.6	35.2	144	17.4	33.4
14	115	03.4	6	18.9	42.3	349	20.9	43.9	140	34.0	35.2	159	20.0	33.4
15	130	05.9	21	18.1	42.0	4	21.7	43.6	155	36.4	35.2	174	22.5	33.4
16	145	08.4	36	17.2	41.6	19	22.6	43.2	170	38.9	35.2	189	25.1	33.5
17	160	10.8	51	16.4	+23 41.3	34	23.5	+20 42.8	185	41.3	−11 35.2	204	27.6	−17 33.5
18	175	13.3	66	15.5	+23 41.0	49	24.3	+20 42.5	200	43.7	−11 35.2	219	30.2	−17 33.5
19	190	15.7	81	14.7	40.6	64	25.2	42.1	215	46.2	35.2	234	32.7	33.6
20	205	18.2	96	13.9	40.3	79	26.1	41.7	230	48.6	35.2	249	35.3	33.6
21	220	20.7	111	13.0	40.0	94	26.9	41.4	245	51.0	35.2	264	37.9	33.6
22	235	23.1	126	12.2	39.6	109	27.8	41.0	260	53.5	35.2	279	40.4	33.7
23	250	25.6	141	11.3	39.3	124	28.6	40.6	275	55.9	35.2	294	43.0	33.7
24	265	28.1	156	10.5	+23 39.0	139	29.5	+20 40.2	290	58.3	−11 35.2	309	45.5	−17 33.7
Dif	—			−8	−3		+9	−4		+24	0		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 6ᵈ.5		PHE	4ʰ: 57′.4									
	PMG: 12ʰ 01ᵐ.0				SD: 15′.6			12ʰ: 57′.7									
					PMG: 17ʰ 52ᵐ			20ʰ: 57′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	46.8	+23	22.7	100	29.9	+12	07.5		**60 N**	21 27	23 12	** **	10 29	92	0 44	6
1	194	46.7		22.8	115	01.2 123	+11	54.7 128		**58**	21 06	22 22	** **	35	88	38	8
2	209	46.6		22.8	129	32.5 123		41.8 129		**56**	20 49	21 52	** **	40	85	32	11
3	224	46.4		22.9	144	03.8 123		28.8 130		**54**	35	30	23 16	45	82	26	14
4	239	46.3		23.0	158	35.1 123		15.8 130		**52**	23	21 12	22 30	49	79	21	17
5	254	46.2	+23	23.0	173	06.5 124	+11	02.7 131		**50**	20 12	20 57	22 02	10 52	78	0 17	19
6	269	46.0	+23	23.1	187	37.9 124	+10	49.5 132		**45**	19 49	20 27	21 17	11 00	73	0 07	23
7	284	45.9		23.2	202	09.2 123		36.2 133		**40**	31	20 04	20 46	07	68	** **	**
8	299	45.8		23.2	216	40.6 124		22.9 133		**35**	16	19 46	23	13	64	** **	**
9	314	45.6		23.3	231	12.1 125	+10	09.6 133		**30**	19 03	31	20 04	18	61	** **	**
10	329	45.5		23.4	245	43.5 124	+9	56.1 135		**20**	18 41	19 06	19 35	26	56	** **	**
11	344	45.3	+23	23.4	260	14.9 124	+9	42.6 135		**10 N**	18 22	18 45	19 12	11 34	51	** **	**
12	359	45.2	+23	23.5	274	46.3 124	+9	29.1 135		**0**	18 05	18 27	18 53	11 41	47	** **	**
13	14	45.1		23.6	289	17.8 125		15.5 136		**10 S**	17 47	18 10	36	48	43	23 58	52
14	29	44.9		23.6	303	49.2 124	+9	01.8 137		**20**	29	17 53	20	11 55	39	53	57
15	44	44.8		23.7	318	20.7 125	+8	48.1 137		**30**	17 07	34	18 04	12 04	33	47	62
16	59	44.7		23.7	332	52.2 125		34.3 138		**35**	16 55	23	17 55	09	30	43	66
17	74	44.5	+23	23.8	347	23.7 125	+8	20.5 138		**40**	16 41	17 12	17 46	12 14	27	23 39	69
18	89	44.4	+23	23.9	1	55.1 124	+8	06.6 139		**45**	16 24	16 58	17 35	12 20	23	23 35	73
19	104	44.3		23.9	16	26.6 125	+7	52.6 140		**50**	16 03	42	23	28	18	29	78
20	119	44.1		24.0	30	58.1 125		38.6 140		**52**	15 54	34	18	32	16	26	81
21	134	44.0		24.0	45	29.6 125		24.6 140		**54**	42	26	13	35	14	24	83
22	149	43.9		24.1	60	01.1 125	+7	10.5 141		**56**	30	17	06	40	11	20	86
23	164	43.7		24.1	74	32.5 124	+6	56.3 142		**58**	15 15	16 07	17 00	44	8	17	89
24	179	43.6	+23	24.2	89	04.0 125	+6	42.1 142		**60 S**	14 58	15 55	16 52	12 49	5	23 13	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 17ᵐ.1		PMG: 13ʰ 36ᵐ			PMG: 14ʰ 41ᵐ			PMG: 4ʰ 35ᵐ			PMG: 3ʰ 20ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	265	28.1	156	10.5	+23 39.0	139	29.5	+20 40.2	290	58.3	−11 35.2	309	45.5	−17 33.7
1	280	30.5	171	09.7	38.6	154	30.4	39.9	306	00.8	35.2	324	48.1	33.8
2	295	33.0	186	08.8	38.3	169	31.2	39.5	321	03.2	35.2	339	50.6	33.8
3	310	35.5	201	08.0	37.9	184	32.1	39.1	336	05.6	35.2	354	53.2	33.8
4	325	37.9	216	07.2	37.6	199	33.0	38.8	351	08.1	35.2	9	55.8	33.9
5	340	40.4	231	06.3	+23 37.2	214	33.8	+20 38.4	6	10.5	−11 35.2	24	58.3	−17 33.9
6	355	42.9	246	05.5	+23 36.9	229	34.7	+20 38.0	21	12.9	−11 35.2	40	00.9	−17 33.9
7	10	45.3	261	04.7	36.6	244	35.6	37.7	36	15.4	35.2	55	03.4	34.0
8	25	47.8	276	03.8	36.2	259	36.4	37.3	51	17.8	35.2	70	06.0	34.0
9	40	50.2	291	03.0	35.9	274	37.3	36.9	66	20.2	35.2	85	08.6	34.0
10	55	52.7	306	02.2	35.5	289	38.2	36.5	81	22.7	35.2	100	11.1	34.1
11	70	55.2	321	01.3	+23 35.2	304	39.0	+20 36.2	96	25.1	−11 35.2	115	13.7	−17 34.1
12	85	57.6	336	00.5	+23 34.8	319	39.9	+20 35.8	111	27.5	−11 35.2	130	16.2	−17 34.1
13	101	00.1	350	59.7	34.4	334	40.7	35.4	126	30.0	35.2	145	18.8	34.2
14	116	02.6	5	58.8	34.1	349	41.6	35.0	141	32.4	35.2	160	21.4	34.2
15	131	05.0	20	58.0	33.7	4	42.5	34.7	156	34.8	35.2	175	23.9	34.2
16	146	07.5	35	57.2	33.4	19	43.3	34.3	171	37.3	35.2	190	26.5	34.3
17	161	10.0	50	56.3	+23 33.0	34	44.2	+20 33.9	186	39.7	−11 35.2	205	29.0	−17 34.3
18	176	12.4	65	55.5	+23 32.7	49	45.1	+20 33.5	201	42.2	−11 35.2	220	31.6	−17 34.3
19	191	14.9	80	54.7	32.3	64	45.9	33.2	216	44.6	35.2	235	34.2	34.4
20	206	17.3	95	53.8	31.9	79	46.8	32.8	231	47.0	35.2	250	36.7	34.4
21	221	19.8	110	53.0	31.6	94	47.7	32.4	246	49.5	35.2	265	39.3	34.4
22	236	22.3	125	52.2	31.2	109	48.5	32.0	261	51.9	35.2	280	41.8	34.5
23	251	24.7	140	51.3	30.8	124	49.4	31.7	276	54.4	35.2	295	44.4	34.5
24	266	27.2	155	50.5	+23 30.5	139	50.3	+20 31.3	291	56.8	−11 35.2	310	47.0	−17 34.5
Dif	—			−8	−4		+9	−4		+24	0		+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 7ᵈ.5 SD: 15′.8		PHE	4ʰ: 58′.2 12ʰ: 58′.4 20ʰ: 58′.7								
	PMG: 12ʰ 01ᵐ.2				PMG: 18ʰ 39ᵐ			Rº: 49ᵐ								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	43.6	+23	24.2	89	04.0	+6	42.1	**60 N**	** **	0 50	2 36	12 01	94	0 50	4
1	194	43.4		24.3	103	35.5 125		27.9 142	**58**	** **	1 40	2 56	03	91	46	8
2	209	43.3		24.3	118	07.0 125	+6	13.6 143	**56**	** **	2 10	3 13	05	87	43	11
3	224	43.2		24.4	132	38.4 124	+5	59.2 144	**54**	0 46	33	27	07	84	40	14
4	239	43.0		24.4	147	09.9 125		44.8 144	**52**	1 32	2 51	39	08	82	38	15
5	254	42.9	+23	24.5	161	41.4 125	+5	30.4 144	**50**	2 00	3 06	3 50	12 10	79	0 36	17
6	269	42.8	+23	24.5	176	12.8 124	+5	15.9 145	**45**	2 46	3 35	4 13	12 13	74	0 30	23
7	284	42.6		24.6	190	44.2 124	+5	01.4 145	**40**	3 16	3 58	31	15	70	26	27
8	299	42.5		24.6	205	15.7 125	+4	46.9 145	**35**	39	4 16	46	17	67	22	30
9	314	42.4		24.7	219	47.1 124		32.3 146	**30**	3 58	31	4 59	19	63	19	33
10	329	42.2		24.7	234	18.5 124		17.6 147	**20**	4 27	4 56	5 21	22	58	13	39
11	344	42.1	+23	24.8	248	49.9 124	+4	03.0 146	**10 N**	4 50	5 17	5 40	12 25	53	0 08	43
12	359	42.0	+23	24.8	263	21.3 124	+3	48.3 147	**0**	5 09	5 35	5 58	12 28	48	0 03	48
13	14	41.8		24.8	277	52.6 123		33.5 148	**10 S**	26	5 52	6 15	31	43	** **	**
14	29	41.7		24.9	292	23.9 123		18.8 147	**20**	42	6 09	34	34	38	** **	**
15	44	41.5		24.9	306	55.3 124	+3	03.9 149	**30**	5 58	28	6 55	37	33	** **	**
16	59	41.4		25.0	321	26.6 123	+2	49.1 148	**35**	6 07	39	7 07	39	30	** **	**
17	74	41.3	+23	25.0	335	57.8 122	+2	34.2 149	**40**	6 17	6 51	7 21	12 41	27	** **	**
18	89	41.1	+23	25.1	350	29.1 123	+2	19.4 148	**45**	6 27	7 04	7 38	12 43	23	** **	**
19	104	41.0		25.1	5	00.3 122	+2	04.4 150	**50**	39	20	7 59	46	18	** **	**
20	119	40.9		25.1	19	31.5 122	+1	49.5 149	**52**	44	28	8 09	48	15	** **	**
21	134	40.7		25.2	34	02.7 122		34.5 150	**54**	50	36	20	49	13	** **	**
22	149	40.6		25.2	48	33.9 122		19.5 150	**56**	6 56	45	33	51	10	** **	**
23	164	40.5		25.3	63	05.0 121	+1	04.5 150	**58**	7 03	7 55	8 47	52	8	** **	**
24	179	40.3	+23	25.3	77	36.1 121	+0	49.4 151	**60 S**	7 10	8 07	9 05	12 54	5	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 13ᵐ.2		PMG: 13ʰ 37ᵐ			PMG: 14ʰ 40ᵐ			PMG: 4ʰ 31ᵐ			PMG: 3ʰ 16ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	266	27.2	155	50.5	+23 30.5	139	50.3	+20 31.3	291	56.8	−11 35.2	310	47.0	−17 34.5
1	281	29.7	170	49.7	30.1	154	51.1	30.9	306	59.2	35.2	325	49.5	34.6
2	296	32.1	185	48.9	29.7	169	52.0	30.5	322	01.7	35.2	340	52.1	34.6
3	311	34.6	200	48.0	29.4	184	52.9	30.2	337	04.1	35.2	355	54.7	34.6
4	326	37.1	215	47.2	29.0	199	53.7	29.8	352	06.6	35.2	10	57.2	34.7
5	341	39.5	230	46.4	+23 28.6	214	54.6	+20 29.4	7	09.0	−11 35.2	25	59.8	−17 34.7
6	356	42.0	245	45.5	+23 28.3	229	55.5	+20 29.0	22	11.4	−11 35.2	41	02.3	−17 34.7
7	11	44.5	260	44.7	27.9	244	56.3	28.7	37	13.9	35.2	56	04.9	34.8
8	26	46.9	275	43.9	27.5	259	57.2	28.3	52	16.3	35.2	71	07.5	34.8
9	41	49.4	290	43.1	27.1	274	58.1	27.9	67	18.8	35.2	86	10.0	34.8
10	56	51.8	305	42.2	26.7	289	58.9	27.5	82	21.2	35.3	101	12.6	34.9
11	71	54.3	320	41.4	+23 26.4	304	59.8	+20 27.1	97	23.6	−11 35.3	116	15.2	−17 34.9
12	86	56.8	335	40.6	+23 26.0	320	00.7	+20 26.8	112	26.1	−11 35.3	131	17.7	−17 34.9
13	101	59.2	350	39.8	25.6	335	01.5	26.4	127	28.5	35.3	146	20.3	35.0
14	117	01.7	5	38.9	25.2	350	02.4	26.0	142	31.0	35.3	161	22.8	35.0
15	132	04.2	20	38.1	24.8	5	03.3	25.6	157	33.4	35.3	176	25.4	35.0
16	147	06.6	35	37.3	24.4	20	04.1	25.3	172	35.9	35.3	191	28.0	35.1
17	162	09.1	50	36.5	+23 24.1	35	05.0	+20 24.9	187	38.3	−11 35.3	206	30.5	−17 35.1
18	177	11.6	65	35.6	+23 23.7	50	05.9	+20 24.5	202	40.8	−11 35.3	221	33.1	−17 35.1
19	192	14.0	80	34.8	23.3	65	06.8	24.1	217	43.2	35.3	236	35.7	35.2
20	207	16.5	95	34.0	22.9	80	07.6	23.7	232	45.6	35.3	251	38.2	35.2
21	222	18.9	110	33.2	22.5	95	08.5	23.4	247	48.1	35.3	266	40.8	35.2
22	237	21.4	125	32.4	22.1	110	09.4	23.0	262	50.5	35.3	281	43.4	35.3
23	252	23.9	140	31.5	21.7	125	10.2	22.6	277	53.0	35.3	296	45.9	35.3
24	267	26.3	155	30.7	+23 21.3	140	11.1	+20 22.2	292	55.4	−11 35.3	311	48.5	−17 35.3
Dif	—			−8	−4		+9	−4		+24	0		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 8ᵈ.5		PHE	4ʰ: 58′.9								
	PMG: 12ʰ 01ᵐ.4				SD: 16′.0			12ʰ: 59′.2								
					PMG: 19ʰ 28ᵐ			20ʰ: 59′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	40.3	+23	25.3	77	36.1	+0	49.4	**60 N**	21 27	23 14	** **	13 35	98	0 54	5
1	194	40.2		25.3	92	07.2 121		34.4 150	**58**	21 07	22 23	** **	34	94	54	8
2	209	40.1		25.4	106	38.2 120		19.3 151	**56**	20 50	21 53	** **	32	91	54	11
3	224	39.9		25.4	121	09.2 120	+0	04.2 151	**54**	36	30	23 18	31	88	54	13
4	239	39.8		25.4	135	40.2 120	−0	10.9 151	**52**	23	21 12	22 31	30	85	53	16
5	254	39.6	+23	25.5	150	11.1 119	−0	26.1 152	**50**	20 13	20 57	22 03	13 29	82	0 53	18
6	269	39.5	+23	25.5	164	42.0 119	−0	41.2 151	**45**	19 50	20 27	21 17	13 27	77	0 53	23
7	284	39.4		25.5	179	12.9 119	−0	56.4 152	**40**	32	20 05	20 47	25	72	53	27
8	299	39.2		25.6	193	43.7 118	−1	11.5 151	**35**	17	19 47	23	24	68	52	31
9	314	39.1		25.6	208	14.5 118		26.7 152	**30**	19 04	31	20 05	22	65	52	34
10	329	39.0		25.6	222	45.2 117		41.9 152	**20**	18 42	19 06	19 36	20	59	52	39
11	344	38.8	+23	25.7	237	15.9 117	−1	57.1 152	**10 N**	18 23	18 46	19 13	13 18	54	0 51	44
12	359	38.7	+23	25.7	251	46.6 117	−2	12.3 152	**0**	18 05	18 28	18 54	13 16	50	0 51	48
13	14	38.6		25.7	266	17.2 116		27.5 152	**10 S**	17 48	18 10	37	14	45	50	53
14	29	38.4		25.7	280	47.8 116		42.8 153	**20**	29	17 53	21	12	41	50	58
15	44	38.3		25.8	295	18.3 115	−2	58.0 152	**30**	17 08	34	18 04	10	35	49	64
16	59	38.1		25.8	309	48.8 115	−3	13.2 152	**35**	16 55	24	17 55	09	32	49	67
17	74	38.0	+23	25.8	324	19.2 114	−3	28.4 152	**40**	16 41	17 12	17 46	13 08	28	0 48	71
18	89	37.9	+23	25.8	338	49.5 113	−3	43.6 152	**45**	16 24	16 58	17 36	13 06	24	0 48	75
19	104	37.7		25.9	353	19.8 113	−3	58.8 152	**50**	16 04	42	24	04	19	47	81
20	119	37.6		25.9	7	50.1 113	−4	14.0 152	**52**	15 54	35	18	03	17	47	83
21	134	37.5		25.9	22	20.3 112		29.2 152	**54**	43	26	13	02	15	47	85
22	149	37.3		25.9	36	50.5 112		44.4 152	**56**	30	17	07	01	12	46	89
23	164	37.2		26.0	51	20.6 111	−4	59.6 152	**58**	15 15	16 07	17 00	13 00	9	46	92
24	179	37.1	+23	26.0	65	50.6 110	−5	14.8 152	**60 S**	14 58	15 55	16 52	12 59	5	0 45	96

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 09ᵐ.2		PMG: 13ʰ 39ᵐ			PMG: 14ʰ 38ᵐ			PMG: 4ʰ 28ᵐ			PMG: 3ʰ 12ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	267	26.3	155	30.7	+23 21.3	140	11.1	+20 22.2	292	55.4	−11 35.3	311	48.5	−17 35.3
1	282	28.8	170	29.9	20.9	155	12.0	21.8	307	57.9	35.3	326	51.1	35.4
2	297	31.3	185	29.1	20.5	170	12.8	21.4	323	00.3	35.3	341	53.6	35.4
3	312	33.7	200	28.3	20.1	185	13.7	21.1	338	02.8	35.3	356	56.2	35.4
4	327	36.2	215	27.4	19.7	200	14.6	20.7	353	05.2	35.4	11	58.7	35.5
5	342	38.7	230	26.6	+23 19.3	215	15.4	+20 20.3	8	07.7	−11 35.4	27	01.3	−17 35.5
6	357	41.1	245	25.8	+23 18.9	230	16.3	+20 19.9	23	10.1	−11 35.4	42	03.9	−17 35.5
7	12	43.6	260	25.0	18.5	245	17.2	19.5	38	12.6	35.4	57	06.4	35.6
8	27	46.1	275	24.2	18.1	260	18.1	19.2	53	15.0	35.4	72	09.0	35.6
9	42	48.5	290	23.4	17.7	275	18.9	18.8	68	17.5	35.4	87	11.6	35.7
10	57	51.0	305	22.5	17.3	290	19.8	18.4	83	19.9	35.4	102	14.1	35.7
11	72	53.4	320	21.7	+23 16.9	305	20.7	+20 18.0	98	22.4	−11 35.4	117	16.7	−17 35.7
12	87	55.9	335	20.9	+23 16.5	320	21.5	+20 17.6	113	24.8	−11 35.4	132	19.3	−17 35.8
13	102	58.4	350	20.1	16.1	335	22.4	17.2	128	27.3	35.4	147	21.8	35.8
14	118	00.8	5	19.3	15.7	350	23.3	16.8	143	29.7	35.4	162	24.4	35.8
15	133	03.3	20	18.5	15.3	5	24.1	16.5	158	32.2	35.4	177	27.0	35.9
16	148	05.8	35	17.6	14.8	20	25.0	16.1	173	34.6	35.4	192	29.5	35.9
17	163	08.2	50	16.8	+23 14.4	35	25.9	+20 15.7	188	37.1	−11 35.4	207	32.1	−17 35.9
18	178	10.7	65	16.0	+23 14.0	50	26.8	+20 15.3	203	39.5	−11 35.5	222	34.7	−17 36.0
19	193	13.2	80	15.2	13.6	65	27.6	14.9	218	42.0	35.5	237	37.2	36.0
20	208	15.6	95	14.4	13.2	80	28.5	14.5	233	44.4	35.5	252	39.8	36.0
21	223	18.1	110	13.6	12.8	95	29.4	14.1	248	46.9	35.5	267	42.4	36.1
22	238	20.6	125	12.8	12.3	110	30.2	13.8	263	49.4	35.5	282	45.0	36.1
23	253	23.0	140	12.0	11.9	125	31.1	13.4	278	51.8	35.5	297	47.5	36.1
24	268	25.5	155	11.1	+23 11.5	140	32.0	+20 13.0	293	54.3	−11 35.5	312	50.1	−17 36.2
Dif	—			−8	−4		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 9ᵈ.5		PHE	4ʰ: 59′.6									
	PMG: 12ʰ 01ᵐ.6				SD: 16′.2			12ʰ: 59′.9									
					PMG: 20ʰ 18ᵐ			20ʰ: 60′.1									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	37.1	+23	26.0	65	50.6	−5	14.8		**60 N**	** **	0 49	2 36	15 13	103	0 59	6
1	194	36.9		26.0	80	20.6 110		30.0	152	**58**	** **	1 40	2 56	08	98	1 02	9
2	209	36.8		26.0	94	50.5 109	−5	45.1	151	**56**	** **	2 10	3 13	15 03	94	05	12
3	224	36.7		26.0	109	20.3 108	−6	00.2	151	**54**	0 45	33	27	14 59	91	07	16
4	239	36.5		26.0	123	50.1 108		15.3	151	**52**	1 32	2 51	40	55	88	09	18
5	254	36.4	+23	26.1	138	19.8 107	−6	30.4	151	**50**	2 00	3 06	3 50	14 51	86	1 11	21
6	269	36.2	+23	26.1	152	49.5 107	−6	45.5	151	**45**	2 46	3 36	4 13	14 44	80	1 16	25
7	284	36.1		26.1	167	19.1 106	−7	00.6	151	**40**	3 17	3 58	31	37	76	20	29
8	299	36.0		26.1	181	48.6 105		15.6	150	**35**	40	4 16	46	32	72	23	33
9	314	35.8		26.1	196	18.0 104		30.6	150	**30**	3 58	32	4 59	27	69	26	36
10	329	35.7		26.1	210	47.4 104	−7	45.6	150	**20**	4 28	4 57	5 21	19	63	31	42
11	344	35.6	+23	26.1	225	16.7 103	−8	00.5	149	**10 N**	4 50	5 17	5 40	14 12	58	1 35	47
12	359	35.4	+23	26.2	239	46.0 103	−8	15.5	150	**0**	5 09	5 35	5 58	14 06	53	1 39	52
13	14	35.3		26.2	254	15.1 101		30.3	148	**10 S**	26	5 53	6 15	13 59	49	43	56
14	29	35.2		26.2	268	44.2 101	−8	45.2	149	**20**	42	6 10	34	53	44	48	61
15	44	35.0		26.2	283	13.2 100	−9	00.0	148	**30**	5 59	29	6 55	45	38	53	67
16	59	34.9		26.2	297	42.2 100	−9	14.8	148	**35**	6 08	39	7 08	41	35	56	70
17	74	34.8	+23	26.2	312	11.0 98	−9	29.6	148	**40**	6 17	6 51	7 22	13 36	31	1 59	74
18	89	34.6	+23	26.2	326	39.8 98	−9	44.3	147	**45**	6 28	7 05	7 39	13 30	27	2 03	78
19	104	34.5		26.2	341	08.5 97	−9	58.9	146	**50**	39	21	7 59	23	23	08	83
20	119	34.4		26.2	355	37.1 96	−10	13.5	146	**52**	45	28	8 09	20	20	10	86
21	134	34.2		26.2	10	05.7 96		28.1	146	**54**	50	37	21	17	17	12	89
22	149	34.1		26.2	24	34.1 94		42.7	146	**56**	6 57	46	33	13	14	15	92
23	164	33.9		26.2	39	02.5 94	−10	57.1	144	**58**	7 03	7 56	8 48	09	11	18	95
24	179	33.8	+23	26.2	53	30.8 93	−11	11.6	145	**60 S**	7 11	8 08	9 06	13 04	7	2 21	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.5		
	6ʰ 05ᵐ.3		PMG: 13ʰ 40ᵐ			PMG: 14ʰ 37ᵐ			PMG: 4ʰ 24ᵐ			PMG: 3ʰ 08ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	268	25.5	155	11.1	+23 11.5	140	32.0	+20 13.0	293	54.3	−11 35.5	312	50.1	−17 36.2
1	283	27.9	170	10.3	11.1	155	32.9	12.6	308	56.7	35.5	327	52.7	36.2
2	298	30.4	185	09.5	10.6	170	33.7	12.2	323	59.2	35.5	342	55.2	36.3
3	313	32.9	200	08.7	10.2	185	34.6	11.8	339	01.6	35.5	357	57.8	36.3
4	328	35.3	215	07.9	09.8	200	35.5	11.4	354	04.1	35.5	13	00.4	36.3
5	343	37.8	230	07.1	+23 09.4	215	36.3	+20 11.0	9	06.5	−11 35.6	28	02.9	−17 36.4
6	358	40.3	245	06.3	+23 08.9	230	37.2	+20 10.7	24	09.0	−11 35.6	43	05.5	−17 36.4
7	13	42.7	260	05.5	08.5	245	38.1	10.3	39	11.5	35.6	58	08.1	36.4
8	28	45.2	275	04.7	08.1	260	39.0	09.9	54	13.9	35.6	73	10.6	36.5
9	43	47.7	290	03.9	07.6	275	39.8	09.5	69	16.4	35.6	88	13.2	36.5
10	58	50.1	305	03.1	07.2	290	40.7	09.1	84	18.8	35.6	103	15.8	36.5
11	73	52.6	320	02.3	+23 06.8	305	41.6	+20 08.7	99	21.3	−11 35.6	118	18.4	−17 36.6
12	88	55.0	335	01.4	+23 06.3	320	42.5	+20 08.3	114	23.8	−11 35.6	133	20.9	−17 36.6
13	103	57.5	350	00.6	05.9	335	43.3	07.9	129	26.2	35.6	148	23.5	36.6
14	119	00.0	4	59.8	05.4	350	44.2	07.5	144	28.7	35.6	163	26.1	36.7
15	134	02.4	19	59.0	05.0	5	45.1	07.2	159	31.1	35.7	178	28.6	36.7
16	149	04.9	34	58.2	04.6	20	45.9	06.8	174	33.6	35.7	193	31.2	36.8
17	164	07.4	49	57.4	+23 04.1	35	46.8	+20 06.4	189	36.0	−11 35.7	208	33.8	−17 36.8
18	179	09.8	64	56.6	+23 03.7	50	47.7	+20 06.0	204	38.5	−11 35.7	223	36.3	−17 36.8
19	194	12.3	79	55.8	03.2	65	48.6	05.6	219	41.0	35.7	238	38.9	36.9
20	209	14.8	94	55.0	02.8	80	49.4	05.2	234	43.4	35.7	253	41.5	36.9
21	224	17.2	109	54.2	02.3	95	50.3	04.8	249	45.9	35.7	268	44.1	36.9
22	239	19.7	124	53.4	01.9	110	51.2	04.4	264	48.4	35.7	283	46.6	37.0
23	254	22.2	139	52.6	01.4	125	52.1	04.0	279	50.8	35.7	298	49.2	37.0
24	269	24.6	154	51.8	+23 01.0	140	52.9	+20 03.6	294	53.3	−11 35.8	313	51.8	−17 37.0
Dif	—			−8	−4		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 10ᵈ.5		PHE	4ʰ: 60′.3									
	PMG: 12ʰ 01ᵐ.9				SD: 16′.4			12ʰ: 60′.4									
					PMG: 21ʰ 12ᵐ			20ʰ: 60′.6									
	hG ☉		Dec		hG ☾	Dif		Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′	º	h m	h m	h m	h m	m	h m	m
0	179	33.8	+23	26.2	53	30.8	91	−11	11.6	**60 N**	21 28	23 14	** **	16 56	107	1 05	8
1	194	33.7		26.2	67	58.9	92		25.9	**58**	21 07	22 23	** **	46	101	11	13
2	209	33.5		26.2	82	27.1	90		40.3	**56**	20 51	21 53	** **	37	97	17	16
3	224	33.4		26.2	96	55.1	89	−11	54.5	**54**	36	31	23 19	30	93	23	19
4	239	33.3		26.2	111	23.0	88	−12	08.7	**52**	24	21 13	22 31	23	90	27	22
5	254	33.1	+23	26.2	125	50.8	88	−12	22.9	**50**	20 13	20 58	22 03	16 17	87	1 32	24
6	269	33.0	+23	26.2	140	18.6	88	−12	37.0	**45**	19 50	20 28	21 18	16 04	82	1 41	30
7	284	32.9		26.2	154	46.3	87	−12	51.0	**40**	32	20 05	20 47	15 53	78	49	34
8	299	32.7		26.2	169	13.8	85	−13	04.9	**35**	17	19 47	24	44	74	1 56	38
9	314	32.6		26.2	183	41.3	85		18.8	**30**	19 04	32	20 05	36	71	2 02	41
10	329	32.5		26.2	198	08.7	84		32.7	**20**	18 42	19 07	19 36	22	66	13	46
11	344	32.3	+23	26.2	212	36.0	83	−13	46.4	**10 N**	18 23	18 46	19 13	15 10	61	2 22	51
12	359	32.2	+23	26.2	227	03.1	81	−14	00.1	**0**	18 06	18 28	18 54	14 59	57	2 31	55
13	14	32.1		26.2	241	30.2	81		13.7	**10 S**	17 48	18 11	37	48	53	39	60
14	29	31.9		26.2	255	57.2	80		27.2	**20**	30	17 54	21	37	48	2 49	64
15	44	31.8		26.2	270	24.1	79		40.6	**30**	17 08	35	18 05	23	44	3 00	69
16	59	31.6		26.2	284	50.9	78	−14	54.0	**35**	16 56	24	17 56	16	40	06	73
17	74	31.5	+23	26.2	299	17.6	77	−15	07.3	**40**	16 42	17 12	17 46	14 07	37	3 13	76
18	89	31.4	+23	26.2	313	44.2	76	−15	20.5	**45**	16 25	16 59	17 36	13 57	33	3 21	81
19	104	31.2		26.2	328	10.8	76		33.6	**50**	16 04	43	24	46	27	31	87
20	119	31.1		26.1	342	37.2	74		46.6	**52**	15 54	35	19	40	25	36	89
21	134	31.0		26.1	357	03.5	73	−15	59.5	**54**	43	27	13	34	22	41	92
22	149	30.8		26.1	11	29.7	72	−16	12.4	**56**	30	18	07	27	19	47	96
23	164	30.7		26.1	25	55.8	71		25.1	**58**	15 16	16 07	17 00	20	15	3 53	100
24	179	30.6	+23	26.1	40	21.8	70	−16	37.7	**60 S**	14 58	15 56	16 53	13 11	11	4 01	104

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.4		
	6ʰ 01ᵐ.4		PMG: 13ʰ 41ᵐ			PMG: 14ʰ 36ᵐ			PMG: 4ʰ 20ᵐ			PMG: 3ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	269	24.6	154	51.8	+23 01.0	140	52.9	+20 03.6	294	53.3	−11 35.8	313	51.8	−17 37.0
1	284	27.1	169	51.0	00.5	155	53.8	03.2	309	55.7	35.8	328	54.3	37.1
2	299	29.5	184	50.2	+23 00.1	170	54.7	02.8	324	58.2	35.8	343	56.9	37.1
3	314	32.0	199	49.4	+22 59.6	185	55.6	02.5	340	00.7	35.8	358	59.5	37.1
4	329	34.5	214	48.6	59.2	200	56.4	02.1	355	03.1	35.8	14	02.1	37.2
5	344	36.9	229	47.8	+22 58.7	215	57.3	+20 01.7	10	05.6	−11 35.8	29	04.6	−17 37.2
6	359	39.4	244	47.0	+22 58.3	230	58.2	+20 01.3	25	08.1	−11 35.8	44	07.2	−17 37.3
7	14	41.9	259	46.2	57.8	245	59.1	00.9	40	10.5	35.8	59	09.8	37.3
8	29	44.3	274	45.4	57.3	260	59.9	00.5	55	13.0	35.9	74	12.4	37.3
9	44	46.8	289	44.6	56.9	276	00.8	+20 00.1	70	15.5	35.9	89	14.9	37.4
10	59	49.3	304	43.8	56.4	291	01.7	+19 59.7	85	17.9	35.9	104	17.5	37.4
11	74	51.7	319	43.0	+22 56.0	306	02.6	+19 59.3	100	20.4	−11 35.9	119	20.1	−17 37.4
12	89	54.2	334	42.2	+22 55.5	321	03.4	+19 58.9	115	22.9	−11 35.9	134	22.6	−17 37.5
13	104	56.7	349	41.4	55.0	336	04.3	58.5	130	25.3	35.9	149	25.2	37.5
14	119	59.1	4	40.6	54.6	351	05.2	58.1	145	27.8	35.9	164	27.8	37.6
15	135	01.6	19	39.8	54.1	6	06.1	57.7	160	30.3	36.0	179	30.4	37.6
16	150	04.0	34	39.0	53.6	21	06.9	57.3	175	32.7	36.0	194	32.9	37.6
17	165	06.5	49	38.3	+22 53.2	36	07.8	+19 56.9	190	35.2	−11 36.0	209	35.5	−17 37.7
18	180	09.0	64	37.5	+22 52.7	51	08.7	+19 56.5	205	37.7	−11 36.0	224	38.1	−17 37.7
19	195	11.4	79	36.7	52.2	66	09.6	56.1	220	40.1	36.0	239	40.7	37.7
20	210	13.9	94	35.9	51.7	81	10.5	55.7	235	42.6	36.0	254	43.2	37.8
21	225	16.4	109	35.1	51.3	96	11.3	55.3	250	45.1	36.0	269	45.8	37.8
22	240	18.8	124	34.3	50.8	111	12.2	54.9	265	47.5	36.0	284	48.4	37.8
23	255	21.3	139	33.5	50.3	126	13.1	54.5	280	50.0	36.1	299	51.0	37.9
24	270	23.8	154	32.7	+22 49.8	141	14.0	+19 54.1	295	52.5	−11 36.1	314	53.5	−17 37.9
Dif	—			−8	−5		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 11^{d}.5		PHE	4^{h}: 60′.7									
	PMG: 12^{h} 02^{m}.1				SD: 16′.5			12^{h}: 60′.8									
					PMG: 22^{h} 11^{m}			20^{h}: 60′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	179	30.6	+23	26.1	40	21.8	69	−16 37.7	126	**60 N**	** **	0 49	2 36	18 43	105	1 13	13
1	194	30.4		26.1	54	47.7	69	−16 50.3	126	**58**	** **	1 41	2 57	27	100	24	18
2	209	30.3		26.1	69	13.5	68	−17 02.7	124	**56**	** **	2 11	3 13	14	95	33	23
3	224	30.2		26.0	83	39.2	67	15.1	124	**54**	0 45	33	28	18 03	91	42	26
4	239	30.0		26.0	98	04.8	66	27.3	122	**52**	1 33	2 51	40	17 53	88	49	29
5	254	29.9	+23	26.0	112	30.3	65	−17 39.4	121	**50**	2 01	3 06	3 51	17 44	86	1 56	32
6	269	29.8	+23	26.0	126	55.7	64	−17 51.4	120	**45**	2 46	3 36	4 14	17 26	81	2 11	37
7	284	29.6		26.0	141	21.0	63	−18 03.3	119	**40**	3 17	3 59	32	17 11	77	23	41
8	299	29.5		26.0	155	46.2	62	15.1	118	**35**	40	4 17	4 47	16 58	74	34	44
9	314	29.4		25.9	170	11.3	61	26.8	117	**30**	3 59	32	5 00	47	72	43	47
10	329	29.2		25.9	184	36.2	59	38.4	116	**20**	4 28	4 57	22	28	68	2 59	51
11	344	29.1	+23	25.9	199	01.1	59	−18 49.8	114	**10 N**	4 51	5 18	5 41	16 11	65	3 13	55
12	359	29.0	+23	25.9	213	25.9	58	−19 01.1	113	**0**	5 10	5 36	5 58	15 56	62	3 26	59
13	14	28.8		25.8	227	50.6	57	12.3	112	**10 S**	27	5 53	6 16	41	58	39	63
14	29	28.7		25.8	242	15.2	56	23.4	111	**20**	43	6 10	34	25	55	3 53	67
15	44	28.5		25.8	256	39.7	55	34.3	109	**30**	5 59	29	6 56	15 07	51	4 09	72
16	59	28.4		25.8	271	04.1	54	45.2	109	**35**	6 08	40	7 08	14 56	49	19	74
17	74	28.3	+23	25.7	285	28.4	53	−19 55.8	106	**40**	6 18	6 52	7 22	14 44	46	4 29	78
18	89	28.1	+23	25.7	299	52.5	51	−20 06.4	106	**45**	6 28	7 05	7 39	14 30	42	4 42	82
19	104	28.0		25.7	314	16.6	51	16.8	104	**50**	40	21	8 00	13	37	4 58	87
20	119	27.9		25.7	328	40.6	50	27.1	103	**52**	45	29	10	14 05	35	5 05	90
21	134	27.7		25.6	343	04.5	49	37.2	101	**54**	51	37	21	13 56	32	13	93
22	149	27.6		25.6	357	28.3	48	47.2	100	**56**	6 57	46	34	46	29	23	96
23	164	27.5		25.6	11	52.0	47	−20 57.1	99	**58**	7 04	7 56	8 48	35	24	33	101
24	179	27.3	+23	25.5	26	15.7	47	−21 06.8	97	**60 S**	7 11	8 08	9 06	13 22	19	5 45	107

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.4		
	5^{h} 57^{m}.4		PMG: 13^{h} 43^{m}			PMG: 14^{h} 34^{m}			PMG: 4^{h} 16^{m}			PMG: 3^{h} 00^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	270	23.8	154	32.7	+22 49.8	141	14.0	+19 54.1	295	52.5	−11 36.1	314	53.5	−17 37.9
1	285	26.2	169	31.9	49.3	156	14.8	53.7	310	54.9	36.1	329	56.1	38.0
2	300	28.7	184	31.1	48.9	171	15.7	53.3	325	57.4	36.1	344	58.7	38.0
3	315	31.2	199	30.3	48.4	186	16.6	52.9	340	59.9	36.1	0	01.3	38.0
4	330	33.6	214	29.5	47.9	201	17.5	52.5	356	02.4	36.1	15	03.8	38.1
5	345	36.1	229	28.8	+22 47.4	216	18.3	+19 52.1	11	04.8	−11 36.2	30	06.4	−17 38.1
6	0	38.5	244	28.0	+22 46.9	231	19.2	+19 51.7	26	07.3	−11 36.2	45	09.0	−17 38.1
7	15	41.0	259	27.2	46.5	246	20.1	51.3	41	09.8	36.2	60	11.6	38.2
8	30	43.5	274	26.4	46.0	261	21.0	50.9	56	12.2	36.2	75	14.1	38.2
9	45	45.9	289	25.6	45.5	276	21.9	50.5	71	14.7	36.2	90	16.7	38.3
10	60	48.4	304	24.8	45.0	291	22.7	50.1	86	17.2	36.2	105	19.3	38.3
11	75	50.9	319	24.0	+22 44.5	306	23.6	+19 49.7	101	19.7	−11 36.2	120	21.9	−17 38.3
12	90	53.3	334	23.3	+22 44.0	321	24.5	+19 49.3	116	22.1	−11 36.3	135	24.5	−17 38.4
13	105	55.8	349	22.5	43.5	336	25.4	48.9	131	24.6	36.3	150	27.0	38.4
14	120	58.3	4	21.7	43.0	351	26.2	48.5	146	27.1	36.3	165	29.6	38.4
15	136	00.7	19	20.9	42.5	6	27.1	48.1	161	29.6	36.3	180	32.2	38.5
16	151	03.2	34	20.1	42.0	21	28.0	47.7	176	32.0	36.3	195	34.8	38.5
17	166	05.6	49	19.3	+22 41.5	36	28.9	+19 47.3	191	34.5	−11 36.3	210	37.3	−17 38.6
18	181	08.1	64	18.5	+22 41.0	51	29.8	+19 46.9	206	37.0	−11 36.4	225	39.9	−17 38.6
19	196	10.6	79	17.8	40.5	66	30.6	46.5	221	39.5	36.4	240	42.5	38.6
20	211	13.0	94	17.0	40.0	81	31.5	46.1	236	41.9	36.4	255	45.1	38.7
21	226	15.5	109	16.2	39.5	96	32.4	45.7	251	44.4	36.4	270	47.6	38.7
22	241	18.0	124	15.4	39.0	111	33.3	45.3	266	46.9	36.4	285	50.2	38.7
23	256	20.4	139	14.6	38.5	126	34.2	44.9	281	49.4	36.4	300	52.8	38.8
24	271	22.9	154	13.9	+22 38.0	141	35.0	+19 44.5	296	51.9	−11 36.5	315	55.4	−17 38.8
Dif	—			−8	−5		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 12^{d}.5		PHE	4^{h}: 60′.9									
	PMG: 12^{h} 02^{m}.3				SD: 16′.6			12^{h}: 60′.9									
					PMG: 23^{h} 13^{m}			20^{h}: 60′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	179	27.3	+23	25.5	26	15.7	−21	06.8		**60 N**	21 28	23 14	** **	20 28	89	1 26	24
1	194	27.2		25.5	40	39.2 45		16.4	96	**58**	21 08	22 23	** **	20 07	85	42	30
2	209	27.1		25.5	55	02.6 44		25.8	94	**56**	20 51	21 53	** **	19 49	82	1 56	34
3	224	26.9		25.4	69	26.0 44		35.1	93	**54**	36	31	23 18	34	80	2 08	37
4	239	26.8		25.4	83	49.2 42		44.2	91	**52**	24	21 13	22 31	21	79	18	40
5	254	26.7	+23	25.4	98	12.4 42	−21	53.1	89	**50**	20 13	20 58	22 03	19 10	77	2 28	42
6	269	26.5	+23	25.3	112	35.5 41	−22	02.0	89	**45**	19 51	20 28	21 18	18 47	74	2 48	46
7	284	26.4		25.3	126	58.4 39		10.6	86	**40**	33	20 06	20 47	28	73	3 04	50
8	299	26.3		25.3	141	21.4 40		19.1	85	**35**	18	19 47	24	18 12	72	18	52
9	314	26.1		25.2	155	44.2 38		27.4	83	**30**	19 05	32	20 05	17 59	70	30	54
10	329	26.0		25.2	170	06.9 37		35.6	82	**20**	18 43	19 07	19 36	36	68	3 50	58
11	344	25.9	+23	25.1	184	29.6 37	−22	43.6	80	**10 N**	18 24	18 47	19 14	17 16	66	4 08	61
12	359	25.7	+23	25.1	198	52.2 36	−22	51.5	79	**0**	18 06	18 29	18 55	16 58	64	4 25	63
13	14	25.6		25.1	213	14.7 35	−22	59.2	77	**10 S**	17 49	18 11	38	39	63	4 42	65
14	29	25.5		25.0	227	37.1 34	−23	06.7	75	**20**	30	17 54	21	16 20	60	5 00	68
15	44	25.3		25.0	241	59.5 34		14.0	73	**30**	17 09	35	18 05	15 58	58	21	71
16	59	25.2		24.9	256	21.8 33		21.2	72	**35**	16 56	25	17 56	45	56	33	74
17	74	25.1	+23	24.9	270	44.0 32	−23	28.2	70	**40**	16 42	17 13	17 47	15 30	54	5 47	76
18	89	24.9	+23	24.8	285	06.2 32	−23	35.0	68	**45**	16 25	16 59	17 36	15 12	52	6 04	79
19	104	24.8		24.8	299	28.3 31		41.7	67	**50**	16 05	43	25	14 50	49	25	82
20	119	24.7		24.7	313	50.3 30		48.2	65	**52**	15 55	36	19	40	47	35	84
21	134	24.5		24.7	328	12.2 29	−23	54.5	63	**54**	44	27	14	28	45	46	87
22	149	24.4		24.7	342	34.2 30	−24	00.6	61	**56**	31	18	08	14 15	42	6 59	90
23	164	24.3		24.6	356	56.0 28		06.6	60	**58**	15 16	16 08	17 01	13 59	39	7 14	93
24	179	24.1	+23	24.6	11	17.8 28	−24	12.3	57	**60 S**	14 59	15 56	16 53	13 41	34	7 32	98

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.4		
	5^{h} 53^{m}.5		PMG: 13^{h} 44^{m}			PMG: 14^{h} 33^{m}			PMG: 4^{h} 12^{m}			PMG: 2^{h} 56^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	271	22.9	154	13.9	+22 38.0	141	35.0	+19 44.5	296	51.9	−11 36.5	315	55.4	−17 38.8
1	286	25.4	169	13.1	37.5	156	35.9	44.1	311	54.3	36.5	330	58.0	38.9
2	301	27.8	184	12.3	37.0	171	36.8	43.7	326	56.8	36.5	346	00.5	38.9
3	316	30.3	199	11.5	36.5	186	37.7	43.3	341	59.3	36.5	1	03.1	38.9
4	331	32.8	214	10.7	36.0	201	38.6	42.9	357	01.8	36.5	16	05.7	39.0
5	346	35.2	229	10.0	+22 35.5	216	39.4	+19 42.5	12	04.2	−11 36.6	31	08.3	−17 39.0
6	1	37.7	244	09.2	+22 35.0	231	40.3	+19 42.1	27	06.7	−11 36.6	46	10.9	−17 39.0
7	16	40.1	259	08.4	34.5	246	41.2	41.7	42	09.2	36.6	61	13.4	39.1
8	31	42.6	274	07.6	33.9	261	42.1	41.3	57	11.7	36.6	76	16.0	39.1
9	46	45.1	289	06.9	33.4	276	43.0	40.9	72	14.2	36.6	91	18.6	39.2
10	61	47.5	304	06.1	32.9	291	43.8	40.5	87	16.7	36.6	106	21.2	39.2
11	76	50.0	319	05.3	+22 32.4	306	44.7	+19 40.1	102	19.1	−11 36.7	121	23.8	−17 39.2
12	91	52.5	334	04.5	+22 31.9	321	45.6	+19 39.7	117	21.6	−11 36.7	136	26.3	−17 39.3
13	106	54.9	349	03.8	31.4	336	46.5	39.3	132	24.1	36.7	151	28.9	39.3
14	121	57.4	4	03.0	30.8	351	47.4	38.8	147	26.6	36.7	166	31.5	39.4
15	136	59.9	19	02.2	30.3	6	48.2	38.4	162	29.1	36.7	181	34.1	39.4
16	152	02.3	34	01.4	29.8	21	49.1	38.0	177	31.5	36.8	196	36.7	39.4
17	167	04.8	49	00.7	+22 29.3	36	50.0	+19 37.6	192	34.0	−11 36.8	211	39.2	−17 39.5
18	182	07.3	63	59.9	+22 28.7	51	50.9	+19 37.2	207	36.5	−11 36.8	226	41.8	−17 39.5
19	197	09.7	78	59.1	28.2	66	51.8	36.8	222	39.0	36.8	241	44.4	39.5
20	212	12.2	93	58.4	27.7	81	52.7	36.4	237	41.5	36.8	256	47.0	39.6
21	227	14.6	108	57.6	27.2	96	53.5	36.0	252	44.0	36.9	271	49.6	39.6
22	242	17.1	123	56.8	26.6	111	54.4	35.6	267	46.4	36.9	286	52.1	39.7
23	257	19.6	138	56.0	26.1	126	55.3	35.2	282	48.9	36.9	301	54.7	39.7
24	272	22.0	153	55.3	+22 25.6	141	56.2	+19 34.8	297	51.4	−11 36.9	316	57.3	−17 39.7
Dif	—			−8	−5		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 13ᵈ.5		PHE	4ʰ: 60′.8									
	PMG: 12ʰ 02ᵐ.5				SD: 16′.6			12ʰ: 60′.7									
					PMG: **ʰ **ᵐ			20ʰ: 60′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	24.1	+23	24.6	11	17.8	28	−24	12.3	56	**60 N**	** **	0 51	2 37	21 57	59	1 50	46
1	194	24.0		24.5	25	39.6			17.9		**58**	** **	1 42	2 57	32	60	2 12	50
2	209	23.9		24.5	40	01.3	27		23.3	54	**56**	** **	2 12	3 14	21 11	61	30	52
3	224	23.7		24.4	54	22.9	26		28.5	52	**54**	0 47	34	28	20 54	62	45	54
4	239	23.6		24.4	68	44.5	26		33.6	51	**52**	1 33	2 52	41	40	62	2 58	56
5	254	23.5	+23	24.3	83	06.1	26	−24	38.4	48	**50**	2 01	3 07	3 52	20 27	63	3 10	56
6	269	23.3	+23	24.2	97	27.6	25	−24	43.1	47	**45**	2 47	3 37	4 14	20 01	63	3 34	58
7	284	23.2		24.2	111	49.1	25		47.5	44	**40**	3 18	3 59	32	19 41	63	3 54	59
8	299	23.1		24.1	126	10.5	24		51.8	43	**35**	41	4 17	4 47	24	63	4 10	60
9	314	22.9		24.1	140	32.0	25		55.9	41	**30**	3 59	33	5 00	19 09	64	24	61
10	329	22.8		24.0	154	53.3	23	−24	59.8	39	**20**	4 28	4 58	22	18 44	64	4 48	63
11	344	22.7	+23	24.0	169	14.7	24	−25	03.6	38	**10 N**	4 51	5 18	5 41	18 22	64	5 09	63
12	359	22.5	+23	23.9	183	36.1	24	−25	07.1	35	**0**	5 10	5 36	5 59	18 02	64	5 28	65
13	14	22.4		23.9	197	57.4	23		10.4	33	**10 S**	27	5 53	6 16	17 42	64	5 47	66
14	29	22.3		23.8	212	18.7	23		13.6	32	**20**	5 43	6 11	35	17 20	65	6 08	67
15	44	22.1		23.7	226	40.0	23		16.5	29	**30**	6 00	30	6 56	16 56	64	32	68
16	59	22.0		23.7	241	01.2	22		19.3	28	**35**	09	40	7 08	41	64	6 47	67
17	74	21.9	+23	23.6	255	22.5	23	−25	21.9	26	**40**	6 18	6 52	7 23	16 24	64	7 03	69
18	89	21.8	+23	23.6	269	43.8	23	−25	24.3	24	**45**	6 28	7 06	7 39	16 04	64	7 23	69
19	104	21.6		23.5	284	05.0	22		26.4	21	**50**	40	22	8 00	15 39	64	47	71
20	119	21.5		23.4	298	26.3	23		28.4	20	**52**	45	29	10	27	63	7 59	71
21	134	21.4		23.4	312	47.5	22		30.2	18	**54**	51	37	21	15 13	63	8 13	71
22	149	21.2		23.3	327	08.8	23		31.8	16	**56**	6 57	46	34	14 57	63	29	72
23	164	21.1		23.2	341	30.0	22		33.3	15	**58**	7 04	7 57	8 48	38	62	8 47	73
24	179	21.0	+23	23.2	355	51.3	23	−25	34.5	12	**60 S**	7 11	8 08	9 06	14 15	61	9 10	75

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.6			Mag: +0.4		
	5ʰ 49ᵐ.6		PMG: 13ʰ 45ᵐ			PMG: 14ʰ 31ᵐ			PMG: 4ʰ 08ᵐ			PMG: 2ʰ 52ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	272	22.0	153	55.3	+22 25.6	141	56.2	+19 34.8	297	51.4	−11 36.9	316	57.3	−17 39.7
1	287	24.5	168	54.5	25.0	156	57.1	34.4	312	53.9	36.9	331	59.9	39.8
2	302	27.0	183	53.7	24.5	171	58.0	34.0	327	56.4	37.0	347	02.5	39.8
3	317	29.4	198	53.0	24.0	186	58.8	33.5	342	58.9	37.0	2	05.0	39.9
4	332	31.9	213	52.2	23.4	201	59.7	33.1	358	01.4	37.0	17	07.6	39.9
5	347	34.4	228	51.4	+22 22.9	217	00.6	+19 32.7	13	03.8	−11 37.0	32	10.2	−17 39.9
6	2	36.8	243	50.7	+22 22.4	232	01.5	+19 32.3	28	06.3	−11 37.0	47	12.8	−17 40.0
7	17	39.3	258	49.9	21.8	247	02.4	31.9	43	08.8	37.1	62	15.4	40.0
8	32	41.8	273	49.1	21.3	262	03.2	31.5	58	11.3	37.1	77	18.0	40.1
9	47	44.2	288	48.4	20.7	277	04.1	31.1	73	13.8	37.1	92	20.5	40.1
10	62	46.7	303	47.6	20.2	292	05.0	30.7	88	16.3	37.1	107	23.1	40.1
11	77	49.1	318	46.9	+22 19.6	307	05.9	+19 30.3	103	18.8	−11 37.2	122	25.7	−17 40.2
12	92	51.6	333	46.1	+22 19.1	322	06.8	+19 29.8	118	21.3	−11 37.2	137	28.3	−17 40.2
13	107	54.1	348	45.3	18.6	337	07.7	29.4	133	23.8	37.2	152	30.9	40.2
14	122	56.5	3	44.6	18.0	352	08.6	29.0	148	26.2	37.2	167	33.5	40.3
15	137	59.0	18	43.8	17.5	7	09.4	28.6	163	28.7	37.2	182	36.0	40.3
16	153	01.5	33	43.0	16.9	22	10.3	28.2	178	31.2	37.3	197	38.6	40.4
17	168	03.9	48	42.3	+22 16.4	37	11.2	+19 27.8	193	33.7	−11 37.3	212	41.2	−17 40.4
18	183	06.4	63	41.5	+22 15.8	52	12.1	+19 27.4	208	36.2	−11 37.3	227	43.8	−17 40.4
19	198	08.9	78	40.8	15.3	67	13.0	27.0	223	38.7	37.3	242	46.4	40.5
20	213	11.3	93	40.0	14.7	82	13.9	26.5	238	41.2	37.4	257	49.0	40.5
21	228	13.8	108	39.2	14.1	97	14.7	26.1	253	43.7	37.4	272	51.5	40.6
22	243	16.3	123	38.5	13.6	112	15.6	25.7	268	46.2	37.4	287	54.1	40.6
23	258	18.7	138	37.7	13.0	127	16.5	25.3	283	48.7	37.4	302	56.7	40.6
24	273	21.2	153	37.0	+22 12.5	142	17.4	+19 24.9	298	51.2	−11 37.4	317	59.3	−17 40.7
Dif	—			−8	−5		+9	−4		+25	0		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 02m.7				Edad: 14d.5 SD: 16′.5 PMG: 0h 17m		PHE	4h: 60′.5 12h: 60′.3 20h: 60′.1 Rº: 64m			Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	21.0	+23	23.2	355	51.3	−25	34.5	**60 N**	21 28	23 12	** **	22 56	31	2 36	75
1	194	20.8		23.1	10	12.6 23		35.5 10	**58**	21 07	22 23	** **	32	36	3 02	73
2	209	20.7		23.0	24	33.9 23		36.3 8	**56**	20 51	21 53	** **	22 12	40	22	72
3	224	20.6		23.0	38	55.2 23		37.0 7	**54**	36	31	23 17	21 56	43	39	71
4	239	20.4		22.9	53	16.6 24		37.4 4	**52**	24	21 13	22 31	42	45	3 54	70
5	254	20.3	+23	22.8	67	37.9 23	−25	37.7 3	**50**	20 13	20 58	22 03	21 30	46	4 06	70
6	269	20.2	+23	22.8	81	59.3 24	−25	37.8 1	**45**	19 51	20 28	21 18	21 04	50	4 32	69
7	284	20.0		22.7	96	20.7 24		37.6 2	**40**	33	20 06	20 47	20 44	52	4 53	68
8	299	19.9		22.6	110	42.2 25		37.3 3	**35**	18	19 48	24	27	54	5 10	67
9	314	19.8		22.5	125	03.7 25		36.8 5	**30**	19 05	32	20 06	20 13	55	25	67
10	329	19.6		22.5	139	25.2 25		36.1 7	**20**	18 43	19 07	19 37	19 48	57	5 51	65
11	344	19.5	+23	22.4	153	46.8 26	−25	35.2 9	**10 N**	18 24	18 47	19 14	19 26	60	6 12	65
12	359	19.4	+23	22.3	168	08.4 26	−25	34.2 10	**0**	18 06	18 29	18 55	19 06	62	6 33	63
13	14	19.3		22.2	182	30.1 27		32.9 13	**10 S**	17 49	18 12	38	18 46	64	6 53	62
14	29	19.1		22.2	196	51.8 27		31.5 14	**20**	30	17 54	22	25	65	7 15	61
15	44	19.0		22.1	211	13.6 28		29.8 17	**30**	17 09	36	18 06	18 00	67	40	60
16	59	18.9		22.0	225	35.4 28		28.0 18	**35**	16 57	25	17 57	17 45	69	7 54	59
17	74	18.7	+23	21.9	239	57.3 29	−25	26.0 20	**40**	16 43	17 13	17 47	17 28	71	8 12	57
18	89	18.6	+23	21.9	254	19.2 29	−25	23.8 22	**45**	16 26	17 00	17 37	17 08	72	8 32	56
19	104	18.5		21.8	268	41.2 30		21.4 24	**50**	16 05	16 44	25	16 43	74	8 58	54
20	119	18.3		21.7	283	03.3 31		18.9 25	**52**	15 55	36	20	30	76	9 10	53
21	134	18.2		21.6	297	25.4 31		16.1 28	**54**	44	28	14	16	78	24	52
22	149	18.1		21.5	311	47.6 32		13.2 29	**56**	32	19	08	16 00	79	9 41	50
23	164	17.9		21.5	326	09.9 33		10.1 31	**58**	17	16 09	17 02	15 40	83	10 00	48
24	179	17.8	+23	21.4	340	32.2 33	−25	06.9 32	**60 S**	15 00	15 57	16 54	15 16	86	10 25	44

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 5h 45m.6		Mag: −3.8 PMG: 13h 46m			Mag: +1.8 PMG: 14h 30m			Mag: −2.7 PMG: 4h 04m			Mag: +0.4 PMG: 2h 48m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	273	21.2	153	37.0	+22 12.5	142	17.4	+19 24.9	298	51.2	−11 37.4	317	59.3	−17 40.7
1	288	23.6	168	36.2	11.9	157	18.3	24.5	313	53.7	37.5	333	01.9	40.7
2	303	26.1	183	35.5	11.4	172	19.2	24.1	328	56.1	37.5	348	04.5	40.8
3	318	28.6	198	34.7	10.8	187	20.1	23.6	343	58.6	37.5	3	07.1	40.8
4	333	31.0	213	33.9	10.2	202	20.9	23.2	359	01.1	37.5	18	09.6	40.8
5	348	33.5	228	33.2	+22 09.7	217	21.8	+19 22.8	14	03.6	−11 37.6	33	12.2	−17 40.9
6	3	36.0	243	32.4	+22 09.1	232	22.7	+19 22.4	29	06.1	−11 37.6	48	14.8	−17 40.9
7	18	38.4	258	31.7	08.5	247	23.6	22.0	44	08.6	37.6	63	17.4	41.0
8	33	40.9	273	30.9	08.0	262	24.5	21.6	59	11.1	37.6	78	20.0	41.0
9	48	43.4	288	30.2	07.4	277	25.4	21.2	74	13.6	37.7	93	22.6	41.0
10	63	45.8	303	29.4	06.8	292	26.3	20.7	89	16.1	37.7	108	25.2	41.1
11	78	48.3	318	28.7	+22 06.3	307	27.1	+19 20.3	104	18.6	−11 37.7	123	27.7	−17 41.1
12	93	50.8	333	27.9	+22 05.7	322	28.0	+19 19.9	119	21.1	−11 37.7	138	30.3	−17 41.2
13	108	53.2	348	27.2	05.1	337	28.9	19.5	134	23.6	37.8	153	32.9	41.2
14	123	55.7	3	26.4	04.6	352	29.8	19.1	149	26.1	37.8	168	35.5	41.2
15	138	58.1	18	25.7	04.0	7	30.7	18.7	164	28.6	37.8	183	38.1	41.3
16	154	00.6	33	24.9	03.4	22	31.6	18.2	179	31.1	37.8	198	40.7	41.3
17	169	03.1	48	24.2	+22 02.8	37	32.5	+19 17.8	194	33.6	−11 37.9	213	43.3	−17 41.4
18	184	05.5	63	23.4	+22 02.3	52	33.3	+19 17.4	209	36.1	−11 37.9	228	45.8	−17 41.4
19	199	08.0	78	22.7	01.7	67	34.2	17.0	224	38.6	37.9	243	48.4	41.4
20	214	10.5	93	21.9	01.1	82	35.1	16.6	239	41.1	37.9	258	51.0	41.5
21	229	12.9	108	21.2	+22 00.5	97	36.0	16.1	254	43.6	38.0	273	53.6	41.5
22	244	15.4	123	20.4	+21 59.9	112	36.9	15.7	269	46.1	38.0	288	56.2	41.6
23	259	17.9	138	19.7	59.3	127	37.8	15.3	284	48.6	38.0	303	58.8	41.6
24	274	20.3	153	18.9	+21 58.8	142	38.7	+19 14.9	299	51.1	−11 38.0	319	01.4	−17 41.6
Dif	—			−8	−6		+9	−4		+25	0		+26	0

UT	SOL SD: 15′.7 PMG: 12h 02m.9				☾ LUNA Edad: 15d.5 SD: 16′.3 PMG: 1h 21m PHE 4h: 59′.9; 12h: 59′.6; 20h: 59′.3 Rº: 61m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	17.8	+23	21.4	340	32.2	−25	06.9	**60 N**	** **	0 54	2 38	23 27	16	3 51	95
1	194	17.7		21.3	354	54.6 34	−25	03.4 35	**58**	** **	1 43	2 58	23 08	22	4 15	89
2	209	17.6		21.2	9	17.1 35	−24	59.8 36	**56**	** **	2 13	3 15	22 52	26	34	86
3	224	17.4		21.1	23	39.7 36		56.0 38	**54**	0 49	35	29	39	28	4 50	83
4	239	17.3		21.0	38	02.4 37		52.0 40	**52**	1 35	2 53	42	27	31	5 04	80
5	254	17.2	+23	20.9	52	25.1 37	−24	47.9 41	**50**	2 02	3 08	3 52	22 16	34	5 16	78
6	269	17.0	+23	20.9	66	48.0 39	−24	43.6 43	**45**	2 48	3 37	4 15	21 54	38	5 41	75
7	284	16.9		20.8	81	10.9 39		39.1 45	**40**	3 18	4 00	33	36	42	6 01	72
8	299	16.8		20.7	95	33.9 40		34.4 47	**35**	3 41	18	4 48	21	45	17	70
9	314	16.6		20.6	109	57.0 41		29.6 48	**30**	4 00	33	5 01	21 08	47	32	67
10	329	16.5		20.5	124	20.2 42		24.6 50	**20**	29	4 58	23	20 45	51	6 56	64
11	344	16.4	+23	20.4	138	43.5 43	−24	19.5 51	**10 N**	4 52	5 19	5 42	20 26	54	7 17	62
12	359	16.3	+23	20.3	153	06.9 44	−24	14.2 53	**0**	5 11	5 37	5 59	20 08	57	7 36	60
13	14	16.1		20.2	167	30.4 45		08.7 55	**10 S**	27	5 54	6 17	19 50	59	7 55	57
14	29	16.0		20.1	181	54.0 46	−24	03.1 56	**20**	5 44	6 11	35	30	63	8 16	54
15	44	15.9		20.0	196	17.7 47	−23	57.3 58	**30**	6 00	30	6 56	19 07	67	40	51
16	59	15.7		19.9	210	41.5 48		51.4 59	**35**	09	40	7 09	18 54	69	8 53	50
17	74	15.6	+23	19.9	225	05.5 50	−23	45.3 61	**40**	6 18	6 52	7 23	18 39	71	9 09	47
18	89	15.5	+23	19.8	239	29.5 50	−23	39.1 62	**45**	6 28	7 06	7 39	18 20	75	9 28	44
19	104	15.3		19.7	253	53.6 51		32.7 64	**50**	40	22	8 00	17 57	80	9 52	40
20	119	15.2		19.6	268	17.8 52		26.2 65	**52**	45	29	10	46	82	10 03	38
21	134	15.1		19.5	282	42.2 54		19.5 67	**54**	51	37	21	34	84	16	36
22	149	15.0		19.4	297	06.6 54		12.7 68	**56**	6 57	46	34	19	88	31	33
23	164	14.8		19.3	311	31.2 56	−23	05.7 70	**58**	7 04	7 57	8 48	17 03	91	10 48	29
24	179	14.7	+23	19.2	325	55.9 57	−22	58.6 71	**60 S**	7 11	8 08	9 06	16 42	97	11 09	24

UT	ARIES PMG 5h 41m.7		VENUS Mag: −3.8 PMG: 13h 47m			MARTE Mag: +1.8 PMG: 14h 29m			JÚPITER Mag: −2.7 PMG: 4h 00m			SATURNO Mag: +0.4 PMG: 2h 43m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	274	20.3	153	18.9	+21 58.8	142	38.7	+19 14.9	299	51.1	−11 38.0	319	01.4	−17 41.6
1	289	22.8	168	18.2	58.2	157	39.6	14.5	314	53.6	38.1	334	04.0	41.7
2	304	25.3	183	17.4	57.6	172	40.4	14.0	329	56.1	38.1	349	06.5	41.7
3	319	27.7	198	16.7	57.0	187	41.3	13.6	344	58.6	38.1	4	09.1	41.8
4	334	30.2	213	16.0	56.4	202	42.2	13.2	0	01.1	38.1	19	11.7	41.8
5	349	32.6	228	15.2	+21 55.8	217	43.1	+19 12.8	15	03.6	−11 38.2	34	14.3	−17 41.8
6	4	35.1	243	14.5	+21 55.2	232	44.0	+19 12.4	30	06.1	−11 38.2	49	16.9	−17 41.9
7	19	37.6	258	13.7	54.7	247	44.9	11.9	45	08.6	38.2	64	19.5	41.9
8	34	40.0	273	13.0	54.1	262	45.8	11.5	60	11.1	38.3	79	22.1	42.0
9	49	42.5	288	12.2	53.5	277	46.7	11.1	75	13.6	38.3	94	24.7	42.0
10	64	45.0	303	11.5	52.9	292	47.6	10.7	90	16.1	38.3	109	27.3	42.1
11	79	47.4	318	10.8	+21 52.3	307	48.4	+19 10.3	105	18.6	−11 38.3	124	29.8	−17 42.1
12	94	49.9	333	10.0	+21 51.7	322	49.3	+19 09.8	120	21.1	−11 38.4	139	32.4	−17 42.1
13	109	52.4	348	09.3	51.1	337	50.2	09.4	135	23.6	38.4	154	35.0	42.2
14	124	54.8	3	08.5	50.5	352	51.1	09.0	150	26.1	38.4	169	37.6	42.2
15	139	57.3	18	07.8	49.9	7	52.0	08.6	165	28.6	38.4	184	40.2	42.3
16	154	59.8	33	07.1	49.3	22	52.9	08.1	180	31.1	38.5	199	42.8	42.3
17	170	02.2	48	06.3	+21 48.7	37	53.8	+19 07.7	195	33.6	−11 38.5	214	45.4	−17 42.3
18	185	04.7	63	05.6	+21 48.1	52	54.7	+19 07.3	210	36.2	−11 38.5	229	48.0	−17 42.4
19	200	07.1	78	04.9	47.5	67	55.6	06.9	225	38.7	38.6	244	50.6	42.4
20	215	09.6	93	04.1	46.9	82	56.4	06.5	240	41.2	38.6	259	53.2	42.5
21	230	12.1	108	03.4	46.3	97	57.3	06.0	255	43.7	38.6	274	55.7	42.5
22	245	14.5	123	02.6	45.7	112	58.2	05.6	270	46.2	38.6	289	58.3	42.5
23	260	17.0	138	01.9	45.0	127	59.1	05.2	285	48.7	38.7	305	00.9	42.6
24	275	19.5	153	01.2	+21 44.4	143	00.0	+19 04.8	300	51.2	−11 38.7	320	03.5	−17 42.6
Dif	—			−7	−6		+9	−4		+25	0		+26	0

UT	SOL				☽ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 16ᵈ.5		PHE	4ʰ: 59′.1								
	PMG: 12ʰ 03ᵐ.1				SD: 16′.1			12ʰ: 58′.8								
					PMG: 2ʰ 22ᵐ			20ʰ: 58′.5								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	14.7	+23	19.2	325	55.9	−22	58.6	**60 N**	21 27	23 10	** **	23 43	10	5 26	99
1	194	14.6		19.1	340	20.7 58		51.3 73	**58**	21 07	22 22	** **	30	13	5 44	93
2	209	14.4		19.0	354	45.6 59		43.9 74	**56**	20 50	21 52	** **	18	17	6 00	88
3	224	14.3		18.9	9	10.6 60		36.4 75	**54**	36	30	23 14	23 07	21	13	85
4	239	14.2		18.8	23	35.7 61		28.7 77	**52**	24	21 13	22 30	22 58	23	24	83
5	254	14.1	+23	18.7	38	01.0 63	−22	21.0 77	**50**	20 13	20 58	22 03	22 50	25	6 34	80
6	269	13.9	+23	18.6	52	26.4 64	−22	13.0 80	**45**	19 51	20 28	21 18	22 32	30	6 56	75
7	284	13.8		18.4	66	51.9 65	−22	05.0 80	**40**	33	20 06	20 47	18	34	7 13	71
8	299	13.7		18.3	81	17.5 66	−21	56.8 82	**35**	18	19 48	24	22 06	36	27	68
9	314	13.5		18.2	95	43.2 67		48.5 83	**30**	19 05	32	20 06	21 55	39	7 39	66
10	329	13.4		18.1	110	09.1 69		40.0 85	**20**	18 43	19 08	19 37	36	44	8 00	62
11	344	13.3	+23	18.0	124	35.0 69	−21	31.5 85	**10 N**	18 24	18 47	19 14	21 20	48	8 19	57
12	359	13.2	+23	17.9	139	01.1 71	−21	22.8 87	**0**	18 07	18 29	18 56	21 05	51	8 36	54
13	14	13.0		17.8	153	27.3 72		14.0 88	**10 S**	17 49	18 12	39	20 49	56	8 52	51
14	29	12.9		17.7	167	53.7 74	−21	05.1 89	**20**	31	17 55	23	33	59	9 10	48
15	44	12.8		17.6	182	20.1 74	−20	56.1 90	**30**	17 10	36	18 06	14	64	31	43
16	59	12.6		17.5	196	46.7 76		46.9 92	**35**	16 58	26	17 57	20 03	67	43	40
17	74	12.5	+23	17.4	211	13.4 77	−20	37.7 92	**40**	16 44	17 14	17 48	19 50	70	9 56	38
18	89	12.4	+23	17.2	225	40.2 78	−20	28.3 94	**45**	16 27	17 01	17 38	19 35	74	10 12	34
19	104	12.3		17.1	240	07.1 79		18.9 94	**50**	16 06	16 45	26	17	79	32	29
20	119	12.1		17.0	254	34.2 81	−20	09.3 96	**52**	15 56	37	21	19 08	81	41	27
21	134	12.0		16.9	269	01.4 82	−19	59.6 97	**54**	45	29	15	18 58	84	10 52	24
22	149	11.9		16.8	283	28.7 83		49.8 98	**56**	33	20	09	47	87	11 04	21
23	164	11.8		16.7	297	56.1 84		39.9 99	**58**	18	16 10	17 02	34	91	17	18
24	179	11.6	+23	16.6	312	23.6 85	−19	29.9 100	**60 S**	15 01	15 58	16 55	18 19	96	11 33	13

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.7			Mag: +0.4		
	5ʰ 37ᵐ.8		PMG: 13ʰ 49ᵐ			PMG: 14ʰ 27ᵐ			PMG: 3ʰ 56ᵐ			PMG: 2ʰ 39ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	275	19.5	153	01.2	+21 44.4	143	00.0	+19 04.8	300	51.2	−11 38.7	320	03.5	−17 42.6
1	290	21.9	168	00.4	43.8	158	00.9	04.3	315	53.7	38.7	335	06.1	42.7
2	305	24.4	182	59.7	43.2	173	01.8	03.9	330	56.2	38.8	350	08.7	42.7
3	320	26.9	197	59.0	42.6	188	02.7	03.5	345	58.7	38.8	5	11.3	42.8
4	335	29.3	212	58.3	42.0	203	03.6	03.1	1	01.2	38.8	20	13.9	42.8
5	350	31.8	227	57.5	+21 41.4	218	04.5	+19 02.6	16	03.7	−11 38.8	35	16.5	−17 42.8
6	5	34.2	242	56.8	+21 40.8	233	05.4	+19 02.2	31	06.3	−11 38.9	50	19.1	−17 42.9
7	20	36.7	257	56.1	40.1	248	06.2	01.8	46	08.8	38.9	65	21.7	42.9
8	35	39.2	272	55.3	39.5	263	07.1	01.4	61	11.3	38.9	80	24.2	43.0
9	50	41.6	287	54.6	38.9	278	08.0	00.9	76	13.8	39.0	95	26.8	43.0
10	65	44.1	302	53.9	38.3	293	08.9	00.5	91	16.3	39.0	110	29.4	43.0
11	80	46.6	317	53.1	+21 37.7	308	09.8	+19 00.1	106	18.8	−11 39.0	125	32.0	−17 43.1
12	95	49.0	332	52.4	+21 37.0	323	10.7	+18 59.6	121	21.3	−11 39.1	140	34.6	−17 43.1
13	110	51.5	347	51.7	36.4	338	11.6	59.2	136	23.8	39.1	155	37.2	43.2
14	125	54.0	2	51.0	35.8	353	12.5	58.8	151	26.3	39.1	170	39.8	43.2
15	140	56.4	17	50.2	35.2	8	13.4	58.4	166	28.9	39.2	185	42.4	43.2
16	155	58.9	32	49.5	34.5	23	14.3	57.9	181	31.4	39.2	200	45.0	43.3
17	171	01.4	47	48.8	+21 33.9	38	15.2	+18 57.5	196	33.9	−11 39.2	215	47.6	−17 43.3
18	186	03.8	62	48.1	+21 33.3	53	16.1	+18 57.1	211	36.4	−11 39.2	230	50.2	−17 43.4
19	201	06.3	77	47.3	32.7	68	16.9	56.6	226	38.9	39.3	245	52.8	43.4
20	216	08.7	92	46.6	32.0	83	17.8	56.2	241	41.4	39.3	260	55.4	43.5
21	231	11.2	107	45.9	31.4	98	18.7	55.8	256	43.9	39.3	275	58.0	43.5
22	246	13.7	122	45.2	30.8	113	19.6	55.4	271	46.5	39.4	291	00.5	43.5
23	261	16.1	137	44.4	30.1	128	20.5	54.9	286	49.0	39.4	306	03.1	43.6
24	276	18.6	152	43.7	+21 29.5	143	21.4	+18 54.5	301	51.5	−11 39.4	321	05.7	−17 43.6
Dif	—			−7	−6		+9	−4		+25	0		+26	0

UT	SOL SD: 15′.7 PMG: 12h 03.m3				LUNA Edad: 17.d5 SD: 15′.9 PMG: 3h 17m PHE 4h: 58′.2; 12h: 57′.9; 20h: 57′.6 Rº: 51m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	11.6	+23	16.6	312	23.6			−19	29.9	**60 N**	** **	0 57	2 39	23 53	5	7 05	94
1	194	11.5		16.4	326	51.3	87			19.9	100	**58**	** **	1 45	3 00	43	10	17	90
2	209	11.4		16.3	341	19.1	88		−19	09.7	102	**56**	** **	2 14	16	35	13	28	86
3	224	11.2		16.2	355	47.0	89		−18	59.4	103	**54**	0 52	36	30	28	15	38	83
4	239	11.1		16.1	10	15.0	90			49.1	103	**52**	1 37	2 54	43	21	18	47	80
5	254	11.0	+23	16.0	24	43.2	92		−18	38.6	105	**50**	2 04	3 09	3 53	23 15	20	7 54	78
6	269	10.9	+23	15.8	39	11.4	92		−18	28.1	105	**45**	2 49	3 38	4 16	23 02	25	8 11	72
7	284	10.7		15.7	53	39.8	94			17.4	107	**40**	3 19	4 01	34	22 52	28	24	69
8	299	10.6		15.6	68	08.3	95		−18	06.7	107	**35**	3 42	19	4 49	42	32	35	66
9	314	10.5		15.5	82	36.9	96		−17	55.9	108	**30**	4 01	34	5 01	34	35	8 45	63
10	329	10.4		15.3	97	05.6	97			45.0	109	**20**	30	4 59	23	20	39	9 02	58
11	344	10.2	+23	15.2	111	34.5	99		−17	34.1	109	**10 N**	4 52	5 19	5 42	22 08	43	9 16	54
12	359	10.1	+23	15.1	126	03.4	99		−17	23.0	111	**0**	5 11	5 37	6 00	21 56	48	9 30	50
13	14	10.0		15.0	140	32.5	101			11.9	111	**10 S**	28	5 54	17	45	51	43	46
14	29	09.9		14.8	155	01.7	102		−17	00.7	112	**20**	5 44	6 11	35	32	56	9 58	41
15	44	09.7		14.7	169	31.0	103		−16	49.4	113	**30**	6 00	30	6 56	18	61	10 14	37
16	59	09.6		14.6	184	00.4	104			38.1	113	**35**	09	41	7 09	10	63	23	34
17	74	09.5	+23	14.5	198	29.9	105		−16	26.7	114	**40**	6 18	6 52	7 23	21 00	67	10 34	31
18	89	09.4	+23	14.3	212	59.6	107		−16	15.2	115	**45**	6 29	7 06	7 39	20 49	71	10 46	28
19	104	09.2		14.2	227	29.3	107		−16	03.7	115	**50**	40	22	8 00	36	75	11 01	23
20	119	09.1		14.1	241	59.2	109		−15	52.0	117	**52**	45	29	10	29	78	08	21
21	134	09.0		13.9	256	29.1	109			40.4	116	**54**	51	37	21	22	81	16	18
22	149	08.8		13.8	270	59.2	111			28.6	118	**56**	6 57	46	33	14	84	25	15
23	164	08.7		13.7	285	29.4	112			16.8	118	**58**	7 04	7 56	8 48	20 05	87	35	11
24	179	08.6	+23	13.5	299	59.7	113		−15	04.9	119	**60 S**	7 11	8 08	9 05	19 55	91	11 46	8

UT	ARIES PMG 5h 33.m8		VENUS Mag: −3.8 PMG: 13h 50m				MARTE Mag: +1.8 PMG: 14h 26m				JÚPITER Mag: −2.7 PMG: 3h 52m				SATURNO Mag: +0.4 PMG: 2h 35m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	276	18.6	152	43.7	+21	29.5	143	21.4	+18	54.5	301	51.5	−11	39.4	321	05.7	−17	43.6
1	291	21.1	167	43.0		28.9	158	22.3		54.1	316	54.0		39.5	336	08.3		43.7
2	306	23.5	182	42.3		28.2	173	23.2		53.6	331	56.5		39.5	351	10.9		43.7
3	321	26.0	197	41.6		27.6	188	24.1		53.2	346	59.0		39.5	6	13.5		43.8
4	336	28.5	212	40.8		27.0	203	25.0		52.8	2	01.6		39.6	21	16.1		43.8
5	351	30.9	227	40.1	+21	26.3	218	25.9	+18	52.3	17	04.1	−11	39.6	36	18.7	−17	43.8
6	6	33.4	242	39.4	+21	25.7	233	26.8	+18	51.9	32	06.6	−11	39.6	51	21.3	−17	43.9
7	21	35.9	257	38.7		25.0	248	27.7		51.5	47	09.1		39.7	66	23.9		43.9
8	36	38.3	272	38.0		24.4	263	28.6		51.1	62	11.6		39.7	81	26.5		44.0
9	51	40.8	287	37.3		23.7	278	29.4		50.6	77	14.1		39.7	96	29.1		44.0
10	66	43.2	302	36.5		23.1	293	30.3		50.2	92	16.7		39.8	111	31.7		44.0
11	81	45.7	317	35.8	+21	22.5	308	31.2	+18	49.8	107	19.2	−11	39.8	126	34.3	−17	44.1
12	96	48.2	332	35.1	+21	21.8	323	32.1	+18	49.3	122	21.7	−11	39.8	141	36.9	−17	44.1
13	111	50.6	347	34.4		21.2	338	33.0		48.9	137	24.2		39.9	156	39.5		44.2
14	126	53.1	2	33.7		20.5	353	33.9		48.5	152	26.7		39.9	171	42.1		44.2
15	141	55.6	17	33.0		19.9	8	34.8		48.0	167	29.3		39.9	186	44.7		44.3
16	156	58.0	32	32.3		19.2	23	35.7		47.6	182	31.8		40.0	201	47.3		44.3
17	172	00.5	47	31.5	+21	18.6	38	36.6	+18	47.2	197	34.3	−11	40.0	216	49.9	−17	44.3
18	187	03.0	62	30.8	+21	17.9	53	37.5	+18	46.7	212	36.8	−11	40.0	231	52.4	−17	44.4
19	202	05.4	77	30.1		17.3	68	38.4		46.3	227	39.4		40.1	246	55.0		44.4
20	217	07.9	92	29.4		16.6	83	39.3		45.9	242	41.9		40.1	261	57.6		44.5
21	232	10.4	107	28.7		15.9	98	40.2		45.4	257	44.4		40.1	277	00.2		44.5
22	247	12.8	122	28.0		15.3	113	41.1		45.0	272	46.9		40.2	292	02.8		44.6
23	262	15.3	137	27.3		14.6	128	42.0		44.6	287	49.4		40.2	307	05.4		44.6
24	277	17.7	152	26.6	+21	14.0	143	42.9	+18	44.1	302	52.0	−11	40.2	322	08.0	−17	44.6
Dif	—			−7		−6		+9		−4		+25		0		+26		0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 18^{d}.5		PHE	4^{h}: 57′.3								
	PMG: 12^{h} 03^{m}.5				SD: 15′.6			12^{h}: 57′.0								
					PMG: 4^{h} 08^{m}			20^{h}: 56′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	08.6	+23	13.5	299	59.7	−15	04.9	**60 N**	21 26	23 06	** **	23 58	5	8 39	88
1	194	08.5		13.4	314	30.1 114	−14	53.0 119	**58**	21 06	22 20	** **	53	7	47	85
2	209	08.3		13.3	329	00.5 114		41.0 120	**56**	20 50	21 51	** **	48	10	8 54	82
3	224	08.2		13.1	343	31.1 116		29.0 120	**54**	36	30	23 11	43	13	9 01	79
4	239	08.1		13.0	358	01.8 117		16.9 121	**52**	24	21 12	22 29	39	15	07	76
5	254	08.0	+23	12.9	12	32.6 118	−14	04.8 121	**50**	20 13	20 57	22 02	23 35	17	9 12	74
6	269	07.8	+23	12.7	27	03.5 119	−13	52.6 122	**45**	19 51	20 28	21 17	23 27	21	9 23	70
7	284	07.7		12.6	41	34.5 120		40.3 123	**40**	33	20 06	20 47	20	25	33	65
8	299	07.6		12.4	56	05.6 121		28.0 123	**35**	18	19 48	24	14	28	41	61
9	314	07.5		12.3	70	36.8 122		15.7 123	**30**	19 05	33	20 06	23 09	31	9 48	59
10	329	07.3		12.2	85	08.1 123	−13	03.3 124	**20**	18 43	19 08	19 37	22 59	36	10 00	53
11	344	07.2	+23	12.0	99	39.5 124	−12	50.8 125	**10 N**	18 25	18 48	19 15	22 51	40	10 10	50
12	359	07.1	+23	11.9	114	10.9 124	−12	38.3 125	**0**	18 07	18 30	18 56	22 44	44	10 20	45
13	14	07.0		11.7	128	42.5 126		25.8 125	**10 S**	17 50	18 13	39	36	48	29	42
14	29	06.9		11.6	143	14.1 126		13.2 126	**20**	32	17 56	23	28	52	39	38
15	44	06.7		11.4	157	45.9 128	−12	00.6 126	**30**	17 11	37	18 07	19	57	51	32
16	59	06.6		11.3	172	17.7 128	−11	48.0 126	**35**	16 58	26	17 58	13	60	10 57	30
17	74	06.5	+23	11.1	186	49.6 129	−11	35.3 127	**40**	16 44	17 15	17 49	22 07	64	11 05	26
18	89	06.4	+23	11.0	201	21.7 131	−11	22.6 127	**45**	16 28	17 02	17 39	22 00	67	11 14	22
19	104	06.2		10.9	215	53.8 131	−11	09.8 128	**50**	16 07	16 46	27	21 51	72	24	18
20	119	06.1		10.7	230	25.9 131	−10	57.0 128	**52**	15 58	38	22	47	74	29	16
21	134	06.0		10.6	244	58.2 133		44.2 128	**54**	47	30	16	43	76	34	14
22	149	05.9		10.4	259	30.5 133		31.4 128	**56**	34	21	10	38	79	40	11
23	164	05.7		10.3	274	03.0 135		18.5 129	**58**	20	11	17 04	32	83	46	9
24	179	05.6	+23	10.1	288	35.5 135	−10	05.6 129	**60 S**	15 02	16 00	16 56	21 26	86	11 54	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +1.8			Mag: −2.7			Mag: +0.4		
	5^{h} 29^{m}.9		PMG: 13^{h} 51^{m}			PMG: 14^{h} 24^{m}			PMG: 3^{h} 48^{m}			PMG: 2^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	277	17.7	152	26.6	+21 14.0	143	42.9	+18 44.1	302	52.0	−11 40.2	322	08.0	−17 44.6
1	292	20.2	167	25.9	13.3	158	43.8	43.7	317	54.5	40.3	337	10.6	44.7
2	307	22.7	182	25.2	12.6	173	44.7	43.3	332	57.0	40.3	352	13.2	44.7
3	322	25.1	197	24.4	12.0	188	45.6	42.8	347	59.5	40.3	7	15.8	44.8
4	337	27.6	212	23.7	11.3	203	46.5	42.4	3	02.1	40.4	22	18.4	44.8
5	352	30.1	227	23.0	+21 10.7	218	47.3	+18 41.9	18	04.6	−11 40.4	37	21.0	−17 44.9
6	7	32.5	242	22.3	+21 10.0	233	48.2	+18 41.5	33	07.1	−11 40.4	52	23.6	−17 44.9
7	22	35.0	257	21.6	09.3	248	49.1	41.1	48	09.6	40.5	67	26.2	44.9
8	37	37.5	272	20.9	08.7	263	50.0	40.6	63	12.2	40.5	82	28.8	45.0
9	52	39.9	287	20.2	08.0	278	50.9	40.2	78	14.7	40.5	97	31.4	45.0
10	67	42.4	302	19.5	07.3	293	51.8	39.8	93	17.2	40.6	112	34.0	45.1
11	82	44.8	317	18.8	+21 06.6	308	52.7	+18 39.3	108	19.7	−11 40.6	127	36.6	−17 45.1
12	97	47.3	332	18.1	+21 06.0	323	53.6	+18 38.9	123	22.3	−11 40.7	142	39.2	−17 45.2
13	112	49.8	347	17.4	05.3	338	54.5	38.4	138	24.8	40.7	157	41.8	45.2
14	127	52.2	2	16.7	04.6	353	55.4	38.0	153	27.3	40.7	172	44.4	45.2
15	142	54.7	17	16.0	04.0	8	56.3	37.6	168	29.9	40.8	187	47.0	45.3
16	157	57.2	32	15.3	03.3	23	57.2	37.1	183	32.4	40.8	202	49.6	45.3
17	172	59.6	47	14.6	+21 02.6	38	58.1	+18 36.7	198	34.9	−11 40.8	217	52.2	−17 45.4
18	188	02.1	62	13.9	+21 01.9	53	59.0	+18 36.3	213	37.4	−11 40.9	232	54.8	−17 45.4
19	203	04.6	77	13.2	01.2	68	59.9	35.8	228	40.0	40.9	247	57.4	45.5
20	218	07.0	92	12.5	+21 00.6	84	00.8	35.4	243	42.5	41.0	263	00.0	45.5
21	233	09.5	107	11.8	+20 59.9	99	01.7	34.9	258	45.0	41.0	278	02.6	45.6
22	248	12.0	122	11.1	59.2	114	02.6	34.5	273	47.6	41.0	293	05.2	45.6
23	263	14.4	137	10.4	58.5	129	03.5	34.1	288	50.1	41.1	308	07.8	45.6
24	278	16.9	152	09.7	+20 57.8	144	04.4	+18 33.6	303	52.6	−11 41.1	323	10.4	−17 45.7
Dif	—			−7	−7		+9	−4		+25	0		+26	0

UT	SOL SD: 15′.7 PMG: 12h 03m.7				LUNA Edad: 19d.5 SD: 15′.4 PMG: 4h 55m PHE 4h: 56′.4 12h: 56′.1 20h: 55′.9 Rº: 43m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	05.6	+23	10.1	288	35.5	−10	05.6	**60 N**	** **	1 01	2 41	** **	**	10 07	84
1	194	05.5		10.0	303	08.1 136	−9	52.6 130	**58**	** **	1 47	3 01	** **	**	12	81
2	209	05.4		09.8	317	40.7 136		39.7 129	**56**	** **	2 16	18	23 58	9	16	78
3	224	05.2		09.6	332	13.4 137		26.7 130	**54**	0 56	38	32	56	11	20	75
4	239	05.1		09.5	346	46.3 139		13.6 131	**52**	1 39	2 55	44	54	13	23	73
5	254	05.0	+23	09.3	1	19.1 138	−9	00.6 130	**50**	2 06	3 10	3 54	23 52	15	10 26	71
6	269	04.9	+23	09.2	15	52.1 140	−8	47.5 131	**45**	2 50	3 39	4 17	23 48	20	10 33	66
7	284	04.8		09.0	30	25.1 140		34.4 131	**40**	3 20	4 02	34	45	23	38	62
8	299	04.6		08.9	44	58.2 141		21.3 131	**35**	3 43	20	4 49	42	26	42	59
9	314	04.5		08.7	59	31.4 142	−8	08.2 131	**30**	4 02	35	5 02	40	28	47	56
10	329	04.4		08.6	74	04.6 142	−7	55.0 132	**20**	30	4 59	24	35	34	10 53	52
11	344	04.3	+23	08.4	88	37.9 143	−7	41.9 131	**10 N**	4 53	5 20	5 43	23 31	38	11 00	46
12	359	04.1	+23	08.2	103	11.3 144	−7	28.7 132	**0**	5 11	5 38	6 00	23 28	42	11 05	43
13	14	04.0		08.1	117	44.8 145		15.5 132	**10 S**	28	5 54	17	24	46	11	39
14	29	03.9		07.9	132	18.3 145	−7	02.3 132	**20**	5 44	6 12	36	20	50	17	34
15	44	03.8		07.8	146	51.8 145	−6	49.0 133	**30**	6 00	30	6 57	16	55	23	30
16	59	03.7		07.6	161	25.4 146		35.8 132	**35**	09	41	7 09	13	58	27	27
17	74	03.5	+23	07.4	175	59.1 147	−6	22.5 133	**40**	6 18	6 52	7 23	23 11	61	11 31	24
18	89	03.4	+23	07.3	190	32.8 147	−6	09.3 132	**45**	6 28	7 06	7 39	23 07	65	11 36	21
19	104	03.3		07.1	205	06.6 148	−5	56.0 133	**50**	40	21	8 00	03	69	42	16
20	119	03.2		06.9	219	40.5 149		42.7 133	**52**	45	29	09	23 01	72	45	14
21	134	03.1		06.8	234	14.4 149		29.4 133	**54**	51	37	20	22 59	74	48	12
22	149	02.9		06.6	248	48.4 150		16.1 133	**56**	6 57	46	33	57	76	51	10
23	164	02.8		06.4	263	22.4 150	−5	02.8 133	**58**	7 03	7 56	8 47	55	79	55	7
24	179	02.7	+23	06.3	277	56.4 150	−4	49.5 133	**60 S**	7 11	8 07	9 04	22 52	82	11 59	4

UT	ARIES PMG 5h 26m.0		VENUS Mag: −3.8 PMG: 13h 52m			MARTE Mag: +1.8 PMG: 14h 23m			JÚPITER Mag: −2.7 PMG: 3h 44m			SATURNO Mag: +0.4 PMG: 2h 27m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	278	16.9	152	09.7	+20 57.8	144	04.4	+18 33.6	303	52.6	−11 41.1	323	10.4	−17 45.7
1	293	19.3	167	09.0	57.2	159	05.3	33.2	318	55.2	41.1	338	13.0	45.7
2	308	21.8	182	08.3	56.5	174	06.2	32.7	333	57.7	41.2	353	15.6	45.8
3	323	24.3	197	07.6	55.8	189	07.1	32.3	349	00.2	41.2	8	18.2	45.8
4	338	26.7	212	06.9	55.1	204	08.0	31.9	4	02.8	41.3	23	20.8	45.9
5	353	29.2	227	06.2	+20 54.4	219	08.9	+18 31.4	19	05.3	−11 41.3	38	23.4	−17 45.9
6	8	31.7	242	05.5	+20 53.7	234	09.8	+18 31.0	34	07.8	−11 41.3	53	26.0	−17 45.9
7	23	34.1	257	04.9	53.0	249	10.7	30.5	49	10.4	41.4	68	28.6	46.0
8	38	36.6	272	04.2	52.3	264	11.6	30.1	64	12.9	41.4	83	31.2	46.0
9	53	39.1	287	03.5	51.6	279	12.5	29.7	79	15.4	41.4	98	33.8	46.1
10	68	41.5	302	02.8	51.0	294	13.4	29.2	94	18.0	41.5	113	36.4	46.1
11	83	44.0	317	02.1	+20 50.3	309	14.3	+18 28.8	109	20.5	−11 41.5	128	39.0	−17 46.2
12	98	46.5	332	01.4	+20 49.6	324	15.2	+18 28.3	124	23.0	−11 41.6	143	41.6	−17 46.2
13	113	48.9	347	00.7	48.9	339	16.1	27.9	139	25.6	41.6	158	44.2	46.3
14	128	51.4	2	00.0	48.2	354	17.0	27.4	154	28.1	41.6	173	46.8	46.3
15	143	53.8	16	59.3	47.5	9	17.9	27.0	169	30.6	41.7	188	49.4	46.3
16	158	56.3	31	58.6	46.8	24	18.8	26.6	184	33.2	41.7	203	52.0	46.4
17	173	58.8	46	58.0	+20 46.1	39	19.7	+18 26.1	199	35.7	−11 41.8	218	54.6	−17 46.4
18	189	01.2	61	57.3	+20 45.4	54	20.6	+18 25.7	214	38.2	−11 41.8	233	57.2	−17 46.5
19	204	03.7	76	56.6	44.7	69	21.5	25.2	229	40.8	41.8	248	59.8	46.5
20	219	06.2	91	55.9	44.0	84	22.4	24.8	244	43.3	41.9	264	02.4	46.6
21	234	08.6	106	55.2	43.3	99	23.3	24.3	259	45.8	41.9	279	05.0	46.6
22	249	11.1	121	54.5	42.6	114	24.2	23.9	274	48.4	42.0	294	07.6	46.6
23	264	13.6	136	53.9	41.8	129	25.1	23.4	289	50.9	42.0	309	10.2	46.7
24	279	16.0	151	53.2	+20 41.1	144	26.0	+18 23.0	304	53.5	−11 42.0	324	12.8	−17 46.7
Dif	—			−7	−7		+9	−4		+25	0		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 03m.9				Edad: 20d.5 SD: 15′.2 PMG: 5h 38m		PHE 4h: 55′.6 12h: 55′.4 20h: 55′.2 Rº: 41m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	02.7	+23	06.3	277	56.4	−4	49.5	**60 N**	21 25	23 02	** **	0 03	3	11 31	82
1	194	02.6		06.1	292	30.5 151		36.2 133	**58**	21 05	22 18	** **	0 00	7	33	78
2	209	02.5		05.9	307	04.7 152		22.9 133	**56**	20 49	21 50	** **	** **	**	34	75
3	224	02.3		05.8	321	38.9 152	−4	09.5 134	**54**	35	29	23 07	** **	**	35	73
4	239	02.2		05.6	336	13.2 153	−3	56.2 133	**52**	23	21 11	22 27	** **	**	36	70
5	254	02.1	+23	05.4	350	47.4 152	−3	42.9 133	**50**	20 12	20 57	22 01	** **	**	11 37	68
6	269	02.0	+23	05.2	5	21.8 154	−3	29.5 134	**45**	19 50	20 27	21 17	** **	**	11 39	64
7	284	01.9		05.1	19	56.2 154		16.2 133	**40**	33	20 05	20 47	** **	**	40	60
8	299	01.7		04.9	34	30.6 154	−3	02.9 133	**35**	18	19 48	24	** **	**	41	58
9	314	01.6		04.7	49	05.1 155	−2	49.5 134	**30**	19 05	33	20 06	** **	**	43	54
10	329	01.5		04.6	63	39.6 155		36.2 133	**20**	18 44	19 08	19 37	** **	**	45	49
11	344	01.4	+23	04.4	78	14.1 155	−2	22.9 133	**10 N**	18 25	18 48	19 15	** **	**	11 46	46
12	359	01.3	+23	04.2	92	48.7 156	−2	09.6 133	**0**	18 08	18 30	18 56	** **	**	11 48	41
13	14	01.1		04.0	107	23.3 156	−1	56.2 134	**10 S**	17 50	18 13	39	** **	**	50	37
14	29	01.0		03.8	121	58.0 157		42.9 133	**20**	32	17 56	24	** **	**	51	33
15	44	00.9		03.7	136	32.6 156		29.6 133	**30**	17 11	38	18 07	** **	**	53	29
16	59	00.8		03.5	151	07.4 158		16.3 133	**35**	16 59	27	17 59	** **	**	54	26
17	74	00.7	+23	03.3	165	42.1 157	−1	03.0 133	**40**	16 45	17 16	17 50	** **	**	11 55	23
18	89	00.5	+23	03.1	180	16.9 158	−0	49.8 132	**45**	16 29	17 02	17 40	** **	**	11 57	19
19	104	00.4		02.9	194	51.7 158		36.5 133	**50**	16 09	16 47	28	** **	**	58	16
20	119	00.3		02.8	209	26.5 158		23.2 133	**52**	15 59	39	23	** **	**	11 59	13
21	134	00.2		02.6	224	01.4 159	−0	10.0 132	**54**	48	31	17	** **	**	12 00	11
22	149	00.1		02.4	238	36.3 159	+0	03.3 133	**56**	36	23	11	** **	**	01	9
23	163	59.9		02.2	253	11.2 159		16.5 132	**58**	21	13	17 05	** **	**	02	6
24	178	59.8	+23	02.0	267	46.1 159	+0	29.7 132	**60 S**	15 04	16 01	16 58	** **	**	12 03	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 5h 22m.1		Mag: −3.8 PMG: 13h 53m			Mag: +1.8 PMG: 14h 21m			Mag: −2.7 PMG: 3h 40m			Mag: +0.4 PMG: 2h 23m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	279	16.0	151	53.2	+20 41.1	144	26.0	+18 23.0	304	53.5	−11 42.0	324	12.8	−17 46.7
1	294	18.5	166	52.5	40.4	159	26.9	22.6	319	56.0	42.1	339	15.4	46.8
2	309	20.9	181	51.8	39.7	174	27.8	22.1	334	58.5	42.1	354	18.0	46.8
3	324	23.4	196	51.1	39.0	189	28.7	21.7	350	01.1	42.2	9	20.6	46.9
4	339	25.9	211	50.4	38.3	204	29.6	21.2	5	03.6	42.2	24	23.2	46.9
5	354	28.3	226	49.8	+20 37.6	219	30.5	+18 20.8	20	06.2	−11 42.2	39	25.8	−17 47.0
6	9	30.8	241	49.1	+20 36.9	234	31.4	+18 20.3	35	08.7	−11 42.3	54	28.4	−17 47.0
7	24	33.3	256	48.4	36.2	249	32.3	19.9	50	11.2	42.3	69	31.0	47.0
8	39	35.7	271	47.7	35.4	264	33.2	19.4	65	13.8	42.4	84	33.6	47.1
9	54	38.2	286	47.0	34.7	279	34.1	19.0	80	16.3	42.4	99	36.2	47.1
10	69	40.7	301	46.4	34.0	294	35.0	18.5	95	18.9	42.4	114	38.9	47.2
11	84	43.1	316	45.7	+20 33.3	309	35.9	+18 18.1	110	21.4	−11 42.5	129	41.5	−17 47.2
12	99	45.6	331	45.0	+20 32.6	324	36.8	+18 17.6	125	24.0	−11 42.5	144	44.1	−17 47.3
13	114	48.1	346	44.3	31.9	339	37.7	17.2	140	26.5	42.6	159	46.7	47.3
14	129	50.5	1	43.7	31.1	354	38.6	16.7	155	29.0	42.6	174	49.3	47.4
15	144	53.0	16	43.0	30.4	9	39.5	16.3	170	31.6	42.7	189	51.9	47.4
16	159	55.4	31	42.3	29.7	24	40.4	15.8	185	34.1	42.7	204	54.5	47.4
17	174	57.9	46	41.6	+20 29.0	39	41.3	+18 15.4	200	36.7	−11 42.7	219	57.1	−17 47.5
18	190	00.4	61	41.0	+20 28.2	54	42.2	+18 15.0	215	39.2	−11 42.8	234	59.7	−17 47.5
19	205	02.8	76	40.3	27.5	69	43.1	14.5	230	41.8	42.8	250	02.3	47.6
20	220	05.3	91	39.6	26.8	84	44.0	14.1	245	44.3	42.9	265	04.9	47.6
21	235	07.8	106	38.9	26.1	99	44.9	13.6	260	46.8	42.9	280	07.5	47.7
22	250	10.2	121	38.3	25.3	114	45.8	13.2	275	49.4	43.0	295	10.1	47.7
23	265	12.7	136	37.6	24.6	129	46.7	12.7	290	51.9	43.0	310	12.7	47.8
24	280	15.2	151	36.9	+20 23.9	144	47.6	+18 12.3	305	54.5	−11 43.0	325	15.3	−17 47.8
Dif	—			−7	−7		+9	−4		+25	0		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 21^{d}.5		PHE	4^{h}: 55′.0									
	PMG: 12^{h} 04^{m}.1				SD: 15′.0			12^{h}: 54′.8									
					PMG: 6^{h} 19^{m}			20^{h}: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	59.8	+23	02.0	267	46.1	+0	29.7		**60 N**	** **	1 06	2 43	0 06	4	12 53	80
1	193	59.7		01.8	282	21.0 159		42.9	132	**58**	** **	1 50	3 03	07	6	51	77
2	208	59.6		01.7	296	56.0 160	+0	56.1	132	**56**	** **	2 18	19	07	9	49	74
3	223	59.5		01.5	311	31.0 160	+1	09.3	132	**54**	1 01	40	33	07	11	48	71
4	238	59.4		01.3	326	06.0 160		22.4	131	**52**	1 41	2 57	45	07	13	46	70
5	253	59.2	+23	01.1	340	41.0 160	+1	35.6	132	**50**	2 08	3 12	3 56	0 07	15	12 45	68
6	268	59.1	+23	00.9	355	16.1 161	+1	48.7	131	**45**	2 52	3 41	4 18	0 08	19	12 43	63
7	283	59.0		00.7	9	51.1 160	+2	01.8	131	**40**	3 21	4 03	35	08	23	40	60
8	298	58.9		00.5	24	26.2 161		14.9	131	**35**	3 44	21	4 50	08	26	39	56
9	313	58.8		00.3	39	01.3 161		28.0	131	**30**	4 02	4 36	5 03	08	29	37	54
10	328	58.7	+23	00.1	53	36.4 161		41.1	131	**20**	31	5 00	25	09	33	34	49
11	343	58.5	+23	00.0	68	11.5 161	+2	54.1	130	**10 N**	4 53	5 20	5 43	0 09	37	12 32	44
12	358	58.4	+22	59.8	82	46.6 161	+3	07.1	130	**0**	5 12	5 38	6 00	0 10	41	12 29	41
13	13	58.3		59.6	97	21.7 161		20.1	130	**10 S**	29	5 55	18	10	45	27	37
14	28	58.2		59.4	111	56.9 162		33.1	130	**20**	5 44	6 12	36	10	49	24	34
15	43	58.1		59.2	126	32.0 161		46.0	129	**30**	6 00	30	6 57	11	54	22	28
16	58	58.0		59.0	141	07.2 162	+3	58.9	129	**35**	09	41	7 09	11	57	20	26
17	73	57.8	+22	58.8	155	42.3 161	+4	11.8	129	**40**	6 18	6 52	7 23	0 12	59	12 18	23
18	88	57.7	+22	58.6	170	17.5 162	+4	24.7	129	**45**	6 28	7 05	7 39	0 12	63	12 16	20
19	103	57.6		58.4	184	52.6 161		37.6	129	**50**	40	21	7 59	12	68	14	15
20	118	57.5		58.2	199	27.8 162	+4	50.4	128	**52**	45	28	8 09	13	70	12	14
21	133	57.4		58.0	214	02.9 161	+5	03.2	128	**54**	50	36	20	13	72	11	12
22	148	57.3		57.8	228	38.1 162		16.0	128	**56**	6 56	45	32	13	75	10	9
23	163	57.1		57.6	243	13.2 161		28.7	127	**58**	7 03	7 55	8 46	14	77	08	7
24	178	57.0	+22	57.4	257	48.4 162	+5	41.4	127	**60 S**	7 10	8 06	9 03	0 14	80	12 06	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.4		
	5^{h} 18^{m}.1		PMG: 13^{h} 54^{m}			PMG: 14^{h} 20^{m}			PMG: 3^{h} 36^{m}			PMG: 2^{h} 19^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	280	15.2	151	36.9	+20 23.9	144	47.6	+18 12.3	305	54.5	−11 43.0	325	15.3	−17 47.8
1	295	17.6	166	36.3	23.1	159	48.5	11.8	320	57.0	43.1	340	17.9	47.9
2	310	20.1	181	35.6	22.4	174	49.4	11.4	335	59.6	43.1	355	20.5	47.9
3	325	22.5	196	34.9	21.7	189	50.3	10.9	351	02.1	43.2	10	23.1	47.9
4	340	25.0	211	34.3	20.9	204	51.2	10.5	6	04.7	43.2	25	25.7	48.0
5	355	27.5	226	33.6	+20 20.2	219	52.1	+18 10.0	21	07.2	−11 43.3	40	28.3	−17 48.0
6	10	29.9	241	32.9	+20 19.5	234	53.0	+18 09.6	36	09.8	−11 43.3	55	31.0	−17 48.1
7	25	32.4	256	32.3	18.7	249	53.9	09.1	51	12.3	43.3	70	33.6	48.1
8	40	34.9	271	31.6	18.0	264	54.8	08.6	66	14.9	43.4	85	36.2	48.2
9	55	37.3	286	30.9	17.2	279	55.7	08.2	81	17.4	43.4	100	38.8	48.2
10	70	39.8	301	30.3	16.5	294	56.7	07.7	96	20.0	43.5	115	41.4	48.3
11	85	42.3	316	29.6	+20 15.8	309	57.6	+18 07.3	111	22.5	−11 43.5	130	44.0	−17 48.3
12	100	44.7	331	28.9	+20 15.0	324	58.5	+18 06.8	126	25.1	−11 43.6	145	46.6	−17 48.3
13	115	47.2	346	28.3	14.3	339	59.4	06.4	141	27.6	43.6	160	49.2	48.4
14	130	49.7	1	27.6	13.5	355	00.3	05.9	156	30.2	43.7	175	51.8	48.4
15	145	52.1	16	27.0	12.8	10	01.2	05.5	171	32.7	43.7	190	54.4	48.5
16	160	54.6	31	26.3	12.0	25	02.1	05.0	186	35.3	43.7	205	57.0	48.5
17	175	57.0	46	25.6	+20 11.3	40	03.0	+18 04.6	201	37.8	−11 43.8	220	59.6	−17 48.6
18	190	59.5	61	25.0	+20 10.5	55	03.9	+18 04.1	216	40.4	−11 43.8	236	02.2	−17 48.6
19	206	02.0	76	24.3	09.8	70	04.8	03.7	231	42.9	43.9	251	04.8	48.7
20	221	04.4	91	23.7	09.0	85	05.7	03.2	246	45.5	43.9	266	07.4	48.7
21	236	06.9	106	23.0	08.3	100	06.6	02.8	261	48.0	44.0	281	10.1	48.8
22	251	09.4	121	22.3	07.5	115	07.5	02.3	276	50.6	44.0	296	12.7	48.8
23	266	11.8	136	21.7	06.8	130	08.4	01.8	291	53.1	44.1	311	15.3	48.8
24	281	14.3	151	21.0	+20 06.0	145	09.3	+18 01.4	306	55.7	−11 44.1	326	17.9	−17 48.9
Dif	—			−7	−7		+9	−5		+26	0		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7		Edad: 22ᵈ.5		PHE	4ʰ: 54′.5								
	PMG: 12ʰ 04ᵐ.3		SD: 14′.9			12ʰ: 54′.4								
			PMG: 7ʰ 00ᵐ			20ʰ: 54′.3								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	178 57.0	+22 57.4	257 48.4		+5 41.4		**60 N**	21 23	22 57	** **	0 10	4	14 13	80
1	193 56.9	57.2	272 23.5	161	+5 54.1	127	**58**	21 04	22 16	** **	13	7	08	77
2	208 56.8	57.0	286 58.6	161	+6 06.8	127	**56**	20 48	21 48	** **	16	9	14 03	75
3	223 56.7	56.8	301 33.8	162	19.4	126	**54**	34	27	23 03	18	12	13 59	72
4	238 56.6	56.6	316 08.9	161	32.0	126	**52**	22	21 10	22 25	20	14	56	69
5	253 56.5	+22 56.4	330 44.0	161	+6 44.6	126	**50**	20 12	20 56	21 59	0 22	16	13 53	67
6	268 56.3	+22 56.2	345 19.1	161	+6 57.1	125	**45**	19 50	20 27	21 16	0 27	20	13 46	63
7	283 56.2	56.0	359 54.2	161	+7 09.6	125	**40**	32	20 05	20 46	31	23	40	59
8	298 56.1	55.8	14 29.3	161	22.1	125	**35**	18	19 47	24	34	26	35	56
9	313 56.0	55.5	29 04.4	161	34.5	124	**30**	19 05	32	20 05	37	29	31	53
10	328 55.9	55.3	43 39.5	161	46.9	124	**20**	18 44	19 08	19 37	42	33	23	49
11	343 55.8	+22 55.1	58 14.5	160	+7 59.3	124	**10 N**	18 25	18 48	19 15	0 46	38	13 16	46
12	358 55.7	+22 54.9	72 49.5	160	+8 11.6	123	**0**	18 08	18 30	18 57	0 51	41	13 10	42
13	13 55.5	54.7	87 24.5	160	23.9	123	**10 S**	17 51	18 14	40	55	45	13 04	38
14	28 55.4	54.5	101 59.5	160	36.2	123	**20**	33	17 57	24	0 59	49	12 58	34
15	43 55.3	54.3	116 34.5	160	+8 48.4	122	**30**	12	38	08	1 05	53	50	30
16	58 55.2	54.1	131 09.5	160	+9 00.6	122	**35**	17 00	28	18 00	08	56	46	27
17	73 55.1	+22 53.9	145 44.4	159	+9 12.7	121	**40**	16 46	17 17	17 51	1 11	60	12 41	24
18	88 55.0	+22 53.6	160 19.3	159	+9 24.8	121	**45**	16 30	17 04	17 41	1 15	63	12 36	20
19	103 54.9	53.4	174 54.2	159	36.9	121	**50**	10	16 48	29	20	68	29	17
20	118 54.7	53.2	189 29.1	159	+9 48.9	120	**52**	16 00	41	24	23	69	26	15
21	133 54.6	53.0	204 04.0	159	+10 00.9	120	**54**	15 50	33	19	25	72	23	12
22	148 54.5	52.8	218 38.8	158	12.8	119	**56**	37	24	13	28	74	19	10
23	163 54.4	52.6	233 13.6	158	24.7	119	**58**	23	14	17 06	31	77	15	7
24	178 54.3	+22 52.3	247 48.4	158	+10 36.5	118	**60 S**	15 07	16 03	16 59	1 34	81	12 10	5

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.8		Mag: −2.7		Mag: +0.4	
	5ʰ 14ᵐ.2	PMG: 13ʰ 55ᵐ		PMG: 14ʰ 19ᵐ		PMG: 3ʰ 32ᵐ		PMG: 2ʰ 14ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	281 14.3	151 21.0	+20 06.0	145 09.3	+18 01.4	306 55.7	−11 44.1	326 17.9	−17 48.9
1	296 16.8	166 20.4	05.3	160 10.2	00.9	321 58.2	44.2	341 20.5	48.9
2	311 19.2	181 19.7	04.5	175 11.1	+18 00.5	337 00.8	44.2	356 23.1	49.0
3	326 21.7	196 19.1	03.8	190 12.0	+18 00.0	352 03.4	44.2	11 25.7	49.0
4	341 24.2	211 18.4	03.0	205 12.9	+17 59.6	7 05.9	44.3	26 28.3	49.1
5	356 26.6	226 17.7	+20 02.3	220 13.8	+17 59.1	22 08.5	−11 44.3	41 30.9	−17 49.1
6	11 29.1	241 17.1	+20 01.5	235 14.8	+17 58.7	37 11.0	−11 44.4	56 33.5	−17 49.2
7	26 31.5	256 16.4	+20 00.7	250 15.7	58.2	52 13.6	44.4	71 36.1	49.2
8	41 34.0	271 15.8	+20 00.0	265 16.6	57.7	67 16.1	44.5	86 38.8	49.3
9	56 36.5	286 15.1	+19 59.2	280 17.5	57.3	82 18.7	44.5	101 41.4	49.3
10	71 38.9	301 14.5	58.4	295 18.4	56.8	97 21.2	44.6	116 44.0	49.4
11	86 41.4	316 13.8	+19 57.7	310 19.3	+17 56.4	112 23.8	−11 44.6	131 46.6	−17 49.4
12	101 43.9	331 13.2	+19 56.9	325 20.2	+17 55.9	127 26.4	−11 44.7	146 49.2	−17 49.4
13	116 46.3	346 12.5	56.2	340 21.1	55.5	142 28.9	44.7	161 51.8	49.5
14	131 48.8	1 11.9	55.4	355 22.0	55.0	157 31.5	44.8	176 54.4	49.5
15	146 51.3	16 11.2	54.6	10 22.9	54.5	172 34.0	44.8	191 57.0	49.6
16	161 53.7	31 10.6	53.8	25 23.8	54.1	187 36.6	44.9	206 59.6	49.6
17	176 56.2	46 09.9	+19 53.1	40 24.7	+17 53.6	202 39.2	−11 44.9	222 02.2	−17 49.7
18	191 58.6	61 09.3	+19 52.3	55 25.6	+17 53.2	217 41.7	−11 44.9	237 04.8	−17 49.7
19	207 01.1	76 08.7	51.5	70 26.5	52.7	232 44.3	45.0	252 07.5	49.8
20	222 03.6	91 08.0	50.8	85 27.5	52.3	247 46.8	45.0	267 10.1	49.8
21	237 06.0	106 07.4	50.0	100 28.4	51.8	262 49.4	45.1	282 12.7	49.9
22	252 08.5	121 06.7	49.2	115 29.3	51.3	277 52.0	45.1	297 15.3	49.9
23	267 11.0	136 06.1	48.4	130 30.2	50.9	292 54.5	45.2	312 17.9	49.9
24	282 13.4	151 05.4	+19 47.7	145 31.1	+17 50.4	307 57.1	−11 45.2	327 20.5	−17 50.0
Dif	—	−6	−8	+9	−5	+26	0	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 23ᵈ.5		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 04ᵐ.5				SD: 14′.8			12ʰ: 54′.2									
					PMG: 7ʰ 42ᵐ			20ʰ: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	54.3	+22	52.3	247	48.4	+10	36.5		**60 N**	** **	1 12	2 46	0 14	5	15 33	82
1	193	54.2		52.1	262	23.1 157	+10	48.3 118		**58**	** **	1 53	3 05	20	8	25	78
2	208	54.1		51.9	276	57.9 158	+11	00.1 118		**56**	** **	2 21	21	25	12	18	75
3	223	54.0		51.7	291	32.6 157		11.8 117		**54**	1 06	42	35	30	14	11	72
4	238	53.8		51.5	306	07.2 156		23.5 117		**52**	1 44	2 59	47	34	16	05	70
5	253	53.7	+22	51.2	320	41.8 156	+11	35.1 116		**50**	2 10	3 13	3 57	0 38	18	15 00	68
6	268	53.6	+22	51.0	335	16.4 156	+11	46.7 116		**45**	2 53	3 42	4 19	0 47	22	14 49	63
7	283	53.5		50.8	349	51.0 156	+11	58.2 115		**40**	3 23	4 04	36	0 54	25	39	60
8	298	53.4		50.6	4	25.6 156	+12	09.7 115		**35**	3 45	22	4 51	1 00	28	31	57
9	313	53.3		50.4	19	00.1 155		21.1 114		**30**	4 03	4 36	5 04	06	30	24	55
10	328	53.2		50.1	33	34.5 154		32.5 114		**20**	32	5 01	25	15	35	12	51
11	343	53.1	+22	49.9	48	09.0 155	+12	43.8 113		**10 N**	4 54	5 21	5 44	1 24	39	14 02	46
12	358	53.0	+22	49.7	62	43.4 154	+12	55.1 113		**0**	5 12	5 38	6 01	1 32	42	13 52	43
13	13	52.8		49.5	77	17.7 153	+13	06.3 112		**10 S**	29	5 55	18	40	46	42	40
14	28	52.7		49.2	91	52.0 153		17.5 112		**20**	5 45	6 12	36	48	50	32	36
15	43	52.6		49.0	106	26.3 153		28.6 111		**30**	6 00	30	6 56	1 58	54	20	32
16	58	52.5		48.8	121	00.6 153		39.7 111		**35**	09	40	7 08	2 04	57	13	30
17	73	52.4	+22	48.5	135	34.8 152	+13	50.7 110		**40**	6 18	6 52	7 22	2 11	59	13 05	27
18	88	52.3	+22	48.3	150	08.9 151	+14	01.6 109		**45**	6 28	7 05	7 38	2 18	63	12 56	24
19	103	52.2		48.1	164	43.0 151		12.5 109		**50**	39	20	7 59	28	67	46	19
20	118	52.1		47.8	179	17.1 151		23.4 109		**52**	44	28	8 08	32	70	41	17
21	133	52.0		47.6	193	51.1 150		34.2 108		**54**	50	35	19	37	72	35	15
22	148	51.9		47.4	208	25.1 150		44.9 107		**56**	6 56	44	31	42	75	29	13
23	163	51.7		47.1	222	59.1 150	+14	55.5 106		**58**	7 02	7 54	8 45	48	78	22	10
24	178	51.6	+22	46.9	237	33.0 149	+15	06.1 106		**60 S**	7 09	8 05	9 01	2 55	81	12 15	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.4		
	5ʰ 10ᵐ.3		PMG: 13ʰ 56ᵐ			PMG: 14ʰ 17ᵐ			PMG: 3ʰ 28ᵐ			PMG: 2ʰ 10ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	282	13.4	151	05.4	+19 47.7	145	31.1	+17 50.4	307	57.1	−11 45.2	327	20.5	−17 50.0
1	297	15.9	166	04.8	46.9	160	32.0	50.0	322	59.6	45.3	342	23.1	50.0
2	312	18.4	181	04.1	46.1	175	32.9	49.5	338	02.2	45.3	357	25.7	50.1
3	327	20.8	196	03.5	45.3	190	33.8	49.0	353	04.8	45.4	12	28.3	50.1
4	342	23.3	211	02.9	44.5	205	34.7	48.6	8	07.3	45.4	27	31.0	50.2
5	357	25.8	226	02.2	+19 43.8	220	35.6	+17 48.1	23	09.9	−11 45.5	42	33.6	−17 50.2
6	12	28.2	241	01.6	+19 43.0	235	36.5	+17 47.7	38	12.4	−11 45.5	57	36.2	−17 50.3
7	27	30.7	256	00.9	42.2	250	37.4	47.2	53	15.0	45.6	72	38.8	50.3
8	42	33.1	271	00.3	41.4	265	38.4	46.7	68	17.6	45.6	87	41.4	50.4
9	57	35.6	285	59.7	40.6	280	39.3	46.3	83	20.1	45.7	102	44.0	50.4
10	72	38.1	300	59.0	39.8	295	40.2	45.8	98	22.7	45.7	117	46.6	50.5
11	87	40.5	315	58.4	+19 39.1	310	41.1	+17 45.3	113	25.3	−11 45.8	132	49.2	−17 50.5
12	102	43.0	330	57.8	+19 38.3	325	42.0	+17 44.9	128	27.8	−11 45.8	147	51.8	−17 50.6
13	117	45.5	345	57.1	37.5	340	42.9	44.4	143	30.4	45.9	162	54.5	50.6
14	132	47.9	0	56.5	36.7	355	43.8	44.0	158	33.0	45.9	177	57.1	50.6
15	147	50.4	15	55.9	35.9	10	44.7	43.5	173	35.5	46.0	192	59.7	50.7
16	162	52.9	30	55.2	35.1	25	45.6	43.0	188	38.1	46.0	208	02.3	50.7
17	177	55.3	45	54.6	+19 34.3	40	46.5	+17 42.6	203	40.7	−11 46.1	223	04.9	−17 50.8
18	192	57.8	60	54.0	+19 33.5	55	47.4	+17 42.1	218	43.2	−11 46.1	238	07.5	−17 50.8
19	208	00.3	75	53.3	32.7	70	48.4	41.6	233	45.8	46.2	253	10.1	50.9
20	223	02.7	90	52.7	31.9	85	49.3	41.2	248	48.4	46.2	268	12.7	50.9
21	238	05.2	105	52.1	31.1	100	50.2	40.7	263	50.9	46.3	283	15.4	51.0
22	253	07.6	120	51.4	30.3	115	51.1	40.2	278	53.5	46.3	298	18.0	51.0
23	268	10.1	135	50.8	29.5	130	52.0	39.8	293	56.1	46.4	313	20.6	51.1
24	283	12.6	150	50.2	+19 28.7	145	52.9	+17 39.3	308	58.6	−11 46.4	328	23.2	−17 51.1
Dif	—			−6	−8		+9	−5		+26	0		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7		Edad: 24ᵈ.5		PHE	4ʰ: 54′.1								
	PMG: 12ʰ 04ᵐ.6		SD: 14′.7			12ʰ: 54′.1								
			PMG: 8ʰ 25ᵐ			20ʰ: 54′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	178 51.6	+22 46.9	237 33.0		+15 06.1		**60 N**	21 21	22 52	** **	0 19	8	16 55	83
1	193 51.5	46.7	252 06.8	148	16.7	106	**58**	21 02	22 13	** **	28	12	43	78
2	208 51.4	46.4	266 40.6	148	27.2	105	**56**	20 46	21 46	** **	37	14	33	74
3	223 51.3	46.2	281 14.4	148	37.6	104	**54**	33	26	22 59	44	17	23	72
4	238 51.2	46.0	295 48.1	147	48.0	104	**52**	21	21 09	22 22	50	20	15	70
5	253 51.1	+22 45.7	310 21.8	147	+15 58.2	102	**50**	20 11	20 54	21 57	0 56	21	16 08	67
6	268 51.0	+22 45.5	324 55.4	146	+16 08.5	103	**45**	19 49	20 26	21 15	1 09	25	15 52	63
7	283 50.9	45.2	339 29.0	146	18.6	101	**40**	32	20 04	20 45	19	29	39	60
8	298 50.8	45.0	354 02.5	145	28.7	101	**35**	17	19 47	23	28	32	28	58
9	313 50.7	44.8	8 35.9	144	38.8	101	**30**	19 05	32	20 05	36	34	19	55
10	328 50.6	44.5	23 09.4	145	48.7	99	**20**	18 44	19 08	19 37	1 50	38	15 03	51
11	343 50.5	+22 44.3	37 42.7	143	+16 58.6	99	**10 N**	18 25	18 48	19 15	2 03	41	14 48	49
12	358 50.3	+22 44.0	52 16.0	143	+17 08.5	99	**0**	18 08	18 31	18 57	2 14	44	14 35	46
13	13 50.2	43.8	66 49.3	143	18.2	97	**10 S**	17 51	18 14	40	26	47	22	43
14	28 50.1	43.6	81 22.5	142	27.9	97	**20**	34	17 57	25	38	51	14 08	39
15	43 50.0	43.3	95 55.6	141	37.5	96	**30**	13	39	09	2 52	55	13 52	36
16	58 49.9	43.1	110 28.7	141	47.1	96	**35**	17 01	29	18 01	3 01	57	43	33
17	73 49.8	+22 42.8	125 01.8	141	+17 56.6	95	**40**	16 47	17 18	17 52	3 10	60	13 32	31
18	88 49.7	+22 42.6	139 34.7	139	+18 06.0	94	**45**	16 31	17 05	17 42	3 21	64	13 20	28
19	103 49.6	42.3	154 07.7	140	15.3	93	**50**	11	16 49	31	35	68	13 05	24
20	118 49.5	42.1	168 40.5	138	24.6	93	**52**	16 02	42	26	42	69	12 58	22
21	133 49.4	41.8	183 13.4	139	33.7	91	**54**	15 51	34	20	49	72	50	20
22	148 49.3	41.6	197 46.1	137	42.8	91	**56**	39	26	14	3 57	75	42	16
23	163 49.2	41.3	212 18.8	137	+18 51.9	91	**58**	25	16	08	4 06	78	32	14
24	178 49.1	+22 41.1	226 51.4	136	+19 00.8	89	**60 S**	15 09	16 05	17 01	4 16	83	12 21	9

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +1.8		Mag: −2.7		Mag: +0.4	
	5ʰ 06ᵐ.3	PMG: 13ʰ 57ᵐ		PMG: 14ʰ 16ᵐ		PMG: 3ʰ 24ᵐ		PMG: 2ʰ 06ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	283 12.6	150 50.2	+19 28.7	145 52.9	+17 39.3	308 58.6	−11 46.4	328 23.2	−17 51.1
1	298 15.0	165 49.5	27.9	160 53.8	38.9	324 01.2	46.5	343 25.8	51.2
2	313 17.5	180 48.9	27.1	175 54.7	38.4	339 03.8	46.5	358 28.4	51.2
3	328 20.0	195 48.3	26.3	190 55.6	37.9	354 06.3	46.6	13 31.0	51.3
4	343 22.4	210 47.7	25.5	205 56.5	37.5	9 08.9	46.6	28 33.7	51.3
5	358 24.9	225 47.0	+19 24.7	220 57.5	+17 37.0	24 11.5	−11 46.7	43 36.3	−17 51.3
6	13 27.4	240 46.4	+19 23.9	235 58.4	+17 36.5	39 14.1	−11 46.7	58 38.9	−17 51.4
7	28 29.8	255 45.8	23.1	250 59.3	36.1	54 16.6	46.8	73 41.5	51.4
8	43 32.3	270 45.1	22.3	266 00.2	35.6	69 19.2	46.9	88 44.1	51.5
9	58 34.8	285 44.5	21.5	281 01.1	35.1	84 21.8	46.9	103 46.7	51.5
10	73 37.2	300 43.9	20.7	296 02.0	34.7	99 24.3	47.0	118 49.3	51.6
11	88 39.7	315 43.3	+19 19.9	311 02.9	+17 34.2	114 26.9	−11 47.0	133 52.0	−17 51.6
12	103 42.1	330 42.7	+19 19.1	326 03.8	+17 33.7	129 29.5	−11 47.1	148 54.6	−17 51.7
13	118 44.6	345 42.0	18.3	341 04.7	33.3	144 32.1	47.1	163 57.2	51.7
14	133 47.1	0 41.4	17.5	356 05.7	32.8	159 34.6	47.2	178 59.8	51.8
15	148 49.5	15 40.8	16.7	11 06.6	32.3	174 37.2	47.2	194 02.4	51.8
16	163 52.0	30 40.2	15.8	26 07.5	31.9	189 39.8	47.3	209 05.0	51.9
17	178 54.5	45 39.5	+19 15.0	41 08.4	+17 31.4	204 42.4	−11 47.3	224 07.6	−17 51.9
18	193 56.9	60 38.9	+19 14.2	56 09.3	+17 30.9	219 44.9	−11 47.4	239 10.3	−17 52.0
19	208 59.4	75 38.3	13.4	71 10.2	30.5	234 47.5	47.4	254 12.9	52.0
20	224 01.9	90 37.7	12.6	86 11.1	30.0	249 50.1	47.5	269 15.5	52.1
21	239 04.3	105 37.1	11.8	101 12.0	29.5	264 52.6	47.5	284 18.1	52.1
22	254 06.8	120 36.5	10.9	116 13.0	29.0	279 55.2	47.6	299 20.7	52.1
23	269 09.2	135 35.8	10.1	131 13.9	28.6	294 57.8	47.7	314 23.3	52.2
24	284 11.7	150 35.2	+19 09.3	146 14.8	+17 28.1	310 00.4	−11 47.7	329 26.0	−17 52.2
Dif	—	−6	−8		+9 −5		+26 −1		+26 0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 25^{d}.5		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 04^{m}.8				SD: 14′.7			12^{h}: 54′.1									
					PMG: 9^{h} 09^{m}			20^{h}: 54′.2									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	178	49.1	+22	41.1	226	51.4	+19	00.8		**60 N**	** **	1 17	2 49	0 27	12	18 18	79
1	193	49.0		40.8	241	24.0 136		09.7	89	**58**	** **	1 57	3 08	40	16	18 01	75
2	208	48.9		40.6	255	56.6 136		18.5	88	**56**	** **	2 24	23	0 51	20	17 47	72
3	223	48.8		40.3	270	29.0 134		27.2	87	**54**	1 11	2 44	37	1 01	22	35	70
4	238	48.6		40.1	285	01.4 134		35.8	86	**52**	1 48	3 01	48	10	24	25	67
5	253	48.5	+22	39.8	299	33.8 134	+19	44.4	86	**50**	2 13	3 15	3 59	1 17	27	17 15	66
6	268	48.4	+22	39.6	314	06.1 133	+19	52.8	84	**45**	2 55	3 44	4 20	1 34	31	16 55	62
7	283	48.3		39.3	328	38.3 132	+20	01.2	84	**40**	3 24	4 05	38	1 48	34	39	60
8	298	48.2		39.0	343	10.4 131		09.5	83	**35**	3 46	23	4 52	2 00	36	26	57
9	313	48.1		38.8	357	42.6 132		17.7	82	**30**	4 04	4 37	5 05	10	38	16 14	56
10	328	48.0		38.5	12	14.6 130		25.8	81	**20**	33	5 02	26	28	41	15 54	53
11	343	47.9	+22	38.3	26	46.6 130	+20	33.9	81	**10 N**	4 54	5 21	5 44	2 44	44	15 37	50
12	358	47.8	+22	38.0	41	18.5 129	+20	41.8	79	**0**	5 13	5 39	6 01	2 58	47	15 21	48
13	13	47.7		37.7	55	50.4 129		49.7	79	**10 S**	29	5 55	18	3 13	50	15 05	45
14	28	47.6		37.5	70	22.2 128	+20	57.5	78	**20**	5 45	6 12	36	29	52	14 47	44
15	43	47.5		37.2	84	53.9 127	+21	05.2	77	**30**	6 00	30	6 56	47	56	28	40
16	58	47.4		37.0	99	25.6 127		12.8	76	**35**	09	40	7 08	3 58	58	16	39
17	73	47.3	+22	36.7	113	57.2 126	+21	20.3	75	**40**	6 18	6 51	7 22	4 10	60	14 03	36
18	88	47.2	+22	36.4	128	28.8 126	+21	27.7	74	**45**	6 27	7 04	7 38	4 25	63	13 48	33
19	103	47.1		36.2	143	00.2 124		35.0	73	**50**	39	20	7 58	43	67	29	30
20	118	47.0		35.9	157	31.7 125		42.2	72	**52**	44	27	8 07	4 51	69	20	28
21	133	46.9		35.6	172	03.0 123		49.4	72	**54**	49	35	18	5 01	71	13 10	26
22	148	46.8		35.4	186	34.4 124	+21	56.4	70	**56**	6 55	43	30	12	74	12 58	24
23	163	46.7		35.1	201	05.6 122	+22	03.3	69	**58**	7 01	7 53	8 43	24	78	46	20
24	178	46.6	+22	34.8	215	36.8 122	+22	10.2	69	**60 S**	7 08	8 04	9 00	5 39	82	12 30	16

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.3		
	5^{h} 02^{m}.4		PMG: 13^{h} 58^{m}			PMG: 14^{h} 14^{m}			PMG: 3^{h} 19^{m}			PMG: 2^{h} 02^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	284	11.7	150	35.2	+19 09.3	146	14.8	+17 28.1	310	00.4	−11 47.7	329	26.0	−17 52.2
1	299	14.2	165	34.6	08.5	161	15.7	27.6	325	03.0	47.8	344	28.6	52.3
2	314	16.6	180	34.0	07.7	176	16.6	27.2	340	05.5	47.8	359	31.2	52.3
3	329	19.1	195	33.4	06.8	191	17.5	26.7	355	08.1	47.9	14	33.8	52.4
4	344	21.6	210	32.8	06.0	206	18.4	26.2	10	10.7	47.9	29	36.4	52.4
5	359	24.0	225	32.2	+19 05.2	221	19.4	+17 25.8	25	13.3	−11 48.0	44	39.0	−17 52.5
6	14	26.5	240	31.5	+19 04.4	236	20.3	+17 25.3	40	15.8	−11 48.0	59	41.7	−17 52.5
7	29	29.0	255	30.9	03.5	251	21.2	24.8	55	18.4	48.1	74	44.3	52.6
8	44	31.4	270	30.3	02.7	266	22.1	24.3	70	21.0	48.1	89	46.9	52.6
9	59	33.9	285	29.7	01.9	281	23.0	23.9	85	23.6	48.2	104	49.5	52.7
10	74	36.4	300	29.1	01.1	296	23.9	23.4	100	26.2	48.3	119	52.1	52.7
11	89	38.8	315	28.5	+19 00.2	311	24.8	+17 22.9	115	28.7	−11 48.3	134	54.7	−17 52.8
12	104	41.3	330	27.9	+18 59.4	326	25.7	+17 22.5	130	31.3	−11 48.4	149	57.4	−17 52.8
13	119	43.7	345	27.3	58.6	341	26.7	22.0	145	33.9	48.4	165	00.0	52.9
14	134	46.2	0	26.7	57.7	356	27.6	21.5	160	36.5	48.5	180	02.6	52.9
15	149	48.7	15	26.1	56.9	11	28.5	21.0	175	39.1	48.5	195	05.2	53.0
16	164	51.1	30	25.4	56.1	26	29.4	20.6	190	41.6	48.6	210	07.8	53.0
17	179	53.6	45	24.8	+18 55.2	41	30.3	+17 20.1	205	44.2	−11 48.6	225	10.4	−17 53.1
18	194	56.1	60	24.2	+18 54.4	56	31.2	+17 19.6	220	46.8	−11 48.7	240	13.1	−17 53.1
19	209	58.5	75	23.6	53.6	71	32.1	19.1	235	49.4	48.8	255	15.7	53.1
20	225	01.0	90	23.0	52.7	86	33.1	18.7	250	52.0	48.8	270	18.3	53.2
21	240	03.5	105	22.4	51.9	101	34.0	18.2	265	54.5	48.9	285	20.9	53.2
22	255	05.9	120	21.8	51.0	116	34.9	17.7	280	57.1	48.9	300	23.5	53.3
23	270	08.4	135	21.2	50.2	131	35.8	17.3	295	59.7	49.0	315	26.1	53.3
24	285	10.9	150	20.6	+18 49.4	146	36.7	+17 16.8	311	02.3	−11 49.0	330	28.8	−17 53.4
Dif	—			−6	−8		+9	−5		+26	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 26ᵈ.5		PHE	4ʰ: 54′.3									
	PMG: 12ʰ 05ᵐ.0				SD: 14′.8			12ʰ: 54′.3									
					PMG: 9ʰ 57ᵐ			20ʰ: 54′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	46.6	+22	34.8	215	36.8	+22	10.2		**60 N**	21 19	22 47	** **	0 39	21	19 37	71
1	193	46.5		34.6	230	07.9 121		16.9	67	**58**	21 00	22 10	** **	0 56	26	19 16	67
2	208	46.4		34.3	244	39.0 121		23.6	67	**56**	20 45	21 44	** **	1 11	28	18 59	65
3	223	46.3		34.0	259	10.0 120		30.1	65	**54**	32	24	22 54	23	31	45	63
4	238	46.2		33.8	273	40.9 119		36.6	65	**52**	20	21 07	22 19	34	33	32	62
5	253	46.1	+22	33.5	288	11.8 119	+22	42.9	63	**50**	20 10	20 53	21 55	1 44	34	18 21	60
6	268	46.0	+22	33.2	302	42.6 118	+22	49.2	63	**45**	19 48	20 25	21 13	2 05	37	17 57	59
7	283	45.9		33.0	317	13.4 118	+22	55.3	61	**40**	31	20 04	20 45	22	39	39	57
8	298	45.8		32.7	331	44.1 117	+23	01.4	61	**35**	17	19 46	23	36	41	23	56
9	313	45.7		32.4	346	14.7 116		07.3	59	**30**	19 05	32	20 05	2 48	43	17 10	55
10	328	45.6		32.1	0	45.3 116		13.1	58	**20**	18 44	19 08	19 37	3 09	46	16 47	53
11	343	45.5	+22	31.9	15	15.8 115	+23	18.9	58	**10 N**	18 25	18 48	19 15	3 28	47	16 27	52
12	358	45.4	+22	31.6	29	46.3 115	+23	24.5	56	**0**	18 09	18 31	18 57	3 45	50	16 09	50
13	13	45.3		31.3	44	16.7 114		30.0	55	**10 S**	17 52	18 15	41	4 03	51	15 50	49
14	28	45.2		31.0	58	47.0 113		35.4	54	**20**	34	17 58	25	21	54	31	47
15	43	45.1		30.8	73	17.3 113		40.7	53	**30**	14	40	10	43	56	15 08	46
16	58	45.0		30.5	87	47.6 113		45.9	52	**35**	17 02	30	18 02	4 56	57	14 55	44
17	73	44.9	+22	30.2	102	17.7 111	+23	51.0	51	**40**	16 49	17 19	17 53	5 10	59	14 39	43
18	88	44.8	+22	29.9	116	47.9 112	+23	56.0	50	**45**	16 33	17 06	17 43	5 28	61	14 21	41
19	103	44.7		29.6	131	17.9 110	+24	00.8	48	**50**	13	16 51	32	5 50	63	13 59	38
20	118	44.6		29.4	145	47.9 110		05.6	48	**52**	16 04	44	27	6 00	65	48	37
21	133	44.5		29.1	160	17.9 110		10.2	46	**54**	15 53	36	22	12	67	36	35
22	148	44.4		28.8	174	47.8 109		14.7	45	**56**	41	28	16	26	69	22	33
23	163	44.3		28.5	189	17.6 108		19.1	44	**58**	28	18	10	6 42	72	13 06	30
24	178	44.2	+22	28.2	203	47.4 108	+24	23.4	43	**60 S**	15 12	16 07	17 03	7 01	76	12 46	27

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.3		
	4ʰ 58ᵐ.5		PMG: 13ʰ 59ᵐ			PMG: 14ʰ 13ᵐ			PMG: 3ʰ 15ᵐ			PMG: 1ʰ 58ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	285	10.9	150	20.6	+18 49.4	146	36.7	+17 16.8	311	02.3	−11 49.0	330	28.8	−17 53.4
1	300	13.3	165	20.0	48.5	161	37.6	16.3	326	04.9	49.1	345	31.4	53.4
2	315	15.8	180	19.4	47.7	176	38.6	15.8	341	07.5	49.1	0	34.0	53.5
3	330	18.2	195	18.8	46.8	191	39.5	15.4	356	10.0	49.2	15	36.6	53.5
4	345	20.7	210	18.2	46.0	206	40.4	14.9	11	12.6	49.3	30	39.2	53.6
5	0	23.2	225	17.6	+18 45.1	221	41.3	+17 14.4	26	15.2	−11 49.3	45	41.9	−17 53.6
6	15	25.6	240	17.0	+18 44.3	236	42.2	+17 13.9	41	17.8	−11 49.4	60	44.5	−17 53.7
7	30	28.1	255	16.4	43.4	251	43.1	13.5	56	20.4	49.4	75	47.1	53.7
8	45	30.6	270	15.8	42.6	266	44.0	13.0	71	23.0	49.5	90	49.7	53.8
9	60	33.0	285	15.2	41.7	281	45.0	12.5	86	25.6	49.5	105	52.3	53.8
10	75	35.5	300	14.6	40.9	296	45.9	12.0	101	28.1	49.6	120	55.0	53.9
11	90	38.0	315	14.0	+18 40.0	311	46.8	+17 11.6	116	30.7	−11 49.7	135	57.6	−17 53.9
12	105	40.4	330	13.4	+18 39.2	326	47.7	+17 11.1	131	33.3	−11 49.7	151	00.2	−17 54.0
13	120	42.9	345	12.8	38.3	341	48.6	10.6	146	35.9	49.8	166	02.8	54.0
14	135	45.4	0	12.2	37.5	356	49.5	10.1	161	38.5	49.8	181	05.4	54.1
15	150	47.8	15	11.6	36.6	11	50.5	09.6	176	41.1	49.9	196	08.1	54.1
16	165	50.3	30	11.1	35.8	26	51.4	09.2	191	43.7	50.0	211	10.7	54.2
17	180	52.7	45	10.5	+18 34.9	41	52.3	+17 08.7	206	46.3	−11 50.0	226	13.3	−17 54.2
18	195	55.2	60	09.9	+18 34.1	56	53.2	+17 08.2	221	48.9	−11 50.1	241	15.9	−17 54.3
19	210	57.7	75	09.3	33.2	71	54.1	07.7	236	51.4	50.1	256	18.5	54.3
20	226	00.1	90	08.7	32.3	86	55.1	07.3	251	54.0	50.2	271	21.2	54.4
21	241	02.6	105	08.1	31.5	101	56.0	06.8	266	56.6	50.2	286	23.8	54.4
22	256	05.1	120	07.5	30.6	116	56.9	06.3	281	59.2	50.3	301	26.4	54.4
23	271	07.5	135	06.9	29.8	131	57.8	05.8	297	01.8	50.4	316	29.0	54.5
24	286	10.0	150	06.3	+18 28.9	146	58.7	+17 05.3	312	04.4	−11 50.4	331	31.6	−17 54.5
Dif	—			−6	−9		+9	−5		+26	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 27^{d}.5		PHE	4^{h}: 54′.5									
	PMG: 12^{h} 05^{m}.1				SD: 14′.8			12^{h}: 54′.6									
					PMG: 10^{h} 47^{m}			20^{h}: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	44.2	+22	28.2	203	47.4	+24	23.4		**60 N**	** **	1 23	2 52	1 00	35	20 48	52
1	193	44.1		27.9	218	17.2 108		27.6	42	**58**	** **	2 01	3 10	22	38	23	53
2	208	44.0		27.7	232	46.9 107		31.7	41	**56**	** **	27	26	39	40	20 04	53
3	223	43.9		27.4	247	16.5 106		35.6	39	**54**	1 16	2 47	39	1 54	42	19 48	53
4	238	43.8		27.1	261	46.1 106		39.5	39	**52**	1 51	3 03	3 50	2 07	43	34	53
5	253	43.7	+22	26.8	276	15.6 105	+24	43.2	37	**50**	2 15	3 17	4 01	2 18	44	19 21	53
6	268	43.6	+22	26.5	290	45.1 105	+24	46.8	36	**45**	2 57	3 45	4 22	2 42	46	18 56	53
7	283	43.5		26.2	305	14.6 105		50.2	34	**40**	3 26	4 07	39	3 01	47	36	53
8	298	43.4		25.9	319	44.0 104		53.6	34	**35**	3 48	24	4 53	17	48	19	53
9	313	43.3		25.6	334	13.3 103		56.8	32	**30**	4 06	4 38	5 06	31	48	18 05	52
10	328	43.2		25.3	348	42.6 103	+24	59.9	31	**20**	33	5 02	27	3 55	49	17 40	53
11	343	43.1	+22	25.1	3	11.9 103	+25	02.9	30	**10 N**	4 55	5 22	5 45	4 15	51	17 19	52
12	358	43.0	+22	24.8	17	41.1 102	+25	05.8	29	**0**	5 13	5 39	6 01	4 35	51	16 59	52
13	13	42.9		24.5	32	10.3 102		08.6	28	**10 S**	29	5 55	18	4 54	52	39	52
14	28	42.8		24.2	46	39.4 101		11.2	26	**20**	5 45	6 12	36	5 15	53	16 18	52
15	43	42.7		23.9	61	08.5 101		13.7	25	**30**	6 00	30	6 56	39	54	15 54	51
16	58	42.6		23.6	75	37.5 100		16.1	24	**35**	08	40	7 08	5 53	54	39	51
17	73	42.5	+22	23.3	90	06.5 100	+25	18.3	22	**40**	6 17	6 51	7 21	6 09	55	15 22	51
18	88	42.5	+22	23.0	104	35.5 100	+25	20.5	22	**45**	6 27	7 04	7 37	6 29	56	15 02	50
19	103	42.4		22.7	119	04.5 100		22.5	20	**50**	38	19	7 57	6 53	58	14 37	49
20	118	42.3		22.4	133	33.4 99		24.3	18	**52**	43	26	8 06	7 05	58	25	49
21	133	42.2		22.1	148	02.2 98		26.1	18	**54**	48	33	16	19	59	14 11	49
22	148	42.1		21.8	162	31.0 98		27.7	16	**56**	6 54	42	28	35	59	13 55	48
23	163	42.0		21.5	176	59.8 98		29.2	15	**58**	7 00	7 51	42	7 54	60	36	47
24	178	41.9	+22	21.2	191	28.6 98	+25	30.6	14	**60 S**	7 07	8 02	8 58	8 17	63	13 13	44

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.3		
	4^{h} 54^{m}.5		PMG: 14^{h} 00^{m}			PMG: 14^{h} 11^{m}			PMG: 3^{h} 11^{m}			PMG: 1^{h} 54^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	286	10.0	150	06.3	+18 28.9	146	58.7	+17 05.3	312	04.4	−11 50.4	331	31.6	−17 54.5
1	301	12.5	165	05.7	28.0	161	59.6	04.9	327	07.0	50.5	346	34.3	54.6
2	316	14.9	180	05.2	27.2	177	00.6	04.4	342	09.6	50.5	1	36.9	54.6
3	331	17.4	195	04.6	26.3	192	01.5	03.9	357	12.2	50.6	16	39.5	54.7
4	346	19.8	210	04.0	25.4	207	02.4	03.4	12	14.8	50.7	31	42.1	54.7
5	1	22.3	225	03.4	+18 24.6	222	03.3	+17 02.9	27	17.3	−11 50.7	46	44.7	−17 54.8
6	16	24.8	240	02.8	+18 23.7	237	04.2	+17 02.5	42	19.9	−11 50.8	61	47.4	−17 54.8
7	31	27.2	255	02.2	22.8	252	05.1	02.0	57	22.5	50.8	76	50.0	54.9
8	46	29.7	270	01.6	22.0	267	06.1	01.5	72	25.1	50.9	91	52.6	54.9
9	61	32.2	285	01.1	21.1	282	07.0	01.0	87	27.7	51.0	106	55.2	55.0
10	76	34.6	300	00.5	20.2	297	07.9	00.5	102	30.3	51.0	121	57.8	55.0
11	91	37.1	314	59.9	+18 19.4	312	08.8	+17 00.1	117	32.9	−11 51.1	137	00.5	−17 55.1
12	106	39.6	329	59.3	+18 18.5	327	09.7	+16 59.6	132	35.5	−11 51.1	152	03.1	−17 55.1
13	121	42.0	344	58.7	17.6	342	10.7	59.1	147	38.1	51.2	167	05.7	55.2
14	136	44.5	359	58.1	16.7	357	11.6	58.6	162	40.7	51.3	182	08.3	55.2
15	151	47.0	14	57.6	15.9	12	12.5	58.1	177	43.3	51.3	197	11.0	55.3
16	166	49.4	29	57.0	15.0	27	13.4	57.7	192	45.9	51.4	212	13.6	55.3
17	181	51.9	44	56.4	+18 14.1	42	14.3	+16 57.2	207	48.5	−11 51.5	227	16.2	−17 55.4
18	196	54.3	59	55.8	+18 13.2	57	15.3	+16 56.7	222	51.1	−11 51.5	242	18.8	−17 55.4
19	211	56.8	74	55.3	12.3	72	16.2	56.2	237	53.7	51.6	257	21.4	55.5
20	226	59.3	89	54.7	11.5	87	17.1	55.7	252	56.3	51.6	272	24.1	55.5
21	242	01.7	104	54.1	10.6	102	18.0	55.2	267	58.9	51.7	287	26.7	55.6
22	257	04.2	119	53.5	09.7	117	18.9	54.8	283	01.5	51.8	302	29.3	55.6
23	272	06.7	134	52.9	08.8	132	19.9	54.3	298	04.1	51.8	317	31.9	55.7
24	287	09.1	149	52.4	+18 07.9	147	20.8	+16 53.8	313	06.7	−11 51.9	332	34.6	−17 55.7
Dif	—				−6 −9			+9 −5			+26 −1			+26 0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 28ᵈ.5		PHE	4ʰ: 54′.8									
	PMG: 12ʰ 05ᵐ.3				SD: 14′.9			12ʰ: 54′.9									
					PMG: 11ʰ 38ᵐ			20ʰ: 55′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	41.9	+22	21.2	191	28.6	+25	30.6		**60 N**	21 16	22 42	** **	1 35	56	21 40	34
1	193	41.8		20.9	205	57.3 97		31.8	12	**58**	20 58	22 06	** **	2 00	55	21 16	37
2	208	41.7		20.6	220	26.0 97		32.9	11	**56**	43	21 41	** **	19	56	20 57	39
3	223	41.6		20.3	234	54.7 97		33.9	10	**54**	30	21	22 49	36	55	41	41
4	238	41.5		20.0	249	23.3 96		34.8	9	**52**	19	21 05	22 16	2 50	55	27	42
5	253	41.4	+22	19.7	263	52.0 97	+25	35.5	7	**50**	20 09	20 52	21 53	3 02	55	20 14	44
6	268	41.3	+22	19.4	278	20.5 95	+25	36.1	6	**45**	19 48	20 24	21 12	3 28	54	19 49	46
7	283	41.2		19.1	292	49.1 96		36.6	5	**40**	31	20 03	20 43	3 48	54	29	47
8	298	41.1		18.8	307	17.7 96		36.9	3	**35**	17	19 46	22	4 05	54	19 12	48
9	313	41.1		18.5	321	46.2 95		37.1	2	**30**	19 04	31	20 04	19	54	18 57	49
10	328	41.0		18.2	336	14.7 95		37.2	1	**20**	18 43	19 08	19 37	4 44	53	33	50
11	343	40.9	+22	17.9	350	43.2 95	+25	37.1	1	**10 N**	18 26	18 48	19 15	5 06	53	18 11	52
12	358	40.8	+22	17.6	5	11.6 94	+25	36.9	2	**0**	18 09	18 31	18 57	5 26	52	17 51	53
13	13	40.7		17.3	19	40.1 95		36.6	3	**10 S**	17 52	18 15	41	5 46	52	31	53
14	28	40.6		16.9	34	08.5 94		36.1	5	**20**	35	17 59	26	6 08	51	17 10	54
15	43	40.5		16.6	48	36.9 94		35.6	5	**30**	15	41	11	33	51	16 45	55
16	58	40.4		16.3	63	05.3 94		34.8	8	**35**	17 03	31	18 02	6 47	51	30	56
17	73	40.3	+22	16.0	77	33.7 94	+25	34.0	8	**40**	16 50	17 20	17 54	7 04	50	16 13	57
18	88	40.2	+22	15.7	92	02.0 93	+25	33.0	10	**45**	16 34	17 07	17 44	7 25	49	15 52	58
19	103	40.1		15.4	106	30.4 94		31.9	11	**50**	15	16 53	33	7 51	48	26	60
20	118	40.0		15.1	120	58.7 93		30.7	12	**52**	16 06	46	29	8 03	48	14	60
21	133	40.0		14.8	135	27.1 94		29.3	14	**54**	15 55	38	24	18	47	15 00	61
22	148	39.9		14.4	149	55.4 93		27.8	15	**56**	44	30	18	34	47	14 43	62
23	163	39.8		14.1	164	23.7 93		26.1	17	**58**	30	20	12	8 54	45	14 23	64
24	178	39.7	+22	13.8	178	52.1 94	+25	24.3	18	**60 S**	15 15	16 10	17 05	9 20	43	13 57	67

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.7			Mag: +0.3		
	4ʰ 50ᵐ.6		PMG: 14ʰ 01ᵐ			PMG: 14ʰ 10ᵐ			PMG: 3ʰ 07ᵐ			PMG: 1ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	287	09.1	149	52.4	+18 07.9	147	20.8	+16 53.8	313	06.7	−11 51.9	332	34.6	−17 55.7
1	302	11.6	164	51.8	07.1	162	21.7	53.3	328	09.3	51.9	347	37.2	55.8
2	317	14.1	179	51.2	06.2	177	22.6	52.8	343	11.9	52.0	2	39.8	55.8
3	332	16.5	194	50.7	05.3	192	23.5	52.3	358	14.5	52.1	17	42.4	55.9
4	347	19.0	209	50.1	04.4	207	24.5	51.9	13	17.1	52.1	32	45.1	55.9
5	2	21.5	224	49.5	+18 03.5	222	25.4	+16 51.4	28	19.7	−11 52.2	47	47.7	−17 56.0
6	17	23.9	239	48.9	+18 02.6	237	26.3	+16 50.9	43	22.3	−11 52.3	62	50.3	−17 56.0
7	32	26.4	254	48.4	01.7	252	27.2	50.4	58	24.9	52.3	77	52.9	56.1
8	47	28.8	269	47.8	+18 00.9	267	28.1	49.9	73	27.5	52.4	92	55.5	56.1
9	62	31.3	284	47.2	+18 00.0	282	29.1	49.4	88	30.1	52.4	107	58.2	56.2
10	77	33.8	299	46.7	+17 59.1	297	30.0	48.9	103	32.7	52.5	123	00.8	56.2
11	92	36.2	314	46.1	+17 58.2	312	30.9	+16 48.5	118	35.3	−11 52.6	138	03.4	−17 56.3
12	107	38.7	329	45.5	+17 57.3	327	31.8	+16 48.0	133	37.9	−11 52.6	153	06.0	−17 56.3
13	122	41.2	344	45.0	56.4	342	32.7	47.5	148	40.5	52.7	168	08.7	56.4
14	137	43.6	359	44.4	55.5	357	33.7	47.0	163	43.1	52.8	183	11.3	56.4
15	152	46.1	14	43.8	54.6	12	34.6	46.5	178	45.7	52.8	198	13.9	56.5
16	167	48.6	29	43.3	53.7	27	35.5	46.0	193	48.3	52.9	213	16.5	56.5
17	182	51.0	44	42.7	+17 52.8	42	36.4	+16 45.5	208	50.9	−11 53.0	228	19.2	−17 56.6
18	197	53.5	59	42.1	+17 51.9	57	37.4	+16 45.1	223	53.5	−11 53.0	243	21.8	−17 56.6
19	212	56.0	74	41.6	51.0	72	38.3	44.6	238	56.1	53.1	258	24.4	56.7
20	227	58.4	89	41.0	50.1	87	39.2	44.1	253	58.7	53.1	273	27.0	56.7
21	243	00.9	104	40.4	49.2	102	40.1	43.6	269	01.3	53.2	288	29.7	56.8
22	258	03.3	119	39.9	48.3	117	41.0	43.1	284	03.9	53.3	303	32.3	56.8
23	273	05.8	134	39.3	47.4	132	42.0	42.6	299	06.5	53.3	318	34.9	56.9
24	288	08.3	149	38.8	+17 46.5	147	42.9	+16 42.1	314	09.1	−11 53.4	333	37.5	−17 56.9
Dif	—			−6	−9		+9	−5		+26	−1		+26	0

UT	SOL SD: 15′.7 PMG: 12h 05m.4				LUNA Edad: 29d.5 SD: 15′.0 PMG: 12h 31m PHE 4h: 55′.2, 12h: 55′.3, 20h: 55′.5 Rº: 52m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	39.7	+22	13.8	178	52.1 93	+25	24.3 19	**60 N**	** **	1 29	2 55	2 31	75	22 14	20
1	193	39.6		13.5	193	20.4 93		22.4 20	**58**	** **	2 05	3 13	2 55	72	21 53	25
2	208	39.5		13.2	207	48.7 93		20.4 22	**56**	** **	30	28	3 15	68	36	28
3	223	39.4		12.9	222	17.0 93		18.2 23	**54**	1 22	2 50	41	31	67	22	31
4	238	39.3		12.5	236	45.3 93		15.9 24	**52**	1 55	3 06	3 52	45	65	21 09	33
5	253	39.2	+22	12.2	251	13.6 93	+25	13.5 24	**50**	2 18	3 19	4 02	3 57	64	20 58	35
6	268	39.2	+22	11.9	265	41.9 93	+25	10.9 26	**45**	2 59	3 47	4 23	4 22	62	20 35	38
7	283	39.1		11.6	280	10.3 94		08.2 27	**40**	3 27	4 08	40	42	60	16	41
8	298	39.0		11.3	294	38.6 93		05.3 29	**35**	3 49	25	4 54	4 59	58	20 00	43
9	313	38.9		10.9	309	06.9 93	+25	02.4 29	**30**	4 07	4 39	5 07	5 13	57	19 46	45
10	328	38.8		10.6	323	35.3 94	+24	59.3 31	**20**	34	5 03	27	37	56	23	47
11	343	38.7	+22	10.3	338	03.6 93	+24	56.0 33	**10 N**	4 56	5 22	5 45	5 59	53	19 03	49
12	358	38.6	+22	10.0	352	32.0 94	+24	52.7 33	**0**	5 13	5 39	6 02	6 18	53	18 44	51
13	13	38.5		09.6	7	00.3 93		49.2 35	**10 S**	29	5 56	18	38	51	24	54
14	28	38.5		09.3	21	28.7 94		45.5 37	**20**	5 45	6 12	36	6 59	49	18 04	56
15	43	38.4		09.0	35	57.1 94		41.8 37	**30**	6 00	30	6 56	7 24	46	17 40	59
16	58	38.3		08.7	50	25.5 94		37.9 39	**35**	08	39	7 07	38	45	26	61
17	73	38.2	+22	08.3	64	53.9 94	+24	33.9 40	**40**	6 17	6 50	7 20	7 54	44	17 10	62
18	88	38.1	+22	08.0	79	22.3 94	+24	29.7 42	**45**	6 26	7 03	7 36	8 14	42	16 50	65
19	103	38.0		07.7	93	50.8 95		25.4 43	**50**	37	18	7 55	39	39	26	68
20	118	37.9		07.4	108	19.2 94		21.0 44	**52**	42	25	8 04	8 51	38	14	70
21	133	37.9		07.0	122	47.7 95		16.5 45	**54**	47	32	15	9 05	35	16 01	72
22	148	37.8		06.7	137	16.2 95		11.8 47	**56**	52	40	26	21	33	15 45	74
23	163	37.7		06.4	151	44.7 95		07.0 48	**58**	6 58	7 50	40	9 39	31	27	77
24	178	37.6	+22	06.0	166	13.3 96	+24	02.1 49	**60 S**	7 05	8 00	8 55	10 03	25	15 04	82

UT	ARIES PMG 4h 46m.7		VENUS Mag: −3.9 PMG: 14h 02m			MARTE Mag: +1.8 PMG: 14h 08m			JÚPITER Mag: −2.7 PMG: 3h 03m			SATURNO Mag: +0.3 PMG: 1h 45m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	288	08.3	149	38.8	+17 46.5	147	42.9	+16 42.1	314	09.1	−11 53.4	333	37.5	−17 56.9
1	303	10.7	164	38.2	45.6	162	43.8	41.6	329	11.7	53.5	348	40.2	57.0
2	318	13.2	179	37.6	44.7	177	44.7	41.2	344	14.3	53.5	3	42.8	57.0
3	333	15.7	194	37.1	43.8	192	45.7	40.7	359	16.9	53.6	18	45.4	57.1
4	348	18.1	209	36.5	42.9	207	46.6	40.2	14	19.5	53.7	33	48.0	57.1
5	3	20.6	224	36.0	+17 42.0	222	47.5	+16 39.7	29	22.1	−11 53.7	48	50.7	−17 57.2
6	18	23.1	239	35.4	+17 41.1	237	48.4	+16 39.2	44	24.7	−11 53.8	63	53.3	−17 57.2
7	33	25.5	254	34.8	40.2	252	49.3	38.7	59	27.3	53.9	78	55.9	57.3
8	48	28.0	269	34.3	39.3	267	50.3	38.2	74	30.0	53.9	93	58.5	57.3
9	63	30.5	284	33.7	38.4	282	51.2	37.7	89	32.6	54.0	109	01.2	57.4
10	78	32.9	299	33.2	37.4	297	52.1	37.2	104	35.2	54.1	124	03.8	57.4
11	93	35.4	314	32.6	+17 36.5	312	53.0	+16 36.8	119	37.8	−11 54.1	139	06.4	−17 57.5
12	108	37.8	329	32.1	+17 35.6	327	54.0	+16 36.3	134	40.4	−11 54.2	154	09.0	−17 57.5
13	123	40.3	344	31.5	34.7	342	54.9	35.8	149	43.0	54.2	169	11.7	57.5
14	138	42.8	359	31.0	33.8	357	55.8	35.3	164	45.6	54.3	184	14.3	57.6
15	153	45.2	14	30.4	32.9	12	56.7	34.8	179	48.2	54.4	199	16.9	57.6
16	168	47.7	29	29.9	32.0	27	57.7	34.3	194	50.8	54.4	214	19.6	57.7
17	183	50.2	44	29.3	+17 31.1	42	58.6	+16 33.8	209	53.4	−11 54.5	229	22.2	−17 57.7
18	198	52.6	59	28.8	+17 30.1	57	59.5	+16 33.3	224	56.0	−11 54.6	244	24.8	−17 57.8
19	213	55.1	74	28.2	29.2	73	00.4	32.8	239	58.7	54.6	259	27.4	57.8
20	228	57.6	89	27.7	28.3	88	01.4	32.3	255	01.3	54.7	274	30.1	57.9
21	244	00.0	104	27.1	27.4	103	02.3	31.8	270	03.9	54.8	289	32.7	57.9
22	259	02.5	119	26.6	26.5	118	03.2	31.4	285	06.5	54.8	304	35.3	58.0
23	274	05.0	134	26.0	25.5	133	04.1	30.9	300	09.1	54.9	319	37.9	58.0
24	289	07.4	149	25.5	+17 24.6	148	05.1	+16 30.4	315	11.7	−11 55.0	334	40.6	−17 58.1
Dif	—			−6	−9		+9	−5		+26	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 30^{d}.5		PHE	4^{h}: 55′.6									
	PMG: 12^{h} 05^{m}.6				SD: 15′.1			12^{h}: 55′.8									
					PMG: 13^{h} 23^{m}			20^{h}: 56′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	37.6	+22	06.0	166	13.3	+24	02.1		**60 N**	21 13	22 36	** **	3 46	87	22 34	12
1	193	37.5		05.7	180	41.8 95	+23	57.0	51	**58**	20 56	22 02	** **	4 07	81	18	17
2	208	37.4		05.4	195	10.4 96		51.8	52	**56**	41	21 38	** **	23	79	22 04	20
3	223	37.3		05.0	209	39.0 96		46.5	53	**54**	28	19	22 44	38	75	21 53	22
4	238	37.3		04.7	224	07.7 97		41.1	54	**52**	17	21 03	22 12	4 50	73	42	25
5	253	37.2	+22	04.4	238	36.3 96	+23	35.5	56	**50**	20 07	20 50	21 50	5 01	71	21 33	27
6	268	37.1	+22	04.0	253	05.0 97	+23	29.8	57	**45**	19 46	20 23	21 10	5 24	67	21 13	32
7	283	37.0		03.7	267	33.7 97		24.0	58	**40**	30	20 02	20 42	42	64	20 57	35
8	298	36.9		03.4	282	02.5 98		18.1	59	**35**	16	19 45	21	5 57	62	43	38
9	313	36.8		03.0	296	31.2 97		12.0	61	**30**	19 04	31	20 03	6 10	60	31	40
10	328	36.8		02.7	311	00.0 98	+23	05.8	62	**20**	18 43	19 08	19 36	33	57	20 10	44
11	343	36.7	+22	02.3	325	28.9 99	+22	59.5	63	**10 N**	18 26	18 48	19 15	6 52	54	19 52	47
12	358	36.6	+22	02.0	339	57.7 98	+22	53.1	64	**0**	18 09	18 31	18 57	7 11	51	19 35	51
13	13	36.5		01.7	354	26.6 99		46.5	66	**10 S**	17 53	18 16	42	29	48	18	54
14	28	36.4		01.3	8	55.5 99		39.8	67	**20**	36	17 59	27	7 48	46	19 00	57
15	43	36.4		01.0	23	24.5 100		33.0	68	**30**	16	42	11	8 10	43	18 39	60
16	58	36.3		00.6	37	53.5 100		26.1	69	**35**	17 04	32	18 03	23	41	27	62
17	73	36.2	+22	00.3	52	22.5 100	+22	19.1	70	**40**	16 51	17 21	17 55	8 38	38	18 12	66
18	88	36.1	+22	00.0	66	51.6 101	+22	11.9	72	**45**	16 36	17 09	17 46	8 56	35	17 55	69
19	103	36.0	+21	59.6	81	20.7 101	+22	04.6	73	**50**	17	16 54	35	9 18	31	34	73
20	118	35.9		59.3	95	49.8 101	+21	57.2	74	**52**	16 08	47	30	29	28	24	75
21	133	35.9		58.9	110	19.0 102		49.7	75	**54**	15 58	40	25	40	27	17 13	77
22	148	35.8		58.6	124	48.2 102		42.1	76	**56**	46	32	20	9 54	23	16 59	81
23	163	35.7		58.2	139	17.4 102		34.4	77	**58**	33	23	14	10 10	19	44	85
24	178	35.6	+21	57.9	153	46.7 103	+21	26.5	79	**60 S**	15 18	16 12	17 07	10 28	15	16 26	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4^{h} 42^{m}.7		PMG: 14^{h} 03^{m}			PMG: 14^{h} 07^{m}			PMG: 2^{h} 59^{m}			PMG: 1^{h} 41^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	289	07.4	149	25.5	+17 24.6	148	05.1	+16 30.4	315	11.7	−11 55.0	334	40.6	−17 58.1
1	304	09.9	164	24.9	23.7	163	06.0	29.9	330	14.3	55.0	349	43.2	58.1
2	319	12.3	179	24.4	22.8	178	06.9	29.4	345	16.9	55.1	4	45.8	58.2
3	334	14.8	194	23.8	21.8	193	07.8	28.9	0	19.6	55.2	19	48.5	58.2
4	349	17.3	209	23.3	20.9	208	08.8	28.4	15	22.2	55.3	34	51.1	58.3
5	4	19.7	224	22.7	+17 20.0	223	09.7	+16 27.9	30	24.8	−11 55.3	49	53.7	−17 58.4
6	19	22.2	239	22.2	+17 19.1	238	10.6	+16 27.4	45	27.4	−11 55.4	64	56.3	−17 58.4
7	34	24.7	254	21.7	18.1	253	11.5	26.9	60	30.0	55.5	79	59.0	58.5
8	49	27.1	269	21.1	17.2	268	12.5	26.4	75	32.6	55.5	95	01.6	58.5
9	64	29.6	284	20.6	16.3	283	13.4	25.9	90	35.2	55.6	110	04.2	58.6
10	79	32.1	299	20.0	15.4	298	14.3	25.4	105	37.9	55.7	125	06.8	58.6
11	94	34.5	314	19.5	+17 14.4	313	15.2	+16 24.9	120	40.5	−11 55.7	140	09.5	−17 58.7
12	109	37.0	329	18.9	+17 13.5	328	16.2	+16 24.4	135	43.1	−11 55.8	155	12.1	−17 58.7
13	124	39.4	344	18.4	12.6	343	17.1	23.9	150	45.7	55.9	170	14.7	58.8
14	139	41.9	359	17.9	11.6	358	18.0	23.5	165	48.3	55.9	185	17.4	58.8
15	154	44.4	14	17.3	10.7	13	18.9	23.0	180	50.9	56.0	200	20.0	58.9
16	169	46.8	29	16.8	09.8	28	19.9	22.5	195	53.6	56.1	215	22.6	58.9
17	184	49.3	44	16.3	+17 08.8	43	20.8	+16 22.0	210	56.2	−11 56.1	230	25.2	−17 59.0
18	199	51.8	59	15.7	+17 07.9	58	21.7	+16 21.5	225	58.8	−11 56.2	245	27.9	−17 59.0
19	214	54.2	74	15.2	07.0	73	22.7	21.0	241	01.4	56.3	260	30.5	59.1
20	229	56.7	89	14.6	06.0	88	23.6	20.5	256	04.0	56.3	275	33.1	59.1
21	244	59.2	104	14.1	05.1	103	24.5	20.0	271	06.6	56.4	290	35.8	59.2
22	260	01.6	119	13.6	04.1	118	25.4	19.5	286	09.3	56.5	305	38.4	59.2
23	275	04.1	134	13.0	03.2	133	26.4	19.0	301	11.9	56.6	320	41.0	59.3
24	290	06.6	149	12.5	+17 02.3	148	27.3	+16 18.5	316	14.5	−11 56.6	335	43.7	−17 59.3
Dif	—			−5	−9		+9	−5		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 1ᵈ.9		PHE	4ʰ: 56′.1									
	PMG: 12ʰ 05ᵐ.7				SD: 15′.3			12ʰ: 56′.3									
					PMG: 14ʰ 14ᵐ			20ʰ: 56′.5									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	35.6	+21	57.9	153	46.7	+21	26.5		**60 N**	** **	1 36	2 58	5 13	91	22 46	8
1	193	35.5		57.5	168	16.0 103		18.5	80	**58**	** **	2 09	3 16	28	87	35	11
2	208	35.5		57.2	182	45.3 103		10.4	81	**56**	** **	33	31	42	82	24	15
3	223	35.4		56.8	197	14.7 104	+21	02.2	82	**54**	1 28	2 53	44	5 53	79	15	18
4	238	35.3		56.5	211	44.2 105	+20	53.9	83	**52**	1 59	3 08	3 55	6 03	77	07	21
5	253	35.2	+21	56.1	226	13.6 104	+20	45.5	84	**50**	2 22	3 22	4 04	6 12	75	22 00	23
6	268	35.2	+21	55.8	240	43.2 106	+20	37.0	85	**45**	3 01	3 49	4 25	6 31	70	21 45	27
7	283	35.1		55.4	255	12.7 105		28.3	87	**40**	29	4 10	42	46	66	32	30
8	298	35.0		55.1	269	42.3 106		19.6	87	**35**	3 51	26	4 56	6 59	63	21	33
9	313	34.9		54.7	284	11.9 106		10.7	89	**30**	4 08	4 41	5 08	7 10	61	21 11	36
10	328	34.8		54.4	298	41.6 107	+20	01.7	90	**20**	35	5 04	28	30	56	20 54	41
11	343	34.8	+21	54.0	313	11.3 107	+19	52.7	90	**10 N**	4 56	5 23	5 46	7 46	53	20 39	45
12	358	34.7	+21	53.7	327	41.1 108	+19	43.5	92	**0**	5 14	5 40	6 02	8 02	49	20 26	48
13	13	34.6		53.3	342	10.9 108		34.2	93	**10 S**	30	5 56	18	17	46	20 12	52
14	28	34.5		52.9	356	40.7 108		24.8	94	**20**	5 45	6 12	35	34	42	19 57	56
15	43	34.5		52.6	11	10.6 109		15.3	95	**30**	6 00	29	6 55	8 53	38	39	61
16	58	34.4		52.2	25	40.5 109	+19	05.7	96	**35**	08	39	7 07	9 04	35	29	64
17	73	34.3	+21	51.9	40	10.5 110	+18	56.0	97	**40**	6 16	6 50	7 20	9 16	33	19 18	67
18	88	34.2	+21	51.5	54	40.5 110	+18	46.2	98	**45**	6 25	7 02	7 35	9 31	29	19 04	71
19	103	34.1		51.2	69	10.5 110		36.3	99	**50**	36	17	7 54	49	25	18 47	76
20	118	34.1		50.8	83	40.6 111		26.3	100	**52**	40	23	8 03	9 57	23	39	78
21	133	34.0		50.4	98	10.7 111		16.2	101	**54**	45	31	13	10 07	20	30	81
22	148	33.9		50.1	112	40.9 112	+18	06.0	102	**56**	51	39	24	17	17	20	84
23	163	33.8		49.7	127	11.1 112	+17	55.7	103	**58**	6 57	48	37	29	14	18 09	87
24	178	33.8	+21	49.3	141	41.4 113	+17	45.3	104	**60 S**	7 03	7 58	8 53	10 43	10	17 56	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4ʰ 38ᵐ.8		PMG: 14ʰ 04ᵐ			PMG: 14ʰ 05ᵐ			PMG: 2ʰ 55ᵐ			PMG: 1ʰ 37ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	290	06.6	149	12.5	+17 02.3	148	27.3	+16 18.5	316	14.5	−11 56.6	335	43.7	−17 59.3
1	305	09.0	164	12.0	01.3	163	28.2	18.0	331	17.1	56.7	350	46.3	59.4
2	320	11.5	179	11.4	+17 00.4	178	29.1	17.5	346	19.7	56.8	5	48.9	59.4
3	335	13.9	194	10.9	+16 59.4	193	30.1	17.0	1	22.4	56.8	20	51.5	59.5
4	350	16.4	209	10.4	58.5	208	31.0	16.5	16	25.0	56.9	35	54.2	59.5
5	5	18.9	224	09.9	+16 57.5	223	31.9	+16 16.0	31	27.6	−11 57.0	50	56.8	−17 59.6
6	20	21.3	239	09.3	+16 56.6	238	32.9	+16 15.5	46	30.2	−11 57.0	65	59.4	−17 59.6
7	35	23.8	254	08.8	55.7	253	33.8	15.0	61	32.8	57.1	81	02.1	59.7
8	50	26.3	269	08.3	54.7	268	34.7	14.5	76	35.5	57.2	96	04.7	59.7
9	65	28.7	284	07.7	53.8	283	35.6	14.0	91	38.1	57.3	111	07.3	59.8
10	80	31.2	299	07.2	52.8	298	36.6	13.5	106	40.7	57.3	126	09.9	59.8
11	95	33.7	314	06.7	+16 51.9	313	37.5	+16 13.0	121	43.3	−11 57.4	141	12.6	−17 59.9
12	110	36.1	329	06.2	+16 50.9	328	38.4	+16 12.5	136	46.0	−11 57.5	156	15.2	−17 59.9
13	125	38.6	344	05.6	50.0	343	39.4	12.0	151	48.6	57.5	171	17.8	−18 00.0
14	140	41.1	359	05.1	49.0	358	40.3	11.5	166	51.2	57.6	186	20.5	−18 00.0
15	155	43.5	14	04.6	48.1	13	41.2	11.0	181	53.8	57.7	201	23.1	−18 00.1
16	170	46.0	29	04.1	47.1	28	42.1	10.5	196	56.4	57.7	216	25.7	00.1
17	185	48.4	44	03.5	+16 46.2	43	43.1	+16 10.0	211	59.1	−11 57.8	231	28.4	−18 00.2
18	200	50.9	59	03.0	+16 45.2	58	44.0	+16 09.5	227	01.7	−11 57.9	246	31.0	−18 00.2
19	215	53.4	74	02.5	44.2	73	44.9	09.0	242	04.3	58.0	261	33.6	00.3
20	230	55.8	89	02.0	43.3	88	45.9	08.5	257	06.9	58.0	276	36.3	00.3
21	245	58.3	104	01.4	42.3	103	46.8	08.0	272	09.6	58.1	291	38.9	00.4
22	261	00.8	119	00.9	41.4	118	47.7	07.5	287	12.2	58.2	306	41.5	00.4
23	276	03.2	134	00.4	40.4	133	48.6	07.0	302	14.8	58.3	321	44.1	00.5
24	291	05.7	148	59.9	+16 39.5	148	49.6	+16 06.5	317	17.4	−11 58.3	336	46.8	−18 00.5
Dif	—			−5	−9		+9	−5		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 2^{d}.9		PHE	4^{h}: 56′.6									
	PMG: 12^{h} 05^{m}.8				SD: 15′.4			12^{h}: 56′.8									
					PMG: 15^{h} 03^{m}			20^{h}: 57′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	33.8	+21	49.3	141	41.4	+17	45.3		**60 N**	21 10	22 30	** **	6 44	91	22 54	6
1	193	33.7		49.0	156	11.6^{112}		34.9^{104}		**58**	20 53	21 58	** **	6 55	87	46	9
2	208	33.6		48.6	170	42.0^{114}		24.3^{106}		**56**	38	35	23 32	7 04	84	39	13
3	223	33.5		48.2	185	12.3^{113}		13.6^{107}		**54**	26	16	22 38	12	81	33	15
4	238	33.5		47.9	199	42.8^{115}	+17	02.8^{108}		**52**	15	21 01	22 09	20	78	28	17
5	253	33.4	+21	47.5	214	13.2^{114}	+16	52.0^{108}		**50**	20 05	20 48	21 47	7 27	75	22 23	19
6	268	33.3	+21	47.1	228	43.7^{115}	+16	41.1^{109}		**45**	19 45	20 21	21 08	7 41	71	22 12	23
7	283	33.2		46.8	243	14.2^{115}		30.0^{111}		**40**	29	20 01	20 41	7 52	68	22 02	28
8	298	33.2		46.4	257	44.8^{116}		18.9^{111}		**35**	15	19 44	20	8 02	64	21 54	31
9	313	33.1		46.0	272	15.4^{116}	+16	07.7^{112}		**30**	19 03	30	20 03	11	61	47	34
10	328	33.0		45.7	286	46.1^{117}	+15	56.4^{113}		**20**	18 43	19 07	19 36	26	56	35	39
11	343	33.0	+21	45.3	301	16.8^{117}	+15	45.0^{114}		**10 N**	18 26	18 48	19 15	8 39	52	21 24	44
12	358	32.9	+21	44.9	315	47.5^{117}	+15	33.5^{115}		**0**	18 09	18 32	18 58	8 51	48	21 14	47
13	13	32.8		44.6	330	18.2^{117}		22.0^{115}		**10 S**	17 53	16	42	9 03	44	21 04	51
14	28	32.7		44.2	344	49.0^{118}	+15	10.4^{116}		**20**	36	18 00	27	16	40	20 53	56
15	43	32.7		43.8	359	19.9^{119}	+14	58.6^{118}		**30**	17	17 43	12	31	35	40	61
16	58	32.6		43.4	13	50.8^{119}		46.9^{117}		**35**	17 06	33	18 05	39	32	33	64
17	73	32.5	+21	43.1	28	21.7^{119}	+14	35.0^{119}		**40**	16 53	17 23	17 56	9 49	29	20 25	67
18	88	32.5	+21	42.7	42	52.6^{119}	+14	23.0^{120}		**45**	16 37	17 10	17 47	10 00	25	20 15	71
19	103	32.4		42.3	57	23.6^{120}	+14	11.0^{120}		**50**	19	16 56	37	14	20	20 03	76
20	118	32.3		41.9	71	54.6^{120}	+13	58.9^{121}		**52**	10	49	32	20	18	19 57	79
21	133	32.2		41.6	86	25.6^{120}		46.7^{122}		**54**	16 00	42	27	27	16	51	81
22	148	32.2		41.2	100	56.7^{121}		34.4^{123}		**56**	15 49	34	22	34	14	44	84
23	163	32.1		40.8	115	27.8^{121}		22.1^{123}		**58**	36	25	16	43	10	36	87
24	178	32.0	+21	40.4	129	59.0^{122}	+13	09.7^{124}		**60 S**	15 21	16 15	17 10	10 53	6	19 27	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4^{h} 34^{m}.9		PMG: 14^{h} 04^{m}			PMG: 14^{h} 04^{m}			PMG: 2^{h} 50^{m}			PMG: 1^{h} 33^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	291	05.7	148	59.9	+16 39.5	148	49.6	+16 06.5	317	17.4	−11 58.3	336	46.8	−18 00.5
1	306	08.2	163	59.4	38.5	163	50.5	06.0	332	20.1	58.4	351	49.4	00.6
2	321	10.6	178	58.8	37.5	178	51.4	05.5	347	22.7	58.5	6	52.0	00.6
3	336	13.1	193	58.3	36.6	193	52.4	05.0	2	25.3	58.5	21	54.7	00.7
4	351	15.6	208	57.8	35.6	208	53.3	04.5	17	28.0	58.6	36	57.3	00.7
5	6	18.0	223	57.3	+16 34.7	223	54.2	+16 04.0	32	30.6	−11 58.7	51	59.9	−18 00.8
6	21	20.5	238	56.8	+16 33.7	238	55.2	+16 03.5	47	33.2	−11 58.8	67	02.6	−18 00.8
7	36	22.9	253	56.3	32.7	253	56.1	03.0	62	35.8	58.8	82	05.2	00.9
8	51	25.4	268	55.7	31.8	268	57.0	02.5	77	38.5	58.9	97	07.8	00.9
9	66	27.9	283	55.2	30.8	283	57.9	02.0	92	41.1	59.0	112	10.5	01.0
10	81	30.3	298	54.7	29.8	298	58.9	01.5	107	43.7	59.0	127	13.1	01.0
11	96	32.8	313	54.2	+16 28.9	313	59.8	+16 01.0	122	46.4	−11 59.1	142	15.7	−18 01.1
12	111	35.3	328	53.7	+16 27.9	329	00.7	+16 00.5	137	49.0	−11 59.2	157	18.4	−18 01.1
13	126	37.7	343	53.2	26.9	344	01.7	+16 00.0	152	51.6	59.3	172	21.0	01.2
14	141	40.2	358	52.7	26.0	359	02.6	+15 59.5	167	54.2	59.3	187	23.6	01.2
15	156	42.7	13	52.2	25.0	14	03.5	59.0	182	56.9	59.4	202	26.3	01.3
16	171	45.1	28	51.6	24.0	29	04.5	58.5	197	59.5	59.5	217	28.9	01.3
17	186	47.6	43	51.1	+16 23.1	44	05.4	+15 58.0	213	02.1	−11 59.6	232	31.5	−18 01.4
18	201	50.0	58	50.6	+16 22.1	59	06.3	+15 57.5	228	04.8	−11 59.6	247	34.2	−18 01.4
19	216	52.5	73	50.1	21.1	74	07.3	57.0	243	07.4	59.7	262	36.8	01.5
20	231	55.0	88	49.6	20.1	89	08.2	56.5	258	10.0	59.8	277	39.4	01.5
21	246	57.4	103	49.1	19.2	104	09.1	55.9	273	12.7	59.9	292	42.1	01.6
22	261	59.9	118	48.6	18.2	119	10.1	55.4	288	15.3	−11 59.9	307	44.7	01.7
23	277	02.4	133	48.1	17.2	134	11.0	54.9	303	17.9	−12 00.0	322	47.3	01.7
24	292	04.8	148	47.6	+16 16.2	149	11.9	+15 54.4	318	20.6	−12 00.1	337	50.0	−18 01.8
Dif	—			−5	−10		+9	−5		+26	−1		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 05m.9				LUNA Edad: 3d.9 SD: 15′.5 PMG: 15h 50m PHE 4h: 57′.1; 12h: 57′.3; 20h: 57′.5 Rº: 47m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	32.0	+21	40.4	129	59.0	+13	09.7	**60 N**	** **	1 42	3 02	8 15	91	23 00	4
1	193	32.0		40.1	144	30.2 122	+12	57.2 125	**58**	** **	2 14	19	22	87	22 55	8
2	208	31.9		39.7	159	01.4 122		44.7 125	**56**	0 40	37	34	28	84	52	10
3	223	31.8		39.3	173	32.6 122		32.0 127	**54**	1 34	2 56	46	33	82	48	13
4	238	31.8		38.9	188	03.9 123		19.4 126	**52**	2 03	3 11	3 57	38	79	45	15
5	253	31.7	+21	38.5	202	35.2 123	+12	06.6 128	**50**	2 25	3 24	4 07	8 42	77	22 42	18
6	268	31.6	+21	38.1	217	06.5 123	+11	53.8 128	**45**	3 04	3 51	4 27	8 52	71	22 35	23
7	283	31.5		37.8	231	37.8 123		40.9 129	**40**	31	4 11	43	9 00	67	30	26
8	298	31.5		37.4	246	09.2 124		27.9 130	**35**	3 52	28	4 57	06	64	25	30
9	313	31.4		37.0	260	40.6 124		14.9 130	**30**	4 09	4 42	5 09	12	61	21	33
10	328	31.3		36.6	275	12.0 124	+11	01.8 131	**20**	36	5 05	29	22	56	14	38
11	343	31.3	+21	36.2	289	43.5 125	+10	48.7 131	**10 N**	4 57	5 23	5 46	9 31	51	22 08	42
12	358	31.2	+21	35.8	304	15.0 125	+10	35.5 132	**0**	5 14	5 40	6 02	9 39	47	22 01	47
13	13	31.1		35.5	318	46.5 125		22.2 133	**10 S**	30	5 56	18	47	43	21 55	51
14	28	31.1		35.1	333	18.0 125	+10	08.9 133	**20**	44	6 12	35	9 56	38	49	55
15	43	31.0		34.7	347	49.5 125	+9	55.5 134	**30**	5 59	29	6 55	10 06	33	41	61
16	58	30.9		34.3	2	21.1 126		42.1 134	**35**	6 07	38	7 06	11	31	37	64
17	73	30.9	+21	33.9	16	52.7 126	+9	28.6 135	**40**	6 15	6 49	7 19	10 18	27	21 32	67
18	88	30.8	+21	33.5	31	24.3 126	+9	15.0 136	**45**	6 24	7 01	7 34	10 25	23	21 26	72
19	103	30.7		33.1	45	55.9 126	+9	01.4 136	**50**	35	15	7 52	34	19	19	77
20	118	30.7		32.7	60	27.5 126	+8	47.8 136	**52**	39	22	8 01	38	16	16	79
21	133	30.6		32.3	74	59.2 127		34.1 137	**54**	44	29	11	43	14	12	82
22	148	30.6		31.9	89	30.8 126		20.3 138	**56**	49	37	22	48	11	08	84
23	163	30.5		31.5	104	02.5 127	+8	06.5 138	**58**	6 55	46	35	53	9	21 03	88
24	178	30.4	+21	31.2	118	34.2 127	+7	52.6 139	**60 S**	7 01	7 56	8 50	10 59	5	20 58	92

UT	ARIES PMG 4h 30m.9		VENUS Mag: −3.9 PMG: 14h 05m				MARTE Mag: +1.8 PMG: 14h 02m				JÚPITER Mag: −2.8 PMG: 2h 46m				SATURNO Mag: +0.3 PMG: 1h 28m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	292	04.8	148	47.6	+16	16.2	149	11.9	+15	54.4	318	20.6	−12	00.1	337	50.0	−18	01.8
1	307	07.3	163	47.1		15.3	164	12.8		53.9	333	23.2		00.2	352	52.6		01.8
2	322	09.8	178	46.6		14.3	179	13.8		53.4	348	25.8		00.2	7	55.2		01.9
3	337	12.2	193	46.1		13.3	194	14.7		52.9	3	28.5		00.3	22	57.9		01.9
4	352	14.7	208	45.6		12.3	209	15.6		52.4	18	31.1		00.4	38	00.5		02.0
5	7	17.2	223	45.1	+16	11.3	224	16.6	+15	51.9	33	33.7	−12	00.5	53	03.1	−18	02.0
6	22	19.6	238	44.6	+16	10.4	239	17.5	+15	51.4	48	36.4	−12	00.5	68	05.8	−18	02.1
7	37	22.1	253	44.1		09.4	254	18.4		50.9	63	39.0		00.6	83	08.4		02.1
8	52	24.5	268	43.6		08.4	269	19.4		50.4	78	41.6		00.7	98	11.0		02.2
9	67	27.0	283	43.1		07.4	284	20.3		49.9	93	44.3		00.8	113	13.7		02.2
10	82	29.5	298	42.6		06.4	299	21.2		49.4	108	46.9		00.8	128	16.3		02.3
11	97	31.9	313	42.1	+16	05.4	314	22.2	+15	48.9	123	49.5	−12	00.9	143	18.9	−18	02.3
12	112	34.4	328	41.6	+16	04.5	329	23.1	+15	48.4	138	52.2	−12	01.0	158	21.6	−18	02.4
13	127	36.9	343	41.1		03.5	344	24.0		47.8	153	54.8		01.1	173	24.2		02.4
14	142	39.3	358	40.6		02.5	359	25.0		47.3	168	57.5		01.1	188	26.8		02.5
15	157	41.8	13	40.1		01.5	14	25.9		46.8	184	00.1		01.2	203	29.5		02.5
16	172	44.3	28	39.6	+16	00.5	29	26.8		46.3	199	02.7		01.3	218	32.1		02.6
17	187	46.7	43	39.1	+15	59.5	44	27.8	+15	45.8	214	05.4	−12	01.4	233	34.7	−18	02.6
18	202	49.2	58	38.6	+15	58.5	59	28.7	+15	45.3	229	08.0	−12	01.4	248	37.4	−18	02.7
19	217	51.7	73	38.1		57.5	74	29.6		44.8	244	10.6		01.5	263	40.0		02.7
20	232	54.1	88	37.6		56.6	89	30.6		44.3	259	13.3		01.6	278	42.6		02.8
21	247	56.6	103	37.1		55.6	104	31.5		43.8	274	15.9		01.7	293	45.3		02.8
22	262	59.0	118	36.6		54.6	119	32.4		43.3	289	18.6		01.7	308	47.9		02.9
23	278	01.5	133	36.1		53.6	134	33.4		42.8	304	21.2		01.8	323	50.5		02.9
24	293	04.0	148	35.6	+15	52.6	149	34.3	+15	42.3	319	23.8	−12	01.9	338	53.2	−18	03.0
Dif	—		−5		−10		+9		−5		+26		−1		+26		−1	

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 06m.0				Edad: 4d.9 SD: 15′.7 PMG: 16h 37m		PHE: 4h: 57′.7; 12h: 57′.9; 20h: 58′.0 Rº: 47m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	178	30.4	+21	31.2	118	34.2	+7	52.6	**60 N**	21 07	22 24	** **	9 46	92	23 04	5
1	193	30.4		30.8	133	05.9 127		38.7 139	**58**	20 50	21 54	** **	49	88	03	8
2	208	30.3		30.4	147	37.6 127		24.8 139	**56**	36	31	23 19	52	85	02	11
3	223	30.2		30.0	162	09.4 128	+7	10.8 140	**54**	24	21 14	22 33	55	82	01	13
4	238	30.2		29.6	176	41.1 127	+6	56.8 140	**52**	13	20 58	22 05	57	79	00	16
5	253	30.1	+21	29.2	191	12.9 128	+6	42.7 141	**50**	20 04	20 46	21 44	9 59	77	23 00	17
6	268	30.0	+21	28.8	205	44.6 127	+6	28.5 142	**45**	19 44	20 20	21 06	10 03	73	22 58	22
7	283	30.0		28.4	220	16.4 128		14.4 141	**40**	28	20 00	20 39	07	68	56	26
8	298	29.9		28.0	234	48.1 127	+6	00.2 142	**35**	14	19 43	19	10	65	55	30
9	313	29.9		27.6	249	19.9 128	+5	45.9 143	**30**	19 03	29	20 02	13	61	54	32
10	328	29.8		27.2	263	51.7 128		31.6 143	**20**	18 43	19 07	19 35	18	56	52	38
11	343	29.7	+21	26.8	278	23.5 128	+5	17.3 143	**10 N**	18 26	18 48	19 15	10 22	51	22 50	43
12	358	29.7	+21	26.4	292	55.2 127	+5	03.0 143	**0**	18 10	18 32	18 58	10 26	47	22 48	47
13	13	29.6		26.0	307	27.0 128	+4	48.6 144	**10 S**	17 54	16	42	30	42	46	52
14	28	29.5		25.6	321	58.8 128		34.2 144	**20**	37	18 01	28	34	38	44	57
15	43	29.5		25.2	336	30.6 128		19.7 145	**30**	18	17 44	13	39	32	42	62
16	58	29.4		24.8	351	02.3 127	+4	05.2 145	**35**	17 07	34	18 06	42	29	41	65
17	73	29.4	+21	24.4	5	34.1 128	+3	50.7 145	**40**	16 54	17 24	17 57	10 45	26	22 39	69
18	88	29.3	+21	24.0	20	05.9 128	+3	36.2 145	**45**	16 39	17 12	17 49	10 48	22	22 38	73
19	103	29.2		23.5	34	37.6 127		21.6 146	**50**	21	16 58	39	53	17	36	78
20	118	29.2		23.1	49	09.4 128	+3	07.0 146	**52**	12	52	34	54	16	35	80
21	133	29.1		22.7	63	41.1 127	+2	52.4 146	**54**	16 03	44	29	57	13	34	82
22	148	29.1		22.3	78	12.9 128		37.7 147	**56**	15 52	37	24	10 59	10	32	86
23	163	29.0		21.9	92	44.6 127		23.0 147	**58**	39	28	19	11 02	7	31	89
24	178	28.9	+21	21.5	107	16.3 127	+2	08.3 147	**60 S**	15 24	16 18	17 12	11 04	5	22 30	92

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 4h 27m.0		Mag: −3.9 PMG: 14h 06m				Mag: +1.8 PMG: 14h 01m				Mag: −2.8 PMG: 2h 42m				Mag: +0.3 PMG: 1h 24m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	293	04.0	148	35.6	+15	52.6	149	34.3	+15	42.3	319	23.8	−12	01.9	338	53.2	−18	03.0
1	308	06.4	163	35.1		51.6	164	35.2		41.7	334	26.5		02.0	353	55.8		03.0
2	323	08.9	178	34.6		50.6	179	36.2		41.2	349	29.1		02.1	8	58.4		03.1
3	338	11.4	193	34.1		49.6	194	37.1		40.7	4	31.8		02.1	24	01.1		03.1
4	353	13.8	208	33.6		48.6	209	38.1		40.2	19	34.4		02.2	39	03.7		03.2
5	8	16.3	223	33.2	+15	47.6	224	39.0	+15	39.7	34	37.0	−12	02.3	54	06.3	−18	03.3
6	23	18.8	238	32.7	+15	46.6	239	39.9	+15	39.2	49	39.7	−12	02.4	69	09.0	−18	03.3
7	38	21.2	253	32.2		45.6	254	40.9		38.7	64	42.3		02.4	84	11.6		03.4
8	53	23.7	268	31.7		44.6	269	41.8		38.2	79	45.0		02.5	99	14.3		03.4
9	68	26.1	283	31.2		43.6	284	42.7		37.7	94	47.6		02.6	114	16.9		03.5
10	83	28.6	298	30.7		42.6	299	43.7		37.1	109	50.2		02.7	129	19.5		03.5
11	98	31.1	313	30.2	+15	41.6	314	44.6	+15	36.6	124	52.9	−12	02.8	144	22.2	−18	03.6
12	113	33.5	328	29.7	+15	40.6	329	45.5	+15	36.1	139	55.5	−12	02.8	159	24.8	−18	03.6
13	128	36.0	343	29.3		39.6	344	46.5		35.6	154	58.2		02.9	174	27.4		03.7
14	143	38.5	358	28.8		38.6	359	47.4		35.1	170	00.8		03.0	189	30.1		03.7
15	158	40.9	13	28.3		37.6	14	48.3		34.6	185	03.5		03.1	204	32.7		03.8
16	173	43.4	28	27.8		36.6	29	49.3		34.1	200	06.1		03.1	219	35.3		03.8
17	188	45.9	43	27.3	+15	35.6	44	50.2	+15	33.6	215	08.8	−12	03.2	234	38.0	−18	03.9
18	203	48.3	58	26.8	+15	34.6	59	51.2	+15	33.0	230	11.4	−12	03.3	249	40.6	−18	03.9
19	218	50.8	73	26.4		33.6	74	52.1		32.5	245	14.0		03.4	264	43.3		04.0
20	233	53.3	88	25.9		32.6	89	53.0		32.0	260	16.7		03.5	279	45.9		04.0
21	248	55.7	103	25.4		31.6	104	54.0		31.5	275	19.3		03.5	294	48.5		04.1
22	263	58.2	118	24.9		30.5	119	54.9		31.0	290	22.0		03.6	309	51.2		04.1
23	279	00.6	133	24.4		29.5	134	55.8		30.5	305	24.6		03.7	324	53.8		04.2
24	294	03.1	148	24.0	+15	28.5	149	56.8	+15	30.0	320	27.3	−12	03.8	339	56.4	−18	04.2
Dif	—			−5		−10		+9		−5		+26		−1		+26		−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 5^{d}.9		PHE	4^{h}: 58′.2								
	PMG: 12^{h} 06^{m}.1				SD: 15′.8			12^{h}: 58′.4								
					PMG: 17^{h} 24^{m}			20^{h}: 58′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	28.9	+21	21.5	107	16.3	+2	08.3	**60 N**	** **	1 49	3 06	11 18	94	23 09	5
1	193	28.9		21.1	121	48.0 127	+1	53.6 147	**58**	** **	2 19	23	17	91	11	8
2	208	28.8		20.7	136	19.7 127		38.9 147	**56**	0 53	41	37	17	87	13	11
3	223	28.8		20.3	150	51.3 126		24.1 148	**54**	1 40	2 59	49	17	84	14	14
4	238	28.7		19.9	165	23.0 127	+1	09.3 148	**52**	2 08	3 14	3 59	16	82	16	16
5	253	28.7	+21	19.5	179	54.6 126	+0	54.6 147	**50**	2 29	3 27	4 09	11 16	79	23 17	19
6	268	28.6	+21	19.0	194	26.3 127	+0	39.7 149	**45**	3 06	3 53	4 29	11 16	74	23 20	24
7	283	28.5		18.6	208	57.9 126		24.9 148	**40**	33	4 13	45	15	70	22	28
8	298	28.5		18.2	223	29.4 125	+0	10.1 148	**35**	3 54	29	4 58	15	66	25	31
9	313	28.4		17.8	238	01.0 126	−0	04.8 149	**30**	4 11	4 43	5 10	14	63	26	35
10	328	28.4		17.4	252	32.5 125		19.6 148	**20**	37	5 05	30	14	57	30	39
11	343	28.3	+21	17.0	267	04.0 125	−0	34.5 149	**10 N**	4 57	5 24	5 47	11 13	53	23 33	44
12	358	28.3	+21	16.6	281	35.5 125	−0	49.4 149	**0**	5 15	5 40	6 03	11 13	48	23 35	49
13	13	28.2		16.1	296	07.0 125	−1	04.2 148	**10 S**	30	5 56	18	12	44	38	53
14	28	28.1		15.7	310	38.4 124		19.1 149	**20**	44	6 11	35	12	38	41	58
15	43	28.1		15.3	325	09.8 124		34.0 149	**30**	5 59	28	6 54	11	34	44	64
16	58	28.0		14.9	339	41.2 124	−1	48.9 149	**35**	6 06	37	7 05	11	30	46	67
17	73	28.0	+21	14.5	354	12.5 123	−2	03.8 149	**40**	6 14	6 48	7 18	11 11	27	23 48	71
18	88	27.9	+21	14.0	8	43.8 123	−2	18.7 149	**45**	6 23	7 00	7 32	11 10	23	23 51	74
19	103	27.9		13.6	23	15.1 123		33.6 149	**50**	33	14	51	10	18	54	80
20	118	27.8		13.2	37	46.3 122	−2	48.5 149	**52**	38	20	7 59	10	16	55	82
21	133	27.8		12.8	52	17.5 122	−3	03.4 149	**54**	42	27	8 09	10	13	56	86
22	148	27.7		12.3	66	48.7 122		18.3 149	**56**	47	35	20	09	11	23 58	88
23	163	27.7		11.9	81	19.8 121		33.2 149	**58**	53	44	32	09	8	** **	**
24	178	27.6	+21	11.5	95	50.9 121	−3	48.0 148	**60 S**	6 59	7 53	8 46	11 09	5	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4^{h} 23^{m}.1		PMG: 14^{h} 07^{m}			PMG: 13^{h} 59^{m}			PMG: 2^{h} 38^{m}			PMG: 1^{h} 20^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	294	03.1	148	24.0	+15 28.5	149	56.8	+15 30.0	320	27.3	−12 03.8	339	56.4	−18 04.2
1	309	05.6	163	23.5	27.5	164	57.7	29.5	335	29.9	03.9	354	59.1	04.3
2	324	08.0	178	23.0	26.5	179	58.6	28.9	350	32.6	03.9	10	01.7	04.3
3	339	10.5	193	22.5	25.5	194	59.6	28.4	5	35.2	04.0	25	04.3	04.4
4	354	13.0	208	22.1	24.5	210	00.5	27.9	20	37.9	04.1	40	07.0	04.4
5	9	15.4	223	21.6	+15 23.5	225	01.5	+15 27.4	35	40.5	−12 04.2	55	09.6	−18 04.5
6	24	17.9	238	21.1	+15 22.4	240	02.4	+15 26.9	50	43.2	−12 04.2	70	12.3	−18 04.6
7	39	20.4	253	20.6	21.4	255	03.3	26.4	65	45.8	04.3	85	14.9	04.6
8	54	22.8	268	20.2	20.4	270	04.3	25.8	80	48.5	04.4	100	17.5	04.7
9	69	25.3	283	19.7	19.4	285	05.2	25.3	95	51.1	04.5	115	20.2	04.7
10	84	27.7	298	19.2	18.4	300	06.1	24.8	110	53.8	04.6	130	22.8	04.8
11	99	30.2	313	18.7	+15 17.4	315	07.1	+15 24.3	125	56.4	−12 04.6	145	25.4	−18 04.8
12	114	32.7	328	18.3	+15 16.3	330	08.0	+15 23.8	140	59.1	−12 04.7	160	28.1	−18 04.9
13	129	35.1	343	17.8	15.3	345	09.0	23.3	156	01.7	04.8	175	30.7	04.9
14	144	37.6	358	17.3	14.3	0	09.9	22.8	171	04.4	04.9	190	33.4	05.0
15	159	40.1	13	16.8	13.3	15	10.8	22.2	186	07.0	05.0	205	36.0	05.0
16	174	42.5	28	16.4	12.3	30	11.8	21.7	201	09.7	05.1	220	38.6	05.1
17	189	45.0	43	15.9	+15 11.2	45	12.7	+15 21.2	216	12.3	−12 05.1	235	41.3	−18 05.1
18	204	47.5	58	15.4	+15 10.2	60	13.7	+15 20.7	231	15.0	−12 05.2	250	43.9	−18 05.2
19	219	49.9	73	15.0	09.2	75	14.6	20.2	246	17.6	05.3	265	46.5	05.2
20	234	52.4	88	14.5	08.2	90	15.5	19.7	261	20.3	05.4	280	49.2	05.3
21	249	54.9	103	14.0	07.1	105	16.5	19.1	276	22.9	05.5	295	51.8	05.3
22	264	57.3	118	13.6	06.1	120	17.4	18.6	291	25.6	05.5	310	54.5	05.4
23	279	59.8	133	13.1	05.1	135	18.3	18.1	306	28.2	05.6	325	57.1	05.4
24	295	02.2	148	12.6	+15 04.1	150	19.3	+15 17.6	321	30.9	−12 05.7	340	59.7	−18 05.5
Dif	—			−5	−10		+9	−5		+26	−1		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 6ᵈ.9		PHE	4ʰ: 58′.8								
	PMG: 12ʰ 06ᵐ.2				SD: 16′.0			12ʰ: 58′.9								
					PMG: 18ʰ 12ᵐ			20ʰ: 59′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	27.6	+21	11.5	95	50.9	−3	48.0	**60 N**	21 03	22 18	** **	12 52	98	23 14	7
1	193	27.5		11.1	110	21.9 120	−4	02.9 149	**58**	20 47	21 49	** **	48	93	19	11
2	208	27.5		10.7	124	52.9 120		17.8 149	**56**	33	28	23 08	44	90	24	14
3	223	27.4		10.2	139	23.9 120		32.6 148	**54**	21	21 10	22 27	41	87	28	17
4	238	27.4		09.8	153	54.8 119	−4	47.5 149	**52**	11	20 56	22 01	38	84	32	20
5	253	27.3	+21	09.4	168	25.6 118	−5	02.3 148	**50**	20 02	20 43	21 41	12 35	82	23 36	22
6	268	27.3	+21	08.9	182	56.5 119	−5	17.1 148	**45**	19 42	20 18	21 04	12 30	76	23 44	26
7	283	27.2		08.5	197	27.2 117		31.9 148	**40**	27	19 58	20 38	25	72	50	31
8	298	27.2		08.1	211	57.9 117	−5	46.7 148	**35**	13	42	17	21	68	23 56	34
9	313	27.1		07.7	226	28.6 117	−6	01.4 147	**30**	19 02	29	20 01	17	65	** **	**
10	328	27.1		07.2	240	59.2 116		16.2 148	**20**	18 42	19 06	19 35	11	59	** **	**
11	343	27.0	+21	06.8	255	29.8 116	−6	30.9 147	**10 N**	18 25	18 48	19 15	12 06	54	** **	**
12	358	27.0	+21	06.4	270	00.3 115	−6	45.6 147	**0**	18 10	18 32	18 58	12 01	50	** **	**
13	13	26.9		05.9	284	30.8 115	−7	00.2 146	**10 S**	17 54	17	43	11 56	45	** **	**
14	28	26.9		05.5	299	01.2 114		14.9 147	**20**	38	18 01	28	50	42	** **	**
15	43	26.8		05.1	313	31.5 113		29.5 146	**30**	19	17 45	14	45	35	** **	**
16	58	26.8		04.6	328	01.8 113		44.1 146	**35**	17 08	36	18 07	41	33	** **	**
17	73	26.7	+21	04.2	342	32.0 112	−7	58.6 145	**40**	16 56	17 25	17 59	11 38	29	** **	**
18	88	26.7	+21	03.8	357	02.2 112	−8	13.2 146	**45**	16 41	17 14	17 50	11 33	25	** **	**
19	103	26.6		03.3	11	32.3 111		27.7 145	**50**	23	17 00	40	28	20	** **	**
20	118	26.6		02.9	26	02.3 110		42.1 144	**52**	15	16 54	36	26	18	** **	**
21	133	26.5		02.4	40	32.3 110	−8	56.5 144	**54**	16 05	47	31	23	15	** **	**
22	148	26.5		02.0	55	02.2 109	−9	10.9 144	**56**	15 55	39	26	20	13	** **	**
23	163	26.4		01.6	69	32.0 108		25.3 144	**58**	42	31	21	17	10	0 00	91
24	178	26.4	+21	01.1	84	01.8 108	−9	39.6 143	**60 S**	15 28	16 21	17 15	11 14	6	0 02	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4ʰ 19ᵐ.1		PMG: 14ʰ 08ᵐ			PMG: 13ʰ 58ᵐ			PMG: 2ʰ 33ᵐ			PMG: 1ʰ 16ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	295	02.2	148	12.6	+15 04.1	150	19.3	+15 17.6	321	30.9	−12 05.7	340	59.7	−18 05.5
1	310	04.7	163	12.2	03.0	165	20.2	17.1	336	33.5	05.8	356	02.4	05.5
2	325	07.2	178	11.7	02.0	180	21.2	16.5	351	36.2	05.9	11	05.0	05.6
3	340	09.6	193	11.2	+15 01.0	195	22.1	16.0	6	38.8	05.9	26	07.6	05.6
4	355	12.1	208	10.8	+15 00.0	210	23.0	15.5	21	41.5	06.0	41	10.3	05.7
5	10	14.6	223	10.3	+14 58.9	225	24.0	+15 15.0	36	44.1	−12 06.1	56	12.9	−18 05.8
6	25	17.0	238	09.9	+14 57.9	240	24.9	+15 14.5	51	46.8	−12 06.2	71	15.6	−18 05.8
7	40	19.5	253	09.4	56.9	255	25.9	13.9	66	49.4	06.3	86	18.2	05.9
8	55	22.0	268	08.9	55.8	270	26.8	13.4	81	52.1	06.4	101	20.8	05.9
9	70	24.4	283	08.5	54.8	285	27.7	12.9	96	54.8	06.4	116	23.5	06.0
10	85	26.9	298	08.0	53.8	300	28.7	12.4	111	57.4	06.5	131	26.1	06.0
11	100	29.4	313	07.6	+14 52.7	315	29.6	+15 11.9	127	00.1	−12 06.6	146	28.8	−18 06.1
12	115	31.8	328	07.1	+14 51.7	330	30.6	+15 11.4	142	02.7	−12 06.7	161	31.4	−18 06.1
13	130	34.3	343	06.6	50.7	345	31.5	10.8	157	05.4	06.8	176	34.0	06.2
14	145	36.7	358	06.2	49.6	0	32.4	10.3	172	08.0	06.8	191	36.7	06.2
15	160	39.2	13	05.7	48.6	15	33.4	09.8	187	10.7	06.9	206	39.3	06.3
16	175	41.7	28	05.3	47.5	30	34.3	09.3	202	13.3	07.0	221	42.0	06.3
17	190	44.1	43	04.8	+14 46.5	45	35.3	+15 08.7	217	16.0	−12 07.1	236	44.6	−18 06.4
18	205	46.6	58	04.4	+14 45.5	60	36.2	+15 08.2	232	18.7	−12 07.2	251	47.2	−18 06.4
19	220	49.1	73	03.9	44.4	75	37.1	07.7	247	21.3	07.3	266	49.9	06.5
20	235	51.5	88	03.4	43.4	90	38.1	07.2	262	24.0	07.3	281	52.5	06.5
21	250	54.0	103	03.0	42.3	105	39.0	06.7	277	26.6	07.4	296	55.2	06.6
22	265	56.5	118	02.5	41.3	120	40.0	06.1	292	29.3	07.5	311	57.8	06.6
23	280	58.9	133	02.1	40.3	135	40.9	05.6	307	32.0	07.6	327	00.4	06.7
24	296	01.4	148	01.6	+14 39.2	150	41.9	+15 05.1	322	34.6	−12 07.7	342	03.1	−18 06.8
Dif	—			−5	−10		+9	−5		+27	−1		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06.m3				◐ LUNA Edad: 7.d9 SD: 16′.1 PMG: 19h 03m PHE { 4h: 59′.3 ; 12h: 59′.4 ; 20h: 59′.6 } Rº: 55m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	26.4	+21	01.1	84	01.8	−9	39.6	**60 N**	** **	1 55	3 10	14 30	102	23 21	10
1	193	26.3		00.7	98	31.5 107	−9	53.9 143	**58**	** **	2 24	26	21	98	30	15
2	208	26.3	+21	00.3	113	01.1 106	−10	08.1 142	**56**	1 05	2 45	40	14	93	38	19
3	223	26.3	+20	59.8	127	30.6 105		22.3 142	**54**	1 46	3 02	3 52	08	90	45	22
4	238	26.2		59.4	142	00.1 105		36.4 141	**52**	2 12	17	4 02	14 02	87	52	24
5	253	26.2	+20	58.9	156	29.5 104	−10	50.5 141	**50**	2 32	3 30	4 11	13 57	84	23 58	27
6	268	26.1	+20	58.5	170	58.9 104	−11	04.5 140	**45**	3 09	3 55	4 31	13 46	79	** **	**
7	283	26.1		58.0	185	28.1 102		18.5 140	**40**	35	4 15	46	37	74	** **	**
8	298	26.0		57.6	199	57.3 102		32.4 139	**35**	3 55	31	4 59	29	71	** **	**
9	313	26.0		57.2	214	26.4 101	−11	46.3 139	**30**	4 12	4 44	5 11	22	68	0 01	37
10	328	25.9		56.7	228	55.5 101	−12	00.1 138	**20**	38	5 06	30	10	63	09	43
11	343	25.9	+20	56.3	243	24.4 99	−12	13.9 138	**10 N**	4 58	5 24	5 47	13 00	58	0 17	47
12	358	25.8	+20	55.8	257	53.3 99	−12	27.6 137	**0**	5 15	5 41	6 03	12 51	54	0 24	52
13	13	25.8		55.4	272	22.1 98		41.2 136	**10 S**	30	5 56	18	41	50	31	56
14	28	25.8		54.9	286	50.8 97	−12	54.8 136	**20**	44	6 11	35	32	45	39	61
15	43	25.7		54.5	301	19.4 96	−13	08.3 135	**30**	5 58	27	6 53	20	40	48	66
16	58	25.7		54.0	315	47.9 95		21.8 135	**35**	6 05	37	7 04	14	37	53	69
17	73	25.6	+20	53.6	330	16.4 95	−13	35.2 134	**40**	6 13	6 47	7 16	12 07	33	0 59	73
18	88	25.6	+20	53.1	344	44.8 94	−13	48.5 133	**45**	6 22	6 58	7 31	11 58	30	1 05	78
19	103	25.5		52.7	359	13.0 92	−14	01.8 133	**50**	32	7 12	49	48	25	14	82
20	118	25.5		52.2	13	41.2 92		14.9 131	**52**	36	18	7 57	44	22	17	86
21	133	25.5		51.8	28	09.3 91		28.0 131	**54**	40	25	8 06	38	20	22	88
22	148	25.4		51.3	42	37.4 91		41.1 131	**56**	45	33	17	33	16	26	92
23	163	25.4		50.9	57	05.3 89	−14	54.0 129	**58**	51	41	29	27	12	31	96
24	178	25.3	+20	50.4	71	33.1 88	−15	06.9 129	**60 S**	6 57	7 51	8 43	11 20	8	1 37	100

UT	ARIES PMG 4h 15.m2		VENUS Mag: −3.9 PMG: 14h 08m				MARTE Mag: +1.8 PMG: 13h 56m				JÚPITER Mag: −2.8 PMG: 2h 29m				SATURNO Mag: +0.3 PMG: 1h 12m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	296	01.4	148	01.6	+14	39.2	150	41.9	+15	05.1	322	34.6	−12	07.7	342	03.1	−18	06.8
1	311	03.8	163	01.2		38.2	165	42.8		04.6	337	37.3		07.8	357	05.7		06.8
2	326	06.3	178	00.7		37.1	180	43.7		04.1	352	39.9		07.8	12	08.3		06.9
3	341	08.8	193	00.3		36.1	195	44.7		03.5	7	42.6		07.9	27	11.0		06.9
4	356	11.2	207	59.8		35.0	210	45.6		03.0	22	45.3		08.0	42	13.6		07.0
5	11	13.7	222	59.4	+14	34.0	225	46.6	+15	02.5	37	47.9	−12	08.1	57	16.3	−18	07.0
6	26	16.2	237	58.9	+14	33.0	240	47.5	+15	02.0	52	50.6	−12	08.2	72	18.9	−18	07.1
7	41	18.6	252	58.5		31.9	255	48.4		01.4	67	53.2		08.3	87	21.5		07.1
8	56	21.1	267	58.0		30.9	270	49.4		00.9	82	55.9		08.4	102	24.2		07.2
9	71	23.6	282	57.6		29.8	285	50.3	+15	00.4	97	58.6		08.4	117	26.8		07.2
10	86	26.0	297	57.1		28.8	300	51.3	+14	59.9	113	01.2		08.5	132	29.5		07.3
11	101	28.5	312	56.7	+14	27.7	315	52.2	+14	59.3	128	03.9	−12	08.6	147	32.1	−18	07.3
12	116	31.0	327	56.2	+14	26.7	330	53.2	+14	58.8	143	06.5	−12	08.7	162	34.8	−18	07.4
13	131	33.4	342	55.8		25.6	345	54.1		58.3	158	09.2		08.8	177	37.4		07.4
14	146	35.9	357	55.4		24.6	0	55.0		57.8	173	11.9		08.9	192	40.0		07.5
15	161	38.3	12	54.9		23.5	15	56.0		57.2	188	14.5		08.9	207	42.7		07.5
16	176	40.8	27	54.5		22.5	30	56.9		56.7	203	17.2		09.0	222	45.3		07.6
17	191	43.3	42	54.0	+14	21.4	45	57.9	+14	56.2	218	19.9	−12	09.1	237	48.0	−18	07.6
18	206	45.7	57	53.6	+14	20.3	60	58.8	+14	55.7	233	22.5	−12	09.2	252	50.6	−18	07.7
19	221	48.2	72	53.1		19.3	75	59.8		55.1	248	25.2		09.3	267	53.2		07.8
20	236	50.7	87	52.7		18.2	91	00.7		54.6	263	27.9		09.4	282	55.9		07.8
21	251	53.1	102	52.3		17.2	106	01.6		54.1	278	30.5		09.5	297	58.5		07.9
22	266	55.6	117	51.8		16.1	121	02.6		53.6	293	33.2		09.5	313	01.2		07.9
23	281	58.1	132	51.4		15.1	136	03.5		53.0	308	35.8		09.6	328	03.8		08.0
24	297	00.5	147	50.9	+14	14.0	151	04.5	+14	52.5	323	38.5	−12	09.7	343	06.4	−18	08.0
Dif	—			−4		−11		+9		−5		+27		−1		+26		−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 06m.3		Edad: 8d.9 SD: 16′.2 PMG: 19h 58m		PHE 4h: 59′.7 12h: 59′.8 20h: 59′.9				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉	Dec	hG ☾	Dif	Dec	Dif								
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	178 25.3	+20 50.4	71 33.1	88	−15 06.9	128	**60 N**	20 59	22 11	** **	16 12	103	23 31	18
1	193 25.3	50.0	86 00.9	86	19.7	127	**58**	44	21 45	** **	15 59	98	45	23
2	208 25.2	49.5	100 28.5	86	32.4	126	**56**	30	24	22 59	47	94	23 57	27
3	223 25.2	49.0	114 56.1	85	45.0	126	**54**	19	21 07	22 22	38	89	** **	**
4	238 25.2	48.6	129 23.6	83	−15 57.6	124	**52**	09	20 53	21 57	29	87	** **	**
5	253 25.1	+20 48.1	143 50.9	83	−16 10.0	124	**50**	20 00	20 41	21 37	15 21	84	** **	**
6	268 25.1	+20 47.7	158 18.2	83	−16 22.4	124	**45**	19 41	20 16	21 01	15 05	79	0 10	33
7	283 25.0	47.2	172 45.4	82	34.7	123	**40**	25	19 57	20 36	14 51	76	21	36
8	298 25.0	46.8	187 12.5	81	46.8	121	**35**	12	41	16	40	72	30	40
9	313 25.0	46.3	201 39.5	80	−16 58.9	121	**30**	19 01	28	20 00	30	69	38	43
10	328 24.9	45.8	216 06.4	79	−17 10.9	120	**20**	18 42	19 06	19 34	14 13	65	0 52	48
11	343 24.9	+20 45.4	230 33.2	78	−17 22.8	119	**10 N**	18 25	18 48	19 14	13 58	61	1 04	52
12	358 24.8	+20 44.9	244 59.9	77	−17 34.6	118	**0**	18 10	18 32	18 58	13 45	57	1 16	56
13	13 24.8	44.5	259 26.6	77	46.3	117	**10 S**	17 55	17	43	31	54	27	60
14	28 24.8	44.0	273 53.1	75	−17 57.9	116	**20**	39	18 02	29	17	50	40	64
15	43 24.7	43.5	288 19.5	74	−18 09.4	115	**30**	20	17 46	15	13 00	46	1 54	69
16	58 24.7	43.1	302 45.8	73	20.7	113	**35**	17 09	37	08	12 51	43	2 02	72
17	73 24.7	+20 42.6	317 12.1	73	−18 32.0	113	**40**	16 57	17 27	18 00	12 40	40	2 12	75
18	88 24.6	+20 42.1	331 38.2	71	−18 43.2	112	**45**	16 43	17 16	17 52	12 28	36	2 23	79
19	103 24.6	41.7	346 04.2	70	−18 54.2	110	**50**	25	17 02	42	13	31	36	85
20	118 24.5	41.2	0 30.2	70	−19 05.2	110	**52**	17	16 56	38	12 06	29	43	87
21	133 24.5	40.7	14 56.0	68	16.0	108	**54**	16 08	49	34	11 58	26	50	90
22	148 24.5	40.3	29 21.8	68	26.7	107	**56**	15 58	42	29	49	23	2 58	93
23	163 24.4	39.8	43 47.4	66	37.3	106	**58**	46	33	24	39	19	3 07	97
24	178 24.4	+20 39.3	58 12.9	65	−19 47.7	104	**60 S**	15 32	16 24	17 18	11 28	14	3 17	103

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 4h 11m.3	Mag: −3.9 PMG: 14h 09m		Mag: +1.8 PMG: 13h 55m		Mag: −2.8 PMG: 2h 25m		Mag: +0.3 PMG: 1h 07m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	297 00.5	147 50.9	+14 14.0	151 04.5	+14 52.5	323 38.5	−12 09.7	343 06.4	−18 08.0
1	312 03.0	162 50.5	13.0	166 05.4	52.0	338 41.2	09.8	358 09.1	08.1
2	327 05.5	177 50.1	11.9	181 06.4	51.5	353 43.8	09.9	13 11.7	08.1
3	342 07.9	192 49.6	10.8	196 07.3	50.9	8 46.5	10.0	28 14.4	08.2
4	357 10.4	207 49.2	09.8	211 08.3	50.4	23 49.2	10.1	43 17.0	08.2
5	12 12.8	222 48.8	+14 08.7	226 09.2	+14 49.9	38 51.8	−12 10.1	58 19.6	−18 08.3
6	27 15.3	237 48.3	+14 07.7	241 10.1	+14 49.4	53 54.5	−12 10.2	73 22.3	−18 08.3
7	42 17.8	252 47.9	06.6	256 11.1	48.8	68 57.2	10.3	88 24.9	08.4
8	57 20.2	267 47.4	05.5	271 12.0	48.3	83 59.8	10.4	103 27.6	08.4
9	72 22.7	282 47.0	04.5	286 13.0	47.8	99 02.5	10.5	118 30.2	08.5
10	87 25.2	297 46.6	03.4	301 13.9	47.2	114 05.2	10.6	133 32.9	08.5
11	102 27.6	312 46.1	+14 02.3	316 14.9	+14 46.7	129 07.8	−12 10.7	148 35.5	−18 08.6
12	117 30.1	327 45.7	+14 01.3	331 15.8	+14 46.2	144 10.5	−12 10.7	163 38.1	−18 08.7
13	132 32.6	342 45.3	+14 00.2	346 16.8	45.7	159 13.2	10.8	178 40.8	08.7
14	147 35.0	357 44.8	+13 59.1	1 17.7	45.1	174 15.9	10.9	193 43.4	08.8
15	162 37.5	12 44.4	58.1	16 18.6	44.6	189 18.5	11.0	208 46.1	08.8
16	177 39.9	27 44.0	57.0	31 19.6	44.1	204 21.2	11.1	223 48.7	08.9
17	192 42.4	42 43.6	+13 55.9	46 20.5	+14 43.6	219 23.9	−12 11.2	238 51.3	−18 08.9
18	207 44.9	57 43.1	+13 54.9	61 21.5	+14 43.0	234 26.5	−12 11.3	253 54.0	−18 09.0
19	222 47.3	72 42.7	53.8	76 22.4	42.5	249 29.2	11.4	268 56.6	09.0
20	237 49.8	87 42.3	52.7	91 23.4	42.0	264 31.9	11.4	283 59.3	09.1
21	252 52.3	102 41.8	51.7	106 24.3	41.4	279 34.5	11.5	299 01.9	09.1
22	267 54.7	117 41.4	50.6	121 25.3	40.9	294 37.2	11.6	314 04.6	09.2
23	282 57.2	132 41.0	49.5	136 26.2	40.4	309 39.9	11.7	329 07.2	09.2
24	297 59.7	147 40.6	+13 48.4	151 27.2	+14 39.8	324 42.6	−12 11.8	344 09.8	−18 09.3
Dif	—	−4	−11	+9	−5	+27	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 9ᵈ.9		PHE	4ʰ: 60′.0									
	PMG: 12ʰ 06ᵐ.4				SD: 16′.3			12ʰ: 60′.1									
					PMG: 20ʰ 57ᵐ			20ʰ: 60′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	24.4	+20	39.3	58	12.9	−19	47.7		**60 N**	** **	2 02	3 14	17 55	96	23 49	33
1	193	24.4		38.9	72	38.4	65	−19	58.1	104	**58**	** **	29	30	37	90	** ** **
2	208	24.3		38.4	87	03.8	64	−20	08.3	102	**56**	1 15	2 49	43	21	86	** ** **
3	223	24.3		37.9	101	29.0	62		18.4	101	**54**	1 52	3 06	3 54	17 07	84	0 07 31
4	238	24.3		37.5	115	54.2	62		28.3	99	**52**	2 17	20	4 05	16 56	81	16 34
5	253	24.2	+20	37.0	130	19.3	61	−20	38.2	99	**50**	2 36	3 32	4 14	16 45	80	0 25 36
6	268	24.2	+20	36.5	144	44.2	59	−20	47.9	97	**45**	3 12	3 57	4 33	16 24	76	0 43 40
7	283	24.2		36.0	159	09.1	59	−20	57.4	95	**40**	37	4 16	4 48	16 07	73	0 57 45
8	298	24.1		35.6	173	33.9	58	−21	06.9	95	**35**	3 57	32	5 01	15 52	71	1 10 47
9	313	24.1		35.1	187	58.6	57		16.2	93	**30**	4 13	4 45	12	39	70	21 49
10	328	24.1		34.6	202	23.2	56		25.3	91	**20**	39	5 07	31	15 18	66	40 53
11	343	24.0	+20	34.1	216	47.7	55	−21	34.4	91	**10 N**	4 58	5 25	5 48	14 59	64	1 56 57
12	358	24.0	+20	33.7	231	12.1	54	−21	43.2	88	**0**	5 15	5 41	6 03	14 42	62	2 12 59
13	13	24.0		33.2	245	36.5	54	−21	52.0	88	**10 S**	30	5 56	18	25	59	27 63
14	28	23.9		32.7	260	00.7	52	−22	00.6	86	**20**	44	6 11	34	14 07	57	2 44 66
15	43	23.9		32.2	274	24.9	52		09.0	84	**30**	5 57	27	6 52	13 46	54	3 03 69
16	58	23.9		31.8	288	48.9	50		17.3	83	**35**	6 05	36	7 03	34	52	14 72
17	73	23.8	+20	31.3	303	12.9	50	−22	25.5	82	**40**	6 12	6 45	7 15	13 20	49	3 27 75
18	88	23.8	+20	30.8	317	36.8	49	−22	33.5	80	**45**	6 21	6 57	7 29	13 04	46	3 42 78
19	103	23.8		30.3	332	00.6	48		41.3	78	**50**	30	7 10	47	12 44	42	4 01 82
20	118	23.7		29.8	346	24.4	48		49.0	77	**52**	34	16	7 55	35	40	10 85
21	133	23.7		29.4	0	48.0	46	−22	56.6	76	**54**	38	23	8 04	24	38	20 87
22	148	23.7		28.9	15	11.6	46	−23	04.0	74	**56**	43	30	14	12 12	35	31 91
23	163	23.7		28.4	29	35.1	45		11.2	72	**58**	48	38	26	11 58	31	4 44 95
24	178	23.6	+20	27.9	43	58.5	44	−23	18.3	71	**60 S**	6 54	7 48	8 40	11 42	26	5 00 100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.3		
	4ʰ 07ᵐ.3		PMG: 14ʰ 10ᵐ			PMG: 13ʰ 53ᵐ			PMG: 2ʰ 21ᵐ			PMG: 1ʰ 03ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	297	59.7	147	40.6	+13 48.4	151	27.2	+14 39.8	324	42.6	−12 11.8	344	09.8	−18 09.3
1	313	02.1	162	40.1	47.4	166	28.1	39.3	339	45.2	11.9	359	12.5	09.3
2	328	04.6	177	39.7	46.3	181	29.1	38.8	354	47.9	12.0	14	15.1	09.4
3	343	07.1	192	39.3	45.2	196	30.0	38.3	9	50.6	12.1	29	17.8	09.4
4	358	09.5	207	38.9	44.1	211	30.9	37.7	24	53.2	12.1	44	20.4	09.5
5	13	12.0	222	38.4	+13 43.1	226	31.9	+14 37.2	39	55.9	−12 12.2	59	23.1	−18 09.6
6	28	14.4	237	38.0	+13 42.0	241	32.8	+14 36.7	54	58.6	−12 12.3	74	25.7	−18 09.6
7	43	16.9	252	37.6	40.9	256	33.8	36.1	70	01.3	12.4	89	28.3	09.7
8	58	19.4	267	37.2	39.8	271	34.7	35.6	85	03.9	12.5	104	31.0	09.7
9	73	21.8	282	36.7	38.8	286	35.7	35.1	100	06.6	12.6	119	33.6	09.8
10	88	24.3	297	36.3	37.7	301	36.6	34.5	115	09.3	12.7	134	36.3	09.8
11	103	26.8	312	35.9	+13 36.6	316	37.6	+14 34.0	130	12.0	−12 12.8	149	38.9	−18 09.9
12	118	29.2	327	35.5	+13 35.5	331	38.5	+14 33.5	145	14.6	−12 12.9	164	41.6	−18 09.9
13	133	31.7	342	35.1	34.4	346	39.5	32.9	160	17.3	12.9	179	44.2	10.0
14	148	34.2	357	34.6	33.4	1	40.4	32.4	175	20.0	13.0	194	46.8	10.0
15	163	36.6	12	34.2	32.3	16	41.4	31.9	190	22.7	13.1	209	49.5	10.1
16	178	39.1	27	33.8	31.2	31	42.3	31.3	205	25.3	13.2	224	52.1	10.1
17	193	41.6	42	33.4	+13 30.1	46	43.3	+14 30.8	220	28.0	−12 13.3	239	54.8	−18 10.2
18	208	44.0	57	33.0	+13 29.0	61	44.2	+14 30.3	235	30.7	−12 13.4	254	57.4	−18 10.2
19	223	46.5	72	32.6	27.9	76	45.2	29.7	250	33.4	13.5	270	00.1	10.3
20	238	48.9	87	32.1	26.9	91	46.1	29.2	265	36.0	13.6	285	02.7	10.4
21	253	51.4	102	31.7	25.8	106	47.0	28.7	280	38.7	13.7	300	05.4	10.4
22	268	53.9	117	31.3	24.7	121	48.0	28.1	295	41.4	13.7	315	08.0	10.5
23	283	56.3	132	30.9	23.6	136	48.9	27.6	310	44.1	13.8	330	10.6	10.5
24	298	58.8	147	30.5	+13 22.5	151	49.9	+14 27.1	325	46.8	−12 13.9	345	13.3	−18 10.6
Dif	—			−4	−11		+9	−5		+27	−1		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 06m.4				Edad: 10d.9 SD: 16′.4 PMG: 21h 59m		PHE	4h: 60′.1 12h: 60′.2 20h: 60′.1 Rº: 63m			Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	178	23.6	+20	27.9	43	58.5	−23	18.3	**60 N**	20 55	22 05	** **	19 31	72	** **	**
1	193	23.6		27.4	58	21.8 43		25.2 69	**58**	40	21 40	** **	19 07	71	0 08	39
2	208	23.6		27.0	72	45.1 43		31.9 67	**56**	27	20	22 50	18 47	70	24	43
3	223	23.5		26.5	87	08.2 41		38.5 66	**54**	16	21 04	22 16	31	69	38	45
4	238	23.5		26.0	101	31.4 42		44.9 64	**52**	20 06	20 50	21 52	17	69	0 50	47
5	253	23.5	+20	25.5	115	54.4 40	−23	51.2 63	**50**	19 57	20 38	21 34	18 05	68	1 01	49
6	268	23.5	+20	25.0	130	17.4 40	−23	57.3 61	**45**	19 39	20 14	20 59	17 40	67	1 23	52
7	283	23.4		24.5	144	40.3 39	−24	03.2 59	**40**	24	19 55	34	20	67	42	54
8	298	23.4		24.0	159	03.2 39		08.9 57	**35**	11	40	20 14	17 03	66	1 57	56
9	313	23.4		23.6	173	25.9 37		14.5 56	**30**	19 00	27	19 58	16 49	65	2 10	57
10	328	23.3		23.1	187	48.7 38		19.9 54	**20**	18 41	19 05	33	24	65	33	59
11	343	23.3	+20	22.6	202	11.3 36	−24	25.2 53	**10 N**	18 25	18 48	19 14	16 03	64	2 53	61
12	358	23.3	+20	22.1	216	33.9 36	−24	30.2 50	**0**	18 10	18 32	18 58	15 44	63	3 11	63
13	13	23.3		21.6	230	56.5 36		35.1 49	**10 S**	17 55	17	43	24	63	30	64
14	28	23.2		21.1	245	19.0 35		39.8 47	**20**	39	18 03	30	15 04	61	3 50	66
15	43	23.2		20.6	259	41.5 35		44.4 46	**30**	21	17 47	16	14 40	60	4 12	68
16	58	23.2		20.1	274	03.9 34		48.7 43	**35**	17 11	38	09	26	59	26	69
17	73	23.2	+20	19.6	288	26.2 33	−24	52.9 42	**40**	16 59	17 28	18 02	14 09	59	4 42	70
18	88	23.1	+20	19.1	302	48.5 33	−24	56.9 40	**45**	16 45	17 17	17 53	13 50	58	5 00	73
19	103	23.1		18.6	317	10.8 33	−25	00.7 38	**50**	28	17 04	44	26	56	23	75
20	118	23.1		18.1	331	33.1 33		04.4 37	**52**	20	16 58	40	15	55	35	76
21	133	23.1		17.6	345	55.3 32		07.8 34	**54**	11	52	36	13 02	53	5 47	78
22	148	23.0		17.2	0	17.4 31		11.1 33	**56**	16 01	45	31	12 47	52	6 02	79
23	163	23.0		16.7	14	39.6 32		14.2 31	**58**	15 49	36	26	29	50	19	82
24	178	23.0	+20	16.2	29	01.7 31	−25	17.1 29	**60 S**	15 36	16 27	17 21	12 08	46	6 40	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 4h 03m.4		Mag: −3.9 PMG: 14h 10m			Mag: +1.8 PMG: 13h 52m			Mag: −2.8 PMG: 2h 16m			Mag: +0.2 PMG: 0h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	298	58.8	147	30.5	+13 22.5	151	49.9	+14 27.1	325	46.8	−12 13.9	345	13.3	−18 10.6
1	314	01.3	162	30.1	21.4	166	50.8	26.5	340	49.4	14.0	0	15.9	10.6
2	329	03.7	177	29.7	20.3	181	51.8	26.0	355	52.1	14.1	15	18.6	10.7
3	344	06.2	192	29.2	19.3	196	52.7	25.5	10	54.8	14.2	30	21.2	10.7
4	359	08.7	207	28.8	18.2	211	53.7	24.9	25	57.5	14.3	45	23.9	10.8
5	14	11.1	222	28.4	+13 17.1	226	54.6	+14 24.4	41	00.1	−12 14.4	60	26.5	−18 10.8
6	29	13.6	237	28.0	+13 16.0	241	55.6	+14 23.9	56	02.8	−12 14.5	75	29.1	−18 10.9
7	44	16.1	252	27.6	14.9	256	56.5	23.3	71	05.5	14.6	90	31.8	10.9
8	59	18.5	267	27.2	13.8	271	57.5	22.8	86	08.2	14.6	105	34.4	11.0
9	74	21.0	282	26.8	12.7	286	58.4	22.3	101	10.9	14.7	120	37.1	11.0
10	89	23.4	297	26.4	11.6	301	59.4	21.7	116	13.5	14.8	135	39.7	11.1
11	104	25.9	312	26.0	+13 10.5	317	00.3	+14 21.2	131	16.2	−12 14.9	150	42.4	−18 11.2
12	119	28.4	327	25.6	+13 09.4	332	01.3	+14 20.7	146	18.9	−12 15.0	165	45.0	−18 11.2
13	134	30.8	342	25.1	08.3	347	02.2	20.1	161	21.6	15.1	180	47.7	11.3
14	149	33.3	357	24.7	07.2	2	03.2	19.6	176	24.3	15.2	195	50.3	11.3
15	164	35.8	12	24.3	06.2	17	04.1	19.0	191	26.9	15.3	210	52.9	11.4
16	179	38.2	27	23.9	05.1	32	05.1	18.5	206	29.6	15.4	225	55.6	11.4
17	194	40.7	42	23.5	+13 04.0	47	06.0	+14 18.0	221	32.3	−12 15.5	240	58.2	−18 11.5
18	209	43.2	57	23.1	+13 02.9	62	07.0	+14 17.4	236	35.0	−12 15.6	256	00.9	−18 11.5
19	224	45.6	72	22.7	01.8	77	07.9	16.9	251	37.7	15.6	271	03.5	11.6
20	239	48.1	87	22.3	+13 00.7	92	08.9	16.4	266	40.4	15.7	286	06.2	11.6
21	254	50.6	102	21.9	+12 59.6	107	09.8	15.8	281	43.0	15.8	301	08.8	11.7
22	269	53.0	117	21.5	58.5	122	10.8	15.3	296	45.7	15.9	316	11.5	11.7
23	284	55.5	132	21.1	57.4	137	11.7	14.8	311	48.4	16.0	331	14.1	11.8
24	299	57.9	147	20.7	+12 56.3	152	12.7	+14 14.2	326	51.1	−12 16.1	346	16.7	−18 11.8
Dif	—			−4	−11		+9	−5		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 11^{d}.9		PHE	4^{h}: 60′.1									
	PMG: 12^{h} 06^{m}.5				SD: 16′.4			12^{h}: 60′.0									
					PMG: 23^{h} 02^{m}			20^{h}: 59′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′			h m	h m	h m	h m	m	h m	m
0	178	23.0	+20	16.2	29	01.7	−25	17.1		**60 N**	** **	2 08	3 18	20 43	42	0 22	61
1	193	23.0		15.7	43	23.7 30		19.8	27	**58**	** **	34	33	20 18	46	0 47	62
2	208	22.9		15.2	57	45.8 31		22.4	26	**56**	1 24	2 53	46	19 57	49	1 07	62
3	223	22.9		14.7	72	07.8 30		24.7	23	**54**	1 58	3 10	3 57	40	51	23	63
4	238	22.9		14.2	86	29.8 30		26.9	22	**52**	2 21	23	4 07	26	52	37	63
5	253	22.9	+20	13.7	100	51.8 30	−25	28.9	20	**50**	2 40	3 35	4 16	19 13	54	1 50	63
6	268	22.9	+20	13.2	115	13.8 30	−25	30.7	18	**45**	3 14	3 59	4 35	18 47	56	2 15	63
7	283	22.8		12.7	129	35.8 30		32.3	16	**40**	39	4 18	4 50	27	57	36	63
8	298	22.8		12.2	143	57.7 29		33.7	14	**35**	3 59	34	5 02	18 09	58	2 53	63
9	313	22.8		11.7	158	19.7 30		35.0	13	**30**	4 15	4 47	13	17 54	59	3 07	64
10	328	22.8		11.2	172	41.6 29		36.0	10	**20**	40	5 08	32	29	61	32	64
11	343	22.7	+20	10.7	187	03.6 30	−25	36.9	9	**10 N**	4 59	5 25	5 48	17 07	62	3 54	63
12	358	22.7	+20	10.2	201	25.5 29	−25	37.6	7	**0**	5 15	5 41	6 03	16 47	63	4 14	63
13	13	22.7		09.6	215	47.5 30		38.1	5	**10 S**	30	5 55	18	27	63	34	63
14	28	22.7		09.1	230	09.5 30		38.4	3	**20**	43	6 10	33	16 05	65	4 56	63
15	43	22.7		08.6	244	31.4 29		38.5	1	**30**	5 57	26	6 51	15 40	66	5 20	63
16	58	22.6		08.1	258	53.4 30		38.5	0	**35**	6 04	34	7 02	25	67	35	63
17	73	22.6	+20	07.6	273	15.4 30	−25	38.2	3	**40**	6 11	6 44	7 14	15 08	67	5 52	62
18	88	22.6	+20	07.1	287	37.4 30	−25	37.8	4	**45**	6 19	6 55	7 27	14 48	68	6 13	61
19	103	22.6		06.6	301	59.5 31		37.2	6	**50**	28	7 08	44	22	69	38	61
20	118	22.6		06.1	316	21.5 30		36.4	8	**52**	32	14	7 52	14 10	70	6 51	60
21	133	22.6		05.6	330	43.6 31		35.4	10	**54**	36	20	8 01	13 55	71	7 05	60
22	148	22.5		05.1	345	05.7 31		34.2	12	**56**	41	28	11	39	72	21	60
23	163	22.5		04.6	359	27.9 32		32.8	14	**58**	46	36	23	13 19	73	7 41	59
24	178	22.5	+20	04.1	13	50.1 32	−25	31.3	15	**60 S**	6 51	7 44	8 36	12 54	75	8 06	57

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3^{h} 59^{m}.5		PMG: 14^{h} 11^{m}			PMG: 13^{h} 50^{m}			PMG: 2^{h} 12^{m}			PMG: 0^{h} 55^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	299	57.9	147	20.7	+12 56.3	152	12.7	+14 14.2	326	51.1	−12 16.1	346	16.7	−18 11.8
1	315	00.4	162	20.3	55.2	167	13.6	13.7	341	53.8	16.2	1	19.4	11.9
2	330	02.9	177	19.9	54.1	182	14.6	13.1	356	56.5	16.3	16	22.0	12.0
3	345	05.3	192	19.5	53.0	197	15.5	12.6	11	59.1	16.4	31	24.7	12.0
4	0	07.8	207	19.1	51.9	212	16.5	12.1	27	01.8	16.5	46	27.3	12.1
5	15	10.3	222	18.7	+12 50.8	227	17.4	+14 11.5	42	04.5	−12 16.6	61	30.0	−18 12.1
6	30	12.7	237	18.3	+12 49.7	242	18.4	+14 11.0	57	07.2	−12 16.7	76	32.6	−18 12.2
7	45	15.2	252	17.9	48.5	257	19.3	10.4	72	09.9	16.7	91	35.3	12.2
8	60	17.7	267	17.5	47.4	272	20.3	09.9	87	12.6	16.8	106	37.9	12.3
9	75	20.1	282	17.1	46.3	287	21.2	09.4	102	15.3	16.9	121	40.6	12.3
10	90	22.6	297	16.7	45.2	302	22.2	08.8	117	17.9	17.0	136	43.2	12.4
11	105	25.1	312	16.3	+12 44.1	317	23.1	+14 08.3	132	20.6	−12 17.1	151	45.8	−18 12.4
12	120	27.5	327	15.9	+12 43.0	332	24.1	+14 07.8	147	23.3	−12 17.2	166	48.5	−18 12.5
13	135	30.0	342	15.5	41.9	347	25.0	07.2	162	26.0	17.3	181	51.1	12.5
14	150	32.4	357	15.1	40.8	2	26.0	06.7	177	28.7	17.4	196	53.8	12.6
15	165	34.9	12	14.7	39.7	17	26.9	06.1	192	31.4	17.5	211	56.4	12.7
16	180	37.4	27	14.3	38.6	32	27.9	05.6	207	34.1	17.6	226	59.1	12.7
17	195	39.8	42	14.0	+12 37.5	47	28.9	+14 05.1	222	36.7	−12 17.7	242	01.7	−18 12.8
18	210	42.3	57	13.6	+12 36.4	62	29.8	+14 04.5	237	39.4	−12 17.8	257	04.4	−18 12.8
19	225	44.8	72	13.2	35.3	77	30.8	04.0	252	42.1	17.9	272	07.0	12.9
20	240	47.2	87	12.8	34.1	92	31.7	03.4	267	44.8	18.0	287	09.7	12.9
21	255	49.7	102	12.4	33.0	107	32.7	02.9	282	47.5	18.0	302	12.3	13.0
22	270	52.2	117	12.0	31.9	122	33.6	02.3	297	50.2	18.1	317	14.9	13.0
23	285	54.6	132	11.6	30.8	137	34.6	01.8	312	52.9	18.2	332	17.6	13.1
24	300	57.1	147	11.2	+12 29.7	152	35.5	+14 01.3	327	55.6	−12 18.3	347	20.2	−18 13.1
Dif	—			−4	−11		+10	−5		+27	−1		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06m.5				LUNA Edad: 12d.9 SD: 16′.3 PMG: **h **m				PHE: 4h: 59′.8; 12h: 59′.7; 20h: 59′.5 Rº: **m		Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif					Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	178	22.5	+20	04.1	13	50.1	−25	31.3			**60 N**	20 51	21 59	** **	21 25	22	1 23	87
1	193	22.5		03.6	28	12.3 32		29.6 17			**58**	36	35	** **	21 04	27	1 49	83
2	208	22.5		03.0	42	34.5 32		27.7 19			**56**	24	16	22 41	20 46	32	2 09	80
3	223	22.4		02.5	56	56.8 33		25.6 21			**54**	13	21 00	22 10	31	35	26	77
4	238	22.4		02.0	71	19.2 34		23.3 23			**52**	20 03	20 47	21 48	18	37	40	76
5	253	22.4	+20	01.5	85	41.5 33	−25	20.8 25			**50**	19 55	20 35	21 30	20 07	39	2 53	74
6	268	22.4	+20	01.0	100	04.0 35	−25	18.2 26			**45**	19 37	20 12	20 56	19 43	43	3 18	72
7	283	22.4	+20	00.5	114	26.5 35		15.4 28			**40**	22	19 53	32	24	46	39	70
8	298	22.4	+20	00.0	128	49.0 35		12.4 30			**35**	19 10	38	20 13	19 07	49	3 56	69
9	313	22.4	+19	59.4	143	11.6 36		09.3 31			**30**	18 59	25	19 57	18 53	51	4 11	67
10	328	22.3		58.9	157	34.2 36		05.9 34			**20**	41	19 04	33	30	54	36	65
11	343	22.3	+19	58.4	171	56.9 37	−25	02.4 35			**10 N**	18 25	18 47	19 14	18 09	57	4 57	63
12	358	22.3	+19	57.9	186	19.7 38	−24	58.7 37			**0**	18 10	18 32	18 58	17 50	59	5 17	62
13	13	22.3		57.4	200	42.5 38		54.8 39			**10 S**	17 55	18	44	30	62	37	60
14	28	22.3		56.9	215	05.4 39		50.8 40			**20**	40	18 03	30	17 10	64	5 59	57
15	43	22.3		56.3	229	28.4 40		46.6 42			**30**	22	17 48	17	16 46	67	6 23	55
16	58	22.3		55.8	243	51.5 41		42.2 44			**35**	12	39	10	32	69	38	53
17	73	22.2	+19	55.3	258	14.6 41	−24	37.7 45			**40**	17 01	17 30	18 03	16 15	72	6 54	52
18	88	22.2	+19	54.8	272	37.8 42	−24	33.0 47			**45**	16 47	17 19	17 55	15 56	74	7 14	50
19	103	22.2		54.2	287	01.0 42		28.1 49			**50**	30	06	46	31	79	39	46
20	118	22.2		53.7	301	24.4 44		23.0 51			**52**	22	17 01	43	20	80	7 51	45
21	133	22.2		53.2	315	47.8 44		17.8 52			**54**	14	16 54	38	15 06	83	8 05	42
22	148	22.2		52.7	330	11.3 45		12.5 53			**56**	16 04	47	34	14 51	85	21	40
23	163	22.2		52.2	344	34.9 46		06.9 56			**58**	15 53	40	29	32	89	8 40	36
24	178	22.2	+19	51.6	358	58.6 47	−24	01.2 57			**60 S**	15 40	16 31	17 24	14 09	94	9 03	31

UT	ARIES PMG 3h 55m.5		VENUS Mag: −3.9 PMG: 14h 12m				MARTE Mag: +1.8 PMG: 13h 49m				JÚPITER Mag: −2.8 PMG: 2h 08m				SATURNO Mag: +0.2 PMG: 0h 51m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	300	57.1	147	11.2	+12	29.7	152	35.5	+14	01.3	327	55.6	−12	18.3	347	20.2	−18	13.1
1	315	59.6	162	10.8		28.6	167	36.5		00.7	342	58.3		18.4	2	22.9		13.2
2	331	02.0	177	10.4		27.5	182	37.4	+14	00.2	358	00.9		18.5	17	25.5		13.2
3	346	04.5	192	10.1		26.3	197	38.4	+13	59.6	13	03.6		18.6	32	28.2		13.3
4	1	06.9	207	09.7		25.2	212	39.3		59.1	28	06.3		18.7	47	30.8		13.3
5	16	09.4	222	09.3	+12	24.1	227	40.3	+13	58.6	43	09.0	−12	18.8	62	33.5	−18	13.4
6	31	11.9	237	08.9	+12	23.0	242	41.2	+13	58.0	58	11.7	−12	18.9	77	36.1	−18	13.5
7	46	14.3	252	08.5		21.9	257	42.2		57.5	73	14.4		19.0	92	38.8		13.5
8	61	16.8	267	08.1		20.8	272	43.1		56.9	88	17.1		19.1	107	41.4		13.6
9	76	19.3	282	07.7		19.6	287	44.1		56.4	103	19.8		19.2	122	44.1		13.6
10	91	21.7	297	07.4		18.5	302	45.0		55.8	118	22.5		19.3	137	46.7		13.7
11	106	24.2	312	07.0	+12	17.4	317	46.0	+13	55.3	133	25.2	−12	19.4	152	49.3	−18	13.7
12	121	26.7	327	06.6	+12	16.3	332	47.0	+13	54.8	148	27.9	−12	19.5	167	52.0	−18	13.8
13	136	29.1	342	06.2		15.2	347	47.9		54.2	163	30.5		19.6	182	54.6		13.8
14	151	31.6	357	05.8		14.0	2	48.9		53.7	178	33.2		19.6	197	57.3		13.9
15	166	34.0	12	05.4		12.9	17	49.8		53.1	193	35.9		19.7	212	59.9		13.9
16	181	36.5	27	05.1		11.8	32	50.8		52.6	208	38.6		19.8	228	02.6		14.0
17	196	39.0	42	04.7	+12	10.7	47	51.7	+13	52.0	223	41.3	−12	19.9	243	05.2	−18	14.0
18	211	41.4	57	04.3	+12	09.6	62	52.7	+13	51.5	238	44.0	−12	20.0	258	07.9	−18	14.1
19	226	43.9	72	03.9		08.4	77	53.6		50.9	253	46.7		20.1	273	10.5		14.2
20	241	46.4	87	03.5		07.3	92	54.6		50.4	268	49.4		20.2	288	13.2		14.2
21	256	48.8	102	03.2		06.2	107	55.5		49.9	283	52.1		20.3	303	15.8		14.3
22	271	51.3	117	02.8		05.1	122	56.5		49.3	298	54.8		20.4	318	18.5		14.3
23	286	53.8	132	02.4		03.9	137	57.5		48.8	313	57.5		20.5	333	21.1		14.4
24	301	56.2	147	02.0	+12	02.8	152	58.4	+13	48.2	329	00.2	−12	20.6	348	23.8	−18	14.4
Dif	—			−4		−11		+10		−5		+27		−1		+26		−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 13^{d}.9		PHE	4^{h}: 59′.4									
	PMG: 12^{h} 06^{m}.5				SD: 16′.2			12^{h}: 59′.2									
					PMG: 0^{h} 04^{m}			20^{h}: 58′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	22.2	+19	51.6	358	58.6	−24	01.2		**60 N**	** **	2 15	3 23	21 47	13	2 50	99
1	193	22.1		51.1	13	22.3 47	−23	55.4	58	**58**	0 29	39	37	31	17	3 12	93
2	208	22.1		50.6	27	46.2 49		49.4	60	**56**	1 33	2 58	3 50	18	21	29	89
3	223	22.1		50.1	42	10.1 49		43.2	62	**54**	2 03	3 13	4 01	21 06	24	43	86
4	238	22.1		49.5	56	34.1 50		36.9	63	**52**	26	27	10	20 55	27	3 56	83
5	253	22.1	+19	49.0	70	58.3 52	−23	30.4	65	**50**	2 44	3 38	4 19	20 46	29	4 07	81
6	268	22.1	+19	48.5	85	22.5 52	−23	23.8	66	**45**	3 17	4 02	4 37	20 26	34	4 30	76
7	283	22.1		47.9	99	46.8 53		17.0	68	**40**	3 42	20	4 51	20 10	38	4 49	73
8	298	22.1		47.4	114	11.2 54		10.1	69	**35**	4 01	35	5 04	19 56	41	5 05	69
9	313	22.1		46.9	128	35.7 55	−23	03.1	70	**30**	16	4 48	14	44	44	18	67
10	328	22.1		46.4	143	00.3 56	−22	55.9	72	**20**	4 41	5 09	33	24	47	5 41	63
11	343	22.1	+19	45.8	157	25.1 58	−22	48.5	74	**10 N**	5 00	5 26	5 48	19 06	51	6 00	61
12	358	22.0	+19	45.3	171	49.9 58	−22	41.0	75	**0**	5 15	5 41	6 03	18 49	55	6 19	57
13	13	22.0		44.8	186	14.8 59		33.4	76	**10 S**	29	5 55	17	32	59	37	54
14	28	22.0		44.2	200	39.8 60		25.6	78	**20**	43	6 09	33	18 14	62	6 56	51
15	43	22.0		43.7	215	04.9 61		17.7	79	**30**	5 56	25	6 50	17 53	67	7 18	47
16	58	22.0		43.2	229	30.2 63		09.7	80	**35**	6 02	33	7 00	41	69	31	45
17	73	22.0	+19	42.6	243	55.5 63	−22	01.5	82	**40**	6 10	6 43	7 12	17 27	72	7 46	42
18	88	22.0	+19	42.1	258	20.9 64	−21	53.2	83	**45**	6 17	6 53	7 26	17 10	76	8 04	38
19	103	22.0		41.6	272	46.5 66		44.7	85	**50**	26	7 06	42	16 50	80	25	34
20	118	22.0		41.0	287	12.1 66		36.2	85	**52**	30	12	50	40	83	36	32
21	133	22.0		40.5	301	37.9 68		27.5	87	**54**	34	18	7 58	29	85	8 47	30
22	148	22.0		39.9	316	03.8 69		18.6	89	**56**	38	25	8 08	16	89	9 01	26
23	163	22.0		39.4	330	29.8 70		09.7	89	**58**	43	32	19	16 01	93	16	22
24	178	22.0	+19	38.9	344	55.9 71	−21	00.6	91	**60 S**	6 48	7 41	8 32	15 43	99	9 34	17

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3^{h} 51^{m}.6		PMG: 14^{h} 12^{m}			PMG: 13^{h} 47^{m}			PMG: 2^{h} 04^{m}			PMG: 0^{h} 46^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	301	56.2	147	02.0	+12 02.8	152	58.4	+13 48.2	329	00.2	−12 20.6	348	23.8	−18 14.4
1	316	58.7	162	01.6	01.7	167	59.4	47.7	344	02.9	20.7	3	26.4	14.5
2	332	01.2	177	01.3	+12 00.5	183	00.3	47.1	359	05.6	20.8	18	29.0	14.5
3	347	03.6	192	00.9	+11 59.4	198	01.3	46.6	14	08.3	20.9	33	31.7	14.6
4	2	06.1	207	00.5	58.3	213	02.2	46.0	29	11.0	21.0	48	34.3	14.6
5	17	08.5	222	00.1	+11 57.2	228	03.2	+13 45.5	44	13.7	−12 21.1	63	37.0	−18 14.7
6	32	11.0	236	59.8	+11 56.0	243	04.1	+13 45.0	59	16.4	−12 21.2	78	39.6	−18 14.7
7	47	13.5	251	59.4	54.9	258	05.1	44.4	74	19.0	21.3	93	42.3	14.8
8	62	15.9	266	59.0	53.8	273	06.0	43.9	89	21.7	21.4	108	44.9	14.9
9	77	18.4	281	58.6	52.6	288	07.0	43.3	104	24.4	21.5	123	47.6	14.9
10	92	20.9	296	58.3	51.5	303	08.0	42.8	119	27.1	21.6	138	50.2	15.0
11	107	23.3	311	57.9	+11 50.4	318	08.9	+13 42.2	134	29.8	−12 21.7	153	52.9	−18 15.0
12	122	25.8	326	57.5	+11 49.2	333	09.9	+13 41.7	149	32.5	−12 21.7	168	55.5	−18 15.1
13	137	28.3	341	57.2	48.1	348	10.8	41.1	164	35.2	21.8	183	58.2	15.1
14	152	30.7	356	56.8	47.0	3	11.8	40.6	179	37.9	21.9	199	00.8	15.2
15	167	33.2	11	56.4	45.8	18	12.7	40.0	194	40.6	22.0	214	03.5	15.2
16	182	35.7	26	56.0	44.7	33	13.7	39.5	209	43.3	22.1	229	06.1	15.3
17	197	38.1	41	55.7	+11 43.6	48	14.6	+13 38.9	224	46.0	−12 22.2	244	08.8	−18 15.3
18	212	40.6	56	55.3	+11 42.4	63	15.6	+13 38.4	239	48.7	−12 22.3	259	11.4	−18 15.4
19	227	43.0	71	54.9	41.3	78	16.6	37.8	254	51.4	22.4	274	14.1	15.4
20	242	45.5	86	54.6	40.2	93	17.5	37.3	269	54.1	22.5	289	16.7	15.5
21	257	48.0	101	54.2	39.0	108	18.5	36.7	284	56.8	22.6	304	19.3	15.6
22	272	50.4	116	53.8	37.9	123	19.4	36.2	299	59.5	22.7	319	22.0	15.6
23	287	52.9	131	53.5	36.8	138	20.4	35.6	315	02.2	22.8	334	24.6	15.7
24	302	55.4	146	53.1	+11 35.6	153	21.3	+13 35.1	330	04.9	−12 22.9	349	27.3	−18 15.7
Dif	—			−4	−11		+10	−5		+27	−1		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06m.5				☾ LUNA Edad: 14d.9 SD: 16′.0 PMG: 1h 03m PHE 4h: 58′.7; 12h: 58′.5; 20h: 58′.2 Rº: 53m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	22.0	+19	38.9	344	55.9		−21 00.6	**60 N**	20 47	21 52	** **	22 00	7	4 29	98
1	193	22.0		38.3	359	22.1 72		−20 51.5 91	**58**	32	30	23 21	21 48	12	45	93
2	208	22.0		37.8	13	48.4 73		42.2 93	**56**	20	21 11	22 33	39	14	4 58	89
3	223	21.9		37.3	28	14.8 74		32.8 94	**54**	10	20 56	22 04	30	17	5 09	86
4	238	21.9		36.7	42	41.4 76		23.2 96	**52**	20 01	43	21 43	22	20	19	83
5	253	21.9	+19	36.2	57	08.0 76	−20	13.6 96	**50**	19 52	20 32	21 26	21 15	23	5 28	80
6	268	21.9	+19	35.6	71	34.8 78	−20	03.8 98	**45**	19 35	20 09	20 53	21 00	27	5 46	76
7	283	21.9		35.1	86	01.7 79	−19	54.0 98	**40**	20	19 51	30	20 48	31	6 02	71
8	298	21.9		34.5	100	28.6 79		44.0 100	**35**	19 08	37	20 11	37	34	14	68
9	313	21.9		34.0	114	55.7 81		33.9 101	**30**	18 58	24	19 56	28	37	25	65
10	328	21.9		33.5	129	23.0 83		23.7 102	**20**	40	19 04	32	20 11	42	6 44	61
11	343	21.9	+19	32.9	143	50.3 83	−19	13.5 102	**10 N**	18 24	18 47	19 13	19 57	46	7 01	56
12	358	21.9	+19	32.4	158	17.7 84	−19	03.1 104	**0**	18 10	18 32	18 57	19 44	50	7 16	52
13	13	21.9		31.8	172	45.3 86	−18	52.6 105	**10 S**	17 56	18	44	31	54	31	49
14	28	21.9		31.3	187	12.9 86		42.0 106	**20**	41	18 04	31	16	59	7 47	45
15	43	21.9		30.7	201	40.7 88		31.4 106	**30**	24	17 49	18	19 00	63	8 05	40
16	58	21.9		30.2	216	08.6 89		20.6 108	**35**	14	41	11	18 50	66	16	37
17	73	21.9	+19	29.6	230	36.6 90	−18	09.7 109	**40**	17 02	17 32	18 04	18 39	70	8 28	34
18	88	21.9	+19	29.1	245	04.7 91	−17	58.8 109	**45**	16 49	17 21	17 57	18 26	74	8 42	31
19	103	21.9		28.5	259	32.9 92		47.8 110	**50**	33	09	49	10	79	8 59	26
20	118	21.9		28.0	274	01.3 94		36.6 112	**52**	25	17 03	45	18 03	81	9 08	23
21	133	21.9		27.4	288	29.7 94		25.4 112	**54**	17	16 57	41	17 54	84	17	20
22	148	21.9		26.9	302	58.2 95		14.1 113	**56**	16 07	50	37	45	87	27	17
23	163	21.9		26.3	317	26.9 97	−17	02.8 113	**58**	15 56	43	32	34	91	38	14
24	178	21.9	+19	25.8	331	55.7 98	−16	51.3 115	**60 S**	15 44	16 34	17 27	17 22	95	9 51	10

UT	ARIES PMG 3h 47m.7		VENUS Mag: −3.9 PMG: 14h 13m			MARTE Mag: +1.8 PMG: 13h 46m			JÚPITER Mag: −2.8 PMG: 1h 59m			SATURNO Mag: +0.2 PMG: 0h 42m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	302	55.4	146	53.1	+11 35.6	153	21.3	+13 35.1	330	04.9	−12 22.9	349	27.3	−18 15.7
1	317	57.8	161	52.7	34.5	168	22.3	34.5	345	07.6	23.0	4	29.9	15.8
2	333	00.3	176	52.4	33.3	183	23.3	34.0	0	10.3	23.1	19	32.6	15.8
3	348	02.8	191	52.0	32.2	198	24.2	33.5	15	13.0	23.2	34	35.2	15.9
4	3	05.2	206	51.6	31.1	213	25.2	32.9	30	15.7	23.3	49	37.9	15.9
5	18	07.7	221	51.3	+11 29.9	228	26.1	+13 32.4	45	18.4	−12 23.4	64	40.5	−18 16.0
6	33	10.2	236	50.9	+11 28.8	243	27.1	+13 31.8	60	21.1	−12 23.5	79	43.2	−18 16.0
7	48	12.6	251	50.6	27.6	258	28.0	31.3	75	23.8	23.6	94	45.8	16.1
8	63	15.1	266	50.2	26.5	273	29.0	30.7	90	26.5	23.7	109	48.5	16.1
9	78	17.5	281	49.8	25.3	288	30.0	30.2	105	29.2	23.8	124	51.1	16.2
10	93	20.0	296	49.5	24.2	303	30.9	29.6	120	31.9	23.9	139	53.8	16.3
11	108	22.5	311	49.1	+11 23.1	318	31.9	+13 29.1	135	34.6	−12 24.0	154	56.4	−18 16.3
12	123	24.9	326	48.7	+11 21.9	333	32.8	+13 28.5	150	37.3	−12 24.1	169	59.1	−18 16.4
13	138	27.4	341	48.4	20.8	348	33.8	28.0	165	40.0	24.2	185	01.7	16.4
14	153	29.9	356	48.0	19.6	3	34.7	27.4	180	42.8	24.3	200	04.4	16.5
15	168	32.3	11	47.7	18.5	18	35.7	26.8	195	45.5	24.4	215	07.0	16.5
16	183	34.8	26	47.3	17.3	33	36.7	26.3	210	48.2	24.5	230	09.7	16.6
17	198	37.3	41	47.0	+11 16.2	48	37.6	+13 25.7	225	50.9	−12 24.6	245	12.3	−18 16.6
18	213	39.7	56	46.6	+11 15.0	63	38.6	+13 25.2	240	53.6	−12 24.7	260	15.0	−18 16.7
19	228	42.2	71	46.2	13.9	78	39.5	24.6	255	56.3	24.8	275	17.6	16.7
20	243	44.7	86	45.9	12.7	93	40.5	24.1	270	59.0	24.9	290	20.3	16.8
21	258	47.1	101	45.5	11.6	108	41.5	23.5	286	01.7	25.0	305	22.9	16.8
22	273	49.6	116	45.2	10.4	123	42.4	23.0	301	04.4	25.1	320	25.6	16.9
23	288	52.0	131	44.8	09.3	138	43.4	22.4	316	07.1	25.2	335	28.2	17.0
24	303	54.5	146	44.5	+11 08.1	153	44.3	+13 21.9	331	09.8	−12 25.3	350	30.8	−18 17.0
Dif	—			−4	−11		+10	−6		+27	−1		+26	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 06.m5				Edad: 15.d9 SD: 15′.8 PMG: 1h 56m		PHE	4h: 58′.0 12h: 57′.7 20h: 57′.4 Rº: 49m								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	21.9	+19	25.8	331	55.7 98	−16	51.3 115	**60 N**	** **	2 21	3 27	22 07	5	6 07	94
1	193	21.9		25.2	346	24.5		39.8	**58**	0 52	2 44	41	22 00	8	18	89
2	208	21.9		24.7	0	53.5 100		28.2 116	**56**	1 41	3 02	3 53	21 53	11	27	85
3	223	21.9		24.1	15	22.6 101		16.5 117	**54**	2 09	17	4 04	47	14	35	82
4	238	21.9		23.6	29	51.8 102	−16	04.8 117	**52**	31	30	13	42	17	42	79
5	253	21.9	+19	23.0	44	21.1 103	−15	52.9 119	**50**	2 48	3 41	4 21	21 38	18	6 48	77
6	268	21.9	+19	22.5	58	50.5 104	−15	41.0 119	**45**	3 20	4 04	4 39	21 27	23	7 02	72
7	283	21.9		21.9	73	20.0 105		29.1 119	**40**	3 44	22	4 53	19	26	13	68
8	298	21.9		21.3	87	49.6 106		17.1 120	**35**	4 02	37	5 05	11	30	22	65
9	313	21.9		20.8	102	19.4 108	−15	05.0 121	**30**	18	4 49	15	21 05	33	30	62
10	328	21.9		20.2	116	49.2 108	−14	52.8 122	**20**	4 41	5 10	33	20 53	38	45	56
11	343	21.9	+19	19.7	131	19.1 109	−14	40.6 122	**10 N**	5 00	5 26	5 49	20 43	43	7 57	52
12	358	21.9	+19	19.1	145	49.1 110	−14	28.3 123	**0**	5 16	5 41	6 03	20 34	46	8 08	49
13	13	22.0		18.6	160	19.2 111		16.0 123	**10 S**	29	5 55	17	25	50	20	44
14	28	22.0		18.0	174	49.5 113	−14	03.6 124	**20**	42	6 09	32	15	54	32	40
15	43	22.0		17.4	189	19.8 113	−13	51.1 125	**30**	5 55	24	49	20 03	60	45	35
16	58	22.0		16.9	203	50.2 114		38.6 125	**35**	6 01	32	6 59	19 56	63	8 53	32
17	73	22.0	+19	16.3	218	20.7 115	−13	26.0 126	**40**	6 08	6 41	7 10	19 49	66	9 02	29
18	88	22.0	+19	15.8	232	51.3 116	−13	13.4 126	**45**	6 16	6 51	7 24	19 40	70	9 13	25
19	103	22.0		15.2	247	22.0 117	−13	00.8 126	**50**	24	7 04	40	29	75	25	20
20	118	22.0		14.6	261	52.8 118	−12	48.1 127	**52**	28	09	47	24	77	31	18
21	133	22.0		14.1	276	23.7 119		35.3 128	**54**	32	15	7 55	18	80	37	16
22	148	22.0		13.5	290	54.7 120		22.5 128	**56**	36	22	8 05	12	83	44	13
23	163	22.0		12.9	305	25.7 120	−12	09.6 129	**58**	40	29	15	19 05	86	9 52	10
24	178	22.0	+19	12.4	319	56.9 122	−11	56.8 128	**60 S**	6 45	7 38	8 28	18 57	90	10 01	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 3h 43.m8		Mag: −3.9 PMG: 14h 13m			Mag: +1.8 PMG: 13h 44m			Mag: −2.8 PMG: 1h 55m			Mag: +0.2 PMG: 0h 38m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	303	54.5	146	44.5	+11 08.1	153	44.3	+13 21.9	331	09.8	−12 25.3	350	30.8	−18 17.0
1	318	57.0	161	44.1	07.0	168	45.3	21.3	346	12.5	25.4	5	33.5	17.1
2	333	59.4	176	43.8	05.8	183	46.2	20.8	1	15.2	25.5	20	36.1	17.1
3	349	01.9	191	43.4	04.7	198	47.2	20.2	16	17.9	25.6	35	38.8	17.2
4	4	04.4	206	43.0	03.5	213	48.2	19.7	31	20.6	25.7	50	41.4	17.2
5	19	06.8	221	42.7	+11 02.4	228	49.1	+13 19.1	46	23.3	−12 25.8	65	44.1	−18 17.3
6	34	09.3	236	42.3	+11 01.2	243	50.1	+13 18.6	61	26.0	−12 25.9	80	46.7	−18 17.3
7	49	11.8	251	42.0	+11 00.1	258	51.0	18.0	76	28.7	26.0	95	49.4	17.4
8	64	14.2	266	41.6	+10 58.9	273	52.0	17.5	91	31.5	26.1	110	52.0	17.4
9	79	16.7	281	41.3	57.8	288	53.0	16.9	106	34.2	26.2	125	54.7	17.5
10	94	19.1	296	40.9	56.6	303	53.9	16.4	121	36.9	26.3	140	57.3	17.6
11	109	21.6	311	40.6	+10 55.5	318	54.9	+13 15.8	136	39.6	−12 26.4	156	00.0	−18 17.6
12	124	24.1	326	40.2	+10 54.3	333	55.8	+13 15.2	151	42.3	−12 26.5	171	02.6	−18 17.7
13	139	26.5	341	39.9	53.1	348	56.8	14.7	166	45.0	26.6	186	05.3	17.7
14	154	29.0	356	39.5	52.0	3	57.8	14.1	181	47.7	26.7	201	07.9	17.8
15	169	31.5	11	39.2	50.8	18	58.7	13.6	196	50.4	26.8	216	10.6	17.8
16	184	33.9	26	38.8	49.7	33	59.7	13.0	211	53.1	26.9	231	13.2	17.9
17	199	36.4	41	38.5	+10 48.5	49	00.6	+13 12.5	226	55.8	−12 27.0	246	15.9	−18 17.9
18	214	38.9	56	38.1	+10 47.4	64	01.6	+13 11.9	241	58.5	−12 27.1	261	18.5	−18 18.0
19	229	41.3	71	37.8	46.2	79	02.6	11.4	257	01.2	27.2	276	21.2	18.0
20	244	43.8	86	37.5	45.0	94	03.5	10.8	272	04.0	27.3	291	23.8	18.1
21	259	46.3	101	37.1	43.9	109	04.5	10.3	287	06.7	27.4	306	26.5	18.1
22	274	48.7	116	36.8	42.7	124	05.4	09.7	302	09.4	27.5	321	29.1	18.2
23	289	51.2	131	36.4	41.6	139	06.4	09.1	317	12.1	27.6	336	31.8	18.3
24	304	53.6	146	36.1	+10 40.4	154	07.4	+13 08.6	332	14.8	−12 27.7	351	34.4	−18 18.3
Dif	—			−3	−12		+10	−6		+27	−1		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 16.d9		PHE	4h: 57′.1								
	PMG: 12h 06.m5				SD: 15′.6			12h: 56′.9								
					PMG: 2h 45m			20h: 56′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	178	22.0	+19	12.4	319	56.9	−11	56.8	**60 N**	20 42	21 46	** **	22 12	4	7 41	87
1	193	22.0		11.8	334	28.1 122		43.8 130	**58**	28	24	23 06	08	7	47	84
2	208	22.0		11.2	348	59.5 124		30.9 129	**56**	17	21 07	22 25	04	10	52	81
3	223	22.0		10.7	3	30.9 124		17.8 131	**54**	20 07	20 52	21 58	22 01	12	7 57	78
4	238	22.0		10.1	18	02.4 125	−11	04.8 130	**52**	19 58	40	38	21 59	14	8 01	76
5	253	22.1	+19	09.5	32	34.0 126	−10	51.7 131	**50**	19 50	20 29	21 22	21 56	16	8 05	74
6	268	22.1	+19	09.0	47	05.7 127	−10	38.6 131	**45**	19 33	20 07	20 50	21 50	21	8 14	69
7	283	22.1		08.4	61	37.5 128		25.4 132	**40**	19	19 49	27	45	25	21	65
8	298	22.1		07.8	76	09.3 128	−10	12.2 132	**35**	19 07	35	20 09	41	28	27	61
9	313	22.1		07.3	90	41.2 129	−9	59.0 132	**30**	18 57	23	19 54	38	30	32	59
10	328	22.1		06.7	105	13.2 130		45.8 132	**20**	39	19 03	31	31	35	41	54
11	343	22.1	+19	06.1	119	45.3 131	−9	32.5 133	**10 N**	18 24	18 46	19 13	21 26	39	8 49	49
12	358	22.1	+19	05.6	134	17.5 132	−9	19.2 133	**0**	18 10	18 32	18 57	21 20	44	8 57	45
13	13	22.1		05.0	148	49.7 132	−9	05.9 133	**10 S**	17 56	18	44	15	48	9 04	41
14	28	22.1		04.4	163	22.0 133	−8	52.5 134	**20**	41	18 05	31	09	53	12	36
15	43	22.2		03.8	177	54.4 134		39.1 134	**30**	25	17 50	19	21 03	57	20	32
16	58	22.2		03.3	192	26.9 135		25.7 134	**35**	15	42	13	20 59	60	25	29
17	73	22.2	+19	02.7	206	59.4 135	−8	12.3 134	**40**	17 04	17 33	18 06	20 55	63	9 31	26
18	88	22.2	+19	02.1	221	32.0 136	−7	58.9 134	**45**	16 51	17 23	17 59	20 50	67	9 38	21
19	103	22.2		01.5	236	04.6 136		45.4 135	**50**	35	11	51	44	72	45	18
20	118	22.2		01.0	250	37.4 138		31.9 135	**52**	28	06	47	41	75	49	15
21	133	22.2	+19	00.4	265	10.2 138		18.4 135	**54**	20	17 00	43	38	77	53	13
22	148	22.2	+18	59.8	279	43.1 139	−7	04.9 135	**56**	11	16 53	39	35	79	9 57	11
23	163	22.2		59.2	294	16.0 139	−6	51.4 135	**58**	16 00	46	35	31	82	10 02	8
24	178	22.3	+18	58.6	308	49.0 140	−6	37.8 136	**60 S**	15 48	16 38	17 30	20 27	86	10 07	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3h 39.m8		PMG: 14h 14m			PMG: 13h 43m			PMG: 1h 51m			PMG: 0h 34m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	304	53.6	146	36.1	+10 40.4	154	07.4	+13 08.6	332	14.8	−12 27.7	351	34.4	−18 18.3
1	319	56.1	161	35.7	39.2	169	08.3	08.0	347	17.5	27.8	6	37.1	18.4
2	334	58.6	176	35.4	38.1	184	09.3	07.5	2	20.2	27.9	21	39.7	18.4
3	350	01.0	191	35.0	36.9	199	10.2	06.9	17	22.9	28.0	36	42.4	18.5
4	5	03.5	206	34.7	35.7	214	11.2	06.4	32	25.6	28.1	51	45.0	18.5
5	20	06.0	221	34.4	+10 34.6	229	12.2	+13 05.8	47	28.4	−12 28.2	66	47.7	−18 18.6
6	35	08.4	236	34.0	+10 33.4	244	13.1	+13 05.2	62	31.1	−12 28.3	81	50.3	−18 18.6
7	50	10.9	251	33.7	32.2	259	14.1	04.7	77	33.8	28.4	96	53.0	18.7
8	65	13.4	266	33.3	31.1	274	15.1	04.1	92	36.5	28.5	111	55.6	18.7
9	80	15.8	281	33.0	29.9	289	16.0	03.6	107	39.2	28.6	126	58.3	18.8
10	95	18.3	296	32.7	28.8	304	17.0	03.0	122	41.9	28.7	142	00.9	18.8
11	110	20.7	311	32.3	+10 27.6	319	17.9	+13 02.5	137	44.6	−12 28.8	157	03.6	−18 18.9
12	125	23.2	326	32.0	+10 26.4	334	18.9	+13 01.9	152	47.3	−12 28.9	172	06.2	−18 19.0
13	140	25.7	341	31.6	25.2	349	19.9	01.3	167	50.1	29.0	187	08.9	19.0
14	155	28.1	356	31.3	24.1	4	20.8	00.8	182	52.8	29.1	202	11.5	19.1
15	170	30.6	11	31.0	22.9	19	21.8	+13 00.2	197	55.5	29.2	217	14.2	19.1
16	185	33.1	26	30.6	21.7	34	22.7	+12 59.7	212	58.2	29.3	232	16.8	19.2
17	200	35.5	41	30.3	+10 20.6	49	23.7	+12 59.1	228	00.9	−12 29.4	247	19.5	−18 19.2
18	215	38.0	56	30.0	+10 19.4	64	24.7	+12 58.6	243	03.6	−12 29.5	262	22.1	−18 19.3
19	230	40.5	71	29.6	18.2	79	25.6	58.0	258	06.4	29.6	277	24.8	19.3
20	245	42.9	86	29.3	17.1	94	26.6	57.4	273	09.1	29.7	292	27.4	19.4
21	260	45.4	101	29.0	15.9	109	27.6	56.9	288	11.8	29.8	307	30.1	19.4
22	275	47.9	116	28.6	14.7	124	28.5	56.3	303	14.5	29.9	322	32.7	19.5
23	290	50.3	131	28.3	13.5	139	29.5	55.8	318	17.2	30.0	337	35.4	19.6
24	305	52.8	146	28.0	+10 12.4	154	30.4	+12 55.2	333	19.9	−12 30.1	352	38.0	−18 19.6
Dif	—			−3	−12		+10	−6		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 17.ᵈ9	PHE	4ʰ: 56′.4										
	PMG: 12ʰ 06.ᵐ5				SD: 15′.4		12ʰ: 56′.1										
					PMG: 3ʰ 31ᵐ		20ʰ: 55′.9										
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	22.3	+18	58.6	308	49.0	−6	37.8		**60 N**	** **	2 28	3 32	22 16	3	9 08	84
1	193	22.3		58.1	323	22.1 141		24.3 135		**58**	1 07	2 49	45	15	6	11	81
2	208	22.3		57.5	337	55.2 141	−6	10.7 136		**56**	1 49	3 07	3 57	14	9	13	78
3	223	22.3		56.9	352	28.4 142	−5	57.1 136		**54**	2 15	21	4 07	13	12	15	76
4	238	22.3		56.3	7	01.6 142		43.5 136		**52**	35	34	16	13	13	17	73
5	253	22.3	+18	55.7	21	34.9 143	−5	29.9 136		**50**	2 52	3 44	4 24	22 12	15	9 19	71
6	268	22.3	+18	55.2	36	08.3 144	−5	16.3 136		**45**	3 23	4 07	4 41	22 11	19	9 23	66
7	283	22.4		54.6	50	41.7 144	−5	02.7 136		**40**	3 46	24	4 55	10	23	26	62
8	298	22.4		54.0	65	15.2 145	−4	49.1 136		**35**	4 04	38	5 06	09	26	28	59
9	313	22.4		53.4	79	48.7 145		35.5 136		**30**	19	4 50	17	08	29	31	56
10	328	22.4		52.8	94	22.3 146		21.9 136		**20**	4 42	5 10	34	06	34	35	51
11	343	22.4	+18	52.3	108	55.9 146	−4	08.2 137		**10 N**	5 01	5 27	5 49	22 05	38	9 38	47
12	358	22.4	+18	51.7	123	29.6 147	−3	54.6 136		**0**	5 16	5 41	6 03	22 04	42	9 42	42
13	13	22.5		51.1	138	03.3 147		41.0 136		**10 S**	29	5 55	17	03	46	45	38
14	28	22.5		50.5	152	37.1 148		27.3 137		**20**	41	6 08	31	02	50	48	34
15	43	22.5		49.9	167	10.9 148		13.7 136		**30**	5 54	23	48	22 00	55	52	29
16	58	22.5		49.3	181	44.8 149	−3	00.1 136		**35**	6 00	31	6 58	21 59	58	54	27
17	73	22.5	+18	48.7	196	18.7 149	−2	46.5 136		**40**	6 07	6 39	7 09	21 58	62	9 57	23
18	88	22.5	+18	48.1	210	52.6 149	−2	32.9 136		**45**	6 14	6 49	7 21	21 57	65	9 59	20
19	103	22.6		47.6	225	26.6 150		19.2 137		**50**	22	7 01	37	56	70	10 03	15
20	118	22.6		47.0	240	00.7 151	−2	05.6 136		**52**	25	07	44	56	71	04	14
21	133	22.6		46.4	254	34.7 150	−1	52.0 136		**54**	29	12	7 52	55	74	06	11
22	148	22.6		45.8	269	08.9 152		38.4 136		**56**	33	19	8 01	54	77	08	9
23	163	22.6		45.2	283	43.0 151		24.8 136		**58**	37	26	12	53	80	10	6
24	178	22.7	+18	44.6	298	17.2 152	−1	11.3 135		**60 S**	6 42	7 34	8 23	21 53	82	10 12	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3ʰ 35.ᵐ9		PMG: 14ʰ 14ᵐ			PMG: 13ʰ 41ᵐ			PMG: 1ʰ 46ᵐ			PMG: 0ʰ 29ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	305	52.8	146	28.0	+10 12.4	154	30.4	+12 55.2	333	19.9	−12 30.1	352	38.0	−18 19.6
1	320	55.2	161	27.6	11.2	169	31.4	54.6	348	22.6	30.2	7	40.7	19.7
2	335	57.7	176	27.3	10.0	184	32.4	54.1	3	25.4	30.3	22	43.3	19.7
3	351	00.2	191	27.0	08.9	199	33.3	53.5	18	28.1	30.4	37	46.0	19.8
4	6	02.6	206	26.6	07.7	214	34.3	53.0	33	30.8	30.5	52	48.6	19.8
5	21	05.1	221	26.3	+10 06.5	229	35.3	+12 52.4	48	33.5	−12 30.6	67	51.3	−18 19.9
6	36	07.6	236	26.0	+10 05.3	244	36.2	+12 51.8	63	36.2	−12 30.7	82	53.9	−18 19.9
7	51	10.0	251	25.6	04.2	259	37.2	51.3	78	38.9	30.8	97	56.6	20.0
8	66	12.5	266	25.3	03.0	274	38.1	50.7	93	41.7	30.9	112	59.2	20.0
9	81	15.0	281	25.0	01.8	289	39.1	50.2	108	44.4	31.0	128	01.9	20.1
10	96	17.4	296	24.6	+10 00.6	304	40.1	49.6	123	47.1	31.1	143	04.5	20.1
11	111	19.9	311	24.3	+9 59.5	319	41.0	+12 49.0	138	49.8	−12 31.2	158	07.2	−18 20.2
12	126	22.4	326	24.0	+9 58.3	334	42.0	+12 48.5	153	52.5	−12 31.3	173	09.8	−18 20.3
13	141	24.8	341	23.7	57.1	349	43.0	47.9	168	55.3	31.4	188	12.5	20.3
14	156	27.3	356	23.3	55.9	4	43.9	47.4	183	58.0	31.5	203	15.1	20.4
15	171	29.7	11	23.0	54.7	19	44.9	46.8	199	00.7	31.6	218	17.8	20.4
16	186	32.2	26	22.7	53.6	34	45.9	46.2	214	03.4	31.7	233	20.4	20.5
17	201	34.7	41	22.4	+9 52.4	49	46.8	+12 45.7	229	06.1	−12 31.9	248	23.1	−18 20.5
18	216	37.1	56	22.0	+9 51.2	64	47.8	+12 45.1	244	08.9	−12 32.0	263	25.7	−18 20.6
19	231	39.6	71	21.7	50.0	79	48.7	44.5	259	11.6	32.1	278	28.4	20.6
20	246	42.1	86	21.4	48.8	94	49.7	44.0	274	14.3	32.2	293	31.0	20.7
21	261	44.5	101	21.1	47.7	109	50.7	43.4	289	17.0	32.3	308	33.7	20.7
22	276	47.0	116	20.7	46.5	124	51.6	42.9	304	19.7	32.4	323	36.3	20.8
23	291	49.5	131	20.4	45.3	139	52.6	42.3	319	22.5	32.5	338	39.0	20.8
24	306	51.9	146	20.1	+9 44.1	154	53.6	+12 41.7	334	25.2	−12 32.6	353	41.6	−18 20.9
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 18.d9		PHE	4h: 55′.6								
	PMG: 12h 06.m5				SD: 15′.2			12h: 55′.4								
					PMG: 4h 14m			20h: 55′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	178	22.7	+18	44.6	298	17.2	−1	11.3	**60 N**	20 37	21 39	** **	22 19	4	10 32	82
1	193	22.7		44.0	312	51.4 152	−0	57.7 136	**58**	24	19	22 53	21	7	32	78
2	208	22.7		43.4	327	25.7 153		44.1 136	**56**	13	21 02	22 17	23	9	31	76
3	223	22.7		42.8	342	00.0 153		30.6 135	**54**	20 03	20 48	21 53	25	11	31	73
4	238	22.7		42.2	356	34.3 153		17.1 135	**52**	19 55	36	33	26	14	30	71
5	253	22.8	+18	41.6	11	08.7 154	−0	03.5 136	**50**	19 47	20 26	21 18	22 27	16	10 30	69
6	268	22.8	+18	41.1	25	43.1 154	+0	10.0 135	**45**	19 30	20 04	20 47	22 30	20	10 29	64
7	283	22.8		40.5	40	17.5 154		23.5 135	**40**	17	19 47	25	33	23	28	61
8	298	22.8		39.9	54	51.9 154		36.9 134	**35**	19 05	33	20 07	35	26	27	58
9	313	22.8		39.3	69	26.4 155	+0	50.4 135	**30**	18 55	21	19 53	37	29	27	55
10	328	22.9		38.7	84	00.9 155	+1	03.9 135	**20**	38	19 02	30	40	34	26	50
11	343	22.9	+18	38.1	98	35.4 155	+1	17.3 134	**10 N**	18 24	18 46	19 12	22 43	38	10 25	46
12	358	22.9	+18	37.5	113	09.9 155	+1	30.7 134	**0**	18 10	18 32	18 57	22 46	42	10 24	42
13	13	22.9		36.9	127	44.5 156		44.1 134	**10 S**	17 56	19	44	49	45	23	38
14	28	23.0		36.3	142	19.1 156	+1	57.5 134	**20**	42	18 05	32	52	49	22	34
15	43	23.0		35.7	156	53.7 156	+2	10.8 133	**30**	26	17 51	20	55	55	21	29
16	58	23.0		35.1	171	28.3 156		24.1 133	**35**	16	43	14	22 57	58	21	26
17	73	23.0	+18	34.5	186	02.9 156	+2	37.4 133	**40**	17 06	17 35	18 07	23 00	60	10 20	23
18	88	23.0	+18	33.9	200	37.6 157	+2	50.7 133	**45**	16 53	17 25	18 01	23 02	64	10 19	20
19	103	23.1		33.3	215	12.3 157	+3	04.0 133	**50**	38	14	17 53	06	68	18	16
20	118	23.1		32.7	229	46.9 156		17.2 132	**52**	31	08	50	07	71	18	13
21	133	23.1		32.1	244	21.6 157		30.4 132	**54**	23	17 03	46	09	73	17	12
22	148	23.1		31.5	258	56.3 157		43.6 132	**56**	14	16 56	42	11	75	17	9
23	163	23.2		30.9	273	31.1 158	+3	56.8 132	**58**	16 04	49	38	13	78	16	7
24	178	23.2	+18	30.3	288	05.8 157	+4	09.9 131	**60 S**	15 53	16 42	17 34	23 15	81	10 16	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3h 32.m0		PMG: 14h 15m			PMG: 13h 40m			PMG: 1h 42m			PMG: 0h 25m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	306	51.9	146	20.1	+9 44.1	154	53.6	+12 41.7	334	25.2	−12 32.6	353	41.6	−18 20.9
1	321	54.4	161	19.8	42.9	169	54.5	41.2	349	27.9	32.7	8	44.3	21.0
2	336	56.8	176	19.4	41.7	184	55.5	40.6	4	30.6	32.8	23	46.9	21.0
3	351	59.3	191	19.1	40.6	199	56.5	40.0	19	33.3	32.9	38	49.6	21.1
4	7	01.8	206	18.8	39.4	214	57.4	39.5	34	36.1	33.0	53	52.2	21.1
5	22	04.2	221	18.5	+9 38.2	229	58.4	+12 38.9	49	38.8	−12 33.1	68	54.9	−18 21.2
6	37	06.7	236	18.2	+9 37.0	244	59.4	+12 38.4	64	41.5	−12 33.2	83	57.5	−18 21.2
7	52	09.2	251	17.8	35.8	260	00.3	37.8	79	44.2	33.3	99	00.2	21.3
8	67	11.6	266	17.5	34.6	275	01.3	37.2	94	47.0	33.4	114	02.8	21.3
9	82	14.1	281	17.2	33.4	290	02.2	36.7	109	49.7	33.5	129	05.5	21.4
10	97	16.6	296	16.9	32.3	305	03.2	36.1	124	52.4	33.6	144	08.1	21.4
11	112	19.0	311	16.6	+9 31.1	320	04.2	+12 35.5	139	55.1	−12 33.7	159	10.8	−18 21.5
12	127	21.5	326	16.2	+9 29.9	335	05.1	+12 35.0	154	57.8	−12 33.8	174	13.4	−18 21.6
13	142	24.0	341	15.9	28.7	350	06.1	34.4	170	00.6	33.9	189	16.1	21.6
14	157	26.4	356	15.6	27.5	5	07.1	33.8	185	03.3	34.0	204	18.7	21.7
15	172	28.9	11	15.3	26.3	20	08.0	33.3	200	06.0	34.1	219	21.4	21.7
16	187	31.3	26	15.0	25.1	35	09.0	32.7	215	08.7	34.2	234	24.0	21.8
17	202	33.8	41	14.6	+9 23.9	50	10.0	+12 32.1	230	11.5	−12 34.4	249	26.7	−18 21.8
18	217	36.3	56	14.3	+9 22.7	65	10.9	+12 31.6	245	14.2	−12 34.5	264	29.3	−18 21.9
19	232	38.7	71	14.0	21.6	80	11.9	31.0	260	16.9	34.6	279	32.0	21.9
20	247	41.2	86	13.7	20.4	95	12.9	30.4	275	19.6	34.7	294	34.6	22.0
21	262	43.7	101	13.4	19.2	110	13.8	29.9	290	22.4	34.8	309	37.3	22.0
22	277	46.1	116	13.1	18.0	125	14.8	29.3	305	25.1	34.9	324	39.9	22.1
23	292	48.6	131	12.8	16.8	140	15.8	28.8	320	27.8	35.0	339	42.6	22.1
24	307	51.1	146	12.4	+9 15.6	155	16.7	+12 28.2	335	30.5	−12 35.1	354	45.2	−18 22.2
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL SD: 15′.8 PMG: 12h 06.m4				☽ LUNA Edad: 19.d9 SD: 15′.0 PMG: 4h 56m PHE 4h: 55′.1; 12h: 54′.9; 20h: 54′.7 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	23.2	+18	30.3	288	05.8	+4	09.9	**60 N**	** **	2 34	3 36	22 23	5	11 54	81
1	193	23.2		29.7	302	40.5 157		23.0 131	**58**	1 20	2 55	3 49		28	8	50	78
2	208	23.2		29.1	317	15.3 158		36.1 131	**56**	1 56	3 11	4 00		32	11	47	75
3	223	23.3		28.4	331	50.0 157	+4	49.2 131	**54**	2 21	25	10		36	13	44	72
4	238	23.3		27.8	346	24.8 158	+5	02.2 130	**52**	40	37	19		40	15	41	70
5	253	23.3	+18	27.2	0	59.6 158	+5	15.2 130	**50**	2 56	3 48	4 27	22 43	17	11 39	68
6	268	23.4	+18	26.6	15	34.3 157	+5	28.1 129	**45**	3 26	4 09	4 43	22 50	21	11 33	64
7	283	23.4		26.0	30	09.1 158		41.0 129	**40**	3 48	26	4 57	22 56	25	29	60
8	298	23.4		25.4	44	43.9 158	+5	53.9 129	**35**	4 06	40	5 08	23 01	28	25	57
9	313	23.4		24.8	59	18.6 157	+6	06.8 129	**30**	21	4 52	18		06	30	22	54
10	328	23.5		24.2	73	53.4 158		19.6 128	**20**	4 43	5 11	35		14	34	16	49
11	343	23.5	+18	23.6	88	28.2 158	+6	32.4 128	**10 N**	5 01	5 27	5 49	23 21	38	11 11	45
12	358	23.5	+18	23.0	103	02.9 157	+6	45.2 128	**0**	5 16	5 41	6 03	23 28	42	11 06	42
13	13	23.5		22.4	117	37.7 158	+6	57.9 127	**10 S**	29	5 54	16		34	46	11 01	38
14	28	23.6		21.8	132	12.5 158	+7	10.6 127	**20**	41	6 07	31		41	50	10 56	34
15	43	23.6		21.1	146	47.2 157		23.2 126	**30**	53	21	47		50	54	50	30
16	58	23.6		20.5	161	22.0 158		35.9 127	**35**	5 59	29	6 56	23 55	56	47	27
17	73	23.7	+18	19.9	175	56.7 157	+7	48.4 125	**40**	6 05	6 38	7 07	** **	**	10 43	24
18	88	23.7	+18	19.3	190	31.4 157	+8	01.0 126	**45**	6 12	6 47	7 19	** **	**	10 39	20
19	103	23.7		18.7	205	06.2 158		13.5 125	**50**	19	6 59	34	** **	**	34	16
20	118	23.8		18.1	219	40.9 157		25.9 124	**52**	23	7 04	41	** **	**	31	15
21	133	23.8		17.5	234	15.6 157		38.3 124	**54**	26	09	49	** **	**	29	12
22	148	23.8		16.8	248	50.3 157	+8	50.7 124	**56**	30	16	7 58	** **	**	26	10
23	163	23.9		16.2	263	24.9 156	+9	03.0 123	**58**	34	22	8 08	** **	**	23	7
24	178	23.9	+18	15.6	277	59.6 157	+9	15.3 123	**60 S**	6 38	7 30	8 19	** **	**	10 19	5

UT	ARIES PMG 3h 28.m0		VENUS Mag: −3.9 PMG: 14h 15m			MARTE Mag: +1.8 PMG: 13h 38m			JÚPITER Mag: −2.8 PMG: 1h 38m			SATURNO Mag: +0.2 PMG: 0h 21m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	307	51.1	146	12.4	+9 15.6	155	16.7	+12 28.2	335	30.5	−12 35.1	354	45.2	−18 22.2
1	322	53.5	161	12.1	14.4	170	17.7	27.6	350	33.3	35.2	9	47.9	22.3
2	337	56.0	176	11.8	13.2	185	18.7	27.1	5	36.0	35.3	24	50.5	22.3
3	352	58.4	191	11.5	12.0	200	19.6	26.5	20	38.7	35.4	39	53.2	22.4
4	8	00.9	206	11.2	10.8	215	20.6	25.9	35	41.4	35.5	54	55.9	22.4
5	23	03.4	221	10.9	+9 09.6	230	21.6	+12 25.4	50	44.2	−12 35.6	69	58.5	−18 22.5
6	38	05.8	236	10.6	+9 08.4	245	22.5	+12 24.8	65	46.9	−12 35.7	85	01.2	−18 22.5
7	53	08.3	251	10.3	07.2	260	23.5	24.2	80	49.6	35.8	100	03.8	22.6
8	68	10.8	266	10.0	06.0	275	24.5	23.7	95	52.4	35.9	115	06.5	22.6
9	83	13.2	281	09.6	04.8	290	25.4	23.1	110	55.1	36.0	130	09.1	22.7
10	98	15.7	296	09.3	03.7	305	26.4	22.5	125	57.8	36.1	145	11.8	22.7
11	113	18.2	311	09.0	+9 02.5	320	27.4	+12 21.9	141	00.5	−12 36.2	160	14.4	−18 22.8
12	128	20.6	326	08.7	+9 01.3	335	28.3	+12 21.4	156	03.3	−12 36.4	175	17.1	−18 22.8
13	143	23.1	341	08.4	+9 00.1	350	29.3	20.8	171	06.0	36.5	190	19.7	22.9
14	158	25.6	356	08.1	+8 58.9	5	30.3	20.2	186	08.7	36.6	205	22.4	23.0
15	173	28.0	11	07.8	57.7	20	31.2	19.7	201	11.4	36.7	220	25.0	23.0
16	188	30.5	26	07.5	56.5	35	32.2	19.1	216	14.2	36.8	235	27.7	23.1
17	203	32.9	41	07.2	+8 55.3	50	33.2	+12 18.5	231	16.9	−12 36.9	250	30.3	−18 23.1
18	218	35.4	56	06.9	+8 54.1	65	34.1	+12 18.0	246	19.6	−12 37.0	265	33.0	−18 23.2
19	233	37.9	71	06.6	52.9	80	35.1	17.4	261	22.4	37.1	280	35.6	23.2
20	248	40.3	86	06.3	51.7	95	36.1	16.8	276	25.1	37.2	295	38.3	23.3
21	263	42.8	101	06.0	50.5	110	37.0	16.3	291	27.8	37.3	310	40.9	23.3
22	278	45.3	116	05.7	49.3	125	38.0	15.7	306	30.6	37.4	325	43.6	23.4
23	293	47.7	131	05.3	48.1	140	39.0	15.1	321	33.3	37.5	340	46.2	23.4
24	308	50.2	146	05.0	+8 46.9	155	39.9	+12 14.6	336	36.0	−12 37.6	355	48.9	−18 23.5
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 20^{d}.9		PHE	4^{h}: 54′.6								
	PMG: 12^{h} 06^{m}.4				SD: 14′.9			12^{h}: 54′.5								
					PMG: 5^{h} 38^{m}			20^{h}: 54′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	23.9	+18	15.6	277	59.6	+9	15.3	**60 N**	20 32	21 33	** **	22 28	6	13 15	82
1	193	23.9		15.0	292	34.2 156		27.6 123	**58**	20	21 13	22 42	36	10	08	79
2	208	23.9		14.4	307	08.9 157		39.8 122	**56**	09	20 58	22 10	43	13	13 02	75
3	223	24.0		13.8	321	43.5 156	+9	51.9 121	**54**	20 00	44	21 47	49	16	12 56	73
4	238	24.0		13.1	336	18.1 156	+10	04.0 121	**52**	19 51	33	28	22 55	18	51	70
5	253	24.0	+18	12.5	350	52.7 156	+10	16.1 121	**50**	19 44	20 22	21 13	23 00	20	12 47	68
6	268	24.1	+18	11.9	5	27.2 155	+10	28.1 120	**45**	19 28	20 01	20 44	23 11	24	12 37	64
7	283	24.1		11.3	20	01.7 155		40.1 120	**40**	15	19 45	22	21	27	29	60
8	298	24.1		10.7	34	36.3 156	+10	52.0 119	**35**	19 04	31	20 05	29	30	22	57
9	313	24.2		10.0	49	10.7 154	+11	03.9 119	**30**	18 54	20	19 51	36	33	16	54
10	328	24.2		09.4	63	45.2 155		15.7 118	**20**	37	19 01	29	48	37	12 05	51
11	343	24.2	+18	08.8	78	19.7 155	+11	27.5 118	**10 N**	18 23	18 45	19 11	23 59	41	11 56	47
12	358	24.3	+18	08.2	92	54.1 154	+11	39.2 117	**0**	18 10	18 32	18 57	** **	**	11 48	42
13	13	24.3		07.5	107	28.5 154	+11	50.9 117	**10 S**	17 57	19	44	** **	**	39	39
14	28	24.4		06.9	122	02.8 153	+12	02.6 117	**20**	43	18 06	33	** **	**	30	36
15	43	24.4		06.3	136	37.2 154		14.1 115	**30**	27	17 52	21	** **	**	20	31
16	58	24.4		05.7	151	11.5 153		25.7 116	**35**	18	45	15	** **	**	14	29
17	73	24.5	+18	05.1	165	45.7 152	+12	37.1 114	**40**	17 08	17 36	18 09	0 00	60	11 07	26
18	88	24.5	+18	04.4	180	20.0 153	+12	48.5 114	**45**	16 55	17 27	18 02	0 06	64	10 59	23
19	103	24.5		03.8	194	54.2 152	+12	59.9 114	**50**	41	16	17 55	14	68	50	18
20	118	24.6		03.2	209	28.4 152	+13	11.2 113	**52**	34	11	52	18	70	46	16
21	133	24.6		02.5	224	02.5 151		22.4 112	**54**	26	06	49	22	72	41	14
22	148	24.6		01.9	238	36.7 152		33.6 112	**56**	18	17 00	45	26	75	36	11
23	163	24.7		01.3	253	10.7 150		44.8 112	**58**	16 08	16 53	41	31	78	30	9
24	178	24.7	+18	00.7	267	44.8 151	+13	55.9 111	**60 S**	15 57	16 45	17 37	0 36	82	10 24	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.8			Mag: +0.2		
	3^{h} 24^{m}.1		PMG: 14^{h} 16^{m}			PMG: 13^{h} 36^{m}			PMG: 1^{h} 33^{m}			PMG: 0^{h} 17^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	308	50.2	146	05.0	+8 46.9	155	39.9	+12 14.6	336	36.0	−12 37.6	355	48.9	−18 23.5
1	323	52.7	161	04.7	45.7	170	40.9	14.0	351	38.7	37.7	10	51.5	23.5
2	338	55.1	176	04.4	44.5	185	41.9	13.4	6	41.5	37.8	25	54.2	23.6
3	353	57.6	191	04.1	43.3	200	42.8	12.8	21	44.2	37.9	40	56.8	23.7
4	9	00.1	206	03.8	42.0	215	43.8	12.3	36	46.9	38.1	55	59.5	23.7
5	24	02.5	221	03.5	+8 40.8	230	44.8	+12 11.7	51	49.7	−12 38.2	71	02.1	−18 23.8
6	39	05.0	236	03.2	+8 39.6	245	45.7	+12 11.1	66	52.4	−12 38.3	86	04.8	−18 23.8
7	54	07.4	251	02.9	38.4	260	46.7	10.6	81	55.1	38.4	101	07.4	23.9
8	69	09.9	266	02.6	37.2	275	47.7	10.0	96	57.9	38.5	116	10.1	23.9
9	84	12.4	281	02.3	36.0	290	48.6	09.4	112	00.6	38.6	131	12.7	24.0
10	99	14.8	296	02.0	34.8	305	49.6	08.9	127	03.3	38.7	146	15.4	24.0
11	114	17.3	311	01.7	+8 33.6	320	50.6	+12 08.3	142	06.1	−12 38.8	161	18.0	−18 24.1
12	129	19.8	326	01.4	+8 32.4	335	51.6	+12 07.7	157	08.8	−12 38.9	176	20.7	−18 24.1
13	144	22.2	341	01.1	31.2	350	52.5	07.1	172	11.5	39.0	191	23.3	24.2
14	159	24.7	356	00.8	30.0	5	53.5	06.6	187	14.3	39.1	206	26.0	24.3
15	174	27.2	11	00.5	28.8	20	54.5	06.0	202	17.0	39.2	221	28.7	24.3
16	189	29.6	26	00.2	27.6	35	55.4	05.4	217	19.7	39.3	236	31.3	24.4
17	204	32.1	40	59.9	+8 26.4	50	56.4	+12 04.9	232	22.5	−12 39.5	251	34.0	−18 24.4
18	219	34.5	55	59.6	+8 25.2	65	57.4	+12 04.3	247	25.2	−12 39.6	266	36.6	−18 24.5
19	234	37.0	70	59.3	24.0	80	58.3	03.7	262	27.9	39.7	281	39.3	24.5
20	249	39.5	85	59.0	22.7	95	59.3	03.1	277	30.7	39.8	296	41.9	24.6
21	264	41.9	100	58.8	21.5	111	00.3	02.6	292	33.4	39.9	311	44.6	24.6
22	279	44.4	115	58.5	20.3	126	01.2	02.0	307	36.1	40.0	326	47.2	24.7
23	294	46.9	130	58.2	19.1	141	02.2	01.4	322	38.9	40.1	341	49.9	24.7
24	309	49.3	145	57.9	+8 17.9	156	03.2	+12 00.8	337	41.6	−12 40.2	356	52.5	−18 24.8
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL SD: 15′.8 PMG: 12h 06.m3				LUNA Edad: 21.d9 SD: 14′.8 PMG: 6h 20m PHE 4h: 54′.3; 12h: 54′.3; 20h: 54′.2 Rº: 44m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	24.7	+18	00.7	267	44.8	+13	55.9	**60 N**	** **	2 41	3 41	22 34	11	14 37	83
1	193	24.8	+18	00.0	282	18.8 150	+14	06.9 110	**58**	1 31	3 00	3 53	46	14	27	78
2	208	24.8	+17	59.4	296	52.8 150		17.8 109	**56**	2 03	16	4 04	22 56	18	17	75
3	223	24.8		58.8	311	26.7 149		28.7 109	**54**	27	29	14	23 05	20	09	72
4	238	24.9		58.1	326	00.6 149		39.6 109	**52**	2 45	41	22	13	22	14 01	70
5	253	24.9	+17	57.5	340	34.5 149	+14	50.3 107	**50**	3 00	3 51	4 29	23 20	25	13 55	68
6	268	24.9	+17	56.9	355	08.3 148	+15	01.1 108	**45**	3 29	4 12	4 45	23 35	29	13 41	63
7	283	25.0		56.2	9	42.1 148		11.7 106	**40**	3 51	28	4 58	48	32	29	60
8	298	25.0		55.6	24	15.8 147		22.3 106	**35**	4 08	42	5 09	23 59	34	19	58
9	313	25.1		55.0	38	49.5 147		32.8 105	**30**	22	4 53	19	** **	**	13 10	56
10	328	25.1		54.3	53	23.2 147		43.3 105	**20**	4 44	5 12	35	** **	**	12 56	51
11	343	25.1	+17	53.7	67	56.8 146	+15	53.7 104	**10 N**	5 02	5 27	5 50	** **	**	12 43	47
12	358	25.2	+17	53.1	82	30.3 145	+16	04.0 103	**0**	5 16	5 41	6 03	0 10	43	12 30	45
13	13	25.2		52.4	97	03.9 146		14.3 103	**10 S**	28	5 54	16	20	47	18	42
14	28	25.3		51.8	111	37.3 144		24.5 102	**20**	40	6 07	30	31	51	12 06	38
15	43	25.3		51.2	126	10.8 145		34.6 101	**30**	51	20	45	44	55	11 51	34
16	58	25.4		50.5	140	44.1 143		44.7 101	**35**	5 57	28	6 54	0 51	58	43	32
17	73	25.4	+17	49.9	155	17.5 144	+16	54.6 99	**40**	6 03	6 36	7 05	1 00	60	11 33	29
18	88	25.4	+17	49.3	169	50.8 143	+17	04.6 100	**45**	6 10	6 45	7 17	1 10	64	11 22	26
19	103	25.5		48.6	184	24.0 142		14.4 98	**50**	17	6 56	31	22	68	08	22
20	118	25.5		48.0	198	57.2 142		24.2 98	**52**	20	7 01	38	28	70	11 02	20
21	133	25.6		47.3	213	30.3 141		33.9 97	**54**	23	06	46	34	73	10 55	18
22	148	25.6		46.7	228	03.4 141		43.5 96	**56**	27	12	7 54	41	75	47	15
23	163	25.7		46.1	242	36.5 141	+17	53.1 96	**58**	31	19	8 03	49	79	39	12
24	178	25.7	+17	45.4	257	09.5 140	+18	02.6 95	**60 S**	6 35	7 26	8 14	1 58	83	10 29	8

UT	ARIES PMG 3h 20.m2		VENUS Mag: −3.9 PMG: 14h 16m			MARTE Mag: +1.8 PMG: 13h 35m			JÚPITER Mag: −2.8 PMG: 1h 29m			SATURNO Mag: +0.2 PMG: 0h 12m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	309	49.3	145	57.9	+8 17.9	156	03.2	+12 00.8	337	41.6	−12 40.2	356	52.5	−18 24.8
1	324	51.8	160	57.6	16.7	171	04.2	+12 00.3	352	44.3	40.3	11	55.2	24.8
2	339	54.3	175	57.3	15.5	186	05.1	+11 59.7	7	47.1	40.4	26	57.8	24.9
3	354	56.7	190	57.0	14.3	201	06.1	59.1	22	49.8	40.5	42	00.5	25.0
4	9	59.2	205	56.7	13.1	216	07.1	58.6	37	52.5	40.6	57	03.1	25.0
5	25	01.7	220	56.4	+8 11.8	231	08.0	+11 58.0	52	55.3	−12 40.7	72	05.8	−18 25.1
6	40	04.1	235	56.1	+8 10.6	246	09.0	+11 57.4	67	58.0	−12 40.9	87	08.4	−18 25.1
7	55	06.6	250	55.8	09.4	261	10.0	56.8	83	00.8	41.0	102	11.1	25.2
8	70	09.0	265	55.5	08.2	276	10.9	56.3	98	03.5	41.1	117	13.7	25.2
9	85	11.5	280	55.2	07.0	291	11.9	55.7	113	06.2	41.2	132	16.4	25.3
10	100	14.0	295	54.9	05.8	306	12.9	55.1	128	09.0	41.3	147	19.0	25.3
11	115	16.4	310	54.7	+8 04.6	321	13.8	+11 54.5	143	11.7	−12 41.4	162	21.7	−18 25.4
12	130	18.9	325	54.4	+8 03.3	336	14.8	+11 54.0	158	14.4	−12 41.5	177	24.3	−18 25.4
13	145	21.4	340	54.1	02.1	351	15.8	53.4	173	17.2	41.6	192	27.0	25.5
14	160	23.8	355	53.8	+8 00.9	6	16.8	52.8	188	19.9	41.7	207	29.6	25.5
15	175	26.3	10	53.5	+7 59.7	21	17.7	52.2	203	22.6	41.8	222	32.3	25.6
16	190	28.8	25	53.2	58.5	36	18.7	51.7	218	25.4	41.9	237	34.9	25.7
17	205	31.2	40	52.9	+7 57.3	51	19.7	+11 51.1	233	28.1	−12 42.0	252	37.6	−18 25.7
18	220	33.7	55	52.6	+7 56.0	66	20.6	+11 50.5	248	30.9	−12 42.2	267	40.2	−18 25.8
19	235	36.2	70	52.3	54.8	81	21.6	49.9	263	33.6	42.3	282	42.9	25.8
20	250	38.6	85	52.1	53.6	96	22.6	49.4	278	36.3	42.4	297	45.6	25.9
21	265	41.1	100	51.8	52.4	111	23.6	48.8	293	39.1	42.5	312	48.2	25.9
22	280	43.5	115	51.5	51.2	126	24.5	48.2	308	41.8	42.6	327	50.9	26.0
23	295	46.0	130	51.2	50.0	141	25.5	47.6	323	44.6	42.7	342	53.5	26.0
24	310	48.5	145	50.9	+7 48.7	156	26.5	+11 47.1	338	47.3	−12 42.8	357	56.2	−18 26.1
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL SD: 15′.8 PMG: 12h 06m.2				LUNA Edad: 22d.9 SD: 14′.8 PMG: 7h 04m PHE 4h: 54′.2 12h: 54′.2 20h: 54′.2 Rº: 47m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	25.7	+17	45.4	257	09.5	+18	02.6	**60 N**	20 27	21 26	23 23	22 45	17	16 00	81
1	193	25.7		44.8	271	42.4 139		12.0 94	**58**	15	21 08	22 32	23 00	22	15 45	77
2	208	25.8		44.1	286	15.3 139		21.3 93	**56**	20 05	20 53	22 03	14	24	32	74
3	223	25.8		43.5	300	48.1 138		30.6 93	**54**	19 56	40	21 41	25	27	21	71
4	238	25.9		42.8	315	20.9 138		39.8 92	**52**	48	29	23	35	30	11	69
5	253	25.9	+17	42.2	329	53.6 137	+18	48.9 91	**50**	19 41	20 19	21 09	23 45	31	15 03	66
6	268	26.0	+17	41.6	344	26.3 137	+18	57.9 90	**45**	19 25	19 59	20 41	** **	**	14 44	63
7	283	26.0		40.9	358	58.9 136	+19	06.8 89	**40**	13	43	20	** **	**	29	60
8	298	26.1		40.3	13	31.5 136		15.7 89	**35**	19 02	29	20 03	** **	**	17	57
9	313	26.1		39.6	28	04.0 135		24.5 88	**30**	18 52	18	19 49	0 09	36	14 06	55
10	328	26.2		39.0	42	36.4 134		33.2 87	**20**	36	19 00	27	25	40	13 47	52
11	343	26.2	+17	38.3	57	08.8 134	+19	41.8 86	**10 N**	18 23	18 45	19 11	0 40	43	13 30	50
12	358	26.2	+17	37.7	71	41.1 133	+19	50.3 85	**0**	18 10	18 31	18 57	0 53	46	13 15	47
13	13	26.3		37.0	86	13.4 133	+19	58.8 85	**10 S**	17 57	19	44	1 07	49	13 00	45
14	28	26.3		36.4	100	45.6 132	+20	07.2 84	**20**	44	18 07	33	22	52	12 44	42
15	43	26.4		35.7	115	17.8 132		15.4 82	**30**	28	17 53	22	39	55	25	39
16	58	26.4		35.1	129	49.9 131		23.6 82	**35**	19	46	16	1 49	57	15	36
17	73	26.5	+17	34.4	144	22.0 131	+20	31.7 81	**40**	17 09	17 38	18 11	2 00	60	12 02	34
18	88	26.5	+17	33.8	158	54.0 130	+20	39.8 81	**45**	16 58	17 29	18 04	2 14	63	11 48	31
19	103	26.6		33.1	173	25.9 129		47.7 79	**50**	43	18	17 58	30	68	30	28
20	118	26.6		32.5	187	57.8 129	+20	55.5 78	**52**	37	14	55	38	69	22	25
21	133	26.7		31.8	202	29.6 128	+21	03.3 78	**54**	29	08	51	47	72	13	23
22	148	26.7		31.2	217	01.3 127		11.0 77	**56**	21	17 03	48	2 56	75	11 02	21
23	163	26.8		30.5	231	33.0 127		18.5 75	**58**	12	16 56	44	3 08	78	10 51	17
24	178	26.8	+17	29.9	246	04.7 127	+21	26.0 75	**60 S**	16 01	16 49	17 40	3 21	82	10 37	13

UT	ARIES PMG 3h 16m.2		VENUS Mag: −3.9 PMG: 14h 17m			MARTE Mag: +1.8 PMG: 13h 33m			JÚPITER Mag: −2.8 PMG: 1h 25m			SATURNO Mag: +0.2 PMG: 0h 08m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	310	48.5	145	50.9	+7 48.7	156	26.5	+11 47.1	338	47.3	−12 42.8	357	56.2	−18 26.1
1	325	50.9	160	50.6	47.5	171	27.4	46.5	353	50.0	42.9	12	58.8	26.1
2	340	53.4	175	50.3	46.3	186	28.4	45.9	8	52.8	43.0	28	01.5	26.2
3	355	55.9	190	50.1	45.1	201	29.4	45.3	23	55.5	43.1	43	04.1	26.2
4	10	58.3	205	49.8	43.9	216	30.4	44.8	38	58.2	43.2	58	06.8	26.3
5	26	00.8	220	49.5	+7 42.6	231	31.3	+11 44.2	54	01.0	−12 43.4	73	09.4	−18 26.3
6	41	03.3	235	49.2	+7 41.4	246	32.3	+11 43.6	69	03.7	−12 43.5	88	12.1	−18 26.4
7	56	05.7	250	48.9	40.2	261	33.3	43.0	84	06.5	43.6	103	14.7	26.5
8	71	08.2	265	48.6	39.0	276	34.2	42.4	99	09.2	43.7	118	17.4	26.5
9	86	10.6	280	48.3	37.7	291	35.2	41.9	114	12.0	43.8	133	20.0	26.6
10	101	13.1	295	48.1	36.5	306	36.2	41.3	129	14.7	43.9	148	22.7	26.6
11	116	15.6	310	47.8	+7 35.3	321	37.2	+11 40.7	144	17.4	−12 44.0	163	25.3	−18 26.7
12	131	18.0	325	47.5	+7 34.1	336	38.1	+11 40.1	159	20.2	−12 44.1	178	28.0	−18 26.7
13	146	20.5	340	47.2	32.9	351	39.1	39.6	174	22.9	44.2	193	30.6	26.8
14	161	23.0	355	46.9	31.6	6	40.1	39.0	189	25.7	44.3	208	33.3	26.8
15	176	25.4	10	46.7	30.4	21	41.0	38.4	204	28.4	44.5	223	35.9	26.9
16	191	27.9	25	46.4	29.2	36	42.0	37.8	219	31.1	44.6	238	38.6	26.9
17	206	30.4	40	46.1	+7 28.0	51	43.0	+11 37.2	234	33.9	−12 44.7	253	41.2	−18 27.0
18	221	32.8	55	45.8	+7 26.7	66	44.0	+11 36.7	249	36.6	−12 44.8	268	43.9	−18 27.0
19	236	35.3	70	45.5	25.5	81	44.9	36.1	264	39.4	44.9	283	46.5	27.1
20	251	37.8	85	45.3	24.3	96	45.9	35.5	279	42.1	45.0	298	49.2	27.2
21	266	40.2	100	45.0	23.1	111	46.9	34.9	294	44.9	45.1	313	51.8	27.2
22	281	42.7	115	44.7	21.8	126	47.8	34.4	309	47.6	45.2	328	54.5	27.3
23	296	45.1	130	44.4	20.6	141	48.8	33.8	324	50.3	45.3	343	57.2	27.3
24	311	47.6	145	44.2	+7 19.4	156	49.8	+11 33.2	339	53.1	−12 45.4	358	59.8	−18 27.4
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 12h 06.m2				Edad: 23.d9 SD: 14′.8 PMG: 7h 51m			PHE 4h: 54′.3 12h: 54′.3 20h: 54′.4 Rº: 49m								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	26.8	+17	29.9	246	04.7	+21	26.0	**60 N**	0 50	2 47	3 46	23 02	29	17 21	75
1	193	26.9		29.2	260	36.2 125		33.4 74	**58**	1 41	3 05	3 58	22	33	17 02	71
2	208	26.9		28.6	275	07.8 126		40.7 73	**56**	2 10	20	4 08	38	36	16 46	68
3	223	27.0		27.9	289	39.2 124		47.9 72	**54**	32	33	17	23 52	38	32	66
4	238	27.0		27.3	304	10.6 124	+21	55.0 71	**52**	2 49	44	25	** **	**	20	64
5	253	27.1	+17	26.6	318	41.9 123	+22	02.0 70	**50**	3 04	3 54	4 32	** **	**	16 09	63
6	268	27.1	+17	25.9	333	13.2 123	+22	09.0 70	**45**	3 32	4 14	4 48	0 04	34	15 47	60
7	283	27.2		25.3	347	44.4 122		15.8 68	**40**	3 53	30	5 00	20	37	29	58
8	298	27.2		24.6	2	15.6 122		22.5 67	**35**	4 10	43	11	33	39	14	57
9	313	27.3		24.0	16	46.7 121		29.1 66	**30**	24	4 54	20	0 45	41	15 01	55
10	328	27.3		23.3	31	17.7 120		35.6 65	**20**	4 45	5 13	36	1 05	44	14 39	53
11	343	27.4	+17	22.7	45	48.7 120	+22	42.1 65	**10 N**	5 02	5 28	5 50	1 23	46	14 20	51
12	358	27.5	+17	22.0	60	19.6 119	+22	48.4 63	**0**	5 16	5 41	6 03	1 39	49	14 02	50
13	13	27.5		21.3	74	50.5 119	+22	54.6 62	**10 S**	28	5 53	15	1 56	50	13 45	47
14	28	27.6		20.7	89	21.3 118	+23	00.7 61	**20**	39	6 06	29	2 14	53	26	45
15	43	27.6		20.0	103	52.0 117		06.7 60	**30**	50	19	44	34	56	13 04	43
16	58	27.7		19.4	118	22.7 117		12.7 60	**35**	5 56	26	6 53	2 46	58	12 51	42
17	73	27.7	+17	18.7	132	53.3 116	+23	18.5 58	**40**	6 01	6 34	7 03	3 00	60	12 36	41
18	88	27.8	+17	18.0	147	23.8 115	+23	24.2 57	**45**	6 08	6 43	7 14	3 17	62	12 19	38
19	103	27.8		17.4	161	54.3 115		29.8 56	**50**	14	53	28	38	65	11 58	35
20	118	27.9		16.7	176	24.8 115		35.2 54	**52**	17	6 58	35	47	67	47	34
21	133	27.9		16.1	190	55.2 114		40.6 54	**54**	20	7 03	42	3 59	68	36	32
22	148	28.0		15.4	205	25.5 113		45.9 53	**56**	24	09	50	4 11	72	23	29
23	163	28.1		14.7	219	55.8 113		51.1 52	**58**	27	15	7 59	26	75	11 08	26
24	178	28.1	+17	14.1	234	26.0 112	+23	56.1 50	**60 S**	6 31	7 22	8 10	4 43	80	10 50	21

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 3h 12.m3		Mag: −3.9 PMG: 14h 17m			Mag: +1.8 PMG: 13h 32m			Mag: −2.9 PMG: 1h 20m			Mag: +0.2 PMG: 0h 04m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	311	47.6	145	44.2	+7 19.4	156	49.8	+11 33.2	339	53.1	−12 45.4	358	59.8	−18 27.4
1	326	50.1	160	43.9	18.1	171	50.8	32.6	354	55.8	45.6	14	02.5	27.4
2	341	52.5	175	43.6	16.9	186	51.7	32.0	9	58.6	45.7	29	05.1	27.5
3	356	55.0	190	43.3	15.7	201	52.7	31.5	25	01.3	45.8	44	07.8	27.5
4	11	57.5	205	43.0	14.5	216	53.7	30.9	40	04.1	45.9	59	10.4	27.6
5	26	59.9	220	42.8	+7 13.2	231	54.7	+11 30.3	55	06.8	−12 46.0	74	13.1	−18 27.6
6	42	02.4	235	42.5	+7 12.0	246	55.6	+11 29.7	70	09.5	−12 46.1	89	15.7	−18 27.7
7	57	04.9	250	42.2	10.8	261	56.6	29.1	85	12.3	46.2	104	18.4	27.7
8	72	07.3	265	41.9	09.5	276	57.6	28.6	100	15.0	46.3	119	21.0	27.8
9	87	09.8	280	41.7	08.3	291	58.5	28.0	115	17.8	46.4	134	23.7	27.9
10	102	12.3	295	41.4	07.1	306	59.5	27.4	130	20.5	46.6	149	26.3	27.9
11	117	14.7	310	41.1	+7 05.9	322	00.5	+11 26.8	145	23.3	−12 46.7	164	29.0	−18 28.0
12	132	17.2	325	40.8	+7 04.6	337	01.5	+11 26.2	160	26.0	−12 46.8	179	31.6	−18 28.0
13	147	19.6	340	40.6	03.4	352	02.4	25.7	175	28.8	46.9	194	34.3	28.1
14	162	22.1	355	40.3	02.2	7	03.4	25.1	190	31.5	47.0	209	36.9	28.1
15	177	24.6	10	40.0	+7 00.9	22	04.4	24.5	205	34.2	47.1	224	39.6	28.2
16	192	27.0	25	39.8	+6 59.7	37	05.4	23.9	220	37.0	47.2	239	42.2	28.2
17	207	29.5	40	39.5	+6 58.5	52	06.3	+11 23.3	235	39.7	−12 47.3	254	44.9	−18 28.3
18	222	32.0	55	39.2	+6 57.2	67	07.3	+11 22.7	250	42.5	−12 47.4	269	47.5	−18 28.3
19	237	34.4	70	38.9	56.0	82	08.3	22.2	265	45.2	47.6	284	50.2	28.4
20	252	36.9	85	38.7	54.8	97	09.3	21.6	280	48.0	47.7	299	52.8	28.4
21	267	39.4	100	38.4	53.5	112	10.2	21.0	295	50.7	47.8	314	55.5	28.5
22	282	41.8	115	38.1	52.3	127	11.2	20.4	310	53.5	47.9	329	58.1	28.5
23	297	44.3	130	37.9	51.1	142	12.2	19.8	325	56.2	48.0	345	00.8	28.6
24	312	46.8	145	37.6	+6 49.8	157	13.1	+11 19.3	340	59.0	−12 48.1	0	03.5	−18 28.7
Dif	—			−3	−12		+10	−6		+27	−1		−8973	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 24^{d}.9		PHE	4^{h}: 54′.5									
	PMG: 12^{h} 06^{m}.1				SD: 14′.8			12^{h}: 54′.6									
					PMG: 8^{h} 40^{m}			20^{h}: 54′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	28.1	+17	14.1	234	26.0	+23	56.1		**60 N**	20 22	21 20	23 04	23 31	48	18 36	60
1	193	28.2		13.4	248	56.1 111	+24	01.1	50	**58**	11	21 02	22 22	23 55	49	18 13	58
2	208	28.2		12.7	263	26.2 111		05.9	48	**56**	20 01	20 48	21 55	** **	**	17 54	57
3	223	28.3		12.1	277	56.3 111		10.6	47	**54**	19 52	35	35	** **	**	38	57
4	238	28.3		11.4	292	26.2 109		15.2	46	**52**	44	25	18	0 05	39	24	56
5	253	28.4	+17	10.7	306	56.2 110	+24	19.7	45	**50**	19 37	20 15	21 05	0 16	40	17 12	56
6	268	28.5	+17	10.1	321	26.1 109	+24	24.1	44	**45**	19 23	19 56	20 37	0 38	43	16 47	55
7	283	28.5		09.4	335	55.9 108		28.4	43	**40**	10	40	17	0 57	44	27	55
8	298	28.6		08.7	350	25.6 107		32.5	41	**35**	19 00	27	20 01	1 12	46	16 11	54
9	313	28.6		08.1	4	55.4 108		36.6	41	**30**	18 51	19 17	19 47	26	46	15 56	54
10	328	28.7		07.4	19	25.0 106		40.5	39	**20**	35	18 59	26	1 49	48	32	53
11	343	28.7	+17	06.7	33	54.6 106	+24	44.3	38	**10 N**	18 22	18 44	19 10	2 09	49	15 11	53
12	358	28.8	+17	06.0	48	24.2 106	+24	48.0	37	**0**	18 10	18 31	18 56	2 28	50	14 52	51
13	13	28.9		05.4	62	53.7 105		51.5	35	**10 S**	17 57	19	44	2 46	52	32	51
14	28	28.9		04.7	77	23.1 104		55.0	35	**20**	44	18 07	34	3 07	53	14 11	51
15	43	29.0		04.0	91	52.5 104	+24	58.3	33	**30**	29	17 54	23	30	55	13 47	49
16	58	29.0		03.4	106	21.9 104	+25	01.5	32	**35**	21	47	18	3 44	55	33	49
17	73	29.1	+17	02.7	120	51.2 103	+25	04.6	31	**40**	17 11	17 40	18 12	4 00	56	13 17	48
18	88	29.2	+17	02.0	135	20.5 103	+25	07.6	30	**45**	17 00	17 31	18 06	4 19	58	12 57	47
19	103	29.2		01.3	149	49.7 102		10.4	28	**50**	16 46	21	18 00	43	60	33	45
20	118	29.3	+17	00.7	164	18.9 102		13.2	28	**52**	40	16	17 57	4 54	61	21	45
21	133	29.3	+17	00.0	178	48.0 101		15.8	26	**54**	33	11	54	5 07	62	12 08	43
22	148	29.4	+16	59.3	193	17.1 101		18.2	24	**56**	25	06	51	23	63	11 52	42
23	163	29.5		58.6	207	46.1 100		20.6	24	**58**	16	17 00	48	5 41	65	34	40
24	178	29.5	+16	58.0	222	15.1 100	+25	22.8	22	**60 S**	16 06	16 53	17 44	6 03	69	11 11	38

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	3^{h} 08^{m}.4		PMG: 14^{h} 18^{m}			PMG: 13^{h} 30^{m}			PMG: 1^{h} 16^{m}			PMG: 23^{h} 56^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	312	46.8	145	37.6	+6 49.8	157	13.1	+11 19.3	340	59.0	−12 48.1	0	03.5	−18 28.7
1	327	49.2	160	37.3	48.6	172	14.1	18.7	356	01.7	48.2	15	06.1	28.7
2	342	51.7	175	37.1	47.4	187	15.1	18.1	11	04.5	48.3	30	08.8	28.8
3	357	54.1	190	36.8	46.1	202	16.1	17.5	26	07.2	48.4	45	11.4	28.8
4	12	56.6	205	36.5	44.9	217	17.0	16.9	41	10.0	48.6	60	14.1	28.9
5	27	59.1	220	36.3	+6 43.7	232	18.0	+11 16.3	56	12.7	−12 48.7	75	16.7	−18 28.9
6	43	01.5	235	36.0	+6 42.4	247	19.0	+11 15.8	71	15.5	−12 48.8	90	19.4	−18 29.0
7	58	04.0	250	35.7	41.2	262	20.0	15.2	86	18.2	48.9	105	22.0	29.0
8	73	06.5	265	35.4	39.9	277	20.9	14.6	101	20.9	49.0	120	24.7	29.1
9	88	08.9	280	35.2	38.7	292	21.9	14.0	116	23.7	49.1	135	27.3	29.1
10	103	11.4	295	34.9	37.5	307	22.9	13.4	131	26.4	49.2	150	30.0	29.2
11	118	13.9	310	34.7	+6 36.2	322	23.9	+11 12.8	146	29.2	−12 49.3	165	32.6	−18 29.2
12	133	16.3	325	34.4	+6 35.0	337	24.8	+11 12.3	161	31.9	−12 49.4	180	35.3	−18 29.3
13	148	18.8	340	34.1	33.8	352	25.8	11.7	176	34.7	49.6	195	37.9	29.3
14	163	21.3	355	33.9	32.5	7	26.8	11.1	191	37.4	49.7	210	40.6	29.4
15	178	23.7	10	33.6	31.3	22	27.8	10.5	206	40.2	49.8	225	43.2	29.5
16	193	26.2	25	33.3	30.0	37	28.7	09.9	221	42.9	49.9	240	45.9	29.5
17	208	28.6	40	33.1	+6 28.8	52	29.7	+11 09.3	236	45.7	−12 50.0	255	48.5	−18 29.6
18	223	31.1	55	32.8	+6 27.6	67	30.7	+11 08.8	251	48.4	−12 50.1	270	51.2	−18 29.6
19	238	33.6	70	32.5	26.3	82	31.7	08.2	266	51.2	50.2	285	53.8	29.7
20	253	36.0	85	32.3	25.1	97	32.6	07.6	281	53.9	50.3	300	56.5	29.7
21	268	38.5	100	32.0	23.8	112	33.6	07.0	296	56.7	50.5	315	59.1	29.8
22	283	41.0	115	31.7	22.6	127	34.6	06.4	311	59.4	50.6	331	01.8	29.8
23	298	43.4	130	31.5	21.4	142	35.6	05.8	327	02.2	50.7	346	04.4	29.9
24	313	45.9	145	31.2	+6 20.1	157	36.5	+11 05.2	342	04.9	−12 50.8	1	07.1	−18 29.9
Dif	—			−3	−12		+10	−6		+27	−1		+27	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 25^{d}.9		PHE	4^{h}: 54′.8									
	PMG: 12^{h} 06^{m}.0				SD: 14′.9			12^{h}: 55′.0									
					PMG: 9^{h} 31^{m}			20^{h}: 55′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	178	29.5	+16	58.0	222	15.1	+25	22.8		**60 N**	1 09	2 53	3 51	** **	**	19 36	40
1	193	29.6		57.3	236	44.0 99		24.9	21	**58**	1 51	3 10	4 02	** **	**	19 11	43
2	208	29.7		56.6	251	13.0 100		26.9	20	**56**	2 17	25	12	0 14	50	18 51	45
3	223	29.7		55.9	265	41.8 98		28.7	18	**54**	38	37	20	30	50	35	45
4	238	29.8		55.2	280	10.7 99		30.5	18	**52**	2 54	48	28	44	50	20	47
5	253	29.8	+16	54.6	294	39.4 97	+25	32.1	16	**50**	3 08	3 57	4 35	0 56	51	18 08	47
6	268	29.9	+16	53.9	309	08.2 98	+25	33.5	14	**45**	3 35	4 17	4 50	1 21	51	17 42	49
7	283	30.0		53.2	323	36.9 97		34.9	14	**40**	3 56	32	5 02	41	52	22	49
8	298	30.0		52.5	338	05.6 97		36.1	12	**35**	4 12	45	12	1 58	52	17 05	50
9	313	30.1		51.8	352	34.3 97		37.2	11	**30**	25	4 56	21	2 12	52	16 50	51
10	328	30.2		51.2	7	02.9 96		38.1	9	**20**	4 46	5 14	37	37	52	25	52
11	343	30.2	+16	50.5	21	31.4 95	+25	38.9	8	**10 N**	5 02	5 28	5 50	2 58	53	16 04	52
12	358	30.3	+16	49.8	36	00.0 96	+25	39.6	7	**0**	5 16	5 41	6 03	3 18	53	15 43	53
13	13	30.4		49.1	50	28.5 95		40.2	6	**10 S**	28	5 53	15	3 38	53	23	53
14	28	30.4		48.4	64	57.0 95		40.6	4	**20**	38	6 05	28	4 00	52	15 02	53
15	43	30.5		47.8	79	25.5 95		40.9	3	**30**	49	17	42	25	52	14 36	55
16	58	30.6		47.1	93	53.9 94		41.1	2	**35**	54	24	6 51	39	53	22	54
17	73	30.6	+16	46.4	108	22.3 94	+25	41.1	0	**40**	5 59	6 32	7 00	4 56	53	14 05	55
18	88	30.7	+16	45.7	122	50.7 94	+25	41.0	1	**45**	6 05	6 40	7 12	5 17	52	13 44	56
19	103	30.8		45.0	137	19.1 94		40.8	2	**50**	11	50	25	43	51	18	56
20	118	30.8		44.3	151	47.4 93		40.4	4	**52**	14	6 55	31	5 55	52	13 06	56
21	133	30.9		43.6	166	15.7 93		39.9	5	**54**	17	7 00	38	6 09	52	12 51	57
22	148	31.0		43.0	180	44.0 93		39.3	6	**56**	20	05	46	26	51	34	58
23	163	31.0		42.3	195	12.3 93		38.6	7	**58**	23	11	7 55	6 46	51	12 14	58
24	178	31.1	+16	41.6	209	40.5 92	+25	37.7	9	**60 S**	6 27	7 18	8 05	7 12	50	11 49	59

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	3^{h} 04^{m}.4		PMG: 14^{h} 18^{m}			PMG: 13^{h} 29^{m}			PMG: 1^{h} 11^{m}			PMG: 23^{h} 51^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	313	45.9	145	31.2	+6 20.1	157	36.5	+11 05.2	342	04.9	−12 50.8	1	07.1	−18 29.9
1	328	48.4	160	31.0	18.9	172	37.5	04.7	357	07.7	50.9	16	09.7	30.0
2	343	50.8	175	30.7	17.6	187	38.5	04.1	12	10.4	51.0	31	12.4	30.0
3	358	53.3	190	30.4	16.4	202	39.5	03.5	27	13.2	51.1	46	15.0	30.1
4	13	55.7	205	30.2	15.1	217	40.4	02.9	42	15.9	51.2	61	17.7	30.1
5	28	58.2	220	29.9	+6 13.9	232	41.4	+11 02.3	57	18.7	−12 51.4	76	20.4	−18 30.2
6	44	00.7	235	29.7	+6 12.7	247	42.4	+11 01.7	72	21.4	−12 51.5	91	23.0	−18 30.3
7	59	03.1	250	29.4	11.4	262	43.4	01.1	87	24.2	51.6	106	25.7	30.3
8	74	05.6	265	29.1	10.2	277	44.3	+11 00.6	102	27.0	51.7	121	28.3	30.4
9	89	08.1	280	28.9	08.9	292	45.3	+11 00.0	117	29.7	51.8	136	31.0	30.4
10	104	10.5	295	28.6	07.7	307	46.3	+10 59.4	132	32.5	51.9	151	33.6	30.5
11	119	13.0	310	28.4	+6 06.4	322	47.3	+10 58.8	147	35.2	−12 52.0	166	36.3	−18 30.5
12	134	15.5	325	28.1	+6 05.2	337	48.3	+10 58.2	162	38.0	−12 52.1	181	38.9	−18 30.6
13	149	17.9	340	27.9	03.9	352	49.2	57.6	177	40.7	52.3	196	41.6	30.6
14	164	20.4	355	27.6	02.7	7	50.2	57.0	192	43.5	52.4	211	44.2	30.7
15	179	22.9	10	27.3	01.5	22	51.2	56.4	207	46.2	52.5	226	46.9	30.7
16	194	25.3	25	27.1	+6 00.2	37	52.2	55.9	222	49.0	52.6	241	49.5	30.8
17	209	27.8	40	26.8	+5 59.0	52	53.1	+10 55.3	237	51.7	−12 52.7	256	52.2	−18 30.8
18	224	30.2	55	26.6	+5 57.7	67	54.1	+10 54.7	252	54.5	−12 52.8	271	54.8	−18 30.9
19	239	32.7	70	26.3	56.5	82	55.1	54.1	267	57.2	52.9	286	57.5	30.9
20	254	35.2	85	26.1	55.2	97	56.1	53.5	283	00.0	53.0	302	00.1	31.0
21	269	37.6	100	25.8	54.0	112	57.0	52.9	298	02.7	53.2	317	02.8	31.1
22	284	40.1	115	25.5	52.7	127	58.0	52.3	313	05.5	53.3	332	05.4	31.1
23	299	42.6	130	25.3	51.5	142	59.0	51.7	328	08.2	53.4	347	08.1	31.2
24	314	45.0	145	25.0	+5 50.2	158	00.0	+10 51.2	343	11.0	−12 53.5	2	10.7	−18 31.2
Dif	—			−3	−12		+10	−6		+28	−1		+27	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 26.ᵈ9		PHE	4ʰ: 55′.3									
	PMG: 12ʰ 05.ᵐ9				SD: 15′.0			12ʰ: 55′.4									
					PMG: 10ʰ 23ᵐ			20ʰ: 55′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	31.1	+16	41.6	209	40.5	+25	37.7		**60 N**	20 17	21 13	22 49	0 19	70	20 16	24
1	193	31.2		40.9	224	08.8 93		36.6	11	**58**	20 06	20 57	22 13	0 44	67	19 54	28
2	208	31.2		40.2	238	37.0 92		35.5	11	**56**	19 57	43	21 48	1 04	65	36	31
3	223	31.3		39.5	253	05.2 92		34.2	13	**54**	48	31	29	20	64	20	34
4	238	31.4		38.8	267	33.4 92		32.7	15	**52**	41	21	13	34	63	19 07	36
5	253	31.5	+16	38.1	282	01.6 92	+25	31.2	15	**50**	19 34	20 12	21 00	1 47	61	18 55	38
6	268	31.5	+16	37.4	296	29.7 91	+25	29.5	17	**45**	19 20	19 53	20 34	2 12	60	18 31	41
7	283	31.6		36.8	310	57.9 92		27.6	19	**40**	19 08	38	20 14	33	58	18 11	43
8	298	31.7		36.1	325	26.1 92		25.7	19	**35**	18 58	25	19 58	2 50	57	17 55	45
9	313	31.7		35.4	339	54.2 91		23.6	21	**30**	49	19 15	45	3 04	57	41	46
10	328	31.8		34.7	354	22.3 91		21.3	23	**20**	34	18 58	25	29	55	17 17	48
11	343	31.9	+16	34.0	8	50.5 92	+25	18.9	24	**10 N**	18 21	18 43	19 09	3 51	54	16 56	51
12	358	31.9	+16	33.3	23	18.6 91	+25	16.4	25	**0**	18 09	18 31	18 56	4 11	52	16 36	53
13	13	32.0		32.6	37	46.7 91		13.8	26	**10 S**	17 57	19	45	31	51	16 16	55
14	28	32.1		31.9	52	14.8 91		11.0	28	**20**	45	18 08	34	4 52	50	15 55	57
15	43	32.2		31.2	66	42.9 91		08.1	29	**30**	31	17 56	24	5 17	49	31	58
16	58	32.2		30.5	81	11.0 91		05.0	31	**35**	22	49	19	32	47	16	60
17	73	32.3	+16	29.8	95	39.2 92	+25	01.9	31	**40**	17 13	17 41	18 14	5 49	46	15 00	61
18	88	32.4	+16	29.1	110	07.3 91	+24	58.5	34	**45**	17 02	17 33	18 08	6 09	45	14 40	63
19	103	32.5		28.4	124	35.4 91		55.1	34	**50**	16 49	24	02	34	43	14	67
20	118	32.5		27.7	139	03.5 91		51.5	36	**52**	43	19	18 00	6 47	41	14 02	68
21	133	32.6		27.0	153	31.7 92		47.8	37	**54**	36	15	17 57	7 01	40	13 48	69
22	148	32.7		26.3	167	59.8 91		43.9	39	**56**	28	09	54	17	38	32	71
23	163	32.7		25.6	182	27.9 91		39.9	40	**58**	20	17 04	51	7 37	35	13 12	75
24	178	32.8	+16	24.9	196	56.1 92	+24	35.8	41	**60 S**	16 10	16 57	17 48	8 02	31	12 48	79

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	3ʰ 00.ᵐ5		PMG: 14ʰ 19ᵐ			PMG: 13ʰ 27ᵐ			PMG: 1ʰ 07ᵐ			PMG: 23ʰ 47ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	314	45.0	145	25.0	+5 50.2	158	00.0	+10 51.2	343	11.0	−12 53.5	2	10.7	−18 31.2
1	329	47.5	160	24.8	49.0	173	00.9	50.6	358	13.8	53.6	17	13.4	31.3
2	344	50.0	175	24.5	47.7	188	01.9	50.0	13	16.5	53.7	32	16.0	31.3
3	359	52.4	190	24.3	46.5	203	02.9	49.4	28	19.3	53.8	47	18.7	31.4
4	14	54.9	205	24.0	45.2	218	03.9	48.8	43	22.0	54.0	62	21.3	31.4
5	29	57.4	220	23.8	+5 44.0	233	04.9	+10 48.2	58	24.8	−12 54.1	77	24.0	−18 31.5
6	44	59.8	235	23.5	+5 42.7	248	05.8	+10 47.6	73	27.5	−12 54.2	92	26.6	−18 31.5
7	60	02.3	250	23.3	41.5	263	06.8	47.0	88	30.3	54.3	107	29.3	31.6
8	75	04.7	265	23.0	40.2	278	07.8	46.4	103	33.0	54.4	122	31.9	31.6
9	90	07.2	280	22.8	39.0	293	08.8	45.9	118	35.8	54.5	137	34.6	31.7
10	105	09.7	295	22.5	37.7	308	09.7	45.3	133	38.6	54.6	152	37.2	31.7
11	120	12.1	310	22.3	+5 36.5	323	10.7	+10 44.7	148	41.3	−12 54.8	167	39.9	−18 31.8
12	135	14.6	325	22.0	+5 35.2	338	11.7	+10 44.1	163	44.1	−12 54.9	182	42.6	−18 31.8
13	150	17.1	340	21.8	34.0	353	12.7	43.5	178	46.8	55.0	197	45.2	31.9
14	165	19.5	355	21.5	32.7	8	13.7	42.9	193	49.6	55.1	212	47.9	32.0
15	180	22.0	10	21.3	31.5	23	14.6	42.3	208	52.3	55.2	227	50.5	32.0
16	195	24.5	25	21.0	30.2	38	15.6	41.7	223	55.1	55.3	242	53.2	32.1
17	210	26.9	40	20.8	+5 29.0	53	16.6	+10 41.1	238	57.8	−12 55.4	257	55.8	−18 32.1
18	225	29.4	55	20.5	+5 27.7	68	17.6	+10 40.5	254	00.6	−12 55.5	272	58.5	−18 32.2
19	240	31.9	70	20.3	26.5	83	18.5	40.0	269	03.4	55.7	288	01.1	32.2
20	255	34.3	85	20.0	25.2	98	19.5	39.4	284	06.1	55.8	303	03.8	32.3
21	270	36.8	100	19.8	24.0	113	20.5	38.8	299	08.9	55.9	318	06.4	32.3
22	285	39.2	115	19.5	22.7	128	21.5	38.2	314	11.6	56.0	333	09.1	32.4
23	300	41.7	130	19.3	21.5	143	22.5	37.6	329	14.4	56.1	348	11.7	32.4
24	315	44.2	145	19.0	+5 20.2	158	23.4	+10 37.0	344	17.1	−12 56.2	3	14.4	−18 32.5
Dif	—			−3	−13		+10	−6		+28	−1		+27	−1

UT	SOL SD: 15′.8 PMG: 12h 05m.8				LUNA Edad: 27d.9 SD: 15′.2 PMG: 11h 16m PHE: 4h: 55′.8; 12h: 55′.9; 20h: 56′.1 Rº: 52m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	178	32.8	+16	24.9	196	56.1	+24	35.8	**60 N**	1 23	2 59	3 55	1 29	84	20 40	14
1	193	32.9		24.2	211	24.3 92		31.6 42	**58**	1 59	3 16	4 06	1 51	80	22	19
2	208	33.0		23.5	225	52.4 91		27.2 44	**56**	2 24	29	16	2 09	76	20 07	23
3	223	33.0		22.8	240	20.6 92		22.6 46	**54**	43	41	24	24	74	19 54	26
4	238	33.1		22.1	254	48.8 92		18.0 46	**52**	2 59	3 52	31	37	71	43	28
5	253	33.2	+16	21.4	269	17.0 92	+24	13.2 48	**50**	3 12	4 01	4 38	2 48	70	19 33	30
6	268	33.3	+16	20.7	283	45.3 93	+24	08.3 49	**45**	3 38	4 19	4 52	3 12	67	19 12	34
7	283	33.4		20.0	298	13.5 92	+24	03.2 51	**40**	3 58	34	5 04	31	64	18 54	38
8	298	33.4		19.3	312	41.8 93	+23	58.0 52	**35**	4 14	47	14	3 47	62	40	40
9	313	33.5		18.6	327	10.0 92		52.7 53	**30**	27	4 57	23	4 01	60	27	42
10	328	33.6		17.9	341	38.3 93		47.3 54	**20**	4 47	5 14	38	24	57	18 05	46
11	343	33.7	+16	17.2	356	06.7 94	+23	41.7 56	**10 N**	5 03	5 28	5 50	4 45	54	17 47	48
12	358	33.7	+16	16.5	10	35.0 93	+23	36.0 57	**0**	5 16	5 41	6 02	5 03	53	17 29	51
13	13	33.8		15.8	25	03.4 94		30.2 58	**10 S**	27	5 52	14	22	50	17 11	54
14	28	33.9		15.1	39	31.7 93		24.2 60	**20**	37	6 04	27	5 42	48	16 52	57
15	43	34.0		14.4	54	00.1 94		18.1 61	**30**	47	16	41	6 06	44	29	61
16	58	34.0		13.7	68	28.6 95		11.9 62	**35**	52	22	49	19	43	16	63
17	73	34.1	+16	13.0	82	57.0 94	+23	05.6 63	**40**	5 57	6 30	6 58	6 35	40	16 01	66
18	88	34.2	+16	12.3	97	25.5 95	+22	59.1 65	**45**	6 03	6 38	7 09	6 54	37	15 43	69
19	103	34.3		11.6	111	54.0 95		52.5 66	**50**	09	47	22	7 17	34	21	72
20	118	34.4		10.9	126	22.5 95		45.7 68	**52**	11	52	28	28	32	15 10	75
21	133	34.4		10.2	140	51.1 96		38.9 68	**54**	14	6 56	34	41	29	14 57	78
22	148	34.5		09.4	155	19.7 96		31.9 70	**56**	17	7 01	42	7 55	27	43	81
23	163	34.6		08.7	169	48.3 96		24.8 71	**58**	20	07	7 50	8 12	23	27	84
24	178	34.7	+16	08.0	184	16.9 96	+22	17.6 72	**60 S**	6 23	7 13	8 00	8 33	18	14 07	89

UT	ARIES PMG 2h 56m.6		VENUS Mag: −3.9 PMG: 14h 19m			MARTE Mag: +1.8 PMG: 13h 26m			JÚPITER Mag: −2.9 PMG: 1h 03m			SATURNO Mag: +0.2 PMG: 23h 43m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	315	44.2	145	19.0	+5 20.2	158	23.4	+10 37.0	344	17.1	−12 56.2	3	14.4	−18 32.5
1	330	46.6	160	18.8	18.9	173	24.4	36.4	359	19.9	56.3	18	17.0	32.5
2	345	49.1	175	18.5	17.7	188	25.4	35.8	14	22.7	56.5	33	19.7	32.6
3	0	51.6	190	18.3	16.4	203	26.4	35.2	29	25.4	56.6	48	22.3	32.6
4	15	54.0	205	18.0	15.2	218	27.3	34.6	44	28.2	56.7	63	25.0	32.7
5	30	56.5	220	17.8	+5 13.9	233	28.3	+10 34.0	59	30.9	−12 56.8	78	27.6	−18 32.7
6	45	59.0	235	17.5	+5 12.7	248	29.3	+10 33.4	74	33.7	−12 56.9	93	30.3	−18 32.8
7	61	01.4	250	17.3	11.4	263	30.3	32.9	89	36.5	57.0	108	32.9	32.9
8	76	03.9	265	17.1	10.2	278	31.3	32.3	104	39.2	57.1	123	35.6	32.9
9	91	06.3	280	16.8	08.9	293	32.2	31.7	119	42.0	57.3	138	38.2	33.0
10	106	08.8	295	16.6	07.6	308	33.2	31.1	134	44.7	57.4	153	40.9	33.0
11	121	11.3	310	16.3	+5 06.4	323	34.2	+10 30.5	149	47.5	−12 57.5	168	43.5	−18 33.1
12	136	13.7	325	16.1	+5 05.1	338	35.2	+10 29.9	164	50.2	−12 57.6	183	46.2	−18 33.1
13	151	16.2	340	15.8	03.9	353	36.2	29.3	179	53.0	57.7	198	48.8	33.2
14	166	18.7	355	15.6	02.6	8	37.1	28.7	194	55.8	57.8	213	51.5	33.2
15	181	21.1	10	15.3	01.4	23	38.1	28.1	209	58.5	57.9	228	54.1	33.3
16	196	23.6	25	15.1	+5 00.1	38	39.1	27.5	225	01.3	58.1	243	56.8	33.3
17	211	26.1	40	14.9	+4 58.8	53	40.1	+10 26.9	240	04.0	−12 58.2	258	59.4	−18 33.4
18	226	28.5	55	14.6	+4 57.6	68	41.0	+10 26.3	255	06.8	−12 58.3	274	02.1	−18 33.4
19	241	31.0	70	14.4	56.3	83	42.0	25.7	270	09.6	58.4	289	04.7	33.5
20	256	33.5	85	14.1	55.1	98	43.0	25.1	285	12.3	58.5	304	07.4	33.5
21	271	35.9	100	13.9	53.8	113	44.0	24.6	300	15.1	58.6	319	10.0	33.6
22	286	38.4	115	13.7	52.5	128	45.0	24.0	315	17.8	58.8	334	12.7	33.6
23	301	40.8	130	13.4	51.3	143	45.9	23.4	330	20.6	58.9	349	15.3	33.7
24	316	43.3	145	13.2	+4 50.0	158	46.9	+10 22.8	345	23.4	−12 59.0	4	18.0	−18 33.7
Dif	—			−2	−13		+10	−6		+28	−1		+27	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 28.^{d}9		PHE	4^{h}: 56′.3									
	PMG: 12^{h} 05.^{m}6				SD: 15′.3			12^{h}: 56′.5									
					PMG: 12^{h} 08^{m}			20^{h}: 56′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	34.7	+16	08.0	184	16.9 97	+22	17.6	74	**60 N**	20 12	21 07	22 36	2 53	92	20 54	9
1	193	34.8		07.3	198	45.6 97		10.2	74	**58**	20 01	20 51	22 04	3 11	86	41	13
2	208	34.8		06.6	213	14.3 97	+22	02.8	74	**56**	19 52	38	21 41	25	83	30	16
3	223	34.9		05.9	227	43.1 98	+21	55.2	76	**54**	44	26	23	38	79	20	19
4	238	35.0		05.2	242	11.8 97		47.5	77	**52**	37	17	21 08	48	78	11	22
5	253	35.1	+16	04.5	256	40.7 99	+21	39.6	79	**50**	19 31	20 08	20 56	3 58	75	20 03	24
6	268	35.2	+16	03.8	271	09.5 98	+21	31.7	79	**45**	19 17	19 50	20 30	4 19	70	19 46	29
7	283	35.3		03.0	285	38.4 99		23.6	81	**40**	19 06	35	20 11	35	67	32	32
8	298	35.3		02.3	300	07.3 99		15.4	82	**35**	18 56	23	19 56	4 49	64	20	35
9	313	35.4		01.6	314	36.2 99	+21	07.1	83	**30**	48	19 13	43	5 01	62	19 09	38
10	328	35.5		00.9	329	05.2 100	+20	58.7	84	**20**	33	18 56	24	21	58	18 51	43
11	343	35.6	+16	00.2	343	34.2 100	+20	50.1	86	**10 N**	18 21	18 43	19 08	5 39	54	18 35	47
12	358	35.7	+15	59.5	358	03.3 101	+20	41.5	86	**0**	18 09	18 31	18 56	5 56	51	18 20	50
13	13	35.8		58.8	12	32.4 101		32.7	88	**10 S**	17 58	19	45	6 12	48	18 05	54
14	28	35.8		58.0	27	01.5 101		23.8	89	**20**	45	18 08	35	30	44	17 49	57
15	43	35.9		57.3	41	30.7 102		14.8	90	**30**	32	17 57	25	6 50	40	30	62
16	58	36.0		56.6	55	59.9 102	+20	05.7	91	**35**	24	50	20	7 02	37	19	65
17	73	36.1	+15	55.9	70	29.1 102	+19	56.5	92	**40**	17 15	17 43	18 15	7 15	35	17 07	67
18	88	36.2	+15	55.2	84	58.4 103	+19	47.1	94	**45**	17 04	17 35	18 10	7 31	31	16 52	71
19	103	36.3		54.4	99	27.7 103		37.7	94	**50**	16 52	26	05	7 51	27	33	77
20	118	36.4		53.7	113	57.1 104		28.1	96	**52**	46	22	02	8 00	25	25	78
21	133	36.4		53.0	128	26.4 103		18.5	96	**54**	39	18	18 00	10	22	15	81
22	148	36.5		52.3	142	55.9 105	+19	08.7	98	**56**	32	13	17 57	22	19	16 04	84
23	163	36.6		51.6	157	25.4 105	+18	58.8	99	**58**	24	07	54	35	16	15 51	88
24	178	36.7	+15	50.9	171	54.9 105	+18	48.8	100	**60 S**	16 15	17 01	17 51	8 51	11	15 36	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2^{h} 52.^{m}6		PMG: 14^{h} 19^{m}			PMG: 13^{h} 24^{m}			PMG: 0^{h} 58^{m}			PMG: 23^{h} 39^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	316	43.3	145	13.2	+4 50.0	158	46.9	+10 22.8	345	23.4	−12 59.0	4	18.0	−18 33.7
1	331	45.8	160	12.9	48.8	173	47.9	22.2	0	26.1	59.1	19	20.6	33.8
2	346	48.2	175	12.7	47.5	188	48.9	21.6	15	28.9	59.2	34	23.3	33.9
3	1	50.7	190	12.5	46.2	203	49.9	21.0	30	31.6	59.3	49	25.9	33.9
4	16	53.2	205	12.2	45.0	218	50.8	20.4	45	34.4	59.4	64	28.6	34.0
5	31	55.6	220	12.0	+4 43.7	233	51.8	+10 19.8	60	37.2	−12 59.6	79	31.2	−18 34.0
6	46	58.1	235	11.7	+4 42.5	248	52.8	+10 19.2	75	39.9	−12 59.7	94	33.9	−18 34.1
7	62	00.6	250	11.5	41.2	263	53.8	18.6	90	42.7	59.8	109	36.5	34.1
8	77	03.0	265	11.3	39.9	278	54.8	18.0	105	45.5	−12 59.9	124	39.2	34.2
9	92	05.5	280	11.0	38.7	293	55.7	17.4	120	48.2	−13 00.0	139	41.8	34.2
10	107	08.0	295	10.8	37.4	308	56.7	16.8	135	51.0	−13 00.1	154	44.5	34.3
11	122	10.4	310	10.5	+4 36.2	323	57.7	+10 16.2	150	53.7	−13 00.2	169	47.1	−18 34.3
12	137	12.9	325	10.3	+4 34.9	338	58.7	+10 15.6	165	56.5	−13 00.4	184	49.8	−18 34.4
13	152	15.3	340	10.1	33.6	353	59.7	15.0	180	59.3	00.5	199	52.4	34.4
14	167	17.8	355	09.8	32.4	9	00.6	14.4	196	02.0	00.6	214	55.1	34.5
15	182	20.3	10	09.6	31.1	24	01.6	13.8	211	04.8	00.7	229	57.8	34.5
16	197	22.7	25	09.4	29.8	39	02.6	13.2	226	07.5	00.8	245	00.4	34.6
17	212	25.2	40	09.1	+4 28.6	54	03.6	+10 12.7	241	10.3	−13 00.9	260	03.1	−18 34.6
18	227	27.7	55	08.9	+4 27.3	69	04.6	+10 12.1	256	13.1	−13 01.1	275	05.7	−18 34.7
19	242	30.1	70	08.6	26.1	84	05.5	11.5	271	15.8	01.2	290	08.4	34.7
20	257	32.6	85	08.4	24.8	99	06.5	10.9	286	18.6	01.3	305	11.0	34.8
21	272	35.1	100	08.2	23.5	114	07.5	10.3	301	21.4	01.4	320	13.7	34.8
22	287	37.5	115	07.9	22.3	129	08.5	09.7	316	24.1	01.5	335	16.3	34.9
23	302	40.0	130	07.7	21.0	144	09.5	09.1	331	26.9	01.6	350	19.0	35.0
24	317	42.5	145	07.5	+4 19.7	159	10.5	+10 08.5	346	29.7	−13 01.7	5	21.6	−18 35.0
Dif	—			−2	−13		+10	−6		+28	−1		+27	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 12h 05m.5				Edad: 0d.4 SD: 15′.5 PMG: 12h 58m		PHE	4h: 56′.9 12h: 57′.0 20h: 57′.2 Rº: 49m								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	36.7	+15	50.9	171	54.9	+18	48.8	**60 N**	1 36	3 05	4 00	4 25	93	21 03	7
1	193	36.8		50.1	186	24.4 105		38.8 100	**58**	2 08	21	10	37	89	20 54	10
2	208	36.9		49.4	200	54.0 106		28.6 102	**56**	31	34	19	48	85	46	13
3	223	37.0		48.7	215	23.7 107		18.3 103	**54**	2 49	45	27	4 57	82	39	16
4	238	37.0		48.0	229	53.3 106	+18	07.9 104	**52**	3 03	3 55	35	5 06	79	33	18
5	253	37.1	+15	47.2	244	23.0 107	+17	57.4 105	**50**	3 16	4 04	4 41	5 13	77	20 27	21
6	268	37.2	+15	46.5	258	52.8 108	+17	46.8 106	**45**	3 41	4 22	4 55	5 29	72	20 15	25
7	283	37.3		45.8	273	22.6 108		36.1 107	**40**	4 00	36	5 06	42	68	20 04	29
8	298	37.4		45.1	287	52.4 108		25.3 108	**35**	15	48	16	5 53	65	19 55	33
9	313	37.5		44.3	302	22.3 109		14.4 109	**30**	28	4 58	24	6 03	62	47	36
10	328	37.6		43.6	316	52.2 109	+17	03.4 110	**20**	4 48	5 15	38	19	57	34	40
11	343	37.7	+15	42.9	331	22.2 110	+16	52.3 111	**10 N**	5 03	5 29	5 51	6 33	53	19 22	44
12	358	37.8	+15	42.2	345	52.2 110	+16	41.2 111	**0**	5 16	5 41	6 02	6 47	49	19 10	49
13	13	37.8		41.4	0	22.2 110		29.9 113	**10 S**	26	5 52	13	7 00	45	18 59	52
14	28	37.9		40.7	14	52.3 111		18.5 114	**20**	36	6 03	25	14	41	46	57
15	43	38.0		40.0	29	22.4 111	+16	07.1 114	**30**	46	14	39	30	37	32	62
16	58	38.1		39.3	43	52.5 111	+15	55.6 115	**35**	50	20	47	39	34	24	65
17	73	38.2	+15	38.5	58	22.7 112	+15	43.9 117	**40**	5 55	6 27	6 56	7 50	31	18 14	69
18	88	38.3	+15	37.8	72	52.9 112	+15	32.2 117	**45**	6 00	6 35	7 06	8 02	27	18 03	73
19	103	38.4		37.1	87	23.2 113		20.4 118	**50**	06	44	18	18	22	17 50	77
20	118	38.5		36.3	101	53.5 113	+15	08.5 119	**52**	08	48	24	25	19	43	80
21	133	38.6		35.6	116	23.8 113	+14	56.5 120	**54**	10	53	31	32	18	36	83
22	148	38.7		34.9	130	54.2 114		44.5 120	**56**	13	6 57	38	41	14	28	86
23	163	38.8		34.2	145	24.6 114		32.4 121	**58**	16	7 03	46	8 51	11	19	89
24	178	38.9	+15	33.4	159	55.1 115	+14	20.1 123	**60 S**	6 19	7 09	7 55	9 02	7	17 09	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 2h 48m.7		Mag: −3.9 PMG: 14h 20m			Mag: +1.8 PMG: 13h 22m			Mag: −2.9 PMG: 0h 54m			Mag: +0.2 PMG: 23h 34m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	317	42.5	145	07.5	+4 19.7	159	10.5	+10 08.5	346	29.7	−13 01.7	5	21.6	−18 35.0
1	332	44.9	160	07.2	18.5	174	11.4	07.9	1	32.4	01.9	20	24.3	35.1
2	347	47.4	175	07.0	17.2	189	12.4	07.3	16	35.2	02.0	35	26.9	35.1
3	2	49.8	190	06.8	15.9	204	13.4	06.7	31	37.9	02.1	50	29.6	35.2
4	17	52.3	205	06.5	14.7	219	14.4	06.1	46	40.7	02.2	65	32.2	35.2
5	32	54.8	220	06.3	+4 13.4	234	15.4	+10 05.5	61	43.5	−13 02.3	80	34.9	−18 35.3
6	47	57.2	235	06.1	+4 12.1	249	16.3	+10 04.9	76	46.2	−13 02.4	95	37.5	−18 35.3
7	62	59.7	250	05.8	10.9	264	17.3	04.3	91	49.0	02.6	110	40.2	35.4
8	78	02.2	265	05.6	09.6	279	18.3	03.7	106	51.8	02.7	125	42.8	35.4
9	93	04.6	280	05.4	08.3	294	19.3	03.1	121	54.5	02.8	140	45.5	35.5
10	108	07.1	295	05.1	07.1	309	20.3	02.5	136	57.3	02.9	155	48.1	35.5
11	123	09.6	310	04.9	+4 05.8	324	21.2	+10 01.9	152	00.1	−13 03.0	170	50.8	−18 35.6
12	138	12.0	325	04.7	+4 04.5	339	22.2	+10 01.3	167	02.8	−13 03.1	185	53.4	−18 35.6
13	153	14.5	340	04.4	03.3	354	23.2	00.7	182	05.6	03.3	200	56.1	35.7
14	168	16.9	355	04.2	02.0	9	24.2	+10 00.1	197	08.3	03.4	215	58.7	35.7
15	183	19.4	10	04.0	+4 00.7	24	25.2	+9 59.5	212	11.1	03.5	231	01.4	35.8
16	198	21.9	25	03.8	+3 59.5	39	26.2	58.9	227	13.9	03.6	246	04.0	35.8
17	213	24.3	40	03.5	+3 58.2	54	27.1	+9 58.3	242	16.6	−13 03.7	261	06.7	−18 35.9
18	228	26.8	55	03.3	+3 56.9	69	28.1	+9 57.7	257	19.4	−13 03.8	276	09.3	−18 35.9
19	243	29.3	70	03.1	55.7	84	29.1	57.1	272	22.2	03.9	291	12.0	36.0
20	258	31.7	85	02.8	54.4	99	30.1	56.5	287	24.9	04.1	306	14.6	36.1
21	273	34.2	100	02.6	53.1	114	31.1	55.9	302	27.7	04.2	321	17.3	36.1
22	288	36.7	115	02.4	51.9	129	32.0	55.3	317	30.5	04.3	336	19.9	36.2
23	303	39.1	130	02.2	50.6	144	33.0	54.7	332	33.2	04.4	351	22.6	36.2
24	318	41.6	145	01.9	+3 49.3	159	34.0	+9 54.1	347	36.0	−13 04.5	6	25.2	−18 36.3
Dif	—		−2		−13	+10		−6	+28		−1	+26		−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 1^{d}.4		PHE	4^{h}: 57′.4									
	PMG: 12^{h} 05^{m}.3				SD: 15′.6			12^{h}: 57′.6									
					PMG: 13^{h} 47^{m}			20^{h}: 57′.7									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Rº: 48^{m}		Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	38.9	+15	33.4	159	55.1	+14	20.1		**60 N**	20 06	21 00	22 24	5 58	93	21 10	4
1	193	38.9		32.7	174	25.6^{115}	+14	07.8^{123}		**58**	19 57	20 45	21 56	6 06	89	21 04	8
2	208	39.0		32.0	188	56.1^{115}	+13	55.4^{124}		**56**	48	33	34	13	86	20 59	11
3	223	39.1		31.2	203	26.7^{116}		43.0^{124}		**54**	40	22	17	19	83	55	14
4	238	39.2		30.5	217	57.2^{115}		30.5^{125}		**52**	33	12	21 03	25	80	51	16
5	253	39.3	+15	29.8	232	27.9^{117}	+13	17.8^{127}		**50**	19 27	20 04	20 51	6 30	78	20 48	18
6	268	39.4	+15	29.0	246	58.5^{116}	+13	05.2^{126}		**45**	19 14	19 46	20 27	6 41	73	20 40	23
7	283	39.5		28.3	261	29.2^{117}	+12	52.4^{128}		**40**	19 03	32	20 08	50	69	33	27
8	298	39.6		27.6	276	00.0^{118}		39.6^{128}		**35**	18 54	21	19 54	6 58	65	28	30
9	313	39.7		26.8	290	30.7^{117}		26.6^{130}		**30**	46	19 11	41	7 05	61	23	33
10	328	39.8		26.1	305	01.5^{118}		13.7^{129}		**20**	32	18 55	22	16	57	14	38
11	343	39.9	+15	25.4	319	32.3^{118}	+12	00.6^{131}		**10 N**	18 20	18 42	19 07	7 26	52	20 06	43
12	358	40.0	+15	24.6	334	03.2^{119}	+11	47.5^{131}		**0**	18 09	18 30	18 55	7 36	48	19 59	47
13	13	40.1		23.9	348	34.1^{119}		34.3^{132}		**10 S**	17 58	19	45	45	44	51	52
14	28	40.2		23.1	3	05.0^{119}		21.1^{132}		**20**	46	18 09	35	7 55	39	43	57
15	43	40.3		22.4	17	35.9^{119}	+11	07.8^{133}		**30**	33	17 58	26	8 07	34	34	62
16	58	40.4		21.7	32	06.9^{120}	+10	54.4^{134}		**35**	25	52	22	13	31	29	65
17	73	40.5	+15	20.9	46	37.9^{120}	+10	41.0^{134}		**40**	17 17	17 45	18 17	8 21	27	19 23	68
18	88	40.6	+15	20.2	61	08.9^{120}	+10	27.5^{135}		**45**	17 07	17 37	18 12	8 29	24	19 16	72
19	103	40.7		19.5	75	39.9^{120}		13.9^{136}		**50**	16 55	29	07	40	19	07	78
20	118	40.8		18.7	90	11.0^{121}	+10	00.3^{136}		**52**	49	25	05	44	17	19 03	80
21	133	40.9		18.0	104	42.1^{121}	+9	46.6^{137}		**54**	43	21	03	50	14	18 59	83
22	148	41.0		17.2	119	13.2^{121}		32.9^{137}		**56**	36	16	18 00	8 55	12	54	86
23	163	41.1		16.5	133	44.4^{122}		19.1^{138}		**58**	28	11	17 58	9 02	8	48	89
24	178	41.2	+15	15.8	148	15.6^{122}	+9	05.3^{138}		**60 S**	16 19	17 05	17 55	9 09	5	18 42	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2^{h} 44^{m}.8		PMG: 14^{h} 20^{m}			PMG: 13^{h} 21^{m}			PMG: 0^{h} 49^{m}			PMG: 23^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	318	41.6	145	01.9	+3 49.3	159	34.0	+9 54.1	347	36.0	−13 04.5	6	25.2	−18 36.3
1	333	44.1	160	01.7	48.0	174	35.0	53.5	2	38.8	04.6	21	27.9	36.3
2	348	46.5	175	01.5	46.8	189	36.0	52.9	17	41.5	04.8	36	30.5	36.4
3	3	49.0	190	01.2	45.5	204	37.0	52.3	32	44.3	04.9	51	33.2	36.4
4	18	51.4	205	01.0	44.2	219	37.9	51.7	47	47.1	05.0	66	35.8	36.5
5	33	53.9	220	00.8	+3 43.0	234	38.9	+9 51.1	62	49.8	−13 05.1	81	38.4	−18 36.5
6	48	56.4	235	00.6	+3 41.7	249	39.9	+9 50.5	77	52.6	−13 05.2	96	41.1	−18 36.6
7	63	58.8	250	00.3	40.4	264	40.9	49.9	92	55.4	05.3	111	43.7	36.6
8	79	01.3	265	00.1	39.2	279	41.9	49.3	107	58.1	05.5	126	46.4	36.7
9	94	03.8	279	59.9	37.9	294	42.9	48.7	123	00.9	05.6	141	49.0	36.7
10	109	06.2	294	59.7	36.6	309	43.8	48.1	138	03.7	05.7	156	51.7	36.8
11	124	08.7	309	59.4	+3 35.3	324	44.8	+9 47.5	153	06.4	−13 05.8	171	54.3	−18 36.8
12	139	11.2	324	59.2	+3 34.1	339	45.8	+9 46.9	168	09.2	−13 05.9	186	57.0	−18 36.9
13	154	13.6	339	59.0	32.8	354	46.8	46.3	183	12.0	06.0	201	59.6	36.9
14	169	16.1	354	58.7	31.5	9	47.8	45.7	198	14.7	06.2	217	02.3	37.0
15	184	18.6	9	58.5	30.3	24	48.7	45.1	213	17.5	06.3	232	04.9	37.0
16	199	21.0	24	58.3	29.0	39	49.7	44.5	228	20.3	06.4	247	07.6	37.1
17	214	23.5	39	58.1	+3 27.7	54	50.7	+9 43.9	243	23.0	−13 06.5	262	10.2	−18 37.1
18	229	25.9	54	57.9	+3 26.4	69	51.7	+9 43.3	258	25.8	−13 06.6	277	12.9	−18 37.2
19	244	28.4	69	57.6	25.2	84	52.7	42.7	273	28.6	06.7	292	15.5	37.2
20	259	30.9	84	57.4	23.9	99	53.7	42.1	288	31.3	06.9	307	18.2	37.3
21	274	33.3	99	57.2	22.6	114	54.6	41.5	303	34.1	07.0	322	20.8	37.3
22	289	35.8	114	57.0	21.3	129	55.6	40.9	318	36.9	07.1	337	23.5	37.4
23	304	38.3	129	56.7	20.1	144	56.6	40.3	333	39.6	07.2	352	26.1	37.5
24	319	40.7	144	56.5	+3 18.8	159	57.6	+9 39.7	348	42.4	−13 07.3	7	28.8	−18 37.5
Dif	—			−2	−13		+10	−6		+28	−1		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 05m.2				LUNA Edad: 2d.4 SD: 15′.7 PMG: 14h 35m PHE 4h: 57′.9; 12h: 58′.0; 20h: 58′.2 Rº: 47m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	41.2	+15	15.8	148	15.6	+9	05.3	**60 N**	1 47	3 11	4 05	7 31	93	21 14	5
1	193	41.3		15.0	162	46.7 121	+8	51.4 139	**58**	2 16	26	15	35	89	12	8
2	208	41.4		14.3	177	18.0 123		37.4 140	**56**	37	39	23	39	86	10	11
3	223	41.5		13.5	191	49.2 122		23.4 140	**54**	2 54	49	31	42	83	09	13
4	238	41.6		12.8	206	20.4 122	+8	09.4 140	**52**	3 08	3 59	38	45	81	07	15
5	253	41.7	+15	12.0	220	51.7 123	+7	55.3 141	**50**	3 20	4 07	4 44	7 48	78	21 06	17
6	268	41.8	+15	11.3	235	23.0 123	+7	41.1 142	**45**	3 44	4 25	4 57	7 54	73	21 03	22
7	283	41.9		10.6	249	54.3 123		26.9 142	**40**	4 03	38	5 08	7 59	68	21 00	26
8	298	42.0		09.8	264	25.6 123	+7	12.7 142	**35**	17	4 50	17	8 03	65	20 58	29
9	313	42.1		09.1	278	56.9 123	+6	58.4 143	**30**	29	5 00	25	06	62	56	32
10	328	42.2		08.3	293	28.3 124		44.1 143	**20**	4 49	16	39	13	56	52	38
11	343	42.3	+15	07.6	307	59.7 124	+6	29.8 143	**10 N**	5 03	5 29	5 51	8 18	52	20 49	43
12	358	42.4	+15	06.8	322	31.0 123	+6	15.4 144	**0**	5 15	5 40	6 02	8 24	47	20 46	47
13	13	42.5		06.1	337	02.4 124	+6	00.9 145	**10 S**	26	5 51	13	29	43	43	52
14	28	42.6		05.3	351	33.8 124	+5	46.4 145	**20**	35	6 01	24	34	38	40	56
15	43	42.7		04.6	6	05.2 124		31.9 145	**30**	44	12	37	41	32	36	62
16	58	42.8		03.8	20	36.6 124		17.4 145	**35**	48	18	45	44	30	34	65
17	73	42.9	+15	03.1	35	08.1 125	+5	02.8 146	**40**	5 53	6 25	6 53	8 48	27	20 31	69
18	88	43.0	+15	02.3	49	39.5 124	+4	48.2 146	**45**	5 58	6 32	7 03	8 53	22	20 28	74
19	103	43.1		01.6	64	10.9 124		33.5 147	**50**	6 03	41	15	8 59	17	25	78
20	118	43.2		00.8	78	42.4 125		18.9 146	**52**	05	45	20	9 01	16	23	81
21	133	43.3	+15	00.1	93	13.8 124	+4	04.2 147	**54**	07	49	27	04	13	22	83
22	148	43.4	+14	59.3	107	45.3 125	+3	49.4 148	**56**	09	53	33	07	11	20	86
23	163	43.5		58.6	122	16.7 124		34.7 147	**58**	12	6 58	41	10	8	17	90
24	178	43.6	+14	57.8	136	48.2 125	+3	19.9 148	**60 S**	6 14	7 04	7 49	9 14	5	20 15	93

UT	ARIES PMG 2h 40m.8		VENUS Mag: −3.9 PMG: 14h 20m			MARTE Mag: +1.8 PMG: 13h 19m			JÚPITER Mag: −2.9 PMG: 0h 45m			SATURNO Mag: +0.2 PMG: 23h 26m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	319	40.7	144	56.5	+3 18.8	159	57.6	+9 39.7	348	42.4	−13 07.3	7	28.8	−18 37.5
1	334	43.2	159	56.3	17.5	174	58.6	39.1	3	45.2	07.4	22	31.4	37.6
2	349	45.7	174	56.1	16.3	189	59.6	38.5	18	48.0	07.6	37	34.1	37.6
3	4	48.1	189	55.8	15.0	205	00.5	37.9	33	50.7	07.7	52	36.7	37.7
4	19	50.6	204	55.6	13.7	220	01.5	37.3	48	53.5	07.8	67	39.4	37.7
5	34	53.0	219	55.4	+3 12.4	235	02.5	+9 36.7	63	56.3	−13 07.9	82	42.0	−18 37.8
6	49	55.5	234	55.2	+3 11.2	250	03.5	+9 36.1	78	59.0	−13 08.0	97	44.7	−18 37.8
7	64	58.0	249	55.0	09.9	265	04.5	35.5	94	01.8	08.1	112	47.3	37.9
8	80	00.4	264	54.7	08.6	280	05.5	34.9	109	04.6	08.3	127	50.0	37.9
9	95	02.9	279	54.5	07.3	295	06.4	34.3	124	07.3	08.4	142	52.6	38.0
10	110	05.4	294	54.3	06.1	310	07.4	33.7	139	10.1	08.5	157	55.3	38.0
11	125	07.8	309	54.1	+3 04.8	325	08.4	+9 33.1	154	12.9	−13 08.6	172	57.9	−18 38.1
12	140	10.3	324	53.9	+3 03.5	340	09.4	+9 32.5	169	15.6	−13 08.7	188	00.6	−18 38.1
13	155	12.8	339	53.6	02.2	355	10.4	31.9	184	18.4	08.8	203	03.2	38.2
14	170	15.2	354	53.4	+3 01.0	10	11.4	31.2	199	21.2	09.0	218	05.9	38.2
15	185	17.7	9	53.2	+2 59.7	25	12.4	30.6	214	24.0	09.1	233	08.5	38.3
16	200	20.2	24	53.0	58.4	40	13.3	30.0	229	26.7	09.2	248	11.2	38.3
17	215	22.6	39	52.8	+2 57.1	55	14.3	+9 29.4	244	29.5	−13 09.3	263	13.8	−18 38.4
18	230	25.1	54	52.5	+2 55.9	70	15.3	+9 28.8	259	32.3	−13 09.4	278	16.5	−18 38.4
19	245	27.5	69	52.3	54.6	85	16.3	28.2	274	35.0	09.5	293	19.1	38.5
20	260	30.0	84	52.1	53.3	100	17.3	27.6	289	37.8	09.7	308	21.8	38.5
21	275	32.5	99	51.9	52.0	115	18.3	27.0	304	40.6	09.8	323	24.4	38.6
22	290	34.9	114	51.7	50.7	130	19.2	26.4	319	43.3	09.9	338	27.1	38.6
23	305	37.4	129	51.4	49.5	145	20.2	25.8	334	46.1	10.0	353	29.7	38.7
24	320	39.9	144	51.2	+2 48.2	160	21.2	+9 25.2	349	48.9	−13 10.1	8	32.3	−18 38.7
Dif	—			−2	−13		+10	−6		+28	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 3^{d}.4		PHE	4^{h}: 58′.3									
	PMG: 12^{h} 05^{m}.0				SD: 15′.9			12^{h}: 58′.4									
					PMG: 15^{h} 22^{m}			20^{h}: 58′.5									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif				Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	43.6	+14	57.8	136	48.2	+3	19.9		**60 N**	20 01	20 53	22 13	9 04	93	21 19	4
1	193	43.7		57.1	151	19.6 124	+3	05.1 148		**58**	19 52	39	21 47	04	90	20	8
2	208	43.8		56.3	165	51.1 125	+2	50.2 149		**56**	43	27	27	05	87	21	11
3	223	43.9		55.6	180	22.5 124		35.4 148		**54**	36	17	21 11	05	84	22	13
4	238	44.0		54.8	194	54.0 125		20.5 149		**52**	30	08	20 58	06	81	22	16
5	253	44.1	+14	54.1	209	25.4 124	+2	05.6 149		**50**	19 24	20 00	20 46	9 06	79	21 23	18
6	268	44.2	+14	53.3	223	56.8 124	+1	50.7 149		**45**	19 11	19 43	20 23	9 07	73	21 25	23
7	283	44.3		52.6	238	28.3 125		35.8 149		**40**	19 01	30	20 05	07	70	26	27
8	298	44.5		51.8	252	59.7 124		20.9 149		**35**	18 52	19	19 51	08	66	27	31
9	313	44.6		51.1	267	31.1 124	+1	05.9 150		**30**	44	19 09	39	08	63	28	34
10	328	44.7		50.3	282	02.5 124	+0	50.9 150		**20**	31	18 54	21	09	57	30	39
11	343	44.8	+14	49.5	296	33.9 124	+0	36.0 149		**10 N**	18 19	18 41	19 06	9 10	52	21 32	44
12	358	44.9	+14	48.8	311	05.3 124	+0	21.0 150		**0**	18 08	18 30	18 55	9 11	47	21 33	49
13	13	45.0		48.0	325	36.7 124	+0	06.0 150		**10 S**	17 58	19	45	12	43	35	53
14	28	45.1		47.3	340	08.0 123	−0	09.0 150		**20**	47	18 09	36	12	39	36	58
15	43	45.2		46.5	354	39.4 124		24.0 150		**30**	34	17 59	27	13	33	38	63
16	58	45.3		45.8	9	10.7 123		39.1 151		**35**	27	53	23	14	30	39	67
17	73	45.4	+14	45.0	23	42.0 123	−0	54.1 150		**40**	17 19	17 47	18 19	9 15	26	21 40	70
18	88	45.5	+14	44.2	38	13.3 123	−1	09.1 150		**45**	17 09	17 40	18 14	9 15	23	21 42	74
19	103	45.6		43.5	52	44.6 123		24.1 150		**50**	16 57	32	10	16	18	43	80
20	118	45.8		42.7	67	15.8 122		39.1 150		**52**	52	28	08	17	15	44	82
21	133	45.9		42.0	81	47.1 123	−1	54.2 151		**54**	46	24	06	17	13	45	84
22	148	46.0		41.2	96	18.3 122	−2	09.2 150		**56**	40	20	04	18	10	46	87
23	163	46.1		40.4	110	49.5 122		24.2 150		**58**	32	15	18 01	18	8	47	91
24	178	46.2	+14	39.7	125	20.6 121	−2	39.2 150		**60 S**	16 24	17 09	17 59	9 19	4	21 48	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2^{h} 36^{m}.9		PMG: 14^{h} 21^{m}			PMG: 13^{h} 18^{m}			PMG: 0^{h} 41^{m}			PMG: 23^{h} 22^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	320	39.9	144	51.2	+2 48.2	160	21.2	+9 25.2	349	48.9	−13 10.1	8	32.3	−18 38.7
1	335	42.3	159	51.0	46.9	175	22.2	24.6	4	51.7	10.2	23	35.0	38.8
2	350	44.8	174	50.8	45.6	190	23.2	24.0	19	54.4	10.4	38	37.6	38.8
3	5	47.3	189	50.6	44.4	205	24.2	23.4	34	57.2	10.5	53	40.3	38.9
4	20	49.7	204	50.4	43.1	220	25.1	22.8	50	00.0	10.6	68	42.9	38.9
5	35	52.2	219	50.1	+2 41.8	235	26.1	+9 22.2	65	02.7	−13 10.7	83	45.6	−18 39.0
6	50	54.6	234	49.9	+2 40.5	250	27.1	+9 21.6	80	05.5	−13 10.8	98	48.2	−18 39.0
7	65	57.1	249	49.7	39.2	265	28.1	21.0	95	08.3	10.9	113	50.9	39.1
8	80	59.6	264	49.5	38.0	280	29.1	20.4	110	11.1	11.1	128	53.5	39.1
9	96	02.0	279	49.3	36.7	295	30.1	19.8	125	13.8	11.2	143	56.2	39.2
10	111	04.5	294	49.1	35.4	310	31.1	19.1	140	16.6	11.3	158	58.8	39.3
11	126	07.0	309	48.8	+2 34.1	325	32.0	+9 18.5	155	19.4	−13 11.4	174	01.5	−18 39.3
12	141	09.4	324	48.6	+2 32.9	340	33.0	+9 17.9	170	22.1	−13 11.5	189	04.1	−18 39.4
13	156	11.9	339	48.4	31.6	355	34.0	17.3	185	24.9	11.6	204	06.8	39.4
14	171	14.4	354	48.2	30.3	10	35.0	16.7	200	27.7	11.8	219	09.4	39.5
15	186	16.8	9	48.0	29.0	25	36.0	16.1	215	30.5	11.9	234	12.1	39.5
16	201	19.3	24	47.8	27.7	40	37.0	15.5	230	33.2	12.0	249	14.7	39.6
17	216	21.8	39	47.6	+2 26.5	55	38.0	+9 14.9	245	36.0	−13 12.1	264	17.4	−18 39.6
18	231	24.2	54	47.3	+2 25.2	70	38.9	+9 14.3	260	38.8	−13 12.2	279	20.0	−18 39.7
19	246	26.7	69	47.1	23.9	85	39.9	13.7	275	41.5	12.4	294	22.7	39.7
20	261	29.1	84	46.9	22.6	100	40.9	13.1	290	44.3	12.5	309	25.3	39.8
21	276	31.6	99	46.7	21.3	115	41.9	12.5	305	47.1	12.6	324	27.9	39.8
22	291	34.1	114	46.5	20.1	130	42.9	11.9	320	49.9	12.7	339	30.6	39.9
23	306	36.5	129	46.3	18.8	145	43.9	11.3	335	52.6	12.8	354	33.2	39.9
24	321	39.0	144	46.1	+2 17.5	160	44.9	+9 10.7	350	55.4	−13 12.9	9	35.9	−18 40.0
Dif	—			−2	−13		+10	−6		+28	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 4ᵈ.4		PHE	4ʰ: 58′.7									
	PMG: 12ʰ 04ᵐ.8				SD: 16′.0			12ʰ: 58′.8									
					PMG: 16ʰ 10ᵐ			20ʰ: 58′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	46.2	+14	39.7	125	20.6	−2	39.2		**60 N**	1 57	3 17	4 10	10 37	97	21 23	6
1	193	46.3		38.9	139	51.8 122	−2	54.2	150	**58**	2 23	31	19	34	93	28	9
2	208	46.4		38.2	154	22.9 121	−3	09.2	150	**56**	43	43	27	32	88	32	12
3	223	46.5		37.4	168	53.9 120		24.2	150	**54**	2 59	3 53	35	29	86	35	16
4	238	46.6		36.6	183	25.0 121		39.2	150	**52**	3 13	4 02	41	27	83	38	18
5	253	46.8	+14	35.9	197	56.0 120	−3	54.1	149	**50**	3 24	4 10	4 47	10 25	80	21 41	21
6	268	46.9	+14	35.1	212	27.0 120	−4	09.1	150	**45**	3 47	4 27	4 59	10 20	76	21 48	25
7	283	47.0		34.3	226	58.0 120		24.0	149	**40**	4 05	41	5 10	17	71	53	30
8	298	47.1		33.6	241	28.9 119		38.9	149	**35**	19	4 52	19	14	67	21 58	33
9	313	47.2		32.8	255	59.8 119	−4	53.8	149	**30**	31	5 01	26	11	64	22 02	36
10	328	47.3		32.0	270	30.7 119	−5	08.7	149	**20**	4 49	16	39	06	59	09	42
11	343	47.4	+14	31.3	285	01.5 118	−5	23.6	149	**10 N**	5 04	5 29	5 51	10 02	54	22 16	46
12	358	47.5	+14	30.5	299	32.3 118	−5	38.4	148	**0**	5 15	5 40	6 01	9 58	50	22 22	50
13	13	47.7		29.7	314	03.0 117	−5	53.2	148	**10 S**	25	5 50	12	55	45	28	54
14	28	47.8		29.0	328	33.7 117	−6	08.0	148	**20**	34	6 00	23	51	40	34	59
15	43	47.9		28.2	343	04.4 117		22.8	148	**30**	42	11	35	46	35	41	65
16	58	48.0		27.4	357	35.0 116		37.5	147	**35**	47	16	43	44	31	46	68
17	73	48.1	+14	26.7	12	05.6 116	−6	52.2	147	**40**	5 51	6 23	6 51	9 41	28	22 50	72
18	88	48.2	+14	25.9	26	36.1 115	−7	06.9	147	**45**	5 55	6 30	7 00	9 38	24	22 56	76
19	103	48.3		25.1	41	06.6 115		21.6	147	**50**	5 59	38	11	34	19	23 03	81
20	118	48.5		24.4	55	37.0 114		36.2	146	**52**	6 01	41	17	32	17	06	84
21	133	48.6		23.6	70	07.4 114	−7	50.8	146	**54**	03	45	22	30	15	09	87
22	148	48.7		22.8	84	37.8 114	−8	05.3	145	**56**	05	49	29	28	12	13	90
23	163	48.8		22.1	99	08.1 113		19.8	145	**58**	07	54	36	26	8	18	93
24	178	48.9	+14	21.3	113	38.3 112	−8	34.3	145	**60 S**	6 10	6 59	7 44	9 23	5	23 22	98

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2ʰ 33ᵐ.0		PMG: 14ʰ 21ᵐ			PMG: 13ʰ 16ᵐ			PMG: 0ʰ 36ᵐ			PMG: 23ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	321	39.0	144	46.1	+2 17.5	160	44.9	+9 10.7	350	55.4	−13 12.9	9	35.9	−18 40.0
1	336	41.5	159	45.8	16.2	175	45.8	10.0	5	58.2	13.1	24	38.5	40.0
2	351	43.9	174	45.6	14.9	190	46.8	09.4	21	00.9	13.2	39	41.2	40.1
3	6	46.4	189	45.4	13.7	205	47.8	08.8	36	03.7	13.3	54	43.8	40.1
4	21	48.9	204	45.2	12.4	220	48.8	08.2	51	06.5	13.4	69	46.5	40.2
5	36	51.3	219	45.0	+2 11.1	235	49.8	+9 07.6	66	09.3	−13 13.5	84	49.1	−18 40.2
6	51	53.8	234	44.8	+2 09.8	250	50.8	+9 07.0	81	12.0	−13 13.6	99	51.8	−18 40.3
7	66	56.2	249	44.6	08.5	265	51.8	06.4	96	14.8	13.8	114	54.4	40.3
8	81	58.7	264	44.4	07.3	280	52.7	05.8	111	17.6	13.9	129	57.1	40.4
9	97	01.2	279	44.2	06.0	295	53.7	05.2	126	20.4	14.0	144	59.7	40.4
10	112	03.6	294	43.9	04.7	310	54.7	04.6	141	23.1	14.1	160	02.4	40.5
11	127	06.1	309	43.7	+2 03.4	325	55.7	+9 04.0	156	25.9	−13 14.2	175	05.0	−18 40.5
12	142	08.6	324	43.5	+2 02.1	340	56.7	+9 03.4	171	28.7	−13 14.3	190	07.7	−18 40.6
13	157	11.0	339	43.3	+2 00.8	355	57.7	02.7	186	31.4	14.5	205	10.3	40.6
14	172	13.5	354	43.1	+1 59.6	10	58.7	02.1	201	34.2	14.6	220	12.9	40.7
15	187	16.0	9	42.9	58.3	25	59.6	01.5	216	37.0	14.7	235	15.6	40.7
16	202	18.4	24	42.7	57.0	41	00.6	00.9	231	39.8	14.8	250	18.2	40.8
17	217	20.9	39	42.5	+1 55.7	56	01.6	+9 00.3	246	42.5	−13 14.9	265	20.9	−18 40.8
18	232	23.4	54	42.3	+1 54.4	71	02.6	+8 59.7	261	45.3	−13 15.1	280	23.5	−18 40.9
19	247	25.8	69	42.1	53.2	86	03.6	59.1	276	48.1	15.2	295	26.2	40.9
20	262	28.3	84	41.8	51.9	101	04.6	58.5	291	50.9	15.3	310	28.8	41.0
21	277	30.7	99	41.6	50.6	116	05.6	57.9	306	53.6	15.4	325	31.5	41.0
22	292	33.2	114	41.4	49.3	131	06.6	57.3	321	56.4	15.5	340	34.1	41.1
23	307	35.7	129	41.2	48.0	146	07.5	56.7	336	59.2	15.6	355	36.8	41.1
24	322	38.1	144	41.0	+1 46.7	161	08.5	+8 56.0	352	02.0	−13 15.8	10	39.4	−18 41.2
Dif	—			−2	−13		+10	−6		+28	−1		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 5^{d}.4		PHE	4^{h}: 58′.9								
	PMG: 12^{h} 04^{m}.6		SD: 16′.0			12^{h}: 59′.0								
			PMG: 17^{h} 00^{m}			20^{h}: 59′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	178 48.9	+14 21.3	113 38.3		−8 34.3		**60 N**	19 55	20 47	22 03	12 14	99	21 29	8
1	193 49.0	20.5	128 08.5	112	−8 48.8	145	**58**	47	33	21 39	07	95	37	13
2	208 49.2	19.7	142 38.7	112	−9 03.1	143	**56**	39	22	21	12 00	92	44	17
3	223 49.3	19.0	157 08.7	110	17.5	144	**54**	32	12	21 05	11 55	88	51	19
4	238 49.4	18.2	171 38.8	111	31.8	143	**52**	26	20 04	20 53	50	85	21 56	23
5	253 49.5	+14 17.4	186 08.8	110	−9 46.1	143	**50**	19 20	19 56	20 42	11 45	83	22 02	24
6	268 49.6	+14 16.7	200 38.7	109	−10 00.3	142	**45**	19 08	19 40	20 19	11 36	77	22 13	30
7	283 49.8	15.9	215 08.5	108	14.5	142	**40**	18 58	27	20 02	28	73	23	33
8	298 49.9	15.1	229 38.3	108	28.6	141	**35**	49	16	19 48	21	69	31	37
9	313 50.0	14.3	244 08.1	108	42.6	140	**30**	42	19 07	37	15	66	38	40
10	328 50.1	13.6	258 37.8	107	−10 56.7	141	**20**	29	18 52	19	11 05	61	22 51	45
11	343 50.2	+14 12.8	273 07.4	106	−11 10.6	139	**10 N**	18 18	18 40	19 05	10 56	56	23 02	49
12	358 50.3	+14 12.0	287 36.9	105	−11 24.5	139	**0**	18 08	18 29	18 54	10 48	52	23 12	53
13	13 50.5	11.2	302 06.4	105	38.4	139	**10 S**	17 58	20	45	40	47	22	58
14	28 50.6	10.5	316 35.9	105	−11 52.2	138	**20**	47	10	36	31	43	33	62
15	43 50.7	09.7	331 05.2	103	−12 05.9	137	**30**	35	18 00	28	21	38	46	67
16	58 50.8	08.9	345 34.5	103	19.6	137	**35**	28	17 54	24	15	35	23 54	70
17	73 50.9	+14 08.1	0 03.8	103	−12 33.2	136	**40**	17 20	17 48	18 20	10 09	32	** **	**
18	88 51.1	+14 07.3	14 32.9	101	−12 46.7	135	**45**	17 11	17 42	18 16	10 02	27	** **	**
19	103 51.2	06.6	29 02.0	101	−13 00.2	135	**50**	17 00	34	12	9 53	22	** **	**
20	118 51.3	05.8	43 31.1	101	13.6	134	**52**	16 55	31	11	49	20	** **	**
21	133 51.4	05.0	58 00.0	99	26.9	133	**54**	50	27	09	45	17	** **	**
22	148 51.6	04.2	72 28.9	99	40.2	133	**56**	43	23	07	40	14	** **	**
23	163 51.7	03.5	86 57.7	98	−13 53.4	132	**58**	37	19	05	34	12	** **	**
24	178 51.8	+14 02.7	101 26.4	97	−14 06.5	131	**60 S**	16 29	17 14	18 03	9 28	8	** **	**

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: +1.8		Mag: −2.9		Mag: +0.2	
	2^{h} 29^{m}.0	PMG: 14^{h} 21^{m}		PMG: 13^{h} 15^{m}		PMG: 0^{h} 32^{m}		PMG: 23^{h} 13^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	322 38.1	144 41.0	+1 46.7	161 08.5	+8 56.0	352 02.0	−13 15.8	10 39.4	−18 41.2
1	337 40.6	159 40.8	45.5	176 09.5	55.4	7 04.7	15.9	25 42.1	41.2
2	352 43.1	174 40.6	44.2	191 10.5	54.8	22 07.5	16.0	40 44.7	41.3
3	7 45.5	189 40.4	42.9	206 11.5	54.2	37 10.3	16.1	55 47.3	41.3
4	22 48.0	204 40.2	41.6	221 12.5	53.6	52 13.1	16.2	70 50.0	41.4
5	37 50.5	219 40.0	+1 40.3	236 13.5	+8 53.0	67 15.8	−13 16.3	85 52.6	−18 41.4
6	52 52.9	234 39.8	+1 39.0	251 14.4	+8 52.4	82 18.6	−13 16.5	100 55.3	−18 41.5
7	67 55.4	249 39.6	37.8	266 15.4	51.8	97 21.4	16.6	115 57.9	41.5
8	82 57.9	264 39.3	36.5	281 16.4	51.2	112 24.2	16.7	131 00.6	41.6
9	98 00.3	279 39.1	35.2	296 17.4	50.5	127 26.9	16.8	146 03.2	41.6
10	113 02.8	294 38.9	33.9	311 18.4	49.9	142 29.7	16.9	161 05.9	41.7
11	128 05.2	309 38.7	+1 32.6	326 19.4	+8 49.3	157 32.5	−13 17.0	176 08.5	−18 41.7
12	143 07.7	324 38.5	+1 31.3	341 20.4	+8 48.7	172 35.3	−13 17.2	191 11.2	−18 41.8
13	158 10.2	339 38.3	30.0	356 21.4	48.1	187 38.0	17.3	206 13.8	41.8
14	173 12.6	354 38.1	28.8	11 22.3	47.5	202 40.8	17.4	221 16.4	41.9
15	188 15.1	9 37.9	27.5	26 23.3	46.9	217 43.6	17.5	236 19.1	41.9
16	203 17.6	24 37.7	26.2	41 24.3	46.3	232 46.4	17.6	251 21.7	42.0
17	218 20.0	39 37.5	+1 24.9	56 25.3	+8 45.7	247 49.1	−13 17.8	266 24.4	−18 42.0
18	233 22.5	54 37.3	+1 23.6	71 26.3	+8 45.0	262 51.9	−13 17.9	281 27.0	−18 42.1
19	248 25.0	69 37.1	22.3	86 27.3	44.4	277 54.7	18.0	296 29.7	42.1
20	263 27.4	84 36.9	21.1	101 28.3	43.8	292 57.5	18.1	311 32.3	42.2
21	278 29.9	99 36.7	19.8	116 29.3	43.2	308 00.2	18.2	326 35.0	42.2
22	293 32.3	114 36.5	18.5	131 30.2	42.6	323 03.0	18.3	341 37.6	42.3
23	308 34.8	129 36.3	17.2	146 31.2	42.0	338 05.8	18.5	356 40.3	42.3
24	323 37.3	144 36.1	+1 15.9	161 32.2	+8 41.4	353 08.6	−13 18.6	11 42.9	−18 42.4
Dif	—	−2	−13	+10	−6	+28	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 6ᵈ.4		PHE	4ʰ: 59′.2									
	PMG: 12ʰ 04ᵐ.4				SD: 16′.1			12ʰ: 59′.2									
					PMG: 17ʰ 52ᵐ			20ʰ: 59′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	178	51.8	+14	02.7	101	26.4	−14	06.5		**60 N**	2 07	3 23	4 15	13 53	102	21 37	15
1	193	51.9		01.9	115	55.1 97		19.6	131	**58**	31	36	23	42	96	21 50	19
2	208	52.0		01.1	130	23.7 96		32.6	130	**56**	2 49	48	31	32	92	22 01	23
3	223	52.2	+14	00.3	144	52.2 95		45.4	128	**54**	3 04	3 58	38	23	88	10	27
4	238	52.3	+13	59.6	159	20.6 94	−14	58.3	129	**52**	17	4 06	44	15	85	19	29
5	253	52.4	+13	58.8	173	49.0 94	−15	11.0	127	**50**	3 28	4 14	4 50	13 08	83	22 26	32
6	268	52.5	+13	58.0	188	17.3 93	−15	23.7	127	**45**	3 50	4 30	5 02	12 53	78	22 43	37
7	283	52.7		57.2	202	45.5 92		36.2	125	**40**	4 07	43	12	41	73	22 56	41
8	298	52.8		56.4	217	13.6 91	−15	48.7	125	**35**	21	4 53	20	30	71	23 08	43
9	313	52.9		55.6	231	41.7 91	−16	01.1	124	**30**	32	5 02	27	21	68	18	46
10	328	53.0		54.9	246	09.6 89		13.4	123	**20**	4 50	17	40	12 06	62	36	50
11	343	53.2	+13	54.1	260	37.5 89	−16	25.6	122	**10 N**	5 04	5 29	5 51	11 52	59	23 51	54
12	358	53.3	+13	53.3	275	05.4 89	−16	37.8	122	**0**	5 15	5 40	6 01	11 40	55	** **	**
13	13	53.4		52.5	289	33.1 87	−16	49.8	120	**10 S**	24	49	11	27	52	** **	**
14	28	53.5		51.7	304	00.7 86	−17	01.7	119	**20**	33	5 59	22	11 14	48	** **	**
15	43	53.7		50.9	318	28.3 86		13.6	119	**30**	41	6 09	33	10 59	43	** **	**
16	58	53.8		50.1	332	55.8 85		25.3	117	**35**	44	14	40	50	41	** **	**
17	73	53.9	+13	49.4	347	23.2 84	−17	37.0	117	**40**	5 48	6 20	6 48	10 41	37	0 02	74
18	88	54.0	+13	48.6	1	50.5 83	−17	48.5	115	**45**	5 52	6 27	6 57	10 29	33	0 12	78
19	103	54.2		47.8	16	17.7 82	−17	59.9	114	**50**	56	34	7 08	15	29	24	83
20	118	54.3		47.0	30	44.9 82	−18	11.3	114	**52**	58	37	13	09	26	30	85
21	133	54.4		46.2	45	12.0 81		22.5	112	**54**	5 59	41	18	10 02	23	36	88
22	148	54.6		45.4	59	38.9 79		33.6	111	**56**	6 01	45	24	9 54	20	43	92
23	163	54.7		44.6	74	05.8 79		44.7	111	**58**	03	49	31	46	16	0 51	96
24	178	54.8	+13	43.8	88	32.7 79	−18	55.6	109	**60 S**	6 05	6 54	7 39	9 36	11	1 00	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2ʰ 25ᵐ.1		PMG: 14ʰ 22ᵐ			PMG: 13ʰ 13ᵐ			PMG: 0ʰ 27ᵐ			PMG: 23ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	323	37.3	144	36.1	+1 15.9	161	32.2	+8 41.4	353	08.6	−13 18.6	11	42.9	−18 42.4
1	338	39.7	159	35.9	14.6	176	33.2	40.8	8	11.3	18.7	26	45.5	42.4
2	353	42.2	174	35.7	13.3	191	34.2	40.1	23	14.1	18.8	41	48.2	42.5
3	8	44.7	189	35.4	12.1	206	35.2	39.5	38	16.9	18.9	56	50.8	42.5
4	23	47.1	204	35.2	10.8	221	36.2	38.9	53	19.7	19.0	71	53.5	42.6
5	38	49.6	219	35.0	+1 09.5	236	37.2	+8 38.3	68	22.4	−13 19.2	86	56.1	−18 42.6
6	53	52.1	234	34.8	+1 08.2	251	38.2	+8 37.7	83	25.2	−13 19.3	101	58.8	−18 42.7
7	68	54.5	249	34.6	06.9	266	39.1	37.1	98	28.0	19.4	117	01.4	42.7
8	83	57.0	264	34.4	05.6	281	40.1	36.5	113	30.8	19.5	132	04.1	42.8
9	98	59.5	279	34.2	04.3	296	41.1	35.9	128	33.5	19.6	147	06.7	42.8
10	114	01.9	294	34.0	03.1	311	42.1	35.2	143	36.3	19.8	162	09.3	42.9
11	129	04.4	309	33.8	+1 01.8	326	43.1	+8 34.6	158	39.1	−13 19.9	177	12.0	−18 42.9
12	144	06.8	324	33.6	+1 00.5	341	44.1	+8 34.0	173	41.9	−13 20.0	192	14.6	−18 43.0
13	159	09.3	339	33.4	+0 59.2	356	45.1	33.4	188	44.6	20.1	207	17.3	43.0
14	174	11.8	354	33.2	57.9	11	46.1	32.8	203	47.4	20.2	222	19.9	43.1
15	189	14.2	9	33.0	56.6	26	47.0	32.2	218	50.2	20.3	237	22.6	43.1
16	204	16.7	24	32.8	55.3	41	48.0	31.6	233	53.0	20.5	252	25.2	43.2
17	219	19.2	39	32.6	+0 54.1	56	49.0	+8 30.9	248	55.7	−13 20.6	267	27.9	−18 43.2
18	234	21.6	54	32.4	+0 52.8	71	50.0	+8 30.3	263	58.5	−13 20.7	282	30.5	−18 43.3
19	249	24.1	69	32.2	51.5	86	51.0	29.7	279	01.3	20.8	297	33.1	43.3
20	264	26.6	84	32.0	50.2	101	52.0	29.1	294	04.1	20.9	312	35.8	43.4
21	279	29.0	99	31.8	48.9	116	53.0	28.5	309	06.9	21.0	327	38.4	43.4
22	294	31.5	114	31.6	47.6	131	54.0	27.9	324	09.6	21.2	342	41.1	43.5
23	309	34.0	129	31.4	46.3	146	55.0	27.3	339	12.4	21.3	357	43.7	43.5
24	324	36.4	144	31.2	+0 45.0	161	55.9	+8 26.6	354	15.2	−13 21.4	12	46.4	−18 43.6
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 7ᵈ.4		PHE	4ʰ: 59′.3									
	PMG: 12ʰ 04ᵐ.2				SD: 16′.2			12ʰ: 59′.4									
					PMG: 18ʰ 48ᵐ			20ʰ: 59′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	178	54.8	+13	43.8	88	32.7 77	−18	55.6	108	**60 N**	19 50	20 40	21 53	15 35	98	21 52	25
1	193	54.9		43.0	102	59.4 76	−19	06.4	106	**58**	41	28	31	18	92	22 09	32
2	208	55.1		42.3	117	26.0 76		17.0	106	**56**	34	17	14	15 04	87	24	35
3	223	55.2		41.5	131	52.6 75		27.6	105	**54**	27	20 07	21 00	14 51	85	37	38
4	238	55.3		40.7	146	19.1 74		38.1	103	**52**	21	19 59	20 47	40	82	48	41
5	253	55.5	+13	39.9	160	45.5 73	−19	48.4	102	**50**	19 16	19 52	20 37	14 31	79	22 58	43
6	268	55.6	+13	39.1	175	11.8 72	−19	58.6	101	**45**	19 05	19 36	20 15	14 11	75	23 20	46
7	283	55.7		38.3	189	38.0 72	−20	08.7	100	**40**	18 55	24	19 59	13 54	73	37	49
8	298	55.8		37.5	204	04.2 70		18.7	98	**35**	47	14	46	41	70	23 51	51
9	313	56.0		36.7	218	30.2 70		28.5	97	**30**	40	19 05	35	29	68	** **	**
10	328	56.1		35.9	232	56.2 69		38.2	96	**20**	28	18 51	18	13 08	65	** **	**
11	343	56.2	+13	35.1	247	22.1 68	−20	47.8	95	**10 N**	18 17	18 39	19 04	12 51	61	** **	**
12	358	56.4	+13	34.3	261	47.9 68	−20	57.3	93	**0**	18 08	18 29	18 54	12 35	58	0 05	57
13	13	56.5		33.5	276	13.7 68	−21	06.6	93	**10 S**	17 58	20	44	19	56	20	60
14	28	56.6		32.7	290	39.3 66		15.9	93	**20**	48	10	36	12 02	52	35	64
15	43	56.8		32.0	305	04.9 66		24.9	90	**30**	36	18 01	29	11 42	49	0 53	68
16	58	56.9		31.2	319	30.3 64		33.9	90	**35**	30	17 56	26	31	47	1 04	70
17	73	57.0	+13	30.4	333	55.8 65	−21	42.7	88	**40**	17 22	17 50	18 22	11 18	44	1 16	73
18	88	57.2	+13	29.6	348	21.1 63	−21	51.3	86	**45**	17 14	17 44	18 19	11 02	42	1 30	77
19	103	57.3		28.8	2	46.3 62	−21	59.9	86	**50**	17 03	37	15	10 44	37	47	82
20	118	57.4		28.0	17	11.5 62	−22	08.3	84	**52**	16 58	34	13	35	35	1 55	84
21	133	57.6		27.2	31	36.6 61		16.5	82	**54**	53	30	12	25	32	2 04	87
22	148	57.7		26.4	46	01.6 60		24.6	81	**56**	47	27	10	14	29	15	90
23	163	57.8		25.6	60	26.5 59		32.6	80	**58**	41	22	09	10 02	25	27	94
24	178	58.0	+13	24.8	74	51.4 59	−22	40.4	78	**60 S**	16 33	17 18	18 07	9 47	20	2 40	101

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2ʰ 21ᵐ.2		PMG: 14ʰ 22ᵐ			PMG: 13ʰ 11ᵐ			PMG: 0ʰ 23ᵐ			PMG: 23ʰ 05ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	324	36.4	144	31.2	+0 45.0	161	55.9	+8 26.6	354	15.2	−13 21.4	12	46.4	−18 43.6
1	339	38.9	159	31.0	43.8	176	56.9	26.0	9	18.0	21.5	27	49.0	43.6
2	354	41.3	174	30.8	42.5	191	57.9	25.4	24	20.7	21.6	42	51.6	43.7
3	9	43.8	189	30.6	41.2	206	58.9	24.8	39	23.5	21.8	57	54.3	43.7
4	24	46.3	204	30.4	39.9	221	59.9	24.2	54	26.3	21.9	72	56.9	43.8
5	39	48.7	219	30.2	+0 38.6	237	00.9	+8 23.6	69	29.1	−13 22.0	87	59.6	−18 43.8
6	54	51.2	234	30.0	+0 37.3	252	01.9	+8 23.0	84	31.8	−13 22.1	103	02.2	−18 43.9
7	69	53.7	249	29.8	36.0	267	02.9	22.3	99	34.6	22.2	118	04.9	43.9
8	84	56.1	264	29.6	34.8	282	03.9	21.7	114	37.4	22.3	133	07.5	44.0
9	99	58.6	279	29.4	33.5	297	04.8	21.1	129	40.2	22.5	148	10.2	44.0
10	115	01.1	294	29.2	32.2	312	05.8	20.5	144	43.0	22.6	163	12.8	44.1
11	130	03.5	309	29.0	+0 30.9	327	06.8	+8 19.9	159	45.7	−13 22.7	178	15.4	−18 44.1
12	145	06.0	324	28.8	+0 29.6	342	07.8	+8 19.3	174	48.5	−13 22.8	193	18.1	−18 44.2
13	160	08.4	339	28.6	28.3	357	08.8	18.6	189	51.3	22.9	208	20.7	44.2
14	175	10.9	354	28.4	27.0	12	09.8	18.0	204	54.1	23.0	223	23.4	44.3
15	190	13.4	9	28.2	25.7	27	10.8	17.4	219	56.8	23.2	238	26.0	44.3
16	205	15.8	24	28.0	24.5	42	11.8	16.8	234	59.6	23.3	253	28.7	44.4
17	220	18.3	39	27.8	+0 23.2	57	12.8	+8 16.2	250	02.4	−13 23.4	268	31.3	−18 44.4
18	235	20.8	54	27.6	+0 21.9	72	13.8	+8 15.6	265	05.2	−13 23.5	283	33.9	−18 44.5
19	250	23.2	69	27.4	20.6	87	14.7	14.9	280	08.0	23.6	298	36.6	44.5
20	265	25.7	84	27.2	19.3	102	15.7	14.3	295	10.7	23.8	313	39.2	44.6
21	280	28.2	99	27.0	18.0	117	16.7	13.7	310	13.5	23.9	328	41.9	44.6
22	295	30.6	114	26.8	16.7	132	17.7	13.1	325	16.3	24.0	343	44.5	44.7
23	310	33.1	129	26.6	15.4	147	18.7	12.5	340	19.1	24.1	358	47.2	44.7
24	325	35.6	144	26.4	+0 14.1	162	19.7	+8 11.9	355	21.8	−13 24.2	13	49.8	−18 44.8
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 04.m0				LUNA Edad: 8.d4 SD: 16′.2 PMG: 19h 48m PHE: 4h: 59′.4; 12h: 59′.4; 20h: 59′.4 Rº: 61m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	178	58.0	+13	24.8	74	51.4 58	−22	40.4 77	**60 N**	2 16	3 29	4 19	17 13	80	22 17	49
1	193	58.1		24.0	89	16.2 57		48.1 75	**58**	38	41	28	16 50	77	41	51
2	208	58.2		23.2	103	40.9 56	−22	55.6 74	**56**	2 55	3 52	35	31	75	22 59	53
3	223	58.4		22.4	118	05.5 56	−23	03.0 72	**54**	3 09	4 02	42	16	73	23 15	55
4	238	58.5		21.6	132	30.1 55		10.2 71	**52**	22	10	48	16 02	72	29	55
5	253	58.6	+13	20.8	146	54.6 54	−23	17.3 69	**50**	3 32	4 17	4 53	15 50	71	23 41	56
6	268	58.8	+13	20.0	161	19.0 54	−23	24.2 68	**45**	3 53	4 32	5 04	15 26	69	** **	**
7	283	58.9		19.2	175	43.4 53		31.0 66	**40**	4 10	45	14	15 07	67	** **	**
8	298	59.0		18.4	190	07.7 52		37.6 65	**35**	23	4 55	22	14 51	66	** **	**
9	313	59.2		17.6	204	31.9 52		44.1 63	**30**	34	5 04	29	37	65	0 04	53
10	328	59.3		16.8	218	56.1 51		50.4 61	**20**	4 51	18	41	14 13	64	26	55
11	343	59.4	+13	16.0	233	20.2 50	−23	56.5 60	**10 N**	5 04	5 29	5 51	13 52	63	0 45	58
12	358	59.6	+13	15.2	247	44.2 50	−24	02.5 59	**0**	5 15	5 39	6 01	13 33	62	1 02	60
13	13	59.7		14.4	262	08.2 49		08.4 56	**10 S**	24	49	10	13 15	59	20	62
14	28	59.9		13.6	276	32.1 49		14.0 55	**20**	32	5 58	20	12 54	59	1 39	64
15	44	00.0		12.8	290	56.0 48		19.5 54	**30**	39	6 07	32	31	57	2 01	67
16	59	00.1		12.0	305	19.8 47		24.9 52	**35**	42	12	38	18	55	14	69
17	74	00.3	+13	11.2	319	43.5 47	−24	30.1 52	**40**	5 46	6 18	6 45	12 02	54	2 29	70
18	89	00.4	+13	10.4	334	07.2 47	−24	35.1 50	**45**	5 49	6 24	6 54	11 44	51	2 47	72
19	104	00.5		09.5	348	30.9 47		39.9 48	**50**	53	31	7 04	21	49	3 09	76
20	119	00.7		08.7	2	54.4 45		44.6 47	**52**	54	34	09	11 10	48	19	78
21	134	00.8		07.9	17	18.0 46		49.1 45	**54**	56	37	14	10 57	46	31	80
22	149	01.0		07.1	31	41.5 45		53.5 44	**56**	57	41	20	43	44	3 45	82
23	164	01.1		06.3	46	05.0 45	−24	57.6 41	**58**	5 59	45	26	27	40	4 01	86
24	179	01.2	+13	05.5	60	28.4 44	−25	01.7 41	**60 S**	6 00	6 49	7 33	10 07	36	4 21	90

UT	ARIES PMG 2h 17.m3		VENUS Mag: −4.0 PMG: 14h 22m			MARTE Mag: +1.8 PMG: 13h 10m			JÚPITER Mag: −2.9 PMG: 0h 18m			SATURNO Mag: +0.2 PMG: 23h 01m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	325	35.6	144	26.4	+0 14.1	162	19.7	+8 11.9	355	21.8	−13 24.2	13	49.8	−18 44.8
1	340	38.0	159	26.2	12.9	177	20.7	11.2	10	24.6	24.3	28	52.4	44.8
2	355	40.5	174	26.0	11.6	192	21.7	10.6	25	27.4	24.5	43	55.1	44.9
3	10	42.9	189	25.8	10.3	207	22.7	10.0	40	30.2	24.6	58	57.7	44.9
4	25	45.4	204	25.6	09.0	222	23.7	09.4	55	32.9	24.7	74	00.4	45.0
5	40	47.9	219	25.5	+0 07.7	237	24.6	+8 08.8	70	35.7	−13 24.8	89	03.0	−18 45.0
6	55	50.3	234	25.3	+0 06.4	252	25.6	+8 08.2	85	38.5	−13 24.9	104	05.6	−18 45.1
7	70	52.8	249	25.1	05.1	267	26.6	07.5	100	41.3	25.0	119	08.3	45.1
8	85	55.3	264	24.9	03.8	282	27.6	06.9	115	44.1	25.2	134	10.9	45.2
9	100	57.7	279	24.7	02.6	297	28.6	06.3	130	46.8	25.3	149	13.6	45.2
10	116	00.2	294	24.5	+0 01.3	312	29.6	05.7	145	49.6	25.4	164	16.2	45.2
11	131	02.7	309	24.3	+0 00.0	327	30.6	+8 05.1	160	52.4	−13 25.5	179	18.9	−18 45.3
12	146	05.1	324	24.1	−0 01.3	342	31.6	+8 04.4	175	55.2	−13 25.6	194	21.5	−18 45.3
13	161	07.6	339	23.9	02.6	357	32.6	03.8	190	58.0	25.7	209	24.1	45.4
14	176	10.1	354	23.7	03.9	12	33.6	03.2	206	00.7	25.9	224	26.8	45.4
15	191	12.5	9	23.5	05.2	27	34.5	02.6	221	03.5	26.0	239	29.4	45.5
16	206	15.0	24	23.3	06.5	42	35.5	02.0	236	06.3	26.1	254	32.1	45.5
17	221	17.4	39	23.1	−0 07.8	57	36.5	+8 01.4	251	09.1	−13 26.2	269	34.7	−18 45.6
18	236	19.9	54	22.9	−0 09.0	72	37.5	+8 00.7	266	11.8	−13 26.3	284	37.3	−18 45.6
19	251	22.4	69	22.7	10.3	87	38.5	+8 00.1	281	14.6	26.5	299	40.0	45.7
20	266	24.8	84	22.5	11.6	102	39.5	+7 59.5	296	17.4	26.6	314	42.6	45.7
21	281	27.3	99	22.3	12.9	117	40.5	58.9	311	20.2	26.7	329	45.3	45.8
22	296	29.8	114	22.1	14.2	132	41.5	58.3	326	23.0	26.8	344	47.9	45.8
23	311	32.2	129	21.9	15.5	147	42.5	57.6	341	25.7	26.9	359	50.6	45.9
24	326	34.7	144	21.7	−0 16.8	162	43.5	+7 57.0	356	28.5	−13 27.0	14	53.2	−18 45.9
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 9^{d}.4		PHE	4^{h}: 59′.4								
	PMG: 12^{h} 03^{m}.8				SD: 16′.2			12^{h}: 59′.3								
					PMG: 20^{h} 49^{m}			20^{h}: 59′.3								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	01.2	+13	05.5	60	28.4	−25	01.7	**60 N**	19 44	20 34	21 44	18 33	51	23 06	76
1	194	01.4		04.7	74	51.8 44		05.5 38	**58**	36	22	24	18 07	53	32	74
2	209	01.5		03.9	89	15.1 43		09.2 37	**56**	29	11	21 07	17 46	55	23 52	73
3	224	01.7		03.1	103	38.4 43		12.7 35	**54**	23	20 03	20 54	29	56	** **	**
4	239	01.8		02.3	118	01.7 43		16.0 33	**52**	17	19 55	42	14	57	** **	**
5	254	01.9	+13	01.5	132	24.9 42	−25	19.1 31	**50**	19 12	19 48	20 32	17 01	58	** **	**
6	269	02.1	+13	00.7	146	48.1 42	−25	22.1 30	**45**	19 01	19 33	20 12	16 35	59	0 06	57
7	284	02.2	+12	59.9	161	11.3 42		24.9 28	**40**	18 52	21	19 56	16 14	60	26	58
8	299	02.4		59.0	175	34.4 41		27.5 26	**35**	45	11	43	15 57	60	42	59
9	314	02.5		58.2	189	57.5 41		30.0 25	**30**	38	19 03	32	42	60	0 57	59
10	329	02.6		57.4	204	20.6 41		32.2 22	**20**	26	18 49	16	15 17	60	1 21	61
11	344	02.8	+12	56.6	218	43.7 41	−25	34.3 21	**10 N**	18 16	18 38	19 03	14 55	61	1 43	61
12	359	02.9	+12	55.8	233	06.8 41	−25	36.3 20	**0**	18 07	18 28	18 53	14 35	61	2 02	62
13	14	03.1		55.0	247	29.8 40		38.0 17	**10 S**	17 58	19	44	14 14	62	22	62
14	29	03.2		54.2	261	52.9 41		39.6 16	**20**	48	11	37	13 53	62	2 43	63
15	44	03.4		53.4	276	15.9 40		41.0 14	**30**	37	18 02	30	28	62	3 08	63
16	59	03.5		52.6	290	38.9 40		42.2 12	**35**	31	17 57	27	13 13	62	23	63
17	74	03.6	+12	51.7	305	01.9 40	−25	43.2 10	**40**	17 24	17 52	18 24	12 56	62	3 39	64
18	89	03.8	+12	50.9	319	24.9 40	−25	44.1 9	**45**	17 16	17 46	18 21	12 35	63	3 59	65
19	104	03.9		50.1	333	47.9 40		44.8 7	**50**	06	40	18	12 10	63	4 25	64
20	119	04.1		49.3	348	10.9 40		45.3 5	**52**	17 02	37	16	11 58	62	37	65
21	134	04.2		48.5	2	33.9 40		45.6 3	**54**	16 57	33	15	43	63	4 51	65
22	149	04.4		47.7	16	56.9 40		45.8 2	**56**	51	30	14	27	63	5 07	66
23	164	04.5		46.9	31	19.9 40		45.7 1	**58**	45	26	12	11 07	63	27	65
24	179	04.6	+12	46.0	45	42.9 40	−25	45.5 2	**60 S**	16 38	17 22	18 11	10 43	63	5 51	66

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2^{h} 13^{m}.3		PMG: 14^{h} 23^{m}			PMG: 13^{h} 08^{m}			PMG: 0^{h} 14^{m}			PMG: 22^{h} 56^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	326	34.7	144	21.7	−0 16.8	162	43.5	+7 57.0	356	28.5	−13 27.0	14	53.2	−18 45.9
1	341	37.2	159	21.5	18.1	177	44.5	56.4	11	31.3	27.2	29	55.8	46.0
2	356	39.6	174	21.4	19.4	192	45.4	55.8	26	34.1	27.3	44	58.5	46.0
3	11	42.1	189	21.2	20.6	207	46.4	55.2	41	36.8	27.4	60	01.1	46.1
4	26	44.6	204	21.0	21.9	222	47.4	54.5	56	39.6	27.5	75	03.8	46.1
5	41	47.0	219	20.8	−0 23.2	237	48.4	+7 53.9	71	42.4	−13 27.6	90	06.4	−18 46.2
6	56	49.5	234	20.6	−0 24.5	252	49.4	+7 53.3	86	45.2	−13 27.7	105	09.0	−18 46.2
7	71	51.9	249	20.4	25.8	267	50.4	52.7	101	48.0	27.9	120	11.7	46.3
8	86	54.4	264	20.2	27.1	282	51.4	52.1	116	50.7	28.0	135	14.3	46.3
9	101	56.9	279	20.0	28.4	297	52.4	51.4	131	53.5	28.1	150	17.0	46.4
10	116	59.3	294	19.8	29.7	312	53.4	50.8	146	56.3	28.2	165	19.6	46.4
11	132	01.8	309	19.6	−0 31.0	327	54.4	+7 50.2	161	59.1	−13 28.3	180	22.2	−18 46.5
12	147	04.3	324	19.4	−0 32.3	342	55.4	+7 49.6	177	01.9	−13 28.4	195	24.9	−18 46.5
13	162	06.7	339	19.2	33.5	357	56.3	49.0	192	04.6	28.6	210	27.5	46.6
14	177	09.2	354	19.0	34.8	12	57.3	48.3	207	07.4	28.7	225	30.2	46.6
15	192	11.7	9	18.8	36.1	27	58.3	47.7	222	10.2	28.8	240	32.8	46.7
16	207	14.1	24	18.7	37.4	42	59.3	47.1	237	13.0	28.9	255	35.4	46.7
17	222	16.6	39	18.5	−0 38.7	58	00.3	+7 46.5	252	15.8	−13 29.0	270	38.1	−18 46.8
18	237	19.1	54	18.3	−0 40.0	73	01.3	+7 45.9	267	18.5	−13 29.1	285	40.7	−18 46.8
19	252	21.5	69	18.1	41.3	88	02.3	45.2	282	21.3	29.3	300	43.4	46.8
20	267	24.0	84	17.9	42.6	103	03.3	44.6	297	24.1	29.4	315	46.0	46.9
21	282	26.4	99	17.7	43.9	118	04.3	44.0	312	26.9	29.5	330	48.6	46.9
22	297	28.9	114	17.5	45.1	133	05.3	43.4	327	29.6	29.6	345	51.3	47.0
23	312	31.4	129	17.3	46.4	148	06.3	42.8	342	32.4	29.7	0	53.9	47.0
24	327	33.8	144	17.1	−0 47.7	163	07.3	+7 42.1	357	35.2	−13 29.9	15	56.6	−18 47.1
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 10^{d}.4		PHE	4^{h}: 59′.2									
	PMG: 12^{h} 03^{m}.6				SD: 16′.1			12^{h}: 59′.1									
					PMG: 21^{h} 51^{m}			20^{h}: 59′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	04.6	+12	46.0	45	42.9	−25	45.5		**60 N**	2 24	3 35	4 24	19 24	28	** **	**
1	194	04.8		45.2	60	06.0 41		45.1	4	**58**	2 44	47	32	19 00	33	** **	**
2	209	04.9		44.4	74	29.0 40		44.6	5	**56**	3 01	3 57	39	18 41	37	** **	**
3	224	05.1		43.6	88	52.1 41		43.8	8	**54**	14	4 06	45	25	40	0 10	70
4	239	05.2		42.8	103	15.2 41		42.9	9	**52**	26	13	51	18 11	42	24	70
5	254	05.4	+12	42.0	117	38.3 41	−25	41.8	11	**50**	3 36	4 20	4 56	17 59	43	0 37	69
6	269	05.5	+12	41.1	132	01.4 41	−25	40.6	12	**45**	3 56	4 35	5 07	17 34	47	1 03	68
7	284	05.7		40.3	146	24.5 41		39.1	15	**40**	4 12	47	16	17 14	49	24	66
8	299	05.8		39.5	160	47.7 42		37.5	16	**35**	25	4 57	23	16 57	51	41	66
9	314	06.0		38.7	175	10.9 42		35.7	18	**30**	35	5 05	30	42	53	1 56	65
10	329	06.1		37.9	189	34.1 42		33.8	19	**20**	4 52	18	41	16 17	56	2 22	63
11	344	06.2	+12	37.1	203	57.4 43	−25	31.6	22	**10 N**	5 04	5 29	5 51	15 56	58	2 44	62
12	359	06.4	+12	36.2	218	20.7 43	−25	29.3	23	**0**	5 14	5 39	6 00	15 36	60	3 04	61
13	14	06.5		35.4	232	44.0 43		26.8	25	**10 S**	23	48	09	15 16	62	24	60
14	29	06.7		34.6	247	07.4 44		24.2	26	**20**	30	5 56	19	14 55	63	3 46	58
15	44	06.8		33.8	261	30.8 44		21.3	29	**30**	37	6 05	30	30	66	4 11	57
16	59	07.0		33.0	275	54.3 45		18.3	30	**35**	40	10	36	14 15	68	26	56
17	74	07.1	+12	32.1	290	17.8 45	−25	15.2	31	**40**	5 43	6 15	6 43	13 58	69	4 43	55
18	89	07.3	+12	31.3	304	41.3 45	−25	11.8	34	**45**	5 46	6 20	6 51	13 38	71	5 04	52
19	104	07.4		30.5	319	04.9 46		08.3	35	**50**	49	27	7 00	13	74	29	51
20	119	07.6		29.7	333	28.6 47		04.6	37	**52**	50	30	05	13 00	76	42	49
21	134	07.7		28.8	347	52.3 47	−25	00.8	38	**54**	52	33	10	12 46	77	5 56	48
22	149	07.9		28.0	2	16.1 48	−24	56.8	40	**56**	53	36	15	30	79	6 13	45
23	164	08.0		27.2	16	39.9 48		52.6	42	**58**	54	40	21	12 10	83	32	43
24	179	08.2	+12	26.4	31	03.8 49	−24	48.3	43	**60 S**	5 55	6 44	7 28	11 46	86	6 57	39

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.2		
	2^{h} 09^{m}.4		PMG: 14^{h} 23^{m}			PMG: 13^{h} 07^{m}			PMG: 0^{h} 10^{m}			PMG: 22^{h} 52^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	327	33.8	144	17.1	−0 47.7	163	07.3	+7 42.1	357	35.2	−13 29.9	15	56.6	−18 47.1
1	342	36.3	159	16.9	49.0	178	08.2	41.5	12	38.0	30.0	30	59.2	47.1
2	357	38.8	174	16.7	50.3	193	09.2	40.9	27	40.8	30.1	46	01.8	47.2
3	12	41.2	189	16.5	51.6	208	10.2	40.3	42	43.5	30.2	61	04.5	47.2
4	27	43.7	204	16.4	52.9	223	11.2	39.6	57	46.3	30.3	76	07.1	47.3
5	42	46.2	219	16.2	−0 54.2	238	12.2	+7 39.0	72	49.1	−13 30.4	91	09.8	−18 47.3
6	57	48.6	234	16.0	−0 55.5	253	13.2	+7 38.4	87	51.9	−13 30.6	106	12.4	−18 47.4
7	72	51.1	249	15.8	56.7	268	14.2	37.8	102	54.7	30.7	121	15.0	47.4
8	87	53.6	264	15.6	58.0	283	15.2	37.2	117	57.4	30.8	136	17.7	47.5
9	102	56.0	279	15.4	−0 59.3	298	16.2	36.5	133	00.2	30.9	151	20.3	47.5
10	117	58.5	294	15.2	−1 00.6	313	17.2	35.9	148	03.0	31.0	166	22.9	47.6
11	133	00.9	309	15.0	−1 01.9	328	18.2	+7 35.3	163	05.8	−13 31.1	181	25.6	−18 47.6
12	148	03.4	324	14.8	−1 03.2	343	19.2	+7 34.7	178	08.6	−13 31.3	196	28.2	−18 47.7
13	163	05.9	339	14.6	04.5	358	20.1	34.0	193	11.3	31.4	211	30.9	47.7
14	178	08.3	354	14.4	05.8	13	21.1	33.4	208	14.1	31.5	226	33.5	47.8
15	193	10.8	9	14.3	07.1	28	22.1	32.8	223	16.9	31.6	241	36.1	47.8
16	208	13.3	24	14.1	08.4	43	23.1	32.2	238	19.7	31.7	256	38.8	47.9
17	223	15.7	39	13.9	−1 09.6	58	24.1	+7 31.6	253	22.4	−13 31.8	271	41.4	−18 47.9
18	238	18.2	54	13.7	−1 10.9	73	25.1	+7 30.9	268	25.2	−13 32.0	286	44.1	−18 47.9
19	253	20.7	69	13.5	12.2	88	26.1	30.3	283	28.0	32.1	301	46.7	48.0
20	268	23.1	84	13.3	13.5	103	27.1	29.7	298	30.8	32.2	316	49.3	48.0
21	283	25.6	99	13.1	14.8	118	28.1	29.1	313	33.6	32.3	331	52.0	48.1
22	298	28.0	114	12.9	16.1	133	29.1	28.4	328	36.3	32.4	346	54.6	48.1
23	313	30.5	129	12.7	17.4	148	30.1	27.8	343	39.1	32.5	1	57.2	48.2
24	328	33.0	144	12.6	−1 18.7	163	31.1	+7 27.2	358	41.9	−13 32.7	16	59.9	−18 48.2
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 11^{d}.4		PHE	4^{h}: 58′.9								
	PMG: 12^{h} 03^{m}.3				SD: 16′.1			12^{h}: 58′.8								
					PMG: 22^{h} 49^{m}			20^{h}: 58′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	08.2	+12	26.4	31	03.8	−24	48.3	**60 N**	19 38	20 27	21 35	19 52	15	0 22	95
1	194	08.3		25.6	45	27.7 49		43.8 45	**58**	31	16	16	33	20	0 46	89
2	209	08.5		24.7	59	51.7 50		39.1 47	**56**	24	20 06	21 01	18	24	1 05	85
3	224	08.6		23.9	74	15.8 51		34.3 48	**54**	18	19 58	20 48	19 05	27	20	82
4	239	08.8		23.1	88	39.9 51		29.3 50	**52**	13	50	37	18 53	30	34	80
5	254	08.9	+12	22.3	103	04.1 52	−24	24.1 52	**50**	19 08	19 43	20 27	18 42	33	1 46	78
6	269	09.1	+12	21.4	117	28.4 53	−24	18.8 53	**45**	18 58	19 29	20 08	18 21	37	2 11	73
7	284	09.2		20.6	131	52.7 53		13.4 54	**40**	50	18	19 52	18 03	40	30	71
8	299	09.4		19.8	146	17.1 54		07.8 56	**35**	42	09	40	17 48	43	2 47	68
9	314	09.5		18.9	160	41.6 55	−24	02.0 58	**30**	36	19 01	30	35	46	3 01	67
10	329	09.7		18.1	175	06.2 56	−23	56.1 59	**20**	25	18 48	14	17 13	50	25	63
11	344	09.8	+12	17.3	189	30.8 56	−23	50.0 61	**10 N**	18 15	18 37	19 02	16 54	53	3 46	60
12	359	10.0	+12	16.5	203	55.5 57	−23	43.8 62	**0**	18 07	18 28	18 52	16 36	56	4 05	58
13	14	10.1		15.6	218	20.3 58		37.4 64	**10 S**	17 58	19	44	16 18	59	24	55
14	29	10.3		14.8	232	45.2 59		30.9 65	**20**	49	11	37	15 58	63	4 44	53
15	44	10.4		14.0	247	10.2 60		24.2 67	**30**	39	18 03	31	36	66	5 08	49
16	59	10.6		13.2	261	35.2 60		17.4 68	**35**	33	17 59	28	23	68	22	47
17	74	10.8	+12	12.3	276	00.4 62	−23	10.4 70	**40**	17 26	17 54	18 25	15 07	72	5 38	44
18	89	10.9	+12	11.5	290	25.6 62	−23	03.3 71	**45**	17 18	17 48	18 23	14 49	75	5 56	42
19	104	11.1		10.7	304	50.9 63	−22	56.1 72	**50**	09	42	20	27	79	6 20	38
20	119	11.2		09.8	319	16.3 64		48.7 74	**52**	05	40	19	16	81	31	36
21	134	11.4		09.0	333	41.7 64		41.1 76	**54**	17 00	37	18	14 03	85	44	33
22	149	11.5		08.2	348	07.3 66		33.5 76	**56**	16 55	34	17	13 49	88	6 58	30
23	164	11.7		07.3	2	32.9 66		25.7 78	**58**	49	30	16	33	91	7 15	27
24	179	11.8	+12	06.5	16	58.7 68	−22	17.7 80	**60 S**	16 43	17 26	18 15	13 12	98	7 36	21

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	2^{h} 05^{m}.5		PMG: 14^{h} 23^{m}			PMG: 13^{h} 05^{m}			PMG: 0^{h} 05^{m}			PMG: 22^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	328	33.0	144	12.6	−1 18.7	163	31.1	+7 27.2	358	41.9	−13 32.7	16	59.9	−18 48.2
1	343	35.4	159	12.4	20.0	178	32.1	26.6	13	44.7	32.8	32	02.5	48.3
2	358	37.9	174	12.2	21.2	193	33.0	25.9	28	47.5	32.9	47	05.2	48.3
3	13	40.4	189	12.0	22.5	208	34.0	25.3	43	50.2	33.0	62	07.8	48.4
4	28	42.8	204	11.8	23.8	223	35.0	24.7	58	53.0	33.1	77	10.4	48.4
5	43	45.3	219	11.6	−1 25.1	238	36.0	+7 24.1	73	55.8	−13 33.2	92	13.1	−18 48.5
6	58	47.8	234	11.4	−1 26.4	253	37.0	+7 23.4	88	58.6	−13 33.4	107	15.7	−18 48.5
7	73	50.2	249	11.2	27.7	268	38.0	22.8	104	01.4	33.5	122	18.3	48.6
8	88	52.7	264	11.0	29.0	283	39.0	22.2	119	04.1	33.6	137	21.0	48.6
9	103	55.2	279	10.9	30.3	298	40.0	21.6	134	06.9	33.7	152	23.6	48.7
10	118	57.6	294	10.7	31.6	313	41.0	21.0	149	09.7	33.8	167	26.3	48.7
11	134	00.1	309	10.5	−1 32.8	328	42.0	+7 20.3	164	12.5	−13 33.9	182	28.9	−18 48.8
12	149	02.5	324	10.3	−1 34.1	343	43.0	+7 19.7	179	15.3	−13 34.1	197	31.5	−18 48.8
13	164	05.0	339	10.1	35.4	358	44.0	19.1	194	18.0	34.2	212	34.2	48.8
14	179	07.5	354	09.9	36.7	13	45.0	18.5	209	20.8	34.3	227	36.8	48.9
15	194	09.9	9	09.7	38.0	28	46.0	17.8	224	23.6	34.4	242	39.4	48.9
16	209	12.4	24	09.5	39.3	43	46.9	17.2	239	26.4	34.5	257	42.1	49.0
17	224	14.9	39	09.3	−1 40.6	58	47.9	+7 16.6	254	29.2	−13 34.6	272	44.7	−18 49.0
18	239	17.3	54	09.2	−1 41.9	73	48.9	+7 16.0	269	31.9	−13 34.8	287	47.4	−18 49.1
19	254	19.8	69	09.0	43.2	88	49.9	15.3	284	34.7	34.9	302	50.0	49.1
20	269	22.3	84	08.8	44.4	103	50.9	14.7	299	37.5	35.0	317	52.6	49.2
21	284	24.7	99	08.6	45.7	118	51.9	14.1	314	40.3	35.1	332	55.3	49.2
22	299	27.2	114	08.4	47.0	133	52.9	13.5	329	43.0	35.2	347	57.9	49.3
23	314	29.7	129	08.2	48.3	148	53.9	12.8	344	45.8	35.3	3	00.5	49.3
24	329	32.1	144	08.0	−1 49.6	163	54.9	+7 12.2	359	48.6	−13 35.5	18	03.2	−18 49.4
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 03m.1				LUNA Edad: 12d.4 SD: 16′.0 PMG: 23h 44m PHE: 4h: 58′.5; 12h: 58′.4; 20h: 58′.2 Rº: 51m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	11.8	+12	06.5	16	58.7 68	−22	17.7 80	**60 N**	2 32	3 40	4 29	20 07	8	1 57	98
1	194	12.0		05.7	31	24.5 70		09.7 82	**58**	2 51	3 51	36	19 53	13	2 15	93
2	209	12.1		04.8	45	50.5 70	−22	01.5 84	**56**	3 06	4 01	43	42	16	30	89
3	224	12.3		04.0	60	16.5 71	−21	53.1 84	**54**	19	10	49	32	19	42	86
4	239	12.5		03.2	74	42.6 72		44.7 86	**52**	30	17	54	23	22	2 54	82
5	254	12.6	+12	02.3	89	08.8	−21	36.1	**50**	3 40	4 24	4 59	19 15	24	3 04	80
6	269	12.8	+12	01.5	103	35.1 73	−21	27.4 87	**45**	3 59	4 38	5 09	18 58	29	3 24	76
7	284	12.9	+12	00.7	118	01.5 74		18.6 88	**40**	4 14	49	17	43	34	41	72
8	299	13.1	+11	59.8	132	28.0 75		09.6 90	**35**	27	4 58	25	31	37	3 55	69
9	314	13.2		59.0	146	54.6 76	−21	00.5 91	**30**	37	5 06	31	21	39	4 08	65
10	329	13.4		58.2	161	21.3 77	−20	51.3 92	**20**	4 52	19	42	18 03	44	28	62
11	344	13.5	+11	57.3	175	48.1 78	−20	42.0 93	**10 N**	5 04	5 30	5 51	17 47	48	4 46	58
12	359	13.7	+11	56.5	190	15.0 79	−20	32.6 94	**0**	5 14	5 39	6 00	17 32	52	5 03	54
13	14	13.9		55.7	204	42.0 80		23.0 96	**10 S**	22	47	08	17	55	19	51
14	29	14.0		54.8	219	09.0 80		13.4 96	**20**	29	5 55	17	17 01	59	37	47
15	44	14.2		54.0	233	36.2 82	−20	03.6 98	**30**	35	6 03	27	16 42	65	5 57	43
16	59	14.3		53.2	248	03.5 83	−19	53.7 99	**35**	38	07	33	31	67	6 09	40
17	74	14.5	+11	52.3	262	30.9 84	−19	43.8 99	**40**	5 40	6 12	6 40	16 19	70	6 22	37
18	89	14.6	+11	51.5	276	58.4 85	−19	33.7 101	**45**	5 43	6 17	6 47	16 04	75	6 38	33
19	104	14.8		50.6	291	26.0 86		23.5 102	**50**	46	23	6 56	15 46	79	6 58	28
20	119	15.0		49.8	305	53.6 86		13.2 103	**52**	47	26	7 01	37	82	7 07	26
21	134	15.1		49.0	320	21.4 88	−19	02.8 104	**54**	47	29	05	28	85	17	23
22	149	15.3		48.1	334	49.3 89	−18	52.3 105	**56**	48	32	10	17	88	28	21
23	164	15.4		47.3	349	17.3 90		41.7 106	**58**	49	35	16	15 04	92	42	16
24	179	15.6	+11	46.5	3	45.3 90	−18	31.0 107	**60 S**	5 50	6 39	7 22	14 50	97	7 57	12

UT	ARIES PMG 2h 01m.5		VENUS Mag: −4.0 PMG: 14h 24m			MARTE Mag: +1.8 PMG: 13h 03m			JÚPITER Mag: −2.9 PMG: 0h 01m			SATURNO Mag: +0.3 PMG: 22h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	329	32.1	144	08.0	−1 49.6	163	54.9	+7 12.2	359	48.6	−13 35.5	18	03.2	−18 49.4
1	344	34.6	159	07.8	50.9	178	55.9	11.6	14	51.4	35.6	33	05.8	49.4
2	359	37.0	174	07.7	52.2	193	56.9	10.9	29	54.2	35.7	48	08.4	49.5
3	14	39.5	189	07.5	53.5	208	57.9	10.3	44	56.9	35.8	63	11.1	49.5
4	29	42.0	204	07.3	54.8	223	58.9	09.7	59	59.7	35.9	78	13.7	49.6
5	44	44.4	219	07.1	−1 56.0	238	59.9	+7 09.1	75	02.5	−13 36.0	93	16.4	−18 49.6
6	59	46.9	234	06.9	−1 57.3	254	00.9	+7 08.4	90	05.3	−13 36.2	108	19.0	−18 49.6
7	74	49.4	249	06.7	58.6	269	01.8	07.8	105	08.1	36.3	123	21.6	49.7
8	89	51.8	264	06.5	−1 59.9	284	02.8	07.2	120	10.8	36.4	138	24.3	49.7
9	104	54.3	279	06.4	−2 01.2	299	03.8	06.6	135	13.6	36.5	153	26.9	49.8
10	119	56.8	294	06.2	02.5	314	04.8	05.9	150	16.4	36.6	168	29.5	49.8
11	134	59.2	309	06.0	−2 03.8	329	05.8	+7 05.3	165	19.2	−13 36.7	183	32.2	−18 49.9
12	150	01.7	324	05.8	−2 05.1	344	06.8	+7 04.7	180	22.0	−13 36.9	198	34.8	−18 49.9
13	165	04.2	339	05.6	06.3	359	07.8	04.1	195	24.7	37.0	213	37.4	50.0
14	180	06.6	354	05.4	07.6	14	08.8	03.4	210	27.5	37.1	228	40.1	50.0
15	195	09.1	9	05.2	08.9	29	09.8	02.8	225	30.3	37.2	243	42.7	50.1
16	210	11.5	24	05.0	10.2	44	10.8	02.2	240	33.1	37.3	258	45.3	50.1
17	225	14.0	39	04.9	−2 11.5	59	11.8	+7 01.6	255	35.9	−13 37.4	273	48.0	−18 50.2
18	240	16.5	54	04.7	−2 12.8	74	12.8	+7 00.9	270	38.6	−13 37.6	288	50.6	−18 50.2
19	255	18.9	69	04.5	14.1	89	13.8	+7 00.3	285	41.4	37.7	303	53.2	50.3
20	270	21.4	84	04.3	15.4	104	14.8	+6 59.7	300	44.2	37.8	318	55.9	50.3
21	285	23.9	99	04.1	16.7	119	15.8	59.0	315	47.0	37.9	333	58.5	50.3
22	300	26.3	114	03.9	17.9	134	16.7	58.4	330	49.8	38.0	349	01.2	50.4
23	315	28.8	129	03.7	19.2	149	17.7	57.8	345	52.5	38.1	4	03.8	50.4
24	330	31.3	144	03.6	−2 20.5	164	18.7	+6 57.2	0	55.3	−13 38.2	19	06.4	−18 50.5
Dif	—			−2	−13		+10	−6		−8972	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 12h 02m.8				Edad: 13d.4 SD: 15′.8 PMG: **h **m		PHE: 4h: 58′.0 12h: 57′.8 20h: 57′.6				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	15.6	+11	46.5	3	45.3 92	−18	31.0 108	**60 N**	19 33	20 20	21 26	20 15	6	3 35	96
1	194	15.8		45.6	18	13.5 93		20.2 109	**58**	26	10	21 09	20 06	9	48	91
2	209	15.9		44.8	32	41.8 93	−18	09.3 110	**56**	19	20 01	20 54	19 58	13	3 59	87
3	224	16.1		43.9	47	10.1 93	−17	58.3 110	**54**	14	19 53	42	51	16	4 08	84
4	239	16.2		43.1	61	38.6 95		47.2 111	**52**	09	46	32	45	18	16	82
5	254	16.4	+11	42.3	76	07.2 96	−17	36.1 111	**50**	19 04	19 39	20 22	19 39	20	4 24	79
6	269	16.6	+11	41.4	90	35.8 96	−17	24.8 113	**45**	18 55	19 26	20 04	19 27	24	4 40	73
7	284	16.7		40.6	105	04.6 98		13.5 113	**40**	47	15	19 49	17	28	4 53	69
8	299	16.9		39.7	119	33.5 99	−17	02.1 114	**35**	40	19 06	37	08	32	5 04	66
9	314	17.0		38.9	134	02.4 99	−16	50.6 115	**30**	34	18 58	28	19 00	35	13	63
10	329	17.2		38.0	148	31.5 101		39.0 116	**20**	23	46	13	18 47	39	30	58
11	344	17.4	+11	37.2	163	00.6 101	−16	27.3 117	**10 N**	18 14	18 36	19 01	18 35	44	5 44	54
12	359	17.5	+11	36.4	177	29.9 103	−16	15.6 117	**0**	18 06	18 27	18 52	18 24	48	5 57	50
13	14	17.7		35.5	191	59.2 103	−16	03.8 118	**10 S**	17 58	19	44	12	52	6 10	46
14	29	17.9		34.7	206	28.6 104	−15	51.9 119	**20**	49	12	38	18 00	57	24	42
15	44	18.0		33.8	220	58.2 106		39.9 120	**30**	40	04	32	17 47	61	40	37
16	59	18.2		33.0	235	27.8 106		27.9 120	**35**	34	18 00	29	38	65	49	34
17	74	18.3	+11	32.1	249	57.5 107	−15	15.8 121	**40**	17 28	17 55	18 27	17 29	68	6 59	31
18	89	18.5	+11	31.3	264	27.3 108	−15	03.6 122	**45**	17 21	17 51	18 25	17 19	72	7 11	27
19	104	18.7		30.4	278	57.2 109	−14	51.4 122	**50**	12	45	23	17 05	78	26	22
20	119	18.8		29.6	293	27.2 110		39.1 123	**52**	08	43	22	16 59	80	33	20
21	134	19.0		28.8	307	57.3 111		26.7 124	**54**	17 04	40	21	53	82	40	18
22	149	19.2		27.9	322	27.5 112		14.3 124	**56**	16 59	37	21	45	85	49	14
23	164	19.3		27.1	336	57.7 112	−14	01.8 125	**58**	53	34	20	36	89	7 58	11
24	179	19.5	+11	26.2	351	28.1 114	−13	49.2 126	**60 S**	16 47	17 31	18 19	16 27	92	8 09	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 1h 57m.6		Mag: −4.0 PMG: 14h 24m			Mag: +1.8 PMG: 13h 02m			Mag: −2.9 PMG: 23h 52m			Mag: +0.3 PMG: 22h 40m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	330	31.3	144	03.6	−2 20.5	164	18.7	+6 57.2	0	55.3	−13 38.2	19	06.4	−18 50.5
1	345	33.7	159	03.4	21.8	179	19.7	56.5	15	58.1	38.4	34	09.1	50.5
2	0	36.2	174	03.2	23.1	194	20.7	55.9	31	00.9	38.5	49	11.7	50.6
3	15	38.6	189	03.0	24.4	209	21.7	55.3	46	03.6	38.6	64	14.3	50.6
4	30	41.1	204	02.8	25.7	224	22.7	54.7	61	06.4	38.7	79	17.0	50.7
5	45	43.6	219	02.6	−2 27.0	239	23.7	+6 54.0	76	09.2	−13 38.8	94	19.6	−18 50.7
6	60	46.0	234	02.4	−2 28.2	254	24.7	+6 53.4	91	12.0	−13 38.9	109	22.2	−18 50.8
7	75	48.5	249	02.3	29.5	269	25.7	52.8	106	14.8	39.1	124	24.9	50.8
8	90	51.0	264	02.1	30.8	284	26.7	52.1	121	17.5	39.2	139	27.5	50.9
9	105	53.4	279	01.9	32.1	299	27.7	51.5	136	20.3	39.3	154	30.1	50.9
10	120	55.9	294	01.7	33.4	314	28.7	50.9	151	23.1	39.4	169	32.8	50.9
11	135	58.4	309	01.5	−2 34.7	329	29.7	+6 50.3	166	25.9	−13 39.5	184	35.4	−18 51.0
12	151	00.8	324	01.3	−2 36.0	344	30.7	+6 49.6	181	28.7	−13 39.6	199	38.0	−18 51.0
13	166	03.3	339	01.1	37.2	359	31.7	49.0	196	31.4	39.8	214	40.7	51.1
14	181	05.8	354	01.0	38.5	14	32.7	48.4	211	34.2	39.9	229	43.3	51.1
15	196	08.2	9	00.8	39.8	29	33.6	47.7	226	37.0	40.0	244	45.9	51.2
16	211	10.7	24	00.6	41.1	44	34.6	47.1	241	39.8	40.1	259	48.6	51.2
17	226	13.1	39	00.4	−2 42.4	59	35.6	+6 46.5	256	42.6	−13 40.2	274	51.2	−18 51.3
18	241	15.6	54	00.2	−2 43.7	74	36.6	+6 45.9	271	45.3	−13 40.3	289	53.8	−18 51.3
19	256	18.1	69	00.0	45.0	89	37.6	45.2	286	48.1	40.4	304	56.5	51.4
20	271	20.5	83	59.8	46.3	104	38.6	44.6	301	50.9	40.6	319	59.1	51.4
21	286	23.0	98	59.7	47.5	119	39.6	44.0	316	53.7	40.7	335	01.7	51.5
22	301	25.5	113	59.5	48.8	134	40.6	43.3	331	56.4	40.8	350	04.4	51.5
23	316	27.9	128	59.3	50.1	149	41.6	42.7	346	59.2	40.9	5	07.0	51.5
24	331	30.4	143	59.1	−2 51.4	164	42.6	+6 42.1	2	02.0	−13 41.0	20	09.6	−18 51.6
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 12h 02m.6				Edad: 14d.4 SD: 15′.7 PMG: 0h 35m		PHE: 4h: 57′.4, 12h: 57′.2, 20h: 57′.0 Rº: 47m									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	19.5	+11	26.2	351	28.1	−13	49.2	**60 N**	2 40	3 46	4 34	20 21	4	5 11	91
1	194	19.7		25.4	5	58.5 114		36.6 126	**58**	2 58	3 56	41	15	8	19	87
2	209	19.8		24.5	20	29.0 115		24.0 126	**56**	3 12	4 06	47	11	10	26	84
3	224	20.0		23.7	34	59.6 116	−13	11.2 128	**54**	24	14	52	07	12	32	81
4	239	20.1		22.8	49	30.3 117	−12	58.5 127	**52**	35	21	4 57	20 03	14	38	78
5	254	20.3	+11	22.0	64	01.1 118	−12	45.6 129	**50**	3 44	4 27	5 02	19 59	17	5 43	75
6	269	20.5	+11	21.1	78	32.0 119	−12	32.8 128	**45**	4 02	4 40	5 11	19 51	22	5 53	71
7	284	20.6		20.3	93	02.9 119		19.8 130	**40**	17	4 51	19	45	25	6 02	67
8	299	20.8		19.4	107	33.9 120	−12	06.9 129	**35**	28	5 00	26	40	28	10	63
9	314	21.0		18.6	122	05.1 122	−11	53.8 131	**30**	38	07	32	35	31	16	61
10	329	21.1		17.7	136	36.2 121		40.8 130	**20**	4 53	20	42	26	36	28	55
11	344	21.3	+11	16.9	151	07.5 123	−11	27.7 131	**10 N**	5 05	5 30	5 51	19 19	40	6 38	50
12	359	21.5	+11	16.0	165	38.9 124	−11	14.5 132	**0**	5 14	5 38	5 59	19 12	44	6 47	46
13	14	21.6		15.2	180	10.3 124	−11	01.3 132	**10 S**	21	46	6 07	19 04	50	6 56	42
14	29	21.8		14.3	194	41.8 125	−10	48.1 132	**20**	28	5 53	16	18 57	53	7 06	38
15	44	22.0		13.5	209	13.4 126		34.8 133	**30**	33	6 01	25	48	59	17	32
16	59	22.1		12.6	223	45.0 126		21.5 133	**35**	35	05	31	43	62	23	30
17	74	22.3	+11	11.8	238	16.8 128	−10	08.1 134	**40**	5 38	6 09	6 37	18 37	66	7 30	27
18	89	22.5	+11	10.9	252	48.6 128	−9	54.8 133	**45**	5 40	6 14	6 44	18 31	69	7 38	23
19	104	22.6		10.1	267	20.5 129		41.4 134	**50**	42	19	53	23	74	48	18
20	119	22.8		09.2	281	52.4 129		27.9 135	**52**	43	22	6 56	19	76	53	16
21	134	23.0		08.4	296	24.4 130		14.4 135	**54**	43	24	7 01	15	79	7 58	13
22	149	23.1		07.5	310	56.5 131	−9	00.9 135	**56**	44	27	05	10	82	8 03	11
23	164	23.3		06.6	325	28.7 132	−8	47.4 135	**58**	45	30	11	18 05	85	09	8
24	179	23.5	+11	05.8	340	00.9 132	−8	33.8 136	**60 S**	5 45	6 33	7 17	17 59	89	8 16	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 1h 53m.7		Mag: −4.0 PMG: 14h 24m			Mag: +1.8 PMG: 13h 00m			Mag: −2.9 PMG: 23h 47m			Mag: +0.3 PMG: 22h 35m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	331	30.4	143	59.1	−2 51.4	164	42.6	+6 42.1	2	02.0	−13 41.0	20	09.6	−18 51.6
1	346	32.9	158	58.9	52.7	179	43.6	41.4	17	04.8	41.1	35	12.3	51.6
2	1	35.3	173	58.7	54.0	194	44.6	40.8	32	07.6	41.3	50	14.9	51.7
3	16	37.8	188	58.6	55.3	209	45.6	40.2	47	10.3	41.4	65	17.5	51.7
4	31	40.3	203	58.4	56.5	224	46.6	39.6	62	13.1	41.5	80	20.2	51.8
5	46	42.7	218	58.2	−2 57.8	239	47.6	+6 38.9	77	15.9	−13 41.6	95	22.8	−18 51.8
6	61	45.2	233	58.0	−2 59.1	254	48.6	+6 38.3	92	18.7	−13 41.7	110	25.4	−18 51.9
7	76	47.6	248	57.8	−3 00.4	269	49.6	37.7	107	21.5	41.8	125	28.1	51.9
8	91	50.1	263	57.6	01.7	284	50.5	37.0	122	24.2	41.9	140	30.7	52.0
9	106	52.6	278	57.4	03.0	299	51.5	36.4	137	27.0	42.1	155	33.3	52.0
10	121	55.0	293	57.3	04.3	314	52.5	35.8	152	29.8	42.2	170	36.0	52.0
11	136	57.5	308	57.1	−3 05.5	329	53.5	+6 35.1	167	32.6	−13 42.3	185	38.6	−18 52.1
12	152	00.0	323	56.9	−3 06.8	344	54.5	+6 34.5	182	35.3	−13 42.4	200	41.2	−18 52.1
13	167	02.4	338	56.7	08.1	359	55.5	33.9	197	38.1	42.5	215	43.8	52.2
14	182	04.9	353	56.5	09.4	14	56.5	33.3	212	40.9	42.6	230	46.5	52.2
15	197	07.4	8	56.3	10.7	29	57.5	32.6	227	43.7	42.8	245	49.1	52.3
16	212	09.8	23	56.2	12.0	44	58.5	32.0	242	46.5	42.9	260	51.7	52.3
17	227	12.3	38	56.0	−3 13.2	59	59.5	+6 31.4	257	49.2	−13 43.0	275	54.4	−18 52.4
18	242	14.7	53	55.8	−3 14.5	75	00.5	+6 30.7	272	52.0	−13 43.1	290	57.0	−18 52.4
19	257	17.2	68	55.6	15.8	90	01.5	30.1	287	54.8	43.2	305	59.6	52.5
20	272	19.7	83	55.4	17.1	105	02.5	29.5	302	57.6	43.3	321	02.3	52.5
21	287	22.1	98	55.2	18.4	120	03.5	28.8	318	00.4	43.4	336	04.9	52.5
22	302	24.6	113	55.0	19.7	135	04.5	28.2	333	03.1	43.6	351	07.5	52.6
23	317	27.1	128	54.9	21.0	150	05.5	27.6	348	05.9	43.7	6	10.2	52.6
24	332	29.5	143	54.7	−3 22.2	165	06.5	+6 26.9	3	08.7	−13 43.8	21	12.8	−18 52.7
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 02m.3				LUNA Edad: 15d.4 SD: 15′.5 PMG: 1h 22m PHE 4h: 56′.8; 12h: 56′.5; 20h: 56′.3 Rº: 45m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	23.5	+11	05.8	340	00.9	−8	33.8	**60 N**	19 27	20 14	21 18	20 25	3	6 42	86
1	194	23.7		04.9	354	33.2 133		20.2 136	**58**	20	20 04	21 01	23	6	46	83
2	209	23.8		04.1	9	05.5 133	−8	06.6 136	**56**	14	19 55	20 48	21	9	50	80
3	224	24.0		03.2	23	38.0 135	−7	53.0 136	**54**	09	48	36	19	11	53	77
4	239	24.2		02.4	38	10.5 135		39.3 137	**52**	05	41	26	17	14	56	75
5	254	24.3	+11	01.5	52	43.0 135	−7	25.7 136	**50**	19 00	19 35	20 18	20 16	16	6 58	73
6	269	24.5	+11	00.7	67	15.6 136	−7	12.0 137	**45**	18 51	19 22	20 00	20 13	20	7 04	68
7	284	24.7	+10	59.8	81	48.3 137	−6	58.3 137	**40**	44	12	19 46	10	24	09	64
8	299	24.8		58.9	96	21.0 137		44.5 138	**35**	37	19 03	35	08	27	13	61
9	314	25.0		58.1	110	53.8 138		30.8 137	**30**	32	18 56	25	06	30	17	57
10	329	25.2		57.2	125	26.7 139		17.0 138	**20**	22	44	11	20 02	35	23	53
11	344	25.3	+10	56.4	139	59.6 139	−6	03.2 138	**10 N**	18 13	18 35	19 00	19 59	39	7 28	48
12	359	25.5	+10	55.5	154	32.5 139	−5	49.4 138	**0**	18 06	18 27	18 51	19 56	44	7 33	44
13	14	25.7		54.7	169	05.6 141		35.6 138	**10 S**	17 58	19	44	54	47	38	40
14	29	25.9		53.8	183	38.6 140		21.8 138	**20**	50	12	38	50	52	44	35
15	44	26.0		52.9	198	11.8 142	−5	08.0 138	**30**	41	05	33	47	57	49	31
16	59	26.2		52.1	212	44.9 141	−4	54.2 138	**35**	36	18 01	31	45	60	53	27
17	74	26.4	+10	51.2	227	18.2 143	−4	40.3 139	**40**	17 30	17 57	18 29	19 43	63	7 57	24
18	89	26.5	+10	50.4	241	51.4 142	−4	26.5 138	**45**	17 23	17 53	18 27	19 40	67	8 01	21
19	104	26.7		49.5	256	24.8 144	−4	12.7 138	**50**	15	48	25	37	71	06	17
20	119	26.9		48.6	270	58.1 143	−3	58.8 139	**52**	11	46	25	35	74	09	14
21	134	27.1		47.8	285	31.5 144		44.9 139	**54**	07	43	24	34	76	11	12
22	149	27.2		46.9	300	05.0 145		31.1 138	**56**	17 02	41	24	32	78	14	10
23	164	27.4		46.1	314	38.5 145		17.2 139	**58**	16 57	38	24	30	81	17	7
24	179	27.6	+10	45.2	329	12.1 146	−3	03.4 138	**60 S**	16 52	17 35	18 23	19 28	84	8 21	4

UT	ARIES PMG 1h 49m.7		VENUS Mag: −4.0 PMG: 14h 25m			MARTE Mag: +1.8 PMG: 12h 59m			JÚPITER Mag: −2.9 PMG: 23h 43m			SATURNO Mag: +0.3 PMG: 22h 31m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	332	29.5	143	54.7	−3 22.2	165	06.5	+6 26.9	3	08.7	−13 43.8	21	12.8	−18 52.7
1	347	32.0	158	54.5	23.5	180	07.5	26.3	18	11.5	43.9	36	15.4	52.7
2	2	34.5	173	54.3	24.8	195	08.5	25.7	33	14.2	44.0	51	18.0	52.8
3	17	36.9	188	54.1	26.1	210	09.4	25.0	48	17.0	44.1	66	20.7	52.8
4	32	39.4	203	53.9	27.4	225	10.4	24.4	63	19.8	44.2	81	23.3	52.9
5	47	41.9	218	53.8	−3 28.7	240	11.4	+6 23.8	78	22.6	−13 44.4	96	25.9	−18 52.9
6	62	44.3	233	53.6	−3 29.9	255	12.4	+6 23.2	93	25.4	−13 44.5	111	28.6	−18 52.9
7	77	46.8	248	53.4	31.2	270	13.4	22.5	108	28.1	44.6	126	31.2	53.0
8	92	49.2	263	53.2	32.5	285	14.4	21.9	123	30.9	44.7	141	33.8	53.0
9	107	51.7	278	53.0	33.8	300	15.4	21.3	138	33.7	44.8	156	36.5	53.1
10	122	54.2	293	52.8	35.1	315	16.4	20.6	153	36.5	44.9	171	39.1	53.1
11	137	56.6	308	52.7	−3 36.4	330	17.4	+6 20.0	168	39.2	−13 45.0	186	41.7	−18 53.2
12	152	59.1	323	52.5	−3 37.6	345	18.4	+6 19.4	183	42.0	−13 45.2	201	44.4	−18 53.2
13	168	01.6	338	52.3	38.9	0	19.4	18.7	198	44.8	45.3	216	47.0	53.3
14	183	04.0	353	52.1	40.2	15	20.4	18.1	213	47.6	45.4	231	49.6	53.3
15	198	06.5	8	51.9	41.5	30	21.4	17.5	228	50.4	45.5	246	52.2	53.4
16	213	09.0	23	51.7	42.8	45	22.4	16.8	243	53.1	45.6	261	54.9	53.4
17	228	11.4	38	51.5	−3 44.1	60	23.4	+6 16.2	258	55.9	−13 45.7	276	57.5	−18 53.4
18	243	13.9	53	51.4	−3 45.3	75	24.4	+6 15.6	273	58.7	−13 45.8	292	00.1	−18 53.5
19	258	16.3	68	51.2	46.6	90	25.4	14.9	289	01.5	46.0	307	02.8	53.5
20	273	18.8	83	51.0	47.9	105	26.4	14.3	304	04.2	46.1	322	05.4	53.6
21	288	21.3	98	50.8	49.2	120	27.4	13.7	319	07.0	46.2	337	08.0	53.6
22	303	23.7	113	50.6	50.5	135	28.4	13.0	334	09.8	46.3	352	10.6	53.7
23	318	26.2	128	50.4	51.7	150	29.3	12.4	349	12.6	46.4	7	13.3	53.7
24	333	28.7	143	50.3	−3 53.0	165	30.3	+6 11.8	4	15.4	−13 46.5	22	15.9	−18 53.8
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 16^{d}.4		PHE	4^{h}: 56′.1									
	PMG: 12^{h} 02^{m}.0				SD: 15′.3			12^{h}: 55′.9									
					PMG: 2^{h} 07^{m}			20^{h}: 55′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	27.6	+10	45.2	329	12.1	−3	03.4		**60 N**	2 47	3 51	4 39	20 28	4	8 08	84
1	194	27.8		44.3	343	45.7 146	−2	49.5	139	**58**	3 04	4 01	45	29	6	09	81
2	209	27.9		43.5	358	19.3 146		35.7	138	**56**	17	10	51	30	9	10	77
3	224	28.1		42.6	12	53.0 147		21.8	139	**54**	29	17	4 56	30	12	10	75
4	239	28.3		41.8	27	26.7 147	−2	08.0	138	**52**	39	24	5 01	31	14	11	73
5	254	28.4	+10	40.9	42	00.4 147	−1	54.1	139	**50**	3 47	4 30	5 05	20 32	15	8 11	71
6	269	28.6	+10	40.0	56	34.2 148	−1	40.3	138	**45**	4 05	4 43	5 14	20 33	20	8 12	66
7	284	28.8		39.2	71	08.1 149		26.4	139	**40**	19	4 53	21	34	23	13	62
8	299	29.0		38.3	85	41.9 148	−1	12.6	138	**35**	30	5 01	28	35	26	14	59
9	314	29.1		37.4	100	15.8 149	−0	58.8	138	**30**	39	09	33	36	29	14	56
10	329	29.3		36.6	114	49.7 149		45.0	138	**20**	4 54	20	43	37	34	16	50
11	344	29.5	+10	35.7	129	23.7 150	−0	31.2	138	**10 N**	5 05	5 30	5 51	20 38	38	8 16	47
12	359	29.7	+10	34.8	143	57.7 150	−0	17.4	138	**0**	5 13	5 38	5 59	20 40	42	8 17	43
13	14	29.8		34.0	158	31.7 150	−0	03.6	138	**10 S**	20	45	6 06	41	46	18	39
14	29	30.0		33.1	173	05.8 151	+0	10.1	137	**20**	26	52	14	42	51	19	34
15	44	30.2		32.2	187	39.8 150		23.9	138	**30**	31	5 59	23	44	55	20	29
16	59	30.4		31.4	202	13.9 151		37.6	137	**35**	33	6 03	28	45	58	20	27
17	74	30.5	+10	30.5	216	48.1 152	+0	51.3	137	**40**	5 35	6 06	6 34	20 46	61	8 21	23
18	89	30.7	+10	29.6	231	22.2 151	+1	05.0	137	**45**	5 37	6 11	6 41	20 47	65	8 22	19
19	104	30.9		28.8	245	56.4 152		18.7	137	**50**	38	16	49	48	70	23	15
20	119	31.1		27.9	260	30.6 152		32.3	136	**52**	39	18	52	49	72	23	13
21	134	31.2		27.0	275	04.8 152		46.0	137	**54**	39	20	6 56	50	74	23	12
22	149	31.4		26.2	289	39.1 153	+1	59.6	136	**56**	39	22	7 01	50	77	24	9
23	164	31.6		25.3	304	13.3 152	+2	13.2	136	**58**	40	25	05	51	80	24	7
24	179	31.8	+10	24.4	318	47.6 153	+2	26.8	136	**60 S**	5 40	6 28	7 11	20 52	83	8 25	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 45^{m}.8		PMG: 14^{h} 25^{m}			PMG: 12^{h} 57^{m}			PMG: 23^{h} 39^{m}			PMG: 22^{h} 27^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	333	28.7	143	50.3	−3 53.0	165	30.3	+6 11.8	4	15.4	−13 46.5	22	15.9	−18 53.8
1	348	31.1	158	50.1	54.3	180	31.3	11.1	19	18.1	46.6	37	18.5	53.8
2	3	33.6	173	49.9	55.6	195	32.3	10.5	34	20.9	46.8	52	21.2	53.8
3	18	36.1	188	49.7	56.9	210	33.3	09.9	49	23.7	46.9	67	23.8	53.9
4	33	38.5	203	49.5	58.2	225	34.3	09.2	64	26.5	47.0	82	26.4	53.9
5	48	41.0	218	49.3	−3 59.4	240	35.3	+6 08.6	79	29.2	−13 47.1	97	29.0	−18 54.0
6	63	43.5	233	49.2	−4 00.7	255	36.3	+6 08.0	94	32.0	−13 47.2	112	31.7	−18 54.0
7	78	45.9	248	49.0	02.0	270	37.3	07.3	109	34.8	47.3	127	34.3	54.1
8	93	48.4	263	48.8	03.3	285	38.3	06.7	124	37.6	47.4	142	36.9	54.1
9	108	50.8	278	48.6	04.6	300	39.3	06.1	139	40.4	47.6	157	39.6	54.2
10	123	53.3	293	48.4	05.8	315	40.3	05.4	154	43.1	47.7	172	42.2	54.2
11	138	55.8	308	48.2	−4 07.1	330	41.3	+6 04.8	169	45.9	−13 47.8	187	44.8	−18 54.2
12	153	58.2	323	48.0	−4 08.4	345	42.3	+6 04.2	184	48.7	−13 47.9	202	47.4	−18 54.3
13	169	00.7	338	47.9	09.7	0	43.3	03.5	199	51.5	48.0	217	50.1	54.3
14	184	03.2	353	47.7	11.0	15	44.3	02.9	214	54.2	48.1	232	52.7	54.4
15	199	05.6	8	47.5	12.2	30	45.3	02.3	229	57.0	48.2	247	55.3	54.4
16	214	08.1	23	47.3	13.5	45	46.3	01.6	244	59.8	48.4	262	58.0	54.5
17	229	10.6	38	47.1	−4 14.8	60	47.3	+6 01.0	260	02.6	−13 48.5	278	00.6	−18 54.5
18	244	13.0	53	46.9	−4 16.1	75	48.3	+6 00.4	275	05.3	−13 48.6	293	03.2	−18 54.5
19	259	15.5	68	46.8	17.4	90	49.3	+5 59.7	290	08.1	48.7	308	05.8	54.6
20	274	17.9	83	46.6	18.6	105	50.3	59.1	305	10.9	48.8	323	08.5	54.6
21	289	20.4	98	46.4	19.9	120	51.2	58.5	320	13.7	48.9	338	11.1	54.7
22	304	22.9	113	46.2	21.2	135	52.2	57.8	335	16.5	49.0	353	13.7	54.7
23	319	25.3	128	46.0	22.5	150	53.2	57.2	350	19.2	49.1	8	16.3	54.8
24	334	27.8	143	45.8	−4 23.8	165	54.2	+5 56.5	5	22.0	−13 49.3	23	19.0	−18 54.8
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 17^{d}.4		PHE	4^{h}: 55′.5								
	PMG: 12^{h} 01^{m}.7				SD: 15′.1			12^{h}: 55′.3								
					PMG: 2^{h} 50^{m}			20^{h}: 55′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	31.8	+10	24.4	318	47.6	+2	26.8	**60 N**	19 21	20 07	21 09	20 32	4	9 32	83
1	194	32.0		23.6	333	21.9 153		40.3 135	**58**	15	19 58	20 54	35	8	30	79
2	209	32.1		22.7	347	56.2 153	+2	53.9 136	**56**	09	50	41	39	10	27	77
3	224	32.3		21.8	2	30.5 153	+3	07.4 135	**54**	05	43	30	42	12	25	74
4	239	32.5		21.0	17	04.9 154		20.9 135	**52**	19 00	36	21	45	14	24	71
5	254	32.7	+10	20.1	31	39.2 153	+3	34.3 134	**50**	18 56	19 30	20 13	20 47	16	9 22	69
6	269	32.8	+10	19.2	46	13.6 154	+3	47.8 135	**45**	18 48	19 18	19 56	20 53	20	9 18	65
7	284	33.0		18.3	60	48.0 154	+4	01.2 134	**40**	41	09	42	20 57	24	15	61
8	299	33.2		17.5	75	22.4 154		14.5 133	**35**	35	19 01	32	21 01	27	13	58
9	314	33.4		16.6	89	56.8 154		27.9 134	**30**	29	18 54	23	05	30	10	56
10	329	33.6		15.7	104	31.2 154		41.2 133	**20**	20	43	19 09	11	34	06	51
11	344	33.7	+10	14.9	119	05.6 154	+4	54.5 133	**10 N**	18 12	18 34	18 59	21 16	39	9 03	46
12	359	33.9	+10	14.0	133	40.1 155	+5	07.7 132	**0**	18 05	18 26	18 50	21 22	42	9 00	42
13	14	34.1		13.1	148	14.5 154		21.0 133	**10 S**	17 58	19	44	27	46	8 57	38
14	29	34.3		12.2	162	48.9 154		34.2 132	**20**	50	13	38	33	50	53	34
15	44	34.5		11.4	177	23.4 155	+5	47.3 131	**30**	42	06	34	39	55	49	30
16	59	34.6		10.5	191	57.8 154	+6	00.4 131	**35**	37	18 03	32	43	57	47	27
17	74	34.8	+10	09.6	206	32.3 155	+6	13.5 131	**40**	17 32	17 59	18 31	21 47	61	8 44	24
18	89	35.0	+10	08.7	221	06.7 154	+6	26.6 131	**45**	17 25	17 55	18 29	21 52	65	8 41	21
19	104	35.2		07.9	235	41.1 154		39.6 130	**50**	18	51	28	21 58	69	38	16
20	119	35.3		07.0	250	15.6 155	+6	52.6 130	**52**	14	49	28	22 01	71	36	14
21	134	35.5		06.1	264	50.0 154	+7	05.5 129	**54**	10	47	28	04	73	35	11
22	149	35.7		05.3	279	24.5 155		18.4 129	**56**	06	44	28	07	77	33	9
23	164	35.9		04.4	293	58.9 154		31.3 129	**58**	17 02	42	27	11	79	31	6
24	179	36.1	+10	03.5	308	33.3 154	+7	44.1 128	**60 S**	16 56	17 39	18 28	22 15	83	8 28	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 41^{m}.9		PMG: 14^{h} 25^{m}			PMG: 12^{h} 56^{m}			PMG: 23^{h} 34^{m}			PMG: 22^{h} 23^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	334	27.8	143	45.8	−4 23.8	165	54.2	+5 56.5	5	22.0	−13 49.3	23	19.0	−18 54.8
1	349	30.3	158	45.7	25.0	180	55.2	55.9	20	24.8	49.4	38	21.6	54.9
2	4	32.7	173	45.5	26.3	195	56.2	55.3	35	27.6	49.5	53	24.2	54.9
3	19	35.2	188	45.3	27.6	210	57.2	54.6	50	30.3	49.6	68	26.8	54.9
4	34	37.7	203	45.1	28.9	225	58.2	54.0	65	33.1	49.7	83	29.5	55.0
5	49	40.1	218	44.9	−4 30.1	240	59.2	+5 53.4	80	35.9	−13 49.8	98	32.1	−18 55.0
6	64	42.6	233	44.7	−4 31.4	256	00.2	+5 52.7	95	38.7	−13 49.9	113	34.7	−18 55.1
7	79	45.1	248	44.5	32.7	271	01.2	52.1	110	41.4	50.0	128	37.4	55.1
8	94	47.5	263	44.4	34.0	286	02.2	51.5	125	44.2	50.2	143	40.0	55.2
9	109	50.0	278	44.2	35.3	301	03.2	50.8	140	47.0	50.3	158	42.6	55.2
10	124	52.4	293	44.0	36.5	316	04.2	50.2	155	49.8	50.4	173	45.2	55.2
11	139	54.9	308	43.8	−4 37.8	331	05.2	+5 49.6	170	52.5	−13 50.5	188	47.9	−18 55.3
12	154	57.4	323	43.6	−4 39.1	346	06.2	+5 48.9	185	55.3	−13 50.6	203	50.5	−18 55.3
13	169	59.8	338	43.4	40.4	1	07.2	48.3	200	58.1	50.7	218	53.1	55.4
14	185	02.3	353	43.3	41.6	16	08.2	47.6	216	00.9	50.8	233	55.7	55.4
15	200	04.8	8	43.1	42.9	31	09.2	47.0	231	03.6	51.0	248	58.4	55.5
16	215	07.2	23	42.9	44.2	46	10.2	46.4	246	06.4	51.1	264	01.0	55.5
17	230	09.7	38	42.7	−4 45.5	61	11.2	+5 45.7	261	09.2	−13 51.2	279	03.6	−18 55.6
18	245	12.2	53	42.5	−4 46.7	76	12.2	+5 45.1	276	12.0	−13 51.3	294	06.2	−18 55.6
19	260	14.6	68	42.3	48.0	91	13.2	44.5	291	14.7	51.4	309	08.9	55.6
20	275	17.1	83	42.1	49.3	106	14.1	43.8	306	17.5	51.5	324	11.5	55.7
21	290	19.6	98	42.0	50.6	121	15.1	43.2	321	20.3	51.6	339	14.1	55.7
22	305	22.0	113	41.8	51.9	136	16.1	42.6	336	23.1	51.7	354	16.7	55.8
23	320	24.5	128	41.6	53.1	151	17.1	41.9	351	25.8	51.9	9	19.4	55.8
24	335	26.9	143	41.4	−4 54.4	166	18.1	+5 41.3	6	28.6	−13 52.0	24	22.0	−18 55.9
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 01.m4				LUNA Edad: 18.d4 SD: 15′.0 PMG: 3h 32m PHE: 4h: 55′.0; 12h: 54′.8; 20h: 54′.7 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	36.1	+10	03.5	308	33.3	+7	44.1	**60 N**	2 55	3 57	4 43	20 36	5	10 55	83
1	194	36.3		02.6	323	07.8 155	+7	56.9 128	**58**	3 10	4 06	49	43	8	49	79
2	209	36.4		01.7	337	42.2 154	+8	09.6 127	**56**	23	14	55	49	11	44	76
3	224	36.6	+10	00.9	352	16.6 154		22.3 127	**54**	33	21	4 59	54	14	39	74
4	239	36.8	+10	00.0	6	51.0 154		35.0 127	**52**	43	28	5 04	20 59	17	35	71
5	254	37.0	+9	59.1	21	25.4 154	+8	47.6 126	**50**	3 51	4 33	5 08	21 03	19	10 31	69
6	269	37.2	+9	58.2	35	59.8 154	+9	00.2 126	**45**	4 08	4 45	5 16	21 13	23	10 23	65
7	284	37.3		57.4	50	34.2 154		12.7 125	**40**	21	4 55	23	21	27	16	61
8	299	37.5		56.5	65	08.5 153		25.2 125	**35**	32	5 03	29	28	30	11	57
9	314	37.7		55.6	79	42.9 154		37.6 124	**30**	41	10	34	35	31	10 06	55
10	329	37.9		54.7	94	17.2 153	+9	50.0 124	**20**	4 54	21	43	45	36	9 57	50
11	344	38.1	+9	53.9	108	51.5 153	+10	02.4 124	**10 N**	5 05	5 30	5 51	21 55	40	9 49	47
12	359	38.3	+9	53.0	123	25.8 153	+10	14.7 123	**0**	5 13	5 37	5 58	22 04	43	9 42	43
13	14	38.4		52.1	138	00.1 153		26.9 122	**10 S**	19	44	6 05	13	47	35	39
14	29	38.6		51.2	152	34.4 153		39.1 122	**20**	25	50	13	23	50	27	35
15	44	38.8		50.3	167	08.6 152	+10	51.2 121	**30**	29	5 57	21	34	55	19	30
16	59	39.0		49.5	181	42.9 153	+11	03.3 121	**35**	31	6 00	26	40	58	14	28
17	74	39.2	+9	48.6	196	17.1 152	+11	15.4 121	**40**	5 32	6 04	6 31	22 48	61	9 08	25
18	89	39.4	+9	47.7	210	51.3 152	+11	27.4 120	**45**	5 33	6 07	6 37	22 57	64	9 02	21
19	104	39.5		46.8	225	25.4 151		39.3 119	**50**	34	12	44	23 07	69	8 54	17
20	119	39.7		45.9	239	59.6 152	+11	51.2 119	**52**	34	14	48	12	71	50	16
21	134	39.9		45.1	254	33.7 151	+12	03.0 118	**54**	35	16	52	17	74	46	13
22	149	40.1		44.2	269	07.8 151		14.8 118	**56**	35	18	6 56	24	76	42	11
23	164	40.3		43.3	283	41.9 151		26.5 117	**58**	35	20	7 00	30	80	37	8
24	179	40.5	+9	42.4	298	16.0 151	+12	38.2 117	**60 S**	5 35	6 23	7 05	23 38	83	8 32	4

UT	ARIES PMG 1h 37.m9		VENUS Mag: −4.0 PMG: 14h 25m			MARTE Mag: +1.8 PMG: 12h 54m			JÚPITER Mag: −2.9 PMG: 23h 30m			SATURNO Mag: +0.3 PMG: 22h 19m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	335	26.9	143	41.4	−4 54.4	166	18.1	+5 41.3	6	28.6	−13 52.0	24	22.0	−18 55.9
1	350	29.4	158	41.2	55.7	181	19.1	40.6	21	31.4	52.1	39	24.6	55.9
2	5	31.9	173	41.0	57.0	196	20.1	40.0	36	34.2	52.2	54	27.2	55.9
3	20	34.3	188	40.9	58.2	211	21.1	39.4	51	36.9	52.3	69	29.9	56.0
4	35	36.8	203	40.7	−4 59.5	226	22.1	38.7	66	39.7	52.4	84	32.5	56.0
5	50	39.3	218	40.5	−5 00.8	241	23.1	+5 38.1	81	42.5	−13 52.5	99	35.1	−18 56.1
6	65	41.7	233	40.3	−5 02.1	256	24.1	+5 37.5	96	45.3	−13 52.6	114	37.7	−18 56.1
7	80	44.2	248	40.1	03.3	271	25.1	36.8	111	48.0	52.7	129	40.4	56.2
8	95	46.7	263	39.9	04.6	286	26.1	36.2	126	50.8	52.9	144	43.0	56.2
9	110	49.1	278	39.7	05.9	301	27.1	35.5	141	53.6	53.0	159	45.6	56.2
10	125	51.6	293	39.6	07.2	316	28.1	34.9	156	56.4	53.1	174	48.2	56.3
11	140	54.0	308	39.4	−5 08.4	331	29.1	+5 34.3	171	59.1	−13 53.2	189	50.8	−18 56.3
12	155	56.5	323	39.2	−5 09.7	346	30.1	+5 33.6	187	01.9	−13 53.3	204	53.5	−18 56.4
13	170	59.0	338	39.0	11.0	1	31.1	33.0	202	04.7	53.4	219	56.1	56.4
14	186	01.4	353	38.8	12.2	16	32.1	32.4	217	07.5	53.5	234	58.7	56.5
15	201	03.9	8	38.6	13.5	31	33.1	31.7	232	10.2	53.6	250	01.3	56.5
16	216	06.4	23	38.4	14.8	46	34.1	31.1	247	13.0	53.8	265	04.0	56.5
17	231	08.8	38	38.3	−5 16.1	61	35.1	+5 30.4	262	15.8	−13 53.9	280	06.6	−18 56.6
18	246	11.3	53	38.1	−5 17.3	76	36.1	+5 29.8	277	18.6	−13 54.0	295	09.2	−18 56.6
19	261	13.8	68	37.9	18.6	91	37.1	29.2	292	21.3	54.1	310	11.8	56.7
20	276	16.2	83	37.7	19.9	106	38.0	28.5	307	24.1	54.2	325	14.5	56.7
21	291	18.7	98	37.5	21.2	121	39.0	27.9	322	26.9	54.3	340	17.1	56.8
22	306	21.2	113	37.3	22.4	136	40.0	27.3	337	29.7	54.4	355	19.7	56.8
23	321	23.6	128	37.1	23.7	151	41.0	26.6	352	32.4	54.5	10	22.3	56.8
24	336	26.1	143	37.0	−5 25.0	166	42.0	+5 26.0	7	35.2	−13 54.6	25	24.9	−18 56.9
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 01m.2				LUNA Edad: 19d.4 SD: 14′.9 PMG: 4h 14m PHE: 4h: 54′.6; 12h: 54′.5; 20h: 54′.4 Rº: 44m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	40.5	+9	42.4	298	16.0	+12	38.2	**60 N**	19 15	20 01	21 01	20 41	9	12 18	83
1	194	40.6		41.5	312	50.0 150	+12	49.8 116	**58**	09	19 52	20 47	20 51	13	08	79
2	209	40.8		40.6	327	24.0 150	+13	01.3 115	**56**	04	44	35	21 00	16	12 00	76
3	224	41.0		39.8	341	58.0 150		12.8 115	**54**	19 00	38	25	08	18	11 53	73
4	239	41.2		38.9	356	31.9 149		24.2 114	**52**	18 56	31	16	16	20	46	71
5	254	41.4	+9	38.0	11	05.8 149	+13	35.6 114	**50**	18 52	19 26	20 08	21 22	22	11 40	69
6	269	41.6	+9	37.1	25	39.7 149	+13	46.9 113	**45**	18 44	19 15	19 52	21 36	27	11 28	64
7	284	41.8		36.2	40	13.6 149	+13	58.2 113	**40**	38	19 06	39	48	29	17	61
8	299	41.9		35.3	54	47.4 148	+14	09.4 112	**35**	32	18 58	29	21 58	32	08	58
9	314	42.1		34.5	69	21.2 148		20.5 111	**30**	27	51	20	22 06	35	11 01	55
10	329	42.3		33.6	83	54.9 147		31.5 110	**20**	19	41	19 07	21	39	10 47	51
11	344	42.5	+9	32.7	98	28.6 147	+14	42.5 110	**10 N**	18 11	18 33	18 57	22 35	42	10 36	47
12	359	42.7	+9	31.8	113	02.3 147	+14	53.5 110	**0**	18 04	18 25	18 50	22 47	45	10 25	44
13	14	42.9		30.9	127	36.0 147	+15	04.4 109	**10 S**	17 58	19	44	23 00	48	14	41
14	29	43.1		30.0	142	09.6 146		15.2 108	**20**	51	13	39	13	52	10 02	38
15	44	43.2		29.1	156	43.2 146		25.9 107	**30**	43	07	35	29	55	9 49	33
16	59	43.4		28.3	171	16.7 145		36.6 107	**35**	38	04	33	38	58	42	30
17	74	43.6	+9	27.4	185	50.2 145	+15	47.2 106	**40**	17 33	18 01	18 32	23 49	60	9 33	28
18	89	43.8	+9	26.5	200	23.7 145	+15	57.7 105	**45**	17 28	17 57	18 31	** **	**	9 23	25
19	104	44.0		25.6	214	57.1 144	+16	08.2 105	**50**	21	53	31	** **	**	11	20
20	119	44.2		24.7	229	30.5 144		18.6 104	**52**	17	52	31	** **	**	9 06	18
21	134	44.4		23.8	244	03.9 144		28.9 103	**54**	14	50	31	** **	**	8 59	16
22	149	44.6		22.9	258	37.2 143		39.2 103	**56**	10	48	31	** **	**	53	13
23	164	44.7		22.0	273	10.4 142		49.4 102	**58**	06	46	31	** **	**	45	10
24	179	44.9	+9	21.2	287	43.7 143	+16	59.5 101	**60 S**	17 01	17 44	18 32	** **	**	8 36	7

UT	ARIES PMG 1h 34m.0		VENUS Mag: −4.0 PMG: 14h 26m			MARTE Mag: +1.8 PMG: 12h 52m			JÚPITER Mag: −2.9 PMG: 23h 25m			SATURNO Mag: +0.3 PMG: 22h 14m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	336	26.1	143	37.0	−5 25.0	166	42.0	+5 26.0	7	35.2	−13 54.6	25	24.9	−18 56.9
1	351	28.5	158	36.8	26.2	181	43.0	25.3	22	38.0	54.8	40	27.6	56.9
2	6	31.0	173	36.6	27.5	196	44.0	24.7	37	40.8	54.9	55	30.2	57.0
3	21	33.5	188	36.4	28.8	211	45.0	24.1	52	43.5	55.0	70	32.8	57.0
4	36	35.9	203	36.2	30.1	226	46.0	23.4	67	46.3	55.1	85	35.4	57.0
5	51	38.4	218	36.0	−5 31.3	241	47.0	+5 22.8	82	49.1	−13 55.2	100	38.1	−18 57.1
6	66	40.9	233	35.8	−5 32.6	256	48.0	+5 22.1	97	51.9	−13 55.3	115	40.7	−18 57.1
7	81	43.3	248	35.7	33.9	271	49.0	21.5	112	54.6	55.4	130	43.3	57.2
8	96	45.8	263	35.5	35.1	286	50.0	20.9	127	57.4	55.5	145	45.9	57.2
9	111	48.3	278	35.3	36.4	301	51.0	20.2	143	00.2	55.6	160	48.5	57.3
10	126	50.7	293	35.1	37.7	316	52.0	19.6	158	02.9	55.8	175	51.2	57.3
11	141	53.2	308	34.9	−5 39.0	331	53.0	+5 19.0	173	05.7	−13 55.9	190	53.8	−18 57.3
12	156	55.6	323	34.7	−5 40.2	346	54.0	+5 18.3	188	08.5	−13 56.0	205	56.4	−18 57.4
13	171	58.1	338	34.5	41.5	1	55.0	17.7	203	11.3	56.1	220	59.0	57.4
14	187	00.6	353	34.4	42.8	16	56.0	17.0	218	14.0	56.2	236	01.6	57.5
15	202	03.0	8	34.2	44.0	31	57.0	16.4	233	16.8	56.3	251	04.3	57.5
16	217	05.5	23	34.0	45.3	46	58.0	15.8	248	19.6	56.4	266	06.9	57.6
17	232	08.0	38	33.8	−5 46.6	61	59.0	+5 15.1	263	22.4	−13 56.5	281	09.5	−18 57.6
18	247	10.4	53	33.6	−5 47.8	77	00.0	+5 14.5	278	25.1	−13 56.6	296	12.1	−18 57.6
19	262	12.9	68	33.4	49.1	92	01.0	13.8	293	27.9	56.8	311	14.8	57.7
20	277	15.4	83	33.2	50.4	107	02.0	13.2	308	30.7	56.9	326	17.4	57.7
21	292	17.8	98	33.0	51.6	122	02.9	12.6	323	33.4	57.0	341	20.0	57.8
22	307	20.3	113	32.9	52.9	137	03.9	11.9	338	36.2	57.1	356	22.6	57.8
23	322	22.8	128	32.7	54.2	152	04.9	11.3	353	39.0	57.2	11	25.2	57.8
24	337	25.2	143	32.5	−5 55.5	167	05.9	+5 10.6	8	41.8	−13 57.3	26	27.9	−18 57.9
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.8 PMG: 12h 00m.9				LUNA Edad: 20d.4 SD: 14′.8 PMG: 4h 58m PHE 4h: 54′.3 12h: 54′.3 20h: 54′.3 Rº: 46m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	44.9	+9	21.2	287	43.7	+16	59.5	**60 N**	3 02	4 02	4 48	20 50	13	13 41	83
1	194	45.1		20.3	302	16.8 141	+17	09.5 100	**58**	16	11	54	21 04	17	27	79
2	209	45.3		19.4	316	50.0 142		19.5 100	**56**	28	19	4 59	16	21	16	75
3	224	45.5		18.5	331	23.1 141		29.4 99	**54**	38	25	5 03	26	24	13 06	72
4	239	45.7		17.6	345	56.1 140		39.2 98	**52**	47	31	07	36	26	12 57	69
5	254	45.9	+9	16.7	0	29.1 140	+17	48.9 97	**50**	3 55	4 37	5 11	21 44	29	12 49	67
6	269	46.1	+9	15.8	15	02.1 140	+17	58.6 97	**45**	4 11	4 48	5 18	22 03	31	12 32	63
7	284	46.2		14.9	29	35.0 139	+18	08.2 96	**40**	24	4 57	25	17	35	18	60
8	299	46.4		14.0	44	07.9 139		17.7 95	**35**	34	5 05	31	30	37	12 06	58
9	314	46.6		13.2	58	40.7 138		27.1 94	**30**	42	11	35	22 41	39	11 56	55
10	329	46.8		12.3	73	13.5 138		36.5 94	**20**	4 55	21	44	23 00	42	38	52
11	344	47.0	+9	11.4	87	46.2 137	+18	45.8 93	**10 N**	5 05	5 30	5 51	23 17	45	11 23	49
12	359	47.2	+9	10.5	102	18.9 137	+18	55.0 92	**0**	5 12	5 37	5 58	23 32	48	11 09	46
13	14	47.4		09.6	116	51.5 136	+19	04.1 91	**10 S**	18	43	6 04	23 48	50	10 55	43
14	29	47.6		08.7	131	24.1 136		13.1 90	**20**	23	49	11	** **	**	40	40
15	44	47.8		07.8	145	56.6 135		22.1 90	**30**	27	54	19	** **	**	22	37
16	59	48.0		06.9	160	29.1 135		30.9 88	**35**	28	5 57	23	** **	**	12	35
17	74	48.1	+9	06.0	175	01.5 134	+19	39.7 88	**40**	5 29	6 01	6 28	** **	**	10 01	32
18	89	48.3	+9	05.1	189	33.9 134	+19	48.4 87	**45**	5 30	6 04	6 34	0 01	64	9 48	28
19	104	48.5		04.2	204	06.2 133	+19	57.0 86	**50**	30	08	40	16	68	31	25
20	119	48.7		03.3	218	38.5 133	+20	05.6 86	**52**	30	09	43	23	70	24	23
21	134	48.9		02.4	233	10.7 132		14.0 84	**54**	30	11	47	31	73	15	21
22	149	49.1		01.5	247	42.8 131		22.4 84	**56**	30	13	51	40	75	9 06	18
23	164	49.3	+9	00.7	262	15.0 132		30.6 82	**58**	30	15	55	0 50	79	8 55	15
24	179	49.5	+8	59.8	276	47.0 130	+20	38.8 82	**60 S**	5 29	6 17	6 59	1 01	84	8 43	10

UT	ARIES PMG 1h 30m.1		VENUS Mag: −4.0 PMG: 14h 26m			MARTE Mag: +1.8 PMG: 12h 51m			JÚPITER Mag: −2.9 PMG: 23h 21m			SATURNO Mag: +0.3 PMG: 22h 10m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	337	25.2	143	32.5	−5 55.5	167	05.9	+5 10.6	8	41.8	−13 57.3	26	27.9	−18 57.9
1	352	27.7	158	32.3	56.7	182	06.9	10.0	23	44.5	57.4	41	30.5	57.9
2	7	30.1	173	32.1	58.0	197	07.9	09.4	38	47.3	57.5	56	33.1	58.0
3	22	32.6	188	31.9	−5 59.3	212	08.9	08.7	53	50.1	57.6	71	35.7	58.0
4	37	35.1	203	31.7	−6 00.5	227	09.9	08.1	68	52.8	57.8	86	38.3	58.1
5	52	37.5	218	31.5	−6 01.8	242	10.9	+5 07.4	83	55.6	−13 57.9	101	41.0	−18 58.1
6	67	40.0	233	31.4	−6 03.1	257	11.9	+5 06.8	98	58.4	−13 58.0	116	43.6	−18 58.1
7	82	42.5	248	31.2	04.3	272	12.9	06.2	114	01.2	58.1	131	46.2	58.2
8	97	44.9	263	31.0	05.6	287	13.9	05.5	129	03.9	58.2	146	48.8	58.2
9	112	47.4	278	30.8	06.9	302	14.9	04.9	144	06.7	58.3	161	51.4	58.3
10	127	49.9	293	30.6	08.1	317	15.9	04.2	159	09.5	58.4	176	54.0	58.3
11	142	52.3	308	30.4	−6 09.4	332	16.9	+5 03.6	174	12.2	−13 58.5	191	56.7	−18 58.3
12	157	54.8	323	30.2	−6 10.7	347	17.9	+5 02.9	189	15.0	−13 58.6	206	59.3	−18 58.4
13	172	57.3	338	30.0	11.9	2	18.9	02.3	204	17.8	58.7	222	01.9	58.4
14	187	59.7	353	29.9	13.2	17	19.9	01.7	219	20.6	58.8	237	04.5	58.5
15	203	02.2	8	29.7	14.4	32	20.9	01.0	234	23.3	59.0	252	07.1	58.5
16	218	04.6	23	29.5	15.7	47	21.9	+5 00.4	249	26.1	59.1	267	09.8	58.5
17	233	07.1	38	29.3	−6 17.0	62	22.9	+4 59.7	264	28.9	−13 59.2	282	12.4	−18 58.6
18	248	09.6	53	29.1	−6 18.2	77	23.9	+4 59.1	279	31.6	−13 59.3	297	15.0	−18 58.6
19	263	12.0	68	28.9	19.5	92	24.9	58.5	294	34.4	59.4	312	17.6	58.7
20	278	14.5	83	28.7	20.8	107	25.9	57.8	309	37.2	59.5	327	20.2	58.7
21	293	17.0	98	28.5	22.0	122	26.9	57.2	324	39.9	59.6	342	22.8	58.8
22	308	19.4	113	28.4	23.3	137	27.9	56.5	339	42.7	59.7	357	25.5	58.8
23	323	21.9	128	28.2	24.6	152	28.8	55.9	354	45.5	59.8	12	28.1	58.8
24	338	24.4	143	28.0	−6 25.8	167	29.8	+4 55.3	9	48.3	−13 59.9	27	30.7	−18 58.9
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 21^{d}.4		PHE	4^{h}: 54′.3								
	PMG: 12^{h} 00^{m}.5		SD: 14′.8			12^{h}: 54′.3								
			PMG: 5^{h} 44^{m}			20^{h}: 54′.3								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	179 49.5	+8 59.8	276 47.0		+20 38.8		**60 N**	19 09	19 54	20 53	21 03	23	15 04	78
1	194 49.7	58.9	291 19.0	130	46.9	81	**58**	19 04	46	40	21	28	14 46	73
2	209 49.9	58.0	305 51.0	130	+20 54.9	80	**56**	18 59	39	29	37	30	31	70
3	224 50.1	57.1	320 22.9	129	+21 02.8	79	**54**	55	32	19	21 50	33	18	68
4	239 50.2	56.2	334 54.7	128	10.6	78	**52**	51	27	10	22 02	35	14 06	66
5	254 50.4	+8 55.3	349 26.5	128	+21 18.4	78	**50**	18 48	19 22	20 03	22 13	36	13 56	64
6	269 50.6	+8 54.4	3 58.3	128	+21 26.0	76	**45**	18 41	19 11	19 48	22 34	39	13 35	61
7	284 50.8	53.5	18 30.0	127	33.5	75	**40**	34	19 02	36	22 52	41	18	59
8	299 51.0	52.6	33 01.6	126	41.0	75	**35**	29	18 55	26	23 07	43	13 04	57
9	314 51.2	51.7	47 33.2	126	48.3	73	**30**	25	49	18	20	44	12 51	56
10	329 51.4	50.8	62 04.7	125	+21 55.6	73	**20**	17	39	19 05	23 42	46	30	53
11	344 51.6	+8 49.9	76 36.2	125	+22 02.8	72	**10 N**	18 10	18 31	18 56	** **	**	12 12	50
12	359 51.8	+8 49.0	91 07.6	124	+22 09.8	70	**0**	18 04	18 25	18 49	** **	**	11 55	48
13	14 52.0	48.1	105 38.9	123	16.8	70	**10 S**	17 58	19	43	** **	**	38	46
14	29 52.2	47.2	120 10.2	123	23.7	69	**20**	51	13	39	0 05	52	11 20	44
15	44 52.4	46.3	134 41.5	123	30.4	67	**30**	44	08	36	24	56	10 59	41
16	59 52.6	45.4	149 12.7	122	37.1	67	**35**	40	05	35	36	57	47	39
17	74 52.8	+8 44.5	163 43.8	121	+22 43.7	66	**40**	17 35	18 03	18 34	0 49	60	10 33	38
18	89 52.9	+8 43.6	178 14.9	121	+22 50.1	64	**45**	17 30	18 00	18 34	1 05	62	10 16	36
19	104 53.1	42.7	192 45.9	120	+22 56.5	64	**50**	24	17 56	34	24	66	9 56	32
20	119 53.3	41.8	207 16.9	120	+23 02.8	63	**52**	21	55	34	33	68	47	30
21	134 53.5	40.9	221 47.8	119	08.9	61	**54**	17	53	34	44	70	36	28
22	149 53.7	40.0	236 18.6	118	15.0	61	**56**	14	52	35	1 55	74	24	25
23	164 53.9	39.1	250 49.4	118	20.9	59	**58**	10	50	35	2 09	77	9 10	21
24	179 54.1	+8 38.2	265 20.2	118	+23 26.8	59	**60 S**	17 06	17 48	18 36	2 25	82	8 53	17

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: +1.8		Mag: −2.9		Mag: +0.3	
	1^{h} 26^{m}.1	PMG: 14^{h} 26^{m}		PMG: 12^{h} 49^{m}		PMG: 23^{h} 16^{m}		PMG: 22^{h} 06^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	338 24.4	143 28.0	−6 25.8	167 29.8	+4 55.3	9 48.3	−13 59.9	27 30.7	−18 58.9
1	353 26.8	158 27.8	27.1	182 30.8	54.6	24 51.0	−14 00.1	42 33.3	58.9
2	8 29.3	173 27.6	28.3	197 31.8	54.0	39 53.8	00.2	57 35.9	59.0
3	23 31.7	188 27.4	29.6	212 32.8	53.3	54 56.6	00.3	72 38.6	59.0
4	38 34.2	203 27.2	30.9	227 33.8	52.7	69 59.3	00.4	87 41.2	59.0
5	53 36.7	218 27.0	−6 32.1	242 34.8	+4 52.0	85 02.1	−14 00.5	102 43.8	−18 59.1
6	68 39.1	233 26.8	−6 33.4	257 35.8	+4 51.4	100 04.9	−14 00.6	117 46.4	−18 59.1
7	83 41.6	248 26.6	34.7	272 36.8	50.8	115 07.6	00.7	132 49.0	59.2
8	98 44.1	263 26.5	35.9	287 37.8	50.1	130 10.4	00.8	147 51.6	59.2
9	113 46.5	278 26.3	37.2	302 38.8	49.5	145 13.2	00.9	162 54.3	59.2
10	128 49.0	293 26.1	38.4	317 39.8	48.8	160 16.0	01.0	177 56.9	59.3
11	143 51.5	308 25.9	−6 39.7	332 40.8	+4 48.2	175 18.7	−14 01.1	192 59.5	−18 59.3
12	158 53.9	323 25.7	−6 41.0	347 41.8	+4 47.5	190 21.5	−14 01.3	208 02.1	−18 59.4
13	173 56.4	338 25.5	42.2	2 42.8	46.9	205 24.3	01.4	223 04.7	59.4
14	188 58.9	353 25.3	43.5	17 43.8	46.3	220 27.0	01.5	238 07.3	59.4
15	204 01.3	8 25.1	44.7	32 44.8	45.6	235 29.8	01.6	253 10.0	59.5
16	219 03.8	23 24.9	46.0	47 45.8	45.0	250 32.6	01.7	268 12.6	59.5
17	234 06.2	38 24.7	−6 47.3	62 46.8	+4 44.3	265 35.3	−14 01.8	283 15.2	−18 59.6
18	249 08.7	53 24.6	−6 48.5	77 47.8	+4 43.7	280 38.1	−14 01.9	298 17.8	−18 59.6
19	264 11.2	68 24.4	49.8	92 48.8	43.0	295 40.9	02.0	313 20.4	59.6
20	279 13.6	83 24.2	51.0	107 49.8	42.4	310 43.6	02.1	328 23.0	59.7
21	294 16.1	98 24.0	52.3	122 50.8	41.8	325 46.4	02.2	343 25.6	59.7
22	309 18.6	113 23.8	53.6	137 51.8	41.1	340 49.2	02.3	358 28.3	59.8
23	324 21.0	128 23.6	54.8	152 52.8	40.5	355 51.9	02.4	13 30.9	59.8
24	339 23.5	143 23.4	−6 56.1	167 53.8	+4 39.8	10 54.7	−14 02.6	28 33.5	−18 59.8
Dif	—	−2	−13	+10	−6	+28	−1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 22^{d}.4		PHE	4^{h}: 54′.4									
	PMG: 12^{h} 00^{m}.2				SD: 14′.8			12^{h}: 54′.4									
					PMG: 6^{h} 31^{m}			20^{h}: 54′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	54.1	+8	38.2	265	20.2	+23	26.8		**60 N**	3 08	4 08	4 53	21 26	39	16 22	67
1	194	54.3		37.3	279	50.9 117		32.5	57	**58**	22	16	4 58	21 49	42	15 59	64
2	209	54.5		36.4	294	21.5 116		38.2	57	**56**	33	23	5 03	22 07	44	41	62
3	224	54.7		35.5	308	52.1 116		43.7	55	**54**	43	29	07	23	45	26	60
4	239	54.9		34.6	323	22.6 115		49.1	54	**52**	51	35	10	37	45	12	60
5	254	55.1	+8	33.7	337	53.1 115	+23	54.5	54	**50**	3 59	4 40	5 14	22 49	46	15 00	59
6	269	55.3	+8	32.8	352	23.5 114	+23	59.7	52	**45**	4 14	4 50	5 21	23 13	48	14 36	57
7	284	55.5		31.9	6	53.9 114	+24	04.8	51	**40**	26	4 59	27	33	48	17	56
8	299	55.7		31.0	21	24.2 113		09.8	50	**35**	35	5 06	32	23 50	49	14 01	55
9	314	55.9		30.1	35	54.5 113		14.6	48	**30**	43	12	36	** **	**	13 47	54
10	329	56.1		29.2	50	24.7 112		19.4	48	**20**	4 56	22	44	** **	**	23	53
11	344	56.3	+8	28.3	64	54.9 112	+24	24.0	46	**10 N**	5 05	5 30	5 51	0 02	48	13 02	52
12	359	56.5	+8	27.4	79	25.0 111	+24	28.6	46	**0**	5 12	5 36	5 57	0 20	49	12 43	51
13	14	56.7		26.5	93	55.0 110		33.0	44	**10 S**	17	42	6 03	38	51	24	50
14	29	56.9		25.6	108	25.0 110		37.3	43	**20**	21	47	09	0 57	53	12 04	48
15	44	57.0		24.7	122	55.0 110		41.5	42	**30**	24	52	16	1 20	55	11 40	47
16	59	57.2		23.8	137	24.9 109		45.6	41	**35**	26	55	20	33	57	26	46
17	74	57.4	+8	22.9	151	54.7 108	+24	49.6	40	**40**	5 26	5 58	6 25	1 49	58	11 11	44
18	89	57.6	+8	22.0	166	24.5 108	+24	53.4	38	**45**	5 27	6 00	6 30	2 07	60	10 52	43
19	104	57.8		21.1	180	54.3 108	+24	57.2	38	**50**	26	04	36	30	62	28	41
20	119	58.0		20.2	195	24.0 107	+25	00.8	36	**52**	26	05	39	41	64	17	39
21	134	58.2		19.2	209	53.6 106		04.3	35	**54**	26	06	42	2 54	65	10 04	38
22	149	58.4		18.3	224	23.3 107		07.7	34	**56**	25	08	46	3 09	67	9 49	36
23	164	58.6		17.4	238	52.8 105		10.9	32	**58**	24	10	49	26	70	31	34
24	179	58.8	+8	16.5	253	22.3 105	+25	14.1	32	**60 S**	5 24	6 12	6 54	3 47	74	9 10	30

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 22^{m}.2		PMG: 14^{h} 27^{m}			PMG: 12^{h} 48^{m}			PMG: 23^{h} 12^{m}			PMG: 22^{h} 02^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	339	23.5	143	23.4	−6 56.1	167	53.8	+4 39.8	10	54.7	−14 02.6	28	33.5	−18 59.8
1	354	26.0	158	23.2	57.3	182	54.7	39.2	25	57.5	02.7	43	36.1	59.9
2	9	28.4	173	23.0	58.6	197	55.7	38.5	41	00.2	02.8	58	38.7	−18 59.9
3	24	30.9	188	22.8	−6 59.9	212	56.7	37.9	56	03.0	02.9	73	41.3	−19 00.0
4	39	33.4	203	22.7	−7 01.1	227	57.7	37.3	71	05.8	03.0	88	44.0	00.0
5	54	35.8	218	22.5	−7 02.4	242	58.7	+4 36.6	86	08.5	−14 03.1	103	46.6	−19 00.0
6	69	38.3	233	22.3	−7 03.6	257	59.7	+4 36.0	101	11.3	−14 03.2	118	49.2	−19 00.1
7	84	40.7	248	22.1	04.9	273	00.7	35.3	116	14.1	03.3	133	51.8	00.1
8	99	43.2	263	21.9	06.1	288	01.7	34.7	131	16.9	03.4	148	54.4	00.2
9	114	45.7	278	21.7	07.4	303	02.7	34.0	146	19.6	03.5	163	57.0	00.2
10	129	48.1	293	21.5	08.6	318	03.7	33.4	161	22.4	03.6	178	59.6	00.2
11	144	50.6	308	21.3	−7 09.9	333	04.7	+4 32.8	176	25.2	−14 03.7	194	02.3	−19 00.3
12	159	53.1	323	21.1	−7 11.2	348	05.7	+4 32.1	191	27.9	−14 03.8	209	04.9	−19 00.3
13	174	55.5	338	20.9	12.4	3	06.7	31.5	206	30.7	04.0	224	07.5	00.4
14	189	58.0	353	20.7	13.7	18	07.7	30.8	221	33.5	04.1	239	10.1	00.4
15	205	00.5	8	20.5	14.9	33	08.7	30.2	236	36.2	04.2	254	12.7	00.4
16	220	02.9	23	20.3	16.2	48	09.7	29.5	251	39.0	04.3	269	15.3	00.5
17	235	05.4	38	20.2	−7 17.4	63	10.7	+4 28.9	266	41.7	−14 04.4	284	17.9	−19 00.5
18	250	07.9	53	20.0	−7 18.7	78	11.7	+4 28.2	281	44.5	−14 04.5	299	20.5	−19 00.6
19	265	10.3	68	19.8	19.9	93	12.7	27.6	296	47.3	04.6	314	23.2	00.6
20	280	12.8	83	19.6	21.2	108	13.7	27.0	311	50.0	04.7	329	25.8	00.6
21	295	15.2	98	19.4	22.4	123	14.7	26.3	326	52.8	04.8	344	28.4	00.7
22	310	17.7	113	19.2	23.7	138	15.7	25.7	341	55.6	04.9	359	31.0	00.7
23	325	20.2	128	19.0	25.0	153	16.7	25.0	356	58.3	05.0	14	33.6	00.8
24	340	22.6	143	18.8	−7 26.2	168	17.7	+4 24.4	12	01.1	−14 05.1	29	36.2	−19 00.8
Dif	—			−2	−13		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 23^{d}.4		PHE	4^{h}: 54′.6									
	PMG: 11^{h} 59^{m}.9				SD: 14′.9			12^{h}: 54′.8									
					PMG: 7^{h} 22^{m}			20^{h}: 54′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	179	58.8	+8	16.5	253	22.3	+25	14.1		**60 N**	19 03	19 48	20 46	22 05	62	17 29	47
1	194	59.0		15.6	267	51.8 105		17.1	30	**58**	18 58	40	33	31	60	17 03	49
2	209	59.2		14.7	282	21.2 104		20.0	29	**56**	54	33	22	22 51	59	16 43	49
3	224	59.4		13.8	296	50.6 104		22.8	28	**54**	50	27	13	23 08	58	26	50
4	239	59.6		12.9	311	20.0 104		25.4	26	**52**	47	22	20 05	22	58	16 12	50
5	254	59.8	+8	12.0	325	49.2 102	+25	28.0	26	**50**	18 44	19 17	19 58	23 35	57	15 59	51
6	270	00.0	+8	11.1	340	18.5 103	+25	30.4	24	**45**	18 37	19 07	19 43	** **	**	15 33	51
7	285	00.2		10.2	354	47.7 102		32.7	23	**40**	31	18 59	32	** **	**	15 13	51
8	300	00.4		09.3	9	16.9 102		34.8	21	**35**	27	52	23	** **	**	14 56	51
9	315	00.6		08.4	23	46.0 101		36.9	21	**30**	22	47	15	0 04	49	41	52
10	330	00.8		07.5	38	15.1 101		38.8	19	**20**	15	37	19 04	28	51	14 16	52
11	345	01.0	+8	06.5	52	44.1 100	+25	40.6	18	**10 N**	18 09	18 30	18 55	0 50	50	13 54	52
12	0	01.2	+8	05.6	67	13.2 101	+25	42.2	16	**0**	18 03	18 24	18 48	1 09	52	13 34	52
13	15	01.4		04.7	81	42.1 99		43.8	16	**10 S**	17 58	19	43	29	52	13 14	52
14	30	01.6		03.8	96	11.1 100		45.2	14	**20**	52	14	40	1 50	53	12 52	52
15	45	01.8		02.9	110	40.0 99		46.5	13	**30**	45	09	37	2 15	53	27	52
16	60	02.0		02.0	125	08.8 98		47.6	11	**35**	41	07	36	30	53	12 12	52
17	75	02.2	+8	01.1	139	37.7 99	+25	48.6	10	**40**	17 37	18 04	18 36	2 47	53	11 55	52
18	90	02.4	+8	00.2	154	06.5 98	+25	49.5	9	**45**	17 32	18 02	18 36	3 07	54	11 35	51
19	105	02.6	+7	59.3	168	35.2 97		50.3	8	**50**	27	17 59	36	32	55	11 09	51
20	120	02.8		58.4	183	04.0 98		50.9	6	**52**	24	58	37	45	55	10 56	52
21	135	03.0		57.4	197	32.7 97		51.4	5	**54**	21	57	38	3 59	56	42	51
22	150	03.2		56.5	212	01.4 97		51.8	4	**56**	18	55	38	4 16	56	25	51
23	165	03.4		55.6	226	30.0 96		52.1	3	**58**	14	54	39	4 36	56	10 05	51
24	180	03.6	+7	54.7	240	58.6 96	+25	52.2	1	**60 S**	17 10	17 52	18 41	5 01	57	9 40	50

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 18^{m}.3		PMG: 14^{h} 27^{m}			PMG: 12^{h} 46^{m}			PMG: 23^{h} 08^{m}			PMG: 21^{h} 58^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	340	22.6	143	18.8	−7 26.2	168	17.7	+4 24.4	12	01.1	−14 05.1	29	36.2	−19 00.8
1	355	25.1	158	18.6	27.5	183	18.7	23.7	27	03.9	05.2	44	38.8	00.8
2	10	27.6	173	18.4	28.7	198	19.6	23.1	42	06.6	05.3	59	41.5	00.9
3	25	30.0	188	18.2	30.0	213	20.6	22.4	57	09.4	05.4	74	44.1	00.9
4	40	32.5	203	18.0	31.2	228	21.6	21.8	72	12.2	05.6	89	46.7	01.0
5	55	35.0	218	17.8	−7 32.5	243	22.6	+4 21.2	87	14.9	−14 05.7	104	49.3	−19 01.0
6	70	37.4	233	17.6	−7 33.7	258	23.6	+4 20.5	102	17.7	−14 05.8	119	51.9	−19 01.0
7	85	39.9	248	17.4	35.0	273	24.6	19.9	117	20.5	05.9	134	54.5	01.1
8	100	42.3	263	17.3	36.2	288	25.6	19.2	132	23.2	06.0	149	57.1	01.1
9	115	44.8	278	17.1	37.5	303	26.6	18.6	147	26.0	06.1	164	59.7	01.2
10	130	47.3	293	16.9	38.7	318	27.6	17.9	162	28.8	06.2	180	02.3	01.2
11	145	49.7	308	16.7	−7 40.0	333	28.6	+4 17.3	177	31.5	−14 06.3	195	05.0	−19 01.2
12	160	52.2	323	16.5	−7 41.2	348	29.6	+4 16.6	192	34.3	−14 06.4	210	07.6	−19 01.3
13	175	54.7	338	16.3	42.5	3	30.6	16.0	207	37.0	06.5	225	10.2	01.3
14	190	57.1	353	16.1	43.7	18	31.6	15.3	222	39.8	06.6	240	12.8	01.4
15	205	59.6	8	15.9	45.0	33	32.6	14.7	237	42.6	06.7	255	15.4	01.4
16	221	02.1	23	15.7	46.2	48	33.6	14.1	252	45.3	06.8	270	18.0	01.4
17	236	04.5	38	15.5	−7 47.5	63	34.6	+4 13.4	267	48.1	−14 06.9	285	20.6	−19 01.5
18	251	07.0	53	15.3	−7 48.7	78	35.6	+4 12.8	282	50.9	−14 07.0	300	23.2	−19 01.5
19	266	09.5	68	15.1	50.0	93	36.6	12.1	297	53.6	07.1	315	25.8	01.5
20	281	11.9	83	14.9	51.2	108	37.6	11.5	312	56.4	07.3	330	28.5	01.6
21	296	14.4	98	14.7	52.5	123	38.6	10.8	327	59.2	07.4	345	31.1	01.6
22	311	16.8	113	14.5	53.7	138	39.6	10.2	343	01.9	07.5	0	33.7	01.7
23	326	19.3	128	14.3	55.0	153	40.6	09.5	358	04.7	07.6	15	36.3	01.7
24	341	21.8	143	14.1	−7 56.2	168	41.6	+4 08.9	13	07.4	−14 07.7	30	38.9	−19 01.7
Dif	—			−2	−12		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 24^{d}.4		PHE	4^{h}: 55′.0									
	PMG: 11^{h} 59^{m}.6				SD: 15′.0			12^{h}: 55′.2									
					PMG: 8^{h} 13^{m}			20^{h}: 55′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′								
0	180	03.6	+7	54.7	240	58.6	96	+25	52.2	0	**60 N**	3 15	4 13	4 58	23 07	80	18 16	29
1	195	03.8		53.8	255	27.2	96		52.2	2	**58**	27	20	5 02	31	75	17 52	33
2	210	04.0		52.9	269	55.8	95		52.0	3	**56**	38	27	06	23 50	73	32	36
3	225	04.2		52.0	284	24.3	96		51.7	4	**54**	47	33	10	** **	**	16	38
4	240	04.4		51.1	298	52.9	94		51.3	5	**52**	3 55	38	14	** **	**	17 02	40
5	255	04.6	+7	50.1	313	21.3	95	+25	50.8	7	**50**	4 02	4 43	5 17	** **	**	16 50	41
6	270	04.8	+7	49.2	327	49.8	95	+25	50.1	8	**45**	4 17	4 53	5 23	0 01	56	16 24	44
7	285	05.0		48.3	342	18.3	94		49.3	9	**40**	28	5 01	29	21	56	16 04	46
8	300	05.2		47.4	356	46.7	94		48.4	11	**35**	37	08	33	39	55	15 47	47
9	315	05.4		46.5	11	15.1	94		47.3	12	**30**	45	13	38	0 53	55	33	48
10	330	05.6		45.6	25	43.5	94		46.1	13	**20**	4 56	22	45	1 19	54	15 08	49
11	345	05.8	+7	44.7	40	11.9	94	+25	44.8	15	**10 N**	5 05	5 29	5 51	1 40	54	14 46	51
12	0	06.0	+7	43.8	54	40.2	93	+25	43.3	16	**0**	5 11	5 35	5 56	2 01	52	14 26	53
13	15	06.2		42.8	69	08.6	94		41.7	18	**10 S**	16	41	6 02	21	52	14 06	54
14	30	06.4		41.9	83	36.9	93		39.9	18	**20**	20	45	08	2 43	51	13 44	55
15	45	06.6		41.0	98	05.2	93		38.1	20	**30**	22	50	14	3 08	50	19	57
16	60	06.8		40.1	112	33.5	93		36.1	22	**35**	23	52	18	23	49	13 04	58
17	75	07.0	+7	39.2	127	01.8	93	+25	33.9	23	**40**	5 23	5 55	6 22	3 40	49	12 47	59
18	90	07.2	+7	38.3	141	30.1	93	+25	31.6	24	**45**	5 23	5 57	6 26	4 01	48	12 26	61
19	105	07.4		37.3	155	58.4	93		29.2	25	**50**	22	6 00	32	27	46	12 00	63
20	120	07.6		36.4	170	26.7	93		26.7	27	**52**	22	01	35	40	45	11 48	63
21	135	07.8		35.5	184	54.9	92		24.0	28	**54**	21	02	37	4 55	44	33	65
22	150	08.0		34.6	199	23.2	93		21.2	30	**56**	20	03	40	5 12	42	11 16	66
23	165	08.2		33.7	213	51.4	92		18.2	31	**58**	19	04	44	32	41	10 56	68
24	180	08.4	+7	32.8	228	19.7	93	+25	15.1		**60 S**	5 18	6 06	6 48	5 58	38	10 30	72

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 14^{m}.3		PMG: 14^{h} 27^{m}			PMG: 12^{h} 44^{m}			PMG: 23^{h} 03^{m}			PMG: 21^{h} 54^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	341	21.8	143	14.1	−7 56.2	168	41.6	+4 08.9	13	07.4	−14 07.7	30	38.9	−19 01.7
1	356	24.2	158	13.9	57.4	183	42.6	08.2	28	10.2	07.8	45	41.5	01.8
2	11	26.7	173	13.7	58.7	198	43.6	07.6	43	13.0	07.9	60	44.1	01.8
3	26	29.2	188	13.5	−7 59.9	213	44.5	07.0	58	15.7	08.0	75	46.7	01.9
4	41	31.6	203	13.3	−8 01.2	228	45.5	06.3	73	18.5	08.1	90	49.3	01.9
5	56	34.1	218	13.1	−8 02.4	243	46.5	+4 05.7	88	21.3	−14 08.2	105	51.9	−19 01.9
6	71	36.6	233	12.9	−8 03.7	258	47.5	+4 05.0	103	24.0	−14 08.3	120	54.6	−19 02.0
7	86	39.0	248	12.7	04.9	273	48.5	04.4	118	26.8	08.4	135	57.2	02.0
8	101	41.5	263	12.6	06.2	288	49.5	03.7	133	29.5	08.5	150	59.8	02.0
9	116	44.0	278	12.4	07.4	303	50.5	03.1	148	32.3	08.6	166	02.4	02.1
10	131	46.4	293	12.2	08.7	318	51.5	02.4	163	35.1	08.7	181	05.0	02.1
11	146	48.9	308	12.0	−8 09.9	333	52.5	+4 01.8	178	37.8	−14 08.8	196	07.6	−19 02.2
12	161	51.3	323	11.8	−8 11.1	348	53.5	+4 01.1	193	40.6	−14 08.9	211	10.2	−19 02.2
13	176	53.8	338	11.6	12.4	3	54.5	+4 00.5	208	43.4	09.0	226	12.8	02.2
14	191	56.3	353	11.4	13.6	18	55.5	+3 59.8	223	46.1	09.1	241	15.4	02.3
15	206	58.7	8	11.2	14.9	33	56.5	59.2	238	48.9	09.2	256	18.0	02.3
16	222	01.2	23	11.0	16.1	48	57.5	58.5	253	51.6	09.4	271	20.6	02.4
17	237	03.7	38	10.8	−8 17.4	63	58.5	+3 57.9	268	54.4	−14 09.5	286	23.2	−19 02.4
18	252	06.1	53	10.6	−8 18.6	78	59.5	+3 57.3	283	57.2	−14 09.6	301	25.9	−19 02.4
19	267	08.6	68	10.4	19.8	94	00.5	56.6	298	59.9	09.7	316	28.5	02.5
20	282	11.1	83	10.2	21.1	109	01.5	56.0	314	02.7	09.8	331	31.1	02.5
21	297	13.5	98	10.0	22.3	124	02.5	55.3	329	05.4	09.9	346	33.7	02.5
22	312	16.0	113	09.8	23.6	139	03.5	54.7	344	08.2	10.0	1	36.3	02.6
23	327	18.5	128	09.6	24.8	154	04.5	54.0	359	11.0	10.1	16	38.9	02.6
24	342	20.9	143	09.4	−8 26.0	169	05.5	+3 53.4	14	13.7	−14 10.2	31	41.5	−19 02.7
Dif	—			−2	−12		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 25^{d}.4		PHE	4^{h}: 55′.6									
	PMG: 11^{h} 59^{m}.3				SD: 15′.1			12^{h}: 55′.8									
					PMG: 9^{h} 06^{m}			20^{h}: 56′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	08.4	+7	32.8	228	19.7	+25	15.1		**60 N**	18 57	19 41	20 38	** **	**	18 45	17
1	195	08.6		31.8	242	47.9 92		11.9	32	**58**	53	34	26	** **	**	25	22
2	210	08.9		30.9	257	16.1 92		08.5	34	**56**	49	28	16	** **	**	18 08	26
3	225	09.1		30.0	271	44.4 93		05.1	34	**54**	45	22	08	0 06	70	17 54	29
4	240	09.3		29.1	286	12.6 92	+25	01.4	37	**52**	42	17	20 00	20	68	42	31
5	255	09.5	+7	28.2	300	40.8 92	+24	57.7	37	**50**	18 39	19 13	19 53	0 32	67	17 31	33
6	270	09.7	+7	27.3	315	09.1 93	+24	53.8	39	**45**	18 33	19 03	19 39	0 57	64	17 08	37
7	285	09.9		26.3	329	37.3 92		49.7	41	**40**	28	18 56	29	1 17	62	16 50	39
8	300	10.1		25.4	344	05.6 93		45.6	41	**35**	24	50	20	34	60	34	42
9	315	10.3		24.5	358	33.8 92		41.3	43	**30**	20	44	13	1 48	59	16 21	43
10	330	10.5		23.6	13	02.1 93		36.8	45	**20**	13	36	19 02	2 13	56	15 57	47
11	345	10.7	+7	22.7	27	30.3 92	+24	32.3	45	**10 N**	18 08	18 29	18 54	2 34	54	15 37	50
12	0	10.9	+7	21.7	41	58.6 93	+24	27.6	47	**0**	18 03	18 23	18 48	2 53	53	15 19	52
13	15	11.1		20.8	56	26.9 93		22.7	49	**10 S**	17 57	19	43	3 13	51	15 00	54
14	30	11.3		19.9	70	55.2 93		17.8	49	**20**	52	14	40	34	48	14 39	58
15	45	11.5		19.0	85	23.5 93		12.7	51	**30**	46	10	38	3 58	46	16	60
16	60	11.7		18.1	99	51.8 93		07.4	53	**35**	43	08	38	4 12	45	14 02	62
17	75	11.9	+7	17.1	114	20.1 93	+24	02.1	53	**40**	17 39	18 06	18 38	4 29	43	13 46	64
18	90	12.1	+7	16.2	128	48.4 93	+23	56.6	55	**45**	17 35	18 04	18 38	4 49	40	13 27	67
19	105	12.3		15.3	143	16.8 94		51.0	56	**50**	29	02	39	5 13	37	13 03	71
20	120	12.5		14.4	157	45.1 93		45.2	58	**52**	27	01	40	25	35	12 51	73
21	135	12.7		13.5	172	13.5 94		39.3	59	**54**	24	18 00	41	39	33	38	75
22	150	12.9		12.5	186	41.9 94		33.3	60	**56**	22	17 59	42	5 54	31	22	78
23	165	13.1		11.6	201	10.3 94		27.1	62	**58**	18	58	43	6 13	27	12 04	82
24	180	13.4	+7	10.7	215	38.7 94	+23	20.9	62	**60 S**	17 15	17 57	18 45	6 36	22	11 42	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1^{h} 10^{m}.4		PMG: 14^{h} 28^{m}			PMG: 12^{h} 43^{m}			PMG: 22^{h} 59^{m}			PMG: 21^{h} 49^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	342	20.9	143	09.4	−8 26.0	169	05.5	+3 53.4	14	13.7	−14 10.2	31	41.5	−19 02.7
1	357	23.4	158	09.2	27.3	184	06.5	52.7	29	16.5	10.3	46	44.1	02.7
2	12	25.8	173	09.0	28.5	199	07.4	52.1	44	19.2	10.4	61	46.7	02.7
3	27	28.3	188	08.8	29.8	214	08.4	51.4	59	22.0	10.5	76	49.3	02.8
4	42	30.8	203	08.6	31.0	229	09.4	50.8	74	24.8	10.6	91	51.9	02.8
5	57	33.2	218	08.4	−8 32.2	244	10.4	+3 50.1	89	27.5	−14 10.7	106	54.5	−19 02.8
6	72	35.7	233	08.2	−8 33.5	259	11.4	+3 49.5	104	30.3	−14 10.8	121	57.1	−19 02.9
7	87	38.2	248	08.0	34.7	274	12.4	48.8	119	33.0	10.9	136	59.7	02.9
8	102	40.6	263	07.8	36.0	289	13.4	48.2	134	35.8	11.0	152	02.4	03.0
9	117	43.1	278	07.6	37.2	304	14.4	47.5	149	38.5	11.1	167	05.0	03.0
10	132	45.6	293	07.4	38.4	319	15.4	46.9	164	41.3	11.2	182	07.6	03.0
11	147	48.0	308	07.2	−8 39.7	334	16.4	+3 46.2	179	44.1	−14 11.3	197	10.2	−19 03.1
12	162	50.5	323	07.0	−8 40.9	349	17.4	+3 45.6	194	46.8	−14 11.4	212	12.8	−19 03.1
13	177	52.9	338	06.8	42.1	4	18.4	44.9	209	49.6	11.5	227	15.4	03.1
14	192	55.4	353	06.6	43.4	19	19.4	44.3	224	52.3	11.6	242	18.0	03.2
15	207	57.9	8	06.4	44.6	34	20.4	43.6	239	55.1	11.7	257	20.6	03.2
16	223	00.3	23	06.2	45.9	49	21.4	43.0	254	57.9	11.8	272	23.2	03.3
17	238	02.8	38	06.0	−8 47.1	64	22.4	+3 42.4	270	00.6	−14 11.9	287	25.8	−19 03.3
18	253	05.3	53	05.8	−8 48.3	79	23.4	+3 41.7	285	03.4	−14 12.1	302	28.4	−19 03.3
19	268	07.7	68	05.6	49.6	94	24.4	41.1	300	06.1	12.2	317	31.0	03.4
20	283	10.2	83	05.4	50.8	109	25.4	40.4	315	08.9	12.3	332	33.6	03.4
21	298	12.7	98	05.2	52.0	124	26.4	39.8	330	11.6	12.4	347	36.2	03.4
22	313	15.1	113	05.0	53.3	139	27.4	39.1	345	14.4	12.5	2	38.8	03.5
23	328	17.6	128	04.8	54.5	154	28.4	38.5	0	17.2	12.6	17	41.4	03.5
24	343	20.1	143	04.6	−8 55.7	169	29.4	+3 37.8	15	19.9	−14 12.7	32	44.0	−19 03.6
Dif	—			−2	−12		+10	−6		+28	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 58m.9				LUNA Edad: 26d.4 SD: 15′.3 PMG: 9h 58m PHE: 4h: 56′.2; 12h: 56′.5; 20h: 56′.7 Rº: 52m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	180	13.4	+7	10.7	215	38.7	95 +23	20.9	65	**60 N**	3 21	4 18	5 02	0 27	91	19 02	10
1	195	13.6		09.8	230	07.2	95	14.4	65	**58**	33	25	07	0 46	86	18 47	15
2	210	13.8		08.8	244	35.6	94	07.9	65	**56**	43	31	10	1 03	81	34	18
3	225	14.0		07.9	259	04.1	95 +23	01.2	67	**54**	51	37	14	16	79	23	21
4	240	14.2		07.0	273	32.6	95 +22	54.4	68	**52**	3 59	42	17	28	77	13	24
5	255	14.4	+7	06.1	288	01.1	95 +22	47.5	69	**50**	4 06	4 46	5 20	1 39	74	18 04	26
6	270	14.6	+7	05.2	302	29.7	96 +22	40.5	70	**45**	4 19	4 56	5 26	2 01	70	17 45	31
7	285	14.8		04.2	316	58.2	95	33.3	72	**40**	30	5 03	31	19	66	29	35
8	300	15.0		03.3	331	26.8	96	26.0	73	**35**	39	09	35	34	64	16	37
9	315	15.2		02.4	345	55.4	96	18.5	75	**30**	46	14	39	2 47	61	17 04	40
10	330	15.4		01.5	0	24.1	97	11.0	75	**20**	4 57	23	45	3 09	58	16 44	45
11	345	15.6	+7	00.5	14	52.7	96 +22	03.3	77	**10 N**	5 05	5 29	5 51	3 28	55	16 27	48
12	0	15.8	+6	59.6	29	21.4	97 +21	55.5	78	**0**	5 11	5 35	5 56	3 46	52	16 11	51
13	15	16.0		58.7	43	50.1	97	47.6	79	**10 S**	15	40	6 01	4 04	48	15 54	55
14	30	16.2		57.8	58	18.9	98	39.5	81	**20**	18	44	06	22	46	37	58
15	45	16.5		56.8	72	47.6	97	31.3	82	**30**	20	48	12	44	42	16	62
16	60	16.7		55.9	87	16.4	98	23.0	83	**35**	20	50	15	4 57	39	15 04	65
17	75	16.9	+6	55.0	101	45.2	98 +21	14.6	84	**40**	5 20	5 51	6 19	5 12	36	14 50	68
18	90	17.1	+6	54.1	116	14.1	99 +21	06.1	85	**45**	5 19	5 53	6 23	5 29	33	14 34	71
19	105	17.3		53.1	130	43.0	99 +20	57.4	87	**50**	18	55	28	5 50	29	14	76
20	120	17.5		52.2	145	11.9	99	48.6	88	**52**	17	56	30	6 00	27	14 04	78
21	135	17.7		51.3	159	40.8	99	39.7	89	**54**	16	57	33	12	24	13 53	81
22	150	17.9		50.4	174	09.8	100	30.7	90	**56**	15	58	35	25	21	40	85
23	165	18.1		49.4	188	38.8	100	21.6	91	**58**	14	5 59	38	40	17	26	88
24	180	18.3	+6	48.5	203	07.8	100 +20	12.3	93	**60 S**	5 12	6 00	6 42	6 58	12	13 08	94

UT	ARIES PMG 1h 06m.5		VENUS Mag: −4.1 PMG: 14h 28m			MARTE Mag: +1.8 PMG: 12h 41m			JÚPITER Mag: −2.9 PMG: 22h 54m			SATURNO Mag: +0.3 PMG: 21h 45m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	343	20.1	143	04.6	−8 55.7	169	29.4	+3 37.8	15	19.9	−14 12.7	32	44.0	−19 03.6
1	358	22.5	158	04.4	57.0	184	30.3	37.2	30	22.7	12.8	47	46.6	03.6
2	13	25.0	173	04.1	58.2	199	31.3	36.5	45	25.4	12.9	62	49.2	03.6
3	28	27.4	188	03.9	−8 59.4	214	32.3	35.9	60	28.2	13.0	77	51.8	03.7
4	43	29.9	203	03.7	−9 00.7	229	33.3	35.2	75	30.9	13.1	92	54.5	03.7
5	58	32.4	218	03.5	−9 01.9	244	34.3	+3 34.6	90	33.7	−14 13.2	107	57.1	−19 03.7
6	73	34.8	233	03.3	−9 03.1	259	35.3	+3 33.9	105	36.5	−14 13.3	122	59.7	−19 03.8
7	88	37.3	248	03.1	04.4	274	36.3	33.3	120	39.2	13.4	138	02.3	03.8
8	103	39.8	263	02.9	05.6	289	37.3	32.6	135	42.0	13.5	153	04.9	03.8
9	118	42.2	278	02.7	06.8	304	38.3	32.0	150	44.7	13.6	168	07.5	03.9
10	133	44.7	293	02.5	08.0	319	39.3	31.3	165	47.5	13.7	183	10.1	03.9
11	148	47.2	308	02.3	−9 09.3	334	40.3	+3 30.7	180	50.2	−14 13.8	198	12.7	−19 04.0
12	163	49.6	323	02.1	−9 10.5	349	41.3	+3 30.0	195	53.0	−14 13.9	213	15.3	−19 04.0
13	178	52.1	338	01.9	11.7	4	42.3	29.4	210	55.7	14.0	228	17.9	04.0
14	193	54.6	353	01.7	13.0	19	43.3	28.7	225	58.5	14.1	243	20.5	04.1
15	208	57.0	8	01.5	14.2	34	44.3	28.1	241	01.2	14.2	258	23.1	04.1
16	223	59.5	23	01.3	15.4	49	45.3	27.4	256	04.0	14.3	273	25.7	04.1
17	239	01.9	38	01.1	−9 16.7	64	46.3	+3 26.8	271	06.8	−14 14.4	288	28.3	−19 04.2
18	254	04.4	53	00.9	−9 17.9	79	47.3	+3 26.1	286	09.5	−14 14.5	303	30.9	−19 04.2
19	269	06.9	68	00.7	19.1	94	48.3	25.5	301	12.3	14.6	318	33.5	04.3
20	284	09.3	83	00.5	20.3	109	49.3	24.8	316	15.0	14.7	333	36.1	04.3
21	299	11.8	98	00.3	21.6	124	50.3	24.2	331	17.8	14.8	348	38.7	04.3
22	314	14.3	113	00.1	22.8	139	51.2	23.5	346	20.5	14.9	3	41.3	04.4
23	329	16.7	127	59.8	24.0	154	52.2	22.9	1	23.3	15.0	18	43.9	04.4
24	344	19.2	142	59.6	−9 25.2	169	53.2	+3 22.2	16	26.0	−14 15.1	33	46.5	−19 04.4
Dif	—			−2	−12		+10	−6		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 27ᵈ.4		PHE	4ʰ: 56′.9									
	PMG: 11ʰ 58ᵐ.6				SD: 15′.5			12ʰ: 57′.2									
					PMG: 10ʰ 50ᵐ			20ʰ: 57′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	18.3	+6	48.5	203	07.8	+20	12.3		**60 N**	18 51	19 35	20 30	1 58	94	19 12	7
1	195	18.5		47.6	217	36.8 100	+20	03.0	93	**58**	47	28	19	2 12	90	19 02	10
2	210	18.7		46.6	232	05.9 101	+19	53.5	95	**56**	44	22	10	24	86	18 52	14
3	225	18.9		45.7	246	35.0 101		43.9	96	**54**	41	17	20 02	35	83	44	17
4	240	19.2		44.8	261	04.2 102		34.2	97	**52**	38	12	19 55	45	79	37	19
5	255	19.4	+6	43.9	275	33.4 102	+19	24.3	99	**50**	18 35	19 08	19 48	2 53	78	18 30	22
6	270	19.6	+6	42.9	290	02.6 102	+19	14.4	99	**45**	18 30	18 59	19 35	3 11	73	18 16	26
7	285	19.8		42.0	304	31.8 102	+19	04.4	100	**40**	25	52	25	25	69	18 04	30
8	300	20.0		41.1	319	01.1 103	+18	54.2	102	**35**	21	47	17	38	65	17 53	34
9	315	20.2		40.2	333	30.4 103		43.9	103	**30**	18	42	10	3 48	63	44	37
10	330	20.4		39.2	347	59.7 103		33.6	103	**20**	12	34	19 00	4 07	58	29	41
11	345	20.6	+6	38.3	2	29.1 104	+18	23.1	105	**10 N**	18 07	18 28	18 52	4 23	54	17 15	45
12	0	20.8	+6	37.4	16	58.5 104	+18	12.5	106	**0**	18 02	18 23	18 47	4 38	50	17 02	49
13	15	21.0		36.4	31	28.0 105	+18	01.8	107	**10 S**	17 57	18	43	4 52	47	16 49	53
14	30	21.2		35.5	45	57.4 104	+17	51.0	108	**20**	53	15	40	5 08	43	35	58
15	45	21.5		34.6	60	26.9 105		40.1	109	**30**	47	11	39	26	38	18	63
16	60	21.7		33.6	74	56.5 106		29.1	110	**35**	44	10	39	36	36	16 09	66
17	75	21.9	+6	32.7	89	26.0 105	+17	18.0	111	**40**	17 41	18 08	18 39	5 48	33	15 58	69
18	90	22.1	+6	31.8	103	55.6 106	+17	06.8	112	**45**	17 37	18 06	18 40	6 02	29	15 45	74
19	105	22.3		30.9	118	25.3 107	+16	55.5	113	**50**	32	05	42	19	24	30	78
20	120	22.5		29.9	132	54.9 106		44.1	114	**52**	30	04	43	27	22	22	81
21	135	22.7		29.0	147	24.6 107		32.6	115	**54**	28	03	44	36	19	14	84
22	150	22.9		28.1	161	54.4 108		21.0	116	**56**	25	03	46	46	16	15 05	87
23	165	23.1		27.1	176	24.1 107	+16	09.3	117	**58**	23	02	47	6 57	13	14 54	91
24	180	23.3	+6	26.2	190	53.9 108	+15	57.5	118	**60 S**	17 20	18 01	18 50	7 10	9	14 42	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	1ʰ 02ᵐ.5		PMG: 14ʰ 28ᵐ			PMG: 12ʰ 40ᵐ			PMG: 22ʰ 50ᵐ			PMG: 21ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	344	19.2	142	59.6	−9 25.2	169	53.2	+3 22.2	16	26.0	−14 15.1	33	46.5	−19 04.4
1	359	21.7	157	59.4	26.5	184	54.2	21.6	31	28.8	15.2	48	49.1	04.5
2	14	24.1	172	59.2	27.7	199	55.2	20.9	46	31.5	15.3	63	51.7	04.5
3	29	26.6	187	59.0	28.9	214	56.2	20.3	61	34.3	15.4	78	54.3	04.5
4	44	29.0	202	58.8	30.1	229	57.2	19.6	76	37.0	15.5	93	56.9	04.6
5	59	31.5	217	58.6	−9 31.4	244	58.2	+3 19.0	91	39.8	−14 15.6	108	59.5	−19 04.6
6	74	34.0	232	58.4	−9 32.6	259	59.2	+3 18.3	106	42.6	−14 15.7	124	02.1	−19 04.6
7	89	36.4	247	58.2	33.8	275	00.2	17.7	121	45.3	15.8	139	04.7	04.7
8	104	38.9	262	58.0	35.0	290	01.2	17.0	136	48.1	15.9	154	07.3	04.7
9	119	41.4	277	57.8	36.3	305	02.2	16.4	151	50.8	16.0	169	09.9	04.8
10	134	43.8	292	57.6	37.5	320	03.2	15.7	166	53.6	16.1	184	12.5	04.8
11	149	46.3	307	57.4	−9 38.7	335	04.2	+3 15.1	181	56.3	−14 16.2	199	15.1	−19 04.8
12	164	48.8	322	57.2	−9 39.9	350	05.2	+3 14.4	196	59.1	−14 16.3	214	17.7	−19 04.9
13	179	51.2	337	56.9	41.2	5	06.2	13.8	212	01.8	16.4	229	20.3	04.9
14	194	53.7	352	56.7	42.4	20	07.2	13.1	227	04.6	16.5	244	22.9	04.9
15	209	56.2	7	56.5	43.6	35	08.2	12.5	242	07.3	16.6	259	25.5	05.0
16	224	58.6	22	56.3	44.8	50	09.2	11.8	257	10.1	16.7	274	28.1	05.0
17	240	01.1	37	56.1	−9 46.0	65	10.1	+3 11.2	272	12.8	−14 16.8	289	30.7	−19 05.0
18	255	03.5	52	55.9	−9 47.3	80	11.1	+3 10.5	287	15.6	−14 16.9	304	33.3	−19 05.1
19	270	06.0	67	55.7	48.5	95	12.1	09.9	302	18.3	17.0	319	35.9	05.1
20	285	08.5	82	55.5	49.7	110	13.1	09.2	317	21.1	17.1	334	38.5	05.1
21	300	10.9	97	55.3	50.9	125	14.1	08.6	332	23.8	17.2	349	41.1	05.2
22	315	13.4	112	55.1	52.1	140	15.1	07.9	347	26.6	17.3	4	43.7	05.2
23	330	15.9	127	54.8	53.4	155	16.1	07.3	2	29.3	17.4	19	46.3	05.3
24	345	18.3	142	54.6	−9 54.6	170	17.1	+3 06.6	17	32.1	−14 17.5	34	48.9	−19 05.3
Dif	—			−2	−12		+10	−7		+28	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 58m.3				LUNA Edad: 28d.4 SD: 15′.7 PMG: 11h 40m PHE 4h: 57′.6; 12h: 57′.8; 20h: 58′.0 Rº: 49m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	23.3	+6	26.2	190	53.9	+15	57.5	**60 N**	3 27	4 23	5 07	3 32	95	19 19	5
1	195	23.6		25.3	205	23.8 109		45.6 119	**58**	38	30	11	42	91	12	9
2	210	23.8		24.3	219	53.6 108		33.6 120	**56**	48	36	14	50	88	06	12
3	225	24.0		23.4	234	23.5 109		21.5 121	**54**	3 56	41	17	3 58	84	19 01	14
4	240	24.2		22.5	248	53.4 109	+15	09.3 122	**52**	4 03	45	20	4 04	82	18 56	17
5	255	24.4	+6	21.5	263	23.4 110	+14	57.1 122	**50**	4 09	4 49	5 23	4 11	79	18 52	19
6	270	24.6	+6	20.6	277	53.3 109	+14	44.7 124	**45**	4 22	4 58	5 28	4 24	73	18 42	24
7	285	24.8		19.7	292	23.4 111		32.3 124	**40**	32	5 05	33	34	70	34	28
8	300	25.0		18.7	306	53.4 110		19.8 125	**35**	40	11	36	43	67	27	31
9	315	25.2		17.8	321	23.5 111	+14	07.2 126	**30**	47	16	40	4 51	63	21	34
10	330	25.5		16.9	335	53.6 111	+13	54.5 127	**20**	4 57	23	46	5 05	58	10	40
11	345	25.7	+6	15.9	350	23.7 111	+13	41.7 128	**10 N**	5 05	5 29	5 50	5 17	53	18 00	45
12	0	25.9	+6	15.0	4	53.8 111	+13	28.8 129	**0**	5 10	5 34	5 55	5 28	49	17 51	49
13	15	26.1		14.1	19	24.0 112		15.9 129	**10 S**	14	38	5 59	39	45	42	53
14	30	26.3		13.1	33	54.2 112	+13	02.9 130	**20**	16	42	6 04	5 51	40	33	57
15	45	26.5		12.2	48	24.5 113	+12	49.8 131	**30**	18	45	09	6 04	35	21	64
16	60	26.7		11.3	62	54.7 112		36.6 132	**35**	17	47	12	12	32	15	66
17	75	26.9	+6	10.3	77	25.0 113	+12	23.4 132	**40**	5 17	5 48	6 15	6 21	29	17 07	70
18	90	27.1	+6	09.4	91	55.3 113	+12	10.0 134	**45**	5 16	5 50	6 19	6 31	25	16 59	74
19	105	27.4		08.5	106	25.7 114	+11	56.6 134	**50**	14	51	24	43	20	48	80
20	120	27.6		07.5	120	56.0 113		43.1 135	**52**	13	52	26	49	18	43	82
21	135	27.8		06.6	135	26.4 114		29.6 135	**54**	12	52	28	6 55	15	38	84
22	150	28.0		05.7	149	56.8 114		16.0 136	**56**	10	53	30	7 02	12	32	87
23	165	28.2		04.7	164	27.3 115	+11	02.3 137	**58**	08	54	33	10	9	25	91
24	180	28.4	+6	03.8	178	57.7 114	+10	48.5 138	**60 S**	5 06	5 54	6 36	7 19	5	16 17	95

UT	ARIES PMG 0h 58m.6		VENUS Mag: −4.1 PMG: 14h 29m			MARTE Mag: +1.8 PMG: 12h 38m			JÚPITER Mag: −2.9 PMG: 22h 46m			SATURNO Mag: +0.3 PMG: 21h 37m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	345	18.3	142	54.6	−9 54.6	170	17.1	+3 06.6	17	32.1	−14 17.5	34	48.9	−19 05.3
1	0	20.8	157	54.4	55.8	185	18.1	06.0	32	34.8	17.6	49	51.5	05.3
2	15	23.3	172	54.2	57.0	200	19.1	05.3	47	37.6	17.7	64	54.1	05.4
3	30	25.7	187	54.0	58.2	215	20.1	04.7	62	40.3	17.8	79	56.7	05.4
4	45	28.2	202	53.8	−9 59.4	230	21.1	04.0	77	43.1	17.9	94	59.3	05.4
5	60	30.7	217	53.6	−10 00.7	245	22.1	+3 03.4	92	45.8	−14 18.0	110	01.9	−19 05.5
6	75	33.1	232	53.4	−10 01.9	260	23.1	+3 02.7	107	48.6	−14 18.1	125	04.5	−19 05.5
7	90	35.6	247	53.2	03.1	275	24.1	02.1	122	51.3	18.2	140	07.1	05.5
8	105	38.0	262	52.9	04.3	290	25.1	01.4	137	54.1	18.3	155	09.7	05.6
9	120	40.5	277	52.7	05.5	305	26.1	00.8	152	56.8	18.4	170	12.3	05.6
10	135	43.0	292	52.5	06.7	320	27.1	+3 00.1	167	59.6	18.5	185	14.9	05.6
11	150	45.4	307	52.3	−10 08.0	335	28.1	+2 59.5	183	02.3	−14 18.6	200	17.5	−19 05.7
12	165	47.9	322	52.1	−10 09.2	350	29.0	+2 58.8	198	05.1	−14 18.7	215	20.1	−19 05.7
13	180	50.4	337	51.9	10.4	5	30.0	58.2	213	07.8	18.8	230	22.7	05.7
14	195	52.8	352	51.7	11.6	20	31.0	57.5	228	10.6	18.9	245	25.3	05.8
15	210	55.3	7	51.5	12.8	35	32.0	56.9	243	13.3	19.0	260	27.9	05.8
16	225	57.8	22	51.2	14.0	50	33.0	56.2	258	16.0	19.1	275	30.5	05.9
17	241	00.2	37	51.0	−10 15.2	65	34.0	+2 55.5	273	18.8	−14 19.2	290	33.1	−19 05.9
18	256	02.7	52	50.8	−10 16.5	80	35.0	+2 54.9	288	21.5	−14 19.3	305	35.7	−19 05.9
19	271	05.1	67	50.6	17.7	95	36.0	54.2	303	24.3	19.4	320	38.3	06.0
20	286	07.6	82	50.4	18.9	110	37.0	53.6	318	27.0	19.5	335	40.9	06.0
21	301	10.1	97	50.2	20.1	125	38.0	52.9	333	29.8	19.6	350	43.4	06.0
22	316	12.5	112	50.0	21.3	140	39.0	52.3	348	32.5	19.7	5	46.0	06.1
23	331	15.0	127	49.7	22.5	155	40.0	51.6	3	35.3	19.8	20	48.6	06.1
24	346	17.5	142	49.5	−10 23.7	170	41.0	+2 51.0	18	38.0	−14 19.9	35	51.2	−19 06.1
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 29ᵈ.4		PHE	4ʰ: 58′.2								
	PMG: 11ʰ 57ᵐ.9				SD: 15′.8			12ʰ: 58′.4								
					PMG: 12ʰ 29ᵐ			20ʰ: 58′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	28.4	+6	03.8	178	57.7	+10	48.5	**60 N**	18 45	19 28	20 23	5 07	95	19 24	4
1	195	28.6		02.9	193	28.2 115		34.7 138	**58**	41	22	13	13	91	21	7
2	210	28.8		01.9	207	58.7 115		20.8 139	**56**	38	17	20 04	18	88	18	10
3	225	29.1	+6	01.0	222	29.2 115	+10	06.9 139	**54**	36	12	19 56	22	85	15	13
4	240	29.3	+6	00.0	236	59.7 115	+9	52.8 141	**52**	33	08	50	26	82	13	15
5	255	29.5	+5	59.1	251	30.3 116	+9	38.8 140	**50**	18 31	19 04	19 44	5 30	80	19 11	17
6	270	29.7	+5	58.2	266	00.9 116	+9	24.6 142	**45**	18 26	18 56	19 31	5 37	75	19 06	22
7	285	29.9		57.2	280	31.5 116	+9	10.4 142	**40**	22	49	22	44	70	19 02	26
8	300	30.1		56.3	295	02.1 116	+8	56.1 143	**35**	18	44	14	50	66	18 58	30
9	315	30.3		55.4	309	32.7 116		41.8 143	**30**	15	39	19 08	5 54	64	55	33
10	330	30.5		54.4	324	03.4 117		27.5 143	**20**	10	32	18 58	6 03	58	50	39
11	345	30.8	+5	53.5	338	34.0 116	+8	13.0 145	**10 N**	18 05	18 26	18 51	6 10	53	18 45	43
12	0	31.0	+5	52.6	353	04.7 117	+7	58.5 145	**0**	18 01	18 22	18 46	6 17	48	18 40	48
13	15	31.2		51.6	7	35.4 117		44.0 145	**10 S**	17 57	18	43	24	44	35	53
14	30	31.4		50.7	22	06.1 117		29.4 146	**20**	53	15	41	31	39	30	58
15	45	31.6		49.7	36	36.8 117		14.8 146	**30**	48	12	40	39	34	25	63
16	60	31.8		48.8	51	07.5 117	+7	00.1 147	**35**	46	11	40	44	31	21	67
17	75	32.0	+5	47.9	65	38.2 117	+6	45.4 147	**40**	17 43	18 10	18 41	6 50	27	18 17	71
18	90	32.3	+5	46.9	80	09.0 118	+6	30.6 148	**45**	17 39	18 09	18 43	6 56	23	18 13	75
19	105	32.5		46.0	94	39.7 117		15.8 148	**50**	35	08	45	7 03	18	08	80
20	120	32.7		45.0	109	10.5 118	+6	00.9 149	**52**	34	07	46	07	16	05	83
21	135	32.9		44.1	123	41.2 117	+5	46.0 149	**54**	32	07	48	10	14	18 02	86
22	150	33.1		43.2	138	12.0 118		31.1 149	**56**	29	07	50	14	11	17 59	89
23	165	33.3		42.2	152	42.8 118		16.1 150	**58**	27	06	52	19	8	56	92
24	180	33.5	+5	41.3	167	13.5 117	+5	01.1 150	**60 S**	17 24	18 06	18 54	7 24	5	17 52	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.9			Mag: +0.3		
	0ʰ 54ᵐ.7		PMG: 14ʰ 29ᵐ			PMG: 12ʰ 36ᵐ			PMG: 22ʰ 41ᵐ			PMG: 21ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	346	17.5	142	49.5	−10 23.7	170	41.0	+2 51.0	18	38.0	−14 19.9	35	51.2	−19 06.1
1	1	19.9	157	49.3	24.9	185	42.0	50.3	33	40.8	20.0	50	53.8	06.2
2	16	22.4	172	49.1	26.1	200	43.0	49.7	48	43.5	20.1	65	56.4	06.2
3	31	24.9	187	48.9	27.3	215	44.0	49.0	63	46.3	20.2	80	59.0	06.2
4	46	27.3	202	48.7	28.6	230	45.0	48.4	78	49.0	20.3	96	01.6	06.3
5	61	29.8	217	48.5	−10 29.8	245	45.9	+2 47.7	93	51.7	−14 20.4	111	04.2	−19 06.3
6	76	32.3	232	48.2	−10 31.0	260	46.9	+2 47.1	108	54.5	−14 20.5	126	06.8	−19 06.3
7	91	34.7	247	48.0	32.2	275	47.9	46.4	123	57.2	20.6	141	09.4	06.4
8	106	37.2	262	47.8	33.4	290	48.9	45.8	139	00.0	20.7	156	12.0	06.4
9	121	39.6	277	47.6	34.6	305	49.9	45.1	154	02.7	20.8	171	14.6	06.4
10	136	42.1	292	47.4	35.8	320	50.9	44.5	169	05.5	20.9	186	17.2	06.5
11	151	44.6	307	47.2	−10 37.0	335	51.9	+2 43.8	184	08.2	−14 21.0	201	19.8	−19 06.5
12	166	47.0	322	46.9	−10 38.2	350	52.9	+2 43.2	199	11.0	−14 21.0	216	22.4	−19 06.5
13	181	49.5	337	46.7	39.4	5	53.9	42.5	214	13.7	21.1	231	25.0	06.6
14	196	52.0	352	46.5	40.6	20	54.9	41.9	229	16.4	21.2	246	27.6	06.6
15	211	54.4	7	46.3	41.8	35	55.9	41.2	244	19.2	21.3	261	30.2	06.6
16	226	56.9	22	46.1	43.0	50	56.9	40.5	259	21.9	21.4	276	32.7	06.7
17	241	59.4	37	45.8	−10 44.2	65	57.9	+2 39.9	274	24.7	−14 21.5	291	35.3	−19 06.7
18	257	01.8	52	45.6	−10 45.4	80	58.9	+2 39.2	289	27.4	−14 21.6	306	37.9	−19 06.7
19	272	04.3	67	45.4	46.6	95	59.9	38.6	304	30.2	21.7	321	40.5	06.8
20	287	06.7	82	45.2	47.8	111	00.9	37.9	319	32.9	21.8	336	43.1	06.8
21	302	09.2	97	45.0	49.1	126	01.9	37.3	334	35.7	21.9	351	45.7	06.8
22	317	11.7	112	44.8	50.3	141	02.8	36.6	349	38.4	22.0	6	48.3	06.9
23	332	14.1	127	44.5	51.5	156	03.8	36.0	4	41.1	22.1	21	50.9	06.9
24	347	16.6	142	44.3	−10 52.7	171	04.8	+2 35.3	19	43.9	−14 22.2	36	53.5	−19 06.9
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 1^{d}.0		PHE	4^{h}: 58′.8									
	PMG: 11^{h} 57^{m}.6				SD: 16′.0			12^{h}: 58′.9									
					PMG: 13^{h} 17^{m}			20^{h}: 59′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	33.5	+5	41.3	167	13.5	+5	01.1		**60 N**	3 33	4 28	5 12	6 42	96	19 28	4
1	195	33.8		40.3	181	44.3 118	+4	46.0	151	**58**	44	34	15	44	92	28	8
2	210	34.0		39.4	196	15.1 118		31.0	150	**56**	3 52	40	18	46	88	28	11
3	225	34.2		38.5	210	45.9 118		15.8	152	**54**	4 00	44	21	47	86	28	14
4	240	34.4		37.5	225	16.7 118	+4	00.7	151	**52**	07	49	23	48	84	28	16
5	255	34.6	+5	36.6	239	47.5 118	+3	45.5	152	**50**	4 13	4 53	5 26	6 50	80	19 28	18
6	270	34.8	+5	35.6	254	18.3 118	+3	30.3	152	**45**	4 25	5 01	5 30	6 52	76	19 28	23
7	285	35.0		34.7	268	49.1 118	+3	15.1	152	**40**	34	07	34	54	71	28	27
8	300	35.3		33.8	283	19.8 117	+2	59.8	153	**35**	42	12	38	56	67	28	31
9	315	35.5		32.8	297	50.6 118		44.5	153	**30**	48	17	41	6 58	64	28	34
10	330	35.7		31.9	312	21.4 118		29.2	153	**20**	4 58	24	46	7 01	58	29	39
11	345	35.9	+5	30.9	326	52.2 118	+2	13.9	153	**10 N**	5 05	5 29	5 50	7 03	53	19 28	45
12	0	36.1	+5	30.0	341	22.9 117	+1	58.5	154	**0**	5 09	5 34	5 54	7 05	49	19 28	49
13	15	36.3		29.1	355	53.7 118		43.1	154	**10 S**	13	37	5 58	08	44	28	54
14	30	36.5		28.1	10	24.4 117		27.7	154	**20**	15	40	6 02	10	39	28	59
15	45	36.8		27.2	24	55.2 118	+1	12.3	154	**30**	15	43	07	13	34	28	65
16	60	37.0		26.2	39	25.9 117	+0	56.9	154	**35**	15	44	09	15	30	28	68
17	75	37.2	+5	25.3	53	56.6 117	+0	41.5	154	**40**	5 14	5 45	6 12	7 17	26	19 28	72
18	90	37.4	+5	24.3	68	27.3 117	+0	26.0	155	**45**	5 12	5 46	6 15	7 19	22	19 28	76
19	105	37.6		23.4	82	58.0 117	+0	10.6	154	**50**	10	47	19	21	18	28	81
20	120	37.8		22.5	97	28.7 117	−0	04.9	155	**52**	08	47	21	23	15	28	84
21	135	38.1		21.5	111	59.3 116		20.3	154	**54**	07	48	23	24	13	28	86
22	150	38.3		20.6	126	30.0 117		35.8	155	**56**	05	48	25	25	11	28	89
23	165	38.5		19.6	141	00.6 116	−0	51.3	155	**58**	03	48	27	27	7	28	92
24	180	38.7	+5	18.7	155	31.2 116	−1	06.8	155	**60 S**	5 00	5 48	6 30	7 29	4	19 27	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.8			Mag: +0.4		
	0^{h} 50^{m}.8		PMG: 14^{h} 29^{m}			PMG: 12^{h} 35^{m}			PMG: 22^{h} 37^{m}			PMG: 21^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	347	16.6	142	44.3	−10 52.7	171	04.8	+2 35.3	19	43.9	−14 22.2	36	53.5	−19 06.9
1	2	19.1	157	44.1	53.9	186	05.8	34.7	34	46.6	22.3	51	56.1	07.0
2	17	21.5	172	43.9	55.1	201	06.8	34.0	49	49.4	22.4	66	58.7	07.0
3	32	24.0	187	43.7	56.3	216	07.8	33.4	64	52.1	22.5	82	01.3	07.0
4	47	26.5	202	43.4	57.5	231	08.8	32.7	79	54.8	22.6	97	03.9	07.1
5	62	28.9	217	43.2	−10 58.7	246	09.8	+2 32.1	94	57.6	−14 22.7	112	06.5	−19 07.1
6	77	31.4	232	43.0	−10 59.9	261	10.8	+2 31.4	110	00.3	−14 22.8	127	09.0	−19 07.1
7	92	33.9	247	42.8	−11 01.1	276	11.8	30.8	125	03.1	22.9	142	11.6	07.2
8	107	36.3	262	42.6	02.3	291	12.8	30.1	140	05.8	23.0	157	14.2	07.2
9	122	38.8	277	42.3	03.5	306	13.8	29.4	155	08.5	23.1	172	16.8	07.2
10	137	41.2	292	42.1	04.7	321	14.8	28.8	170	11.3	23.2	187	19.4	07.3
11	152	43.7	307	41.9	−11 05.8	336	15.8	+2 28.1	185	14.0	−14 23.3	202	22.0	−19 07.3
12	167	46.2	322	41.7	−11 07.0	351	16.8	+2 27.5	200	16.8	−14 23.4	217	24.6	−19 07.3
13	182	48.6	337	41.4	08.2	6	17.8	26.8	215	19.5	23.4	232	27.2	07.4
14	197	51.1	352	41.2	09.4	21	18.7	26.2	230	22.2	23.5	247	29.8	07.4
15	212	53.6	7	41.0	10.6	36	19.7	25.5	245	25.0	23.6	262	32.4	07.4
16	227	56.0	22	40.8	11.8	51	20.7	24.9	260	27.7	23.7	277	35.0	07.5
17	242	58.5	37	40.6	−11 13.0	66	21.7	+2 24.2	275	30.5	−14 23.8	292	37.5	−19 07.5
18	258	01.0	52	40.3	−11 14.2	81	22.7	+2 23.6	290	33.2	−14 23.9	307	40.1	−19 07.5
19	273	03.4	67	40.1	15.4	96	23.7	22.9	305	35.9	24.0	322	42.7	07.6
20	288	05.9	82	39.9	16.6	111	24.7	22.3	320	38.7	24.1	337	45.3	07.6
21	303	08.3	97	39.7	17.8	126	25.7	21.6	335	41.4	24.2	352	47.9	07.6
22	318	10.8	112	39.4	19.0	141	26.7	20.9	350	44.2	24.3	7	50.5	07.7
23	333	13.3	127	39.2	20.2	156	27.7	20.3	5	46.9	24.4	22	53.1	07.7
24	348	15.7	142	39.0	−11 21.4	171	28.7	+2 19.6	20	49.6	−14 24.5	37	55.7	−19 07.7
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 2^{d}.0		PHE	4^{h}: 59′.2								
	PMG: 11^{h} 57^{m}.2				SD: 16′.1			12^{h}: 59′.3								
					PMG: 14^{h} 06^{m}			20^{h}: 59′.3								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	38.7	+5	18.7	155	31.2	−1	06.8	**60 N**	18 39	19 22	20 16	8 18	98	19 32	5
1	195	38.9		17.7	170	01.8 116		22.3 155	**58**	36	16	20 06	16	94	36	8
2	210	39.1		16.8	184	32.4 116		37.8 155	**56**	33	11	19 58	14	91	39	12
3	225	39.4		15.8	199	02.9 115	−1	53.2 154	**54**	31	07	51	13	87	42	14
4	240	39.6		14.9	213	33.5 116	−2	08.7 155	**52**	28	19 03	44	12	84	44	17
5	255	39.8	+5	14.0	228	04.0 115	−2	24.2 155	**50**	18 26	18 59	19 39	8 10	82	19 46	20
6	270	40.0	+5	13.0	242	34.4 114	−2	39.7 155	**45**	18 22	18 52	19 27	8 08	76	19 51	25
7	285	40.2		12.1	257	04.9 115	−2	55.1 154	**40**	18	46	18	05	73	55	29
8	300	40.4		11.1	271	35.3 114	−3	10.6 155	**35**	15	41	11	03	69	19 59	33
9	315	40.7		10.2	286	05.7 114		26.0 154	**30**	13	37	19 05	8 02	65	20 02	36
10	330	40.9		09.2	300	36.1 114		41.5 155	**20**	08	30	18 56	7 59	59	08	41
11	345	41.1	+5	08.3	315	06.4 113	−3	56.9 154	**10 N**	18 04	18 25	18 50	7 56	55	20 13	46
12	0	41.3	+5	07.3	329	36.7 113	−4	12.3 154	**0**	18 01	18 21	18 45	7 54	50	20 17	51
13	15	41.5		06.4	344	07.0 113		27.7 154	**10 S**	17 57	18	42	52	45	22	55
14	30	41.7		05.5	358	37.3 113		43.0 153	**20**	53	15	41	49	41	27	60
15	45	42.0		04.5	13	07.5 112	−4	58.4 154	**30**	49	13	41	47	34	33	65
16	60	42.2		03.6	27	37.7 112	−5	13.7 153	**35**	47	12	42	45	32	36	69
17	75	42.4	+5	02.6	42	07.8 111	−5	29.0 153	**40**	17 45	18 12	18 43	7 43	28	20 40	73
18	90	42.6	+5	01.7	56	37.9 111	−5	44.3 153	**45**	17 42	18 11	18 45	7 41	24	20 44	77
19	105	42.8	+5	00.7	71	08.0 111	−5	59.5 152	**50**	38	11	48	39	19	49	83
20	120	43.0	+4	59.8	85	38.0 110	−6	14.7 152	**52**	37	10	50	38	17	52	85
21	135	43.3		58.8	100	08.0 110		29.9 152	**54**	35	10	51	37	14	54	88
22	150	43.5		57.9	114	38.0 110	−6	45.1 152	**56**	33	10	53	36	11	20 57	91
23	165	43.7		56.9	129	07.9 109	−7	00.2 151	**58**	31	10	56	34	8	21 00	95
24	180	43.9	+4	56.0	143	37.8 109	−7	15.3 151	**60 S**	17 29	18 10	18 59	7 33	4	21 04	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.8			Mag: +0.4		
	0^{h} 46^{m}.8		PMG: 14^{h} 30^{m}			PMG: 12^{h} 33^{m}			PMG: 22^{h} 33^{m}			PMG: 21^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	348	15.7	142	39.0	−11 21.4	171	28.7	+2 19.6	20	49.6	−14 24.5	37	55.7	−19 07.7
1	3	18.2	157	38.8	22.6	186	29.7	19.0	35	52.4	24.6	52	58.3	07.8
2	18	20.7	172	38.5	23.8	201	30.7	18.3	50	55.1	24.7	68	00.9	07.8
3	33	23.1	187	38.3	25.0	216	31.7	17.7	65	57.8	24.8	83	03.4	07.8
4	48	25.6	202	38.1	26.1	231	32.6	17.0	81	00.6	24.9	98	06.0	07.9
5	63	28.1	217	37.9	−11 27.3	246	33.6	+2 16.4	96	03.3	−14 25.0	113	08.6	−19 07.9
6	78	30.5	232	37.6	−11 28.5	261	34.6	+2 15.7	111	06.1	−14 25.1	128	11.2	−19 07.9
7	93	33.0	247	37.4	29.7	276	35.6	15.1	126	08.8	25.1	143	13.8	08.0
8	108	35.5	262	37.2	30.9	291	36.6	14.4	141	11.5	25.2	158	16.4	08.0
9	123	37.9	277	37.0	32.1	306	37.6	13.8	156	14.3	25.3	173	19.0	08.0
10	138	40.4	292	36.7	33.3	321	38.6	13.1	171	17.0	25.4	188	21.6	08.1
11	153	42.8	307	36.5	−11 34.5	336	39.6	+2 12.4	186	19.7	−14 25.5	203	24.1	−19 08.1
12	168	45.3	322	36.3	−11 35.7	351	40.6	+2 11.8	201	22.5	−14 25.6	218	26.7	−19 08.1
13	183	47.8	337	36.1	36.8	6	41.6	11.1	216	25.2	25.7	233	29.3	08.2
14	198	50.2	352	35.8	38.0	21	42.6	10.5	231	27.9	25.8	248	31.9	08.2
15	213	52.7	7	35.6	39.2	36	43.6	09.8	246	30.7	25.9	263	34.5	08.2
16	228	55.2	22	35.4	40.4	51	44.6	09.2	261	33.4	26.0	278	37.1	08.3
17	243	57.6	37	35.1	−11 41.6	66	45.6	+2 08.5	276	36.2	−14 26.1	293	39.7	−19 08.3
18	259	00.1	52	34.9	−11 42.8	81	46.6	+2 07.9	291	38.9	−14 26.2	308	42.3	−19 08.3
19	274	02.6	67	34.7	44.0	96	47.5	07.2	306	41.6	26.3	323	44.8	08.4
20	289	05.0	82	34.5	45.1	111	48.5	06.6	321	44.4	26.4	338	47.4	08.4
21	304	07.5	97	34.2	46.3	126	49.5	05.9	336	47.1	26.4	353	50.0	08.4
22	319	10.0	112	34.0	47.5	141	50.5	05.2	351	49.8	26.5	8	52.6	08.5
23	334	12.4	127	33.8	48.7	156	51.5	04.6	6	52.6	26.6	23	55.2	08.5
24	349	14.9	142	33.5	−11 49.9	171	52.5	+2 03.9	21	55.3	−14 26.7	38	57.8	−19 08.5
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 3ᵈ.0		PHE	4ʰ: 59′.4									
	PMG: 11ʰ 56ᵐ.9				SD: 16′.2			12ʰ: 59′.5									
					PMG: 14ʰ 56ᵐ			20ʰ: 59′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	43.9	+4	56.0	143	37.8	−7	15.3		**60 N**	3 39	4 33	5 16	9 56	101	19 37	8
1	195	44.1		55.0	158	07.6 108		30.4	151	**58**	49	39	19	50	96	44	12
2	210	44.4		54.1	172	37.4 108	−7	45.4	150	**56**	3 57	44	22	45	92	51	15
3	225	44.6		53.1	187	07.2 108	−8	00.4	150	**54**	4 04	48	24	40	90	19 56	18
4	240	44.8		52.2	201	36.8 106		15.3	149	**52**	11	52	27	36	86	20 01	21
5	255	45.0	+4	51.2	216	06.5 107	−8	30.2	149	**50**	4 16	4 56	5 29	9 32	84	20 06	23
6	270	45.2	+4	50.3	230	36.1 106	−8	45.1	149	**45**	4 28	5 03	5 33	9 24	78	20 16	29
7	285	45.4		49.4	245	05.7 106	−8	59.9	148	**40**	37	09	36	18	73	24	33
8	300	45.7		48.4	259	35.2 105	−9	14.7	148	**35**	44	14	39	12	70	32	36
9	315	45.9		47.5	274	04.6 104		29.4	147	**30**	50	18	42	9 07	67	38	39
10	330	46.1		46.5	288	34.0 104		44.1	147	**20**	4 58	24	46	8 58	61	49	45
11	345	46.3	+4	45.6	303	03.4 104	−9	58.7	146	**10 N**	5 05	5 29	5 50	8 51	56	20 59	49
12	0	46.5	+4	44.6	317	32.7 103	−10	13.3	146	**0**	5 09	5 33	5 54	8 44	52	21 08	53
13	15	46.8		43.7	332	01.9 102		27.8	145	**10 S**	12	36	5 57	37	47	17	58
14	30	47.0		42.7	346	31.1 102		42.3	145	**20**	13	38	6 00	30	42	27	62
15	45	47.2		41.8	1	00.2 101	−10	56.7	144	**30**	13	40	04	21	38	38	68
16	60	47.4		40.8	15	29.3 101	−11	11.0	143	**35**	12	41	06	17	34	45	71
17	75	47.6	+4	39.9	29	58.3 100	−11	25.3	143	**40**	5 11	5 42	6 09	8 11	31	21 53	74
18	90	47.8	+4	38.9	44	27.3 100	−11	39.5	142	**45**	5 08	5 42	6 12	8 05	27	22 01	79
19	105	48.1		38.0	58	56.2 99	−11	53.7	142	**50**	05	43	15	7 58	21	12	84
20	120	48.3		37.0	73	25.0 98	−12	07.8	141	**52**	04	43	16	55	19	17	86
21	135	48.5		36.1	87	53.8 98		21.8	140	**54**	02	43	18	51	16	22	90
22	150	48.7		35.1	102	22.5 97		35.7	139	**56**	5 00	43	20	47	13	28	93
23	165	48.9		34.2	116	51.2 97	−12	49.6	139	**58**	4 57	43	22	42	10	35	97
24	180	49.2	+4	33.2	131	19.8 96	−13	03.4	138	**60 S**	4 54	5 43	6 24	7 37	7	22 43	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.8			Mag: +0.4		
	0ʰ 42ᵐ.9		PMG: 14ʰ 30ᵐ			PMG: 12ʰ 32ᵐ			PMG: 22ʰ 28ᵐ			PMG: 21ʰ 20ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	349	14.9	142	33.5	−11 49.9	171	52.5	+2 03.9	21	55.3	−14 26.7	38	57.8	−19 08.5
1	4	17.3	157	33.3	51.1	186	53.5	03.3	36	58.0	26.8	54	00.4	08.5
2	19	19.8	172	33.1	52.2	201	54.5	02.6	52	00.8	26.9	69	02.9	08.6
3	34	22.3	187	32.9	53.4	216	55.5	02.0	67	03.5	27.0	84	05.5	08.6
4	49	24.7	202	32.6	54.6	231	56.5	01.3	82	06.2	27.1	99	08.1	08.6
5	64	27.2	217	32.4	−11 55.8	246	57.5	+2 00.7	97	09.0	−14 27.2	114	10.7	−19 08.7
6	79	29.7	232	32.2	−11 57.0	261	58.5	+2 00.0	112	11.7	−14 27.3	129	13.3	−19 08.7
7	94	32.1	247	31.9	58.1	276	59.5	+1 59.4	127	14.4	27.4	144	15.9	08.7
8	109	34.6	262	31.7	−11 59.3	292	00.4	58.7	142	17.1	27.5	159	18.5	08.8
9	124	37.1	277	31.5	−12 00.5	307	01.4	58.0	157	19.9	27.5	174	21.0	08.8
10	139	39.5	292	31.2	01.7	322	02.4	57.4	172	22.6	27.6	189	23.6	08.8
11	154	42.0	307	31.0	−12 02.9	337	03.4	+1 56.7	187	25.3	−14 27.7	204	26.2	−19 08.9
12	169	44.4	322	30.8	−12 04.0	352	04.4	+1 56.1	202	28.1	−14 27.8	219	28.8	−19 08.9
13	184	46.9	337	30.5	05.2	7	05.4	55.4	217	30.8	27.9	234	31.4	08.9
14	199	49.4	352	30.3	06.4	22	06.4	54.8	232	33.5	28.0	249	34.0	09.0
15	214	51.8	7	30.1	07.6	37	07.4	54.1	247	36.3	28.1	264	36.6	09.0
16	229	54.3	22	29.8	08.7	52	08.4	53.5	262	39.0	28.2	279	39.1	09.0
17	244	56.8	37	29.6	−12 09.9	67	09.4	+1 52.8	277	41.7	−14 28.3	294	41.7	−19 09.0
18	259	59.2	52	29.4	−12 11.1	82	10.4	+1 52.1	292	44.5	−14 28.4	309	44.3	−19 09.1
19	275	01.7	67	29.1	12.3	97	11.4	51.5	307	47.2	28.5	324	46.9	09.1
20	290	04.2	82	28.9	13.4	112	12.4	50.8	322	49.9	28.6	339	49.5	09.1
21	305	06.6	97	28.7	14.6	127	13.3	50.2	337	52.6	28.6	354	52.1	09.2
22	320	09.1	112	28.4	15.8	142	14.3	49.5	352	55.4	28.7	9	54.6	09.2
23	335	11.6	127	28.2	17.0	157	15.3	48.9	7	58.1	28.8	24	57.2	09.2
24	350	14.0	142	28.0	−12 18.1	172	16.3	+1 48.2	23	00.8	−14 28.9	39	59.8	−19 09.3
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 4ᵈ.0		PHE	4ʰ: 59′.5								
	PMG: 11ʰ 56ᵐ.5		SD: 16′.2			12ʰ: 59′.5								
			PMG: 15ʰ 48ᵐ			20ʰ: 59′.5								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	180 49.2	+4 33.2	131 19.8	95	−13 03.4	138	**60 N**	18 33	19 16	20 09	11 37	103	19 45	11
1	195 49.4	32.3	145 48.3	95	17.2	136	**58**	30	10	20 00	26	98	19 56	17
2	210 49.6	31.3	160 16.8	94	30.8	136	**56**	28	06	19 52	17	94	20 06	20
3	225 49.8	30.4	174 45.2	94	44.4	136	**54**	26	19 02	45	10	89	14	25
4	240 50.0	29.4	189 13.5	93	−13 57.9	135	**52**	24	18 58	39	11 02	87	22	27
5	255 50.3	+4 28.5	203 41.8	93	−14 11.4	135	**50**	18 22	18 55	19 34	10 56	84	20 29	30
6	270 50.5	+4 27.5	218 10.0	92	−14 24.7	133	**45**	18 18	18 48	19 23	10 42	79	20 45	34
7	285 50.7	26.6	232 38.2	92	38.0	133	**40**	15	42	15	31	75	20 57	38
8	300 50.9	25.6	247 06.2	90	−14 51.2	132	**35**	13	38	08	22	71	21 08	41
9	315 51.1	24.6	261 34.3	91	−15 04.3	131	**30**	10	34	19 02	10 14	68	17	45
10	330 51.4	23.7	276 02.2	89	17.3	130	**20**	06	28	18 54	9 59	63	34	48
11	345 51.6	+4 22.7	290 30.1	89	−15 30.2	129	**10 N**	18 03	18 24	18 48	9 47	59	21 48	53
12	0 51.8	+4 21.8	304 57.9	88	−15 43.0	128	**0**	18 00	18 21	18 45	9 36	54	22 01	57
13	15 52.0	20.8	319 25.6	87	−15 55.8	128	**10 S**	17 57	18	42	24	51	15	60
14	30 52.2	19.9	333 53.3	87	−16 08.4	126	**20**	54	16	41	9 12	47	29	64
15	45 52.5	18.9	348 20.8	85	21.0	126	**30**	50	14	42	8 59	41	46	68
16	60 52.7	18.0	2 48.4	86	33.4	124	**35**	49	14	43	51	39	22 56	70
17	75 52.9	+4 17.0	17 15.8	84	−16 45.8	124	**40**	17 46	18 13	18 45	8 42	35	23 07	74
18	90 53.1	+4 16.1	31 43.2	84	−16 58.0	122	**45**	17 44	18 13	18 47	8 32	31	23 20	78
19	105 53.3	15.1	46 10.5	83	−17 10.2	122	**50**	41	13	51	19	26	36	83
20	120 53.6	14.2	60 37.7	82	22.3	121	**52**	40	14	53	14	23	43	86
21	135 53.8	13.2	75 04.9	82	34.2	119	**54**	39	14	55	07	21	23 52	89
22	150 54.0	12.3	89 32.0	81	46.0	118	**56**	37	14	18 57	8 00	18	** **	**
23	165 54.2	11.3	103 59.0	80	−17 57.8	118	**58**	35	14	19 00	7 52	14	** **	**
24	180 54.4	+4 10.4	118 25.9	79	−18 09.4	116	**60 S**	17 33	18 15	19 03	7 44	9	** **	**

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.1		Mag: +1.8		Mag: −2.8		Mag: +0.4	
	0ʰ 39ᵐ.0	PMG: 14ʰ 30ᵐ		PMG: 12ʰ 30ᵐ		PMG: 22ʰ 24ᵐ		PMG: 21ʰ 16ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	350 14.0	142 28.0	−12 18.1	172 16.3	+1 48.2	23 00.8	−14 28.9	39 59.8	−19 09.3
1	5 16.5	157 27.7	19.3	187 17.3	47.6	38 03.6	29.0	55 02.4	09.3
2	20 18.9	172 27.5	20.5	202 18.3	46.9	53 06.3	29.1	70 05.0	09.3
3	35 21.4	187 27.3	21.7	217 19.3	46.2	68 09.0	29.2	85 07.5	09.4
4	50 23.9	202 27.0	22.8	232 20.3	45.6	83 11.7	29.3	100 10.1	09.4
5	65 26.3	217 26.8	−12 24.0	247 21.3	+1 44.9	98 14.5	−14 29.4	115 12.7	−19 09.4
6	80 28.8	232 26.6	−12 25.2	262 22.3	+1 44.3	113 17.2	−14 29.5	130 15.3	−19 09.4
7	95 31.3	247 26.3	26.3	277 23.3	43.6	128 19.9	29.5	145 17.9	09.5
8	110 33.7	262 26.1	27.5	292 24.3	43.0	143 22.7	29.6	160 20.5	09.5
9	125 36.2	277 25.9	28.7	307 25.2	42.3	158 25.4	29.7	175 23.0	09.5
10	140 38.7	292 25.6	29.8	322 26.2	41.7	173 28.1	29.8	190 25.6	09.6
11	155 41.1	307 25.4	−12 31.0	337 27.2	+1 41.0	188 30.8	−14 29.9	205 28.2	−19 09.6
12	170 43.6	322 25.1	−12 32.2	352 28.2	+1 40.3	203 33.6	−14 30.0	220 30.8	−19 09.6
13	185 46.0	337 24.9	33.3	7 29.2	39.7	218 36.3	30.1	235 33.4	09.7
14	200 48.5	352 24.7	34.5	22 30.2	39.0	233 39.0	30.2	250 35.9	09.7
15	215 51.0	7 24.4	35.7	37 31.2	38.4	248 41.7	30.3	265 38.5	09.7
16	230 53.4	22 24.2	36.8	52 32.2	37.7	263 44.5	30.3	280 41.1	09.8
17	245 55.9	37 24.0	−12 38.0	67 33.2	+1 37.1	278 47.2	−14 30.4	295 43.7	−19 09.8
18	260 58.4	52 23.7	−12 39.2	82 34.2	+1 36.4	293 49.9	−14 30.5	310 46.3	−19 09.8
19	276 00.8	67 23.5	40.3	97 35.2	35.7	308 52.6	30.6	325 48.8	09.8
20	291 03.3	82 23.2	41.5	112 36.2	35.1	323 55.4	30.7	340 51.4	09.9
21	306 05.8	97 23.0	42.7	127 37.1	34.4	338 58.1	30.8	355 54.0	09.9
22	321 08.2	112 22.8	43.8	142 38.1	33.8	354 00.8	30.9	10 56.6	09.9
23	336 10.7	127 22.5	45.0	157 39.1	33.1	9 03.5	31.0	25 59.2	10.0
24	351 13.2	142 22.3	−12 46.1	172 40.1	+1 32.5	24 06.3	−14 31.1	41 01.7	−19 10.0
Dif	—	−2	−12	+10	−7	+27	−1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 5^{d}.0		PHE	4^{h}: 59′.5									
	PMG: 11^{h} 56^{m}.2				SD: 16′.2			12^{h}: 59′.4									
					PMG: 16^{h} 44^{m}			20^{h}: 59′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	54.4	+4	10.4	118	25.9	79	−18 09.4	115	**60 N**	3 45	4 38	5 21	13 20	100	19 56	21
1	195	54.7		09.4	132	52.8			20.9	**58**	3 54	43	24	13 04	95	20 13	26
2	210	54.9		08.4	147	19.6	78		32.3	114 **56**	4 02	48	26	12 51	90	26	31
3	225	55.1		07.5	161	46.3	77		43.6	113 **54**	08	52	28	39	87	39	34
4	240	55.3		06.5	176	13.0	77	−18 54.8		112 **52**	14	56	30	29	84	49	37
5	255	55.5	+4	05.6	190	39.5	75	−19 05.8		110 **50**	4 20	4 59	5 32	12 20	82	20 59	39
6	270	55.8	+4	04.6	205	06.0	75	−19 16.8		110 **45**	4 30	5 06	5 35	12 01	77	21 19	43
7	285	56.0		03.7	219	32.5	75		27.6	108 **40**	39	11	38	11 46	73	35	47
8	300	56.2		02.7	233	58.8	73		38.3	107 **35**	45	15	41	33	70	21 49	49
9	315	56.4		01.8	248	25.1	73		48.9	106 **30**	51	19	43	22	68	22 02	50
10	330	56.6	+4	00.8	262	51.3	72	−19 59.3		104 **20**	4 59	25	47	11 02	65	22	54
11	345	56.9	+3	59.9	277	17.4	71	−20 09.6		103 **10 N**	5 04	5 29	5 50	10 46	61	22 41	56
12	0	57.1	+3	58.9	291	43.5	71	−20 19.8		102 **0**	5 08	5 32	5 53	10 30	58	22 58	59
13	15	57.3		57.9	306	09.5	70		29.9	101 **10 S**	10	35	56	10 15	55	23 15	61
14	30	57.5		57.0	320	35.4	69		39.9	100 **20**	11	37	5 59	9 59	51	33	64
15	45	57.8		56.0	335	01.3	69		49.7	98 **30**	10	38	6 02	40	48	23 54	67
16	60	58.0		55.1	349	27.1	68	−20 59.4		97 **35**	09	38	04	30	44	** **	**
17	75	58.2	+3	54.1	3	52.8	67	−21 08.9		95 **40**	5 07	5 39	6 06	9 17	42	** **	**
18	90	58.4	+3	53.2	18	18.4	66	−21 18.3		94 **45**	5 05	5 39	6 08	9 03	38	** **	**
19	105	58.6		52.2	32	44.0	66		27.6	93 **50**	5 01	38	11	8 45	34	** **	**
20	120	58.9		51.3	47	09.5	65		36.7	91 **52**	4 59	38	12	37	32	** **	**
21	135	59.1		50.3	61	34.9	64		45.8	91 **54**	57	38	13	28	29	** **	**
22	150	59.3		49.3	76	00.3	64	−21 54.6		88 **56**	54	38	15	18	25	0 01	93
23	165	59.5		48.4	90	25.6	63	−22 03.3		87 **58**	52	37	16	8 06	22	12	97
24	180	59.7	+3	47.4	104	50.8	62	−22 11.9		86 **60 S**	4 48	5 37	6 18	7 53	16	0 25	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.8			Mag: −2.8			Mag: +0.4		
	0^{h} 35^{m}.0		PMG: 14^{h} 31^{m}			PMG: 12^{h} 29^{m}			PMG: 22^{h} 20^{m}			PMG: 21^{h} 12^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	351	13.2	142	22.3	−12 46.1	172	40.1	+1 32.5	24	06.3	−14 31.1	41	01.7	−19 10.0
1	6	15.6	157	22.0	47.3	187	41.1	31.8	39	09.0	31.1	56	04.3	10.0
2	21	18.1	172	21.8	48.5	202	42.1	31.2	54	11.7	31.2	71	06.9	10.1
3	36	20.5	187	21.6	49.6	217	43.1	30.5	69	14.4	31.3	86	09.5	10.1
4	51	23.0	202	21.3	50.8	232	44.1	29.8	84	17.2	31.4	101	12.1	10.1
5	66	25.5	217	21.1	−12 51.9	247	45.1	+1 29.2	99	19.9	−14 31.5	116	14.6	−19 10.1
6	81	27.9	232	20.8	−12 53.1	262	46.1	+1 28.5	114	22.6	−14 31.6	131	17.2	−19 10.2
7	96	30.4	247	20.6	54.3	277	47.1	27.9	129	25.3	31.7	146	19.8	10.2
8	111	32.9	262	20.4	55.4	292	48.1	27.2	144	28.0	31.8	161	22.4	10.2
9	126	35.3	277	20.1	56.6	307	49.0	26.6	159	30.8	31.8	176	25.0	10.3
10	141	37.8	292	19.9	57.7	322	50.0	25.9	174	33.5	31.9	191	27.5	10.3
11	156	40.3	307	19.6	−12 58.9	337	51.0	+1 25.2	189	36.2	−14 32.0	206	30.1	−19 10.3
12	171	42.7	322	19.4	−13 00.1	352	52.0	+1 24.6	204	38.9	−14 32.1	221	32.7	−19 10.3
13	186	45.2	337	19.1	01.2	7	53.0	23.9	219	41.7	32.2	236	35.3	10.4
14	201	47.7	352	18.9	02.4	22	54.0	23.3	234	44.4	32.3	251	37.8	10.4
15	216	50.1	7	18.7	03.5	37	55.0	22.6	249	47.1	32.4	266	40.4	10.4
16	231	52.6	22	18.4	04.7	52	56.0	22.0	264	49.8	32.5	281	43.0	10.5
17	246	55.0	37	18.2	−13 05.8	67	57.0	+1 21.3	279	52.5	−14 32.5	296	45.6	−19 10.5
18	261	57.5	52	17.9	−13 07.0	82	58.0	+1 20.6	294	55.3	−14 32.6	311	48.2	−19 10.5
19	277	00.0	67	17.7	08.1	97	59.0	20.0	309	58.0	32.7	326	50.7	10.6
20	292	02.4	82	17.4	09.3	112	59.9	19.3	325	00.7	32.8	341	53.3	10.6
21	307	04.9	97	17.2	10.4	128	00.9	18.7	340	03.4	32.9	356	55.9	10.6
22	322	07.4	112	16.9	11.6	143	01.9	18.0	355	06.1	33.0	11	58.5	10.6
23	337	09.8	127	16.7	12.7	158	02.9	17.4	10	08.9	33.1	27	01.0	10.7
24	352	12.3	142	16.5	−13 13.9	173	03.9	+1 16.7	25	11.6	−14 33.1	42	03.6	−19 10.7
Dif	—			−2	−12		+10	−7		+27	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 6ᵈ.0		PHE	4ʰ: 59′.3								
	PMG: 11ʰ 55ᵐ.8		SD: 16′.2			12ʰ: 59′.3								
			PMG: 17ʰ 42ᵐ			20ʰ: 59′.2								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 59.7	+3 47.4	104 50.8	62	−22 11.9	85	**60 N**	18 27	19 09	20 01	15 00	87	20 17	39
1	196 00.0	46.5	119 16.0	61	20.4	82	**58**	25	04	19 53	14 39	82	39	44
2	211 00.2	45.5	133 41.1	60	28.6	82	**56**	23	19 00	46	21	79	20 57	47
3	226 00.4	44.6	148 06.1	60	36.8	82	**54**	21	18 57	40	14 06	77	21 13	48
4	241 00.6	43.6	162 31.1	60	44.8	80	**52**	19	53	34	13 53	75	26	50
5	256 00.9	+3 42.6	176 56.0	59	−22 52.6	78	**50**	18 18	18 50	19 29	13 42	73	21 38	51
6	271 01.1	+3 41.7	191 20.9	59	−23 00.3	77	**45**	18 15	18 44	19 19	13 18	71	22 02	53
7	286 01.3	40.7	205 45.7	58	07.9	76	**40**	12	39	11	12 59	69	22	54
8	301 01.5	39.8	220 10.4	57	15.3	74	**35**	10	35	05	43	67	38	56
9	316 01.7	38.8	234 35.1	57	22.5	72	**30**	08	32	19 00	30	66	22 52	57
10	331 02.0	37.9	248 59.7	56	29.6	71	**20**	04	26	18 52	12 07	63	23 16	59
11	346 02.2	+3 36.9	263 24.3	56	−23 36.6	70	**10 N**	18 02	18 23	18 47	11 47	61	23 37	60
12	1 02.4	+3 35.9	277 48.8	55	−23 43.4	68	**0**	17 59	18 20	18 44	11 28	60	23 57	60
13	16 02.6	35.0	292 13.2	54	50.0	66	**10 S**	57	18	42	11 10	58	** **	**
14	31 02.9	34.0	306 37.6	54	−23 56.5	65	**20**	54	16	42	10 50	56	** **	**
15	46 03.1	33.1	321 02.0	54	−24 02.8	63	**30**	52	15	43	28	53	** **	**
16	61 03.3	32.1	335 26.3	53	08.9	61	**35**	50	15	45	10 14	53	0 06	70
17	76 03.5	+3 31.2	349 50.6	53	−24 14.9	60	**40**	17 48	18 15	18 47	9 59	51	0 21	71
18	91 03.7	+3 30.2	4 14.8	52	−24 20.7	58	**45**	17 46	18 16	18 50	9 41	49	0 38	74
19	106 04.0	29.2	18 38.9	51	26.4	57	**50**	44	16	54	19	45	0 59	78
20	121 04.2	28.3	33 03.0	51	31.9	55	**52**	43	17	56	9 09	43	1 09	80
21	136 04.4	27.3	47 27.1	51	37.3	54	**54**	42	17	18 59	8 57	41	21	82
22	151 04.6	26.4	61 51.2	51	42.4	51	**56**	41	18	19 01	43	39	34	85
23	166 04.9	25.4	76 15.1	49	47.4	50	**58**	40	19	05	28	34	1 49	89
24	181 05.1	+3 24.4	90 39.1	50	−24 52.3	49	**60 S**	17 38	18 20	19 08	8 09	29	2 07	95

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.1		Mag: +1.7		Mag: −2.8		Mag: +0.4	
	0ʰ 31ᵐ.1	PMG: 14ʰ 31ᵐ		PMG: 12ʰ 27ᵐ		PMG: 22ʰ 15ᵐ		PMG: 21ʰ 08ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	352 12.3	142 16.5	−13 13.9	173 03.9	+1 16.7	25 11.6	−14 33.1	42 03.6	−19 10.7
1	7 14.8	157 16.2	15.0	188 04.9	16.1	40 14.3	33.2	57 06.2	10.7
2	22 17.2	172 16.0	16.2	203 05.9	15.4	55 17.0	33.3	72 08.8	10.8
3	37 19.7	187 15.7	17.3	218 06.9	14.7	70 19.7	33.4	87 11.3	10.8
4	52 22.2	202 15.5	18.5	233 07.9	14.1	85 22.4	33.5	102 13.9	10.8
5	67 24.6	217 15.2	−13 19.6	248 08.9	+1 13.4	100 25.2	−14 33.6	117 16.5	−19 10.8
6	82 27.1	232 15.0	−13 20.8	263 09.8	+1 12.8	115 27.9	−14 33.7	132 19.1	−19 10.9
7	97 29.5	247 14.7	21.9	278 10.8	12.1	130 30.6	33.7	147 21.6	10.9
8	112 32.0	262 14.5	23.1	293 11.8	11.5	145 33.3	33.8	162 24.2	10.9
9	127 34.5	277 14.2	24.2	308 12.8	10.8	160 36.0	33.9	177 26.8	11.0
10	142 36.9	292 14.0	25.4	323 13.8	10.1	175 38.8	34.0	192 29.4	11.0
11	157 39.4	307 13.7	−13 26.5	338 14.8	+1 09.5	190 41.5	−14 34.1	207 31.9	−19 11.0
12	172 41.9	322 13.5	−13 27.7	353 15.8	+1 08.8	205 44.2	−14 34.2	222 34.5	−19 11.0
13	187 44.3	337 13.2	28.8	8 16.8	08.2	220 46.9	34.3	237 37.1	11.1
14	202 46.8	352 13.0	30.0	23 17.8	07.5	235 49.6	34.3	252 39.7	11.1
15	217 49.3	7 12.7	31.1	38 18.8	06.8	250 52.3	34.4	267 42.2	11.1
16	232 51.7	22 12.5	32.2	53 19.7	06.2	265 55.0	34.5	282 44.8	11.2
17	247 54.2	37 12.2	−13 33.4	68 20.7	+1 05.5	280 57.8	−14 34.6	297 47.4	−19 11.2
18	262 56.6	52 12.0	−13 34.5	83 21.7	+1 04.9	296 00.5	−14 34.7	312 50.0	−19 11.2
19	277 59.1	67 11.7	35.7	98 22.7	04.2	311 03.2	34.8	327 52.5	11.2
20	293 01.6	82 11.5	36.8	113 23.7	03.6	326 05.9	34.9	342 55.1	11.3
21	308 04.0	97 11.2	38.0	128 24.7	02.9	341 08.6	34.9	357 57.7	11.3
22	323 06.5	112 11.0	39.1	143 25.7	02.2	356 11.3	35.0	13 00.2	11.3
23	338 09.0	127 10.7	40.2	158 26.7	01.6	11 14.1	35.1	28 02.8	11.4
24	353 11.4	142 10.5	−13 41.4	173 27.7	+1 00.9	26 16.8	−14 35.2	43 05.4	−19 11.4
Dif	—	−2	−11	+10	−7	+27	−1	+26	0

UT	SOL SD: 15′.9 PMG: 11h 55m.5				LUNA Edad: 7d.0 SD: 16′.1 PMG: 18h 43m PHE 4h: 59′.1; 12h: 59′.0; 20h: 58′.9 Rº: 60m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	05.1	+3	24.4	90	39.1 49	−24	52.3 47	**60 N**	3 51	4 43	5 26	16 27	59	20 56	68
1	196	05.3		23.5	105	03.0 49	−24	57.0 45	**58**	3 59	48	28	16 01	59	21 23	66
2	211	05.5		22.5	119	26.9 49	−25	01.5 43	**56**	4 06	52	30	15 40	60	21 44	65
3	226	05.7		21.6	133	50.8 48		05.8 42	**54**	13	56	32	23	60	22 01	65
4	241	06.0		20.6	148	14.6 48		10.0 40	**52**	18	4 59	33	15 08	60	16	64
5	256	06.2	+3	19.6	162	38.4 48	−25	14.0 39	**50**	4 23	5 02	5 35	14 55	61	22 29	64
6	271	06.4	+3	18.7	177	02.1 47	−25	17.9 36	**45**	4 33	5 08	5 38	14 29	61	22 55	64
7	286	06.6		17.7	191	25.9 48		21.5 35	**40**	41	13	40	14 08	61	23 16	63
8	301	06.9		16.8	205	49.6 47		25.0 34	**35**	47	17	42	13 50	61	34	62
9	316	07.1		15.8	220	13.3 47		28.4 31	**30**	52	20	44	36	60	23 49	62
10	331	07.3		14.8	234	37.0 47		31.5 30	**20**	4 59	25	47	13 10	61	** **	**
11	346	07.5	+3	13.9	249	00.6 46	−25	34.5 28	**10 N**	5 04	5 29	5 50	12 48	61	** **	**
12	1	07.7	+3	12.9	263	24.2 46	−25	37.3 27	**0**	5 08	5 32	5 52	12 28	61	** **	**
13	16	08.0		12.0	277	47.9 47		40.0 24	**10 S**	09	34	55	12 08	60	0 16	62
14	31	08.2		11.0	292	11.5 46		42.4 23	**20**	09	35	57	11 46	60	0 37	63
15	46	08.4		10.0	306	35.1 46		44.7 21	**30**	08	36	5 59	21	60	1 01	64
16	61	08.6		09.1	320	58.7 46		46.8 20	**35**	06	36	6 01	11 07	59	16	64
17	76	08.9	+3	08.1	335	22.2 45	−25	48.8 18	**40**	5 04	5 35	6 02	10 50	59	1 32	65
18	91	09.1	+3	07.2	349	45.8 46	−25	50.6 16	**45**	5 01	5 35	6 04	10 30	58	1 52	66
19	106	09.3		06.2	4	09.4 46		52.2 14	**50**	4 57	34	06	10 04	58	2 17	68
20	121	09.5		05.2	18	32.9 45		53.6 13	**52**	54	34	07	9 52	57	29	68
21	136	09.8		04.3	32	56.5 46		54.9 10	**54**	52	33	08	38	57	43	69
22	151	10.0		03.3	47	20.1 46		55.9 10	**56**	49	32	09	22	56	2 59	70
23	166	10.2		02.3	61	43.7 46		56.9 10	**58**	46	32	10	9 02	55	3 18	71
24	181	10.4	+3	01.4	76	07.2 45	−25	57.6 7	**60 S**	4 42	5 31	6 12	8 38	53	3 42	73

UT	ARIES PMG 0h 27m.2		VENUS Mag: −4.1 PMG: 14h 32m			MARTE Mag: +1.7 PMG: 12h 25m			JÚPITER Mag: −2.8 PMG: 22h 11m			SATURNO Mag: +0.4 PMG: 21h 04m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	353	11.4	142	10.5	−13 41.4	173	27.7	+1 00.9	26	16.8	−14 35.2	43	05.4	−19 11.4
1	8	13.9	157	10.2	42.5	188	28.7	+1 00.3	41	19.5	35.3	58	08.0	11.4
2	23	16.4	172	10.0	43.7	203	29.6	+0 59.6	56	22.2	35.4	73	10.5	11.4
3	38	18.8	187	09.7	44.8	218	30.6	59.0	71	24.9	35.4	88	13.1	11.5
4	53	21.3	202	09.5	45.9	233	31.6	58.3	86	27.6	35.5	103	15.7	11.5
5	68	23.8	217	09.2	−13 47.1	248	32.6	+0 57.6	101	30.3	−14 35.6	118	18.3	−19 11.5
6	83	26.2	232	09.0	−13 48.2	263	33.6	+0 57.0	116	33.0	−14 35.7	133	20.8	−19 11.6
7	98	28.7	247	08.7	49.3	278	34.6	56.3	131	35.8	35.8	148	23.4	11.6
8	113	31.1	262	08.5	50.5	293	35.6	55.7	146	38.5	35.9	163	26.0	11.6
9	128	33.6	277	08.2	51.6	308	36.6	55.0	161	41.2	35.9	178	28.5	11.6
10	143	36.1	292	08.0	52.7	323	37.6	54.4	176	43.9	36.0	193	31.1	11.7
11	158	38.5	307	07.7	−13 53.9	338	38.6	+0 53.7	191	46.6	−14 36.1	208	33.7	−19 11.7
12	173	41.0	322	07.5	−13 55.0	353	39.5	+0 53.0	206	49.3	−14 36.2	223	36.2	−19 11.7
13	188	43.5	337	07.2	56.1	8	40.5	52.4	221	52.0	36.3	238	38.8	11.7
14	203	45.9	352	07.0	57.3	23	41.5	51.7	236	54.7	36.4	253	41.4	11.8
15	218	48.4	7	06.7	58.4	38	42.5	51.1	251	57.4	36.4	268	44.0	11.8
16	233	50.9	22	06.4	−13 59.5	53	43.5	50.4	267	00.2	36.5	283	46.5	11.8
17	248	53.3	37	06.2	−14 00.7	68	44.5	+0 49.8	282	02.9	−14 36.6	298	49.1	−19 11.9
18	263	55.8	52	05.9	−14 01.8	83	45.5	+0 49.1	297	05.6	−14 36.7	313	51.7	−19 11.9
19	278	58.3	67	05.7	02.9	98	46.5	48.4	312	08.3	36.8	328	54.2	11.9
20	294	00.7	82	05.4	04.1	113	47.5	47.8	327	11.0	36.9	343	56.8	11.9
21	309	03.2	97	05.2	05.2	128	48.4	47.1	342	13.7	36.9	358	59.4	12.0
22	324	05.6	112	04.9	06.3	143	49.4	46.5	357	16.4	37.0	14	01.9	12.0
23	339	08.1	127	04.6	07.4	158	50.4	45.8	12	19.1	37.1	29	04.5	12.0
24	354	10.6	142	04.4	−14 08.6	173	51.4	+0 45.1	27	21.8	−14 37.2	44	07.1	−19 12.0
Dif	—			−3	−11		+10	−7		+27	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 8^{d}.0		PHE	4^{h}: 58′.8									
	PMG: 11^{h} 55^{m}.1				SD: 16′.0			12^{h}: 58′.7									
					PMG: 19^{h} 43^{m}			20^{h}: 58′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	181	10.4	+3	01.4	76	07.2	−25	57.6		**60 N**	18 21	19 03	19 55	17 26	33	22 04	89
1	196	10.6	+3	00.4	90	30.8 46		58.2	6	**58**	19	18 59	47	17 00	38	29	84
2	211	10.9	+2	59.5	104	54.4 46		58.5	3	**56**	17	55	40	16 40	41	22 49	81
3	226	11.1		58.5	119	18.0 46		58.8	3	**54**	16	51	34	23	43	23 06	78
4	241	11.3		57.5	133	41.7 47		58.8	0	**52**	14	48	29	16 08	46	20	76
5	256	11.5	+2	56.6	148	05.3 46	−25	58.7	1	**50**	18 13	18 46	19 24	15 56	46	23 33	74
6	271	11.8	+2	55.6	162	29.0 47	−25	58.4	3	**45**	18 11	18 40	19 15	15 30	49	23 59	71
7	286	12.0		54.7	176	52.7 47		57.9	5	**40**	09	36	08	15 09	51	** **	**
8	301	12.2		53.7	191	16.4 47		57.3	6	**35**	07	32	19 02	14 51	53	** **	**
9	316	12.4		52.7	205	40.1 47		56.4	9	**30**	05	29	18 57	36	55	** **	**
10	331	12.7		51.8	220	03.8 47		55.5	9	**20**	03	25	50	14 11	56	0 15	61
11	346	12.9	+2	50.8	234	27.6 48	−25	54.3	12	**10 N**	18 00	18 21	18 46	13 49	58	0 37	60
12	1	13.1	+2	49.8	248	51.4 48	−25	53.0	13	**0**	17 58	18 19	18 43	13 29	59	0 57	60
13	16	13.3		48.9	263	15.3 49		51.5	15	**10 S**	56	17	42	13 08	61	1 18	59
14	31	13.6		47.9	277	39.2 49		49.8	17	**20**	55	17	42	12 46	62	1 40	58
15	46	13.8		47.0	292	03.1 49		48.0	18	**30**	53	16	44	21	64	2 05	58
16	61	14.0		46.0	306	27.0 49		45.9	21	**35**	51	17	46	12 06	65	20	57
17	76	14.2	+2	45.0	320	51.0 50	−25	43.8	21	**40**	17 50	18 17	18 49	11 49	66	2 37	57
18	91	14.4	+2	44.1	335	15.0 50	−25	41.4	24	**45**	17 49	18 18	18 52	11 28	68	2 58	56
19	106	14.7		43.1	349	39.1 51		38.9	25	**50**	47	19	57	11 02	70	3 25	53
20	121	14.9		42.1	4	03.2 51		36.2	27	**52**	46	20	18 59	10 49	71	37	53
21	136	15.1		41.2	18	27.4 52		33.4	28	**54**	46	21	19 02	35	72	3 52	52
22	151	15.3		40.2	32	51.6 52		30.4	30	**56**	45	22	05	10 18	73	4 09	50
23	166	15.6		39.2	47	15.9 53		27.2	32	**58**	44	23	09	9 57	76	29	49
24	181	15.8	+2	38.3	61	40.2 53	−25	23.9	33	**60 S**	17 43	18 24	19 13	9 31	80	4 55	46

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +1.7			Mag: −2.8			Mag: +0.4		
	0^{h} 23^{m}.2		PMG: 14^{h} 32^{m}			PMG: 12^{h} 24^{m}			PMG: 22^{h} 07^{m}			PMG: 21^{h} 00^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	354	10.6	142	04.4	−14 08.6	173	51.4	+0 45.1	27	21.8	−14 37.2	44	07.1	−19 12.0
1	9	13.0	157	04.1	09.7	188	52.4	44.5	42	24.5	37.3	59	09.7	12.1
2	24	15.5	172	03.9	10.8	203	53.4	43.8	57	27.2	37.3	74	12.2	12.1
3	39	18.0	187	03.6	11.9	218	54.4	43.2	72	30.0	37.4	89	14.8	12.1
4	54	20.4	202	03.4	13.1	233	55.4	42.5	87	32.7	37.5	104	17.4	12.2
5	69	22.9	217	03.1	−14 14.2	248	56.4	+0 41.9	102	35.4	−14 37.6	119	19.9	−19 12.2
6	84	25.4	232	02.8	−14 15.3	263	57.3	+0 41.2	117	38.1	−14 37.7	134	22.5	−19 12.2
7	99	27.8	247	02.6	16.4	278	58.3	40.5	132	40.8	37.8	149	25.1	12.2
8	114	30.3	262	02.3	17.6	293	59.3	39.9	147	43.5	37.8	164	27.6	12.3
9	129	32.8	277	02.1	18.7	309	00.3	39.2	162	46.2	37.9	179	30.2	12.3
10	144	35.2	292	01.8	19.8	324	01.3	38.6	177	48.9	38.0	194	32.8	12.3
11	159	37.7	307	01.5	−14 20.9	339	02.3	+0 37.9	192	51.6	−14 38.1	209	35.3	−19 12.3
12	174	40.1	322	01.3	−14 22.1	354	03.3	+0 37.2	207	54.3	−14 38.2	224	37.9	−19 12.4
13	189	42.6	337	01.0	23.2	9	04.3	36.6	222	57.0	38.2	239	40.5	12.4
14	204	45.1	352	00.8	24.3	24	05.3	35.9	237	59.7	38.3	254	43.0	12.4
15	219	47.5	7	00.5	25.4	39	06.2	35.3	253	02.4	38.4	269	45.6	12.4
16	234	50.0	22	00.2	26.5	54	07.2	34.6	268	05.1	38.5	284	48.2	12.5
17	249	52.5	37	00.0	−14 27.7	69	08.2	+0 34.0	283	07.8	−14 38.6	299	50.7	−19 12.5
18	264	54.9	51	59.7	−14 28.8	84	09.2	+0 33.3	298	10.5	−14 38.6	314	53.3	−19 12.5
19	279	57.4	66	59.5	29.9	99	10.2	32.6	313	13.2	38.7	329	55.9	12.6
20	294	59.9	81	59.2	31.0	114	11.2	32.0	328	15.9	38.8	344	58.4	12.6
21	310	02.3	96	58.9	32.1	129	12.2	31.3	343	18.7	38.9	0	01.0	12.6
22	325	04.8	111	58.7	33.2	144	13.2	30.7	358	21.4	39.0	15	03.6	12.6
23	340	07.3	126	58.4	34.4	159	14.1	30.0	13	24.1	39.0	30	06.1	12.7
24	355	09.7	141	58.1	−14 35.5	174	15.1	+0 29.3	28	26.8	−14 39.1	45	08.7	−19 12.7
Dif	—			−3	−11		+10	−7		+27	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 54m.8				LUNA Edad: 9d.0 SD: 15′.9 PMG: 20h 42m PHE: 4h: 58′.5; 12h: 58′.4; 20h: 58′.2 Rº: 55m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	15.8	+2	38.3	61	40.2	−25	23.9	**60 N**	3 56	4 48	5 30	17 59	17	23 33	97
1	196	16.0		37.3	76	04.6 54		20.4 35	**58**	4 04	52	32	38	22	23 53	91
2	211	16.2		36.4	90	29.0 54		16.7 37	**56**	11	56	34	21	26	** **	**
3	226	16.5		35.4	104	53.5 55		12.9 38	**54**	17	4 59	35	17 06	30	** **	**
4	241	16.7		34.4	119	18.0 55		08.9 40	**52**	22	5 02	36	16 54	32	** **	**
5	256	16.9	+2	33.5	133	42.6 56	−25	04.8 41	**50**	4 26	5 05	5 38	16 42	35	** **	**
6	271	17.1	+2	32.5	148	07.3 57	−25	00.5 43	**45**	4 36	5 10	5 40	16 19	39	** **	**
7	286	17.4		31.5	162	32.0 57	−24	56.1 44	**40**	43	15	42	16 00	42	0 19	69
8	301	17.6		30.6	176	56.8 58		51.4 47	**35**	49	18	44	15 44	45	36	67
9	316	17.8		29.6	191	21.6 58		46.7 47	**30**	4 53	21	45	31	46	0 51	65
10	331	18.0		28.6	205	46.5 59		41.8 49	**20**	5 00	26	48	15 07	51	1 16	62
11	346	18.3	+2	27.7	220	11.5 60	−24	36.7 51	**10 N**	5 04	5 29	5 50	14 47	53	1 37	60
12	1	18.5	+2	26.7	234	36.6 61	−24	31.5 52	**0**	5 07	5 31	5 52	14 28	56	1 57	58
13	16	18.7		25.7	249	01.7 61		26.1 54	**10 S**	08	32	53	14 09	59	2 17	56
14	31	18.9		24.8	263	26.9 62		20.6 55	**20**	07	33	55	13 48	62	2 38	54
15	46	19.1		23.8	277	52.2 63		14.9 57	**30**	05	33	57	25	65	3 03	50
16	61	19.4		22.8	292	17.5 63		09.1 58	**35**	03	33	58	13 11	67	17	49
17	76	19.6	+2	21.9	306	42.9 64	−24	03.1 60	**40**	5 01	5 32	5 59	12 55	69	3 34	47
18	91	19.8	+2	20.9	321	08.4 65	−23	57.0 61	**45**	4 57	5 31	6 00	12 36	72	3 54	44
19	106	20.0		20.0	335	34.0 66		50.7 63	**50**	52	30	02	12	76	4 18	41
20	121	20.3		19.0	349	59.6 66		44.3 64	**52**	50	29	02	12 00	79	30	39
21	136	20.5		18.0	4	25.4 68		37.8 65	**54**	47	28	03	11 47	81	44	36
22	151	20.7		17.1	18	51.2 68		31.1 67	**56**	44	27	04	31	85	4 59	34
23	166	20.9		16.1	33	17.1 69		24.3 68	**58**	40	26	05	11 13	88	5 18	29
24	181	21.2	+2	15.1	47	43.1 70	−23	17.3 70	**60 S**	4 36	5 25	6 06	10 51	94	5 41	24

UT	ARIES PMG 0h 19m.3		VENUS Mag: −4.1 PMG: 14h 32m			MARTE Mag: +1.7 PMG: 12h 22m			JÚPITER Mag: −2.8 PMG: 22h 02m			SATURNO Mag: +0.4 PMG: 20h 56m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	355	09.7	141	58.1	−14 35.5	174	15.1	+0 29.3	28	26.8	−14 39.1	45	08.7	−19 12.7
1	10	12.2	156	57.9	36.6	189	16.1	28.7	43	29.5	39.2	60	11.3	12.7
2	25	14.6	171	57.6	37.7	204	17.1	28.0	58	32.2	39.3	75	13.8	12.7
3	40	17.1	186	57.4	38.8	219	18.1	27.4	73	34.9	39.4	90	16.4	12.8
4	55	19.6	201	57.1	39.9	234	19.1	26.7	88	37.6	39.4	105	19.0	12.8
5	70	22.0	216	56.8	−14 41.0	249	20.1	+0 26.1	103	40.3	−14 39.5	120	21.5	−19 12.8
6	85	24.5	231	56.6	−14 42.1	264	21.1	+0 25.4	118	43.0	−14 39.6	135	24.1	−19 12.8
7	100	27.0	246	56.3	43.3	279	22.0	24.7	133	45.7	39.7	150	26.7	12.9
8	115	29.4	261	56.0	44.4	294	23.0	24.1	148	48.4	39.8	165	29.2	12.9
9	130	31.9	276	55.8	45.5	309	24.0	23.4	163	51.1	39.8	180	31.8	12.9
10	145	34.4	291	55.5	46.6	324	25.0	22.8	178	53.8	39.9	195	34.3	12.9
11	160	36.8	306	55.2	−14 47.7	339	26.0	+0 22.1	193	56.5	−14 40.0	210	36.9	−19 13.0
12	175	39.3	321	55.0	−14 48.8	354	27.0	+0 21.4	208	59.2	−14 40.1	225	39.5	−19 13.0
13	190	41.7	336	54.7	49.9	9	28.0	20.8	224	01.9	40.2	240	42.0	13.0
14	205	44.2	351	54.4	51.0	24	29.0	20.1	239	04.6	40.2	255	44.6	13.0
15	220	46.7	6	54.2	52.1	39	29.9	19.5	254	07.3	40.3	270	47.2	13.1
16	235	49.1	21	53.9	53.2	54	30.9	18.8	269	10.0	40.4	285	49.7	13.1
17	250	51.6	36	53.6	−14 54.3	69	31.9	+0 18.1	284	12.7	−14 40.5	300	52.3	−19 13.1
18	265	54.1	51	53.4	−14 55.4	84	32.9	+0 17.5	299	15.4	−14 40.5	315	54.9	−19 13.1
19	280	56.5	66	53.1	56.6	99	33.9	16.8	314	18.1	40.6	330	57.4	13.2
20	295	59.0	81	52.8	57.7	114	34.9	16.2	329	20.8	40.7	346	00.0	13.2
21	311	01.5	96	52.6	58.8	129	35.9	15.5	344	23.5	40.8	1	02.5	13.2
22	326	03.9	111	52.3	−14 59.9	144	36.9	14.9	359	26.2	40.9	16	05.1	13.2
23	341	06.4	126	52.0	−15 01.0	159	37.8	14.2	14	28.9	40.9	31	07.7	13.3
24	356	08.9	141	51.8	−15 02.1	174	38.8	+0 13.5	29	31.6	−14 41.0	46	10.2	−19 13.3
Dif	—			−3	−11		+10	−7		+27	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9 PMG: 11h 54m.4				Edad: 10d.0 SD: 15′.8 PMG: 21h 37m		PHE	4h: 58′.1 12h: 58′.0 20h: 57′.8 Rº: 51m			Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉		Dec		hG ☾	Dif	Dec	Dif								
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	181	21.2	+2	15.1	47	43.1	−23	17.3	**60 N**	18 15	18 57	19 48	18 16	9	** **	**
1	196	21.4		14.2	62	09.1 70		10.2 71	**58**	13	53	40	18 00	15	** **	**
2	211	21.6		13.2	76	35.3 72	−23	03.0 72	**56**	12	49	34	17 47	18	0 10	87
3	226	21.8		12.2	91	01.5 72	−22	55.6 74	**54**	11	46	29	36	21	24	83
4	241	22.1		11.3	105	27.8 73		48.1 75	**52**	10	44	24	26	24	36	81
5	256	22.3	+2	10.3	119	54.2 74	−22	40.5 76	**50**	18 09	18 41	19 20	17 17	26	0 47	78
6	271	22.5	+2	09.3	134	20.7 75	−22	32.7 78	**45**	18 07	18 36	19 11	16 58	31	1 10	73
7	286	22.7		08.4	148	47.2 75		24.8 79	**40**	05	32	19 04	42	35	28	70
8	301	23.0		07.4	163	13.9 77		16.8 80	**35**	04	29	18 59	29	38	43	67
9	316	23.2		06.4	177	40.6 77		08.6 82	**30**	03	27	55	16 17	41	1 56	65
10	331	23.4		05.5	192	07.5 79	−22	00.4 82	**20**	18 01	23	48	15 58	44	2 18	61
11	346	23.6	+2	04.5	206	34.4 79	−21	52.0 84	**10 N**	17 59	18 20	18 44	15 40	49	2 37	58
12	1	23.9	+2	03.5	221	01.4 80	−21	43.5 85	**0**	17 58	18 18	18 42	15 24	52	2 55	54
13	16	24.1		02.6	235	28.5 81		34.8 87	**10 S**	56	17	42	15 08	55	3 13	51
14	31	24.3		01.6	249	55.7 82		26.1 87	**20**	55	17	43	14 50	60	32	47
15	46	24.5	+2	00.6	264	23.0 83		17.2 89	**30**	54	18	45	30	64	3 53	44
16	61	24.7	+1	59.7	278	50.4 84	−21	08.2 90	**35**	53	18	48	18	67	4 06	41
17	76	25.0	+1	58.7	293	17.8 84	−20	59.1 91	**40**	17 52	18 19	18 51	14 04	70	4 21	38
18	91	25.2	+1	57.7	307	45.4 86	−20	49.8 93	**45**	17 51	18 20	18 55	13 48	74	4 38	34
19	106	25.4		56.8	322	13.0 86		40.5 93	**50**	50	22	19 00	28	79	4 59	30
20	121	25.6		55.8	336	40.8 88		31.1 94	**52**	50	23	03	19	80	5 09	28
21	136	25.9		54.8	351	08.6 88		21.5 96	**54**	49	24	06	13 08	84	20	25
22	151	26.1		53.9	5	36.5 89		11.8 97	**56**	49	26	09	12 56	87	33	22
23	166	26.3		52.9	20	04.5 90	−20	02.1 97	**58**	48	27	13	41	92	5 47	19
24	181	26.5	+1	51.9	34	32.6 91	−19	52.2 99	**60 S**	17 47	18 29	19 18	12 25	96	6 05	13

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 0h 15m.4		Mag: −4.1 PMG: 14h 33m				Mag: +1.7 PMG: 12h 21m				Mag: −2.8 PMG: 21h 58m				Mag: +0.4 PMG: 20h 52m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	356	08.9	141	51.8	−15	02.1	174	38.8	+0	13.5	29	31.6	−14	41.0	46	10.2	−19	13.3
1	11	11.3	156	51.5		03.2	189	39.8		12.9	44	34.3		41.1	61	12.8		13.3
2	26	13.8	171	51.2		04.3	204	40.8		12.2	59	37.0		41.2	76	15.3		13.3
3	41	16.2	186	50.9		05.4	219	41.8		11.6	74	39.6		41.2	91	17.9		13.4
4	56	18.7	201	50.7		06.5	234	42.8		10.9	89	42.3		41.3	106	20.5		13.4
5	71	21.2	216	50.4	−15	07.6	249	43.8	+0	10.2	104	45.0	−14	41.4	121	23.0	−19	13.4
6	86	23.6	231	50.1	−15	08.7	264	44.7	+0	09.6	119	47.7	−14	41.5	136	25.6	−19	13.4
7	101	26.1	246	49.9		09.8	279	45.7		08.9	134	50.4		41.5	151	28.2		13.5
8	116	28.6	261	49.6		10.9	294	46.7		08.3	149	53.1		41.6	166	30.7		13.5
9	131	31.0	276	49.3		12.0	309	47.7		07.6	164	55.8		41.7	181	33.3		13.5
10	146	33.5	291	49.0		13.1	324	48.7		06.9	179	58.5		41.8	196	35.8		13.5
11	161	36.0	306	48.8	−15	14.1	339	49.7	+0	06.3	195	01.2	−14	41.9	211	38.4	−19	13.6
12	176	38.4	321	48.5	−15	15.2	354	50.7	+0	05.6	210	03.9	−14	41.9	226	41.0	−19	13.6
13	191	40.9	336	48.2		16.3	9	51.7		05.0	225	06.6		42.0	241	43.5		13.6
14	206	43.4	351	48.0		17.4	24	52.6		04.3	240	09.3		42.1	256	46.1		13.6
15	221	45.8	6	47.7		18.5	39	53.6		03.7	255	12.0		42.2	271	48.6		13.7
16	236	48.3	21	47.4		19.6	54	54.6		03.0	270	14.7		42.2	286	51.2		13.7
17	251	50.7	36	47.1	−15	20.7	69	55.6	+0	02.3	285	17.4	−14	42.3	301	53.8	−19	13.7
18	266	53.2	51	46.9	−15	21.8	84	56.6	+0	01.7	300	20.1	−14	42.4	316	56.3	−19	13.7
19	281	55.7	66	46.6		22.9	99	57.6		01.0	315	22.8		42.5	331	58.9		13.8
20	296	58.1	81	46.3		24.0	114	58.6	+0	00.4	330	25.5		42.5	347	01.4		13.8
21	312	00.6	96	46.0		25.1	129	59.5	−0	00.3	345	28.1		42.6	2	04.0		13.8
22	327	03.1	111	45.8		26.2	145	00.5		01.0	0	30.8		42.7	17	06.5		13.8
23	342	05.5	126	45.5		27.3	160	01.5		01.6	15	33.5		42.8	32	09.1		13.9
24	357	08.0	141	45.2	−15	28.3	175	02.5	−0	02.3	30	36.2	−14	42.8	47	11.7	−19	13.9
Dif	—			−3		−11		+10		−7		+27		−1		+26		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 11^{d}.0		PHE	4^{h}: 57′.7									
	PMG: 11^{h} 54^{m}.1				SD: 15′.7			12^{h}: 57′.5									
					PMG: 22^{h} 28^{m}			20^{h}: 57′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	181	26.5	+1	51.9	34	32.6	−19	52.2		**60 N**	4 02	4 53	5 35	18 25	6	1 10	96
1	196	26.8		51.0	49	00.8 92		42.2	100	**58**	09	4 57	36	15	9	24	91
2	211	27.0		50.0	63	29.1 93		32.1	101	**56**	15	5 00	38	18 05	13	37	87
3	226	27.2		49.0	77	57.5 94		21.9	102	**54**	21	03	39	17 57	16	47	84
4	241	27.4		48.1	92	26.0 95		11.6	103	**52**	25	06	40	50	18	1 57	81
5	256	27.7	+1	47.1	106	54.5 95	−19	01.3	103	**50**	4 30	5 08	5 40	17 43	21	2 05	79
6	271	27.9	+1	46.1	121	23.2 97	−18	50.8	105	**45**	4 38	5 13	5 42	17 29	25	2 23	73
7	286	28.1		45.2	135	51.9 97		40.2	106	**40**	45	17	44	17	29	38	69
8	301	28.3		44.2	150	20.8 99		29.5	107	**35**	50	20	45	17 07	32	2 50	66
9	316	28.6		43.2	164	49.7 99		18.8	107	**30**	4 54	22	46	16 58	35	3 01	63
10	331	28.8		42.3	179	18.7 100	−18	07.9	109	**20**	5 00	26	48	42	41	19	58
11	346	29.0	+1	41.3	193	47.8 101	−17	57.0	109	**10 N**	5 04	5 29	5 50	16 29	44	3 35	54
12	1	29.2	+1	40.3	208	17.0 102	−17	45.9	111	**0**	5 06	5 30	5 51	16 16	49	3 49	51
13	16	29.4		39.3	222	46.3 103		34.8	111	**10 S**	07	31	52	16 03	53	4 04	46
14	31	29.7		38.4	237	15.7 104		23.6	112	**20**	06	31	53	15 50	56	19	43
15	46	29.9		37.4	251	45.1 104		12.3	113	**30**	03	31	54	34	62	37	38
16	61	30.1		36.4	266	14.7 106	−17	00.9	114	**35**	5 00	30	55	25	64	47	35
17	76	30.3	+1	35.5	280	44.3 106	−16	49.5	114	**40**	4 57	5 29	5 56	15 14	68	4 59	32
18	91	30.6	+1	34.5	295	14.1 108	−16	38.0	115	**45**	4 53	5 27	5 57	15 02	72	5 12	29
19	106	30.8		33.5	309	43.9 108		26.4	116	**50**	48	25	57	14 47	77	29	23
20	121	31.0		32.6	324	13.8 109		14.7	117	**52**	45	24	58	39	80	37	21
21	136	31.2		31.6	338	43.8 110	−16	02.9	118	**54**	42	23	58	32	82	45	19
22	151	31.5		30.6	353	13.8 110	−15	51.1	118	**56**	38	22	59	23	85	5 55	15
23	166	31.7		29.7	7	44.0 112		39.2	119	**58**	34	20	5 59	13	89	6 06	12
24	181	31.9	+1	28.7	22	14.2 112	−15	27.2	120	**60 S**	4 29	5 18	6 00	14 01	93	6 18	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.7			Mag: −2.8			Mag: +0.4		
	0^{h} 11^{m}.4		PMG: 14^{h} 33^{m}			PMG: 12^{h} 19^{m}			PMG: 21^{h} 54^{m}			PMG: 20^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	357	08.0	141	45.2	−15 28.3	175	02.5	−0 02.3	30	36.2	−14 42.8	47	11.7	−19 13.9
1	12	10.5	156	44.9	29.4	190	03.5	02.9	45	38.9	42.9	62	14.2	13.9
2	27	12.9	171	44.7	30.5	205	04.5	03.6	60	41.6	43.0	77	16.8	13.9
3	42	15.4	186	44.4	31.6	220	05.5	04.3	75	44.3	43.1	92	19.3	14.0
4	57	17.8	201	44.1	32.7	235	06.4	04.9	90	47.0	43.1	107	21.9	14.0
5	72	20.3	216	43.8	−15 33.8	250	07.4	−0 05.6	105	49.7	−14 43.2	122	24.5	−19 14.0
6	87	22.8	231	43.6	−15 34.9	265	08.4	−0 06.2	120	52.4	−14 43.3	137	27.0	−19 14.0
7	102	25.2	246	43.3	35.9	280	09.4	06.9	135	55.0	43.4	152	29.6	14.1
8	117	27.7	261	43.0	37.0	295	10.4	07.6	150	57.7	43.4	167	32.1	14.1
9	132	30.2	276	42.7	38.1	310	11.4	08.2	166	00.4	43.5	182	34.7	14.1
10	147	32.6	291	42.4	39.2	325	12.4	08.9	181	03.1	43.6	197	37.2	14.1
11	162	35.1	306	42.2	−15 40.3	340	13.3	−0 09.5	196	05.8	−14 43.7	212	39.8	−19 14.2
12	177	37.6	321	41.9	−15 41.4	355	14.3	−0 10.2	211	08.5	−14 43.7	227	42.3	−19 14.2
13	192	40.0	336	41.6	42.4	10	15.3	10.9	226	11.2	43.8	242	44.9	14.2
14	207	42.5	351	41.3	43.5	25	16.3	11.5	241	13.9	43.9	257	47.5	14.2
15	222	45.0	6	41.0	44.6	40	17.3	12.2	256	16.6	44.0	272	50.0	14.2
16	237	47.4	21	40.8	45.7	55	18.3	12.8	271	19.2	44.0	287	52.6	14.3
17	252	49.9	36	40.5	−15 46.8	70	19.3	−0 13.5	286	21.9	−14 44.1	302	55.1	−19 14.3
18	267	52.3	51	40.2	−15 47.8	85	20.2	−0 14.1	301	24.6	−14 44.2	317	57.7	−19 14.3
19	282	54.8	66	39.9	48.9	100	21.2	14.8	316	27.3	44.3	333	00.2	14.3
20	297	57.3	81	39.6	50.0	115	22.2	15.5	331	30.0	44.3	348	02.8	14.4
21	312	59.7	96	39.4	51.1	130	23.2	16.1	346	32.7	44.4	3	05.4	14.4
22	328	02.2	111	39.1	52.1	145	24.2	16.8	1	35.4	44.5	18	07.9	14.4
23	343	04.7	126	38.8	53.2	160	25.2	17.4	16	38.0	44.5	33	10.5	14.4
24	358	07.1	141	38.5	−15 54.3	175	26.1	−0 18.1	31	40.7	−14 44.6	48	13.0	−19 14.5
Dif	—			−3	−11		+10	−7		+27	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 53m.7				LUNA Edad: 12d.0 SD: 15′.6 PMG: 23h 16m PHE 4h: 57′.2; 12h: 57′.0; 20h: 56′.8 Rº: 45m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	31.9	+1	28.7	22	14.2	−15	27.2	**60 N**	18 08	18 50	19 41	18 31	4	2 46	91
1	196	32.1		27.7	36	44.6 114		15.1 121	**58**	07	47	34	24	8	2 55	88
2	211	32.4		26.8	51	15.0 114	−15	03.0 121	**56**	07	44	28	18	11	3 04	84
3	226	32.6		25.8	65	45.4 114	−14	50.8 122	**54**	06	41	23	13	13	11	81
4	241	32.8		24.8	80	16.0 116		38.6 122	**52**	05	39	19	08	15	18	78
5	256	33.0	+1	23.8	94	46.7 117	−14	26.3 123	**50**	18 04	18 37	19 15	18 04	17	3 24	76
6	271	33.3	+1	22.9	109	17.4 117	−14	13.9 124	**45**	18 03	18 32	19 07	17 54	22	3 36	72
7	286	33.5		21.9	123	48.2 118	−14	01.4 125	**40**	02	29	19 01	46	26	47	67
8	301	33.7		20.9	138	19.1 119	−13	48.9 125	**35**	01	26	18 56	39	29	3 56	64
9	316	33.9		20.0	152	50.1 120		36.4 125	**30**	18 00	24	52	33	32	4 04	60
10	331	34.1		19.0	167	21.1 120		23.8 126	**20**	17 59	21	46	23	37	17	56
11	346	34.4	+1	18.0	181	52.2 121	−13	11.1 127	**10 N**	17 58	18 19	18 43	17 13	42	4 29	51
12	1	34.6	+1	17.1	196	23.4 122	−12	58.4 127	**0**	17 57	18 18	18 42	17 05	45	4 40	47
13	16	34.8		16.1	210	54.7 123		45.6 128	**10 S**	56	17	42	16 56	50	4 50	43
14	31	35.0		15.1	225	26.1 124		32.8 128	**20**	55	17	43	46	55	5 02	38
15	46	35.3		14.2	239	57.5 124		19.9 129	**30**	55	19	46	36	59	15	33
16	61	35.5		13.2	254	29.0 125	−12	06.9 130	**35**	54	20	49	29	63	22	31
17	76	35.7	+1	12.2	269	00.5 125	−11	54.0 129	**40**	17 54	18 21	18 53	16 22	66	5 31	27
18	91	35.9	+1	11.2	283	32.2 127	−11	40.9 131	**45**	17 54	18 23	18 57	16 14	70	5 41	23
19	106	36.2		10.3	298	03.9 127		27.9 130	**50**	53	25	19 03	16 04	74	52	19
20	121	36.4		09.3	312	35.7 128		14.7 132	**52**	53	27	06	15 59	77	5 58	16
21	136	36.6		08.3	327	07.5 128	−11	01.6 131	**54**	53	28	10	54	79	6 04	14
22	151	36.8		07.4	341	39.4 129	−10	48.4 132	**56**	53	30	14	48	83	10	12
23	166	37.1		06.4	356	11.4 130		35.1 133	**58**	52	31	18	42	85	18	8
24	181	37.3	+1	05.4	10	43.5 131	−10	21.8 133	**60 S**	17 52	18 34	19 23	15 34	90	6 26	5

UT	ARIES PMG 0h 07m.5		VENUS Mag: −4.2 PMG: 14h 34m				MARTE Mag: +1.7 PMG: 12h 17m				JÚPITER Mag: −2.8 PMG: 21h 49m				SATURNO Mag: +0.4 PMG: 20h 44m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	358	07.1	141	38.5	−15	54.3	175	26.1	−0	18.1	31	40.7	−14	44.6	48	13.0	−19	14.5
1	13	09.6	156	38.2		55.4	190	27.1		18.8	46	43.4		44.7	63	15.6		14.5
2	28	12.1	171	37.9		56.4	205	28.1		19.4	61	46.1		44.8	78	18.1		14.5
3	43	14.5	186	37.7		57.5	220	29.1		20.1	76	48.8		44.8	93	20.7		14.5
4	58	17.0	201	37.4		58.6	235	30.1		20.7	91	51.5		44.9	108	23.2		14.5
5	73	19.5	216	37.1	−15	59.7	250	31.1	−0	21.4	106	54.2	−14	45.0	123	25.8	−19	14.6
6	88	21.9	231	36.8	−16	00.7	265	32.1	−0	22.1	121	56.8	−14	45.1	138	28.3	−19	14.6
7	103	24.4	246	36.5		01.8	280	33.0		22.7	136	59.5		45.1	153	30.9		14.6
8	118	26.8	261	36.2		02.9	295	34.0		23.4	152	02.2		45.2	168	33.4		14.6
9	133	29.3	276	36.0		03.9	310	35.0		24.0	167	04.9		45.3	183	36.0		14.7
10	148	31.8	291	35.7		05.0	325	36.0		24.7	182	07.6		45.3	198	38.6		14.7
11	163	34.2	306	35.4	−16	06.1	340	37.0	−0	25.4	197	10.3	−14	45.4	213	41.1	−19	14.7
12	178	36.7	321	35.1	−16	07.1	355	38.0	−0	26.0	212	12.9	−14	45.5	228	43.7	−19	14.7
13	193	39.2	336	34.8		08.2	10	38.9		26.7	227	15.6		45.6	243	46.2		14.8
14	208	41.6	351	34.5		09.3	25	39.9		27.3	242	18.3		45.6	258	48.8		14.8
15	223	44.1	6	34.3		10.3	40	40.9		28.0	257	21.0		45.7	273	51.3		14.8
16	238	46.6	21	34.0		11.4	55	41.9		28.7	272	23.7		45.8	288	53.9		14.8
17	253	49.0	36	33.7	−16	12.5	70	42.9	−0	29.3	287	26.3	−14	45.8	303	56.4	−19	14.8
18	268	51.5	51	33.4	−16	13.5	85	43.9	−0	30.0	302	29.0	−14	45.9	318	59.0	−19	14.9
19	283	53.9	66	33.1		14.6	100	44.8		30.6	317	31.7		46.0	334	01.5		14.9
20	298	56.4	81	32.8		15.7	115	45.8		31.3	332	34.4		46.1	349	04.1		14.9
21	313	58.9	96	32.5		16.7	130	46.8		32.0	347	37.1		46.1	4	06.6		14.9
22	329	01.3	111	32.2		17.8	145	47.8		32.6	2	39.7		46.2	19	09.2		15.0
23	344	03.8	126	32.0		18.8	160	48.8		33.3	17	42.4		46.3	34	11.7		15.0
24	359	06.3	141	31.7	−16	19.9	175	49.8	−0	33.9	32	45.1	−14	46.3	49	14.3	−19	15.0
Dif	—			−3		−11		+10		−7		+27		−1		+26		0

UT	SOL SD: 15′.9 PMG: 11h 53m.3				☾ LUNA Edad: 13d.0 SD: 15′.5 PMG: **h **m PHE: 4h: 56′.7; 12h: 56′.5; 20h: 56′.3 Rº: **m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	37.3	+1	05.4	10	43.5	−10	21.8	**60 N**	4 07	4 58	5 40	18 35	3	4 17	88
1	196	37.5		04.5	25	15.6 131	−10	08.5 133	**58**	14	5 01	41	32	6	23	84
2	211	37.7		03.5	39	47.8 132	−9	55.2 133	**56**	20	04	42	29	9	28	81
3	226	37.9		02.5	54	20.0 132		41.8 134	**54**	25	07	42	26	11	32	79
4	241	38.2		01.5	68	52.3 133		28.3 135	**52**	29	09	43	23	14	36	76
5	256	38.4	+1	00.6	83	24.7 134	−9	14.9 134	**50**	4 33	5 11	5 43	18 21	16	4 40	73
6	271	38.6	+0	59.6	97	57.1 134	−9	01.4 135	**45**	4 41	5 15	5 45	18 16	20	4 48	68
7	286	38.8		58.6	112	29.6 135	−8	47.8 136	**40**	47	19	46	12	24	4 54	65
8	301	39.1		57.7	127	02.1 135		34.3 135	**35**	52	21	47	08	27	5 00	61
9	316	39.3		56.7	141	34.7 136		20.7 136	**30**	4 55	23	47	05	30	04	59
10	331	39.5		55.7	156	07.4 137	−8	07.1 136	**20**	5 01	26	48	18 00	35	13	53
11	346	39.7	+0	54.7	170	40.1 137	−7	53.5 136	**10 N**	5 04	5 28	5 49	17 55	39	5 20	49
12	1	40.0	+0	53.8	185	12.9 138	−7	39.8 137	**0**	5 05	5 29	5 50	17 50	44	5 27	44
13	16	40.2		52.8	199	45.7 138		26.1 137	**10 S**	05	30	51	46	47	33	41
14	31	40.4		51.8	214	18.6 139	−7	12.4 137	**20**	04	29	51	41	52	40	36
15	46	40.6		50.9	228	51.5 139	−6	58.7 137	**30**	5 00	28	52	35	57	48	31
16	61	40.8		49.9	243	24.5 140		44.9 138	**35**	4 58	27	52	32	60	53	28
17	76	41.1	+0	48.9	257	57.6 141	−6	31.1 138	**40**	4 54	5 25	5 52	17 28	64	5 58	25
18	91	41.3	+0	48.0	272	30.6 140	−6	17.4 137	**45**	4 49	5 23	5 53	17 24	67	6 04	21
19	106	41.5		47.0	287	03.8 142	−6	03.6 138	**50**	43	21	53	18	73	11	17
20	121	41.7		46.0	301	37.0 142	−5	49.7 139	**52**	40	20	53	16	75	14	15
21	136	42.0		45.0	316	10.2 142		35.9 138	**54**	37	18	53	13	77	18	12
22	151	42.2		44.1	330	43.5 143		22.0 139	**56**	33	16	53	11	79	22	10
23	166	42.4		43.1	345	16.8 143	−5	08.2 138	**58**	28	14	54	07	83	26	7
24	181	42.6	+0	42.1	359	50.1 143	−4	54.3 139	**60 S**	4 23	5 12	5 54	17 04	86	6 31	4

UT	ARIES PMG 0h 03m.6		VENUS Mag: −4.2 PMG: 14h 34m			MARTE Mag: +1.7 PMG: 12h 16m			JÚPITER Mag: −2.8 PMG: 21h 45m			SATURNO Mag: +0.4 PMG: 20h 40m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	359	06.3	141	31.7	−16 19.9	175	49.8	−0 33.9	32	45.1	−14 46.3	49	14.3	−19 15.0
1	14	08.7	156	31.4	21.0	190	50.7	34.6	47	47.8	46.4	64	16.8	15.0
2	29	11.2	171	31.1	22.0	205	51.7	35.3	62	50.5	46.5	79	19.4	15.0
3	44	13.7	186	30.8	23.1	220	52.7	35.9	77	53.1	46.6	94	21.9	15.1
4	59	16.1	201	30.5	24.1	235	53.7	36.6	92	55.8	46.6	109	24.5	15.1
5	74	18.6	216	30.2	−16 25.2	250	54.7	−0 37.2	107	58.5	−14 46.7	124	27.0	−19 15.1
6	89	21.1	231	29.9	−16 26.2	265	55.7	−0 37.9	123	01.2	−14 46.8	139	29.6	−19 15.1
7	104	23.5	246	29.6	27.3	280	56.6	38.6	138	03.9	46.8	154	32.1	15.2
8	119	26.0	261	29.3	28.4	295	57.6	39.2	153	06.5	46.9	169	34.7	15.2
9	134	28.4	276	29.1	29.4	310	58.6	39.9	168	09.2	47.0	184	37.2	15.2
10	149	30.9	291	28.8	30.5	325	59.6	40.5	183	11.9	47.0	199	39.8	15.2
11	164	33.4	306	28.5	−16 31.5	341	00.6	−0 41.2	198	14.6	−14 47.1	214	42.3	−19 15.2
12	179	35.8	321	28.2	−16 32.6	356	01.6	−0 41.8	213	17.2	−14 47.2	229	44.9	−19 15.3
13	194	38.3	336	27.9	33.6	11	02.5	42.5	228	19.9	47.2	244	47.4	15.3
14	209	40.8	351	27.6	34.7	26	03.5	43.2	243	22.6	47.3	259	50.0	15.3
15	224	43.2	6	27.3	35.7	41	04.5	43.8	258	25.3	47.4	274	52.5	15.3
16	239	45.7	21	27.0	36.8	56	05.5	44.5	273	27.9	47.5	289	55.1	15.4
17	254	48.2	36	26.7	−16 37.8	71	06.5	−0 45.1	288	30.6	−14 47.5	304	57.6	−19 15.4
18	269	50.6	51	26.4	−16 38.9	86	07.4	−0 45.8	303	33.3	−14 47.6	320	00.2	−19 15.4
19	284	53.1	66	26.1	39.9	101	08.4	46.5	318	36.0	47.7	335	02.7	15.4
20	299	55.5	81	25.8	41.0	116	09.4	47.1	333	38.6	47.7	350	05.3	15.4
21	314	58.0	96	25.5	42.0	131	10.4	47.8	348	41.3	47.8	5	07.8	15.5
22	330	00.5	111	25.2	43.1	146	11.4	48.4	3	44.0	47.9	20	10.4	15.5
23	345	02.9	126	24.9	44.1	161	12.4	49.1	18	46.7	47.9	35	12.9	15.5
24	0	05.4	141	24.7	−16 45.2	176	13.3	−0 49.8	33	49.3	−14 48.0	50	15.4	−19 15.5
Dif	—			−3	−11		+10	−7		+27	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 14^{d}.0		PHE	4^{h}: 56′.1								
	PMG: 11^{h} 53^{m}.0		SD: 15′.3			12^{h}: 56′.0								
			PMG: 0^{h} 01^{m}			20^{h}: 55′.8								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	181 42.6	+0 42.1	359 50.1		−4 54.3		**60 N**	18 02	18 44	19 34	18 38	3	5 45	85
1	196 42.8	41.2	14 23.6	145	40.4	139	**58**	02	41	28	38	6	47	82
2	211 43.1	40.2	28 57.0	144	26.5	139	**56**	01	38	23	38	8	49	79
3	226 43.3	39.2	43 30.5	145	−4 12.6	139	**54**	01	36	18	37	11	51	76
4	241 43.5	38.2	58 04.0	145	−3 58.7	139	**52**	00	34	14	37	13	52	74
5	256 43.7	+0 37.3	72 37.6	146	−3 44.8	139	**50**	18 00	18 32	19 10	18 37	15	5 53	72
6	271 44.0	+0 36.3	87 11.2	146	−3 30.9	139	**45**	17 59	18 29	19 03	18 36	20	5 56	67
7	286 44.2	35.3	101 44.8	146	17.0	139	**40**	59	26	18 57	36	23	5 59	63
8	301 44.4	34.4	116 18.5	147	−3 03.0	140	**35**	58	23	53	35	27	6 01	59
9	316 44.6	33.4	130 52.2	147	−2 49.1	139	**30**	58	22	49	35	29	03	56
10	331 44.8	32.4	145 26.0	148	35.2	139	**20**	57	19	45	35	34	06	51
11	346 45.1	+0 31.4	159 59.8	148	−2 21.2	140	**10 N**	17 57	18 18	18 42	18 34	38	6 09	47
12	1 45.3	+0 30.5	174 33.6	148	−2 07.3	139	**0**	17 56	18 17	18 41	18 34	42	6 11	43
13	16 45.5	29.5	189 07.4	148	−1 53.4	139	**10 S**	56	17	41	33	47	14	38
14	31 45.7	28.5	203 41.3	149	39.4	140	**20**	56	18	43	33	51	16	35
15	46 46.0	27.6	218 15.2	149	25.5	139	**30**	56	20	48	32	56	19	30
16	61 46.2	26.6	232 49.2	150	−1 11.6	139	**35**	56	21	51	32	59	21	27
17	76 46.4	+0 25.6	247 23.1	149	−0 57.7	139	**40**	17 56	18 23	18 54	18 32	62	6 23	23
18	91 46.6	+0 24.6	261 57.1	150	−0 43.8	139	**45**	17 56	18 25	19 00	18 31	66	6 25	20
19	106 46.8	23.7	276 31.1	150	29.9	139	**50**	56	28	06	31	71	28	15
20	121 47.1	22.7	291 05.2	151	16.0	139	**52**	56	30	10	31	73	29	13
21	136 47.3	21.7	305 39.2	150	−0 02.1	139	**54**	56	32	13	30	76	30	11
22	151 47.5	20.8	320 13.3	151	+0 11.8	139	**56**	56	34	18	30	78	32	8
23	166 47.7	19.8	334 47.4	151	25.6	138	**58**	57	36	23	30	81	33	6
24	181 48.0	+0 18.8	349 21.6	152	+0 39.5	139	**60 S**	17 57	18 38	19 28	18 30	84	6 35	3

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.2		Mag: +1.7		Mag: −2.8		Mag: +0.4	
	23^{h} 55^{m}.7	PMG: 14^{h} 35^{m}		PMG: 12^{h} 14^{m}		PMG: 21^{h} 41^{m}		PMG: 20^{h} 35^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	0 05.4	141 24.7	−16 45.2	176 13.3	−0 49.8	33 49.3	−14 48.0	50 15.4	−19 15.5
1	15 07.9	156 24.4	46.2	191 14.3	50.4	48 52.0	48.1	65 18.0	15.5
2	30 10.3	171 24.1	47.2	206 15.3	51.1	63 54.7	48.1	80 20.5	15.6
3	45 12.8	186 23.8	48.3	221 16.3	51.7	78 57.4	48.2	95 23.1	15.6
4	60 15.3	201 23.5	49.3	236 17.3	52.4	94 00.0	48.3	110 25.6	15.6
5	75 17.7	216 23.2	−16 50.4	251 18.3	−0 53.1	109 02.7	−14 48.3	125 28.2	−19 15.6
6	90 20.2	231 22.9	−16 51.4	266 19.2	−0 53.7	124 05.4	−14 48.4	140 30.7	−19 15.6
7	105 22.7	246 22.6	52.5	281 20.2	54.4	139 08.0	48.5	155 33.3	15.7
8	120 25.1	261 22.3	53.5	296 21.2	55.0	154 10.7	48.5	170 35.8	15.7
9	135 27.6	276 22.0	54.5	311 22.2	55.7	169 13.4	48.6	185 38.4	15.7
10	150 30.0	291 21.7	55.6	326 23.2	56.4	184 16.0	48.7	200 40.9	15.7
11	165 32.5	306 21.4	−16 56.6	341 24.1	−0 57.0	199 18.7	−14 48.7	215 43.5	−19 15.8
12	180 35.0	321 21.1	−16 57.6	356 25.1	−0 57.7	214 21.4	−14 48.8	230 46.0	−19 15.8
13	195 37.4	336 20.8	58.7	11 26.1	58.3	229 24.1	48.9	245 48.5	15.8
14	210 39.9	351 20.5	−16 59.7	26 27.1	59.0	244 26.7	48.9	260 51.1	15.8
15	225 42.4	6 20.2	−17 00.8	41 28.1	−0 59.7	259 29.4	49.0	275 53.6	15.8
16	240 44.8	21 19.9	01.8	56 29.0	−1 00.3	274 32.1	49.1	290 56.2	15.9
17	255 47.3	36 19.6	−17 02.8	71 30.0	−1 01.0	289 34.7	−14 49.1	305 58.7	−19 15.9
18	270 49.8	51 19.3	−17 03.9	86 31.0	−1 01.6	304 37.4	−14 49.2	321 01.3	−19 15.9
19	285 52.2	66 19.0	04.9	101 32.0	02.3	319 40.1	49.3	336 03.8	15.9
20	300 54.7	81 18.7	05.9	116 33.0	03.0	334 42.7	49.3	351 06.4	15.9
21	315 57.1	96 18.4	07.0	131 33.9	03.6	349 45.4	49.4	6 08.9	16.0
22	330 59.6	111 18.1	08.0	146 34.9	04.3	4 48.1	49.5	21 11.4	16.0
23	346 02.1	126 17.8	09.0	161 35.9	04.9	19 50.7	49.5	36 14.0	16.0
24	1 04.5	141 17.5	−17 10.1	176 36.9	−1 05.6	34 53.4	−14 49.6	51 16.5	−19 16.0
Dif	—	−3	−10	+10	−7	+27	−1	+25	0

UT	SOL SD: 15′.9 PMG: 11h 52m.6				LUNA Edad: 15d.0 SD: 15′.2 PMG: 0h 44m PHE: 4h: 55′.6; 12h: 55′.5; 20h: 55′.3 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	48.0	+0	18.8	349	21.6	+0	39.5	**60 N**	4 13	5 03	5 45	18 41	4	7 10	84
1	196	48.2		17.8	3	55.7 151	+0	53.3 138	**58**	19	06	45	44	6	09	80
2	211	48.4		16.9	18	29.9 152	+1	07.1 138	**56**	24	08	45	46	9	08	77
3	226	48.6		15.9	33	04.1 152		20.9 138	**54**	28	10	46	48	12	07	74
4	241	48.8		14.9	47	38.3 152		34.7 138	**52**	32	12	46	50	14	06	72
5	256	49.1	+0	13.9	62	12.5 152	+1	48.5 138	**50**	4 36	5 14	5 46	18 52	16	7 05	70
6	271	49.3	+0	13.0	76	46.8 153	+2	02.2 137	**45**	4 43	5 18	5 47	18 56	20	7 03	66
7	286	49.5		12.0	91	21.0 152		16.0 138	**40**	49	21	48	18 59	24	02	62
8	301	49.7		11.0	105	55.3 153		29.7 137	**35**	53	23	48	19 02	26	7 00	59
9	316	49.9		10.1	120	29.5 152		43.4 137	**30**	4 57	24	48	04	30	6 59	56
10	331	50.2		09.1	135	03.8 153	+2	57.0 136	**20**	5 01	27	49	09	34	57	51
11	346	50.4	+0	08.1	149	38.1 153	+3	10.7 137	**10 N**	5 04	5 28	5 49	19 12	39	6 56	46
12	1	50.6	+0	07.1	164	12.4 153	+3	24.3 136	**0**	5 05	5 29	5 49	19 16	42	6 54	42
13	16	50.8		06.2	178	46.8 154		37.9 136	**10 S**	04	29	49	20	46	52	39
14	31	51.0		05.2	193	21.1 153	+3	51.5 136	**20**	5 02	28	49	24	50	51	34
15	46	51.3		04.2	207	55.4 153	+4	05.0 135	**30**	4 58	26	49	28	56	49	29
16	61	51.5		03.3	222	29.8 154		18.6 136	**35**	55	24	49	31	58	48	26
17	76	51.7	+0	02.3	237	04.1 153	+4	32.1 135	**40**	4 51	5 22	5 49	19 34	61	6 46	23
18	91	51.9	+0	01.3	251	38.5 154	+4	45.5 134	**45**	4 45	5 20	5 49	19 37	66	6 45	19
19	106	52.1	+0	00.3	266	12.8 153	+4	59.0 135	**50**	38	16	49	42	69	43	15
20	121	52.4	−0	00.6	280	47.2 154	+5	12.4 134	**52**	35	15	48	44	72	42	13
21	136	52.6		01.6	295	21.5 153		25.8 134	**54**	31	13	48	46	74	41	11
22	151	52.8		02.6	309	55.9 154		39.1 133	**56**	27	11	48	48	77	40	9
23	166	53.0		03.6	324	30.2 153	+5	52.4 133	**58**	22	09	48	51	80	39	6
24	181	53.3	−0	04.5	339	04.6 154	+6	05.7 133	**60 S**	4 16	5 06	5 48	19 54	83	6 38	3

UT	ARIES PMG 23h 51m.8		VENUS Mag: −4.2 PMG: 14h 35m			MARTE Mag: +1.7 PMG: 12h 13m			JÚPITER Mag: −2.8 PMG: 21h 37m			SATURNO Mag: +0.4 PMG: 20h 31m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	1	04.5	141	17.5	−17 10.1	176	36.9	−1 05.6	34	53.4	−14 49.6	51	16.5	−19 16.0
1	16	07.0	156	17.2	11.1	191	37.9	06.3	49	56.1	49.7	66	19.1	16.0
2	31	09.5	171	16.9	12.1	206	38.9	06.9	64	58.7	49.7	81	21.6	16.1
3	46	11.9	186	16.6	13.1	221	39.8	07.6	80	01.4	49.8	96	24.2	16.1
4	61	14.4	201	16.3	14.2	236	40.8	08.2	95	04.1	49.9	111	26.7	16.1
5	76	16.9	216	16.0	−17 15.2	251	41.8	−1 08.9	110	06.7	−14 49.9	126	29.2	−19 16.1
6	91	19.3	231	15.7	−17 16.2	266	42.8	−1 09.6	125	09.4	−14 50.0	141	31.8	−19 16.1
7	106	21.8	246	15.4	17.2	281	43.8	10.2	140	12.1	50.1	156	34.3	16.2
8	121	24.3	261	15.1	18.3	296	44.7	10.9	155	14.7	50.1	171	36.9	16.2
9	136	26.7	276	14.8	19.3	311	45.7	11.5	170	17.4	50.2	186	39.4	16.2
10	151	29.2	291	14.4	20.3	326	46.7	12.2	185	20.1	50.3	201	42.0	16.2
11	166	31.6	306	14.1	−17 21.3	341	47.7	−1 12.9	200	22.7	−14 50.3	216	44.5	−19 16.2
12	181	34.1	321	13.8	−17 22.4	356	48.7	−1 13.5	215	25.4	−14 50.4	231	47.0	−19 16.3
13	196	36.6	336	13.5	23.4	11	49.6	14.2	230	28.0	50.5	246	49.6	16.3
14	211	39.0	351	13.2	24.4	26	50.6	14.8	245	30.7	50.5	261	52.1	16.3
15	226	41.5	6	12.9	25.4	41	51.6	15.5	260	33.4	50.6	276	54.7	16.3
16	241	44.0	21	12.6	26.4	56	52.6	16.2	275	36.0	50.6	291	57.2	16.3
17	256	46.4	36	12.3	−17 27.5	71	53.6	−1 16.8	290	38.7	−14 50.7	306	59.7	−19 16.4
18	271	48.9	51	12.0	−17 28.5	86	54.5	−1 17.5	305	41.4	−14 50.8	322	02.3	−19 16.4
19	286	51.4	66	11.7	29.5	101	55.5	18.1	320	44.0	50.8	337	04.8	16.4
20	301	53.8	81	11.4	30.5	116	56.5	18.8	335	46.7	50.9	352	07.4	16.4
21	316	56.3	96	11.1	31.5	131	57.5	19.5	350	49.3	51.0	7	09.9	16.4
22	331	58.7	111	10.8	32.5	146	58.4	20.1	5	52.0	51.0	22	12.4	16.5
23	347	01.2	126	10.5	33.6	161	59.4	20.8	20	54.7	51.1	37	15.0	16.5
24	2	03.7	141	10.2	−17 34.6	177	00.4	−1 21.4	35	57.3	−14 51.2	52	17.5	−19 16.5
Dif	—			−3	−10		+10	−7		+27	−1		+25	0

UT	SOL SD: 15′.9 PMG: 11h 52m.3		LUNA Edad: 16d.0 SD: 15′.0 PMG: 1h 26m PHE 4h: 55′.1; 12h: 55′.0; 20h: 54′.9 Rº: 43m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	181 53.3	−0 04.5	339 04.6		+6 05.7		**60 N**	17 56	18 38	19 27	18 45	4	8 34	83
1	196 53.5	05.5	353 39.0	154	19.0	133	**58**	56	35	22	50	8	29	80
2	211 53.7	06.5	8 13.3	153	32.2	132	**56**	56	33	17	18 55	11	25	77
3	226 53.9	07.4	22 47.7	154	45.4	132	**54**	56	31	13	19 00	13	21	75
4	241 54.1	08.4	37 22.0	153	+6 58.5	131	**52**	56	29	09	04	15	18	72
5	256 54.4	−0 09.4	51 56.3	153	+7 11.6	131	**50**	17 56	18 28	19 06	19 08	17	8 15	70
6	271 54.6	−0 10.4	66 30.7	154	+7 24.7	131	**45**	17 55	18 25	18 59	19 16	21	8 09	65
7	286 54.8	11.3	81 05.0	153	37.7	130	**40**	55	22	54	23	25	8 04	61
8	301 55.0	12.3	95 39.3	153	+7 50.7	130	**35**	55	20	50	28	29	7 59	58
9	316 55.2	13.3	110 13.6	153	+8 03.6	129	**30**	55	19	47	34	31	55	55
10	331 55.5	14.3	124 47.9	153	16.6	130	**20**	55	17	43	43	35	48	51
11	346 55.7	−0 15.2	139 22.2	153	+8 29.4	128	**10 N**	17 55	18 16	18 41	19 51	39	7 42	46
12	1 55.9	−0 16.2	153 56.5	153	+8 42.2	128	**0**	17 56	18 16	18 40	19 58	43	7 36	43
13	16 56.1	17.2	168 30.8	153	+8 55.0	128	**10 S**	56	17	41	20 06	47	31	38
14	31 56.3	18.1	183 05.0	152	+9 07.8	128	**20**	56	18	44	14	51	25	34
15	46 56.5	19.1	197 39.3	153	20.5	127	**30**	57	21	49	24	55	18	30
16	61 56.8	20.1	212 13.5	152	33.1	126	**35**	57	23	52	29	58	14	27
17	76 57.0	−0 21.1	226 47.7	152	+9 45.7	126	**40**	17 58	18 25	18 57	20 35	62	7 09	25
18	91 57.2	−0 22.0	241 21.9	152	+9 58.2	125	**45**	17 58	18 28	19 02	20 43	65	7 04	21
19	106 57.4	23.0	255 56.1	152	+10 10.8	126	**50**	59	31	10	51	70	6 58	17
20	121 57.6	24.0	270 30.3	152	23.2	124	**52**	17 59	33	13	20 56	71	55	15
21	136 57.9	25.0	285 04.4	151	35.6	124	**54**	18 00	35	17	21 00	74	52	13
22	151 58.1	25.9	299 38.5	151	+10 48.0	124	**56**	00	38	22	05	77	49	10
23	166 58.3	26.9	314 12.6	151	+11 00.3	123	**58**	01	40	27	11	80	45	7
24	181 58.5	−0 27.9	328 46.7	151	+11 12.5	122	**60 S**	18 01	18 43	19 33	21 17	84	6 41	4

UT	ARIES PMG 23h 47m.8	VENUS Mag: −4.2 PMG: 14h 36m		MARTE Mag: +1.7 PMG: 12h 11m		JÚPITER Mag: −2.8 PMG: 21h 32m		SATURNO Mag: +0.4 PMG: 20h 27m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	2 03.7	141 10.2	−17 34.6	177 00.4	−1 21.4	35 57.3	−14 51.2	52 17.5	−19 16.5
1	17 06.1	156 09.8	35.6	192 01.4	22.1	51 00.0	51.2	67 20.1	16.5
2	32 08.6	171 09.5	36.6	207 02.4	22.8	66 02.6	51.3	82 22.6	16.5
3	47 11.1	186 09.2	37.6	222 03.3	23.4	81 05.3	51.3	97 25.1	16.5
4	62 13.5	201 08.9	38.6	237 04.3	24.1	96 08.0	51.4	112 27.7	16.6
5	77 16.0	216 08.6	−17 39.6	252 05.3	−1 24.7	111 10.6	−14 51.5	127 30.2	−19 16.6
6	92 18.5	231 08.3	−17 40.6	267 06.3	−1 25.4	126 13.3	−14 51.5	142 32.8	−19 16.6
7	107 20.9	246 08.0	41.7	282 07.3	26.1	141 15.9	51.6	157 35.3	16.6
8	122 23.4	261 07.7	42.7	297 08.2	26.7	156 18.6	51.7	172 37.8	16.6
9	137 25.9	276 07.4	43.7	312 09.2	27.4	171 21.3	51.7	187 40.4	16.7
10	152 28.3	291 07.0	44.7	327 10.2	28.0	186 23.9	51.8	202 42.9	16.7
11	167 30.8	306 06.7	−17 45.7	342 11.2	−1 28.7	201 26.6	−14 51.8	217 45.4	−19 16.7
12	182 33.2	321 06.4	−17 46.7	357 12.1	−1 29.4	216 29.2	−14 51.9	232 48.0	−19 16.7
13	197 35.7	336 06.1	47.7	12 13.1	30.0	231 31.9	52.0	247 50.5	16.7
14	212 38.2	351 05.8	48.7	27 14.1	30.7	246 34.5	52.0	262 53.1	16.8
15	227 40.6	6 05.5	49.7	42 15.1	31.3	261 37.2	52.1	277 55.6	16.8
16	242 43.1	21 05.2	50.7	57 16.1	32.0	276 39.8	52.2	292 58.1	16.8
17	257 45.6	36 04.9	−17 51.7	72 17.0	−1 32.7	291 42.5	−14 52.2	308 00.7	−19 16.8
18	272 48.0	51 04.5	−17 52.7	87 18.0	−1 33.3	306 45.2	−14 52.3	323 03.2	−19 16.8
19	287 50.5	66 04.2	53.7	102 19.0	34.0	321 47.8	52.3	338 05.7	16.8
20	302 53.0	81 03.9	54.7	117 20.0	34.6	336 50.5	52.4	353 08.3	16.9
21	317 55.4	96 03.6	55.7	132 20.9	35.3	351 53.1	52.5	8 10.8	16.9
22	332 57.9	111 03.3	56.7	147 21.9	36.0	6 55.8	52.5	23 13.3	16.9
23	348 00.4	126 03.0	57.7	162 22.9	36.6	21 58.4	52.6	38 15.9	16.9
24	3 02.8	141 02.7	−17 58.7	177 23.9	−1 37.3	37 01.1	−14 52.6	53 18.4	−19 16.9
Dif	—	−3	−10	+10	−7	+27	−1	+25	0

UT	SOL SD: 15′.9 PMG: 11h 51m.9				☽ LUNA Edad: 17d.0 SD: 14′.9 PMG: 2h 09m PHE 4h: 54′.7; 12h: 54′.6; 20h: 54′.5 Rº: 43m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	58.5	−0	27.9	328	46.7	+11	12.5	**60 N**	4 18	5 08	5 49	18 49	7	9 57	84
1	196	58.7		28.9	343	20.8 151		24.7 122	**58**	23	10	49	18 58	10	49	80
2	211	59.0		29.8	357	54.8 150		36.9 122	**56**	28	12	49	19 06	13	42	77
3	226	59.2		30.8	12	28.9 151	+11	49.0 121	**54**	32	14	49	13	16	36	74
4	241	59.4		31.8	27	02.9 150	+12	01.0 120	**52**	36	16	49	19	19	30	72
5	256	59.6	−0	32.7	41	36.8 149	+12	13.0 120	**50**	4 39	5 17	5 49	19 25	21	9 25	69
6	271	59.8	−0	33.7	56	10.8 150	+12	24.9 119	**45**	4 46	5 20	5 50	19 37	25	9 14	65
7	287	00.0		34.7	70	44.7 149		36.8 119	**40**	51	23	50	48	28	9 05	61
8	302	00.3		35.7	85	18.6 149	+12	48.6 118	**35**	55	24	50	19 57	31	8 57	58
9	317	00.5		36.6	99	52.5 149	+13	00.3 117	**30**	4 58	26	49	20 05	33	50	56
10	332	00.7		37.6	114	26.3 148		12.0 117	**20**	5 02	27	49	18	38	39	51
11	347	00.9	−0	38.6	129	00.1 148	+13	23.7 117	**10 N**	5 04	5 28	5 49	20 30	41	8 28	48
12	2	01.1	−0	39.6	143	33.9 148	+13	35.3 116	**0**	5 04	5 28	5 49	20 41	45	8 19	44
13	17	01.4		40.5	158	07.7 148		46.8 115	**10 S**	03	27	48	20 53	48	8 09	41
14	32	01.6		41.5	172	41.4 147	+13	58.2 114	**20**	5 00	26	48	21 05	51	7 59	37
15	47	01.8		42.5	187	15.1 147	+14	09.6 114	**30**	4 55	23	47	19	56	48	32
16	62	02.0		43.4	201	48.8 147		20.9 113	**35**	52	21	46	27	58	41	30
17	77	02.2	−0	44.4	216	22.4 146	+14	32.2 113	**40**	4 47	5 19	5 46	21 37	61	7 34	26
18	92	02.4	−0	45.4	230	56.0 146	+14	43.4 112	**45**	4 41	5 16	5 45	21 48	64	7 25	23
19	107	02.7		46.4	245	29.6 146	+14	54.5 111	**50**	34	12	44	22 01	69	15	18
20	122	02.9		47.3	260	03.1 145	+15	05.6 111	**52**	30	10	44	07	72	10	17
21	137	03.1		48.3	274	36.6 145		16.6 110	**54**	26	08	43	14	74	7 05	14
22	152	03.3		49.3	289	10.1 145		27.5 109	**56**	21	06	43	22	77	6 59	12
23	167	03.5		50.3	303	43.5 144		38.4 109	**58**	16	03	42	31	80	52	9
24	182	03.7	−0	51.2	318	16.9 144	+15	49.2 108	**60 S**	4 10	5 00	5 41	22 41	84	6 45	5

UT	ARIES PMG 23h 43m.9		VENUS Mag: −4.2 PMG: 14h 36m			MARTE Mag: +1.7 PMG: 12h 10m			JÚPITER Mag: −2.8 PMG: 21h 28m			SATURNO Mag: +0.4 PMG: 20h 23m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	3	02.8	141	02.7	−17 58.7	177	23.9	−1 37.3	37	01.1	−14 52.6	53	18.4	−19 16.9
1	18	05.3	156	02.3	−17 59.7	192	24.9	37.9	52	03.7	52.7	68	20.9	17.0
2	33	07.7	171	02.0	−18 00.7	207	25.8	38.6	67	06.4	52.8	83	23.5	17.0
3	48	10.2	186	01.7	01.7	222	26.8	39.3	82	09.0	52.8	98	26.0	17.0
4	63	12.7	201	01.4	02.7	237	27.8	39.9	97	11.7	52.9	113	28.6	17.0
5	78	15.1	216	01.1	−18 03.7	252	28.8	−1 40.6	112	14.3	−14 52.9	128	31.1	−19 17.0
6	93	17.6	231	00.8	−18 04.7	267	29.7	−1 41.2	127	17.0	−14 53.0	143	33.6	−19 17.0
7	108	20.1	246	00.4	05.7	282	30.7	41.9	142	19.7	53.1	158	36.2	17.1
8	123	22.5	261	00.1	06.7	297	31.7	42.6	157	22.3	53.1	173	38.7	17.1
9	138	25.0	275	59.8	07.7	312	32.7	43.2	172	25.0	53.2	188	41.2	17.1
10	153	27.5	290	59.5	08.7	327	33.7	43.9	187	27.6	53.2	203	43.8	17.1
11	168	29.9	305	59.2	−18 09.7	342	34.6	−1 44.5	202	30.3	−14 53.3	218	46.3	−19 17.1
12	183	32.4	320	58.8	−18 10.6	357	35.6	−1 45.2	217	32.9	−14 53.4	233	48.8	−19 17.2
13	198	34.8	335	58.5	11.6	12	36.6	45.9	232	35.6	53.4	248	51.4	17.2
14	213	37.3	350	58.2	12.6	27	37.6	46.5	247	38.2	53.5	263	53.9	17.2
15	228	39.8	5	57.9	13.6	42	38.5	47.2	262	40.9	53.5	278	56.4	17.2
16	243	42.2	20	57.6	14.6	57	39.5	47.8	277	43.5	53.6	293	59.0	17.2
17	258	44.7	35	57.2	−18 15.6	72	40.5	−1 48.5	292	46.2	−14 53.7	309	01.5	−19 17.2
18	273	47.2	50	56.9	−18 16.6	87	41.5	−1 49.2	307	48.8	−14 53.7	324	04.0	−19 17.3
19	288	49.6	65	56.6	17.6	102	42.4	49.8	322	51.4	53.8	339	06.6	17.3
20	303	52.1	80	56.3	18.5	117	43.4	50.5	337	54.1	53.8	354	09.1	17.3
21	318	54.6	95	56.0	19.5	132	44.4	51.1	352	56.7	53.9	9	11.6	17.3
22	333	57.0	110	55.6	20.5	147	45.4	51.8	7	59.4	54.0	24	14.2	17.3
23	348	59.5	125	55.3	21.5	162	46.3	52.5	23	02.0	54.0	39	16.7	17.3
24	4	02.0	140	55.0	−18 22.5	177	47.3	−1 53.1	38	04.7	−14 54.1	54	19.2	−19 17.4
Dif	—			−3	−10		+10	−7		+27	−1		+25	0

UT	SOL SD: 15′.9 PMG: 11h 51m.6		LUNA Edad: 18d.0 SD: 14′.8 PMG: 2h 52m PHE 4h: 54′.4; 12h: 54′.3; 20h: 54′.3 Rº: 45m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	182 03.7	−0 51.2	318 16.9		+15 49.2		**60 N**	17 50	18 32	19 21	18 56	10	11 21	84
1	197 04.0	52.2	332 50.2	143	+15 59.9	107	**58**	50	29	16	19 08	15	11 09	80
2	212 04.2	53.2	347 23.6	144	+16 10.5	106	**56**	51	28	11	19	18	10 59	76
3	227 04.4	54.2	1 56.8	142	21.1	106	**54**	51	26	08	29	21	50	73
4	242 04.6	55.1	16 30.1	143	31.6	105	**52**	51	25	04	38	23	42	70
5	257 04.8	−0 56.1	31 03.3	142	+16 42.1	105	**50**	17 51	18 23	19 01	19 46	25	10 34	69
6	272 05.0	−0 57.1	45 36.4	141	+16 52.4	103	**45**	17 52	18 21	18 55	20 02	30	10 19	64
7	287 05.3	58.0	60 09.6	142	+17 02.7	103	**40**	52	19	50	16	32	10 06	61
8	302 05.5	−0 59.0	74 42.6	140	12.9	102	**35**	52	18	47	28	35	9 55	58
9	317 05.7	−1 00.0	89 15.7	141	23.1	102	**30**	53	17	44	38	37	46	56
10	332 05.9	−1 01.0	103 48.7	140	33.1	100	**20**	53	15	41	20 56	40	30	52
11	347 06.1	−1 01.9	118 21.6	139	+17 43.1	100	**10 N**	17 54	18 15	18 39	21 11	44	9 16	48
12	2 06.3	−1 02.9	132 54.6	140	+17 53.0	99	**0**	17 55	18 15	18 39	21 26	46	9 03	45
13	17 06.6	03.9	147 27.4	138	+18 02.9	99	**10 S**	56	17	41	41	49	8 50	42
14	32 06.8	04.9	162 00.3	139	12.6	97	**20**	57	19	44	21 56	53	36	39
15	47 07.0	05.8	176 33.0	137	22.3	97	**30**	58	22	50	22 15	55	20	35
16	62 07.2	06.8	191 05.8	138	31.9	96	**35**	17 59	24	54	25	58	11	33
17	77 07.4	−1 07.8	205 38.5	137	+18 41.4	95	**40**	18 00	18 27	18 59	22 38	60	8 00	30
18	92 07.6	−1 08.8	220 11.1	136	+18 50.8	94	**45**	18 01	18 30	19 05	22 52	64	7 48	27
19	107 07.9	09.7	234 43.7	136	+19 00.2	94	**50**	02	35	13	23 10	68	33	23
20	122 08.1	10.7	249 16.3	136	09.5	93	**52**	03	37	17	19	69	27	20
21	137 08.3	11.7	263 48.8	135	18.6	91	**54**	03	39	21	28	72	19	18
22	152 08.5	12.6	278 21.3	135	27.7	91	**56**	04	42	26	39	75	11	15
23	167 08.7	13.6	292 53.7	134	36.7	90	**58**	05	45	32	23 51	79	7 01	12
24	182 08.9	−1 14.6	307 26.1	134	+19 45.7	90	**60 S**	18 06	18 48	19 39	** **	**	6 50	8

UT	ARIES PMG 23h 40m.0	VENUS Mag: −4.2 PMG: 14h 37m		MARTE Mag: +1.7 PMG: 12h 08m		JÚPITER Mag: −2.8 PMG: 21h 24m		SATURNO Mag: +0.4 PMG: 20h 19m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	4 02.0	140 55.0	−18 22.5	177 47.3	−1 53.1	38 04.7	−14 54.1	54 19.2	−19 17.4
1	19 04.4	155 54.7	23.5	192 48.3	53.8	53 07.3	54.1	69 21.7	17.4
2	34 06.9	170 54.3	24.4	207 49.3	54.4	68 10.0	54.2	84 24.3	17.4
3	49 09.3	185 54.0	25.4	222 50.2	55.1	83 12.6	54.2	99 26.8	17.4
4	64 11.8	200 53.7	26.4	237 51.2	55.7	98 15.3	54.3	114 29.3	17.4
5	79 14.3	215 53.4	−18 27.4	252 52.2	−1 56.4	113 17.9	−14 54.4	129 31.9	−19 17.4
6	94 16.7	230 53.1	−18 28.3	267 53.2	−1 57.1	128 20.6	−14 54.4	144 34.4	−19 17.5
7	109 19.2	245 52.7	29.3	282 54.1	57.7	143 23.2	54.5	159 36.9	17.5
8	124 21.7	260 52.4	30.3	297 55.1	58.4	158 25.8	54.5	174 39.5	17.5
9	139 24.1	275 52.1	31.3	312 56.1	59.0	173 28.5	54.6	189 42.0	17.5
10	154 26.6	290 51.8	32.3	327 57.1	−1 59.7	188 31.1	54.7	204 44.5	17.5
11	169 29.1	305 51.4	−18 33.2	342 58.0	−2 00.4	203 33.8	−14 54.7	219 47.1	−19 17.5
12	184 31.5	320 51.1	−18 34.2	357 59.0	−2 01.0	218 36.4	−14 54.8	234 49.6	−19 17.6
13	199 34.0	335 50.8	35.2	13 00.0	01.7	233 39.1	54.8	249 52.1	17.6
14	214 36.4	350 50.4	36.1	28 01.0	02.3	248 41.7	54.9	264 54.6	17.6
15	229 38.9	5 50.1	37.1	43 01.9	03.0	263 44.4	54.9	279 57.2	17.6
16	244 41.4	20 49.8	38.1	58 02.9	03.7	278 47.0	55.0	294 59.7	17.6
17	259 43.8	35 49.5	−18 39.1	73 03.9	−2 04.3	293 49.6	−14 55.0	310 02.2	−19 17.6
18	274 46.3	50 49.1	−18 40.0	88 04.9	−2 05.0	308 52.3	−14 55.1	325 04.8	−19 17.7
19	289 48.8	65 48.8	41.0	103 05.8	05.6	323 54.9	55.2	340 07.3	17.7
20	304 51.2	80 48.5	42.0	118 06.8	06.3	338 57.6	55.2	355 09.8	17.7
21	319 53.7	95 48.2	42.9	133 07.8	07.0	354 00.2	55.3	10 12.3	17.7
22	334 56.2	110 47.8	43.9	148 08.8	07.6	9 02.8	55.3	25 14.9	17.7
23	349 58.6	125 47.5	44.9	163 09.7	08.3	24 05.5	55.4	40 17.4	17.7
24	5 01.1	140 47.2	−18 45.8	178 10.7	−2 08.9	39 08.1	−14 55.4	55 19.9	−19 17.8
Dif	—	−3	−10	+10	−7	+26	−1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 19^{d}.0		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 51^{m}.2				SD: 14′.8			12^{h}: 54′.2									
					PMG: 3^{h} 37^{m}			20^{h}: 54′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	08.9	−1	14.6	307	26.1	+19	45.7		**60 N**	4 23	5 12	5 54	19 06	18	12 45	82
1	197	09.1		15.6	321	58.4 133	+19	54.5	88	**58**	28	14	54	23	22	29	76
2	212	09.4		16.5	336	30.7 133	+20	03.3	88	**56**	32	16	53	37	26	15	73
3	227	09.6		17.5	351	03.0 133		11.9	86	**54**	36	18	53	19 50	28	12 03	70
4	242	09.8		18.5	5	35.1 131		20.5	86	**52**	40	19	53	20 01	31	11 52	68
5	257	10.0	−1	19.5	20	07.3 132	+20	29.0	85	**50**	4 42	5 20	5 53	20 11	32	11 43	66
6	272	10.2	−1	20.4	34	39.4 131	+20	37.4	84	**45**	4 48	5 23	5 52	20 32	35	11 23	62
7	287	10.4		21.4	49	11.4 130		45.7	83	**40**	53	24	51	20 48	39	11 07	59
8	302	10.7		22.4	63	43.4 130	+20	53.9	82	**35**	56	26	51	21 03	40	10 53	58
9	317	10.9		23.4	78	15.4 130	+21	02.1	82	**30**	4 59	27	51	15	42	42	55
10	332	11.1		24.3	92	47.3 129		10.1	80	**20**	5 02	28	50	36	45	22	52
11	347	11.3	−1	25.3	107	19.1 128	+21	18.0	79	**10 N**	5 04	5 28	5 49	21 55	46	10 04	50
12	2	11.5	−1	26.3	121	50.9 128	+21	25.9	79	**0**	5 03	5 27	5 48	22 12	49	9 48	48
13	17	11.7		27.2	136	22.7 128		33.6	77	**10 S**	5 02	26	47	30	50	32	45
14	32	11.9		28.2	150	54.4 127		41.3	77	**20**	4 58	24	46	22 49	52	9 15	42
15	47	12.1		29.2	165	26.0 126		48.8	75	**30**	53	20	44	23 10	56	8 55	39
16	62	12.4		30.2	179	57.6 126	+21	56.3	75	**35**	49	18	44	23	57	44	37
17	77	12.6	−1	31.1	194	29.2 126	+22	03.7	74	**40**	4 44	5 15	5 42	23 38	59	8 30	36
18	92	12.8	−1	32.1	209	00.7 125	+22	11.0	73	**45**	4 37	5 12	5 41	23 56	61	8 15	32
19	107	13.0		33.1	223	32.1 124		18.1	71	**50**	29	07	40	** **	**	7 56	29
20	122	13.2		34.1	238	03.5 124		25.2	71	**52**	25	05	39	** **	**	47	27
21	137	13.4		35.0	252	34.9 124		32.2	70	**54**	21	03	38	** **	**	37	24
22	152	13.6		36.0	267	06.2 123		39.1	69	**56**	16	5 00	37	** **	**	26	21
23	167	13.9		37.0	281	37.4 122		45.8	67	**58**	10	4 57	36	** **	**	7 13	18
24	182	14.1	−1	37.9	296	08.6 122	+22	52.5	67	**60 S**	4 03	4 54	5 35	0 05	84	6 58	13

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.7			Mag: −2.8			Mag: +0.4		
	23^{h} 36^{m}.1		PMG: 14^{h} 37^{m}			PMG: 12^{h} 07^{m}			PMG: 21^{h} 20^{m}			PMG: 20^{h} 15^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	5	01.1	140	47.2	−18 45.8	178	10.7	−2 08.9	39	08.1	−14 55.4	55	19.9	−19 17.8
1	20	03.6	155	46.8	46.8	193	11.7	09.6	54	10.8	55.5	70	22.5	17.8
2	35	06.0	170	46.5	47.7	208	12.7	10.3	69	13.4	55.6	85	25.0	17.8
3	50	08.5	185	46.2	48.7	223	13.6	10.9	84	16.0	55.6	100	27.5	17.8
4	65	10.9	200	45.8	49.7	238	14.6	11.6	99	18.7	55.7	115	30.0	17.8
5	80	13.4	215	45.5	−18 50.6	253	15.6	−2 12.2	114	21.3	−14 55.7	130	32.6	−19 17.8
6	95	15.9	230	45.2	−18 51.6	268	16.6	−2 12.9	129	24.0	−14 55.8	145	35.1	−19 17.9
7	110	18.3	245	44.9	52.6	283	17.5	13.6	144	26.6	55.8	160	37.6	17.9
8	125	20.8	260	44.5	53.5	298	18.5	14.2	159	29.2	55.9	175	40.1	17.9
9	140	23.3	275	44.2	54.5	313	19.5	14.9	174	31.9	55.9	190	42.7	17.9
10	155	25.7	290	43.9	55.4	328	20.4	15.5	189	34.5	56.0	205	45.2	17.9
11	170	28.2	305	43.5	−18 56.4	343	21.4	−2 16.2	204	37.1	−14 56.0	220	47.7	−19 17.9
12	185	30.7	320	43.2	−18 57.3	358	22.4	−2 16.9	219	39.8	−14 56.1	235	50.2	−19 17.9
13	200	33.1	335	42.9	58.3	13	23.4	17.5	234	42.4	56.2	250	52.8	18.0
14	215	35.6	350	42.5	−18 59.3	28	24.3	18.2	249	45.1	56.2	265	55.3	18.0
15	230	38.1	5	42.2	−19 00.2	43	25.3	18.8	264	47.7	56.3	280	57.8	18.0
16	245	40.5	20	41.9	01.2	58	26.3	19.5	279	50.3	56.3	296	00.3	18.0
17	260	43.0	35	41.5	−19 02.1	73	27.3	−2 20.2	294	53.0	−14 56.4	311	02.9	−19 18.0
18	275	45.4	50	41.2	−19 03.1	88	28.2	−2 20.8	309	55.6	−14 56.4	326	05.4	−19 18.0
19	290	47.9	65	40.9	04.0	103	29.2	21.5	324	58.2	56.5	341	07.9	18.1
20	305	50.4	80	40.5	05.0	118	30.2	22.1	340	00.9	56.5	356	10.4	18.1
21	320	52.8	95	40.2	05.9	133	31.1	22.8	355	03.5	56.6	11	13.0	18.1
22	335	55.3	110	39.9	06.9	148	32.1	23.5	10	06.1	56.6	26	15.5	18.1
23	350	57.8	125	39.5	07.8	163	33.1	24.1	25	08.8	56.7	41	18.0	18.1
24	6	00.2	140	39.2	−19 08.8	178	34.1	−2 24.8	40	11.4	−14 56.7	56	20.5	−19 18.1
Dif	—			−3	−10		+10	−7		+26	−1		+25	0

UT	SOL SD: 16′.0 PMG: 11h 50m.9				LUNA Edad: 20d.0 SD: 14′.8 PMG: 4h 24m PHE 4h: 54′.2; 12h: 54′.2; 20h: 54′.3 Rº: 49m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	182	14.1	−1	37.9	296	08.6	+22	52.5	**60 N**	17 44	18 25	19 15	19 24	31	14 07	72
1	197	14.3		38.9	310	39.8 122	+22	59.1 66	**58**	45	24	10	19 45	35	13 45	69
2	212	14.5		39.9	325	10.9 121	+23	05.5 64	**56**	45	22	06	20 03	38	28	66
3	227	14.7		40.9	339	42.0 121		11.9 64	**54**	46	21	19 02	18	39	13	64
4	242	14.9		41.8	354	13.0 120		18.2 63	**52**	46	20	18 59	32	40	13 00	62
5	257	15.1	−1	42.8	8	43.9 119	+23	24.3 61	**50**	17 47	18 19	18 57	20 43	42	12 49	61
6	272	15.3	−1	43.8	23	14.8 119	+23	30.4 61	**45**	17 48	18 17	18 51	21 07	44	12 25	59
7	287	15.6		44.8	37	45.7 119		36.3 59	**40**	49	16	47	27	44	12 06	58
8	302	15.8		45.7	52	16.5 118		42.1 58	**35**	49	15	44	43	46	11 51	55
9	317	16.0		46.7	66	47.3 118		47.9 58	**30**	50	14	42	21 57	47	37	55
10	332	16.2		47.7	81	18.0 117		53.5 56	**20**	52	14	39	22 21	48	11 14	53
11	347	16.4	−1	48.7	95	48.6 116	+23	59.0 55	**10 N**	17 53	18 14	18 38	22 41	50	10 54	51
12	2	16.6	−1	49.6	110	19.3 117	+24	04.4 54	**0**	17 54	18 15	18 39	23 01	50	10 36	49
13	17	16.8		50.6	124	49.8 115		09.7 53	**10 S**	56	17	41	20	52	10 17	48
14	32	17.0		51.6	139	20.4 116		14.9 52	**20**	57	19	45	23 41	53	9 57	46
15	47	17.3		52.5	153	50.8 114		20.0 51	**30**	17 59	23	51	** **	**	34	44
16	62	17.5		53.5	168	21.3 115		25.0 50	**35**	18 00	26	18 55	** **	**	21	43
17	77	17.7	−1	54.5	182	51.6 113	+24	29.8 48	**40**	18 02	18 29	19 01	** **	**	9 06	41
18	92	17.9	−1	55.5	197	22.0 114	+24	34.5 47	**45**	18 03	18 33	19 07	** **	**	8 47	40
19	107	18.1		56.4	211	52.3 113		39.2 47	**50**	05	38	16	0 18	64	25	36
20	122	18.3		57.4	226	22.5 112		43.7 45	**52**	06	40	20	28	66	14	35
21	137	18.5		58.4	240	52.7 112		48.1 44	**54**	07	43	25	40	68	8 01	34
22	152	18.7	−1	59.3	255	22.9 112		52.4 43	**56**	08	46	31	0 54	70	7 47	31
23	167	18.9	−2	00.3	269	53.0 111	+24	56.6 42	**58**	09	49	37	1 10	73	31	27
24	182	19.1	−2	01.3	284	23.1 111	+25	00.6 40	**60 S**	18 11	18 53	19 44	1 29	79	7 11	23

UT	ARIES PMG 23h 32m.1		VENUS Mag: −4.2 PMG: 14h 38m				MARTE Mag: +1.7 PMG: 12h 05m				JÚPITER Mag: −2.8 PMG: 21h 16m				SATURNO Mag: +0.5 PMG: 20h 11m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	6	00.2	140	39.2	−19	08.8	178	34.1	−2	24.8	40	11.4	−14	56.7	56	20.5	−19	18.1
1	21	02.7	155	38.8		09.7	193	35.0		25.4	55	14.0		56.8	71	23.1		18.1
2	36	05.2	170	38.5		10.7	208	36.0		26.1	70	16.7		56.9	86	25.6		18.2
3	51	07.6	185	38.2		11.6	223	37.0		26.7	85	19.3		56.9	101	28.1		18.2
4	66	10.1	200	37.8		12.5	238	37.9		27.4	100	21.9		57.0	116	30.6		18.2
5	81	12.6	215	37.5	−19	13.5	253	38.9	−2	28.1	115	24.6	−14	57.0	131	33.2	−19	18.2
6	96	15.0	230	37.2	−19	14.4	268	39.9	−2	28.7	130	27.2	−14	57.1	146	35.7	−19	18.2
7	111	17.5	245	36.8		15.4	283	40.9		29.4	145	29.8		57.1	161	38.2		18.2
8	126	19.9	260	36.5		16.3	298	41.8		30.0	160	32.4		57.2	176	40.7		18.2
9	141	22.4	275	36.1		17.3	313	42.8		30.7	175	35.1		57.2	191	43.2		18.3
10	156	24.9	290	35.8		18.2	328	43.8		31.4	190	37.7		57.3	206	45.8		18.3
11	171	27.3	305	35.5	−19	19.1	343	44.7	−2	32.0	205	40.3	−14	57.3	221	48.3	−19	18.3
12	186	29.8	320	35.1	−19	20.1	358	45.7	−2	32.7	220	43.0	−14	57.4	236	50.8	−19	18.3
13	201	32.3	335	34.8		21.0	13	46.7		33.3	235	45.6		57.4	251	53.3		18.3
14	216	34.7	350	34.4		21.9	28	47.7		34.0	250	48.2		57.5	266	55.8		18.3
15	231	37.2	5	34.1		22.9	43	48.6		34.7	265	50.9		57.5	281	58.4		18.3
16	246	39.7	20	33.8		23.8	58	49.6		35.3	280	53.5		57.6	297	00.9		18.4
17	261	42.1	35	33.4	−19	24.8	73	50.6	−2	36.0	295	56.1	−14	57.6	312	03.4	−19	18.4
18	276	44.6	50	33.1	−19	25.7	88	51.5	−2	36.6	310	58.7	−14	57.7	327	05.9	−19	18.4
19	291	47.0	65	32.7		26.6	103	52.5		37.3	326	01.4		57.7	342	08.5		18.4
20	306	49.5	80	32.4		27.6	118	53.5		38.0	341	04.0		57.8	357	11.0		18.4
21	321	52.0	95	32.1		28.5	133	54.5		38.6	356	06.6		57.8	12	13.5		18.4
22	336	54.4	110	31.7		29.4	148	55.4		39.3	11	09.2		57.9	27	16.0		18.4
23	351	56.9	125	31.4		30.3	163	56.4		39.9	26	11.9		57.9	42	18.5		18.5
24	6	59.4	140	31.0	−19	31.3	178	57.4	−2	40.6	41	14.5	−14	58.0	57	21.1	−19	18.5
Dif	—			−3		−9		+10		−7		+26		−1		+25		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 21^{d}.0		PHE	4^{h}: 54′.3									
	PMG: 11^{h} 50^{m}.6				SD: 14′.8			12^{h}: 54′.4									
					PMG: 5^{h} 13^{m}			20^{h}: 54′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	182	19.1	−2	01.3	284	23.1	+25	00.6		**60 N**	4 28	5 17	5 59	19 55	51	15 19	55
1	197	19.4		02.3	298	53.1 110		04.6	40	**58**	33	19	58	20 20	52	14 54	54
2	212	19.6		03.2	313	23.1 110		08.4	38	**56**	37	20	57	41	51	34	54
3	227	19.8		04.2	327	53.0 109		12.1	37	**54**	40	21	57	20 57	52	17	54
4	242	20.0		05.2	342	22.9 109		15.7	36	**52**	43	22	56	21 12	52	14 02	54
5	257	20.2	−2	06.2	356	52.8 109	+25	19.1	34	**50**	4 46	5 23	5 56	21 25	52	13 50	53
6	272	20.4	−2	07.1	11	22.6 108	+25	22.5	34	**45**	4 51	5 25	5 54	21 51	52	13 24	53
7	287	20.6		08.1	25	52.4 108		25.7	32	**40**	55	26	53	22 11	52	13 04	52
8	302	20.8		09.1	40	22.1 107		28.8	31	**35**	4 58	27	53	29	52	12 46	53
9	317	21.0		10.0	54	51.8 107		31.8	30	**30**	5 00	28	52	22 44	52	32	52
10	332	21.2		11.0	69	21.5 107		34.7	29	**20**	03	28	50	23 09	52	12 07	52
11	347	21.5	−2	12.0	83	51.1 106	+25	37.5	28	**10 N**	5 03	5 28	5 49	23 31	52	11 45	52
12	2	21.7	−2	13.0	98	20.7 106	+25	40.1	26	**0**	5 03	5 27	5 47	23 51	52	11 25	51
13	17	21.9		13.9	112	50.2 105		42.6	25	**10 S**	5 00	25	46	** **	**	11 05	50
14	32	22.1		14.9	127	19.8 106		45.0	24	**20**	4 56	22	44	** **	**	10 43	50
15	47	22.3		15.9	141	49.2 104		47.3	23	**30**	50	18	42	0 06	53	18	50
16	62	22.5		16.9	156	18.7 105		49.4	21	**35**	46	15	41	20	54	10 04	49
17	77	22.7	−2	17.8	170	48.1 104	+25	51.4	20	**40**	4 40	5 12	5 39	0 37	55	9 47	48
18	92	22.9	−2	18.8	185	17.5 104	+25	53.3	19	**45**	4 33	5 08	5 37	0 57	56	9 27	47
19	107	23.1		19.8	199	46.8 103		55.1	18	**50**	24	03	35	1 22	57	9 01	47
20	122	23.3		20.7	214	16.1 103		56.7	16	**52**	20	5 01	34	34	58	8 49	46
21	137	23.5		21.7	228	45.4 103		58.2	15	**54**	15	4 58	33	1 48	59	35	45
22	152	23.8		22.7	243	14.7 103	+25	59.6	14	**56**	10	55	32	2 04	61	8 18	44
23	167	24.0		23.7	257	43.9 102	+26	00.9	13	**58**	4 03	51	31	23	63	7 58	43
24	182	24.2	−2	24.6	272	13.1 102	+26	02.0	11	**60 S**	3 56	4 47	5 29	2 48	65	7 34	40

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.7			Mag: −2.8			Mag: +0.5		
	23^{h} 28^{m}.2		PMG: 14^{h} 38^{m}			PMG: 12^{h} 03^{m}			PMG: 21^{h} 11^{m}			PMG: 20^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	6	59.4	140	31.0	−19 31.3	178	57.4	−2 40.6	41	14.5	−14 58.0	57	21.1	−19 18.5
1	22	01.8	155	30.7	32.2	193	58.3	41.3	56	17.1	58.0	72	23.6	18.5
2	37	04.3	170	30.3	33.1	208	59.3	41.9	71	19.7	58.1	87	26.1	18.5
3	52	06.8	185	30.0	34.1	224	00.3	42.6	86	22.4	58.1	102	28.6	18.5
4	67	09.2	200	29.7	35.0	239	01.2	43.2	101	25.0	58.2	117	31.1	18.5
5	82	11.7	215	29.3	−19 35.9	254	02.2	−2 43.9	116	27.6	−14 58.2	132	33.6	−19 18.5
6	97	14.2	230	29.0	−19 36.8	269	03.2	−2 44.5	131	30.2	−14 58.3	147	36.2	−19 18.6
7	112	16.6	245	28.6	37.8	284	04.2	45.2	146	32.9	58.3	162	38.7	18.6
8	127	19.1	260	28.3	38.7	299	05.1	45.9	161	35.5	58.4	177	41.2	18.6
9	142	21.5	275	27.9	39.6	314	06.1	46.5	176	38.1	58.4	192	43.7	18.6
10	157	24.0	290	27.6	40.5	329	07.1	47.2	191	40.7	58.5	207	46.2	18.6
11	172	26.5	305	27.2	−19 41.5	344	08.0	−2 47.8	206	43.4	−14 58.5	222	48.8	−19 18.6
12	187	28.9	320	26.9	−19 42.4	359	09.0	−2 48.5	221	46.0	−14 58.6	237	51.3	−19 18.6
13	202	31.4	335	26.5	43.3	14	10.0	49.2	236	48.6	58.6	252	53.8	18.7
14	217	33.9	350	26.2	44.2	29	10.9	49.8	251	51.2	58.7	267	56.3	18.7
15	232	36.3	5	25.8	45.1	44	11.9	50.5	266	53.8	58.7	282	58.8	18.7
16	247	38.8	20	25.5	46.0	59	12.9	51.1	281	56.5	58.8	298	01.3	18.7
17	262	41.3	35	25.2	−19 47.0	74	13.8	−2 51.8	296	59.1	−14 58.8	313	03.9	−19 18.7
18	277	43.7	50	24.8	−19 47.9	89	14.8	−2 52.5	312	01.7	−14 58.9	328	06.4	−19 18.7
19	292	46.2	65	24.5	48.8	104	15.8	53.1	327	04.3	58.9	343	08.9	18.7
20	307	48.7	80	24.1	49.7	119	16.8	53.8	342	06.9	59.0	358	11.4	18.7
21	322	51.1	95	23.8	50.6	134	17.7	54.4	357	09.6	59.0	13	13.9	18.8
22	337	53.6	110	23.4	51.5	149	18.7	55.1	12	12.2	59.1	28	16.4	18.8
23	352	56.0	125	23.1	52.4	164	19.7	55.7	27	14.8	59.1	43	19.0	18.8
24	7	58.5	140	22.7	−19 53.4	179	20.6	−2 56.4	42	17.4	−14 59.2	58	21.5	−19 18.8
Dif	—			−3	−9		+10	−7		+26	0		+25	0

UT	SOL SD: 16′.0 PMG: 11h 50m.2				LUNA Edad: 22d.0 SD: 14′.9 PMG: 6h 04m PHE 4h: 54′.6; 12h: 54′.8; 20h: 54′.9 Rº: 51m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	182	24.2	−2	24.6	272	13.1	+26	02.0	**60 N**	17 38	18 19	19 08	20 46	73	16 14	35
1	197	24.4		25.6	286	42.2 101		03.1 11	**58**	39	18	04	21 12	69	15 48	39
2	212	24.6		26.6	301	11.4 102		04.0 9	**56**	40	17	19 00	32	67	28	40
3	227	24.8		27.5	315	40.5 101		04.7 7	**54**	41	16	18 57	21 49	65	15 11	42
4	242	25.0		28.5	330	09.6 101		05.4 7	**52**	42	15	55	22 04	63	14 56	44
5	257	25.2	−2	29.5	344	38.6 100	+26	05.9 5	**50**	17 42	18 15	18 52	22 17	62	14 43	45
6	272	25.4	−2	30.5	359	07.7 101	+26	06.2 3	**45**	17 44	18 13	18 47	22 43	60	14 17	46
7	287	25.6		31.4	13	36.7 100		06.5 3	**40**	45	12	44	23 03	59	13 56	48
8	302	25.8		32.4	28	05.7 100		06.6 1	**35**	47	12	41	21	57	39	48
9	317	26.0		33.4	42	34.6 99		06.6 0	**30**	48	12	39	23 36	56	13 24	49
10	332	26.2		34.3	57	03.6 100		06.5 1	**20**	50	12	37	** **	**	12 59	50
11	347	26.4	−2	35.3	71	32.5 99	+26	06.2 3	**10 N**	17 52	18 13	18 37	** **	**	12 37	50
12	2	26.7	−2	36.3	86	01.4 99	+26	05.8 4	**0**	17 53	18 14	18 38	** **	**	12 16	52
13	17	26.9		37.3	100	30.3 99		05.3 5	**10 S**	55	16	41	0 12	51	11 55	53
14	32	27.1		38.2	114	59.2 99		04.6 7	**20**	17 58	20	45	34	51	33	54
15	47	27.3		39.2	129	28.0 98		03.8 8	**30**	18 00	24	52	0 59	51	11 08	54
16	62	27.5		40.2	143	56.9 99		02.9 9	**35**	02	27	18 57	1 14	51	10 53	55
17	77	27.7	−2	41.1	158	25.7 98	+26	01.9 10	**40**	18 04	18 31	19 03	1 32	50	10 35	56
18	92	27.9	−2	42.1	172	54.5 98	+26	00.7 12	**45**	18 06	18 35	19 10	1 53	50	10 14	56
19	107	28.1		43.1	187	23.3 98	+25	59.4 13	**50**	08	41	20	2 19	49	9 48	57
20	122	28.3		44.1	201	52.1 98		58.0 14	**52**	09	43	24	32	49	35	57
21	137	28.5		45.0	216	20.9 98		56.4 16	**54**	11	46	29	2 47	48	20	58
22	152	28.7		46.0	230	49.6 97		54.7 17	**56**	12	50	35	3 05	47	9 02	60
23	167	28.9		47.0	245	18.4 98		52.8 19	**58**	14	54	42	26	46	8 41	61
24	182	29.1	−2	47.9	259	47.1 97	+25	50.9 19	**60 S**	18 16	18 58	19 50	3 53	45	8 14	63

UT	ARIES PMG 23h 24m.3		VENUS Mag: −4.2 PMG: 14h 39m				MARTE Mag: +1.7 PMG: 12h 02m				JÚPITER Mag: −2.8 PMG: 21h 07m				SATURNO Mag: +0.5 PMG: 20h 03m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	7	58.5	140	22.7	−19	53.4	179	20.6	−2	56.4	42	17.4	−14	59.2	58	21.5	−19	18.8
1	23	01.0	155	22.4		54.3	194	21.6		57.1	57	20.0		59.2	73	24.0		18.8
2	38	03.4	170	22.0		55.2	209	22.6		57.7	72	22.7		59.3	88	26.5		18.8
3	53	05.9	185	21.7		56.1	224	23.5		58.4	87	25.3		59.3	103	29.0		18.8
4	68	08.4	200	21.3		57.0	239	24.5		59.0	102	27.9		59.4	118	31.5		18.8
5	83	10.8	215	21.0	−19	57.9	254	25.5	−2	59.7	117	30.5	−14	59.4	133	34.0	−19	18.9
6	98	13.3	230	20.6	−19	58.8	269	26.4	−3	00.4	132	33.1	−14	59.5	148	36.6	−19	18.9
7	113	15.8	245	20.3	−19	59.7	284	27.4		01.0	147	35.7		59.5	163	39.1		18.9
8	128	18.2	260	19.9	−20	00.6	299	28.4		01.7	162	38.4		59.6	178	41.6		18.9
9	143	20.7	275	19.6		01.5	314	29.3		02.3	177	41.0		59.6	193	44.1		18.9
10	158	23.2	290	19.2		02.4	329	30.3		03.0	192	43.6		59.6	208	46.6		18.9
11	173	25.6	305	18.8	−20	03.3	344	31.3	−3	03.7	207	46.2	−14	59.7	223	49.1	−19	18.9
12	188	28.1	320	18.5	−20	04.2	359	32.2	−3	04.3	222	48.8	−14	59.7	238	51.6	−19	19.0
13	203	30.5	335	18.1		05.1	14	33.2		05.0	237	51.4		59.8	253	54.2		19.0
14	218	33.0	350	17.8		06.0	29	34.2		05.6	252	54.1		59.8	268	56.7		19.0
15	233	35.5	5	17.4		06.9	44	35.1		06.3	267	56.7		59.9	283	59.2		19.0
16	248	37.9	20	17.1		07.8	59	36.1		06.9	282	59.3	−14	59.9	299	01.7		19.0
17	263	40.4	35	16.7	−20	08.7	74	37.1	−3	07.6	298	01.9	−15	00.0	314	04.2	−19	19.0
18	278	42.9	50	16.4	−20	09.6	89	38.0	−3	08.3	313	04.5	−15	00.0	329	06.7	−19	19.0
19	293	45.3	65	16.0		10.5	104	39.0		08.9	328	07.1	−15	00.1	344	09.2		19.0
20	308	47.8	80	15.7		11.4	119	40.0		09.6	343	09.7		00.1	359	11.7		19.0
21	323	50.3	95	15.3		12.3	134	40.9		10.2	358	12.3		00.2	14	14.3		19.1
22	338	52.7	110	15.0		13.2	149	41.9		10.9	13	15.0		00.2	29	16.8		19.1
23	353	55.2	125	14.6		14.1	164	42.9		11.6	28	17.6		00.2	44	19.3		19.1
24	8	57.6	140	14.2	−20	15.0	179	43.8	−3	12.2	43	20.2	−15	00.3	59	21.8	−19	19.1
Dif	—			−4		−9		+10		−7		+26		0		+25		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 23^{d}.0		PHE	4^{h}: 55′.1									
	PMG: 11^{h} 49^{m}.9				SD: 15′.0			12^{h}: 55′.3									
					PMG: 6^{h} 55^{m}			20^{h}: 55′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	29.1	−2	47.9	259	47.1	+25	50.9		**60 N**	4 33	5 22	6 03	21 59	86	16 49	21
1	197	29.3		48.9	274	15.9 98		48.8	21	**58**	37	23	02	22 21	81	27	25
2	212	29.5		49.9	288	44.6 97		46.6	22	**56**	41	24	01	39	78	16 08	29
3	227	29.7		50.8	303	13.3 97		44.2	24	**54**	44	25	6 00	22 54	75	15 53	32
4	242	29.9		51.8	317	42.0 97		41.7	25	**52**	46	26	5 59	23 07	73	40	33
5	257	30.1	−2	52.8	332	10.7 97	+25	39.1	26	**50**	4 49	5 26	5 59	23 19	71	15 28	35
6	272	30.4	−2	53.8	346	39.4 97	+25	36.3	28	**45**	4 53	5 28	5 57	23 43	67	15 03	39
7	287	30.6		54.7	1	08.1 97		33.4	29	**40**	57	28	55	** **	**	14 44	41
8	302	30.8		55.7	15	36.8 97		30.4	30	**35**	4 59	29	54	** **	**	27	43
9	317	31.0		56.7	30	05.5 97		27.3	31	**30**	5 01	29	53	** **	**	14 13	45
10	332	31.2		57.6	44	34.2 97		24.0	33	**20**	03	29	51	0 01	54	13 49	47
11	347	31.4	−2	58.6	59	02.9 97	+25	20.6	34	**10 N**	5 03	5 28	5 49	0 23	53	13 27	50
12	2	31.6	−2	59.6	73	31.6 97	+25	17.0	36	**0**	5 02	5 26	5 47	0 43	52	13 08	51
13	17	31.8	−3	00.6	88	00.3 97		13.4	36	**10 S**	4 59	24	45	1 03	51	12 48	54
14	32	32.0		01.5	102	29.0 97		09.6	38	**20**	54	20	42	25	49	27	55
15	47	32.2		02.5	116	57.7 97		05.6	40	**30**	47	15	39	1 50	47	12 02	58
16	62	32.4		03.5	131	26.4 97	+25	01.5	41	**35**	43	12	38	2 05	46	11 48	59
17	77	32.6	−3	04.4	145	55.2 98	+24	57.3	42	**40**	4 37	5 09	5 36	2 22	44	11 31	61
18	92	32.8	−3	05.4	160	23.9 97	+24	53.0	43	**45**	4 29	5 04	5 34	2 43	42	11 10	64
19	107	33.0		06.4	174	52.6 97		48.5	45	**50**	20	4 59	31	3 08	40	10 45	67
20	122	33.2		07.3	189	21.3 97		43.9	46	**52**	15	56	30	21	38	32	69
21	137	33.4		08.3	203	50.1 98		39.2	47	**54**	10	53	28	35	37	18	71
22	152	33.6		09.3	218	18.8 97		34.4	48	**56**	4 04	49	27	3 52	35	10 02	72
23	167	33.8		10.3	232	47.6 98		29.4	50	**58**	3 57	45	25	4 12	31	9 42	76
24	182	34.0	−3	11.2	247	16.3 97	+24	24.3	51	**60 S**	3 49	4 41	5 23	4 38	26	9 17	81

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.7			Mag: −2.8			Mag: +0.5		
	23^{h} 20^{m}.3		PMG: 14^{h} 39^{m}			PMG: 12^{h} 00^{m}			PMG: 21^{h} 03^{m}			PMG: 19^{h} 59^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	8	57.6	140	14.2	−20 15.0	179	43.8	−3 12.2	43	20.2	−15 00.3	59	21.8	−19 19.1
1	24	00.1	155	13.9	15.9	194	44.8	12.9	58	22.8	00.3	74	24.3	19.1
2	39	02.6	170	13.5	16.8	209	45.8	13.5	73	25.4	00.4	89	26.8	19.1
3	54	05.0	185	13.2	17.7	224	46.7	14.2	88	28.0	00.4	104	29.3	19.1
4	69	07.5	200	12.8	18.6	239	47.7	14.8	103	30.6	00.5	119	31.8	19.1
5	84	10.0	215	12.5	−20 19.5	254	48.7	−3 15.5	118	33.2	−15 00.5	134	34.3	−19 19.2
6	99	12.4	230	12.1	−20 20.3	269	49.6	−3 16.2	133	35.8	−15 00.6	149	36.9	−19 19.2
7	114	14.9	245	11.7	21.2	284	50.6	16.8	148	38.4	00.6	164	39.4	19.2
8	129	17.4	260	11.4	22.1	299	51.6	17.5	163	41.1	00.6	179	41.9	19.2
9	144	19.8	275	11.0	23.0	314	52.5	18.1	178	43.7	00.7	194	44.4	19.2
10	159	22.3	290	10.7	23.9	329	53.5	18.8	193	46.3	00.7	209	46.9	19.2
11	174	24.8	305	10.3	−20 24.8	344	54.5	−3 19.5	208	48.9	−15 00.8	224	49.4	−19 19.2
12	189	27.2	320	09.9	−20 25.7	359	55.4	−3 20.1	223	51.5	−15 00.8	239	51.9	−19 19.2
13	204	29.7	335	09.6	26.5	14	56.4	20.8	238	54.1	00.9	254	54.4	19.2
14	219	32.1	350	09.2	27.4	29	57.4	21.4	253	56.7	00.9	269	56.9	19.3
15	234	34.6	5	08.9	28.3	44	58.3	22.1	268	59.3	01.0	284	59.4	19.3
16	249	37.1	20	08.5	29.2	59	59.3	22.7	284	01.9	01.0	300	01.9	19.3
17	264	39.5	35	08.1	−20 30.1	75	00.2	−3 23.4	299	04.5	−15 01.0	315	04.5	−19 19.3
18	279	42.0	50	07.8	−20 30.9	90	01.2	−3 24.1	314	07.1	−15 01.1	330	07.0	−19 19.3
19	294	44.5	65	07.4	31.8	105	02.2	24.7	329	09.7	01.1	345	09.5	19.3
20	309	46.9	80	07.1	32.7	120	03.1	25.4	344	12.3	01.2	0	12.0	19.3
21	324	49.4	95	06.7	33.6	135	04.1	26.0	359	14.9	01.2	15	14.5	19.3
22	339	51.9	110	06.3	34.4	150	05.1	26.7	14	17.5	01.3	30	17.0	19.3
23	354	54.3	125	06.0	35.3	165	06.0	27.3	29	20.2	01.3	45	19.5	19.4
24	9	56.8	140	05.6	−20 36.2	180	07.0	−3 28.0	44	22.8	−15 01.3	60	22.0	−19 19.4
Dif	—			−4	−9		+10	−7		+26	0		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 24ᵈ.0		PHE	4ʰ: 55′.7									
	PMG: 11ʰ 49ᵐ.6				SD: 15′.1			12ʰ: 55′.9									
					PMG: 7ʰ 47ᵐ			20ʰ: 56′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	182	34.0	−3	11.2	247	16.3	+24	24.3		**60 N**	17 32	18 13	19 02	23 25	93	17 10	12
1	197	34.2		12.2	261	45.1 98		19.0	53	**58**	34	13	18 58	42	88	16 52	17
2	212	34.4		13.2	276	13.9 98		13.6	54	**56**	35	12	55	23 57	84	37	21
3	227	34.6		14.1	290	42.7 98		08.1	55	**54**	36	11	52	** **	**	25	23
4	242	34.8		15.1	305	11.5 98	+24	02.5	56	**52**	37	11	50	** **	**	13	26
5	257	35.0	−3	16.1	319	40.4 99	+23	56.7	58	**50**	17 38	18 10	18 48	** **	**	16 03	28
6	272	35.2	−3	17.0	334	09.2 98	+23	50.9	58	**45**	17 40	18 10	18 44	** **	**	15 42	33
7	287	35.4		18.0	348	38.1 99		44.8	61	**40**	42	09	40	0 02	64	25	36
8	302	35.6		19.0	3	06.9 98		38.7	61	**35**	44	09	38	18	62	15 10	39
9	317	35.8		19.9	17	35.8 99		32.4	63	**30**	45	09	37	32	60	14 58	41
10	332	36.0		20.9	32	04.7 99		26.0	64	**20**	48	10	36	0 55	57	36	45
11	347	36.2	−3	21.9	46	33.6 99	+23	19.5	65	**10 N**	17 50	18 11	18 36	1 16	54	14 17	48
12	2	36.4	−3	22.9	61	02.6 100	+23	12.8	67	**0**	17 53	18 14	18 38	1 35	51	13 59	51
13	17	36.6		23.8	75	31.5 99	+23	06.0	68	**10 S**	55	16	41	1 54	48	42	54
14	32	36.8		24.8	90	00.5 100	+22	59.1	69	**20**	17 58	20	46	2 14	46	22	58
15	47	37.0		25.8	104	29.5 100		52.1	70	**30**	18 01	25	54	37	43	13 00	61
16	62	37.2		26.7	118	58.5 100		44.9	72	**35**	03	29	18 59	2 51	41	12 47	63
17	77	37.4	−3	27.7	133	27.5 100	+22	37.7	72	**40**	18 06	18 33	19 05	3 06	39	12 32	66
18	92	37.6	−3	28.7	147	56.6 101	+22	30.2	75	**45**	18 08	18 38	19 13	3 25	36	12 14	69
19	107	37.8		29.6	162	25.7 101		22.7	75	**50**	11	44	23	48	32	11 52	73
20	122	38.0		30.6	176	54.7 100		15.1	76	**52**	13	47	28	3 59	30	41	75
21	137	38.2		31.6	191	23.9 102	+22	07.3	78	**54**	14	50	34	4 12	27	29	78
22	152	38.4		32.5	205	53.0 101	+21	59.4	79	**56**	16	54	40	27	24	11 14	82
23	167	38.6		33.5	220	22.1 101		51.4	80	**58**	18	18 58	47	4 43	21	10 58	85
24	182	38.8	−3	34.5	234	51.3 102	+21	43.2	82	**60 S**	18 20	19 03	19 56	5 04	15	10 38	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.7			Mag: −2.7			Mag: +0.5		
	23ʰ 16ᵐ.4		PMG: 14ʰ 40ᵐ			PMG: 11ʰ 59ᵐ			PMG: 20ʰ 59ᵐ			PMG: 19ʰ 55ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	9	56.8	140	05.6	−20 36.2	180	07.0	−3 28.0	44	22.8	−15 01.3	60	22.0	−19 19.4
1	24	59.3	155	05.2	37.1	195	08.0	28.7	59	25.4	01.4	75	24.5	19.4
2	40	01.7	170	04.9	37.9	210	08.9	29.3	74	28.0	01.4	90	27.0	19.4
3	55	04.2	185	04.5	38.8	225	09.9	30.0	89	30.6	01.5	105	29.5	19.4
4	70	06.6	200	04.2	39.7	240	10.8	30.6	104	33.2	01.5	120	32.0	19.4
5	85	09.1	215	03.8	−20 40.5	255	11.8	−3 31.3	119	35.8	−15 01.6	135	34.5	−19 19.4
6	100	11.6	230	03.4	−20 41.4	270	12.8	−3 32.0	134	38.4	−15 01.6	150	37.1	−19 19.4
7	115	14.0	245	03.1	42.3	285	13.7	32.6	149	41.0	01.6	165	39.6	19.4
8	130	16.5	260	02.7	43.1	300	14.7	33.3	164	43.6	01.7	180	42.1	19.5
9	145	19.0	275	02.3	44.0	315	15.7	33.9	179	46.2	01.7	195	44.6	19.5
10	160	21.4	290	02.0	44.9	330	16.6	34.6	194	48.8	01.8	210	47.1	19.5
11	175	23.9	305	01.6	−20 45.7	345	17.6	−3 35.2	209	51.4	−15 01.8	225	49.6	−19 19.5
12	190	26.4	320	01.2	−20 46.6	0	18.6	−3 35.9	224	54.0	−15 01.8	240	52.1	−19 19.5
13	205	28.8	335	00.9	47.5	15	19.5	36.6	239	56.6	01.9	255	54.6	19.5
14	220	31.3	350	00.5	48.3	30	20.5	37.2	254	59.2	01.9	270	57.1	19.5
15	235	33.7	5	00.1	49.2	45	21.4	37.9	270	01.8	02.0	285	59.6	19.5
16	250	36.2	19	59.8	50.1	60	22.4	38.5	285	04.4	02.0	301	02.1	19.5
17	265	38.7	34	59.4	−20 50.9	75	23.4	−3 39.2	300	07.0	−15 02.1	316	04.6	−19 19.5
18	280	41.1	49	59.0	−20 51.8	90	24.3	−3 39.8	315	09.6	−15 02.1	331	07.1	−19 19.6
19	295	43.6	64	58.7	52.6	105	25.3	40.5	330	12.2	02.1	346	09.6	19.6
20	310	46.1	79	58.3	53.5	120	26.3	41.2	345	14.8	02.2	1	12.1	19.6
21	325	48.5	94	57.9	54.3	135	27.2	41.8	0	17.4	02.2	16	14.6	19.6
22	340	51.0	109	57.6	55.2	150	28.2	42.5	15	20.0	02.3	31	17.1	19.6
23	355	53.5	124	57.2	56.1	165	29.1	43.1	30	22.6	02.3	46	19.6	19.6
24	10	55.9	139	56.8	−20 56.9	180	30.1	−3 43.8	45	25.2	−15 02.3	61	22.1	−19 19.6
Dif	—			−4	−9		+10	−7		+26	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 25^{d}.0		PHE	4^{h}: 56′.4									
	PMG: 11^{h} 49^{m}.3				SD: 15′.3			12^{h}: 56′.7									
					PMG: 8^{h} 38^{m}			20^{h}: 57′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	182	38.8	−3	34.5	234	51.3	+21	43.2		**60 N**	4 38	5 27	6 08	** **	**	17 22	7
1	197	39.0		35.4	249	20.5 102		34.9	83	**58**	42	27	07	** **	**	17 09	12
2	212	39.2		36.4	263	49.7 102		26.6	83	**56**	45	28	05	** **	**	16 58	15
3	227	39.4		37.4	278	19.0 103		18.1	85	**54**	48	29	04	0 09	81	48	18
4	242	39.6		38.3	292	48.3 103		09.4	87	**52**	50	29	03	20	78	39	21
5	257	39.8	−3	39.3	307	17.6 103	+21	00.7	87	**50**	4 52	5 29	6 02	0 30	75	16 31	23
6	272	40.0	−3	40.3	321	46.9 103	+20	51.8	89	**45**	4 56	5 30	5 59	0 50	71	16 15	27
7	287	40.2		41.2	336	16.2 103		42.8	90	**40**	4 59	30	57	1 06	67	16 01	31
8	302	40.4		42.2	350	45.6 104		33.7	91	**35**	5 01	30	56	20	64	15 49	35
9	317	40.6		43.2	5	15.0 104		24.5	92	**30**	02	30	54	32	61	39	37
10	332	40.8		44.1	19	44.4 104		15.2	93	**20**	04	29	51	1 52	58	21	42
11	347	41.0	−3	45.1	34	13.8 104	+20	05.8	94	**10 N**	5 03	5 28	5 49	2 10	54	15 05	46
12	2	41.2	−3	46.1	48	43.3 105	+19	56.2	96	**0**	5 01	5 25	5 46	2 26	51	14 50	50
13	17	41.4		47.1	63	12.8 105		46.5	97	**10 S**	4 58	22	43	2 42	48	36	53
14	32	41.6		48.0	77	42.3 105		36.7	98	**20**	53	18	40	3 00	43	20	57
15	47	41.8		49.0	92	11.8 105		26.8	99	**30**	45	13	37	20	39	14 01	62
16	62	42.0		50.0	106	41.4 106		16.8	100	**35**	40	10	35	32	36	13 50	65
17	77	42.2	−3	50.9	121	11.0 106	+19	06.7	101	**40**	4 33	5 05	5 33	3 45	34	13 38	68
18	92	42.4	−3	51.9	135	40.6 106	+18	56.5	102	**45**	4 25	5 00	5 30	4 01	30	13 23	72
19	107	42.6		52.9	150	10.2 106		46.1	104	**50**	15	4 54	27	20	25	13 05	77
20	122	42.8		53.8	164	39.9 107		35.7	104	**52**	10	51	25	29	23	12 56	80
21	137	43.0		54.8	179	09.6 107		25.1	106	**54**	4 04	48	23	39	21	47	82
22	152	43.2		55.8	193	39.3 107		14.4	107	**56**	3 58	44	22	4 51	17	36	86
23	167	43.3		56.7	208	09.0 107	+18	03.7	107	**58**	51	40	19	5 04	14	23	90
24	182	43.5	−3	57.7	222	38.8 108	+17	52.8	109	**60 S**	3 42	4 35	5 17	5 19	9	12 09	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.7			Mag: −2.7			Mag: +0.5		
	23^{h} 12^{m}.5		PMG: 14^{h} 41^{m}			PMG: 11^{h} 57^{m}			PMG: 20^{h} 55^{m}			PMG: 19^{h} 51^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	10	55.9	139	56.8	−20 56.9	180	30.1	−3 43.8	45	25.2	−15 02.3	61	22.1	−19 19.6
1	25	58.4	154	56.5	57.8	195	31.1	44.4	60	27.7	02.4	76	24.6	19.6
2	41	00.9	169	56.1	58.6	210	32.0	45.1	75	30.3	02.4	91	27.1	19.6
3	56	03.3	184	55.7	−20 59.5	225	33.0	45.8	90	32.9	02.5	106	29.6	19.6
4	71	05.8	199	55.4	−21 00.3	240	33.9	46.4	105	35.5	02.5	121	32.1	19.7
5	86	08.2	214	55.0	−21 01.2	255	34.9	−3 47.1	120	38.1	−15 02.5	136	34.6	−19 19.7
6	101	10.7	229	54.6	−21 02.0	270	35.9	−3 47.7	135	40.7	−15 02.6	151	37.2	−19 19.7
7	116	13.2	244	54.2	02.9	285	36.8	48.4	150	43.3	02.6	166	39.7	19.7
8	131	15.6	259	53.9	03.7	300	37.8	49.0	165	45.9	02.7	181	42.2	19.7
9	146	18.1	274	53.5	04.6	315	38.8	49.7	180	48.5	02.7	196	44.7	19.7
10	161	20.6	289	53.1	05.4	330	39.7	50.4	195	51.1	02.7	211	47.2	19.7
11	176	23.0	304	52.8	−21 06.3	345	40.7	−3 51.0	210	53.7	−15 02.8	226	49.7	−19 19.7
12	191	25.5	319	52.4	−21 07.1	0	41.6	−3 51.7	225	56.3	−15 02.8	241	52.2	−19 19.7
13	206	28.0	334	52.0	07.9	15	42.6	52.3	240	58.9	02.8	256	54.7	19.7
14	221	30.4	349	51.6	08.8	30	43.6	53.0	256	01.5	02.9	271	57.2	19.7
15	236	32.9	4	51.3	09.6	45	44.5	53.6	271	04.1	02.9	286	59.7	19.8
16	251	35.4	19	50.9	10.5	60	45.5	54.3	286	06.7	03.0	302	02.2	19.8
17	266	37.8	34	50.5	−21 11.3	75	46.4	−3 55.0	301	09.2	−15 03.0	317	04.7	−19 19.8
18	281	40.3	49	50.2	−21 12.2	90	47.4	−3 55.6	316	11.8	−15 03.0	332	07.2	−19 19.8
19	296	42.7	64	49.8	13.0	105	48.4	56.3	331	14.4	03.1	347	09.7	19.8
20	311	45.2	79	49.4	13.8	120	49.3	56.9	346	17.0	03.1	2	12.2	19.8
21	326	47.7	94	49.0	14.7	135	50.3	57.6	1	19.6	03.2	17	14.7	19.8
22	341	50.1	109	48.7	15.5	150	51.2	58.2	16	22.2	03.2	32	17.2	19.8
23	356	52.6	124	48.3	16.3	165	52.2	58.9	31	24.8	03.2	47	19.7	19.8
24	11	55.1	139	47.9	−21 17.2	180	53.2	−3 59.6	46	27.4	−15 03.3	62	22.2	−19 19.8
Dif	—			−4	−8		+10	−7		+26	0		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 26^{d}.0		PHE	4^{h}: 57′.3									
	PMG: 11^{h} 48^{m}.9				SD: 15′.6			12^{h}: 57′.6									
					PMG: 9^{h} 28^{m}			20^{h}: 57′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	43.5	−3	57.7	222	38.8	+17	52.8		**60 N**	17 26	18 07	18 56	0 58	96	17 29	5
1	197	43.7		58.7	237	08.6 108		41.8 110		**58**	28	07	52	1 10	91	21	8
2	212	43.9	−3	59.6	251	38.4 108		30.7 111		**56**	30	07	50	21	87	13	12
3	227	44.1	−4	00.6	266	08.2 108		19.5 112		**54**	31	06	47	30	84	06	15
4	242	44.3		01.5	280	38.1 109	+17	08.2 113		**52**	33	06	45	38	81	17 00	17
5	257	44.5	−4	02.5	295	08.0 109	+16	56.8 114		**50**	17 34	18 06	18 43	1 45	79	16 54	20
6	272	44.7	−4	03.5	309	37.9 109	+16	45.3 115		**45**	17 37	18 06	18 40	2 01	73	16 42	25
7	287	44.9		04.4	324	07.8 109		33.7 116		**40**	39	06	37	13	70	32	29
8	302	45.1		05.4	338	37.8 110		22.0 117		**35**	41	06	36	24	66	24	32
9	317	45.3		06.4	353	07.8 110	+16	10.2 118		**30**	43	07	34	33	63	16	35
10	332	45.5		07.3	7	37.8 110	+15	58.3 119		**20**	46	08	34	2 50	57	16 03	40
11	347	45.7	−4	08.3	22	07.8 110	+15	46.3 120		**10 N**	17 49	18 10	18 35	3 04	53	15 51	45
12	2	45.9	−4	09.3	36	37.8 110	+15	34.2 121		**0**	17 52	18 13	18 37	3 17	49	15 40	49
13	17	46.1		10.2	51	07.9 111		22.1 121		**10 S**	55	16	41	30	45	29	53
14	32	46.3		11.2	65	38.0 111	+15	09.8 123		**20**	17 59	21	47	43	41	17	58
15	47	46.5		12.2	80	08.1 111	+14	57.4 124		**30**	18 03	27	18 55	3 59	36	15 03	64
16	62	46.6		13.1	94	38.2 111		44.9 125		**35**	05	30	19 00	4 08	34	14 55	67
17	77	46.8	−4	14.1	109	08.4 112	+14	32.4 125		**40**	18 08	18 35	19 07	4 19	30	14 46	70
18	92	47.0	−4	15.1	123	38.5 111	+14	19.7 127		**45**	18 11	18 40	19 16	4 31	26	14 35	75
19	107	47.2		16.0	138	08.7 112	+14	07.0 127		**50**	14	47	27	45	21	22	80
20	122	47.4		17.0	152	38.9 112	+13	54.2 128		**52**	16	50	32	4 52	19	16	82
21	137	47.6		18.0	167	09.2 113		41.3 129		**54**	18	54	38	5 00	16	09	85
22	152	47.8		18.9	181	39.4 112		28.3 130		**56**	20	18 58	45	08	13	14 02	88
23	167	48.0		19.9	196	09.7 113		15.2 131		**58**	23	19 03	19 52	18	9	13 53	92
24	182	48.2	−4	20.9	210	39.9 112	+13	02.0 132		**60 S**	18 25	19 08	20 01	5 28	6	13 43	96

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.7			Mag: −2.7			Mag: +0.5		
	23^{h} 08^{m}.5		PMG: 14^{h} 41^{m}			PMG: 11^{h} 56^{m}			PMG: 20^{h} 51^{m}			PMG: 19^{h} 47^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	11	55.1	139	47.9	−21 17.2	180	53.2	−3 59.6	46	27.4	−15 03.3	62	22.2	−19 19.8
1	26	57.5	154	47.5	18.0	195	54.1	−4 00.2	61	30.0	03.3	77	24.7	19.8
2	42	00.0	169	47.2	18.8	210	55.1	00.9	76	32.5	03.3	92	27.2	19.9
3	57	02.5	184	46.8	19.7	225	56.0	01.5	91	35.1	03.4	107	29.7	19.9
4	72	04.9	199	46.4	20.5	240	57.0	02.2	106	37.7	03.4	122	32.2	19.9
5	87	07.4	214	46.0	−21 21.3	255	57.9	−4 02.8	121	40.3	−15 03.4	137	34.6	−19 19.9
6	102	09.8	229	45.7	−21 22.2	270	58.9	−4 03.5	136	42.9	−15 03.5	152	37.1	−19 19.9
7	117	12.3	244	45.3	23.0	285	59.9	04.2	151	45.5	03.5	167	39.6	19.9
8	132	14.8	259	44.9	23.8	301	00.8	04.8	166	48.1	03.6	182	42.1	19.9
9	147	17.2	274	44.5	24.6	316	01.8	05.5	181	50.7	03.6	197	44.6	19.9
10	162	19.7	289	44.1	25.5	331	02.7	06.1	196	53.2	03.6	212	47.1	19.9
11	177	22.2	304	43.8	−21 26.3	346	03.7	−4 06.8	211	55.8	−15 03.7	227	49.6	−19 19.9
12	192	24.6	319	43.4	−21 27.1	1	04.7	−4 07.4	226	58.4	−15 03.7	242	52.1	−19 19.9
13	207	27.1	334	43.0	27.9	16	05.6	08.1	242	01.0	03.7	257	54.6	19.9
14	222	29.6	349	42.6	28.8	31	06.6	08.7	257	03.6	03.8	272	57.1	20.0
15	237	32.0	4	42.3	29.6	46	07.5	09.4	272	06.2	03.8	287	59.6	20.0
16	252	34.5	19	41.9	30.4	61	08.5	10.1	287	08.7	03.8	303	02.1	20.0
17	267	37.0	34	41.5	−21 31.2	76	09.4	−4 10.7	302	11.3	−15 03.9	318	04.6	−19 20.0
18	282	39.4	49	41.1	−21 32.0	91	10.4	−4 11.4	317	13.9	−15 03.9	333	07.1	−19 20.0
19	297	41.9	64	40.7	32.9	106	11.4	12.0	332	16.5	04.0	348	09.6	20.0
20	312	44.3	79	40.4	33.7	121	12.3	12.7	347	19.1	04.0	3	12.1	20.0
21	327	46.8	94	40.0	34.5	136	13.3	13.3	2	21.7	04.0	18	14.6	20.0
22	342	49.3	109	39.6	35.3	151	14.2	14.0	17	24.2	04.1	33	17.1	20.0
23	357	51.7	124	39.2	36.1	166	15.2	14.7	32	26.8	04.1	48	19.6	20.0
24	12	54.2	139	38.8	−21 36.9	181	16.1	−4 15.3	47	29.4	−15 04.1	63	22.1	−19 20.0
Dif	—			−4	−8		+10	−7		+26	0		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0 PMG: $11^h\ 48^m.6$				Edad: $27^d.0$ SD: 15′.8 PMG: $10^h\ 18^m$ PHE 4^h: 58′.1, 12^h: 58′.4, 20^h: 58′.6 Rº: 49^m											
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	182	48.2	−4	20.9	210	39.9	+13	02.0	**60 N**	4 43	5 31	6 13	2 34	96	17 34	4
1	197	48.4		21.8	225	10.2 113	+12	48.8 132	**58**	46	32	11	41	92	29	8
2	212	48.6		22.8	239	40.5 113		35.4 134	**56**	49	32	09	48	88	25	10
3	227	48.8		23.7	254	10.9 114		22.0 134	**54**	51	32	08	54	85	21	13
4	242	49.0		24.7	268	41.2 113	+12	08.5 135	**52**	53	32	06	2 59	83	17	16
5	257	49.1	−4	25.7	283	11.6 114	+11	54.9 136	**50**	4 55	5 33	6 05	3 04	80	17 14	18
6	272	49.3	−4	26.6	297	41.9 113	+11	41.3 136	**45**	4 58	5 33	6 02	3 14	75	17 07	23
7	287	49.5		27.6	312	12.3 114		27.6 137	**40**	5 01	32	5 59	23	70	17 01	27
8	302	49.7		28.6	326	42.7 114	+11	13.8 138	**35**	02	32	57	30	67	16 56	31
9	317	49.9		29.5	341	13.1 114	+10	59.9 139	**30**	03	31	55	36	64	51	34
10	332	50.1		30.5	355	43.5 114		45.9 140	**20**	04	30	52	47	59	43	40
11	347	50.3	−4	31.5	10	14.0 115	+10	31.9 140	**10 N**	5 03	5 27	5 48	3 57	53	16 36	44
12	2	50.5	−4	32.4	24	44.4 114	+10	17.8 141	**0**	5 01	5 25	5 45	4 06	49	16 29	49
13	17	50.7		33.4	39	14.8 114	+10	03.6 142	**10 S**	4 57	21	42	15	44	22	54
14	32	50.9		34.3	53	45.3 115	+9	49.4 142	**20**	51	17	39	24	40	15	59
15	47	51.0		35.3	68	15.8 115		35.1 143	**30**	42	11	35	35	35	07	64
16	62	51.2		36.3	82	46.2 114		20.7 144	**35**	37	07	32	42	31	16 02	67
17	77	51.4	−4	37.2	97	16.7 115	+9	06.3 144	**40**	4 30	5 02	5 29	4 49	27	15 56	71
18	92	51.6	−4	38.2	111	47.2 115	+8	51.8 145	**45**	4 21	4 57	5 26	4 57	23	15 50	75
19	107	51.8		39.2	126	17.7 115		37.3 145	**50**	10	50	22	5 06	19	42	81
20	122	52.0		40.1	140	48.1 114		22.6 147	**52**	4 05	46	20	11	16	38	84
21	137	52.2		41.1	155	18.6 115	+8	08.0 146	**54**	3 59	43	18	16	14	34	86
22	152	52.4		42.0	169	49.1 115	+7	53.2 148	**56**	52	38	16	21	12	30	89
23	167	52.6		43.0	184	19.6 115		38.4 148	**58**	44	34	14	27	8	25	92
24	182	52.7	−4	44.0	198	50.1 115	+7	23.6 148	**60 S**	3 35	4 28	5 11	5 34	5	15 19	96

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG $23^h\ 04^m.6$		Mag: −4.3 PMG: $14^h\ 42^m$			Mag: +1.7 PMG: $11^h\ 54^m$			Mag: −2.7 PMG: $20^h\ 46^m$			Mag: +0.5 PMG: $19^h\ 43^m$		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	12	54.2	139	38.8	−21 36.9	181	16.1	−4 15.3	47	29.4	−15 04.1	63	22.1	−19 20.0
1	27	56.7	154	38.5	37.8	196	17.1	16.0	62	32.0	04.2	78	24.6	20.0
2	42	59.1	169	38.1	38.6	211	18.1	16.6	77	34.6	04.2	93	27.1	20.0
3	58	01.6	184	37.7	39.4	226	19.0	17.3	92	37.1	04.2	108	29.6	20.1
4	73	04.1	199	37.3	40.2	241	20.0	17.9	107	39.7	04.3	123	32.1	20.1
5	88	06.5	214	36.9	−21 41.0	256	20.9	−4 18.6	122	42.3	−15 04.3	138	34.6	−19 20.1
6	103	09.0	229	36.5	−21 41.8	271	21.9	−4 19.2	137	44.9	−15 04.3	153	37.0	−19 20.1
7	118	11.5	244	36.2	42.6	286	22.8	19.9	152	47.5	04.4	168	39.5	20.1
8	133	13.9	259	35.8	43.4	301	23.8	20.6	167	50.0	04.4	183	42.0	20.1
9	148	16.4	274	35.4	44.2	316	24.8	21.2	182	52.6	04.4	198	44.5	20.1
10	163	18.8	289	35.0	45.0	331	25.7	21.9	197	55.2	04.5	213	47.0	20.1
11	178	21.3	304	34.6	−21 45.8	346	26.7	−4 22.5	212	57.8	−15 04.5	228	49.5	−19 20.1
12	193	23.8	319	34.3	−21 46.6	1	27.6	−4 23.2	228	00.4	−15 04.5	243	52.0	−19 20.1
13	208	26.2	334	33.9	47.5	16	28.6	23.8	243	02.9	04.6	258	54.5	20.1
14	223	28.7	349	33.5	48.3	31	29.5	24.5	258	05.5	04.6	273	57.0	20.1
15	238	31.2	4	33.1	49.1	46	30.5	25.1	273	08.1	04.6	288	59.5	20.1
16	253	33.6	19	32.7	49.9	61	31.4	25.8	288	10.7	04.7	304	02.0	20.2
17	268	36.1	34	32.3	−21 50.7	76	32.4	−4 26.5	303	13.2	−15 04.7	319	04.5	−19 20.2
18	283	38.6	49	31.9	−21 51.5	91	33.4	−4 27.1	318	15.8	−15 04.7	334	07.0	−19 20.2
19	298	41.0	64	31.6	52.3	106	34.3	27.8	333	18.4	04.8	349	09.4	20.2
20	313	43.5	79	31.2	53.0	121	35.3	28.4	348	21.0	04.8	4	11.9	20.2
21	328	45.9	94	30.8	53.8	136	36.2	29.1	3	23.5	04.8	19	14.4	20.2
22	343	48.4	109	30.4	54.6	151	37.2	29.7	18	26.1	04.9	34	16.9	20.2
23	358	50.9	124	30.0	55.4	166	38.1	30.4	33	28.7	04.9	49	19.4	20.2
24	13	53.3	139	29.6	−21 56.2	181	39.1	−4 31.0	48	31.3	−15 04.9	64	21.9	−19 20.2
Dif	—			−4	−8		+10	−7		+26	0		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 28ᵈ.0		PHE	4ʰ: 58′.9								
	PMG: 11ʰ 48ᵐ.3		SD: 16′.0			12ʰ: 59′.1								
			PMG: 11ʰ 07ᵐ			20ʰ: 59′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	182 52.7	−4 44.0	198 50.1		+7 23.6		**60 N**	17 20	18 01	18 50	4 10	97	17 38	4
1	197 52.9	44.9	213 20.6	115	+7 08.7	149	**58**	22	01	47	13	94	37	7
2	212 53.1	45.9	227 51.1	115	+6 53.7	150	**56**	24	01	44	16	90	35	11
3	227 53.3	46.9	242 21.6	115	38.7	150	**54**	26	01	42	19	87	34	13
4	242 53.5	47.8	256 52.1	115	23.6	151	**52**	28	02	41	22	84	33	16
5	257 53.7	−4 48.8	271 22.6	115	+6 08.5	151	**50**	17 29	18 02	18 39	4 24	82	17 32	18
6	272 53.9	−4 49.7	285 53.1	115	+5 53.3	152	**45**	17 33	18 02	18 36	4 29	77	17 30	23
7	287 54.0	50.7	300 23.6	115	38.1	152	**40**	36	03	34	33	72	28	27
8	302 54.2	51.7	314 54.0	114	22.9	152	**35**	38	04	33	37	68	27	30
9	317 54.4	52.6	329 24.5	115	+5 07.6	153	**30**	41	04	32	40	65	25	34
10	332 54.6	53.6	343 55.0	115	+4 52.2	154	**20**	45	07	32	46	58	23	39
11	347 54.8	−4 54.5	358 25.4	114	+4 36.8	154	**10 N**	17 48	18 09	18 34	4 50	54	17 20	45
12	2 55.0	−4 55.5	12 55.9	115	+4 21.4	154	**0**	17 52	18 12	18 36	4 55	49	17 18	50
13	17 55.2	56.5	27 26.3	114	+4 05.9	155	**10 S**	55	16	41	4 59	45	16	54
14	32 55.4	57.4	41 56.7	114	+3 50.4	155	**20**	17 59	21	47	5 04	40	14	59
15	47 55.5	58.4	56 27.1	114	34.9	155	**30**	18 04	28	18 56	10	33	11	65
16	62 55.7	−4 59.4	70 57.5	114	19.3	156	**35**	06	32	19 02	13	30	09	69
17	77 55.9	−5 00.3	85 27.9	114	+3 03.7	156	**40**	18 10	18 37	19 09	5 16	27	17 07	73
18	92 56.1	−5 01.3	99 58.2	113	+2 48.1	156	**45**	18 13	18 43	19 18	5 20	23	17 05	77
19	107 56.3	02.2	114 28.6	114	32.4	157	**50**	18	50	30	25	18	03	82
20	122 56.5	03.2	128 58.9	113	16.7	157	**52**	20	54	36	27	16	02	85
21	137 56.6	04.2	143 29.2	113	+2 01.0	157	**54**	22	18 58	42	30	13	17 00	88
22	152 56.8	05.1	157 59.5	113	+1 45.3	157	**56**	24	19 03	49	33	10	16 59	91
23	167 57.0	06.1	172 29.8	113	29.5	158	**58**	27	08	19 58	35	8	57	94
24	182 57.2	−5 07.0	187 00.1	113	+1 13.7	158	**60 S**	18 30	19 13	20 07	5 39	4	16 55	98

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.3		Mag: +1.7		Mag: −2.7		Mag: +0.5	
	23ʰ 00ᵐ.7	PMG: 14ʰ 42ᵐ		PMG: 11ʰ 53ᵐ		PMG: 20ʰ 42ᵐ		PMG: 19ʰ 39ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	13 53.3	139 29.6	−21 56.2	181 39.1	−4 31.0	48 31.3	−15 04.9	64 21.9	−19 20.2
1	28 55.8	154 29.2	57.0	196 40.0	31.7	63 33.8	05.0	79 24.4	20.2
2	43 58.3	169 28.9	57.8	211 41.0	32.3	78 36.4	05.0	94 26.9	20.2
3	59 00.7	184 28.5	58.6	226 42.0	33.0	93 39.0	05.0	109 29.4	20.2
4	74 03.2	199 28.1	−21 59.4	241 42.9	33.7	108 41.5	05.0	124 31.9	20.2
5	89 05.7	214 27.7	−22 00.2	256 43.9	−4 34.3	123 44.1	−15 05.1	139 34.3	−19 20.2
6	104 08.1	229 27.3	−22 01.0	271 44.8	−4 35.0	138 46.7	−15 05.1	154 36.8	−19 20.2
7	119 10.6	244 26.9	01.8	286 45.8	35.6	153 49.3	05.1	169 39.3	20.2
8	134 13.1	259 26.5	02.5	301 46.7	36.3	168 51.8	05.2	184 41.8	20.3
9	149 15.5	274 26.1	03.3	316 47.7	36.9	183 54.4	05.2	199 44.3	20.3
10	164 18.0	289 25.8	04.1	331 48.6	37.6	198 57.0	05.2	214 46.8	20.3
11	179 20.4	304 25.4	−22 04.9	346 49.6	−4 38.2	213 59.5	−15 05.3	229 49.3	−19 20.3
12	194 22.9	319 25.0	−22 05.7	1 50.5	−4 38.9	229 02.1	−15 05.3	244 51.8	−19 20.3
13	209 25.4	334 24.6	06.5	16 51.5	39.6	244 04.7	05.3	259 54.3	20.3
14	224 27.8	349 24.2	07.2	31 52.4	40.2	259 07.2	05.4	274 56.7	20.3
15	239 30.3	4 23.8	08.0	46 53.4	40.9	274 09.8	05.4	289 59.2	20.3
16	254 32.8	19 23.4	08.8	61 54.3	41.5	289 12.4	05.4	305 01.7	20.3
17	269 35.2	34 23.0	−22 09.6	76 55.3	−4 42.2	304 14.9	−15 05.4	320 04.2	−19 20.3
18	284 37.7	49 22.6	−22 10.4	91 56.3	−4 42.8	319 17.5	−15 05.5	335 06.7	−19 20.3
19	299 40.2	64 22.3	11.1	106 57.2	43.5	334 20.1	05.5	350 09.2	20.3
20	314 42.6	79 21.9	11.9	121 58.2	44.1	349 22.6	05.5	5 11.7	20.3
21	329 45.1	94 21.5	12.7	136 59.1	44.8	4 25.2	05.6	20 14.2	20.3
22	344 47.5	109 21.1	13.5	152 00.1	45.4	19 27.8	05.6	35 16.6	20.3
23	359 50.0	124 20.7	14.2	167 01.0	46.1	34 30.3	05.6	50 19.1	20.3
24	14 52.5	139 20.3	−22 15.0	182 02.0	−4 46.7	49 32.9	−15 05.7	65 21.6	−19 20.3
Dif	—	−4	−8	+10	−7	+26	0	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 29ᵈ.0		PHE	4ʰ: 59′.6									
	PMG: 11ʰ 48ᵐ.0				SD: 16′.2			12ʰ: 59′.8									
					PMG: 11ʰ 56ᵐ			20ʰ: 59′.9									
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	57.2	−5	07.0	187	00.1	+1	13.7		**60 N**	4 48	5 36	6 18	5 47	99	17 42	4
1	197	57.4		08.0	201	30.3 112	+0	57.9 158		**58**	51	36	15	47	95	44	8
2	212	57.6		09.0	216	00.5 112		42.1 158		**56**	53	36	13	46	93	46	11
3	227	57.7		09.9	230	30.7 112		26.2 159		**54**	55	36	11	46	89	47	14
4	242	57.9		10.9	245	00.9 112	+0	10.4 158		**52**	57	36	09	46	86	49	16
5	257	58.1	−5	11.8	259	31.0 111	−0	05.5 159		**50**	4 58	5 36	6 08	5 46	84	17 50	19
6	272	58.3	−5	12.8	274	01.1 111	−0	21.4 159		**45**	5 01	5 35	6 04	5 46	78	17 53	24
7	287	58.5		13.7	288	31.2 111		37.3 159		**40**	03	34	6 01	45	74	55	29
8	302	58.7		14.7	303	01.2 110	−0	53.2 159		**35**	04	33	5 59	45	70	57	32
9	317	58.8		15.7	317	31.3 111	−1	09.1 159		**30**	05	32	56	45	66	17 59	36
10	332	59.0		16.6	332	01.3 110		25.1 160		**20**	05	30	52	44	61	18 02	42
11	347	59.2	−5	17.6	346	31.2 109	−1	41.0 159		**10 N**	5 03	5 27	5 48	5 44	55	18 05	46
12	2	59.4	−5	18.5	1	01.1 109	−1	56.9 159		**0**	5 00	5 24	5 45	5 44	50	18 08	51
13	17	59.6		19.5	15	31.0 109	−2	12.9 160		**10 S**	4 55	20	41	44	45	10	56
14	32	59.8		20.5	30	00.9 109		28.8 159		**20**	49	15	37	44	40	13	61
15	47	59.9		21.4	44	30.7 108	−2	44.7 159		**30**	40	08	32	43	35	16	67
16	63	00.1		22.4	59	00.5 108	−3	00.7 160		**35**	34	5 04	29	43	32	18	71
17	78	00.3	−5	23.3	73	30.3 108	−3	16.6 159		**40**	4 26	4 59	5 26	5 43	28	18 20	75
18	93	00.5	−5	24.3	88	00.0 107	−3	32.5 159		**45**	4 17	4 53	5 22	5 43	23	18 22	80
19	108	00.7		25.2	102	29.7 107	−3	48.4 159		**50**	06	45	18	43	18	25	85
20	123	00.8		26.2	116	59.3 106	−4	04.3 159		**52**	4 00	41	16	43	16	27	87
21	138	01.0		27.2	131	28.9 106		20.2 159		**54**	3 53	37	14	43	13	28	90
22	153	01.2		28.1	145	58.4 105		36.1 159		**56**	46	33	11	43	10	30	93
23	168	01.4		29.1	160	27.9 105	−4	51.9 158		**58**	38	28	08	43	7	31	97
24	183	01.6	−5	30.0	174	57.4 105	−5	07.8 159		**60 S**	3 28	4 22	5 05	5 43	4	18 33	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.7			Mag: −2.7			Mag: +0.5		
	22ʰ 56ᵐ.7		PMG: 14ʰ 43ᵐ			PMG: 11ʰ 51ᵐ			PMG: 20ʰ 38ᵐ			PMG: 19ʰ 35ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	14	52.5	139	20.3	−22 15.0	182	02.0	−4 46.7	49	32.9	−15 05.7	65	21.6	−19 20.3
1	29	54.9	154	19.9	15.8	197	02.9	47.4	64	35.5	05.7	80	24.1	20.4
2	44	57.4	169	19.5	16.6	212	03.9	48.1	79	38.0	05.7	95	26.6	20.4
3	59	59.9	184	19.1	17.3	227	04.8	48.7	94	40.6	05.7	110	29.1	20.4
4	75	02.3	199	18.7	18.1	242	05.8	49.4	109	43.2	05.8	125	31.6	20.4
5	90	04.8	214	18.3	−22 18.9	257	06.7	−4 50.0	124	45.7	−15 05.8	140	34.0	−19 20.4
6	105	07.3	229	17.9	−22 19.6	272	07.7	−4 50.7	139	48.3	−15 05.8	155	36.5	−19 20.4
7	120	09.7	244	17.6	20.4	287	08.6	51.3	154	50.9	05.9	170	39.0	20.4
8	135	12.2	259	17.2	21.2	302	09.6	52.0	169	53.4	05.9	185	41.5	20.4
9	150	14.7	274	16.8	21.9	317	10.5	52.6	184	56.0	05.9	200	44.0	20.4
10	165	17.1	289	16.4	22.7	332	11.5	53.3	199	58.5	05.9	215	46.5	20.4
11	180	19.6	304	16.0	−22 23.5	347	12.4	−4 53.9	215	01.1	−15 06.0	230	49.0	−19 20.4
12	195	22.0	319	15.6	−22 24.2	2	13.4	−4 54.6	230	03.7	−15 06.0	245	51.4	−19 20.4
13	210	24.5	334	15.2	25.0	17	14.3	55.2	245	06.2	06.0	260	53.9	20.4
14	225	27.0	349	14.8	25.7	32	15.3	55.9	260	08.8	06.0	275	56.4	20.4
15	240	29.4	4	14.4	26.5	47	16.2	56.6	275	11.4	06.1	290	58.9	20.4
16	255	31.9	19	14.0	27.3	62	17.2	57.2	290	13.9	06.1	306	01.4	20.4
17	270	34.4	34	13.6	−22 28.0	77	18.1	−4 57.9	305	16.5	−15 06.1	321	03.9	−19 20.4
18	285	36.8	49	13.2	−22 28.8	92	19.1	−4 58.5	320	19.0	−15 06.2	336	06.3	−19 20.4
19	300	39.3	64	12.8	29.5	107	20.0	59.2	335	21.6	06.2	351	08.8	20.4
20	315	41.8	79	12.4	30.3	122	21.0	−4 59.8	350	24.1	06.2	6	11.3	20.4
21	330	44.2	94	12.0	31.0	137	21.9	−5 00.5	5	26.7	06.2	21	13.8	20.5
22	345	46.7	109	11.6	31.8	152	22.9	01.1	20	29.3	06.3	36	16.3	20.5
23	0	49.1	124	11.2	32.5	167	23.8	01.8	35	31.8	06.3	51	18.8	20.5
24	15	51.6	139	10.8	−22 33.3	182	24.8	−5 02.4	50	34.4	−15 06.3	66	21.2	−19 20.5
Dif	—				−4 −8			+10 −7			+26 0			+25 0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 30ᵈ.0		PHE	4ʰ: 60′.1								
	PMG: 11ʰ 47ᵐ.8		SD: 16′.3			12ʰ: 60′.2								
			PMG: 12ʰ 46ᵐ			20ʰ: 60′.2								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	183 01.6	−5 30.0	174 57.4		−5 07.8		**60 N**	17 14	17 56	18 44	7 26	104	17 46	6
1	198 01.7	31.0	189 26.8	104	23.6	158	**58**	17	56	41	22	99	52	10
2	213 01.9	31.9	203 56.2	104	39.4	158	**56**	19	56	39	19	95	17 57	13
3	228 02.1	32.9	218 25.5	103	−5 55.2	158	**54**	21	57	38	15	92	18 01	17
4	243 02.3	33.9	232 54.8	103	−6 10.9	157	**52**	23	57	36	12	89	05	20
5	258 02.5	−5 34.8	247 24.0	102	−6 26.6	157	**50**	17 25	17 57	18 35	7 10	86	18 09	22
6	273 02.6	−5 35.8	261 53.2	102	−6 42.3	157	**45**	17 29	17 59	18 32	7 04	80	18 17	27
7	288 02.8	36.7	276 22.3	101	−6 58.0	157	**40**	33	18 00	31	6 59	75	24	31
8	303 03.0	37.7	290 51.4	101	−7 13.6	156	**35**	36	01	30	55	71	29	36
9	318 03.2	38.6	305 20.4	100	29.2	156	**30**	38	02	30	51	68	35	38
10	333 03.3	39.6	319 49.3	99	−7 44.8	156	**20**	43	05	30	45	62	44	44
11	348 03.5	−5 40.5	334 18.3	100	−8 00.3	155	**10 N**	17 47	18 08	18 32	6 39	58	18 51	50
12	3 03.7	−5 41.5	348 47.1	98	−8 15.8	155	**0**	17 51	18 12	18 36	6 34	53	18 59	54
13	18 03.9	42.5	3 15.9	98	31.3	155	**10 S**	17 55	16	41	29	48	19 06	59
14	33 04.1	43.4	17 44.6	97	−8 46.7	154	**20**	18 00	22	48	24	43	14	64
15	48 04.2	44.4	32 13.3	97	−9 02.0	153	**30**	05	29	18 57	18	37	23	69
16	63 04.4	45.3	46 42.0	97	17.4	154	**35**	08	34	19 04	15	33	29	72
17	78 04.6	−5 46.3	61 10.5	95	−9 32.6	152	**40**	18 12	18 39	19 12	6 11	30	19 35	76
18	93 04.8	−5 47.2	75 39.0	95	−9 47.8	152	**45**	18 16	18 46	19 21	6 06	26	19 42	81
19	108 04.9	48.2	90 07.5	95	−10 03.0	152	**50**	21	54	34	6 01	21	50	87
20	123 05.1	49.1	104 35.8	93	18.1	151	**52**	23	18 58	40	5 59	18	54	89
21	138 05.3	50.1	119 04.2	94	33.2	151	**54**	26	19 02	47	56	16	19 58	93
22	153 05.5	51.0	133 32.4	92	−10 48.2	150	**56**	28	07	19 54	53	13	20 03	96
23	168 05.6	52.0	148 00.6	92	−11 03.1	149	**58**	31	12	20 03	50	9	08	100
24	183 05.8	−5 53.0	162 28.7	91	−11 18.0	149	**60 S**	18 35	19 19	20 14	5 47	5	20 15	104

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.3		Mag: +1.6		Mag: −2.7		Mag: +0.5	
	22ʰ 52ᵐ.8	PMG: 14ʰ 44ᵐ		PMG: 11ʰ 50ᵐ		PMG: 20ʰ 34ᵐ		PMG: 19ʰ 31ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	15 51.6	139 10.8	−22 33.3	182 24.8	−5 02.4	50 34.4	−15 06.3	66 21.2	−19 20.5
1	30 54.1	154 10.5	34.0	197 25.7	03.1	65 36.9	06.3	81 23.7	20.5
2	45 56.5	169 10.1	34.8	212 26.7	03.7	80 39.5	06.4	96 26.2	20.5
3	60 59.0	184 09.7	35.5	227 27.6	04.4	95 42.1	06.4	111 28.7	20.5
4	76 01.5	199 09.3	36.3	242 28.6	05.0	110 44.6	06.4	126 31.2	20.5
5	91 03.9	214 08.9	−22 37.0	257 29.5	−5 05.7	125 47.2	−15 06.4	141 33.6	−19 20.5
6	106 06.4	229 08.5	−22 37.8	272 30.5	−5 06.4	140 49.7	−15 06.5	156 36.1	−19 20.5
7	121 08.9	244 08.1	38.5	287 31.4	07.0	155 52.3	06.5	171 38.6	20.5
8	136 11.3	259 07.7	39.3	302 32.4	07.7	170 54.8	06.5	186 41.1	20.5
9	151 13.8	274 07.3	40.0	317 33.3	08.3	185 57.4	06.5	201 43.6	20.5
10	166 16.3	289 06.9	40.8	332 34.3	09.0	200 59.9	06.6	216 46.0	20.5
11	181 18.7	304 06.5	−22 41.5	347 35.2	−5 09.6	216 02.5	−15 06.6	231 48.5	−19 20.5
12	196 21.2	319 06.1	−22 42.2	2 36.2	−5 10.3	231 05.0	−15 06.6	246 51.0	−19 20.5
13	211 23.6	334 05.7	43.0	17 37.1	10.9	246 07.6	06.6	261 53.5	20.5
14	226 26.1	349 05.3	43.7	32 38.1	11.6	261 10.2	06.7	276 56.0	20.5
15	241 28.6	4 04.9	44.4	47 39.0	12.2	276 12.7	06.7	291 58.4	20.5
16	256 31.0	19 04.5	45.2	62 40.0	12.9	291 15.3	06.7	307 00.9	20.5
17	271 33.5	34 04.1	−22 45.9	77 40.9	−5 13.5	306 17.8	−15 06.7	322 03.4	−19 20.5
18	286 36.0	49 03.7	−22 46.7	92 41.9	−5 14.2	321 20.4	−15 06.8	337 05.9	−19 20.5
19	301 38.4	64 03.3	47.4	107 42.8	14.8	336 22.9	06.8	352 08.4	20.5
20	316 40.9	79 02.9	48.1	122 43.8	15.5	351 25.5	06.8	7 10.8	20.5
21	331 43.4	94 02.5	48.9	137 44.7	16.1	6 28.0	06.8	22 13.3	20.5
22	346 45.8	109 02.1	49.6	152 45.7	16.8	21 30.6	06.9	37 15.8	20.6
23	1 48.3	124 01.7	50.3	167 46.6	17.4	36 33.1	06.9	52 18.3	20.6
24	16 50.7	139 01.3	−22 51.0	182 47.6	−5 18.1	51 35.7	−15 06.9	67 20.7	−19 20.6
Dif	—	−4	−7	+9	−7	+26	0	+25	0

UT	SOL SD: 16′.0 PMG: 11h 47m.5				LUNA Edad: 1d.5 SD: 16′.4 PMG: 13h 40m PHE: 4h: 60′.3; 12h: 60′.3; 20h: 60′.3 Rº: 56m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	183	05.8	−5	53.0	162	28.7	−11	18.0	**60 N**	4 53	5 41	6 23	9 10	106	17 52	10
1	198	06.0		53.9	176	56.8 91		32.8 148	**58**	55	40	20	9 01	101	18 02	14
2	213	06.2		54.9	191	24.8 90	−11	47.6 148	**56**	57	40	17	8 54	97	10	19
3	228	06.3		55.8	205	52.7 89	−12	02.3 147	**54**	4 59	40	15	47	93	18	22
4	243	06.5		56.8	220	20.6 89		16.9 146	**52**	5 00	39	13	41	90	25	25
5	258	06.7	−5	57.7	234	48.4 88	−12	31.4 145	**50**	5 01	5 39	6 11	8 36	87	18 31	27
6	273	06.9	−5	58.7	249	16.1 87	−12	45.9 145	**45**	5 03	5 37	6 07	8 24	82	18 44	33
7	288	07.0	−5	59.6	263	43.7 86	−13	00.3 144	**40**	05	36	03	14	77	18 55	38
8	303	07.2	−6	00.6	278	11.3 86		14.6 143	**35**	06	35	6 00	8 06	74	19 05	41
9	318	07.4		01.5	292	38.8 85		28.9 143	**30**	06	34	5 58	7 59	70	13	44
10	333	07.6		02.5	307	06.3 85		43.0 141	**20**	05	31	53	47	65	28	48
11	348	07.7	−6	03.4	321	33.6 83	−13	57.1 141	**10 N**	5 03	5 27	5 48	7 37	59	19 41	53
12	3	07.9	−6	04.4	336	00.9 83	−14	11.1 140	**0**	4 59	5 23	5 44	7 27	55	19 53	57
13	18	08.1		05.3	350	28.1 82		25.0 139	**10 S**	54	19	40	17	51	20 05	61
14	33	08.3		06.3	4	55.3 82		38.9 139	**20**	47	13	35	7 07	46	18	65
15	48	08.4		07.2	19	22.4 81	−14	52.6 137	**30**	37	06	30	6 55	41	32	71
16	63	08.6		08.2	33	49.4 80	−15	06.3 137	**35**	31	5 01	27	48	38	41	74
17	78	08.8	−6	09.1	48	16.3 79	−15	19.8 135	**40**	4 23	4 56	5 23	6 41	34	20 51	77
18	93	08.9	−6	10.1	62	43.1 78	−15	33.3 135	**45**	4 13	4 49	5 19	6 32	30	21 03	81
19	108	09.1		11.1	77	09.9 78		46.6 133	**50**	4 01	41	14	22	24	17	87
20	123	09.3		12.0	91	36.6 77	−15	59.9 133	**52**	3 55	37	11	17	22	23	90
21	138	09.5		13.0	106	03.2 76	−16	13.1 132	**54**	48	32	09	12	19	31	93
22	153	09.6		13.9	120	29.8 76		26.2 131	**56**	40	27	06	6 06	16	39	97
23	168	09.8		14.9	134	56.3 75		39.1 129	**58**	31	22	5 03	5 59	12	48	102
24	183	10.0	−6	15.8	149	22.7 74	−16	52.0 129	**60 S**	3 21	4 16	4 59	5 52	8	21 59	107

UT	ARIES PMG 22h 48m.9		VENUS Mag: −4.3 PMG: 14h 44m			MARTE Mag: +1.6 PMG: 11h 48m			JÚPITER Mag: −2.7 PMG: 20h 30m			SATURNO Mag: +0.5 PMG: 19h 27m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	16	50.7	139	01.3	−22 51.0	182	47.6	−5 18.1	51	35.7	−15 06.9	67	20.7	−19 20.6
1	31	53.2	154	00.9	51.8	197	48.5	18.7	66	38.2	06.9	82	23.2	20.6
2	46	55.7	169	00.5	52.5	212	49.5	19.4	81	40.8	07.0	97	25.7	20.6
3	61	58.1	184	00.1	53.2	227	50.4	20.1	96	43.3	07.0	112	28.2	20.6
4	77	00.6	198	59.7	54.0	242	51.3	20.7	111	45.9	07.0	127	30.7	20.6
5	92	03.1	213	59.3	−22 54.7	257	52.3	−5 21.4	126	48.4	−15 07.0	142	33.1	−19 20.6
6	107	05.5	228	58.9	−22 55.4	272	53.2	−5 22.0	141	51.0	−15 07.1	157	35.6	−19 20.6
7	122	08.0	243	58.5	56.1	287	54.2	22.7	156	53.5	07.1	172	38.1	20.6
8	137	10.5	258	58.1	56.8	302	55.1	23.3	171	56.0	07.1	187	40.6	20.6
9	152	12.9	273	57.7	57.6	317	56.1	24.0	186	58.6	07.1	202	43.0	20.6
10	167	15.4	288	57.3	58.3	332	57.0	24.6	202	01.1	07.1	217	45.5	20.6
11	182	17.9	303	56.9	−22 59.0	347	58.0	−5 25.3	217	03.7	−15 07.2	232	48.0	−19 20.6
12	197	20.3	318	56.5	−22 59.7	2	58.9	−5 25.9	232	06.2	−15 07.2	247	50.5	−19 20.6
13	212	22.8	333	56.1	−23 00.4	17	59.9	26.6	247	08.8	07.2	262	52.9	20.6
14	227	25.2	348	55.7	01.2	33	00.8	27.2	262	11.3	07.2	277	55.4	20.6
15	242	27.7	3	55.3	01.9	48	01.8	27.9	277	13.9	07.3	292	57.9	20.6
16	257	30.2	18	54.9	02.6	63	02.7	28.5	292	16.4	07.3	308	00.4	20.6
17	272	32.6	33	54.5	−23 03.3	78	03.6	−5 29.2	307	19.0	−15 07.3	323	02.8	−19 20.6
18	287	35.1	48	54.1	−23 04.0	93	04.6	−5 29.8	322	21.5	−15 07.3	338	05.3	−19 20.6
19	302	37.6	63	53.6	04.7	108	05.5	30.5	337	24.0	07.3	353	07.8	20.6
20	317	40.0	78	53.2	05.4	123	06.5	31.1	352	26.6	07.4	8	10.3	20.6
21	332	42.5	93	52.8	06.2	138	07.4	31.8	7	29.1	07.4	23	12.7	20.6
22	347	45.0	108	52.4	06.9	153	08.4	32.4	22	31.7	07.4	38	15.2	20.6
23	2	47.4	123	52.0	07.6	168	09.3	33.1	37	34.2	07.4	53	17.7	20.6
24	17	49.9	138	51.6	−23 08.3	183	10.3	−5 33.7	52	36.7	−15 07.4	68	20.2	−19 20.6
Dif	—			−4	−7		+9	−7		+25	0		+25	0

UT	SOL				LUNA						Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 2ᵈ.5		PHE	4ʰ: 60′.3										
	PMG: 11ʰ 47ᵐ.2				SD: 16′.4			12ʰ: 60′.3										
					PMG: 14ʰ 36ᵐ			20ʰ: 60′.2										
	hG ☉		Dec		hG ☾	Dif	Dec	Dif					Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			º	h m	h m	h m	h m	m	h m	m
0	183	10.0	−6	15.8	149	22.7	−16	52.0			**60 N**	17 08	17 50	18 38	10 56	107	18 02	16
1	198	10.1		16.8	163	49.0 73	−17	04.7 127			**58**	11	51	36	42	101	16	23
2	213	10.3		17.7	178	15.2 72		17.4 127			**56**	14	51	34	31	95	29	27
3	228	10.5		18.7	192	41.4 72		29.9 125			**54**	17	52	33	20	92	40	31
4	243	10.7		19.6	207	07.5 71		42.3 124			**52**	19	53	32	11	89	50	33
5	258	10.8	−6	20.6	221	33.5 70	−17	54.6 123			**50**	17 21	17 53	18 31	10 03	86	18 58	37
6	273	11.0	−6	21.5	235	59.5 70	−18	06.8 122			**45**	17 26	17 55	18 29	9 46	80	19 17	41
7	288	11.2		22.5	250	25.3 68		18.9 121			**40**	29	57	28	31	77	33	44
8	303	11.3		23.4	264	51.1 68		30.9 120			**35**	33	17 58	27	20	73	46	47
9	318	11.5		24.4	279	16.9 68		42.7 118			**30**	36	18 00	28	9 09	71	19 57	50
10	333	11.7		25.3	293	42.5 66	−18	54.4 117			**20**	41	03	29	8 52	66	20 16	54
11	348	11.8	−6	26.3	308	08.1 66	−19	06.0 116			**10 N**	17 46	18 07	18 31	8 36	62	20 34	56
12	3	12.0	−6	27.2	322	33.6 65	−19	17.5 115			**0**	17 50	18 11	18 35	8 22	59	20 50	60
13	18	12.2		28.1	336	59.0 64		28.8 113			**10 S**	17 55	16	41	8 08	55	21 06	63
14	33	12.4		29.1	351	24.3 63		40.0 112			**20**	18 00	23	48	7 53	51	23	66
15	48	12.5		30.0	5	49.6 63	−19	51.1 111			**30**	06	30	18 59	36	47	43	70
16	63	12.7		31.0	20	14.8 62	−20	02.0 109			**35**	10	35	19 06	26	44	21 55	72
17	78	12.9	−6	31.9	34	39.9 61	−20	12.8 108			**40**	18 14	18 41	19 14	7 15	41	22 08	75
18	93	13.0	−6	32.9	49	05.0 61	−20	23.5 107			**45**	18 18	18 48	19 24	7 02	37	22 24	78
19	108	13.2		33.8	63	29.9 59		34.0 105			**50**	24	18 57	37	6 46	32	44	83
20	123	13.4		34.8	77	54.8 59		44.4 104			**52**	26	19 01	44	39	29	22 53	85
21	138	13.5		35.7	92	19.7 59	−20	54.7 103			**54**	29	06	51	31	26	23 04	88
22	153	13.7		36.7	106	44.5 58	−21	04.8 101			**56**	32	11	19 59	22	22	16	91
23	168	13.9		37.6	121	09.2 57		14.8 100			**58**	36	17	20 09	11	19	30	95
24	183	14.0	−6	38.6	135	33.8 56	−21	24.6 98			**60 S**	18 40	19 24	20 20	6 00	13	23 46	102

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG		Mag: −4.3				Mag: +1.6				Mag: −2.7				Mag: +0.5			
	22ʰ 44ᵐ.9		PMG: 14ʰ 45ᵐ				PMG: 11ʰ 47ᵐ				PMG: 20ʰ 26ᵐ				PMG: 19ʰ 23ᵐ			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	17	49.9	138	51.6	−23	08.3	183	10.3	−5	33.7	52	36.7	−15	07.4	68	20.2	−19	20.6
1	32	52.4	153	51.2		09.0	198	11.2		34.4	67	39.3		07.5	83	22.6		20.6
2	47	54.8	168	50.8		09.7	213	12.2		35.0	82	41.8		07.5	98	25.1		20.6
3	62	57.3	183	50.4		10.4	228	13.1		35.7	97	44.4		07.5	113	27.6		20.6
4	77	59.7	198	50.0		11.1	243	14.0		36.3	112	46.9		07.5	128	30.1		20.6
5	93	02.2	213	49.6	−23	11.8	258	15.0	−5	37.0	127	49.5	−15	07.5	143	32.5	−19	20.6
6	108	04.7	228	49.2	−23	12.5	273	15.9	−5	37.6	142	52.0	−15	07.6	158	35.0	−19	20.6
7	123	07.1	243	48.8		13.2	288	16.9		38.3	157	54.5		07.6	173	37.5		20.6
8	138	09.6	258	48.4		13.9	303	17.8		38.9	172	57.1		07.6	188	39.9		20.6
9	153	12.1	273	48.0		14.6	318	18.8		39.6	187	59.6		07.6	203	42.4		20.6
10	168	14.5	288	47.6		15.3	333	19.7		40.2	203	02.1		07.6	218	44.9		20.6
11	183	17.0	303	47.2	−23	16.0	348	20.7	−5	40.9	218	04.7	−15	07.7	233	47.4	−19	20.6
12	198	19.5	318	46.8	−23	16.7	3	21.6	−5	41.6	233	07.2	−15	07.7	248	49.8	−19	20.6
13	213	21.9	333	46.4		17.4	18	22.5		42.2	248	09.8		07.7	263	52.3		20.6
14	228	24.4	348	46.0		18.1	33	23.5		42.9	263	12.3		07.7	278	54.8		20.7
15	243	26.9	3	45.5		18.8	48	24.4		43.5	278	14.8		07.7	293	57.2		20.7
16	258	29.3	18	45.1		19.5	63	25.4		44.2	293	17.4		07.8	308	59.7		20.7
17	273	31.8	33	44.7	−23	20.2	78	26.3	−5	44.8	308	19.9	−15	07.8	324	02.2	−19	20.7
18	288	34.2	48	44.3	−23	20.9	93	27.3	−5	45.5	323	22.4	−15	07.8	339	04.6	−19	20.7
19	303	36.7	63	43.9		21.5	108	28.2		46.1	338	25.0		07.8	354	07.1		20.7
20	318	39.2	78	43.5		22.2	123	29.1		46.8	353	27.5		07.8	9	09.6		20.7
21	333	41.6	93	43.1		22.9	138	30.1		47.4	8	30.0		07.8	24	12.1		20.7
22	348	44.1	108	42.7		23.6	153	31.0		48.1	23	32.6		07.9	39	14.5		20.7
23	3	46.6	123	42.3		24.3	168	32.0		48.7	38	35.1		07.9	54	17.0		20.7
24	18	49.0	138	41.9	−23	25.0	183	32.9	−5	49.4	53	37.6	−15	07.9	69	19.5	−19	20.7
Dif	—			−4		−7		+9		−7		+25		0		+25		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 3ᵈ.5		PHE	4ʰ: 60′.1									
	PMG: 11ʰ 46ᵐ.9				SD: 16′.4			12ʰ: 60′.0									
					PMG: 15ʰ 35ᵐ			20ʰ: 59′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	14.0	−6	38.6	135	33.8	−21	24.6		**60 N**	4 57	5 46	6 27	12 43	96	18 18	32
						56			97								
1	198	14.2		39.5	149	58.4		34.3		**58**	4 59	45	24	23	90	39	38
						54			95								
2	213	14.4		40.5	164	22.8		43.8		**56**	5 01	44	21	12 06	86	18 56	42
						55			94								
3	228	14.5		41.4	178	47.3	−21	53.2		**54**	02	43	19	11 52	83	19 11	44
						53			92								
4	243	14.7		42.4	193	11.6	−22	02.4		**52**	03	42	16	40	80	23	47
						54			91								
5	258	14.9	−6	43.3	207	36.0	−22	11.5		**50**	5 04	5 42	6 14	11 29	78	19 35	48
						52			90								
6	273	15.0	−6	44.3	222	00.2	−22	20.5		**45**	5 06	5 40	6 09	11 06	75	19 58	51
						52			87								
7	288	15.2		45.2	236	24.4		29.2		**40**	07	38	05	10 48	73	20 17	53
						51			87								
8	303	15.3		46.1	250	48.5		37.9		**35**	07	36	6 02	33	70	33	55
						51			84								
9	318	15.5		47.1	265	12.6		46.3		**30**	07	35	5 59	10 20	68	20 47	56
						50			83								
10	333	15.7		48.0	279	36.6	−22	54.6		**20**	06	31	53	9 58	65	21 10	58
						49			82								
11	348	15.8	−6	49.0	294	00.5	−23	02.8		**10 N**	5 03	5 27	5 48	9 38	64	21 30	60
						49			80								
12	3	16.0	−6	49.9	308	24.4	−23	10.8		**0**	4 59	5 23	5 44	9 21	61	21 50	61
						48			78								
13	18	16.2		50.9	322	48.2		18.6		**10 S**	53	18	39	9 03	59	22 09	63
						48			77								
14	33	16.3		51.8	337	12.0		26.3		**20**	45	11	34	8 44	56	29	65
						47			75								
15	48	16.5		52.8	351	35.7		33.8		**30**	35	5 03	27	23	53	22 53	66
						47			73								
16	63	16.7		53.7	5	59.4		41.1		**35**	28	4 58	24	8 10	51	23 07	68
						46			72								
17	78	16.8	−6	54.6	20	23.0	−23	48.3		**40**	4 20	4 52	5 20	7 56	48	23 23	69
						46			70								
18	93	17.0	−6	55.6	34	46.6	−23	55.3		**45**	4 09	4 45	5 15	7 39	45	23 42	71
						46			68								
19	108	17.1		56.5	49	10.2	−24	02.1		**50**	3 56	36	09	18	42	** **	**
						44			67								
20	123	17.3		57.5	63	33.6		08.8		**52**	50	32	07	7 08	40	** **	**
						45			65								
21	138	17.5		58.4	77	57.1		15.3		**54**	42	27	04	6 57	37	** **	**
						44			63								
22	153	17.6	−6	59.4	92	20.5		21.6		**56**	34	22	5 01	44	34	** **	**
						44			62								
23	168	17.8	−7	00.3	106	43.9		27.8		**58**	24	16	4 57	30	29	** **	**
						43			60								
24	183	18.0	−7	01.3	121	07.2	−24	33.8		**60 S**	3 13	4 09	4 53	6 13	23	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.6			Mag: −2.7			Mag: +0.5		
	22ʰ 41ᵐ.0		PMG: 14ʰ 46ᵐ			PMG: 11ʰ 45ᵐ			PMG: 20ʰ 22ᵐ			PMG: 19ʰ 20ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	18	49.0	138	41.9	−23 25.0	183	32.9	−5 49.4	53	37.6	−15 07.9	69	19.5	−19 20.7
1	33	51.5	153	41.5	25.7	198	33.8	50.0	68	40.2	07.9	84	21.9	20.7
2	48	54.0	168	41.1	26.3	213	34.8	50.7	83	42.7	07.9	99	24.4	20.7
3	63	56.4	183	40.7	27.0	228	35.7	51.3	98	45.2	08.0	114	26.9	20.7
4	78	58.9	198	40.3	27.7	243	36.7	52.0	113	47.8	08.0	129	29.3	20.7
5	94	01.3	213	39.8	−23 28.4	258	37.6	−5 52.6	128	50.3	−15 08.0	144	31.8	−19 20.7
6	109	03.8	228	39.4	−23 29.1	273	38.6	−5 53.3	143	52.8	−15 08.0	159	34.3	−19 20.7
7	124	06.3	243	39.0	29.7	288	39.5	53.9	158	55.4	08.0	174	36.7	20.7
8	139	08.7	258	38.6	30.4	303	40.4	54.6	173	57.9	08.0	189	39.2	20.7
9	154	11.2	273	38.2	31.1	318	41.4	55.2	189	00.4	08.1	204	41.7	20.7
10	169	13.7	288	37.8	31.8	333	42.3	55.9	204	03.0	08.1	219	44.1	20.7
11	184	16.1	303	37.4	−23 32.4	348	43.3	−5 56.5	219	05.5	−15 08.1	234	46.6	−19 20.7
12	199	18.6	318	37.0	−23 33.1	3	44.2	−5 57.2	234	08.0	−15 08.1	249	49.1	−19 20.7
13	214	21.1	333	36.6	33.8	18	45.1	57.8	249	10.5	08.1	264	51.5	20.7
14	229	23.5	348	36.2	34.5	33	46.1	58.5	264	13.1	08.1	279	54.0	20.7
15	244	26.0	3	35.8	35.1	48	47.0	59.1	279	15.6	08.2	294	56.5	20.7
16	259	28.5	18	35.3	35.8	63	48.0	−5 59.8	294	18.1	08.2	309	58.9	20.7
17	274	30.9	33	34.9	−23 36.5	78	48.9	−6 00.4	309	20.7	−15 08.2	325	01.4	−19 20.7
18	289	33.4	48	34.5	−23 37.1	93	49.8	−6 01.0	324	23.2	−15 08.2	340	03.9	−19 20.7
19	304	35.8	63	34.1	37.8	108	50.8	01.7	339	25.7	08.2	355	06.3	20.7
20	319	38.3	78	33.7	38.5	123	51.7	02.3	354	28.2	08.2	10	08.8	20.7
21	334	40.8	93	33.3	39.1	138	52.7	03.0	9	30.8	08.3	25	11.3	20.7
22	349	43.2	108	32.9	39.8	153	53.6	03.6	24	33.3	08.3	40	13.7	20.7
23	4	45.7	123	32.5	40.5	168	54.5	04.3	39	35.8	08.3	55	16.2	20.7
24	19	48.2	138	32.1	−23 41.1	183	55.5	−6 04.9	54	38.3	−15 08.3	70	18.7	−19 20.7
Dif	—				−4 −7			+9 −6			+25 0			+25 0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0 PMG: 11h 46m.7		Edad: 4d.5 SD: 16′.3 PMG: 16h 36m		PHE: 4h: 59′.7; 12h: 59′.6; 20h: 59′.4 Rº: 62m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉	Dec	hG ☾	Dif	Dec	Dif								
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	183 18.0	−7 01.3	121 07.2	43	−24 33.8	58	**60 N**	17 02	17 44	18 32	14 19	69	18 50	60
1	198 18.1	02.2	135 30.5	43	39.6	57	**58**	06	45	30	13 53	68	19 17	60
2	213 18.3	03.1	149 53.8	42	45.3	54	**56**	09	46	29	32	67	38	60
3	228 18.4	04.1	164 17.0	42	50.7	53	**54**	12	47	28	15	67	19 55	61
4	243 18.6	05.0	178 40.2	42	−24 56.0	52	**52**	14	48	27	13 00	67	20 10	61
5	258 18.8	−7 06.0	193 03.4	42	−25 01.2	50	**50**	17 17	17 49	18 27	12 47	66	20 23	61
6	273 18.9	−7 06.9	207 26.5	41	−25 06.1	49	**45**	17 22	17 51	18 25	12 21	65	20 49	61
7	288 19.1	07.8	221 49.6	41	10.9	48	**40**	26	54	25	12 01	64	21 10	62
8	303 19.2	08.8	236 12.7	41	15.5	46	**35**	30	56	25	11 43	64	28	61
9	318 19.4	09.7	250 35.8	41	19.9	44	**30**	34	17 58	25	28	64	21 43	61
10	333 19.6	10.7	264 58.8	40	24.1	42	**20**	40	18 02	27	11 03	63	22 08	62
11	348 19.7	−7 11.6	279 21.9	41	−25 28.2	41	**10 N**	17 45	18 06	18 30	10 42	62	22 30	62
12	3 19.9	−7 12.6	293 44.9	40	−25 32.1	39	**0**	17 50	18 11	18 35	10 22	61	22 51	61
13	18 20.0	13.5	308 07.9	40	35.8	37	**10 S**	17 55	16	41	10 02	61	23 12	61
14	33 20.2	14.4	322 30.9	40	39.3	35	**20**	18 01	23	18 49	9 40	60	34	61
15	48 20.4	15.4	336 53.9	40	42.7	34	**30**	07	32	19 00	16	59	23 59	61
16	63 20.5	16.3	351 16.9	40	45.8	31	**35**	11	37	08	9 01	58	** **	**
17	78 20.7	−7 17.3	5 39.9	40	−25 48.8	30	**40**	18 16	18 43	19 16	8 44	58	** **	**
18	93 20.8	−7 18.2	20 02.9	40	−25 51.6	28	**45**	18 21	18 51	19 27	8 24	57	** **	**
19	108 21.0	19.1	34 25.8	39	54.2	26	**50**	27	19 01	41	8 00	54	0 07	73
20	123 21.1	20.1	48 48.8	40	56.7	25	**52**	30	05	48	7 48	53	18	74
21	138 21.3	21.0	63 11.8	40	−25 59.0	23	**54**	33	10	19 56	34	52	32	75
22	153 21.5	22.0	77 34.8	40	−26 01.1	21	**56**	37	16	20 04	7 18	51	0 47	78
23	168 21.6	22.9	91 57.8	40	03.0	19	**58**	41	22	15	6 59	49	1 05	81
24	183 21.8	−7 23.8	106 20.8	40	−26 04.7	17	**60 S**	18 45	19 29	20 26	6 36	46	1 28	84

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 22h 37m.1	Mag: −4.3 PMG: 14h 46m		Mag: +1.6 PMG: 11h 44m		Mag: −2.7 PMG: 20h 18m		Mag: +0.5 PMG: 19h 16m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	19 48.2	138 32.1	−23 41.1	183 55.5	−6 04.9	54 38.3	−15 08.3	70 18.7	−19 20.7
1	34 50.6	153 31.7	41.8	198 56.4	05.6	69 40.9	08.3	85 21.1	20.7
2	49 53.1	168 31.2	42.5	213 57.4	06.2	84 43.4	08.3	100 23.6	20.7
3	64 55.6	183 30.8	43.1	228 58.3	06.9	99 45.9	08.3	115 26.1	20.7
4	79 58.0	198 30.4	43.8	243 59.2	07.5	114 48.4	08.4	130 28.5	20.7
5	95 00.5	213 30.0	−23 44.4	259 00.2	−6 08.2	129 51.0	−15 08.4	145 31.0	−19 20.7
6	110 03.0	228 29.6	−23 45.1	274 01.1	−6 08.8	144 53.5	−15 08.4	160 33.5	−19 20.7
7	125 05.4	243 29.2	45.7	289 02.1	09.5	159 56.0	08.4	175 35.9	20.7
8	140 07.9	258 28.8	46.4	304 03.0	10.1	174 58.5	08.4	190 38.4	20.7
9	155 10.3	273 28.4	47.0	319 03.9	10.8	190 01.1	08.4	205 40.8	20.7
10	170 12.8	288 28.0	47.7	334 04.9	11.4	205 03.6	08.4	220 43.3	20.7
11	185 15.3	303 27.5	−23 48.4	349 05.8	−6 12.1	220 06.1	−15 08.5	235 45.8	−19 20.7
12	200 17.7	318 27.1	−23 49.0	4 06.7	−6 12.7	235 08.6	−15 08.5	250 48.2	−19 20.7
13	215 20.2	333 26.7	49.7	19 07.7	13.4	250 11.1	08.5	265 50.7	20.7
14	230 22.7	348 26.3	50.3	34 08.6	14.0	265 13.7	08.5	280 53.2	20.7
15	245 25.1	3 25.9	50.9	49 09.6	14.7	280 16.2	08.5	295 55.6	20.7
16	260 27.6	18 25.5	51.6	64 10.5	15.3	295 18.7	08.5	310 58.1	20.7
17	275 30.1	33 25.1	−23 52.2	79 11.4	−6 16.0	310 21.2	−15 08.5	326 00.5	−19 20.7
18	290 32.5	48 24.7	−23 52.9	94 12.4	−6 16.6	325 23.7	−15 08.5	341 03.0	−19 20.7
19	305 35.0	63 24.3	53.5	109 13.3	17.3	340 26.3	08.6	356 05.5	20.7
20	320 37.5	78 23.8	54.2	124 14.2	17.9	355 28.8	08.6	11 07.9	20.7
21	335 39.9	93 23.4	54.8	139 15.2	18.6	10 31.3	08.6	26 10.4	20.7
22	350 42.4	108 23.0	55.5	154 16.1	19.2	25 33.8	08.6	41 12.8	20.7
23	5 44.8	123 22.6	56.1	169 17.1	19.9	40 36.3	08.6	56 15.3	20.7
24	20 47.3	138 22.2	−23 56.7	184 18.0	−6 20.5	55 38.8	−15 08.6	71 17.8	−19 20.7
Dif	—	−4	−7	+9	−6	+25	0	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 5ᵈ.5		PHE	4ʰ: 59′.2									
	PMG: 11ʰ 46ᵐ.4				SD: 16′.2			12ʰ: 59′.1									
					PMG: 17ʰ 38ᵐ			20ʰ: 58′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	183	21.8	−7	23.8	106	20.8	−26	04.7		**60 N**	5 02	5 50	6 32	15 28	39	19 50	85
1	198	21.9		24.8	120	43.8 40		06.2	15	**58**	04	49	29	15 01	43	20 17	80
2	213	22.1		25.7	135	06.8 40		07.6	14	**56**	05	48	25	14 39	46	38	77
3	228	22.2		26.6	149	29.9 41		08.8	12	**54**	06	47	22	22	48	20 56	75
4	243	22.4		27.6	163	52.9 40		09.8	10	**52**	07	46	20	14 07	49	21 11	73
5	258	22.6	−7	28.5	178	16.0 41	−26	10.6	8	**50**	5 07	5 45	6 17	13 53	51	21 24	72
6	273	22.7	−7	29.5	192	39.1 41	−26	11.3	7	**45**	5 08	5 42	6 12	13 26	53	21 50	70
7	288	22.9		30.4	207	02.3 42		11.8	5	**40**	09	40	07	13 05	55	22 12	67
8	303	23.0		31.3	221	25.4 41		12.0	2	**35**	09	38	04	12 47	56	29	66
9	318	23.2		32.3	235	48.6 42		12.2	2	**30**	08	36	6 00	32	57	22 44	65
10	333	23.3		33.2	250	11.8 42		12.1	1	**20**	06	32	5 54	12 06	58	23 10	62
11	348	23.5	−7	34.1	264	35.1 43	−26	11.9	2	**10 N**	5 03	5 27	5 48	11 44	59	23 32	60
12	3	23.6	−7	35.1	278	58.4 43	−26	11.4	5	**0**	4 58	5 22	5 43	11 23	60	23 52	59
13	18	23.8		36.0	293	21.7 43		10.9	5	**10 S**	52	17	38	11 03	61	** **	**
14	33	23.9		37.0	307	45.1 44		10.1	8	**20**	44	10	32	10 40	62	** **	**
15	48	24.1		37.9	322	08.5 44		09.1	10	**30**	32	5 01	25	10 15	63	** **	**
16	63	24.3		38.8	336	31.9 44		08.0	11	**35**	25	4 56	21	9 59	64	0 15	60
17	78	24.4	−7	39.8	350	55.4 45	−26	06.7	13	**40**	4 16	4 49	5 17	9 42	65	0 32	60
18	93	24.6	−7	40.7	5	19.0 46	−26	05.3	14	**45**	4 05	4 41	5 12	9 21	65	0 53	59
19	108	24.7		41.6	19	42.6 46		03.6	17	**50**	3 51	32	05	8 54	67	1 20	58
20	123	24.9		42.6	34	06.2 46	−26	01.8	18	**52**	44	27	5 02	41	68	32	59
21	138	25.0		43.5	48	29.9 47	−25	59.8	20	**54**	37	22	4 59	26	69	1 47	58
22	153	25.2		44.4	62	53.7 48		57.7	21	**56**	28	16	55	8 09	69	2 05	56
23	168	25.3		45.4	77	17.5 48		55.4	23	**58**	18	10	52	7 48	71	26	55
24	183	25.5	−7	46.3	91	41.3 48	−25	52.9	25	**60 S**	3 06	4 03	4 47	7 22	73	2 52	54

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.7			Mag: +0.5		
	22ʰ 33ᵐ.1		PMG: 14ʰ 47ᵐ			PMG: 11ʰ 42ᵐ			PMG: 20ʰ 14ᵐ			PMG: 19ʰ 12ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	20	47.3	138	22.2	−23 56.7	184	18.0	−6 20.5	55	38.8	−15 08.6	71	17.8	−19 20.7
1	35	49.8	153	21.8	57.4	199	18.9	21.1	70	41.4	08.6	86	20.2	20.7
2	50	52.2	168	21.4	58.0	214	19.9	21.8	85	43.9	08.6	101	22.7	20.7
3	65	54.7	183	21.0	58.6	229	20.8	22.4	100	46.4	08.7	116	25.1	20.7
4	80	57.2	198	20.5	59.3	244	21.7	23.1	115	48.9	08.7	131	27.6	20.7
5	95	59.6	213	20.1	−23 59.9	259	22.7	−6 23.7	130	51.4	−15 08.7	146	30.1	−19 20.7
6	111	02.1	228	19.7	−24 00.5	274	23.6	−6 24.4	145	53.9	−15 08.7	161	32.5	−19 20.7
7	126	04.6	243	19.3	01.2	289	24.5	25.0	160	56.5	08.7	176	35.0	20.7
8	141	07.0	258	18.9	01.8	304	25.5	25.7	175	59.0	08.7	191	37.4	20.7
9	156	09.5	273	18.5	02.4	319	26.4	26.3	191	01.5	08.7	206	39.9	20.7
10	171	12.0	288	18.1	03.1	334	27.3	27.0	206	04.0	08.7	221	42.4	20.7
11	186	14.4	303	17.7	−24 03.7	349	28.3	−6 27.6	221	06.5	−15 08.8	236	44.8	−19 20.6
12	201	16.9	318	17.2	−24 04.3	4	29.2	−6 28.3	236	09.0	−15 08.8	251	47.3	−19 20.6
13	216	19.3	333	16.8	05.0	19	30.2	28.9	251	11.5	08.8	266	49.7	20.6
14	231	21.8	348	16.4	05.6	34	31.1	29.6	266	14.0	08.8	281	52.2	20.6
15	246	24.3	3	16.0	06.2	49	32.0	30.2	281	16.6	08.8	296	54.7	20.6
16	261	26.7	18	15.6	06.8	64	33.0	30.8	296	19.1	08.8	311	57.1	20.6
17	276	29.2	33	15.2	−24 07.5	79	33.9	−6 31.5	311	21.6	−15 08.8	326	59.6	−19 20.6
18	291	31.7	48	14.8	−24 08.1	94	34.8	−6 32.1	326	24.1	−15 08.8	342	02.0	−19 20.6
19	306	34.1	63	14.3	08.7	109	35.8	32.8	341	26.6	08.8	357	04.5	20.6
20	321	36.6	78	13.9	09.3	124	36.7	33.4	356	29.1	08.8	12	06.9	20.6
21	336	39.1	93	13.5	09.9	139	37.6	34.1	11	31.6	08.9	27	09.4	20.6
22	351	41.5	108	13.1	10.5	154	38.6	34.7	26	34.1	08.9	42	11.9	20.6
23	6	44.0	123	12.7	11.2	169	39.5	35.4	41	36.6	08.9	57	14.3	20.6
24	21	46.4	138	12.3	−24 11.8	184	40.4	−6 36.0	56	39.2	−15 08.9	72	16.8	−19 20.6
Dif	—			−4	−6		+9	−6		+25	0		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 6ᵈ.5		PHE	4ʰ: 58′.7									
	PMG: 11ʰ 46ᵐ.2				SD: 16′.0			12ʰ: 58′.5									
					PMG: 18ʰ 37ᵐ			20ʰ: 58′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	25.5	−7	46.3	91	41.3	−25	52.9		**60 N**	16 56	17 38	18 26	16 07	19	21 15	96
1	198	25.6		47.2	106	05.3 50		50.2	27	**58**	17 00	40	25	15 44	25	37	90
2	213	25.8		48.2	120	29.3 50		47.4	28	**56**	04	41	24	25	30	21 55	86
3	228	25.9		49.1	134	53.3 50		44.4	30	**54**	07	43	24	15 10	32	22 11	82
4	243	26.1		50.0	149	17.4 51		41.3	31	**52**	10	44	23	14 56	35	24	79
5	258	26.2	−7	51.0	163	41.6 52	−25	37.9	34	**50**	17 13	17 45	18 22	14 44	37	22 36	77
6	273	26.4	−7	51.9	178	05.8 52	−25	34.5	34	**45**	17 18	17 48	18 22	14 19	42	23 00	72
7	288	26.5		52.8	192	30.2 54		30.8	37	**40**	23	51	22	14 00	44	19	69
8	303	26.7		53.8	206	54.5 53		27.0	38	**35**	28	53	22	13 43	47	35	67
9	318	26.8		54.7	221	19.0 55		23.1	39	**30**	31	17 55	23	29	48	23 49	64
10	333	27.0		55.6	235	43.5 55		18.9	42	**20**	38	18 00	26	13 04	52	** **	**
11	348	27.1	−7	56.6	250	08.2 57	−25	14.6	43	**10 N**	17 44	18 05	18 30	12 43	54	** **	**
12	3	27.3	−7	57.5	264	32.8 56	−25	10.2	44	**0**	17 49	18 10	18 35	12 23	57	** **	**
13	18	27.4		58.4	278	57.6 58		05.6	46	**10 S**	17 55	16	41	12 04	59	0 13	57
14	33	27.6	−7	59.4	293	22.4 58	−25	00.9	47	**20**	18 02	24	18 50	11 42	62	0 35	55
15	48	27.7	−8	00.3	307	47.4 60	−24	56.0	49	**30**	09	33	19 02	18	64	1 00	52
16	63	27.9		01.2	322	12.4 60		50.9	51	**35**	13	39	09	11 03	67	15	51
17	78	28.0	−8	02.2	336	37.5 61	−24	45.7	52	**40**	18 18	18 46	19 19	10 47	68	1 32	49
18	93	28.2	−8	03.1	351	02.6 61	−24	40.3	54	**45**	18 23	18 54	19 30	10 26	72	1 52	47
19	108	28.3		04.0	5	27.9 63		34.8	55	**50**	30	19 04	45	10 01	75	2 18	44
20	123	28.5		05.0	19	53.2 63		29.2	56	**52**	33	09	19 52	9 49	77	31	42
21	138	28.6		05.9	34	18.6 64		23.4	58	**54**	37	14	20 00	35	79	2 45	40
22	153	28.7		06.8	48	44.2 66		17.4	60	**56**	41	20	10	9 18	83	3 01	38
23	168	28.9		07.7	63	09.8 66		11.4	60	**58**	45	27	20	8 59	86	21	34
24	183	29.0	−8	08.7	77	35.5 67	−24	05.1	63	**60 S**	18 50	19 35	20 33	8 35	91	3 46	28

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.7			Mag: +0.5		
	22ʰ 29ᵐ.2		PMG: 14ʰ 48ᵐ			PMG: 11ʰ 41ᵐ			PMG: 20ʰ 10ᵐ			PMG: 19ʰ 08ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	21	46.4	138	12.3	−24 11.8	184	40.4	−6 36.0	56	39.2	−15 08.9	72	16.8	−19 20.6
1	36	48.9	153	11.9	12.4	199	41.4	36.7	71	41.7	08.9	87	19.2	20.6
2	51	51.4	168	11.4	13.0	214	42.3	37.3	86	44.2	08.9	102	21.7	20.6
3	66	53.8	183	11.0	13.6	229	43.2	38.0	101	46.7	08.9	117	24.1	20.6
4	81	56.3	198	10.6	14.2	244	44.2	38.6	116	49.2	08.9	132	26.6	20.6
5	96	58.8	213	10.2	−24 14.8	259	45.1	−6 39.2	131	51.7	−15 08.9	147	29.0	−19 20.6
6	112	01.2	228	09.8	−24 15.5	274	46.0	−6 39.9	146	54.2	−15 08.9	162	31.5	−19 20.6
7	127	03.7	243	09.4	16.1	289	47.0	40.5	161	56.7	08.9	177	34.0	20.6
8	142	06.2	258	09.0	16.7	304	47.9	41.2	176	59.2	09.0	192	36.4	20.6
9	157	08.6	273	08.5	17.3	319	48.8	41.8	192	01.7	09.0	207	38.9	20.6
10	172	11.1	288	08.1	17.9	334	49.8	42.5	207	04.2	09.0	222	41.3	20.6
11	187	13.6	303	07.7	−24 18.5	349	50.7	−6 43.1	222	06.7	−15 09.0	237	43.8	−19 20.6
12	202	16.0	318	07.3	−24 19.1	4	51.6	−6 43.8	237	09.2	−15 09.0	252	46.2	−19 20.6
13	217	18.5	333	06.9	19.7	19	52.6	44.4	252	11.7	09.0	267	48.7	20.6
14	232	20.9	348	06.5	20.3	34	53.5	45.1	267	14.2	09.0	282	51.1	20.6
15	247	23.4	3	06.1	20.9	49	54.4	45.7	282	16.7	09.0	297	53.6	20.6
16	262	25.9	18	05.6	21.5	64	55.4	46.3	297	19.2	09.0	312	56.0	20.6
17	277	28.3	33	05.2	−24 22.1	79	56.3	−6 47.0	312	21.8	−15 09.0	327	58.5	−19 20.6
18	292	30.8	48	04.8	−24 22.7	94	57.2	−6 47.6	327	24.3	−15 09.0	343	00.9	−19 20.6
19	307	33.3	63	04.4	23.3	109	58.1	48.3	342	26.8	09.0	358	03.4	20.6
20	322	35.7	78	04.0	23.9	124	59.1	48.9	357	29.3	09.0	13	05.8	20.6
21	337	38.2	93	03.6	24.5	140	00.0	49.6	12	31.8	09.1	28	08.3	20.6
22	352	40.7	108	03.2	25.1	155	00.9	50.2	27	34.3	09.1	43	10.8	20.6
23	7	43.1	123	02.7	25.7	170	01.9	50.9	42	36.8	09.1	58	13.2	20.6
24	22	45.6	138	02.3	−24 26.3	185	02.8	−6 51.5	57	39.3	−15 09.1	73	15.7	−19 20.6
Dif	—			−4	−6		+9	−6		+25	0		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 7ᵈ.5		PHE	4ʰ: 58′.1									
	PMG: 11ʰ 46ᵐ.0				SD: 15′.8			12ʰ: 57′.9									
					PMG: 19ʰ 33ᵐ			20ʰ: 57′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	29.0	−8	08.7	77	35.5	−24	05.1		**60 N**	5 07	5 55	6 37	16 26	11	22 51	96
1	198	29.2		09.6	92	01.2 67	−23	58.8	63	**58**	08	53	33	16 09	16	23 07	91
2	213	29.3		10.5	106	27.1 69		52.2	66	**56**	09	52	29	15 55	19	21	87
3	228	29.5		11.5	120	53.1 70		45.6	66	**54**	10	50	26	42	23	33	83
4	243	29.6		12.4	135	19.1 70		38.8	68	**52**	10	49	23	31	26	43	81
5	258	29.8	−8	13.3	149	45.3 72	−23	31.9	69	**50**	5 10	5 48	6 20	15 21	28	23 53	78
6	273	29.9	−8	14.3	164	11.5 72	−23	24.8	71	**45**	5 11	5 45	6 15	15 01	32	** **	**
7	288	30.1		15.2	178	37.9 74		17.6	72	**40**	11	42	09	14 44	36	** **	**
8	303	30.2		16.1	193	04.3 74		10.3	73	**35**	10	40	05	30	39	** **	**
9	318	30.3		17.0	207	30.8 75	−23	02.9	74	**30**	09	37	6 01	14 17	42	** **	**
10	333	30.5		18.0	221	57.4 76	−22	55.3	76	**20**	07	32	5 54	13 56	46	0 12	61
11	348	30.6	−8	18.9	236	24.2 78	−22	47.6	77	**10 N**	5 03	5 27	5 48	13 37	50	0 32	58
12	3	30.8	−8	19.8	250	51.0 78	−22	39.7	79	**0**	4 58	5 22	5 43	13 20	53	0 51	55
13	18	30.9		20.7	265	17.9 79		31.8	79	**10 S**	51	16	37	13 03	56	1 10	52
14	33	31.1		21.7	279	44.9 80		23.7	81	**20**	42	5 08	30	12 44	60	30	48
15	48	31.2		22.6	294	12.0 81		15.5	82	**30**	30	4 59	23	22	64	1 52	45
16	63	31.3		23.5	308	39.2 82	−22	07.2	83	**35**	22	53	19	12 10	66	2 06	43
17	78	31.5	−8	24.5	323	06.5 83	−21	58.7	85	**40**	4 13	4 46	5 14	11 55	69	2 21	40
18	93	31.6	−8	25.4	337	33.9 84	−21	50.2	85	**45**	4 01	4 38	5 08	11 38	73	2 39	37
19	108	31.8		26.3	352	01.4 85		41.5	87	**50**	3 46	27	5 01	16	78	3 02	32
20	123	31.9		27.2	6	29.0 86		32.7	88	**52**	39	23	4 58	11 06	80	13	30
21	138	32.1		28.2	20	56.7 87		23.8	89	**54**	31	17	54	10 54	83	25	27
22	153	32.2		29.1	35	24.5 88		14.8	90	**56**	22	11	50	41	86	39	24
23	168	32.3		30.0	49	52.4 89	−21	05.6	92	**58**	3 11	4 04	46	25	90	3 55	20
24	183	32.5	−8	30.9	64	20.4 90	−20	56.4	92	**60 S**	2 58	3 56	4 41	10 06	96	4 14	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.7			Mag: +0.5		
	22ʰ 25ᵐ.3		PMG: 14ʰ 48ᵐ			PMG: 11ʰ 39ᵐ			PMG: 20ʰ 06ᵐ			PMG: 19ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	22	45.6	138	02.3	−24 26.3	185	02.8	−6 51.5	57	39.3	−15 09.1	73	15.7	−19 20.6
1	37	48.1	153	01.9	26.9	200	03.7	52.1	72	41.8	09.1	88	18.1	20.6
2	52	50.5	168	01.5	27.4	215	04.7	52.8	87	44.3	09.1	103	20.6	20.6
3	67	53.0	183	01.1	28.0	230	05.6	53.4	102	46.8	09.1	118	23.0	20.6
4	82	55.4	198	00.7	28.6	245	06.5	54.1	117	49.3	09.1	133	25.5	20.5
5	97	57.9	213	00.3	−24 29.2	260	07.5	−6 54.7	132	51.8	−15 09.1	148	27.9	−19 20.5
6	113	00.4	227	59.8	−24 29.8	275	08.4	−6 55.4	147	54.3	−15 09.1	163	30.4	−19 20.5
7	128	02.8	242	59.4	30.4	290	09.3	56.0	162	56.8	09.1	178	32.8	20.5
8	143	05.3	257	59.0	31.0	305	10.2	56.7	177	59.3	09.1	193	35.3	20.5
9	158	07.8	272	58.6	31.5	320	11.2	57.3	193	01.8	09.1	208	37.7	20.5
10	173	10.2	287	58.2	32.1	335	12.1	57.9	208	04.3	09.1	223	40.2	20.5
11	188	12.7	302	57.8	−24 32.7	350	13.0	−6 58.6	223	06.7	−15 09.1	238	42.6	−19 20.5
12	203	15.2	317	57.3	−24 33.3	5	14.0	−6 59.2	238	09.2	−15 09.1	253	45.1	−19 20.5
13	218	17.6	332	56.9	33.9	20	14.9	−6 59.9	253	11.7	09.2	268	47.5	20.5
14	233	20.1	347	56.5	34.4	35	15.8	−7 00.5	268	14.2	09.2	283	50.0	20.5
15	248	22.6	2	56.1	35.0	50	16.7	01.2	283	16.7	09.2	298	52.4	20.5
16	263	25.0	17	55.7	35.6	65	17.7	01.8	298	19.2	09.2	313	54.9	20.5
17	278	27.5	32	55.3	−24 36.2	80	18.6	−7 02.4	313	21.7	−15 09.2	328	57.3	−19 20.5
18	293	29.9	47	54.9	−24 36.7	95	19.5	−7 03.1	328	24.2	−15 09.2	343	59.8	−19 20.5
19	308	32.4	62	54.4	37.3	110	20.5	03.7	343	26.7	09.2	359	02.2	20.5
20	323	34.9	77	54.0	37.9	125	21.4	04.4	358	29.2	09.2	14	04.7	20.5
21	338	37.3	92	53.6	38.5	140	22.3	05.0	13	31.7	09.2	29	07.1	20.5
22	353	39.8	107	53.2	39.0	155	23.2	05.7	28	34.2	09.2	44	09.5	20.5
23	8	42.3	122	52.8	39.6	170	24.2	06.3	43	36.7	09.2	59	12.0	20.5
24	23	44.7	137	52.4	−24 40.2	185	25.1	−7 07.0	58	39.2	−15 09.2	74	14.4	−19 20.5
Dif	—			−4	−6		+9	−6		+25	0		+24	0

UT	SOL SD: 16′.0 PMG: 11h 45m.7		LUNA Edad: 8d.5 SD: 15′.7 PMG: 20h 25m PHE 4h: 57′.5; 12h: 57′.3; 20h: 57′.1 Rº: 48m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	183 32.5	−8 30.9	64 20.4	90	−20 56.4	94	**60 N**	16 51	17 33	18 21	16 37	6	** **	**
1	198 32.6	31.9	78 48.4	92	47.0	94	**58**	55	35	20	25	10	** **	**
2	213 32.8	32.8	93 16.6	93	37.6	96	**56**	16 59	37	19	14	14	** **	**
3	228 32.9	33.7	107 44.9	94	28.0	96	**54**	17 02	38	19	16 05	17	** **	**
4	243 33.0	34.6	122 13.3	95	18.4	96	**52**	06	40	19	15 57	19	** **	**
5	258 33.2	−8 35.5	136 41.8	95	−20 08.6	98	**50**	17 09	17 41	18 19	15 49	22	** **	**
6	273 33.3	−8 36.5	151 10.3	95	−19 58.7	99	**45**	17 15	17 45	18 19	15 33	26	0 12	73
7	288 33.5	37.4	165 39.0	97	48.8	99	**40**	20	48	19	20	30	28	69
8	303 33.6	38.3	180 07.8	98	38.7	101	**35**	25	50	20	15 09	33	42	65
9	318 33.7	39.2	194 36.6	98	28.5	102	**30**	29	53	21	14 59	36	0 53	63
10	333 33.9	40.2	209 05.6	100	18.3	102	**20**	36	17 59	24	42	41	1 13	58
11	348 34.0	−8 41.1	223 34.6	100	−19 07.9	104	**10 N**	17 43	18 04	18 29	14 27	45	1 30	54
12	3 34.2	−8 42.0	238 03.8	102	−18 57.5	104	**0**	17 49	18 10	18 34	14 13	49	1 46	51
13	18 34.3	42.9	252 33.0	102	46.9	106	**10 S**	17 55	17	41	13 59	52	2 02	47
14	33 34.4	43.9	267 02.4	104	36.3	106	**20**	18 02	25	18 51	44	56	18	44
15	48 34.6	44.8	281 31.8	104	25.6	107	**30**	10	35	19 03	26	62	37	39
16	63 34.7	45.7	296 01.3	105	14.8	108	**35**	15	41	11	16	64	2 49	36
17	78 34.8	−8 46.6	310 31.0	107	−18 03.9	109	**40**	18 20	18 48	19 21	13 04	68	3 01	33
18	93 35.0	−8 47.5	325 00.7	107	−17 53.0	109	**45**	18 26	18 57	19 33	12 51	71	3 16	29
19	108 35.1	48.5	339 30.5	108	41.9	111	**50**	34	19 07	49	34	77	34	25
20	123 35.2	49.4	354 00.4	109	30.8	111	**52**	37	13	19 56	26	79	43	22
21	138 35.4	50.3	8 30.3	109	19.5	113	**54**	41	18	20 05	17	82	3 52	20
22	153 35.5	51.2	23 00.4	111	−17 08.3	112	**56**	45	25	15	12 07	85	4 03	16
23	168 35.7	52.1	37 30.6	112	−16 56.9	114	**58**	50	32	27	11 55	89	15	13
24	183 35.8	−8 53.1	52 00.8	112	−16 45.4	115	**60 S**	18 55	19 40	20 40	11 42	94	4 29	9

UT	ARIES PMG 22h 21m.3	VENUS Mag: −4.4 PMG: 14h 49m		MARTE Mag: +1.6 PMG: 11h 38m		JÚPITER Mag: −2.7 PMG: 20h 02m		SATURNO Mag: +0.5 PMG: 19h 00m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	23 44.7	137 52.4	−24 40.2	185 25.1	−7 07.0	58 39.2	−15 09.2	74 14.4	−19 20.5
1	38 47.2	152 52.0	40.7	200 26.0	07.6	73 41.7	09.2	89 16.9	20.5
2	53 49.7	167 51.5	41.3	215 27.0	08.2	88 44.2	09.2	104 19.3	20.5
3	68 52.1	182 51.1	41.9	230 27.9	08.9	103 46.7	09.2	119 21.8	20.5
4	83 54.6	197 50.7	42.4	245 28.8	09.5	118 49.1	09.2	134 24.2	20.5
5	98 57.0	212 50.3	−24 43.0	260 29.7	−7 10.2	133 51.6	−15 09.2	149 26.7	−19 20.4
6	113 59.5	227 49.9	−24 43.6	275 30.7	−7 10.8	148 54.1	−15 09.2	164 29.1	−19 20.4
7	129 02.0	242 49.5	44.1	290 31.6	11.4	163 56.6	09.2	179 31.6	20.4
8	144 04.4	257 49.0	44.7	305 32.5	12.1	178 59.1	09.2	194 34.0	20.4
9	159 06.9	272 48.6	45.2	320 33.4	12.7	194 01.6	09.2	209 36.5	20.4
10	174 09.4	287 48.2	45.8	335 34.4	13.4	209 04.1	09.2	224 38.9	20.4
11	189 11.8	302 47.8	−24 46.4	350 35.3	−7 14.0	224 06.6	−15 09.2	239 41.4	−19 20.4
12	204 14.3	317 47.4	−24 46.9	5 36.2	−7 14.7	239 09.1	−15 09.2	254 43.8	−19 20.4
13	219 16.8	332 47.0	47.5	20 37.1	15.3	254 11.5	09.2	269 46.2	20.4
14	234 19.2	347 46.6	48.0	35 38.1	15.9	269 14.0	09.2	284 48.7	20.4
15	249 21.7	2 46.1	48.6	50 39.0	16.6	284 16.5	09.2	299 51.1	20.4
16	264 24.2	17 45.7	49.1	65 39.9	17.2	299 19.0	09.2	314 53.6	20.4
17	279 26.6	32 45.3	−24 49.7	80 40.9	−7 17.9	314 21.5	−15 09.2	329 56.0	−19 20.4
18	294 29.1	47 44.9	−24 50.2	95 41.8	−7 18.5	329 24.0	−15 09.3	344 58.5	−19 20.4
19	309 31.5	62 44.5	50.8	110 42.7	19.2	344 26.5	09.3	0 00.9	20.4
20	324 34.0	77 44.1	51.3	125 43.6	19.8	359 29.0	09.3	15 03.4	20.4
21	339 36.5	92 43.7	51.9	140 44.6	20.4	14 31.4	09.3	30 05.8	20.4
22	354 38.9	107 43.2	52.4	155 45.5	21.1	29 33.9	09.3	45 08.2	20.4
23	9 41.4	122 42.8	53.0	170 46.4	21.7	44 36.4	09.3	60 10.7	20.4
24	24 43.9	137 42.4	−24 53.5	185 47.3	−7 22.4	59 38.9	−15 09.3	75 13.1	−19 20.4
Dif	—	−4	−6	+9	−6	+25	0	+24	0

UT	SOL			LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0			Edad: 9ᵈ.5		PHE	4ʰ: 57′.0								
	PMG: 11ʰ 45ᵐ.5			SD: 15′.5			12ʰ: 56′.8								
				PMG: 21ʰ 13ᵐ			20ʰ: 56′.6								
	hG ☉		Dec	hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	° ′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	183	35.8	−8 53.1	52	00.8	−16	45.4	**60 N**	5 12	6 00	6 42	16 43	4	0 27	92
1	198	35.9	54.0	66	31.2 114		33.9 115	**58**	12	5 58	38	35	7	38	87
2	213	36.1	54.9	81	01.6 114		22.3 116	**56**	13	56	34	28	10	48	84
3	228	36.2	55.8	95	32.1 115	−16	10.6 117	**54**	13	54	30	22	13	0 56	81
4	243	36.3	56.7	110	02.7 116	−15	58.9 117	**52**	13	52	27	16	15	1 04	78
5	258	36.5	−8 57.7	124	33.4 117	−15	47.1 118	**50**	5 14	5 51	6 24	16 11	17	1 11	75
6	273	36.6	−8 58.6	139	04.2 118	−15	35.2 119	**45**	5 13	5 47	6 17	15 59	23	1 25	71
7	288	36.7	−8 59.5	153	35.0 118		23.3 119	**40**	13	44	12	50	26	37	67
8	303	36.9	−9 00.4	168	06.0 120	−15	11.3 120	**35**	12	41	07	42	29	47	64
9	318	37.0	01.3	182	37.0 120	−14	59.2 121	**30**	11	38	6 03	35	32	1 56	60
10	333	37.1	02.2	197	08.1 121		47.0 122	**20**	07	33	5 55	23	37	2 11	56
11	348	37.3	−9 03.2	211	39.3 122	−14	34.8 122	**10 N**	5 03	5 27	5 49	15 12	41	2 24	51
12	3	37.4	−9 04.1	226	10.5 122	−14	22.6 122	**0**	4 57	5 21	5 42	15 02	45	2 37	47
13	18	37.5	05.0	240	41.9 124	−14	10.3 123	**10 S**	50	14	36	14 51	50	2 49	43
14	33	37.6	05.9	255	13.3 124	−13	57.9 124	**20**	40	5 06	29	40	54	3 02	38
15	48	37.8	06.8	269	44.8 125		45.4 125	**30**	28	4 56	21	28	59	16	34
16	63	37.9	07.7	284	16.4 126		33.0 124	**35**	19	50	16	20	63	25	31
17	78	38.0	−9 08.7	298	48.0 126	−13	20.4 126	**40**	4 10	4 43	5 11	14 12	66	3 34	28
18	93	38.2	−9 09.6	313	19.7 127	−13	07.8 126	**45**	3 57	4 34	5 04	14 02	70	3 45	25
19	108	38.3	10.5	327	51.5 128	−12	55.2 126	**50**	42	23	4 57	13 51	74	3 59	19
20	123	38.4	11.4	342	23.4 129		42.4 128	**52**	34	18	53	45	77	4 05	17
21	138	38.6	12.3	356	55.3 129		29.7 127	**54**	25	12	50	39	79	12	15
22	153	38.7	13.2	11	27.3 130		16.9 128	**56**	15	4 06	45	32	82	19	13
23	168	38.8	14.1	25	59.4 131	−12	04.0 129	**58**	3 04	3 58	41	24	86	28	9
24	183	39.0	−9 15.1	40	31.6 132	−11	51.1 129	**60 S**	2 50	3 50	4 35	13 16	89	4 38	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.7			Mag: +0.5		
	22ʰ 17ᵐ.4		PMG: 14ʰ 50ᵐ			PMG: 11ʰ 36ᵐ			PMG: 19ʰ 58ᵐ			PMG: 18ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	24	43.9	137	42.4	−24 53.5	185	47.3	−7 22.4	59	38.9	−15 09.3	75	13.1	−19 20.4
1	39	46.3	152	42.0	54.0	200	48.3	23.0	74	41.4	09.3	90	15.6	20.3
2	54	48.8	167	41.6	54.6	215	49.2	23.6	89	43.9	09.3	105	18.0	20.3
3	69	51.3	182	41.2	55.1	230	50.1	24.3	104	46.3	09.3	120	20.5	20.3
4	84	53.7	197	40.8	55.7	245	51.0	24.9	119	48.8	09.3	135	22.9	20.3
5	99	56.2	212	40.3	−24 56.2	260	51.9	−7 25.6	134	51.3	−15 09.3	150	25.3	−19 20.3
6	114	58.7	227	39.9	−24 56.7	275	52.9	−7 26.2	149	53.8	−15 09.3	165	27.8	−19 20.3
7	130	01.1	242	39.5	57.3	290	53.8	26.8	164	56.3	09.3	180	30.2	20.3
8	145	03.6	257	39.1	57.8	305	54.7	27.5	179	58.8	09.3	195	32.7	20.3
9	160	06.0	272	38.7	58.4	320	55.6	28.1	195	01.2	09.3	210	35.1	20.3
10	175	08.5	287	38.3	58.9	335	56.6	28.8	210	03.7	09.3	225	37.5	20.3
11	190	11.0	302	37.9	−24 59.4	350	57.5	−7 29.4	225	06.2	−15 09.3	240	40.0	−19 20.3
12	205	13.4	317	37.4	−24 59.9	5	58.4	−7 30.0	240	08.7	−15 09.3	255	42.4	−19 20.3
13	220	15.9	332	37.0	−25 00.5	20	59.3	30.7	255	11.2	09.3	270	44.9	20.3
14	235	18.4	347	36.6	01.0	36	00.3	31.3	270	13.6	09.3	285	47.3	20.3
15	250	20.8	2	36.2	01.5	51	01.2	32.0	285	16.1	09.3	300	49.8	20.3
16	265	23.3	17	35.8	02.1	66	02.1	32.6	300	18.6	09.3	315	52.2	20.3
17	280	25.8	32	35.4	−25 02.6	81	03.0	−7 33.2	315	21.1	−15 09.3	330	54.6	−19 20.3
18	295	28.2	47	35.0	−25 03.1	96	04.0	−7 33.9	330	23.6	−15 09.3	345	57.1	−19 20.3
19	310	30.7	62	34.5	03.6	111	04.9	34.5	345	26.0	09.3	0	59.5	20.2
20	325	33.1	77	34.1	04.2	126	05.8	35.2	0	28.5	09.3	16	02.0	20.2
21	340	35.6	92	33.7	04.7	141	06.7	35.8	15	31.0	09.3	31	04.4	20.2
22	355	38.1	107	33.3	05.2	156	07.6	36.4	30	33.5	09.3	46	06.8	20.2
23	10	40.5	122	32.9	05.7	171	08.6	37.1	45	35.9	09.3	61	09.3	20.2
24	25	43.0	137	32.5	−25 06.2	186	09.5	−7 37.7	60	38.4	−15 09.2	76	11.7	−19 20.2
Dif	—			−4	−5		+9	−6		+25	0		+24	0

UT	SOL SD: 16′.0 PMG: 11h 45m.3		LUNA Edad: 10d.5 SD: 15′.4 PMG: 21h 58m PHE 4h: 56′.4; 12h: 56′.3; 20h: 56′.1 Rº: 43m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	183 39.0	−9 15.1	40 31.6		−11 51.1		**60 N**	16 45	17 27	18 15	16 47	3	1 59	87
1	198 39.1	16.0	55 03.8	132	38.2	129	**58**	50	30	15	42	6	2 05	85
2	213 39.2	16.9	69 36.1	133	25.2	130	**56**	54	32	15	38	9	12	81
3	228 39.3	17.8	84 08.4	133	−11 12.2	130	**54**	16 58	34	15	35	11	17	78
4	243 39.5	18.7	98 40.9	135	−10 59.1	131	**52**	17 01	36	15	31	14	22	76
5	258 39.6	−9 19.6	113 13.3	134	−10 46.0	131	**50**	17 05	17 37	18 15	16 28	16	2 26	74
6	273 39.7	−9 20.5	127 45.9	136	−10 32.9	131	**45**	17 12	17 41	18 15	16 22	20	2 36	68
7	288 39.8	21.5	142 18.5	136	19.7	132	**40**	17	45	16	16	24	44	64
8	303 40.0	22.4	156 51.2	137	−10 06.5	132	**35**	22	48	17	11	27	51	61
9	318 40.1	23.3	171 23.9	137	−9 53.2	133	**30**	27	51	19	07	30	2 56	59
10	333 40.2	24.2	185 56.7	138	39.9	133	**20**	35	17 57	23	16 00	35	3 07	53
11	348 40.4	−9 25.1	200 29.6	139	−9 26.6	133	**10 N**	17 42	18 03	18 28	15 53	39	3 15	49
12	3 40.5	−9 26.0	215 02.5	139	−9 13.2	134	**0**	17 49	18 10	18 34	15 47	43	3 24	44
13	18 40.6	26.9	229 35.4	139	−8 59.8	134	**10 S**	17 55	17	42	41	47	32	40
14	33 40.7	27.8	244 08.5	141	46.4	134	**20**	18 03	25	18 52	34	52	40	36
15	48 40.9	28.7	258 41.5	140	33.0	134	**30**	11	36	19 05	27	57	50	31
16	63 41.0	29.7	273 14.7	142	19.5	135	**35**	16	42	13	23	60	3 56	28
17	78 41.1	−9 30.6	287 47.9	142	−8 06.0	135	**40**	18 22	18 50	19 24	15 18	63	4 02	25
18	93 41.2	−9 31.5	302 21.1	142	−7 52.4	136	**45**	18 29	18 59	19 36	15 12	67	4 10	21
19	108 41.4	32.4	316 54.4	143	38.9	135	**50**	37	19 11	19 53	05	72	18	17
20	123 41.5	33.3	331 27.7	143	25.3	136	**52**	41	16	20 01	15 02	74	22	15
21	138 41.6	34.2	346 01.1	144	−7 11.7	136	**54**	45	23	10	14 58	77	27	12
22	153 41.7	35.1	0 34.5	144	−6 58.1	136	**56**	49	29	20	54	80	32	9
23	168 41.8	36.0	15 08.0	145	44.4	137	**58**	18 54	37	33	50	82	37	7
24	183 42.0	−9 36.9	29 41.5	145	−6 30.7	137	**60 S**	19 00	19 46	20 47	14 45	86	4 43	4

UT	ARIES PMG 22h 13m.5	VENUS Mag: −4.4 PMG: 14h 50m		MARTE Mag: +1.6 PMG: 11h 35m		JÚPITER Mag: −2.6 PMG: 19h 54m		SATURNO Mag: +0.6 PMG: 18h 52m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	25 43.0	137 32.5	−25 06.2	186 09.5	−7 37.7	60 38.4	−15 09.2	76 11.7	−19 20.2
1	40 45.5	152 32.1	06.8	201 10.4	38.4	75 40.9	09.2	91 14.1	20.2
2	55 47.9	167 31.7	07.3	216 11.3	39.0	90 43.4	09.2	106 16.6	20.2
3	70 50.4	182 31.2	07.8	231 12.2	39.6	105 45.8	09.2	121 19.0	20.2
4	85 52.9	197 30.8	08.3	246 13.2	40.3	120 48.3	09.2	136 21.5	20.2
5	100 55.3	212 30.4	−25 08.8	261 14.1	−7 40.9	135 50.8	−15 09.2	151 23.9	−19 20.2
6	115 57.8	227 30.0	−25 09.3	276 15.0	−7 41.6	150 53.3	−15 09.2	166 26.3	−19 20.2
7	131 00.3	242 29.6	09.9	291 15.9	42.2	165 55.7	09.2	181 28.8	20.2
8	146 02.7	257 29.2	10.4	306 16.8	42.8	180 58.2	09.2	196 31.2	20.2
9	161 05.2	272 28.8	10.9	321 17.8	43.5	196 00.7	09.2	211 33.7	20.2
10	176 07.6	287 28.3	11.4	336 18.7	44.1	211 03.2	09.2	226 36.1	20.1
11	191 10.1	302 27.9	−25 11.9	351 19.6	−7 44.8	226 05.6	−15 09.2	241 38.5	−19 20.1
12	206 12.6	317 27.5	−25 12.4	6 20.5	−7 45.4	241 08.1	−15 09.2	256 41.0	−19 20.1
13	221 15.0	332 27.1	12.9	21 21.5	46.0	256 10.6	09.2	271 43.4	20.1
14	236 17.5	347 26.7	13.4	36 22.4	46.7	271 13.0	09.2	286 45.8	20.1
15	251 20.0	2 26.3	13.9	51 23.3	47.3	286 15.5	09.2	301 48.3	20.1
16	266 22.4	17 25.9	14.4	66 24.2	47.9	301 18.0	09.2	316 50.7	20.1
17	281 24.9	32 25.5	−25 14.9	81 25.1	−7 48.6	316 20.5	−15 09.2	331 53.1	−19 20.1
18	296 27.4	47 25.1	−25 15.4	96 26.0	−7 49.2	331 22.9	−15 09.2	346 55.6	−19 20.1
19	311 29.8	62 24.6	15.9	111 27.0	49.9	346 25.4	09.2	1 58.0	20.1
20	326 32.3	77 24.2	16.4	126 27.9	50.5	1 27.9	09.2	17 00.4	20.1
21	341 34.7	92 23.8	16.9	141 28.8	51.1	16 30.3	09.2	32 02.9	20.1
22	356 37.2	107 23.4	17.4	156 29.7	51.8	31 32.8	09.2	47 05.3	20.1
23	11 39.7	122 23.0	17.9	171 30.6	52.4	46 35.3	09.2	62 07.8	20.1
24	26 42.1	137 22.6	−25 18.4	186 31.6	−7 53.0	61 37.7	−15 09.2	77 10.2	−19 20.0
Dif	—	−4	−5	+9	−6	+25	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 11^{d}.5		PHE	4^{h}: 55′.9									
	PMG: 11^{h} 45^{m}.1				SD: 15′.3			12^{h}: 55′.8									
					PMG: 22^{h} 41^{m}			20^{h}: 55′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	183	42.0	−9	36.9	29	41.5	−6	30.7		**60 N**	5 16	6 04	6 47	16 50	2	3 26	85
1	198	42.1		37.8	44	15.1 146		17.0	137	**58**	17	02	42	48	6	30	81
2	213	42.2		38.7	58	48.7 146	−6	03.3	137	**56**	17	6 00	38	47	8	33	78
3	228	42.3		39.6	73	22.4 147	−5	49.6	137	**54**	17	5 58	34	46	10	35	76
4	243	42.5		40.6	87	56.1 147		35.9	137	**52**	17	56	30	45	12	38	73
5	258	42.6	−9	41.5	102	29.8 147	−5	22.1	138	**50**	5 17	5 54	6 27	16 44	14	3 40	71
6	273	42.7	−9	42.4	117	03.6 148	−5	08.4	137	**45**	5 16	5 50	6 20	16 42	19	3 44	67
7	288	42.8		43.3	131	37.4 148	−4	54.6	138	**40**	15	46	14	40	23	48	63
8	303	42.9		44.2	146	11.3 149		40.8	138	**35**	13	43	09	38	26	52	59
9	318	43.1		45.1	160	45.2 149		27.0	138	**30**	12	40	6 04	37	29	3 55	56
10	333	43.2		46.0	175	19.1 149	−4	13.2	138	**20**	08	34	5 56	35	33	4 00	51
11	348	43.3	−9	46.9	189	53.1 150	−3	59.4	138	**10 N**	5 03	5 27	5 49	16 32	38	4 04	47
12	3	43.4	−9	47.8	204	27.1 150	−3	45.5	139	**0**	4 56	5 21	5 42	16 30	43	4 08	43
13	18	43.5		48.7	219	01.1 150		31.7	138	**10 S**	49	13	35	28	47	12	39
14	33	43.7		49.6	233	35.2 151		17.9	138	**20**	39	5 05	27	26	51	16	34
15	48	43.8		50.5	248	09.3 151	−3	04.0	139	**30**	25	4 54	19	24	56	21	29
16	63	43.9		51.4	262	43.4 151	−2	50.2	138	**35**	17	47	14	23	58	24	26
17	78	44.0	−9	52.3	277	17.5 151	−2	36.3	139	**40**	4 06	4 40	5 08	16 21	62	4 27	23
18	93	44.1	−9	53.2	291	51.7 152	−2	22.4	139	**45**	3 53	4 30	5 01	16 19	66	4 31	19
19	108	44.3		54.1	306	25.9 152	−2	08.6	138	**50**	37	19	4 53	17	71	35	15
20	123	44.4		55.0	321	00.2 153	−1	54.7	139	**52**	29	13	49	16	73	37	13
21	138	44.5		55.9	335	34.4 152		40.9	138	**54**	20	07	45	15	75	39	11
22	153	44.6		56.8	350	08.7 153		27.0	139	**56**	3 09	4 00	40	14	77	41	9
23	168	44.7		57.7	4	43.0 153	−1	13.2	138	**58**	2 57	3 52	35	12	81	44	5
24	183	44.8	−9	58.7	19	17.4 154	−0	59.3	139	**60 S**	2 42	3 43	4 29	16 11	84	4 47	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.6			Mag: +0.6		
	22^{h} 09^{m}.6		PMG: 14^{h} 51^{m}			PMG: 11^{h} 33^{m}			PMG: 19^{h} 50^{m}			PMG: 18^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	26	42.1	137	22.6	−25 18.4	186	31.6	−7 53.0	61	37.7	−15 09.2	77	10.2	−19 20.0
1	41	44.6	152	22.2	18.9	201	32.5	53.7	76	40.2	09.2	92	12.6	20.0
2	56	47.1	167	21.8	19.4	216	33.4	54.3	91	42.7	09.2	107	15.1	20.0
3	71	49.5	182	21.4	19.9	231	34.3	55.0	106	45.1	09.2	122	17.5	20.0
4	86	52.0	197	20.9	20.4	246	35.2	55.6	121	47.6	09.2	137	19.9	20.0
5	101	54.5	212	20.5	−25 20.9	261	36.1	−7 56.2	136	50.1	−15 09.1	152	22.4	−19 20.0
6	116	56.9	227	20.1	−25 21.4	276	37.1	−7 56.9	151	52.5	−15 09.1	167	24.8	−19 20.0
7	131	59.4	242	19.7	21.8	291	38.0	57.5	166	55.0	09.1	182	27.2	20.0
8	147	01.9	257	19.3	22.3	306	38.9	58.1	181	57.5	09.1	197	29.7	20.0
9	162	04.3	272	18.9	22.8	321	39.8	58.8	196	59.9	09.1	212	32.1	20.0
10	177	06.8	287	18.5	23.3	336	40.7	−7 59.4	212	02.4	09.1	227	34.5	20.0
11	192	09.2	302	18.1	−25 23.8	351	41.7	−8 00.1	227	04.9	−15 09.1	242	37.0	−19 20.0
12	207	11.7	317	17.7	−25 24.3	6	42.6	−8 00.7	242	07.3	−15 09.1	257	39.4	−19 20.0
13	222	14.2	332	17.2	24.7	21	43.5	01.3	257	09.8	09.1	272	41.8	19.9
14	237	16.6	347	16.8	25.2	36	44.4	02.0	272	12.3	09.1	287	44.3	19.9
15	252	19.1	2	16.4	25.7	51	45.3	02.6	287	14.7	09.1	302	46.7	19.9
16	267	21.6	17	16.0	26.2	66	46.2	03.2	302	17.2	09.1	317	49.1	19.9
17	282	24.0	32	15.6	−25 26.7	81	47.2	−8 03.9	317	19.6	−15 09.1	332	51.5	−19 19.9
18	297	26.5	47	15.2	−25 27.1	96	48.1	−8 04.5	332	22.1	−15 09.1	347	54.0	−19 19.9
19	312	29.0	62	14.8	27.6	111	49.0	05.1	347	24.6	09.1	2	56.4	19.9
20	327	31.4	77	14.4	28.1	126	49.9	05.8	2	27.0	09.1	17	58.8	19.9
21	342	33.9	92	14.0	28.6	141	50.8	06.4	17	29.5	09.1	33	01.3	19.9
22	357	36.3	107	13.6	29.0	156	51.7	07.1	32	32.0	09.0	48	03.7	19.9
23	12	38.8	122	13.2	29.5	171	52.6	07.7	47	34.4	09.0	63	06.1	19.9
24	27	41.3	137	12.7	−25 30.0	186	53.6	−8 08.3	62	36.9	−15 09.0	78	08.6	−19 19.9
Dif	—			−4	−5		+9	−6		+25	0		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 12ᵈ.5		PHE	4ʰ: 55′.5								
	PMG: 11ʰ 44ᵐ.9				SD: 15′.1			12ʰ: 55′.3								
					PMG: 23ʰ 23ᵐ			20ʰ: 55′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	44.8	−9	58.7	19	17.4	−0	59.3	**60 N**	16 39	17 22	18 10	16 52	3	4 51	84
1	198	45.0	−9	59.6	33	51.7 153		45.5 138	**58**	44	25	10	54	6	51	80
2	213	45.1	−10	00.5	48	26.1 154		31.6 139	**56**	49	27	10	55	9	51	77
3	228	45.2		01.4	63	00.5 154		17.8 138	**54**	53	29	10	56	11	51	75
4	243	45.3		02.3	77	34.9 154	−0	04.0 138	**52**	16 57	31	11	57	13	51	72
5	258	45.4	−10	03.2	92	09.3 154	+0	09.9 139	**50**	17 01	17 33	18 11	16 58	15	4 51	70
6	273	45.5	−10	04.1	106	43.7 154	+0	23.7 138	**45**	17 08	17 38	18 12	17 01	19	4 51	66
7	288	45.6		05.0	121	18.2 155		37.5 138	**40**	14	42	13	03	22	51	62
8	303	45.8		05.9	135	52.7 155	+0	51.3 138	**35**	20	46	15	04	26	51	58
9	318	45.9		06.8	150	27.2 155	+1	05.0 137	**30**	25	49	17	06	28	51	55
10	333	46.0		07.7	165	01.7 155		18.8 138	**20**	33	17 56	21	08	34	51	50
11	348	46.1	−10	08.6	179	36.2 155	+1	32.6 138	**10 N**	17 41	18 02	18 27	17 10	38	4 51	46
12	3	46.2	−10	09.5	194	10.7 155	+1	46.3 137	**0**	17 48	18 09	18 34	17 13	41	4 51	42
13	18	46.3		10.4	208	45.2 155	+2	00.0 137	**10 S**	17 56	17	42	15	46	51	37
14	33	46.4		11.3	223	19.8 156	+2	13.7 137	**20**	18 04	26	18 52	17	50	50	34
15	48	46.6		12.2	237	54.3 155		27.4 137	**30**	13	37	19 06	20	55	50	29
16	63	46.7		13.1	252	28.9 156		41.1 137	**35**	18	44	15	21	58	50	26
17	78	46.8	−10	14.0	267	03.4 155	+2	54.8 137	**40**	18 24	18 52	19 26	17 23	61	4 50	23
18	93	46.9	−10	14.9	281	38.0 156	+3	08.4 136	**45**	18 31	19 02	19 40	17 25	65	4 50	19
19	108	47.0		15.7	296	12.6 156		22.0 136	**50**	40	14	19 57	28	69	50	15
20	123	47.1		16.6	310	47.1 155		35.6 136	**52**	44	20	20 05	29	72	50	13
21	138	47.2		17.5	325	21.7 156	+3	49.2 136	**54**	49	27	15	30	74	50	10
22	153	47.3		18.4	339	56.3 156	+4	02.7 135	**56**	53	34	26	31	77	50	8
23	168	47.4		19.3	354	30.9 156		16.3 136	**58**	18 59	42	39	33	80	49	6
24	183	47.6	−10	20.2	9	05.4 155	+4	29.8 135	**60 S**	19 05	19 52	20 55	17 35	83	4 49	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.6			Mag: −2.6			Mag: +0.6		
	22ʰ 05ᵐ.6		PMG: 14ʰ 52ᵐ			PMG: 11ʰ 32ᵐ			PMG: 19ʰ 46ᵐ			PMG: 18ʰ 44ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	27	41.3	137	12.7	−25 30.0	186	53.6	−8 08.3	62	36.9	−15 09.0	78	08.6	−19 19.9
1	42	43.7	152	12.3	30.4	201	54.5	09.0	77	39.3	09.0	93	11.0	19.8
2	57	46.2	167	11.9	30.9	216	55.4	09.6	92	41.8	09.0	108	13.4	19.8
3	72	48.7	182	11.5	31.4	231	56.3	10.2	107	44.2	09.0	123	15.9	19.8
4	87	51.1	197	11.1	31.8	246	57.2	10.9	122	46.7	09.0	138	18.3	19.8
5	102	53.6	212	10.7	−25 32.3	261	58.1	−8 11.5	137	49.2	−15 09.0	153	20.7	−19 19.8
6	117	56.1	227	10.3	−25 32.8	276	59.0	−8 12.1	152	51.6	−15 09.0	168	23.1	−19 19.8
7	132	58.5	242	09.9	33.2	292	00.0	12.8	167	54.1	09.0	183	25.6	19.8
8	148	01.0	257	09.5	33.7	307	00.9	13.4	182	56.5	09.0	198	28.0	19.8
9	163	03.5	272	09.1	34.2	322	01.8	14.0	197	59.0	09.0	213	30.4	19.8
10	178	05.9	287	08.7	34.6	337	02.7	14.7	213	01.4	09.0	228	32.9	19.8
11	193	08.4	302	08.3	−25 35.1	352	03.6	−8 15.3	228	03.9	−15 08.9	243	35.3	−19 19.8
12	208	10.8	317	07.9	−25 35.5	7	04.5	−8 16.0	243	06.4	−15 08.9	258	37.7	−19 19.7
13	223	13.3	332	07.4	36.0	22	05.4	16.6	258	08.8	08.9	273	40.1	19.7
14	238	15.8	347	07.0	36.4	37	06.4	17.2	273	11.3	08.9	288	42.6	19.7
15	253	18.2	2	06.6	36.9	52	07.3	17.9	288	13.7	08.9	303	45.0	19.7
16	268	20.7	17	06.2	37.3	67	08.2	18.5	303	16.2	08.9	318	47.4	19.7
17	283	23.2	32	05.8	−25 37.8	82	09.1	−8 19.1	318	18.6	−15 08.9	333	49.8	−19 19.7
18	298	25.6	47	05.4	−25 38.3	97	10.0	−8 19.8	333	21.1	−15 08.9	348	52.3	−19 19.7
19	313	28.1	62	05.0	38.7	112	10.9	20.4	348	23.5	08.9	3	54.7	19.7
20	328	30.6	77	04.6	39.1	127	11.8	21.0	3	26.0	08.9	18	57.1	19.7
21	343	33.0	92	04.2	39.6	142	12.7	21.7	18	28.4	08.9	33	59.6	19.7
22	358	35.5	107	03.8	40.0	157	13.7	22.3	33	30.9	08.8	49	02.0	19.7
23	13	38.0	122	03.4	40.5	172	14.6	22.9	48	33.4	08.8	64	04.4	19.6
24	28	40.4	137	03.0	−25 40.9	187	15.5	−8 23.6	63	35.8	−15 08.8	79	06.8	−19 19.6
Dif	—			−4	−5		+9	−6		+25	0		+24	0

UT	SOL SD: 16′.1 PMG: 11h 44m.7				LUNA Edad: 13d.5 SD: 15′.0 PMG: **h **m PHE: 4h: 55′.1; 12h: 54′.9; 20h: 54′.8 Rº: **m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	47.6	−10	20.2	9	05.4	+4	29.8	**60 N**	5 21	6 09	6 52	16 55	4	6 15	83
1	198	47.7		21.1	23	40.0 156		43.3 135	**58**	21	06	47	17 00	6	11	80
2	213	47.8		22.0	38	14.6 156	+4	56.7 134	**56**	21	04	42	04	9	08	77
3	228	47.9		22.9	52	49.2 156	+5	10.1 134	**54**	20	6 01	38	07	12	06	74
4	243	48.0		23.8	67	23.7 155		23.5 134	**52**	20	5 59	34	10	15	03	72
5	258	48.1	−10	24.7	81	58.3 156	+5	36.9 134	**50**	5 20	5 57	6 30	17 13	17	6 01	70
6	273	48.2	−10	25.6	96	32.9 156	+5	50.2 133	**45**	5 18	5 53	6 22	17 20	21	5 57	65
7	288	48.3		26.5	111	07.4 155	+6	03.6 134	**40**	17	48	16	25	25	53	61
8	303	48.4		27.4	125	42.0 156		16.8 132	**35**	15	45	10	30	28	49	58
9	318	48.5		28.3	140	16.5 155		30.1 133	**30**	13	41	6 05	34	30	46	56
10	333	48.6		29.2	154	51.0 155		43.3 132	**20**	08	34	5 57	42	34	41	51
11	348	48.7	−10	30.1	169	25.6 156	+6	56.5 132	**10 N**	5 03	5 27	5 49	17 48	39	5 37	46
12	3	48.8	−10	31.0	184	00.1 155	+7	09.6 131	**0**	4 56	5 20	5 41	17 54	43	5 33	42
13	18	49.0		31.9	198	34.6 155		22.7 131	**10 S**	48	13	34	18 01	46	28	39
14	33	49.1		32.7	213	09.1 155		35.8 131	**20**	37	5 03	26	07	51	24	34
15	48	49.2		33.6	227	43.5 154	+7	48.8 130	**30**	23	4 52	16	15	55	19	29
16	63	49.3		34.5	242	18.0 155	+8	01.8 130	**35**	14	45	11	19	58	16	27
17	78	49.4	−10	35.4	256	52.5 155	+8	14.8 130	**40**	4 03	4 37	5 05	18 24	62	5 13	23
18	93	49.5	−10	36.3	271	26.9 154	+8	27.7 129	**45**	3 49	4 27	4 58	18 30	65	5 09	20
19	108	49.6		37.2	286	01.3 154		40.6 129	**50**	32	14	49	37	70	05	15
20	123	49.7		38.1	300	35.7 154	+8	53.4 128	**52**	24	09	45	41	72	03	13
21	138	49.8		39.0	315	10.1 154	+9	06.2 128	**54**	14	4 02	40	44	75	5 00	12
22	153	49.9		39.9	329	44.5 154		19.0 128	**56**	3 03	3 55	35	48	77	4 58	9
23	168	50.0		40.8	344	18.8 153		31.7 127	**58**	2 50	46	30	53	80	55	6
24	183	50.1	−10	41.7	358	53.1 153	+9	44.4 127	**60 S**	2 34	3 37	4 23	18 58	84	4 52	3

UT	ARIES PMG 22h 01m.7		VENUS Mag: −4.4 PMG: 14h 52m			MARTE Mag: +1.6 PMG: 11h 30m			JÚPITER Mag: −2.6 PMG: 19h 42m			SATURNO Mag: +0.6 PMG: 18h 41m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	28	40.4	137	03.0	−25 40.9	187	15.5	−8 23.6	63	35.8	−15 08.8	79	06.8	−19 19.6
1	43	42.9	152	02.6	41.4	202	16.4	24.2	78	38.3	08.8	94	09.3	19.6
2	58	45.3	167	02.2	41.8	217	17.3	24.8	93	40.7	08.8	109	11.7	19.6
3	73	47.8	182	01.8	42.3	232	18.2	25.5	108	43.2	08.8	124	14.1	19.6
4	88	50.3	197	01.4	42.7	247	19.1	26.1	123	45.6	08.8	139	16.5	19.6
5	103	52.7	212	01.0	−25 43.1	262	20.0	−8 26.7	138	48.1	−15 08.8	154	19.0	−19 19.6
6	118	55.2	227	00.6	−25 43.6	277	20.9	−8 27.4	153	50.5	−15 08.8	169	21.4	−19 19.6
7	133	57.7	242	00.2	44.0	292	21.9	28.0	168	53.0	08.7	184	23.8	19.6
8	149	00.1	256	59.8	44.5	307	22.8	28.6	183	55.4	08.7	199	26.2	19.6
9	164	02.6	271	59.4	44.9	322	23.7	29.3	198	57.9	08.7	214	28.7	19.5
10	179	05.1	286	58.9	45.3	337	24.6	29.9	214	00.3	08.7	229	31.1	19.5
11	194	07.5	301	58.5	−25 45.8	352	25.5	−8 30.5	229	02.7	−15 08.7	244	33.5	−19 19.5
12	209	10.0	316	58.1	−25 46.2	7	26.4	−8 31.2	244	05.2	−15 08.7	259	35.9	−19 19.5
13	224	12.4	331	57.7	46.6	22	27.3	31.8	259	07.6	08.7	274	38.4	19.5
14	239	14.9	346	57.3	47.1	37	28.2	32.4	274	10.1	08.7	289	40.8	19.5
15	254	17.4	1	56.9	47.5	52	29.1	33.1	289	12.5	08.7	304	43.2	19.5
16	269	19.8	16	56.5	47.9	67	30.0	33.7	304	15.0	08.6	319	45.6	19.5
17	284	22.3	31	56.1	−25 48.3	82	31.0	−8 34.3	319	17.4	−15 08.6	334	48.0	−19 19.5
18	299	24.8	46	55.7	−25 48.8	97	31.9	−8 35.0	334	19.9	−15 08.6	349	50.5	−19 19.4
19	314	27.2	61	55.3	49.2	112	32.8	35.6	349	22.3	08.6	4	52.9	19.4
20	329	29.7	76	54.9	49.6	127	33.7	36.2	4	24.8	08.6	19	55.3	19.4
21	344	32.2	91	54.5	50.0	142	34.6	36.9	19	27.2	08.6	34	57.7	19.4
22	359	34.6	106	54.1	50.5	157	35.5	37.5	34	29.7	08.6	50	00.2	19.4
23	14	37.1	121	53.7	50.9	172	36.4	38.1	49	32.1	08.6	65	02.6	19.4
24	29	39.6	136	53.3	−25 51.3	187	37.3	−8 38.7	64	34.5	−15 08.5	80	05.0	−19 19.4
Dif	—			−4	−4		+9	−6		+24	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 14ᵈ.5		PHE	4ʰ: 54′.7								
	PMG: 11ʰ 44ᵐ.6		SD: 14′.9			12ʰ: 54′.6								
			PMG: 0ʰ 05ᵐ			20ʰ: 54′.5								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	183 50.1	−10 41.7	358 53.1		+9 44.4		**60 N**	16 33	17 16	18 05	16 59	5	7 38	84
1	198 50.2	42.5	13 27.4	153	+9 57.0	126	**58**	39	20	05	17 06	9	31	81
2	213 50.3	43.4	28 01.7	153	+10 09.6	126	**56**	44	22	06	13	12	25	77
3	228 50.4	44.3	42 36.0	153	22.1	125	**54**	49	25	06	19	15	20	74
4	243 50.5	45.2	57 10.2	152	34.6	125	**52**	53	27	07	25	17	15	72
5	258 50.6	−10 46.1	71 44.4	152	+10 47.0	124	**50**	16 57	17 30	18 07	17 30	19	7 11	70
6	273 50.7	−10 47.0	86 18.6	152	+10 59.4	124	**45**	17 05	17 35	18 09	17 41	23	7 02	65
7	288 50.8	47.9	100 52.8	152	+11 11.8	124	**40**	12	39	11	50	27	6 54	61
8	303 50.9	48.8	115 26.9	151	24.1	123	**35**	18	43	13	17 58	29	47	59
9	318 51.0	49.7	130 01.1	152	36.3	122	**30**	23	47	15	18 04	33	42	55
10	333 51.1	50.5	144 35.2	151	+11 48.5	122	**20**	32	17 54	20	16	37	32	50
11	348 51.2	−10 51.4	159 09.2	150	+12 00.6	121	**10 N**	17 40	18 02	18 26	18 27	40	6 23	47
12	3 51.3	−10 52.3	173 43.3	151	+12 12.7	121	**0**	17 48	18 09	18 33	18 37	44	6 15	43
13	18 51.4	53.2	188 17.3	150	24.7	120	**10 S**	17 56	17	42	47	48	6 07	39
14	33 51.5	54.1	202 51.2	149	36.7	120	**20**	18 04	27	18 53	18 58	51	5 58	36
15	48 51.6	55.0	217 25.2	150	+12 48.6	119	**30**	14	39	19 08	19 10	56	48	31
16	63 51.7	55.9	231 59.1	149	+13 00.4	118	**35**	20	46	17	17	59	43	28
17	78 51.8	−10 56.7	246 33.0	149	+13 12.2	118	**40**	18 26	18 55	19 29	19 26	61	5 36	26
18	93 51.9	−10 57.6	261 06.8	148	+13 24.0	118	**45**	18 34	19 05	19 43	19 35	65	5 29	22
19	108 52.0	58.5	275 40.7	149	35.7	117	**50**	43	18	20 01	47	70	20	18
20	123 52.1	−10 59.4	290 14.4	147	47.3	116	**52**	48	24	10	53	71	16	15
21	138 52.2	−11 00.3	304 48.2	148	+13 58.8	115	**54**	52	31	20	19 59	74	12	13
22	153 52.3	01.2	319 21.9	147	+14 10.3	115	**56**	18 58	39	32	20 05	78	07	10
23	168 52.4	02.0	333 55.6	147	21.8	115	**58**	19 04	48	20 46	13	81	5 01	8
24	183 52.5	−11 02.9	348 29.3	147	+14 33.1	113	**60 S**	19 10	19 58	21 03	20 22	85	4 55	4

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.4		Mag: +1.6		Mag: −2.6		Mag: +0.6	
	21ʰ 57ᵐ.8	PMG: 14ʰ 53ᵐ		PMG: 11ʰ 29ᵐ		PMG: 19ʰ 39ᵐ		PMG: 18ʰ 37ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	29 39.6	136 53.3	−25 51.3	187 37.3	−8 38.7	64 34.5	−15 08.5	80 05.0	−19 19.4
1	44 42.0	151 52.9	51.7	202 38.2	39.4	79 37.0	08.5	95 07.4	19.4
2	59 44.5	166 52.5	52.1	217 39.1	40.0	94 39.4	08.5	110 09.8	19.4
3	74 46.9	181 52.1	52.6	232 40.0	40.6	109 41.9	08.5	125 12.3	19.4
4	89 49.4	196 51.7	53.0	247 40.9	41.3	124 44.3	08.5	140 14.7	19.3
5	104 51.9	211 51.3	−25 53.4	262 41.9	−8 41.9	139 46.7	−15 08.5	155 17.1	−19 19.3
6	119 54.3	226 50.9	−25 53.8	277 42.8	−8 42.5	154 49.2	−15 08.5	170 19.5	−19 19.3
7	134 56.8	241 50.5	54.2	292 43.7	43.2	169 51.6	08.5	185 22.0	19.3
8	149 59.3	256 50.1	54.6	307 44.6	43.8	184 54.1	08.4	200 24.4	19.3
9	165 01.7	271 49.7	55.0	322 45.5	44.4	199 56.5	08.4	215 26.8	19.3
10	180 04.2	286 49.3	55.4	337 46.4	45.1	214 59.0	08.4	230 29.2	19.3
11	195 06.7	301 48.9	−25 55.8	352 47.3	−8 45.7	230 01.4	−15 08.4	245 31.6	−19 19.3
12	210 09.1	316 48.5	−25 56.3	7 48.2	−8 46.3	245 03.8	−15 08.4	260 34.1	−19 19.3
13	225 11.6	331 48.1	56.7	22 49.1	47.0	260 06.3	08.4	275 36.5	19.2
14	240 14.0	346 47.7	57.1	37 50.0	47.6	275 08.7	08.4	290 38.9	19.2
15	255 16.5	1 47.3	57.5	52 50.9	48.2	290 11.1	08.3	305 41.3	19.2
16	270 19.0	16 46.9	57.9	67 51.8	48.8	305 13.6	08.3	320 43.7	19.2
17	285 21.4	31 46.5	−25 58.3	82 52.7	−8 49.5	320 16.0	−15 08.3	335 46.1	−19 19.2
18	300 23.9	46 46.1	−25 58.7	97 53.6	−8 50.1	335 18.5	−15 08.3	350 48.6	−19 19.2
19	315 26.4	61 45.8	59.1	112 54.5	50.7	350 20.9	08.3	5 51.0	19.2
20	330 28.8	76 45.4	59.5	127 55.4	51.4	5 23.3	08.3	20 53.4	19.2
21	345 31.3	91 45.0	−25 59.9	142 56.4	52.0	20 25.8	08.2	35 55.8	19.1
22	0 33.8	106 44.6	−26 00.3	157 57.3	52.6	35 28.2	08.2	50 58.2	19.1
23	15 36.2	121 44.2	00.7	172 58.2	53.3	50 30.6	08.2	66 00.7	19.1
24	30 38.7	136 43.8	−26 01.1	187 59.1	−8 53.9	65 33.1	−15 08.2	81 03.1	−19 19.1
Dif	—	−4	−4	+9	−6	+24	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 15^{d}.5		PHE	4^{h}: 54′.4									
	PMG: 11^{h} 44^{m}.4				SD: 14′.8			12^{h}: 54′.3									
					PMG: 0^{h} 47^{m}			20^{h}: 54′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	52.5	−11	02.9	348	29.3	+14	33.1		**60 N**	5 25	6 14	6 57	17 04	8	9 02	85
1	198	52.6		03.8	3	02.9^{146}		44.5^{114}		**58**	25	11	51	15	13	8 52	80
2	213	52.7		04.7	17	36.4^{145}	+14	55.7^{112}		**56**	24	08	46	25	16	42	77
3	228	52.8		05.6	32	10.0^{146}	+15	06.9^{112}		**54**	24	05	41	34	18	34	74
4	243	52.9		06.5	46	43.5^{145}		18.0^{111}		**52**	23	03	37	42	21	27	72
5	258	53.0	−11	07.3	61	17.0^{145}	+15	29.0^{110}		**50**	5 23	6 00	6 33	17 49	23	8 21	69
6	273	53.1	−11	08.2	75	50.4^{144}	+15	40.0^{110}		**45**	5 21	5 55	6 25	18 04	27	8 07	64
7	288	53.2		09.1	90	23.8^{144}	+15	50.9^{109}		**40**	19	50	18	17	30	7 55	62
8	303	53.2		10.0	104	57.1^{143}	+16	01.8^{109}		**35**	17	46	12	27	34	46	58
9	318	53.3		10.9	119	30.4^{143}		12.5^{107}		**30**	14	42	6 07	37	35	37	56
10	333	53.4		11.7	134	03.7^{143}		23.2^{107}		**20**	09	35	5 57	18 53	40	22	52
11	348	53.5	−11	12.6	148	36.9^{142}	+16	33.9^{107}		**10 N**	5 03	5 28	5 49	19 07	43	7 10	48
12	3	53.6	−11	13.5	163	10.1^{142}	+16	44.4^{105}		**0**	4 56	5 20	5 41	19 21	46	6 58	45
13	18	53.7		14.4	177	43.3^{142}	+16	54.9^{105}		**10 S**	47	12	33	35	48	46	42
14	33	53.8		15.3	192	16.4^{141}	+17	05.3^{104}		**20**	35	5 02	24	19 49	52	34	38
15	48	53.9		16.1	206	49.4^{140}		15.6^{103}		**30**	21	4 50	14	20 06	56	19	34
16	63	54.0		17.0	221	22.4^{140}		25.9^{103}		**35**	11	42	09	16	58	11	31
17	78	54.1	−11	17.9	235	55.4^{140}	+17	36.1^{102}		**40**	4 00	4 34	5 02	20 27	61	6 02	28
18	93	54.2	−11	18.8	250	28.3^{139}	+17	46.2^{101}		**45**	3 46	4 23	4 54	20 40	65	5 51	25
19	108	54.3		19.6	265	01.2^{139}	+17	56.2^{100}		**50**	27	10	45	20 57	68	38	20
20	123	54.4		20.5	279	34.1^{139}	+18	06.2^{100}		**52**	18	4 04	40	21 04	71	31	19
21	138	54.4		21.4	294	06.9^{138}		16.0 ^{98}		**54**	3 08	3 57	36	13	73	25	16
22	153	54.5		22.3	308	39.6^{137}		25.8 ^{98}		**56**	2 56	49	30	23	76	17	14
23	168	54.6		23.2	323	12.3^{137}		35.5 ^{97}		**58**	42	40	24	34	80	5 09	10
24	183	54.7	−11	24.0	337	45.0^{137}	+18	45.2 ^{97}		**60 S**	2 26	3 30	4 18	21 47	85	4 59	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21^{h} 53^{m}.8		PMG: 14^{h} 53^{m}			PMG: 11^{h} 27^{m}			PMG: 19^{h} 35^{m}			PMG: 18^{h} 33^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	30	38.7	136	43.8	−26 01.1	187	59.1	−8 53.9	65	33.1	−15 08.2	81	03.1	−19 19.1
1	45	41.2	151	43.4	01.5	203	00.0	54.5	80	35.5	08.2	96	05.5	19.1
2	60	43.6	166	43.0	01.8	218	00.9	55.1	95	37.9	08.2	111	07.9	19.1
3	75	46.1	181	42.6	02.2	233	01.8	55.8	110	40.4	08.2	126	10.3	19.1
4	90	48.5	196	42.2	02.6	248	02.7	56.4	125	42.8	08.1	141	12.7	19.1
5	105	51.0	211	41.8	−26 03.0	263	03.6	−8 57.0	140	45.2	−15 08.1	156	15.2	−19 19.1
6	120	53.5	226	41.4	−26 03.4	278	04.5	−8 57.7	155	47.7	−15 08.1	171	17.6	−19 19.0
7	135	55.9	241	41.0	03.8	293	05.4	58.3	170	50.1	08.1	186	20.0	19.0
8	150	58.4	256	40.6	04.2	308	06.3	58.9	185	52.5	08.1	201	22.4	19.0
9	166	00.9	271	40.2	04.6	323	07.2	−8 59.5	200	55.0	08.1	216	24.8	19.0
10	181	03.3	286	39.8	04.9	338	08.1	−9 00.2	215	57.4	08.0	231	27.2	19.0
11	196	05.8	301	39.4	−26 05.3	353	09.0	−9 00.8	230	59.8	−15 08.0	246	29.7	−19 19.0
12	211	08.3	316	39.1	−26 05.7	8	09.9	−9 01.4	246	02.3	−15 08.0	261	32.1	−19 19.0
13	226	10.7	331	38.7	06.1	23	10.8	02.1	261	04.7	08.0	276	34.5	19.0
14	241	13.2	346	38.3	06.5	38	11.7	02.7	276	07.1	08.0	291	36.9	18.9
15	256	15.7	1	37.9	06.8	53	12.6	03.3	291	09.6	08.0	306	39.3	18.9
16	271	18.1	16	37.5	07.2	68	13.5	03.9	306	12.0	07.9	321	41.7	18.9
17	286	20.6	31	37.1	−26 07.6	83	14.4	−9 04.6	321	14.4	−15 07.9	336	44.1	−19 18.9
18	301	23.0	46	36.7	−26 08.0	98	15.3	−9 05.2	336	16.9	−15 07.9	351	46.6	−19 18.9
19	316	25.5	61	36.3	08.4	113	16.2	05.8	351	19.3	07.9	6	49.0	18.9
20	331	28.0	76	35.9	08.7	128	17.1	06.5	6	21.7	07.9	21	51.4	18.9
21	346	30.4	91	35.5	09.1	143	18.0	07.1	21	24.1	07.8	36	53.8	18.9
22	1	32.9	106	35.1	09.5	158	18.9	07.7	36	26.6	07.8	51	56.2	18.8
23	16	35.4	121	34.8	09.8	173	19.8	08.3	51	29.0	07.8	66	58.6	18.8
24	31	37.8	136	34.4	−26 10.2	188	20.7	−9 09.0	66	31.4	−15 07.8	82	01.0	−19 18.8
Dif	—			−4	−4		+9	−6		+24	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 16ᵈ.5		PHE	4ʰ: 54′.2								
	PMG: 11ʰ 44ᵐ.3		SD: 14′.8			12ʰ: 54′.1								
			PMG: 1ʰ 32ᵐ			20ʰ: 54′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	183 54.7	−11 24.0	337 45.0		+18 45.2		**60 N**	16 28	17 11	18 00	17 12	14	10 27	84
1	198 54.8	24.9	352 17.6	136	+18 54.7	95	**58**	34	15	00	28	18	10 12	79
2	213 54.9	25.8	6 50.2	136	+19 04.2	95	**56**	39	18	01	41	22	9 59	75
3	228 55.0	26.7	21 22.7	135	13.6	94	**54**	44	21	02	17 52	25	48	72
4	243 55.1	27.5	35 55.2	135	22.9	93	**52**	49	23	03	18 03	27	39	69
5	258 55.1	−11 28.4	50 27.6	134	+19 32.1	92	**50**	16 53	17 26	18 04	18 12	29	9 30	67
6	273 55.2	−11 29.3	65 00.0	134	+19 41.2	91	**45**	17 02	17 32	18 06	18 31	33	9 11	64
7	288 55.3	30.2	79 32.3	133	50.2	90	**40**	09	37	08	18 47	36	8 57	60
8	303 55.4	31.0	94 04.6	133	+19 59.2	90	**35**	15	41	11	19 01	38	44	58
9	318 55.5	31.9	108 36.9	133	+20 08.1	89	**30**	21	45	13	12	40	33	56
10	333 55.6	32.8	123 09.1	132	16.8	87	**20**	31	17 53	19	33	42	8 14	53
11	348 55.7	−11 33.6	137 41.2	131	+20 25.5	87	**10 N**	17 39	18 01	18 26	19 50	46	7 58	49
12	3 55.8	−11 34.5	152 13.3	131	+20 34.1	86	**0**	17 48	18 09	18 33	20 07	47	7 43	47
13	18 55.8	35.4	166 45.4	131	42.6	85	**10 S**	17 56	18	43	23	50	28	44
14	33 55.9	36.3	181 17.4	130	51.0	84	**20**	18 05	28	18 54	20 41	53	7 12	41
15	48 56.0	37.1	195 49.3	129	+20 59.4	84	**30**	16	40	19 10	21 02	56	6 53	38
16	63 56.1	38.0	210 21.2	129	+21 07.6	82	**35**	22	48	20	14	57	42	36
17	78 56.2	−11 38.9	224 53.1	129	+21 15.7	81	**40**	18 29	18 57	19 31	21 28	60	6 30	33
18	93 56.3	−11 39.7	239 24.9	128	+21 23.8	81	**45**	18 37	19 08	19 46	21 45	62	6 16	30
19	108 56.3	40.6	253 56.7	128	31.7	79	**50**	47	22	20 05	22 05	66	5 58	26
20	123 56.4	41.5	268 28.4	127	39.6	79	**52**	51	28	15	15	68	50	24
21	138 56.5	42.4	283 00.1	127	47.3	77	**54**	18 56	35	25	26	71	41	21
22	153 56.6	43.2	297 31.7	126	+21 55.0	77	**56**	19 02	44	38	39	73	31	18
23	168 56.7	44.1	312 03.2	125	+22 02.6	76	**58**	08	19 53	20 53	22 54	77	19	15
24	183 56.8	−11 45.0	326 34.8	126	+22 10.0	74	**60 S**	19 16	20 04	21 11	23 12	82	5 06	10

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.5		Mag: +1.7		Mag: −2.6		Mag: +0.6	
	21ʰ 49ᵐ.9	PMG: 14ʰ 54ᵐ		PMG: 11ʰ 26ᵐ		PMG: 19ʰ 31ᵐ		PMG: 18ʰ 29ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	31 37.8	136 34.4	−26 10.2	188 20.7	−9 09.0	66 31.4	−15 07.8	82 01.0	−19 18.8
1	46 40.3	151 34.0	10.6	203 21.6	09.6	81 33.8	07.8	97 03.5	18.8
2	61 42.8	166 33.6	10.9	218 22.5	10.2	96 36.3	07.8	112 05.9	18.8
3	76 45.2	181 33.2	11.3	233 23.4	10.9	111 38.7	07.7	127 08.3	18.8
4	91 47.7	196 32.8	11.7	248 24.3	11.5	126 41.1	07.7	142 10.7	18.8
5	106 50.1	211 32.4	−26 12.0	263 25.2	−9 12.1	141 43.6	−15 07.7	157 13.1	−19 18.8
6	121 52.6	226 32.0	−26 12.4	278 26.1	−9 12.7	156 46.0	−15 07.7	172 15.5	−19 18.7
7	136 55.1	241 31.6	12.8	293 27.0	13.4	171 48.4	07.7	187 17.9	18.7
8	151 57.5	256 31.3	13.1	308 27.9	14.0	186 50.8	07.6	202 20.3	18.7
9	167 00.0	271 30.9	13.5	323 28.8	14.6	201 53.2	07.6	217 22.7	18.7
10	182 02.5	286 30.5	13.8	338 29.7	15.2	216 55.7	07.6	232 25.2	18.7
11	197 04.9	301 30.1	−26 14.2	353 30.6	−9 15.9	231 58.1	−15 07.6	247 27.6	−19 18.7
12	212 07.4	316 29.7	−26 14.6	8 31.5	−9 16.5	247 00.5	−15 07.6	262 30.0	−19 18.7
13	227 09.9	331 29.3	14.9	23 32.4	17.1	262 02.9	07.5	277 32.4	18.6
14	242 12.3	346 28.9	15.3	38 33.3	17.7	277 05.4	07.5	292 34.8	18.6
15	257 14.8	1 28.6	15.6	53 34.2	18.4	292 07.8	07.5	307 37.2	18.6
16	272 17.3	16 28.2	16.0	68 35.1	19.0	307 10.2	07.5	322 39.6	18.6
17	287 19.7	31 27.8	−26 16.3	83 36.0	−9 19.6	322 12.6	−15 07.5	337 42.0	−19 18.6
18	302 22.2	46 27.4	−26 16.7	98 36.9	−9 20.3	337 15.0	−15 07.4	352 44.4	−19 18.6
19	317 24.6	61 27.0	17.0	113 37.8	20.9	352 17.5	07.4	7 46.9	18.6
20	332 27.1	76 26.6	17.4	128 38.7	21.5	7 19.9	07.4	22 49.3	18.5
21	347 29.6	91 26.3	17.7	143 39.6	22.1	22 22.3	07.4	37 51.7	18.5
22	2 32.0	106 25.9	18.1	158 40.5	22.8	37 24.7	07.4	52 54.1	18.5
23	17 34.5	121 25.5	18.4	173 41.4	23.4	52 27.1	07.3	67 56.5	18.5
24	32 37.0	136 25.1	−26 18.8	188 42.3	−9 24.0	67 29.6	−15 07.3	82 58.9	−19 18.5
Dif	—	−4	−4	+9	−6	+24	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 17^{d}.5		PHE	4^{h}: 54′.1									
	PMG: 11^{h} 44^{m}.2				SD: 14′.7			12^{h}: 54′.1									
					PMG: 2^{h} 18^{m}			20^{h}: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	56.8	−11	45.0	326	34.8	+22	10.0		**60 N**	5 30	6 19	7 02	17 26	24	11 51	77
1	198	56.8		45.8	341	06.2 124		17.4	74	**58**	29	15	6 56	17 46	29	31	72
2	213	56.9		46.7	355	37.7 125		24.7	73	**56**	28	12	50	18 03	32	14	70
3	228	57.0		47.6	10	09.1 124		31.8	71	**54**	27	09	45	17	35	11 00	67
4	243	57.1		48.4	24	40.4 123		38.9	71	**52**	27	06	41	30	36	10 48	65
5	258	57.2	−11	49.3	39	11.7 123	+22	45.9	70	**50**	5 26	6 03	6 37	18 41	37	10 37	64
6	273	57.2	−11	50.2	53	42.9 122	+22	52.7	68	**45**	5 23	5 58	6 28	19 04	40	10 15	60
7	288	57.3		51.0	68	14.1 122	+22	59.5	68	**40**	21	53	20	23	42	9 57	58
8	303	57.4		51.9	82	45.2 121	+23	06.1	66	**35**	18	48	14	39	43	42	56
9	318	57.5		52.8	97	16.3 121		12.7	66	**30**	16	44	6 08	19 52	45	29	55
10	333	57.6		53.6	111	47.4 121		19.1	64	**20**	10	36	5 58	20 15	47	9 07	52
11	348	57.6	−11	54.5	126	18.4 120	+23	25.5	64	**10 N**	5 03	5 28	5 49	20 36	48	8 47	51
12	3	57.7	−11	55.4	140	49.4 120	+23	31.7	62	**0**	4 55	5 20	5 41	20 54	50	8 30	48
13	18	57.8		56.2	155	20.3 119		37.8	61	**10 S**	46	11	32	21 13	51	8 12	46
14	33	57.9		57.1	169	51.1 118		43.9	61	**20**	34	5 00	23	34	52	7 53	44
15	48	57.9		58.0	184	22.0 119		49.8	59	**30**	18	4 48	12	21 58	54	31	42
16	63	58.0		58.8	198	52.7 117	+23	55.6	58	**35**	4 08	40	5 06	22 11	56	18	40
17	78	58.1	−11	59.7	213	23.5 118	+24	01.3	57	**40**	3 57	4 31	4 59	22 28	56	7 03	39
18	93	58.2	−12	00.5	227	54.2 117	+24	06.9	56	**45**	3 42	4 20	4 51	22 47	58	6 46	36
19	108	58.2		01.4	242	24.8 116		12.4	55	**50**	23	06	41	23 11	61	24	33
20	123	58.3		02.3	256	55.4 116		17.7	53	**52**	13	4 00	36	23	62	14	31
21	138	58.4		03.1	271	26.0 116		23.0	53	**54**	3 02	3 52	31	37	63	6 02	29
22	153	58.5		04.0	285	56.5 115		28.1	51	**56**	2 50	44	25	23 52	65	5 49	27
23	168	58.5		04.9	300	27.0 115		33.2	51	**58**	35	35	19	** **	**	34	23
24	183	58.6	−12	05.7	314	57.4 114	+24	38.1	49	**60 S**	2 17	3 24	4 12	** **	**	5 16	18

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21^{h} 46^{m}.0		PMG: 14^{h} 55^{m}			PMG: 11^{h} 24^{m}			PMG: 19^{h} 27^{m}			PMG: 18^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	32	37.0	136	25.1	−26 18.8	188	42.3	−9 24.0	67	29.6	−15 07.3	82	58.9	−19 18.5
1	47	39.4	151	24.7	19.1	203	43.2	24.6	82	32.0	07.3	98	01.3	18.5
2	62	41.9	166	24.3	19.4	218	44.1	25.3	97	34.4	07.3	113	03.7	18.5
3	77	44.4	181	24.0	19.8	233	45.0	25.9	112	36.8	07.3	128	06.1	18.5
4	92	46.8	196	23.6	20.1	248	45.9	26.5	127	39.2	07.2	143	08.5	18.4
5	107	49.3	211	23.2	−26 20.5	263	46.8	−9 27.1	142	41.7	−15 07.2	158	10.9	−19 18.4
6	122	51.8	226	22.8	−26 20.8	278	47.7	−9 27.8	157	44.1	−15 07.2	173	13.3	−19 18.4
7	137	54.2	241	22.4	21.1	293	48.6	28.4	172	46.5	07.2	188	15.8	18.4
8	152	56.7	256	22.1	21.5	308	49.5	29.0	187	48.9	07.1	203	18.2	18.4
9	167	59.1	271	21.7	21.8	323	50.4	29.6	202	51.3	07.1	218	20.6	18.4
10	183	01.6	286	21.3	22.1	338	51.3	30.3	217	53.7	07.1	233	23.0	18.4
11	198	04.1	301	20.9	−26 22.5	353	52.2	−9 30.9	232	56.2	−15 07.1	248	25.4	−19 18.3
12	213	06.5	316	20.6	−26 22.8	8	53.1	−9 31.5	247	58.6	−15 07.1	263	27.8	−19 18.3
13	228	09.0	331	20.2	23.1	23	54.0	32.1	263	01.0	07.0	278	30.2	18.3
14	243	11.5	346	19.8	23.5	38	54.9	32.7	278	03.4	07.0	293	32.6	18.3
15	258	13.9	1	19.4	23.8	53	55.8	33.4	293	05.8	07.0	308	35.0	18.3
16	273	16.4	16	19.0	24.1	68	56.6	34.0	308	08.2	07.0	323	37.4	18.3
17	288	18.9	31	18.7	−26 24.4	83	57.5	−9 34.6	323	10.6	−15 06.9	338	39.8	−19 18.2
18	303	21.3	46	18.3	−26 24.8	98	58.4	−9 35.2	338	13.1	−15 06.9	353	42.2	−19 18.2
19	318	23.8	61	17.9	25.1	113	59.3	35.9	353	15.5	06.9	8	44.6	18.2
20	333	26.2	76	17.5	25.4	129	00.2	36.5	8	17.9	06.9	23	47.0	18.2
21	348	28.7	91	17.2	25.7	144	01.1	37.1	23	20.3	06.8	38	49.4	18.2
22	3	31.2	106	16.8	26.0	159	02.0	37.7	38	22.7	06.8	53	51.9	18.2
23	18	33.6	121	16.4	26.4	174	02.9	38.4	53	25.1	06.8	68	54.3	18.2
24	33	36.1	136	16.0	−26 26.7	189	03.8	−9 39.0	68	27.5	−15 06.8	83	56.7	−19 18.1
Dif	—			−4	−3		+9	−6		+24	0		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 18.ᵈ5		PHE	4ʰ: 54′.1									
	PMG: 11ʰ 44.ᵐ0				SD: 14′.7			12ʰ: 54′.1									
					PMG: 3ʰ 06ᵐ			20ʰ: 54′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	183	58.6	−12	05.7	314	57.4	+24	38.1		**60 N**	16 22	17 06	17 55	17 50	42	13 08	63
1	198	58.7		06.6	329	27.8 114		42.9	48	**58**	29	10	56	18 15	44	12 43	61
2	213	58.8		07.4	343	58.2 114		47.6	47	**56**	35	13	57	35	46	24	59
3	228	58.8		08.3	358	28.5 113		52.2	46	**54**	40	17	58	18 52	46	12 07	58
4	243	58.9		09.2	12	58.8 113	+24	56.6	44	**52**	45	20	17 59	19 06	47	11 53	57
5	258	59.0	−12	10.0	27	29.0 112	+25	01.0	44	**50**	16 49	17 22	18 00	19 18	48	11 41	56
6	273	59.1	−12	10.9	41	59.2 112	+25	05.2	42	**45**	16 58	17 29	18 03	19 44	48	11 15	56
7	288	59.1		11.7	56	29.3 111		09.3	41	**40**	17 06	34	06	20 05	49	10 55	55
8	303	59.2		12.6	70	59.5 112		13.3	40	**35**	13	39	08	22	49	38	54
9	318	59.3		13.5	85	29.5 110		17.2	39	**30**	19	43	11	20 37	49	10 24	53
10	333	59.3		14.3	99	59.6 111		21.0	38	**20**	29	17 52	18	21 02	50	9 59	52
11	348	59.4	−12	15.2	114	29.6 110	+25	24.6	36	**10 N**	17 39	18 00	18 25	21 24	50	9 38	51
12	3	59.5	−12	16.0	128	59.6 110	+25	28.2	36	**0**	17 47	18 09	18 33	21 44	51	9 18	50
13	18	59.6		16.9	143	29.5 109		31.6	34	**10 S**	17 56	18	43	22 04	51	8 58	50
14	33	59.6		17.7	157	59.4 109		34.9	33	**20**	18 06	29	18 55	26	52	37	49
15	48	59.7		18.6	172	29.3 109		38.1	32	**30**	17	42	19 11	22 52	51	8 13	47
16	63	59.8		19.5	186	59.2 109		41.1	30	**35**	24	18 50	22	23 07	51	7 58	47
17	78	59.8	−12	20.3	201	29.0 108	+25	44.0	29	**40**	18 31	19 00	19 34	23 24	52	7 42	45
18	93	59.9	−12	21.2	215	58.8 108	+25	46.9	29	**45**	18 40	19 11	19 49	23 45	52	7 22	44
19	109	00.0		22.0	230	28.5 107		49.5	26	**50**	50	25	20 09	** **	**	6 57	42
20	124	00.0		22.9	244	58.2 107		52.1	26	**52**	18 55	32	19	** **	**	45	41
21	139	00.1		23.7	259	27.9 107		54.6	25	**54**	19 00	40	31	** **	**	31	40
22	154	00.2		24.6	273	57.6 107		56.9	23	**56**	06	48	20 44	** **	**	6 16	38
23	169	00.2		25.4	288	27.2 106	+25	59.1	22	**58**	13	19 58	21 00	0 11	67	5 57	36
24	184	00.3	−12	26.3	302	56.8 106	+26	01.2	21	**60 S**	19 21	20 10	21 19	0 34	71	5 34	31

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21ʰ 42.ᵐ0		PMG: 14ʰ 55ᵐ			PMG: 11ʰ 23ᵐ			PMG: 19ʰ 23ᵐ			PMG: 18ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	33	36.1	136	16.0	−26 26.7	189	03.8	−9 39.0	68	27.5	−15 06.8	83	56.7	−19 18.1
1	48	38.6	151	15.7	27.0	204	04.7	39.6	83	29.9	06.7	98	59.1	18.1
2	63	41.0	166	15.3	27.3	219	05.6	40.2	98	32.3	06.7	114	01.5	18.1
3	78	43.5	181	14.9	27.6	234	06.5	40.9	113	34.8	06.7	129	03.9	18.1
4	93	46.0	196	14.6	27.9	249	07.4	41.5	128	37.2	06.7	144	06.3	18.1
5	108	48.4	211	14.2	−26 28.3	264	08.3	−9 42.1	143	39.6	−15 06.7	159	08.7	−19 18.1
6	123	50.9	226	13.8	−26 28.6	279	09.2	−9 42.7	158	42.0	−15 06.6	174	11.1	−19 18.1
7	138	53.4	241	13.4	28.9	294	10.1	43.3	173	44.4	06.6	189	13.5	18.0
8	153	55.8	256	13.1	29.2	309	10.9	44.0	188	46.8	06.6	204	15.9	18.0
9	168	58.3	271	12.7	29.5	324	11.8	44.6	203	49.2	06.6	219	18.3	18.0
10	184	00.7	286	12.3	29.8	339	12.7	45.2	218	51.6	06.5	234	20.7	18.0
11	199	03.2	301	12.0	−26 30.1	354	13.6	−9 45.8	233	54.0	−15 06.5	249	23.1	−19 18.0
12	214	05.7	316	11.6	−26 30.4	9	14.5	−9 46.4	248	56.4	−15 06.5	264	25.5	−19 18.0
13	229	08.1	331	11.2	30.7	24	15.4	47.1	263	58.8	06.5	279	27.9	17.9
14	244	10.6	346	10.8	31.0	39	16.3	47.7	279	01.2	06.4	294	30.3	17.9
15	259	13.1	1	10.5	31.3	54	17.2	48.3	294	03.6	06.4	309	32.7	17.9
16	274	15.5	16	10.1	31.6	69	18.1	48.9	309	06.0	06.4	324	35.1	17.9
17	289	18.0	31	09.7	−26 31.9	84	19.0	−9 49.6	324	08.5	−15 06.3	339	37.5	−19 17.9
18	304	20.5	46	09.4	−26 32.2	99	19.9	−9 50.2	339	10.9	−15 06.3	354	39.9	−19 17.9
19	319	22.9	61	09.0	32.5	114	20.8	50.8	354	13.3	06.3	9	42.3	17.8
20	334	25.4	76	08.6	32.8	129	21.6	51.4	9	15.7	06.3	24	44.7	17.8
21	349	27.9	91	08.3	33.1	144	22.5	52.0	24	18.1	06.2	39	47.1	17.8
22	4	30.3	106	07.9	33.4	159	23.4	52.7	39	20.5	06.2	54	49.5	17.8
23	19	32.8	121	07.5	33.7	174	24.3	53.3	54	22.9	06.2	69	51.9	17.8
24	34	35.2	136	07.2	−26 34.0	189	25.2	−9 53.9	69	25.3	−15 06.2	84	54.3	−19 17.8
Dif	—			−4	−3		+9	−6		+24	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 19ᵈ.5		PHE	4ʰ: 54′.2									
	PMG: 11ʰ 43ᵐ.9				SD: 14′.8			12ʰ: 54′.3									
					PMG: 3ʰ 56ᵐ			20ʰ: 54′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	00.3	−12	26.3	302	56.8	+26	01.2		**60 N**	5 34	6 23	7 07	18 32	64	14 11	42
1	199	00.4		27.1	317	26.4	106	03.1	19	**58**	33	19	7 00	18 59	62	13 44	44
2	214	00.4		28.0	331	56.0	106	05.0	19	**56**	32	16	6 55	19 21	60	23	45
3	229	00.5		28.9	346	25.5	105	06.7	17	**54**	31	12	49	38	59	13 05	46
4	244	00.6		29.7	0	55.0	105	08.3	16	**52**	30	09	44	19 53	58	12 50	47
5	259	00.6	−12	30.6	15	24.5	105	+26 09.7	14	**50**	5 29	6 06	6 40	20 06	57	12 37	48
6	274	00.7	−12	31.4	29	54.0	105	+26 11.1	14	**45**	5 26	6 00	6 30	20 32	57	12 11	48
7	289	00.8		32.3	44	23.4	104	12.3	12	**40**	23	5 55	22	20 54	55	11 50	49
8	304	00.8		33.1	58	52.9	105	13.3	10	**35**	20	50	16	21 11	55	32	49
9	319	00.9		34.0	73	22.3	104	14.3	10	**30**	17	45	6 09	26	54	11 17	50
10	334	00.9		34.8	87	51.6	103	15.1	8	**20**	10	36	5 59	21 52	53	10 51	50
11	349	01.0	−12	35.7	102	21.0	104	+26 15.9	8	**10 N**	5 03	5 28	5 49	22 14	52	10 29	51
12	4	01.1	−12	36.5	116	50.4	104	+26 16.4	5	**0**	4 55	5 19	5 41	22 35	51	10 08	51
13	19	01.1		37.4	131	19.7	103	16.9	5	**10 S**	45	5 10	32	22 55	51	9 48	51
14	34	01.2		38.2	145	49.0	103	17.2	3	**20**	32	4 59	22	23 18	49	26	51
15	49	01.3		39.1	160	18.3	103	17.4	2	**30**	16	46	11	43	48	9 00	52
16	64	01.3		39.9	174	47.6	103	17.5	1	**35**	4 06	37	5 04	23 58	47	8 45	52
17	79	01.4	−12	40.8	189	16.9	103	+26 17.4	1	**40**	3 53	4 28	4 56	** **	**	8 27	52
18	94	01.4	−12	41.6	203	46.2	103	+26 17.3	1	**45**	3 38	4 16	4 48	** **	**	8 06	52
19	109	01.5		42.4	218	15.4	102	17.0	3	**50**	18	4 02	37	0 12	52	7 39	53
20	124	01.6		43.3	232	44.7	103	16.5	5	**52**	3 08	3 55	32	25	52	26	53
21	139	01.6		44.1	247	13.9	102	16.0	5	**54**	2 57	47	27	40	52	7 11	53
22	154	01.7		45.0	261	43.1	102	15.3	7	**56**	43	39	21	0 57	52	6 54	53
23	169	01.7		45.8	276	12.3	102	14.5	8	**58**	28	29	14	1 18	53	33	52
24	184	01.8	−12	46.7	290	41.5	102	+26 13.5	10	**60 S**	2 08	3 17	4 06	1 45	53	6 05	53

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21ʰ 38ᵐ.1		PMG: 14ʰ 56ᵐ			PMG: 11ʰ 22ᵐ			PMG: 19ʰ 19ᵐ			PMG: 18ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	34	35.2	136	07.2	−26 34.0	189	25.2	−9 53.9	69	25.3	−15 06.2	84	54.3	−19 17.8
1	49	37.7	151	06.8	34.3	204	26.1	54.5	84	27.7	06.1	99	56.7	17.8
2	64	40.2	166	06.4	34.6	219	27.0	55.1	99	30.1	06.1	114	59.1	17.7
3	79	42.6	181	06.1	34.9	234	27.9	55.8	114	32.5	06.1	130	01.5	17.7
4	94	45.1	196	05.7	35.2	249	28.8	56.4	129	34.9	06.1	145	03.9	17.7
5	109	47.6	211	05.4	−26 35.5	264	29.6	−9 57.0	144	37.3	−15 06.0	160	06.3	−19 17.7
6	124	50.0	226	05.0	−26 35.7	279	30.5	−9 57.6	159	39.7	−15 06.0	175	08.7	−19 17.7
7	139	52.5	241	04.6	36.0	294	31.4	58.2	174	42.1	06.0	190	11.1	17.7
8	154	55.0	256	04.3	36.3	309	32.3	58.9	189	44.5	05.9	205	13.5	17.6
9	169	57.4	271	03.9	36.6	324	33.2	−9 59.5	204	46.9	05.9	220	15.9	17.6
10	184	59.9	286	03.5	36.9	339	34.1	−10 00.1	219	49.3	05.9	235	18.3	17.6
11	200	02.4	301	03.2	−26 37.2	354	35.0	−10 00.7	234	51.7	−15 05.9	250	20.7	−19 17.6
12	215	04.8	316	02.8	−26 37.4	9	35.9	−10 01.3	249	54.1	−15 05.8	265	23.1	−19 17.6
13	230	07.3	331	02.5	37.7	24	36.8	02.0	264	56.5	05.8	280	25.5	17.6
14	245	09.7	346	02.1	38.0	39	37.6	02.6	279	58.9	05.8	295	27.9	17.5
15	260	12.2	1	01.7	38.3	54	38.5	03.2	295	01.3	05.8	310	30.3	17.5
16	275	14.7	16	01.4	38.5	69	39.4	03.8	310	03.7	05.7	325	32.7	17.5
17	290	17.1	31	01.0	−26 38.8	84	40.3	−10 04.4	325	06.1	−15 05.7	340	35.1	−19 17.5
18	305	19.6	46	00.7	−26 39.1	99	41.2	−10 05.1	340	08.5	−15 05.7	355	37.5	−19 17.5
19	320	22.1	61	00.3	39.4	114	42.1	05.7	355	10.9	05.6	10	39.9	17.5
20	335	24.5	76	00.0	39.6	129	43.0	06.3	10	13.3	05.6	25	42.3	17.4
21	350	27.0	90	59.6	39.9	144	43.8	06.9	25	15.7	05.6	40	44.7	17.4
22	5	29.5	105	59.2	40.2	159	44.7	07.5	40	18.1	05.5	55	47.1	17.4
23	20	31.9	120	58.9	40.4	174	45.6	08.1	55	20.4	05.5	70	49.5	17.4
24	35	34.4	135	58.5	−26 40.7	189	46.5	−10 08.8	70	22.8	−15 05.5	85	51.9	−19 17.4
Dif	—			−4	−3		+9	−6		+24	0		+24	0

UT	SOL SD: 16′.1 PMG: 11h 43m.8				LUNA Edad: 20d.5 SD: 14′.8 PMG: 4h 47m PHE: 4h: 54′.5; 12h: 54′.7; 20h: 54′.8 Rº: 51m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	184	01.8	−12	46.7	290	41.5	+26	13.5	**60 N**	16 17	17 01	17 50	19 36	81	14 53	24
1	199	01.9		47.5	305	10.7 102		12.4 11	**58**	24	05	51	20 01	76	28	29
2	214	01.9		48.4	319	39.9 102		11.2 12	**56**	30	09	53	21	72	14 08	32
3	229	02.0		49.2	334	09.1 102		09.9 13	**54**	36	13	54	37	70	13 51	35
4	244	02.0		50.1	348	38.3 102		08.4 15	**52**	41	16	55	20 51	68	37	37
5	259	02.1	−12	50.9	3	07.5 102	+26	06.9 15	**50**	16 45	17 19	17 57	21 03	67	13 25	38
6	274	02.1	−12	51.7	17	36.7 102	+26	05.2 17	**45**	16 55	17 26	18 00	21 29	63	12 59	41
7	289	02.2		52.6	32	05.9 102		03.3 19	**40**	17 04	31	03	21 49	61	39	42
8	304	02.3		53.4	46	35.1 102	+26	01.3 20	**35**	11	37	06	22 06	59	21	45
9	319	02.3		54.3	61	04.2 101	+25	59.2 21	**30**	17	42	10	20	58	12 07	45
10	334	02.4		55.1	75	33.4 102		57.0 22	**20**	28	51	17	22 45	55	11 41	48
11	349	02.4	−12	56.0	90	02.6 102	+25	54.7 23	**10 N**	17 38	17 59	18 24	23 06	53	11 20	49
12	4	02.5	−12	56.8	104	31.8 102	+25	52.2 25	**0**	17 47	18 08	18 33	23 26	50	10 59	51
13	19	02.5		57.6	119	01.0 102		49.6 26	**10 S**	17 57	18	44	23 46	48	39	52
14	34	02.6		58.5	133	30.2 102		46.8 28	**20**	18 07	30	18 56	** **	**	10 17	54
15	49	02.6	−12	59.3	147	59.4 102		44.0 28	**30**	19	44	19 13	** **	**	9 52	55
16	64	02.7	−13	00.2	162	28.6 102		41.0 30	**35**	25	18 52	24	** **	**	37	57
17	79	02.7	−13	01.0	176	57.8 102	+25	37.9 31	**40**	18 33	19 02	19 37	0 16	46	9 19	58
18	94	02.8	−13	01.8	191	27.0 102	+25	34.6 33	**45**	18 42	19 14	19 53	0 37	45	8 58	60
19	109	02.9		02.7	205	56.3 103		31.2 34	**50**	53	29	20 14	1 04	43	32	62
20	124	02.9		03.5	220	25.5 102		27.7 35	**52**	18 59	36	24	17	42	19	63
21	139	03.0		04.4	234	54.7 102		24.1 36	**54**	19 04	44	36	32	40	8 04	65
22	154	03.0		05.2	249	24.0 103		20.3 38	**56**	11	19 53	20 50	1 49	39	7 47	66
23	169	03.1		06.0	263	53.3 103		16.5 38	**58**	18	20 04	21 07	2 11	36	7 25	70
24	184	03.1	−13	06.9	278	22.5 102	+25	12.4 41	**60 S**	19 26	20 16	21 28	2 38	32	6 58	74

UT	ARIES PMG 21h 34m.2		VENUS Mag: −4.5 PMG: 14h 56m			MARTE Mag: +1.7 PMG: 11h 20m			JÚPITER Mag: −2.6 PMG: 19h 15m			SATURNO Mag: +0.6 PMG: 18h 14m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	35	34.4	135	58.5	−26 40.7	189	46.5	−10 08.8	70	22.8	−15 05.5	85	51.9	−19 17.4
1	50	36.9	150	58.2	41.0	204	47.4	09.4	85	25.2	05.5	100	54.3	17.4
2	65	39.3	165	57.8	41.2	219	48.3	10.0	100	27.6	05.4	115	56.7	17.3
3	80	41.8	180	57.5	41.5	234	49.2	10.6	115	30.0	05.4	130	59.1	17.3
4	95	44.2	195	57.1	41.8	249	50.0	11.2	130	32.4	05.4	146	01.5	17.3
5	110	46.7	210	56.8	−26 42.0	264	50.9	−10 11.9	145	34.8	−15 05.3	161	03.9	−19 17.3
6	125	49.2	225	56.4	−26 42.3	279	51.8	−10 12.5	160	37.2	−15 05.3	176	06.3	−19 17.3
7	140	51.6	240	56.1	42.6	294	52.7	13.1	175	39.6	05.3	191	08.6	17.2
8	155	54.1	255	55.7	42.8	309	53.6	13.7	190	42.0	05.3	206	11.0	17.2
9	170	56.6	270	55.4	43.1	324	54.5	14.3	205	44.4	05.2	221	13.4	17.2
10	185	59.0	285	55.0	43.3	339	55.4	14.9	220	46.8	05.2	236	15.8	17.2
11	201	01.5	300	54.7	−26 43.6	354	56.2	−10 15.6	235	49.2	−15 05.2	251	18.2	−19 17.2
12	216	04.0	315	54.3	−26 43.8	9	57.1	−10 16.2	250	51.6	−15 05.1	266	20.6	−19 17.2
13	231	06.4	330	54.0	44.1	24	58.0	16.8	265	53.9	05.1	281	23.0	17.1
14	246	08.9	345	53.6	44.3	39	58.9	17.4	280	56.3	05.1	296	25.4	17.1
15	261	11.3	0	53.3	44.6	54	59.8	18.0	295	58.7	05.0	311	27.8	17.1
16	276	13.8	15	52.9	44.8	70	00.7	18.6	311	01.1	05.0	326	30.2	17.1
17	291	16.3	30	52.6	−26 45.1	85	01.5	−10 19.3	326	03.5	−15 05.0	341	32.6	−19 17.1
18	306	18.7	45	52.2	−26 45.3	100	02.4	−10 19.9	341	05.9	−15 04.9	356	35.0	−19 17.1
19	321	21.2	60	51.9	45.6	115	03.3	20.5	356	08.3	04.9	11	37.4	17.0
20	336	23.7	75	51.5	45.8	130	04.2	21.1	11	10.7	04.9	26	39.8	17.0
21	351	26.1	90	51.2	46.1	145	05.1	21.7	26	13.1	04.8	41	42.2	17.0
22	6	28.6	105	50.8	46.3	160	06.0	22.3	41	15.4	04.8	56	44.5	17.0
23	21	31.1	120	50.5	46.6	175	06.8	23.0	56	17.8	04.8	71	46.9	17.0
24	36	33.5	135	50.2	−26 46.8	190	07.7	−10 23.6	71	20.2	−15 04.8	86	49.3	−19 16.9
Dif	—			−3	−3		+9	−6		+24	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 21^{d}.5 SD: 14′.9		PHE	4^{h}: 55′.0 12^{h}: 55′.2 20^{h}: 55′.4									
	PMG: 11^{h} 43^{m}.8				PMG: 5^{h} 38^{m}			Rº: 50^{m}									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	03.1	−13	06.9	278	22.5	+25	12.4		**60 N**	5 39	6 28	7 12	20 57	89	15 17	14
1	199	03.2		07.7	292	51.8	103	08.3	41	**58**	37	24	7 05	21 17	84	14 57	19
2	214	03.2		08.5	307	21.1	103	+25 04.0	43	**56**	36	20	6 59	33	80	40	23
3	229	03.3		09.4	321	50.5	104	+24 59.7	43	**54**	34	16	53	47	77	26	26
4	244	03.3		10.2	336	19.8	103	55.1	46	**52**	33	13	48	21 59	74	14	28
5	259	03.4	−13	11.0	350	49.1	103	+24 50.5	46	**50**	5 32	6 10	6 43	22 10	72	14 03	30
6	274	03.4	−13	11.9	5	18.5	104	+24 45.7	48	**45**	5 28	6 03	6 33	22 32	68	13 40	34
7	289	03.5		12.7	19	47.9	104	40.8	49	**40**	25	5 57	25	22 50	64	21	37
8	304	03.5		13.6	34	17.3	104	35.8	50	**35**	22	51	17	23 05	61	13 06	39
9	319	03.5		14.4	48	46.7	104	30.7	51	**30**	18	46	11	18	59	12 52	42
10	334	03.6		15.2	63	16.1	104	25.4	53	**20**	11	37	6 00	40	55	29	45
11	349	03.6	−13	16.1	77	45.5	104	+24 20.0	54	**10 N**	5 03	5 28	5 50	23 59	52	12 09	48
12	4	03.7	−13	16.9	92	15.0	105	+24 14.5	55	**0**	4 54	5 19	5 40	** **	**	11 50	50
13	19	03.7		17.7	106	44.5	105	08.9	56	**10 S**	44	5 09	31	** **	**	31	53
14	34	03.8		18.5	121	14.0	105	+24 03.1	58	**20**	31	4 58	21	0 07	46	11 11	55
15	49	03.8		19.4	135	43.5	105	+23 57.2	59	**30**	14	44	09	31	44	10 47	59
16	64	03.9		20.2	150	13.0	105	51.2	60	**35**	4 03	35	5 02	0 45	42	34	60
17	79	03.9	−13	21.0	164	42.6	106	+23 45.1	61	**40**	3 50	4 25	4 54	1 02	40	10 17	63
18	94	04.0	−13	21.9	179	12.2	106	+23 38.9	62	**45**	3 34	4 13	4 45	1 22	37	9 58	66
19	109	04.0		22.7	193	41.8	106	32.5	64	**50**	13	3 58	33	47	33	34	69
20	124	04.1		23.5	208	11.4	106	26.0	65	**52**	3 03	51	28	1 59	32	22	72
21	139	04.1		24.4	222	41.1	107	19.4	66	**54**	2 51	43	22	2 12	30	9 09	74
22	154	04.1		25.2	237	10.7	106	12.7	67	**56**	37	33	16	28	27	8 53	77
23	169	04.2		26.0	251	40.4	107	+23 05.8	69	**58**	2 20	23	09	2 47	23	35	81
24	184	04.2	−13	26.9	266	10.1	107	+22 58.8	70	**60 S**	1 59	3 11	4 01	3 10	18	8 12	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21^{h} 30^{m}.2		PMG: 14^{h} 57^{m}			PMG: 11^{h} 19^{m}			PMG: 19^{h} 12^{m}			PMG: 18^{h} 10^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	36	33.5	135	50.2	−26 46.8	190	07.7	−10 23.6	71	20.2	−15 04.8	86	49.3	−19 16.9
1	51	36.0	150	49.8	47.0	205	08.6	24.2	86	22.6	04.7	101	51.7	16.9
2	66	38.5	165	49.5	47.3	220	09.5	24.8	101	25.0	04.7	116	54.1	16.9
3	81	40.9	180	49.1	47.5	235	10.4	25.4	116	27.4	04.7	131	56.5	16.9
4	96	43.4	195	48.8	47.8	250	11.2	26.0	131	29.8	04.6	146	58.9	16.9
5	111	45.8	210	48.4	−26 48.0	265	12.1	−10 26.6	146	32.1	−15 04.6	162	01.3	−19 16.9
6	126	48.3	225	48.1	−26 48.2	280	13.0	−10 27.3	161	34.5	−15 04.6	177	03.7	−19 16.8
7	141	50.8	240	47.8	48.5	295	13.9	27.9	176	36.9	04.5	192	06.1	16.8
8	156	53.2	255	47.4	48.7	310	14.8	28.5	191	39.3	04.5	207	08.5	16.8
9	171	55.7	270	47.1	48.9	325	15.6	29.1	206	41.7	04.5	222	10.9	16.8
10	186	58.2	285	46.7	49.2	340	16.5	29.7	221	44.1	04.4	237	13.2	16.8
11	202	00.6	300	46.4	−26 49.4	355	17.4	−10 30.3	236	46.4	−15 04.4	252	15.6	−19 16.7
12	217	03.1	315	46.1	−26 49.6	10	18.3	−10 30.9	251	48.8	−15 04.4	267	18.0	−19 16.7
13	232	05.6	330	45.7	49.9	25	19.2	31.6	266	51.2	04.3	282	20.4	16.7
14	247	08.0	345	45.4	50.1	40	20.0	32.2	281	53.6	04.3	297	22.8	16.7
15	262	10.5	0	45.1	50.3	55	20.9	32.8	296	56.0	04.3	312	25.2	16.7
16	277	13.0	15	44.7	50.5	70	21.8	33.4	311	58.4	04.2	327	27.6	16.6
17	292	15.4	30	44.4	−26 50.8	85	22.7	−10 34.0	327	00.7	−15 04.2	342	30.0	−19 16.6
18	307	17.9	45	44.0	−26 51.0	100	23.6	−10 34.6	342	03.1	−15 04.2	357	32.4	−19 16.6
19	322	20.3	60	43.7	51.2	115	24.4	35.2	357	05.5	04.1	12	34.7	16.6
20	337	22.8	75	43.4	51.4	130	25.3	35.9	12	07.9	04.1	27	37.1	16.6
21	352	25.3	90	43.0	51.6	145	26.2	36.5	27	10.3	04.1	42	39.5	16.6
22	7	27.7	105	42.7	51.9	160	27.1	37.1	42	12.6	04.0	57	41.9	16.5
23	22	30.2	120	42.4	52.1	175	28.0	37.7	57	15.0	04.0	72	44.3	16.5
24	37	32.7	135	42.0	−26 52.3	190	28.8	−10 38.3	72	17.4	−15 03.9	87	46.7	−19 16.5
Dif	—			−3	−2		+9	−6		+24	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 22ᵈ.5		PHE	4ʰ: 55′.6								
	PMG: 11ʰ 43ᵐ.7		SD: 15′.1			12ʰ: 55′.8								
			PMG: 6ʰ 28ᵐ			20ʰ: 56′.1								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	184 04.2	−13 26.9	266 10.1	108	+22 58.8	71	**60 N**	16 12	16 56	17 45	22 26	93	15 31	8
1	199 04.3	27.7	280 39.9	108	51.7	72	**58**	19	17 01	47	41	88	16	13
2	214 04.3	28.5	295 09.6	107	44.5	73	**56**	26	05	49	22 53	84	15 03	17
3	229 04.3	29.3	309 39.4	108	37.2	74	**54**	32	09	50	23 04	81	14 52	19
4	244 04.4	30.2	324 09.2	108	29.8	76	**52**	37	12	52	13	78	42	22
5	259 04.4	−13 31.0	338 39.1	109	+22 22.2	77	**50**	16 42	17 15	17 53	23 22	75	14 33	24
6	274 04.5	−13 31.8	353 08.9	108	+22 14.5	78	**45**	16 52	17 23	17 57	23 40	70	14 14	29
7	289 04.5	32.6	7 38.8	109	+22 06.7	79	**40**	17 01	29	18 01	23 54	67	13 58	33
8	304 04.6	33.5	22 08.7	109	+21 58.8	80	**35**	09	35	04	** **	**	45	36
9	319 04.6	34.3	36 38.7	110	50.8	82	**30**	15	40	08	** **	**	34	38
10	334 04.6	35.1	51 08.6	109	42.6	82	**20**	27	50	16	** **	**	13 14	42
11	349 04.7	−13 35.9	65 38.6	110	+21 34.4	84	**10 N**	17 37	17 59	18 24	** **	**	12 57	45
12	4 04.7	−13 36.8	80 08.6	110	+21 26.0	85	**0**	17 47	18 08	18 33	0 16	50	12 40	49
13	19 04.7	37.6	94 38.7	111	17.5	86	**10 S**	17 57	19	44	34	47	24	52
14	34 04.8	38.4	109 08.7	110	08.9	87	**20**	18 08	31	18 57	0 53	43	12 06	56
15	49 04.8	39.2	123 38.8	111	+21 00.2	88	**30**	20	45	19 15	1 15	39	11 46	60
16	64 04.9	40.1	138 08.9	111	+20 51.4	90	**35**	27	18 54	26	27	38	34	63
17	79 04.9	−13 40.9	152 39.1	112	+20 42.4	90	**40**	18 35	19 04	19 40	1 42	35	11 20	66
18	94 04.9	−13 41.7	167 09.2	111	+20 33.4	92	**45**	18 45	19 17	19 56	1 59	31	11 04	69
19	109 05.0	42.5	181 39.4	112	24.2	92	**50**	18 57	33	20 18	2 20	27	10 43	74
20	124 05.0	43.3	196 09.6	112	15.0	94	**52**	19 02	40	29	31	24	34	76
21	139 05.0	44.2	210 39.9	113	+20 05.6	95	**54**	08	49	42	42	22	23	79
22	154 05.1	45.0	225 10.2	113	+19 56.1	96	**56**	15	19 58	20 56	2 55	19	10 10	83
23	169 05.1	45.8	239 40.4	112	46.5	97	**58**	23	20 09	21 14	3 10	15	9 56	86
24	184 05.1	−13 46.6	254 10.8	114	+19 36.8		**60 S**	19 31	20 22	21 37	3 28	10	9 38	92

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.5		Mag: +1.7		Mag: −2.6		Mag: +0.6	
	21ʰ 26ᵐ.3	PMG: 14ʰ 58ᵐ		PMG: 11ʰ 17ᵐ		PMG: 19ʰ 08ᵐ		PMG: 18ʰ 06ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	37 32.7	135 42.0	−26 52.3	190 28.8	−10 38.3	72 17.4	−15 03.9	87 46.7	−19 16.5
1	52 35.1	150 41.7	52.5	205 29.7	38.9	87 19.8	03.9	102 49.1	16.5
2	67 37.6	165 41.4	52.7	220 30.6	39.5	102 22.1	03.9	117 51.5	16.5
3	82 40.1	180 41.1	52.9	235 31.5	40.1	117 24.5	03.8	132 53.9	16.4
4	97 42.5	195 40.7	53.1	250 32.3	40.8	132 26.9	03.8	147 56.2	16.4
5	112 45.0	210 40.4	−26 53.4	265 33.2	−10 41.4	147 29.3	−15 03.8	162 58.6	−19 16.4
6	127 47.5	225 40.1	−26 53.6	280 34.1	−10 42.0	162 31.7	−15 03.7	178 01.0	−19 16.4
7	142 49.9	240 39.7	53.8	295 35.0	42.6	177 34.0	03.7	193 03.4	16.4
8	157 52.4	255 39.4	54.0	310 35.8	43.2	192 36.4	03.7	208 05.8	16.3
9	172 54.8	270 39.1	54.2	325 36.7	43.8	207 38.8	03.6	223 08.2	16.3
10	187 57.3	285 38.8	54.4	340 37.6	44.4	222 41.2	03.6	238 10.6	16.3
11	202 59.8	300 38.4	−26 54.6	355 38.5	−10 45.0	237 43.5	−15 03.6	253 12.9	−19 16.3
12	218 02.2	315 38.1	−26 54.8	10 39.4	−10 45.7	252 45.9	−15 03.5	268 15.3	−19 16.3
13	233 04.7	330 37.8	55.0	25 40.2	46.3	267 48.3	03.5	283 17.7	16.2
14	248 07.2	345 37.5	55.2	40 41.1	46.9	282 50.7	03.4	298 20.1	16.2
15	263 09.6	0 37.1	55.4	55 42.0	47.5	297 53.0	03.4	313 22.5	16.2
16	278 12.1	15 36.8	55.6	70 42.9	48.1	312 55.4	03.4	328 24.9	16.2
17	293 14.6	30 36.5	−26 55.8	85 43.7	−10 48.7	327 57.8	−15 03.3	343 27.3	−19 16.2
18	308 17.0	45 36.2	−26 56.0	100 44.6	−10 49.3	343 00.1	−15 03.3	358 29.6	−19 16.1
19	323 19.5	60 35.8	56.2	115 45.5	49.9	358 02.5	03.3	13 32.0	16.1
20	338 21.9	75 35.5	56.4	130 46.4	50.5	13 04.9	03.2	28 34.4	16.1
21	353 24.4	90 35.2	56.6	145 47.2	51.2	28 07.3	03.2	43 36.8	16.1
22	8 26.9	105 34.9	56.8	160 48.1	51.8	43 09.6	03.2	58 39.2	16.1
23	23 29.3	120 34.6	57.0	175 49.0	52.4	58 12.0	03.1	73 41.6	16.0
24	38 31.8	135 34.2	−26 57.2	190 49.8	−10 53.0	73 14.4	−15 03.1	88 43.9	−19 16.0
Dif	—	−3	−2	+9	−6	+24	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 23ᵈ5		PHE	4ʰ: 56′.4									
	PMG: 11ʰ 43ᵐ6				SD: 15′.3			12ʰ: 56′.7									
					PMG: 7ʰ 18ᵐ			20ʰ: 56′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	05.1	−13	46.6	254	10.8	+19	36.8		**60 N**	5 43	6 33	7 17	23 59	94	15 39	6
1	199	05.2		47.4	268	41.1 113		27.0	98	**58**	41	28	10	** **	**	29	9
2	214	05.2		48.3	283	11.5 114		17.1	99	**56**	40	24	7 03	** **	**	20	12
3	229	05.2		49.1	297	41.9 114	+19	07.0	101	**54**	38	20	6 57	** **	**	11	16
4	244	05.3		49.9	312	12.3 114	+18	56.9	101	**52**	36	16	51	** **	**	15 04	18
5	259	05.3	−13	50.7	326	42.7 114	+18	46.7	102	**50**	5 35	6 13	6 47	** **	**	14 57	21
6	274	05.3	−13	51.5	341	13.2 115	+18	36.3	104	**45**	5 31	6 05	6 36	** **	**	14 43	25
7	289	05.4		52.4	355	43.7 115		25.9	104	**40**	27	5 59	27	** **	**	31	29
8	304	05.4		53.2	10	14.2 115		15.4	105	**35**	23	53	19	0 06	64	21	32
9	319	05.4		54.0	24	44.7 115	+18	04.7	107	**30**	20	48	12	17	61	14 12	35
10	334	05.5		54.8	39	15.3 116	+17	54.0	107	**20**	12	38	6 01	35	57	13 56	40
11	349	05.5	−13	55.6	53	45.9 116	+17	43.1	109	**10 N**	5 04	5 29	5 50	0 51	52	13 42	44
12	4	05.5	−13	56.4	68	16.5 116	+17	32.2	109	**0**	4 54	5 19	5 40	1 06	49	13 29	48
13	19	05.6		57.2	82	47.1 116		21.1	111	**10 S**	43	5 08	30	21	45	16	52
14	34	05.6		58.1	97	17.8 117	+17	10.0	111	**20**	30	4 57	19	36	41	13 02	57
15	49	05.6		58.9	111	48.4 116	+16	58.7	113	**30**	12	42	07	1 54	37	12 46	61
16	64	05.6	−13	59.7	126	19.1 117		47.4	113	**35**	4 01	33	5 00	2 05	33	37	64
17	79	05.7	−14	00.5	140	49.9 118	+16	36.0	114	**40**	3 47	4 22	4 51	2 17	30	12 26	68
18	94	05.7	−14	01.3	155	20.6 117	+16	24.4	116	**45**	3 30	4 10	4 42	2 30	27	12 13	72
19	109	05.7		02.1	169	51.3 117		12.8	116	**50**	3 09	3 54	30	47	23	11 57	77
20	124	05.8		02.9	184	22.1 118	+16	01.1	117	**52**	2 58	46	24	2 55	20	50	79
21	139	05.8		03.7	198	52.9 118	+15	49.3	118	**54**	45	38	18	3 04	17	42	82
22	154	05.8		04.6	213	23.7 118		37.3	120	**56**	30	28	11	14	14	33	85
23	169	05.8		05.4	227	54.5 118		25.3	120	**58**	2 12	17	4 04	25	11	22	89
24	184	05.9	−14	06.2	242	25.4 119	+15	13.2	121	**60 S**	1 49	3 04	3 55	3 38	7	11 10	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21ʰ 22ᵐ4		PMG: 14ʰ 58ᵐ			PMG: 11ʰ 16ᵐ			PMG: 19ʰ 04ᵐ			PMG: 18ʰ 02ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	38	31.8	135	34.2	−26 57.2	190	49.8	−10 53.0	73	14.4	−15 03.1	88	43.9	−19 16.0
1	53	34.3	150	33.9	57.4	205	50.7	53.6	88	16.7	03.0	103	46.3	16.0
2	68	36.7	165	33.6	57.5	220	51.6	54.2	103	19.1	03.0	118	48.7	16.0
3	83	39.2	180	33.3	57.7	235	52.5	54.8	118	21.5	03.0	133	51.1	16.0
4	98	41.7	195	33.0	57.9	250	53.3	55.4	133	23.8	02.9	148	53.5	15.9
5	113	44.1	210	32.7	−26 58.1	265	54.2	−10 56.0	148	26.2	−15 02.9	163	55.9	−19 15.9
6	128	46.6	225	32.3	−26 58.3	280	55.1	−10 56.6	163	28.6	−15 02.9	178	58.2	−19 15.9
7	143	49.1	240	32.0	58.5	295	56.0	57.3	178	31.0	02.8	194	00.6	15.9
8	158	51.5	255	31.7	58.7	310	56.8	57.9	193	33.3	02.8	209	03.0	15.9
9	173	54.0	270	31.4	58.8	325	57.7	58.5	208	35.7	02.7	224	05.4	15.8
10	188	56.4	285	31.1	59.0	340	58.6	59.1	223	38.1	02.7	239	07.8	15.8
11	203	58.9	300	30.8	−26 59.2	355	59.4	−10 59.7	238	40.4	−15 02.7	254	10.2	−19 15.8
12	219	01.4	315	30.5	−26 59.4	11	00.3	−11 00.3	253	42.8	−15 02.6	269	12.5	−19 15.8
13	234	03.8	330	30.1	59.6	26	01.2	00.9	268	45.2	02.6	284	14.9	15.8
14	249	06.3	345	29.8	59.7	41	02.1	01.5	283	47.5	02.5	299	17.3	15.7
15	264	08.8	0	29.5	−26 59.9	56	02.9	02.1	298	49.9	02.5	314	19.7	15.7
16	279	11.2	15	29.2	−27 00.1	71	03.8	02.7	313	52.3	02.5	329	22.1	15.7
17	294	13.7	30	28.9	−27 00.2	86	04.7	−11 03.3	328	54.6	−15 02.4	344	24.4	−19 15.7
18	309	16.2	45	28.6	−27 00.4	101	05.5	−11 03.9	343	57.0	−15 02.4	359	26.8	−19 15.6
19	324	18.6	60	28.3	00.6	116	06.4	04.6	358	59.3	02.3	14	29.2	15.6
20	339	21.1	75	28.0	00.8	131	07.3	05.2	14	01.7	02.3	29	31.6	15.6
21	354	23.6	90	27.7	00.9	146	08.2	05.8	29	04.1	02.3	44	34.0	15.6
22	9	26.0	105	27.4	01.1	161	09.0	06.4	44	06.4	02.2	59	36.3	15.6
23	24	28.5	120	27.1	01.3	176	09.9	07.0	59	08.8	02.2	74	38.7	15.5
24	39	30.9	135	26.8	−27 01.4	191	10.8	−11 07.6	74	11.2	−15 02.1	89	41.1	−19 15.5
Dif	—			−3	−2		+9	−6		+24	0		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 24ᵈ.5		PHE	4ʰ: 57′.3									
	PMG: 11ʰ 43ᵐ.6				SD: 15′.6			12ʰ: 57′.6									
					PMG: 8ʰ 06ᵐ			20ʰ: 57′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	05.9	−14	06.2	242	25.4	+15	13.2		**60 N**	16 06	16 51	17 40	** **	**	15 45	4
1	199	05.9		07.0	256	56.2	118 +15	01.1	121	**58**	14	16 56	43	0 09	89	38	8
2	214	05.9		07.8	271	27.1	119 +14	48.8	123	**56**	21	17 01	45	17	86	32	11
3	229	05.9		08.6	285	58.0	119	36.4	124	**54**	28	05	47	25	83	27	13
4	244	06.0		09.4	300	28.9	119	24.0	124	**52**	33	09	48	31	81	22	16
5	259	06.0	−14	10.2	314	59.8	119 +14	11.4	126	**50**	16 38	17 12	17 50	0 37	78	15 18	18
6	274	06.0	−14	11.0	329	30.8	120 +13	58.8	126	**45**	16 49	17 20	17 55	0 50	73	15 08	23
7	289	06.0		11.8	344	01.7	119	46.1	127	**40**	16 59	27	17 59	1 01	69	15 00	27
8	304	06.1		12.7	358	32.7	120	33.3	128	**35**	17 07	33	18 03	10	65	14 53	30
9	319	06.1		13.5	13	03.6	119	20.4	129	**30**	14	38	07	18	62	47	33
10	334	06.1		14.3	27	34.6	120 +13	07.5	129	**20**	26	49	15	32	56	36	39
11	349	06.1	−14	15.1	42	05.6	120 +12	54.4	131	**10 N**	17 37	17 58	18 23	1 43	53	14 26	44
12	4	06.1	−14	15.9	56	36.6	120 +12	41.3	131	**0**	17 47	18 08	18 33	1 55	48	14 17	48
13	19	06.2		16.7	71	07.6	120	28.1	132	**10 S**	17 57	19	45	2 06	43	14 08	53
14	34	06.2		17.5	85	38.7	121	14.8	133	**20**	18 09	32	18 59	17	40	13 59	57
15	49	06.2		18.3	100	09.7	120 +12	01.4	134	**30**	22	47	19 17	31	34	47	63
16	64	06.2		19.1	114	40.7	120 +11	48.0	134	**35**	29	18 56	28	38	32	41	66
17	79	06.3	−14	19.9	129	11.8	121 +11	34.4	136	**40**	18 38	19 07	19 42	2 47	28	13 34	69
18	94	06.3	−14	20.7	143	42.8	120 +11	20.8	136	**45**	18 48	19 20	20 00	2 57	24	13 25	73
19	109	06.3		21.5	158	13.9	121 +11	07.2	136	**50**	19 00	37	23	3 10	19	14	79
20	124	06.3		22.3	172	44.9	120 +10	53.4	138	**52**	06	44	34	15	17	09	82
21	139	06.3		23.1	187	16.0	121	39.6	138	**54**	12	19 53	20 47	21	15	13 04	84
22	154	06.3		23.9	201	47.0	120	25.7	139	**56**	20	20 03	21 03	28	12	12 58	87
23	169	06.4		24.7	216	18.1	121 +10	11.7	140	**58**	28	15	22	36	8	51	90
24	184	06.4	−14	25.5	230	49.2	121 +9	57.7	140	**60 S**	19 37	20 29	21 47	3 45	4	12 43	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.7			Mag: −2.6			Mag: +0.6		
	21ʰ 18ᵐ.4		PMG: 14ʰ 59ᵐ			PMG: 11ʰ 15ᵐ			PMG: 19ʰ 00ᵐ			PMG: 17ʰ 58ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	39	30.9	135	26.8	−27 01.4	191	10.8	−11 07.6	74	11.2	−15 02.1	89	41.1	−19 15.5
1	54	33.4	150	26.5	01.6	206	11.6	08.2	89	13.5	02.1	104	43.5	15.5
2	69	35.9	165	26.2	01.8	221	12.5	08.8	104	15.9	02.1	119	45.9	15.5
3	84	38.3	180	25.9	01.9	236	13.4	09.4	119	18.2	02.0	134	48.2	15.5
4	99	40.8	195	25.6	02.1	251	14.2	10.0	134	20.6	02.0	149	50.6	15.4
5	114	43.3	210	25.2	−27 02.2	266	15.1	−11 10.6	149	23.0	−15 01.9	164	53.0	−19 15.4
6	129	45.7	225	24.9	−27 02.4	281	16.0	−11 11.2	164	25.3	−15 01.9	179	55.4	−19 15.4
7	144	48.2	240	24.6	02.6	296	16.8	11.8	179	27.7	01.9	194	57.7	15.4
8	159	50.7	255	24.3	02.7	311	17.7	12.4	194	30.0	01.8	210	00.1	15.3
9	174	53.1	270	24.1	02.9	326	18.6	13.1	209	32.4	01.8	225	02.5	15.3
10	189	55.6	285	23.8	03.0	341	19.4	13.7	224	34.8	01.7	240	04.9	15.3
11	204	58.0	300	23.5	−27 03.2	356	20.3	−11 14.3	239	37.1	−15 01.7	255	07.3	−19 15.3
12	220	00.5	315	23.2	−27 03.3	11	21.2	−11 14.9	254	39.5	−15 01.7	270	09.6	−19 15.3
13	235	03.0	330	22.9	03.5	26	22.1	15.5	269	41.8	01.6	285	12.0	15.2
14	250	05.4	345	22.6	03.6	41	22.9	16.1	284	44.2	01.6	300	14.4	15.2
15	265	07.9	0	22.3	03.8	56	23.8	16.7	299	46.6	01.5	315	16.8	15.2
16	280	10.4	15	22.0	03.9	71	24.7	17.3	314	48.9	01.5	330	19.1	15.2
17	295	12.8	30	21.7	−27 04.1	86	25.5	−11 17.9	329	51.3	−15 01.4	345	21.5	−19 15.2
18	310	15.3	45	21.4	−27 04.2	101	26.4	−11 18.5	344	53.6	−15 01.4	0	23.9	−19 15.1
19	325	17.8	60	21.1	04.4	116	27.3	19.1	359	56.0	01.4	15	26.3	15.1
20	340	20.2	75	20.8	04.5	131	28.1	19.7	14	58.3	01.3	30	28.6	15.1
21	355	22.7	90	20.5	04.7	146	29.0	20.3	30	00.7	01.3	45	31.0	15.1
22	10	25.2	105	20.2	04.8	161	29.8	20.9	45	03.1	01.2	60	33.4	15.0
23	25	27.6	120	19.9	04.9	176	30.7	21.5	60	05.4	01.2	75	35.8	15.0
24	40	30.1	135	19.6	−27 05.1	191	31.6	−11 22.1	75	07.8	−15 01.1	90	38.2	−19 15.0
Dif	—			−3	−2		+9	−6		+24	0		+24	0

UT	SOL SD: 16′.1 PMG: 11h 43m.6				LUNA Edad: 25d.5 SD: 15′.8 PMG: 8h 54m PHE 4h: 58′.2; 12h: 58′.5; 20h: 58′.8 Rº: 48m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	184	06.4	−14	25.5	230	49.2	+9	57.7	**60 N**	5 48	6 37	7 23	1 33	95	15 49	3
1	199	06.4		26.3	245	20.2 120		43.6 141	**58**	46	32	14	38	92	46	6
2	214	06.4		27.1	259	51.3 121		29.4 142	**56**	43	28	07	43	88	43	10
3	229	06.4		27.9	274	22.4 121		15.2 142	**54**	41	23	7 01	48	85	40	13
4	244	06.4		28.7	288	53.4 120	+9	00.9 143	**52**	39	19	6 55	52	82	38	15
5	259	06.5	−14	29.5	303	24.5 121	+8	46.5 144	**50**	5 38	6 16	6 50	1 55	80	15 36	17
6	274	06.5	−14	30.3	317	55.5 120	+8	32.1 144	**45**	5 33	6 08	6 39	2 03	75	15 31	22
7	289	06.5		31.1	332	26.6 121		17.6 145	**40**	29	6 01	29	10	70	27	26
8	304	06.5		31.9	346	57.6 120	+8	03.0 146	**35**	25	5 55	21	15	67	23	30
9	319	06.5		32.7	1	28.6 120	+7	48.4 146	**30**	21	49	14	20	63	20	33
10	334	06.5		33.5	15	59.7 121		33.7 147	**20**	13	39	6 02	28	58	15	39
11	349	06.6	−14	34.3	30	30.7 120	+7	19.0 147	**10 N**	5 04	5 29	5 51	2 36	52	15 10	44
12	4	06.6	−14	35.1	45	01.7 120	+7	04.2 148	**0**	4 54	5 19	5 40	2 43	48	15 05	49
13	19	06.6		35.9	59	32.7 120	+6	49.3 149	**10 S**	42	5 08	30	49	44	15 01	53
14	34	06.6		36.7	74	03.6 119		34.4 149	**20**	28	4 55	18	2 57	38	14 56	58
15	49	06.6		37.5	88	34.6 120		19.4 150	**30**	4 10	40	5 05	3 05	33	50	64
16	64	06.6		38.3	103	05.6 120	+6	04.4 150	**35**	3 58	31	4 58	10	30	47	67
17	79	06.6	−14	39.1	117	36.5 119	+5	49.4 150	**40**	3 44	4 20	4 49	3 15	27	14 43	71
18	94	06.6	−14	39.9	132	07.4 119	+5	34.2 152	**45**	3 27	4 07	4 39	3 21	23	14 38	76
19	109	06.6		40.7	146	38.3 119		19.1 151	**50**	3 04	3 50	26	29	17	33	81
20	124	06.7		41.5	161	09.2 119	+5	03.9 152	**52**	2 53	42	20	32	15	31	83
21	139	06.7		42.2	175	40.1 119	+4	48.6 153	**54**	39	33	14	36	12	28	86
22	154	06.7		43.0	190	10.9 118		33.3 153	**56**	24	23	4 07	40	10	25	89
23	169	06.7		43.8	204	41.7 118		17.9 154	**58**	2 04	3 11	3 59	44	7	21	93
24	184	06.7	−14	44.6	219	12.5 118	+4	02.5 154	**60 S**	1 39	2 58	3 50	3 49	4	14 18	96

UT	ARIES PMG 21h 14m.5		VENUS Mag: −4.6 PMG: 14h 59m			MARTE Mag: +1.7 PMG: 11h 13m			JÚPITER Mag: −2.5 PMG: 18h 57m			SATURNO Mag: +0.6 PMG: 17h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	40	30.1	135	19.6	−27 05.1	191	31.6	−11 22.1	75	07.8	−15 01.1	90	38.2	−19 15.0
1	55	32.5	150	19.4	05.2	206	32.4	22.7	90	10.1	01.1	105	40.5	15.0
2	70	35.0	165	19.1	05.4	221	33.3	23.3	105	12.5	01.1	120	42.9	14.9
3	85	37.5	180	18.8	05.5	236	34.2	23.9	120	14.8	01.0	135	45.3	14.9
4	100	39.9	195	18.5	05.6	251	35.0	24.6	135	17.2	01.0	150	47.7	14.9
5	115	42.4	210	18.2	−27 05.8	266	35.9	−11 25.2	150	19.5	−15 00.9	165	50.0	−19 14.9
6	130	44.9	225	17.9	−27 05.9	281	36.8	−11 25.8	165	21.9	−15 00.9	180	52.4	−19 14.9
7	145	47.3	240	17.6	06.0	296	37.6	26.4	180	24.2	00.8	195	54.8	14.8
8	160	49.8	255	17.4	06.2	311	38.5	27.0	195	26.6	00.8	210	57.1	14.8
9	175	52.3	270	17.1	06.3	326	39.4	27.6	210	28.9	00.8	225	59.5	14.8
10	190	54.7	285	16.8	06.4	341	40.2	28.2	225	31.3	00.7	241	01.9	14.8
11	205	57.2	300	16.5	−27 06.6	356	41.1	−11 28.8	240	33.6	−15 00.7	256	04.3	−19 14.7
12	220	59.6	315	16.2	−27 06.7	11	42.0	−11 29.4	255	36.0	−15 00.6	271	06.6	−19 14.7
13	236	02.1	330	15.9	06.8	26	42.8	30.0	270	38.3	00.6	286	09.0	14.7
14	251	04.6	345	15.7	06.9	41	43.7	30.6	285	40.7	00.5	301	11.4	14.7
15	266	07.0	0	15.4	07.1	56	44.5	31.2	300	43.0	00.5	316	13.8	14.7
16	281	09.5	15	15.1	07.2	71	45.4	31.8	315	45.4	00.4	331	16.1	14.6
17	296	12.0	30	14.8	−27 07.3	86	46.3	−11 32.4	330	47.7	−15 00.4	346	18.5	−19 14.6
18	311	14.4	45	14.6	−27 07.4	101	47.1	−11 33.0	345	50.1	−15 00.4	1	20.9	−19 14.6
19	326	16.9	60	14.3	07.6	116	48.0	33.6	0	52.4	00.3	16	23.2	14.6
20	341	19.4	75	14.0	07.7	131	48.8	34.2	15	54.8	00.3	31	25.6	14.5
21	356	21.8	90	13.7	07.8	146	49.7	34.8	30	57.1	00.2	46	28.0	14.5
22	11	24.3	105	13.5	07.9	161	50.6	35.4	45	59.5	00.2	61	30.4	14.5
23	26	26.8	120	13.2	08.0	176	51.4	36.0	61	01.8	00.1	76	32.7	14.5
24	41	29.2	135	12.9	−27 08.1	191	52.3	−11 36.6	76	04.2	−15 00.1	91	35.1	−19 14.4
Dif	—		−3		−1	+9		−6	+24		0	+24		0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 26ᵈ.5		PHE	4ʰ: 59′.1								
	PMG: 11ʰ 43ᵐ.5				SD: 16′.1			12ʰ: 59′.4								
					PMG: 9ʰ 42ᵐ			20ʰ: 59′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	184	06.7	−14	44.6	219	12.5	+4	02.5	**60 N**	16 01	16 46	17 36	3 08	98	15 52	4
1	199	06.7		45.4	233	43.3 118	+3	47.1 154	**58**	09	52	39	10	94	52	8
2	214	06.7		46.2	248	14.1 118		31.6 155	**56**	17	16 57	41	11	91	53	10
3	229	06.7		47.0	262	44.8 117		16.1 155	**54**	24	17 01	43	13	87	53	13
4	244	06.7		47.8	277	15.5 117	+3	00.5 156	**52**	29	05	45	14	85	53	15
5	259	06.7	−14	48.6	291	46.2 117	+2	44.9 156	**50**	16 35	17 09	17 47	3 15	83	15 53	18
6	274	06.7	−14	49.4	306	16.8 116	+2	29.3 156	**45**	16 47	17 17	17 52	3 18	77	15 53	23
7	289	06.8		50.1	320	47.4 116	+2	13.7 156	**40**	16 56	24	17 56	20	72	53	28
8	304	06.8		50.9	335	18.0 116	+1	58.0 157	**35**	17 05	31	18 01	22	68	53	31
9	319	06.8		51.7	349	48.6 116		42.2 158	**30**	12	37	05	23	65	53	35
10	334	06.8		52.5	4	19.1 115		26.5 157	**20**	25	48	14	26	59	54	40
11	349	06.8	−14	53.3	18	49.6 115	+1	10.7 158	**10 N**	17 36	17 58	18 23	3 28	54	15 54	45
12	4	06.8	−14	54.1	33	20.0 114	+0	54.9 158	**0**	17 47	18 08	18 33	3 31	49	15 54	50
13	19	06.8		54.9	47	50.4 114		39.1 158	**10 S**	17 58	20	18 45	33	44	54	55
14	34	06.8		55.7	62	20.8 114		23.2 159	**20**	18 10	33	19 00	35	40	54	60
15	49	06.8		56.4	76	51.2 114	+0	07.3 159	**30**	23	48	19	38	34	54	66
16	64	06.8		57.2	91	21.5 113	−0	08.6 159	**35**	31	18 58	31	40	30	54	70
17	79	06.8	−14	58.0	105	51.7 112	−0	24.5 159	**40**	18 40	19 09	19 45	3 42	26	15 54	74
18	94	06.8	−14	58.8	120	21.9 112	−0	40.4 159	**45**	18 51	19 23	20 03	3 44	22	15 54	78
19	109	06.8	−14	59.6	134	52.1 112	−0	56.4 160	**50**	19 04	40	27	46	18	54	84
20	124	06.8	−15	00.4	149	22.2 111	−1	12.4 160	**52**	10	49	39	47	15	54	86
21	139	06.8		01.1	163	52.3 111		28.3 159	**54**	16	19 58	20 53	48	13	54	89
22	154	06.8		01.9	178	22.4 111	−1	44.3 160	**56**	24	20 08	21 10	50	10	54	92
23	169	06.8		02.7	192	52.3 109	−2	00.3 160	**58**	32	21	30	51	7	54	96
24	184	06.8	−15	03.5	207	22.3 110	−2	16.4 161	**60 S**	19 42	20 35	21 58	3 53	4	15 54	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.7			Mag: −2.5			Mag: +0.6		
	21ʰ 10ᵐ.6		PMG: 14ʰ 59ᵐ			PMG: 11ʰ 12ᵐ			PMG: 18ʰ 53ᵐ			PMG: 17ʰ 51ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	41	29.2	135	12.9	−27 08.1	191	52.3	−11 36.6	76	04.2	−15 00.1	91	35.1	−19 14.4
1	56	31.7	150	12.6	08.3	206	53.2	37.2	91	06.5	−15 00.0	106	37.5	14.4
2	71	34.1	165	12.4	08.4	221	54.0	37.8	106	08.9	−15 00.0	121	39.8	14.4
3	86	36.6	180	12.1	08.5	236	54.9	38.4	121	11.2	−14 59.9	136	42.2	14.4
4	101	39.1	195	11.8	08.6	251	55.7	39.0	136	13.6	59.9	151	44.6	14.3
5	116	41.5	210	11.6	−27 08.7	266	56.6	−11 39.6	151	15.9	−14 59.9	166	47.0	−19 14.3
6	131	44.0	225	11.3	−27 08.8	281	57.5	−11 40.2	166	18.2	−14 59.8	181	49.3	−19 14.3
7	146	46.5	240	11.0	08.9	296	58.3	40.8	181	20.6	59.8	196	51.7	14.3
8	161	48.9	255	10.8	09.0	311	59.2	41.4	196	22.9	59.7	211	54.1	14.3
9	176	51.4	270	10.5	09.1	327	00.0	42.0	211	25.3	59.7	226	56.4	14.2
10	191	53.9	285	10.2	09.2	342	00.9	42.6	226	27.6	59.6	241	58.8	14.2
11	206	56.3	300	10.0	−27 09.3	357	01.8	−11 43.2	241	30.0	−14 59.6	257	01.2	−19 14.2
12	221	58.8	315	09.7	−27 09.4	12	02.6	−11 43.8	256	32.3	−14 59.5	272	03.5	−19 14.2
13	237	01.3	330	09.4	09.5	27	03.5	44.4	271	34.6	59.5	287	05.9	14.1
14	252	03.7	345	09.2	09.6	42	04.3	45.0	286	37.0	59.4	302	08.3	14.1
15	267	06.2	0	08.9	09.7	57	05.2	45.6	301	39.3	59.4	317	10.7	14.1
16	282	08.6	15	08.7	09.8	72	06.0	46.2	316	41.7	59.3	332	13.0	14.1
17	297	11.1	30	08.4	−27 09.9	87	06.9	−11 46.8	331	44.0	−14 59.3	347	15.4	−19 14.0
18	312	13.6	45	08.1	−27 10.0	102	07.8	−11 47.4	346	46.4	−14 59.2	2	17.8	−19 14.0
19	327	16.0	60	07.9	10.1	117	08.6	48.0	1	48.7	59.2	17	20.1	14.0
20	342	18.5	75	07.6	10.2	132	09.5	48.6	16	51.0	59.2	32	22.5	14.0
21	357	21.0	90	07.4	10.3	147	10.3	49.2	31	53.4	59.1	47	24.9	13.9
22	12	23.4	105	07.1	10.4	162	11.2	49.8	46	55.7	59.1	62	27.2	13.9
23	27	25.9	120	06.8	10.5	177	12.1	50.4	61	58.1	59.0	77	29.6	13.9
24	42	28.4	135	06.6	−27 10.6	192	12.9	−11 51.0	77	00.4	−14 59.0	92	32.0	−19 13.9
Dif	—			−3	−1		+9	−6		+23	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1		PMG: 11h 43m.5		Edad: 27d.5		SD: 16′.3		PMG: 10h 32m	PHE: 4h: 60′.0; 12h: 60′.2; 20h: 60′.4; Rº: 52m							
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	06.8	−15	03.5	207	22.3	−2	16.4		**60 N**	5 52	6 42	7 28	4 46	102	15 56	5
1	199	06.8		04.3	221	52.2 109		32.4 160		**58**	50	36	19	44	98	16 00	8
2	214	06.8		05.0	236	22.0 108	−2	48.4 160		**56**	47	31	12	42	95	03	12
3	229	06.8		05.8	250	51.8 108	−3	04.4 160		**54**	45	27	7 05	40	92	06	15
4	244	06.8		06.6	265	21.5 107		20.4 160		**52**	43	23	6 59	39	88	08	18
5	259	06.8	−15	07.4	279	51.2 107	−3	36.5 161		**50**	5 41	6 19	6 53	4 38	85	16 11	20
6	274	06.8	−15	08.2	294	20.8 106	−3	52.5 160		**45**	5 36	6 11	6 41	4 35	80	16 16	26
7	289	06.8		08.9	308	50.4 106	−4	08.5 160		**40**	31	6 03	31	32	75	21	30
8	304	06.8		09.7	323	19.9 105		24.5 160		**35**	27	5 57	23	30	71	24	34
9	319	06.8		10.5	337	49.4 105		40.5 160		**30**	22	51	15	28	68	28	37
10	334	06.8		11.3	352	18.8 104	−4	56.5 160		**20**	13	40	6 02	25	62	34	43
11	349	06.8	−15	12.1	6	48.1 103	−5	12.5 160		**10 N**	5 04	5 29	5 51	4 22	57	16 39	48
12	4	06.8	−15	12.8	21	17.4 103	−5	28.5 160		**0**	4 54	5 19	5 40	4 20	51	16 44	53
13	19	06.8		13.6	35	46.6 102	−5	44.5 160		**10 S**	42	5 07	29	17	47	49	58
14	34	06.8		14.4	50	15.7 101	−6	00.4 159		**20**	27	4 54	17	15	41	16 54	63
15	49	06.8		15.2	64	44.8 101		16.4 160		**30**	4 08	38	5 04	12	36	17 00	69
16	64	06.8		15.9	79	13.8 100		32.3 159		**35**	3 56	29	4 56	10	33	04	72
17	79	06.8	−15	16.7	93	42.8 100	−6	48.1 158		**40**	3 42	4 17	4 46	4 08	29	17 08	76
18	94	06.8	−15	17.5	108	11.7 99	−7	04.0 159		**45**	3 23	4 03	4 36	4 06	24	17 12	82
19	109	06.8		18.2	122	40.5 98		19.8 158		**50**	2 59	3 46	23	04	19	18	87
20	124	06.7		19.0	137	09.2 97		35.7 159		**52**	47	38	17	02	17	20	90
21	139	06.7		19.8	151	37.9 97	−7	51.4 157		**54**	33	29	10	01	14	23	93
22	154	06.7		20.6	166	06.5 96	−8	07.2 158		**56**	2 17	18	4 02	4 00	11	26	97
23	169	06.7		21.3	180	35.0 95		22.9 157		**58**	1 56	3 06	3 54	3 58	8	30	100
24	184	06.7	−15	22.1	195	03.4 94	−8	38.6 157		**60 S**	1 28	2 51	3 44	3 57	4	17 34	104

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 21h 06m.6		Mag: −4.6 PMG: 15h 00m			Mag: +1.7 PMG: 11h 11m			Mag: −2.5 PMG: 18h 49m			Mag: +0.6 PMG: 17h 47m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	42	28.4	135	06.6	−27 10.6	192	12.9	−11 51.0	77	00.4	−14 59.0	92	32.0	−19 13.9
1	57	30.8	150	06.3	10.7	207	13.8	51.6	92	02.7	58.9	107	34.3	13.8
2	72	33.3	165	06.1	10.8	222	14.6	52.2	107	05.1	58.9	122	36.7	13.8
3	87	35.7	180	05.8	10.9	237	15.5	52.8	122	07.4	58.8	137	39.1	13.8
4	102	38.2	195	05.6	10.9	252	16.3	53.4	137	09.7	58.8	152	41.4	13.8
5	117	40.7	210	05.3	−27 11.0	267	17.2	−11 54.0	152	12.1	−14 58.7	167	43.8	−19 13.7
6	132	43.1	225	05.1	−27 11.1	282	18.0	−11 54.6	167	14.4	−14 58.7	182	46.2	−19 13.7
7	147	45.6	240	04.8	11.2	297	18.9	55.2	182	16.8	58.6	197	48.5	13.7
8	162	48.1	255	04.6	11.3	312	19.8	55.8	197	19.1	58.6	212	50.9	13.7
9	177	50.5	270	04.3	11.4	327	20.6	56.4	212	21.4	58.5	227	53.3	13.6
10	192	53.0	285	04.1	11.4	342	21.5	57.0	227	23.8	58.5	242	55.6	13.6
11	207	55.5	300	03.8	−27 11.5	357	22.3	−11 57.6	242	26.1	−14 58.4	257	58.0	−19 13.6
12	222	57.9	315	03.6	−27 11.6	12	23.2	−11 58.2	257	28.4	−14 58.4	273	00.4	−19 13.6
13	238	00.4	330	03.4	11.7	27	24.0	58.8	272	30.8	58.3	288	02.7	13.5
14	253	02.9	345	03.1	11.7	42	24.9	−11 59.4	287	33.1	58.3	303	05.1	13.5
15	268	05.3	0	02.9	11.8	57	25.7	−12 00.0	302	35.4	58.2	318	07.4	13.5
16	283	07.8	15	02.6	11.9	72	26.6	−12 00.6	317	37.8	58.2	333	09.8	13.5
17	298	10.2	30	02.4	−27 12.0	87	27.4	−12 01.2	332	40.1	−14 58.1	348	12.2	−19 13.4
18	313	12.7	45	02.1	−27 12.0	102	28.3	−12 01.7	347	42.4	−14 58.1	3	14.5	−19 13.4
19	328	15.2	60	01.9	12.1	117	29.2	02.3	2	44.8	58.0	18	16.9	13.4
20	343	17.6	75	01.7	12.2	132	30.0	02.9	17	47.1	58.0	33	19.3	13.4
21	358	20.1	90	01.4	12.3	147	30.9	03.5	32	49.4	57.9	48	21.6	13.3
22	13	22.6	105	01.2	12.3	162	31.7	04.1	47	51.8	57.9	63	24.0	13.3
23	28	25.0	120	01.0	12.4	177	32.6	04.7	62	54.1	57.8	78	26.4	13.3
24	43	27.5	135	00.7	−27 12.5	192	33.4	−12 05.3	77	56.4	−14 57.8	93	28.7	−19 13.3
Dif	—			−2	−1		+9	−6		+23	0		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 28.ᵈ5		PHE	4ʰ: 60′.6									
	PMG: 11ʰ 43.ᵐ6				SD: 16′.5			12ʰ: 60′.8									
					PMG: 11ʰ 24ᵐ			20ʰ: 60′.9									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′		h m	h m	h m	h m	m	h m	m
0	184	06.7	−15	22.1	195	03.4		−8	38.6	**60 N**	15 56	16 42	17 32	6 28	108	16 01	7
1	199	06.7		22.9	209	31.8	94	−8	54.2 156	**58**	16 05	48	35	22	103	08	12
2	214	06.7		23.6	224	00.1	93	−9	09.8 156	**56**	13	53	37	17	98	15	16
3	229	06.7		24.4	238	28.3	92		25.4 156	**54**	20	16 58	40	12	95	21	19
4	244	06.7		25.2	252	56.5	92		40.9 155	**52**	26	17 02	42	07	92	26	22
5	259	06.7	−15	26.0	267	24.5	90	−9	56.4 155	**50**	16 32	17 06	17 44	6 03	89	16 31	25
6	274	06.7	−15	26.7	281	52.5	90	−10	11.8 154	**45**	16 44	17 15	17 50	5 55	83	16 42	30
7	289	06.6		27.5	296	20.4	89		27.2 154	**40**	16 54	22	54	47	79	51	35
8	304	06.6		28.3	310	48.2	88		42.5 153	**35**	17 03	29	17 59	41	75	16 58	39
9	319	06.6		29.0	325	16.0	88	−10	57.8 153	**30**	11	35	18 04	36	71	17 05	42
10	334	06.6		29.8	339	43.6	86	−11	13.0 152	**20**	24	47	13	27	65	17	47
11	349	06.6	−15	30.6	354	11.2	86	−11	28.2 152	**10 N**	17 36	17 58	18 23	5 19	60	17 27	53
12	4	06.6	−15	31.3	8	38.7	85	−11	43.3 151	**0**	17 47	18 08	18 33	5 11	55	17 37	57
13	19	06.6		32.1	23	06.1	84	−11	58.3 150	**10 S**	17 58	20	18 46	5 04	50	47	61
14	34	06.6		32.9	37	33.4	83	−12	13.3 150	**20**	18 11	34	19 01	4 56	46	17 57	66
15	49	06.5		33.6	52	00.7	83		28.2 149	**30**	25	18 50	21	48	39	18 09	72
16	64	06.5		34.4	66	27.8	81		43.1 149	**35**	33	19 00	33	43	36	16	76
17	79	06.5	−15	35.1	80	54.8	80	−12	57.9 148	**40**	18 42	19 12	19 48	4 37	32	18 24	79
18	94	06.5	−15	35.9	95	21.8	80	−13	12.6 147	**45**	18 54	19 26	20 07	4 30	28	18 34	83
19	109	06.5		36.7	109	48.7	79		27.2 146	**50**	19 07	44	32	23	22	45	90
20	124	06.5		37.4	124	15.5	78		41.7 145	**52**	13	19 53	44	19	20	50	93
21	139	06.5		38.2	138	42.2	77	−13	56.2 145	**54**	20	20 02	20 59	15	17	18 56	96
22	154	06.4		39.0	153	08.8	76	−14	10.6 144	**56**	28	14	21 17	11	14	19 03	99
23	169	06.4		39.7	167	35.3	75		24.9 143	**58**	37	27	21 39	06	10	10	104
24	184	06.4	−15	40.5	182	01.7	74	−14	39.2 143	**60 S**	19 47	20 42	22 10	4 01	6	19 18	110

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.6			Mag: −2.5			Mag: +0.6		
	21ʰ 02.ᵐ7		PMG: 15ʰ 00ᵐ			PMG: 11ʰ 09ᵐ			PMG: 18ʰ 45ᵐ			PMG: 17ʰ 43ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	43	27.5	135	00.7	−27 12.5	192	33.4	−12 05.3	77	56.4	−14 57.8	93	28.7	−19 13.3
1	58	30.0	150	00.5	12.5	207	34.3	05.9	92	58.8	57.7	108	31.1	13.2
2	73	32.4	165	00.3	12.6	222	35.1	06.5	108	01.1	57.7	123	33.4	13.2
3	88	34.9	180	00.0	12.6	237	36.0	07.1	123	03.4	57.6	138	35.8	13.2
4	103	37.3	194	59.8	12.7	252	36.8	07.7	138	05.7	57.6	153	38.2	13.2
5	118	39.8	209	59.6	−27 12.8	267	37.7	−12 08.3	153	08.1	−14 57.5	168	40.5	−19 13.1
6	133	42.3	224	59.3	−27 12.8	282	38.5	−12 08.9	168	10.4	−14 57.5	183	42.9	−19 13.1
7	148	44.7	239	59.1	12.9	297	39.4	09.5	183	12.7	57.4	198	45.3	13.1
8	163	47.2	254	58.9	12.9	312	40.2	10.1	198	15.1	57.4	213	47.6	13.1
9	178	49.7	269	58.6	13.0	327	41.1	10.7	213	17.4	57.3	228	50.0	13.0
10	193	52.1	284	58.4	13.0	342	41.9	11.3	228	19.7	57.3	243	52.3	13.0
11	208	54.6	299	58.2	−27 13.1	357	42.8	−12 11.9	243	22.0	−14 57.2	258	54.7	−19 13.0
12	223	57.1	314	58.0	−27 13.2	12	43.6	−12 12.5	258	24.4	−14 57.1	273	57.1	−19 13.0
13	238	59.5	329	57.7	13.2	27	44.5	13.0	273	26.7	57.1	288	59.4	12.9
14	254	02.0	344	57.5	13.3	42	45.3	13.6	288	29.0	57.0	304	01.8	12.9
15	269	04.5	359	57.3	13.3	57	46.2	14.2	303	31.3	57.0	319	04.1	12.9
16	284	06.9	14	57.1	13.4	72	47.0	14.8	318	33.7	56.9	334	06.5	12.9
17	299	09.4	29	56.8	−27 13.4	87	47.9	−12 15.4	333	36.0	−14 56.9	349	08.9	−19 12.8
18	314	11.8	44	56.6	−27 13.5	102	48.7	−12 16.0	348	38.3	−14 56.8	4	11.2	−19 12.8
19	329	14.3	59	56.4	13.5	117	49.6	16.6	3	40.6	56.8	19	13.6	12.8
20	344	16.8	74	56.2	13.5	132	50.4	17.2	18	43.0	56.7	34	15.9	12.7
21	359	19.2	89	56.0	13.6	147	51.3	17.8	33	45.3	56.7	49	18.3	12.7
22	14	21.7	104	55.8	13.6	162	52.1	18.4	48	47.6	56.6	64	20.7	12.7
23	29	24.2	119	55.5	13.7	177	53.0	19.0	63	49.9	56.6	79	23.0	12.7
24	44	26.6	134	55.3	−27 13.7	192	53.8	−12 19.6	78	52.3	−14 56.5	94	25.4	−19 12.6
Dif	—			−2	−1		+9	−6		+23	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 0ᵈ.1		PHE	4ʰ: 61′.0									
	PMG: 11ʰ 43ᵐ.6				SD: 16′.6			12ʰ: 61′.1									
					PMG: 12ʰ 20ᵐ			20ʰ: 61′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	06.4	−15	40.5	182	01.7	−14	39.2		**60 N**	5 57	6 47	7 33	8 16	112	16 08	12
1	199	06.4		41.2	196	28.1 74	−14	53.3	141	**58**	54	41	24	8 05	105	20	18
2	214	06.4		42.0	210	54.3 72	−15	07.3	140	**56**	51	35	16	7 55	101	31	23
3	229	06.4		42.8	225	20.5 72		21.3	140	**54**	48	31	09	47	96	40	27
4	244	06.3		43.5	239	46.5 70		35.2	139	**52**	46	26	7 02	39	93	48	30
5	259	06.3	−15	44.3	254	12.5 70	−15	48.9	137	**50**	5 44	6 22	6 57	7 32	90	16 56	33
6	274	06.3	−15	45.0	268	38.3 68	−16	02.6	137	**45**	5 38	6 13	6 44	7 18	84	17 12	38
7	289	06.3		45.8	283	04.1 68		16.2	136	**40**	33	6 05	34	7 06	79	26	42
8	304	06.3		46.5	297	29.8 67		29.6	134	**35**	28	5 58	25	6 56	76	37	45
9	319	06.2		47.3	311	55.4 66		43.0	134	**30**	24	52	17	47	73	17 47	48
10	334	06.2		48.1	326	20.9 65	−16	56.3	133	**20**	14	41	6 03	32	67	18 04	53
11	349	06.2	−15	48.8	340	46.3 64	−17	09.4	131	**10 N**	5 05	5 30	5 51	6 19	63	18 20	57
12	4	06.2	−15	49.6	355	11.6 63	−17	22.5	131	**0**	4 54	5 19	5 40	6 06	59	18 34	61
13	19	06.2		50.3	9	36.8 62		35.4	129	**10 S**	41	5 07	29	5 54	55	18 48	65
14	34	06.1		51.1	24	01.9 61	−17	48.2	128	**20**	26	4 53	16	42	50	19 03	69
15	49	06.1		51.8	38	26.9 60	−18	00.9	127	**30**	4 06	37	5 02	27	45	21	73
16	64	06.1		52.6	52	51.9 60		13.5	126	**35**	3 54	27	4 54	19	42	32	75
17	79	06.1	−15	53.3	67	16.7 58	−18	25.9	124	**40**	3 39	4 15	4 44	5 09	39	19 43	80
18	94	06.0	−15	54.1	81	41.4 57	−18	38.3	124	**45**	3 20	4 00	4 33	4 58	34	19 57	84
19	109	06.0		54.8	96	06.1 57	−18	50.5	122	**50**	2 55	3 42	19	45	29	20 15	88
20	124	06.0		55.6	110	30.6 55	−19	02.6	121	**52**	42	34	13	39	26	23	91
21	139	06.0		56.3	124	55.1 55		14.5	119	**54**	28	24	4 06	32	23	32	95
22	154	06.0		57.1	139	19.5 54		26.4	119	**56**	2 10	13	3 58	25	19	42	99
23	169	05.9		57.8	153	43.8 53		38.0	116	**58**	1 48	3 00	49	16	16	20 54	104
24	184	05.9	−15	58.6	168	08.0 52	−19	49.6	116	**60 S**	1 17	2 44	3 39	4 07	10	21 08	110

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.6			Mag: −2.5			Mag: +0.6		
	20ʰ 58ᵐ.8		PMG: 15ʰ 01ᵐ			PMG: 11ʰ 08ᵐ			PMG: 18ʰ 42ᵐ			PMG: 17ʰ 40ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	44	26.6	134	55.3	−27 13.7	192	53.8	−12 19.6	78	52.3	−14 56.5	94	25.4	−19 12.6
1	59	29.1	149	55.1	13.8	207	54.7	20.2	93	54.6	56.5	109	27.7	12.6
2	74	31.6	164	54.9	13.8	222	55.5	20.7	108	56.9	56.4	124	30.1	12.6
3	89	34.0	179	54.7	13.8	237	56.4	21.3	123	59.2	56.4	139	32.5	12.6
4	104	36.5	194	54.5	13.9	252	57.2	21.9	139	01.6	56.3	154	34.8	12.5
5	119	39.0	209	54.3	−27 13.9	267	58.1	−12 22.5	154	03.9	−14 56.2	169	37.2	−19 12.5
6	134	41.4	224	54.1	−27 13.9	282	58.9	−12 23.1	169	06.2	−14 56.2	184	39.5	−19 12.5
7	149	43.9	239	53.8	14.0	297	59.7	23.7	184	08.5	56.1	199	41.9	12.5
8	164	46.3	254	53.6	14.0	313	00.6	24.3	199	10.8	56.1	214	44.2	12.4
9	179	48.8	269	53.4	14.0	328	01.4	24.9	214	13.2	56.0	229	46.6	12.4
10	194	51.3	284	53.2	14.1	343	02.3	25.5	229	15.5	56.0	244	49.0	12.4
11	209	53.7	299	53.0	−27 14.1	358	03.1	−12 26.1	244	17.8	−14 55.9	259	51.3	−19 12.3
12	224	56.2	314	52.8	−27 14.1	13	04.0	−12 26.7	259	20.1	−14 55.9	274	53.7	−19 12.3
13	239	58.7	329	52.6	14.2	28	04.8	27.2	274	22.4	55.8	289	56.0	12.3
14	255	01.1	344	52.4	14.2	43	05.7	27.8	289	24.8	55.7	304	58.4	12.3
15	270	03.6	359	52.2	14.2	58	06.5	28.4	304	27.1	55.7	320	00.7	12.2
16	285	06.1	14	52.0	14.2	73	07.4	29.0	319	29.4	55.6	335	03.1	12.2
17	300	08.5	29	51.8	−27 14.3	88	08.2	−12 29.6	334	31.7	−14 55.6	350	05.5	−19 12.2
18	315	11.0	44	51.6	−27 14.3	103	09.1	−12 30.2	349	34.0	−14 55.5	5	07.8	−19 12.2
19	330	13.4	59	51.4	14.3	118	09.9	30.8	4	36.3	55.5	20	10.2	12.1
20	345	15.9	74	51.2	14.3	133	10.7	31.4	19	38.7	55.4	35	12.5	12.1
21	0	18.4	89	51.0	14.3	148	11.6	32.0	34	41.0	55.4	50	14.9	12.1
22	15	20.8	104	50.8	14.4	163	12.4	32.5	49	43.3	55.3	65	17.2	12.0
23	30	23.3	119	50.6	14.4	178	13.3	33.1	64	45.6	55.2	80	19.6	12.0
24	45	25.8	134	50.4	−27 14.4	193	14.1	−12 33.7	79	47.9	−14 55.2	95	21.9	−19 12.0
Dif	—			−2	0		+8	−6		+23	+1		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 1^{d}.1		PHE	4^{h}: 61′.1									
	PMG: 11^{h} 43^{m}.6				SD: 16′.6			12^{h}: 61′.1									
					PMG: 13^{h} 20^{m}			20^{h}: 61′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	184	05.9	−15	58.6	168	08.0	−19	49.6		**60 N**	15 51	16 37	17 28	10 08	107	16 20	25
1	199	05.9	−15	59.3	182	32.1 51	−20	01.0	114	**58**	16 00	44	31	9 50	100	38	31
2	214	05.9	−16	00.1	196	56.1 50		12.3	113	**56**	09	49	34	36	95	16 54	35
3	229	05.8		00.8	211	20.0 49		23.4	111	**54**	16	54	36	23	92	17 07	39
4	244	05.8		01.6	225	43.8 48		34.4	110	**52**	22	16 59	39	12	89	18	42
5	259	05.8	−16	02.3	240	07.6 48	−20	45.3	109	**50**	16 28	17 03	17 42	9 02	86	17 29	44
6	274	05.7	−16	03.1	254	31.3 47	−20	56.0	107	**45**	16 41	17 12	17 47	8 42	81	17 50	48
7	289	05.7		03.8	268	54.8 45	−21	06.6	106	**40**	16 52	20	53	25	78	18 08	51
8	304	05.7		04.6	283	18.3 45		17.0	104	**35**	17 01	27	17 58	12	75	22	54
9	319	05.7		05.3	297	41.8 45		27.2	102	**30**	09	34	18 03	8 00	72	35	56
10	334	05.6		06.1	312	05.1 43		37.3	101	**20**	23	46	12	7 39	69	18 57	59
11	349	05.6	−16	06.8	326	28.3 42	−21	47.3	100	**10 N**	17 35	17 57	18 22	7 22	65	19 17	61
12	4	05.6	−16	07.5	340	51.5 42	−21	57.1	98	**0**	17 47	18 09	18 34	7 05	63	19 35	63
13	19	05.5		08.3	355	14.6 41	−22	06.7	96	**10 S**	17 59	21	18 47	6 49	59	19 53	65
14	34	05.5		09.0	9	37.6 40		16.2	95	**20**	18 12	35	19 02	32	56	20 12	68
15	49	05.5		09.8	24	00.6 40		25.5	93	**30**	26	18 52	22	12	52	34	72
16	64	05.4		10.5	38	23.4 38		34.6	91	**35**	35	19 02	35	6 01	49	20 47	73
17	79	05.4	−16	11.3	52	46.2 38	−22	43.6	90	**40**	18 45	19 15	19 51	5 48	46	21 03	75
18	94	05.4	−16	12.0	67	09.0 38	−22	52.4	88	**45**	18 56	19 29	20 10	5 32	43	21 21	78
19	109	05.4		12.7	81	31.6 36	−23	01.1	87	**50**	19 11	48	36	14	38	43	82
20	124	05.3		13.5	95	54.2 36		09.5	84	**52**	17	19 57	20 49	5 05	35	21 54	83
21	139	05.3		14.2	110	16.7 35		17.8	83	**54**	25	20 07	21 05	4 55	33	22 07	85
22	154	05.3		15.0	124	39.2 35		26.0	82	**56**	33	19	24	44	29	21	88
23	169	05.2		15.7	139	01.6 34		33.9	79	**58**	42	32	21 48	32	24	38	92
24	184	05.2	−16	16.4	153	23.9 33	−23	41.7	78	**60 S**	19 53	20 49	22 23	4 17	18	22 58	98

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.6			Mag: −2.5			Mag: +0.6		
	20^{h} 54^{m}.8		PMG: 15^{h} 01^{m}			PMG: 11^{h} 06^{m}			PMG: 18^{h} 38^{m}			PMG: 17^{h} 36^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	45	25.8	134	50.4	−27 14.4	193	14.1	−12 33.7	79	47.9	−14 55.2	95	21.9	−19 12.0
1	60	28.2	149	50.2	14.4	208	15.0	34.3	94	50.2	55.1	110	24.3	12.0
2	75	30.7	164	50.1	14.4	223	15.8	34.9	109	52.5	55.1	125	26.6	11.9
3	90	33.2	179	49.9	14.4	238	16.6	35.5	124	54.9	55.0	140	29.0	11.9
4	105	35.6	194	49.7	14.4	253	17.5	36.1	139	57.2	55.0	155	31.4	11.9
5	120	38.1	209	49.5	−27 14.5	268	18.3	−12 36.7	154	59.5	−14 54.9	170	33.7	−19 11.8
6	135	40.6	224	49.3	−27 14.5	283	19.2	−12 37.3	170	01.8	−14 54.9	185	36.1	−19 11.8
7	150	43.0	239	49.1	14.5	298	20.0	37.8	185	04.1	54.8	200	38.4	11.8
8	165	45.5	254	48.9	14.5	313	20.9	38.4	200	06.4	54.7	215	40.8	11.8
9	180	47.9	269	48.7	14.5	328	21.7	39.0	215	08.7	54.7	230	43.1	11.7
10	195	50.4	284	48.6	14.5	343	22.5	39.6	230	11.1	54.6	245	45.5	11.7
11	210	52.9	299	48.4	−27 14.5	358	23.4	−12 40.2	245	13.4	−14 54.6	260	47.8	−19 11.7
12	225	55.3	314	48.2	−27 14.5	13	24.2	−12 40.8	260	15.7	−14 54.5	275	50.2	−19 11.7
13	240	57.8	329	48.0	14.5	28	25.1	41.4	275	18.0	54.5	290	52.5	11.6
14	256	00.3	344	47.8	14.5	43	25.9	42.0	290	20.3	54.4	305	54.9	11.6
15	271	02.7	359	47.7	14.5	58	26.7	42.5	305	22.6	54.3	320	57.2	11.6
16	286	05.2	14	47.5	14.5	73	27.6	43.1	320	24.9	54.3	335	59.6	11.5
17	301	07.7	29	47.3	−27 14.5	88	28.4	−12 43.7	335	27.2	−14 54.2	351	01.9	−19 11.5
18	316	10.1	44	47.1	−27 14.5	103	29.3	−12 44.3	350	29.5	−14 54.2	6	04.3	−19 11.5
19	331	12.6	59	47.0	14.5	118	30.1	44.9	5	31.8	54.1	21	06.6	11.5
20	346	15.1	74	46.8	14.5	133	30.9	45.5	20	34.2	54.0	36	09.0	11.4
21	1	17.5	89	46.6	14.5	148	31.8	46.1	35	36.5	54.0	51	11.4	11.4
22	16	20.0	104	46.4	14.5	163	32.6	46.6	50	38.8	53.9	66	13.7	11.4
23	31	22.4	119	46.3	14.5	178	33.5	47.2	65	41.1	53.9	81	16.1	11.3
24	46	24.9	134	46.1	−27 14.5	193	34.3	−12 47.8	80	43.4	−14 53.8	96	18.4	−19 11.3
Dif	—			−2	0		+8	−6		+23	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 2ᵈ.1		PHE	4ʰ: 60′.9									
	PMG: 11ʰ 43ᵐ.7				SD: 16′.6			12ʰ: 60′.7									
					PMG: 14ʰ 23ᵐ			20ʰ: 60′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	184	05.2	−16	16.4	153	23.9	−23	41.7		**60 N**	6 01	6 51	7 38	11 55	85	16 45	49
1	199	05.2		17.2	167	46.2 33		49.3	76	**58**	5 58	45	28	30	82	17 09	53
2	214	05.1		17.9	182	08.4 32	−23	56.7	74	**56**	55	39	20	11 11	79	29	55
3	229	05.1		18.6	196	30.6 32	−24	04.0	73	**54**	52	34	13	10 55	77	17 46	56
4	244	05.0		19.4	210	52.7 31		11.1	71	**52**	49	29	06	41	76	18 00	57
5	259	05.0	−16	20.1	225	14.8 31	−24	18.0	69	**50**	5 47	6 25	7 00	10 28	75	18 13	58
6	274	05.0	−16	20.9	239	36.8 30	−24	24.7	67	**45**	5 41	6 16	6 47	10 03	73	18 38	60
7	289	04.9		21.6	253	58.7 29		31.2	65	**40**	35	08	36	9 43	71	18 59	61
8	304	04.9		22.3	268	20.7 30		37.5	63	**35**	30	6 00	27	27	70	19 16	61
9	319	04.9		23.1	282	42.5 28		43.7	62	**30**	25	5 54	19	9 12	69	31	62
10	334	04.8		23.8	297	04.4 29		49.7	60	**20**	15	42	6 04	8 48	67	19 56	63
11	349	04.8	−16	24.5	311	26.2 28	−24	55.4	57	**10 N**	5 05	5 30	5 52	8 27	66	20 18	63
12	4	04.7	−16	25.3	325	47.9 27	−25	01.0	56	**0**	4 54	5 19	5 40	8 08	64	20 38	64
13	19	04.7		26.0	340	09.7 28		06.4	54	**10 S**	41	5 06	28	7 48	63	20 58	65
14	34	04.7		26.7	354	31.4 27		11.7	53	**20**	25	4 52	15	28	61	21 20	65
15	49	04.6		27.5	8	53.0 26		16.7	50	**30**	4 05	35	5 01	7 04	59	21 46	65
16	64	04.6		28.2	23	14.7 27		21.5	48	**35**	3 52	25	4 52	6 50	58	22 00	66
17	79	04.6	−16	28.9	37	36.3 26	−25	26.2	47	**40**	3 36	4 12	4 42	6 34	56	22 18	66
18	94	04.5	−16	29.6	51	57.9 26	−25	30.6	44	**45**	3 16	3 57	4 30	6 15	54	22 39	66
19	109	04.5		30.4	66	19.5 26		34.9	43	**50**	2 50	39	16	5 52	51	23 05	67
20	124	04.4		31.1	80	41.1 26		39.0	41	**52**	37	30	09	40	50	17	68
21	139	04.4		31.8	95	02.6 25		42.8	38	**54**	22	20	4 02	28	47	32	67
22	154	04.3		32.6	109	24.2 26		46.5	37	**56**	2 03	3 08	3 54	5 13	45	23 49	68
23	169	04.3		33.3	123	45.7 25		50.0	35	**58**	1 39	2 54	44	4 56	41	** **	**
24	184	04.3	−16	34.0	138	07.3 26	−25	53.3	33	**60 S**	1 04	2 38	3 34	4 35	36	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.6			Mag: −2.5			Mag: +0.6		
	20ʰ 50ᵐ.9		PMG: 15ʰ 01ᵐ			PMG: 11ʰ 05ᵐ			PMG: 18ʰ 34ᵐ			PMG: 17ʰ 32ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	46	24.9	134	46.1	−27 14.5	193	34.3	−12 47.8	80	43.4	−14 53.8	96	18.4	−19 11.3
1	61	27.4	149	45.9	14.5	208	35.1	48.4	95	45.7	53.7	111	20.8	11.3
2	76	29.8	164	45.8	14.5	223	36.0	49.0	110	48.0	53.7	126	23.1	11.3
3	91	32.3	179	45.6	14.5	238	36.8	49.6	125	50.3	53.6	141	25.5	11.2
4	106	34.8	194	45.4	14.4	253	37.7	50.1	140	52.6	53.6	156	27.8	11.2
5	121	37.2	209	45.3	−27 14.4	268	38.5	−12 50.7	155	54.9	−14 53.5	171	30.2	−19 11.2
6	136	39.7	224	45.1	−27 14.4	283	39.3	−12 51.3	170	57.2	−14 53.5	186	32.5	−19 11.1
7	151	42.2	239	44.9	14.4	298	40.2	51.9	185	59.5	53.4	201	34.9	11.1
8	166	44.6	254	44.8	14.4	313	41.0	52.5	201	01.8	53.3	216	37.2	11.1
9	181	47.1	269	44.6	14.4	328	41.9	53.1	216	04.1	53.3	231	39.6	11.1
10	196	49.6	284	44.5	14.4	343	42.7	53.7	231	06.4	53.2	246	41.9	11.0
11	211	52.0	299	44.3	−27 14.3	358	43.5	−12 54.2	246	08.7	−14 53.2	261	44.3	−19 11.0
12	226	54.5	314	44.1	−27 14.3	13	44.4	−12 54.8	261	11.1	−14 53.1	276	46.6	−19 11.0
13	241	56.9	329	44.0	14.3	28	45.2	55.4	276	13.4	53.0	291	48.9	10.9
14	256	59.4	344	43.8	14.3	43	46.0	56.0	291	15.7	53.0	306	51.3	10.9
15	272	01.9	359	43.7	14.2	58	46.9	56.6	306	18.0	52.9	321	53.6	10.9
16	287	04.3	14	43.5	14.2	73	47.7	57.1	321	20.3	52.9	336	56.0	10.8
17	302	06.8	29	43.4	−27 14.2	88	48.5	−12 57.7	336	22.6	−14 52.8	351	58.3	−19 10.8
18	317	09.3	44	43.2	−27 14.2	103	49.4	−12 58.3	351	24.9	−14 52.7	7	00.7	−19 10.8
19	332	11.7	59	43.1	14.1	118	50.2	58.9	6	27.2	52.7	22	03.0	10.8
20	347	14.2	74	42.9	14.1	133	51.1	−12 59.5	21	29.5	52.6	37	05.4	10.7
21	2	16.7	89	42.8	14.1	148	51.9	−13 00.1	36	31.8	52.5	52	07.7	10.7
22	17	19.1	104	42.6	14.1	163	52.7	00.6	51	34.1	52.5	67	10.1	10.7
23	32	21.6	119	42.5	14.0	178	53.6	01.2	66	36.4	52.4	82	12.4	10.6
24	47	24.1	134	42.3	−27 14.0	193	54.4	−13 01.8	81	38.7	−14 52.4	97	14.8	−19 10.6
Dif	—			−2	0		+8	−6		+23	+1		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 3^{d}.1		PHE	4^{h}: 60′.4								
	PMG: 11^{h} 43^{m}.8		SD: 16′.5			12^{h}: 60′.2								
			PMG: 15^{h} 27^{m}			20^{h}: 60′.0								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	184 04.3	−16 34.0	138 07.3	25	−25 53.3	31	**60 N**	15 46	16 33	17 24	13 20	51	17 34	80
1	199 04.2	34.7	152 28.8	25	56.4	29	**58**	15 56	40	27	12 52	54	18 02	77
2	214 04.2	35.5	166 50.3	26	−25 59.3	27	**56**	16 05	46	30	30	55	24	75
3	229 04.1	36.2	181 11.9	26	−26 02.0	25	**54**	12	51	33	12 12	57	42	73
4	244 04.1	36.9	195 33.4	25	04.5	24	**52**	19	16 56	36	11 57	57	18 57	72
5	259 04.0	−16 37.6	209 55.0	26	−26 06.9	21	**50**	16 25	17 00	17 39	11 43	59	19 11	71
6	274 04.0	−16 38.4	224 16.5	25	−26 09.0	19	**45**	16 39	17 10	17 45	11 16	60	19 38	69
7	289 04.0	39.1	238 38.1	26	10.9	18	**40**	50	18	51	10 54	61	20 00	67
8	304 03.9	39.8	252 59.7	26	12.7	15	**35**	16 59	26	17 56	37	61	17	67
9	319 03.9	40.5	267 21.3	26	14.2	14	**30**	17 08	33	18 01	10 21	62	33	66
10	334 03.8	41.2	281 42.9	26	15.6	11	**20**	22	45	12	9 55	62	20 59	64
11	349 03.8	−16 42.0	296 04.6	27	−26 16.7	10	**10 N**	17 35	17 57	18 22	9 33	62	21 21	63
12	4 03.7	−16 42.7	310 26.3	27	−26 17.7	8	**0**	17 47	18 09	18 34	9 12	63	21 42	62
13	19 03.7	43.4	324 48.0	27	18.5	6	**10 S**	18 00	22	18 47	8 51	64	22 03	61
14	34 03.6	44.1	339 09.7	27	19.1	4	**20**	13	36	19 04	29	64	25	59
15	49 03.6	44.8	353 31.5	28	19.5	2	**30**	28	18 54	24	8 03	64	22 51	57
16	64 03.5	45.6	7 53.3	28	19.7	0	**35**	37	19 04	38	7 48	64	23 06	57
17	79 03.5	−16 46.3	22 15.2	29	−26 19.7	2	**40**	18 47	19 17	19 54	7 30	65	23 24	55
18	94 03.4	−16 47.0	36 37.1	29	−26 19.5	4	**45**	18 59	19 32	20 14	7 09	65	23 45	53
19	109 03.4	47.7	50 59.0	29	19.1	5	**50**	19 14	19 52	41	6 43	65	** **	**
20	124 03.3	48.4	65 21.0	30	18.6	8	**52**	21	20 01	20 55	30	65	** **	**
21	139 03.3	49.2	79 43.0	30	17.8	9	**54**	29	12	21 11	6 15	65	** **	**
22	154 03.2	49.9	94 05.1	31	16.9	12	**56**	37	24	31	5 58	65	** **	**
23	169 03.2	50.6	108 27.3	32	15.7	13	**58**	47	38	21 57	37	65	0 10	68
24	184 03.1	−16 51.3	122 49.5	32	−26 14.4		**60 S**	19 58	20 55	22 38	5 11	65	0 36	68

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.6		Mag: +1.6		Mag: −2.5		Mag: +0.6	
	20^{h} 47^{m}.0	PMG: 15^{h} 01^{m}		PMG: 11^{h} 04^{m}		PMG: 18^{h} 31^{m}		PMG: 17^{h} 28^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	47 24.1	134 42.3	−27 14.0	193 54.4	−13 01.8	81 38.7	−14 52.4	97 14.8	−19 10.6
1	62 26.5	149 42.2	14.0	208 55.2	02.4	96 41.0	52.3	112 17.1	10.6
2	77 29.0	164 42.0	13.9	223 56.1	03.0	111 43.3	52.2	127 19.5	10.5
3	92 31.4	179 41.9	13.9	238 56.9	03.5	126 45.6	52.2	142 21.8	10.5
4	107 33.9	194 41.8	13.9	253 57.7	04.1	141 47.9	52.1	157 24.2	10.5
5	122 36.4	209 41.6	−27 13.8	268 58.6	−13 04.7	156 50.2	−14 52.1	172 26.5	−19 10.5
6	137 38.8	224 41.5	−27 13.8	283 59.4	−13 05.3	171 52.5	−14 52.0	187 28.8	−19 10.4
7	152 41.3	239 41.3	13.8	299 00.2	05.9	186 54.8	51.9	202 31.2	10.4
8	167 43.8	254 41.2	13.7	314 01.1	06.5	201 57.1	51.9	217 33.5	10.4
9	182 46.2	269 41.1	13.7	329 01.9	07.0	216 59.4	51.8	232 35.9	10.3
10	197 48.7	284 40.9	13.6	344 02.7	07.6	232 01.7	51.7	247 38.2	10.3
11	212 51.2	299 40.8	−27 13.6	359 03.6	−13 08.2	247 03.9	−14 51.7	262 40.6	−19 10.3
12	227 53.6	314 40.7	−27 13.5	14 04.4	−13 08.8	262 06.2	−14 51.6	277 42.9	−19 10.2
13	242 56.1	329 40.5	13.5	29 05.2	09.4	277 08.5	51.6	292 45.3	10.2
14	257 58.6	344 40.4	13.5	44 06.1	09.9	292 10.8	51.5	307 47.6	10.2
15	273 01.0	359 40.3	13.4	59 06.9	10.5	307 13.1	51.4	322 50.0	10.2
16	288 03.5	14 40.2	13.4	74 07.7	11.1	322 15.4	51.4	337 52.3	10.1
17	303 05.9	29 40.0	−27 13.3	89 08.6	−13 11.7	337 17.7	−14 51.3	352 54.6	−19 10.1
18	318 08.4	44 39.9	−27 13.3	104 09.4	−13 12.2	352 20.0	−14 51.2	7 57.0	−19 10.1
19	333 10.9	59 39.8	13.2	119 10.2	12.8	7 22.3	51.2	22 59.3	10.0
20	348 13.3	74 39.7	13.2	134 11.0	13.4	22 24.6	51.1	38 01.7	10.0
21	3 15.8	89 39.5	13.1	149 11.9	14.0	37 26.9	51.0	53 04.0	10.0
22	18 18.3	104 39.4	13.1	164 12.7	14.6	52 29.2	51.0	68 06.4	09.9
23	33 20.7	119 39.3	13.0	179 13.5	15.1	67 31.5	50.9	83 08.7	09.9
24	48 23.2	134 39.2	−27 13.0	194 14.4	−13 15.7	82 33.8	−14 50.9	98 11.0	−19 09.9
Dif	—	−1	0	+8	−6	+23	+1	+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 4ᵈ.1		PHE	4ʰ: 59′.7									
	PMG: 11ʰ 43ᵐ.8				SD: 16′.3			12ʰ: 59′.5									
					PMG: 16ʰ 30ᵐ			20ʰ: 59′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	184	03.1	−16	51.3	122	49.5	−26	14.4		**60 N**	6 05	6 56	7 43	14 11	25	18 54	97
1	199	03.1		52.0	137	11.7 32		12.9	15	**58**	6 01	49	33	13 46	31	19 19	90
2	214	03.0		52.7	151	34.1 34		11.3	16	**56**	5 58	43	24	25	36	39	86
3	229	03.0		53.4	165	56.5 34		09.4	19	**54**	55	38	16	13 09	38	19 55	83
4	244	02.9		54.2	180	18.9 34		07.4	20	**52**	52	33	09	12 54	41	20 09	80
5	259	02.9	−16	54.9	194	41.4 35	−26	05.1	23	**50**	5 49	6 28	7 03	12 42	42	20 22	78
6	274	02.8	−16	55.6	209	04.0 36	−26	02.7	24	**45**	5 43	6 18	6 50	12 16	46	20 47	74
7	289	02.8		56.3	223	26.7 37	−26	00.1	26	**40**	37	10	38	11 55	49	21 07	71
8	304	02.7		57.0	237	49.4 37	−25	57.4	27	**35**	32	6 02	29	38	51	24	69
9	319	02.7		57.7	252	12.3 39		54.4	30	**30**	27	5 55	20	11 23	52	21 39	66
10	334	02.6		58.4	266	35.2 39		51.3	31	**20**	16	43	6 06	10 57	56	22 03	63
11	349	02.5	−16	59.1	280	58.1 39	−25	48.0	33	**10 N**	5 05	5 31	5 53	10 35	58	22 24	61
12	4	02.5	−16	59.8	295	21.2 41	−25	44.6	34	**0**	4 54	5 19	5 40	10 15	60	22 44	58
13	19	02.4	−17	00.5	309	44.3 41		40.9	37	**10 S**	40	5 06	28	9 55	61	23 04	54
14	34	02.4		01.3	324	07.6 43		37.1	38	**20**	24	4 51	5 15	33	63	24	52
15	49	02.3		02.0	338	30.9 43		33.1	40	**30**	4 03	34	4 59	9 07	67	23 48	49
16	64	02.3		02.7	352	54.3 44		29.0	41	**35**	3 50	23	50	8 52	68	** **	**
17	79	02.2	−17	03.4	7	17.8 45	−25	24.7	43	**40**	3 33	4 10	4 40	8 35	70	** **	**
18	94	02.1	−17	04.1	21	41.4 46	−25	20.2	45	**45**	3 13	3 55	4 28	8 14	72	** **	**
19	109	02.1		04.8	36	05.1 47		15.6	46	**50**	2 46	35	13	7 48	75	0 12	50
20	124	02.0		05.5	50	28.8 47		10.8	48	**52**	32	26	4 06	35	76	25	49
21	139	02.0		06.2	64	52.7 49		05.8	50	**54**	2 16	15	3 58	20	79	39	48
22	154	01.9		06.9	79	16.7 50	−25	00.7	51	**56**	1 56	3 03	50	7 03	81	0 57	45
23	169	01.9		07.6	93	40.8 51	−24	55.4	53	**58**	1 30	2 49	40	6 42	85	1 18	42
24	184	01.8	−17	08.3	108	04.9 51	−24	49.9	55	**60 S**	0 49	2 31	3 29	6 16	90	1 44	37

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.5			Mag: +0.6		
	20ʰ 43ᵐ.1		PMG: 15ʰ 01ᵐ			PMG: 11ʰ 02ᵐ			PMG: 18ʰ 27ᵐ			PMG: 17ʰ 25ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	48	23.2	134	39.2	−27 13.0	194	14.4	−13 15.7	82	33.8	−14 50.9	98	11.0	−19 09.9
1	63	25.7	149	39.1	12.9	209	15.2	16.3	97	36.1	50.8	113	13.4	09.9
2	78	28.1	164	39.0	12.8	224	16.0	16.9	112	38.4	50.7	128	15.7	09.8
3	93	30.6	179	38.8	12.8	239	16.9	17.4	127	40.6	50.7	143	18.1	09.8
4	108	33.1	194	38.7	12.7	254	17.7	18.0	142	42.9	50.6	158	20.4	09.8
5	123	35.5	209	38.6	−27 12.7	269	18.5	−13 18.6	157	45.2	−14 50.5	173	22.8	−19 09.7
6	138	38.0	224	38.5	−27 12.6	284	19.3	−13 19.2	172	47.5	−14 50.5	188	25.1	−19 09.7
7	153	40.4	239	38.4	12.5	299	20.2	19.8	187	49.8	50.4	203	27.4	09.7
8	168	42.9	254	38.3	12.5	314	21.0	20.3	202	52.1	50.3	218	29.8	09.6
9	183	45.4	269	38.2	12.4	329	21.8	20.9	217	54.4	50.3	233	32.1	09.6
10	198	47.8	284	38.1	12.3	344	22.7	21.5	232	56.7	50.2	248	34.5	09.6
11	213	50.3	299	38.0	−27 12.3	359	23.5	−13 22.1	247	59.0	−14 50.1	263	36.8	−19 09.5
12	228	52.8	314	37.9	−27 12.2	14	24.3	−13 22.6	263	01.3	−14 50.1	278	39.1	−19 09.5
13	243	55.2	329	37.8	12.1	29	25.1	23.2	278	03.5	50.0	293	41.5	09.5
14	258	57.7	344	37.7	12.1	44	26.0	23.8	293	05.8	49.9	308	43.8	09.4
15	274	00.2	359	37.5	12.0	59	26.8	24.4	308	08.1	49.9	323	46.2	09.4
16	289	02.6	14	37.4	11.9	74	27.6	24.9	323	10.4	49.8	338	48.5	09.4
17	304	05.1	29	37.4	−27 11.9	89	28.5	−13 25.5	338	12.7	−14 49.7	353	50.8	−19 09.4
18	319	07.5	44	37.3	−27 11.8	104	29.3	−13 26.1	353	15.0	−14 49.7	8	53.2	−19 09.3
19	334	10.0	59	37.2	11.7	119	30.1	26.7	8	17.3	49.6	23	55.5	09.3
20	349	12.5	74	37.1	11.6	134	30.9	27.2	23	19.6	49.5	38	57.9	09.3
21	4	14.9	89	37.0	11.6	149	31.8	27.8	38	21.8	49.5	54	00.2	09.2
22	19	17.4	104	36.9	11.5	164	32.6	28.4	53	24.1	49.4	69	02.5	09.2
23	34	19.9	119	36.8	11.4	179	33.4	29.0	68	26.4	49.3	84	04.9	09.2
24	49	22.3	134	36.7	−27 11.3	194	34.2	−13 29.5	83	28.7	−14 49.3	99	07.2	−19 09.1
Dif	—			−1	+1		+8	−6		+23	+1		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 5^{d}.1		PHE	4^{h}: 58′.9								
	PMG: 11^{h} 43^{m}.9		SD: 16′.1			12^{h}: 58′.7								
			PMG: 17^{h} 28^{m}			20^{h}: 58′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	184 01.8	−17 08.3	108 04.9	53	−24 49.9	56	**60 N**	15 41	16 29	17 20	14 36	12	20 31	98
1	199 01.7	09.0	122 29.2	54	44.3	57	**58**	15 52	36	24	17	18	20 49	93
2	214 01.7	09.7	136 53.6	55	38.6	59	**56**	16 01	42	27	14 01	22	21 05	88
3	229 01.6	10.4	151 18.1	56	32.7	61	**54**	09	48	30	13 47	25	18	85
4	244 01.5	11.1	165 42.7	56	26.6	62	**52**	16	53	33	35	28	29	82
5	259 01.5	−17 11.8	180 07.3	56	−24 20.4	62	**50**	16 22	16 57	17 36	13 24	31	21 40	79
6	274 01.4	−17 12.5	194 32.1	58	−24 14.1	63	**45**	16 36	17 08	17 43	13 02	35	22 01	74
7	289 01.4	13.2	208 57.1	60	07.6	65	**40**	48	17	49	12 44	39	18	70
8	304 01.3	13.9	223 22.1	60	−24 00.9	67	**35**	16 58	24	17 55	29	42	33	67
9	319 01.2	14.6	237 47.2	61	−23 54.1	68	**30**	17 07	32	18 00	12 15	45	22 45	65
10	334 01.2	15.3	252 12.4	62	47.2	69	**20**	22	45	11	11 53	48	23 06	60
11	349 01.1	−17 16.0	266 37.8	64	−23 40.1	71	**10 N**	17 35	17 57	18 22	11 33	52	23 25	56
12	4 01.0	−17 16.7	281 03.3	65	−23 32.9	72	**0**	17 47	18 09	18 34	11 15	55	23 42	52
13	19 01.0	17.4	295 28.8	65	25.6	73	**10 S**	18 00	22	18 48	10 56	58	23 58	50
14	34 00.9	18.1	309 54.5	67	18.1	75	**20**	14	37	19 05	36	62	** **	**
15	49 00.9	18.8	324 20.3	68	10.5	76	**30**	30	18 55	26	14	65	** **	**
16	64 00.8	19.5	338 46.2	69	−23 02.8	77	**35**	39	19 07	40	10 00	68	0 03	46
17	79 00.7	−17 20.2	353 12.2	70	−22 54.9	79	**40**	18 50	19 20	19 57	9 45	70	0 19	44
18	94 00.7	−17 20.9	7 38.4	72	−22 46.9	80	**45**	19 02	19 35	20 18	9 26	74	0 38	41
19	109 00.6	21.6	22 04.6	72	38.8	81	**50**	17	19 56	20 46	9 03	79	1 02	37
20	124 00.5	22.3	36 31.0	74	30.5	83	**52**	25	20 05	21 00	8 51	82	14	34
21	139 00.5	22.9	50 57.5	75	22.1	84	**54**	33	16	17	39	84	27	31
22	154 00.4	23.6	65 24.1	76	13.6	85	**56**	42	29	21 39	24	88	1 42	28
23	169 00.3	24.3	79 50.8	77	−22 05.0	86	**58**	19 52	20 44	22 07	8 07	92	2 00	24
24	184 00.2	−17 25.0	94 17.6	78	−21 56.3	87	**60 S**	20 04	21 02	22 57	7 46	98	2 21	19

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.7		Mag: +1.6		Mag: −2.5		Mag: +0.6	
	20^{h} 39^{m}.1	PMG: 15^{h} 02^{m}		PMG: 11^{h} 01^{m}		PMG: 18^{h} 23^{m}		PMG: 17^{h} 21^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	49 22.3	134 36.7	−27 11.3	194 34.2	−13 29.5	83 28.7	−14 49.3	99 07.2	−19 09.1
1	64 24.8	149 36.6	11.3	209 35.1	30.1	98 31.0	49.2	114 09.6	09.1
2	79 27.3	164 36.5	11.2	224 35.9	30.7	113 33.3	49.1	129 11.9	09.1
3	94 29.7	179 36.4	11.1	239 36.7	31.3	128 35.5	49.1	144 14.2	09.0
4	109 32.2	194 36.3	11.0	254 37.5	31.8	143 37.8	49.0	159 16.6	09.0
5	124 34.7	209 36.3	−27 10.9	269 38.4	−13 32.4	158 40.1	−14 48.9	174 18.9	−19 09.0
6	139 37.1	224 36.2	−27 10.9	284 39.2	−13 33.0	173 42.4	−14 48.9	189 21.3	−19 08.9
7	154 39.6	239 36.1	10.8	299 40.0	33.6	188 44.7	48.8	204 23.6	08.9
8	169 42.0	254 36.0	10.7	314 40.8	34.1	203 47.0	48.7	219 25.9	08.9
9	184 44.5	269 35.9	10.6	329 41.7	34.7	218 49.2	48.7	234 28.3	08.8
10	199 47.0	284 35.9	10.5	344 42.5	35.3	233 51.5	48.6	249 30.6	08.8
11	214 49.4	299 35.8	−27 10.4	359 43.3	−13 35.8	248 53.8	−14 48.5	264 32.9	−19 08.8
12	229 51.9	314 35.7	−27 10.3	14 44.1	−13 36.4	263 56.1	−14 48.5	279 35.3	−19 08.8
13	244 54.4	329 35.6	10.2	29 45.0	37.0	278 58.4	48.4	294 37.6	08.7
14	259 56.8	344 35.6	10.1	44 45.8	37.6	294 00.6	48.3	309 39.9	08.7
15	274 59.3	359 35.5	10.1	59 46.6	38.1	309 02.9	48.3	324 42.3	08.7
16	290 01.8	14 35.4	10.0	74 47.4	38.7	324 05.2	48.2	339 44.6	08.6
17	305 04.2	29 35.3	−27 09.9	89 48.2	−13 39.3	339 07.5	−14 48.1	354 47.0	−19 08.6
18	320 06.7	44 35.3	−27 09.8	104 49.1	−13 39.8	354 09.8	−14 48.1	9 49.3	−19 08.6
19	335 09.2	59 35.2	09.7	119 49.9	40.4	9 12.0	48.0	24 51.6	08.5
20	350 11.6	74 35.1	09.6	134 50.7	41.0	24 14.3	47.9	39 54.0	08.5
21	5 14.1	89 35.1	09.5	149 51.5	41.6	39 16.6	47.9	54 56.3	08.5
22	20 16.5	104 35.0	09.4	164 52.3	42.1	54 18.9	47.8	69 58.6	08.4
23	35 19.0	119 35.0	09.3	179 53.2	42.7	69 21.2	47.7	85 01.0	08.4
24	50 21.5	134 34.9	−27 09.2	194 54.0	−13 43.3	84 23.4	−14 47.7	100 03.3	−19 08.4
Dif	—	−1	+1	+8	−6	+23	+1	+23	0

UT	SOL SD: 16′.2 PMG: 11h 44m.0				LUNA Edad: 6d.1 SD: 15′.9 PMG: 18h 22m PHE: 4h: 58′.1; 12h: 57′.9; 20h: 57′.6 Rº: 49m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	184	00.2	−17	25.0	94	17.6	−21	56.3	**60 N**	6 09	7 00	7 48	14 48	7	22 09	94
1	199	00.2		25.7	108	44.6 80		47.4 89	**58**	05	6 53	38	35	11	22	89
2	214	00.1		26.4	123	11.7 81		38.4 90	**56**	6 02	47	28	23	15	33	85
3	229	00.0		27.1	137	38.8 81		29.3 91	**54**	5 58	41	20	12	18	43	82
4	244	00.0		27.8	152	06.1 83		20.1 92	**52**	55	36	13	14 03	21	51	80
5	258	59.9	−17	28.5	166	33.5 84	−21	10.8 93	**50**	5 52	6 31	7 06	13 55	23	22 59	77
6	273	59.8	−17	29.1	181	01.1 86	−21	01.4 94	**45**	5 46	6 21	6 52	13 37	28	23 15	72
7	288	59.8		29.8	195	28.7 86	−20	51.9 95	**40**	39	12	41	23	32	28	68
8	303	59.7		30.5	209	56.4 87		42.3 96	**35**	34	6 04	31	11	35	40	64
9	318	59.6		31.2	224	24.3 89		32.5 98	**30**	28	5 57	22	13 00	38	23 50	61
10	333	59.5		31.9	238	52.3 90		22.7 98	**20**	17	44	6 07	12 41	43	** **	**
11	348	59.5	−17	32.6	253	20.4 91	−20	12.7 100	**10 N**	5 06	5 31	5 53	12 25	46	** **	**
12	3	59.4	−17	33.3	267	48.6 92	−20	02.7 100	**0**	4 54	5 19	5 41	12 10	50	** **	**
13	18	59.3		33.9	282	16.9 93	−19	52.6 101	**10 S**	40	5 06	28	11 54	54	** **	**
14	33	59.3		34.6	296	45.3 94		42.3 103	**20**	23	4 51	5 14	38	58	0 16	46
15	48	59.2		35.3	311	13.9 96		32.0 103	**30**	4 01	32	4 58	19	63	37	41
16	63	59.1		36.0	325	42.5 96		21.6 104	**35**	3 48	21	49	11 08	66	0 49	38
17	78	59.0	−17	36.7	340	11.3 98	−19	11.1 105	**40**	3 31	4 08	4 38	10 55	69	1 03	35
18	93	59.0	−17	37.4	354	40.2 99	−19	00.5 106	**45**	3 10	3 52	4 25	10 40	73	1 19	31
19	108	58.9		38.0	9	09.1 99	−18	49.8 107	**50**	2 42	32	10	22	78	39	26
20	123	58.8		38.7	23	38.2 101		39.0 108	**52**	27	22	4 03	13	80	48	24
21	138	58.7		39.4	38	07.4 102		28.1 109	**54**	2 10	3 11	3 55	10 03	83	1 58	22
22	153	58.6		40.1	52	36.7 103		17.2 109	**56**	1 49	2 58	46	9 52	86	2 10	19
23	168	58.6		40.7	67	06.1 104	−18	06.1 111	**58**	1 20	43	35	39	91	24	14
24	183	58.5	−17	41.4	81	35.7 106	−17	55.0 111	**60 S**	0 31	2 25	3 24	9 24	95	2 40	9

UT	ARIES PMG 20h 35m.2		VENUS Mag: −4.7 PMG: 15h 02m			MARTE Mag: +1.6 PMG: 11h 00m			JÚPITER Mag: −2.5 PMG: 18h 20m			SATURNO Mag: +0.7 PMG: 17h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	50	21.5	134	34.9	−27 09.2	194	54.0	−13 43.3	84	23.4	−14 47.7	100	03.3	−19 08.4
1	65	23.9	149	34.8	09.1	209	54.8	43.8	99	25.7	47.6	115	05.6	08.3
2	80	26.4	164	34.8	09.0	224	55.6	44.4	114	28.0	47.5	130	08.0	08.3
3	95	28.9	179	34.7	08.9	239	56.5	45.0	129	30.3	47.4	145	10.3	08.3
4	110	31.3	194	34.7	08.8	254	57.3	45.5	144	32.5	47.4	160	12.6	08.2
5	125	33.8	209	34.6	−27 08.7	269	58.1	−13 46.1	159	34.8	−14 47.3	175	15.0	−19 08.2
6	140	36.3	224	34.6	−27 08.6	284	58.9	−13 46.7	174	37.1	−14 47.2	190	17.3	−19 08.2
7	155	38.7	239	34.5	08.4	299	59.7	47.3	189	39.4	47.2	205	19.6	08.1
8	170	41.2	254	34.5	08.3	315	00.6	47.8	204	41.6	47.1	220	22.0	08.1
9	185	43.7	269	34.4	08.2	330	01.4	48.4	219	43.9	47.0	235	24.3	08.1
10	200	46.1	284	34.4	08.1	345	02.2	49.0	234	46.2	47.0	250	26.6	08.0
11	215	48.6	299	34.3	−27 08.0	0	03.0	−13 49.5	249	48.5	−14 46.9	265	29.0	−19 08.0
12	230	51.0	314	34.3	−27 07.9	15	03.8	−13 50.1	264	50.7	−14 46.8	280	31.3	−19 08.0
13	245	53.5	329	34.2	07.8	30	04.6	50.7	279	53.0	46.7	295	33.6	07.9
14	260	56.0	344	34.2	07.7	45	05.5	51.2	294	55.3	46.7	310	36.0	07.9
15	275	58.4	359	34.1	07.5	60	06.3	51.8	309	57.6	46.6	325	38.3	07.9
16	291	00.9	14	34.1	07.4	75	07.1	52.4	324	59.8	46.5	340	40.6	07.8
17	306	03.4	29	34.1	−27 07.3	90	07.9	−13 52.9	340	02.1	−14 46.5	355	43.0	−19 07.8
18	321	05.8	44	34.0	−27 07.2	105	08.7	−13 53.5	355	04.4	−14 46.4	10	45.3	−19 07.8
19	336	08.3	59	34.0	07.1	120	09.6	54.1	10	06.6	46.3	25	47.6	07.7
20	351	10.8	74	33.9	07.0	135	10.4	54.6	25	08.9	46.2	40	50.0	07.7
21	6	13.2	89	33.9	06.8	150	11.2	55.2	40	11.2	46.2	55	52.3	07.7
22	21	15.7	104	33.9	06.7	165	12.0	55.8	55	13.5	46.1	70	54.6	07.6
23	36	18.1	119	33.8	06.6	180	12.8	56.3	70	15.7	46.0	85	57.0	07.6
24	51	20.6	134	33.8	−27 06.5	195	13.6	−13 56.9	85	18.0	−14 46.0	100	59.3	−19 07.6
Dif	—		0		+1	+8		−6	+23		+1	+23		0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 7^{d}.1		PHE	4^{h}: 57′.3								
	PMG: 11^{h} 44^{m}.2				SD: 15′.6			12^{h}: 57′.1								
					PMG: 19^{h} 11^{m}			20^{h}: 56′.8								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	183	58.5	−17	41.4	81	35.7	−17	55.0	**60 N**	15 37	16 25	17 16	14 55	4	23 43	89
1	198	58.4		42.1	96	05.3^{106}		43.8^{112}	**58**	48	32	20	46	8	51	85
2	213	58.3		42.8	110	35.0^{107}		32.5^{113}	**56**	15 57	39	24	38	11	23 58	82
3	228	58.3		43.5	125	04.8^{108}		21.2^{113}	**54**	16 05	45	28	30	14	** **	**
4	243	58.2		44.1	139	34.8^{110}	−17	09.8^{114}	**52**	13	50	31	24	16	** **	**
5	258	58.1	−17	44.8	154	04.8^{110}	−16	58.3^{115}	**50**	16 20	16 55	17 34	14 18	18	** **	**
6	273	58.0	−17	45.5	168	35.0^{112}	−16	46.7^{116}	**45**	16 34	17 06	17 41	14 05	23	** **	**
7	288	57.9		46.2	183	05.2^{112}		35.1^{116}	**40**	46	15	47	13 55	27	** **	**
8	303	57.9		46.8	197	35.5^{113}		23.3^{118}	**35**	16 56	23	54	46	30	** **	**
9	318	57.8		47.5	212	06.0^{115}	−16	11.6^{117}	**30**	17 05	31	17 59	38	33	** **	**
10	333	57.7		48.2	226	36.5^{115}	−15	59.7^{119}	**20**	21	44	18 11	24	38	0 06	57
11	348	57.6	−17	48.8	241	07.1^{116}	−15	47.8^{119}	**10 N**	17 35	17 57	18 22	13 11	43	0 21	52
12	3	57.5	−17	49.5	255	37.9^{118}	−15	35.8^{120}	**0**	17 48	18 09	18 35	13 00	46	0 34	49
13	18	57.5		50.2	270	08.7^{118}		23.8^{120}	**10 S**	18 01	23	18 49	12 48	51	0 48	44
14	33	57.4		50.9	284	39.6^{119}	−15	11.7^{121}	**20**	15	38	19 06	36	55	1 02	40
15	48	57.3		51.5	299	10.6^{120}	−14	59.5^{122}	**30**	31	18 57	28	22	60	18	35
16	63	57.2		52.2	313	41.7^{121}		47.3^{122}	**35**	41	19 09	42	14	62	27	33
17	78	57.1	−17	52.9	328	12.9^{122}	−14	35.0^{123}	**40**	18 52	19 22	19 59	12 04	66	1 38	29
18	93	57.0	−17	53.5	342	44.2^{123}	−14	22.7^{123}	**45**	19 05	19 39	20 21	11 53	70	1 50	26
19	108	57.0		54.2	357	15.5^{123}	−14	10.3^{124}	**50**	21	19 59	20 50	40	75	2 05	21
20	123	56.9		54.9	11	47.0^{125}	−13	57.8^{125}	**52**	28	20 09	21 05	33	78	12	19
21	138	56.8		55.5	26	18.5^{125}		45.3^{125}	**54**	37	21	23	26	80	20	16
22	153	56.7		56.2	40	50.2^{127}		32.8^{125}	**56**	46	34	21 46	18	84	29	13
23	168	56.6		56.9	55	21.9^{127}		20.2^{126}	**58**	19 57	20 50	22 18	11 10	86	38	10
24	183	56.5	−17	57.5	69	53.7^{128}	−13	07.5^{127}	**60 S**	20 09	21 09	** **	10 59	91	2 49	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.5			Mag: +0.7		
	20^{h} 31^{m}.3		PMG: 15^{h} 02^{m}			PMG: 10^{h} 58^{m}			PMG: 18^{h} 16^{m}			PMG: 17^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	51	20.6	134	33.8	−27 06.5	195	13.6	−13 56.9	85	18.0	−14 46.0	100	59.3	−19 07.6
1	66	23.1	149	33.8	06.3	210	14.5	57.5	100	20.3	45.9	116	01.6	07.5
2	81	25.5	164	33.8	06.2	225	15.3	58.0	115	22.5	45.8	131	04.0	07.5
3	96	28.0	179	33.7	06.1	240	16.1	58.6	130	24.8	45.7	146	06.3	07.5
4	111	30.5	194	33.7	06.0	255	16.9	59.2	145	27.1	45.7	161	08.6	07.4
5	126	32.9	209	33.7	−27 05.8	270	17.7	−13 59.7	160	29.3	−14 45.6	176	10.9	−19 07.4
6	141	35.4	224	33.7	−27 05.7	285	18.5	−14 00.3	175	31.6	−14 45.5	191	13.3	−19 07.4
7	156	37.9	239	33.6	05.6	300	19.3	00.9	190	33.9	45.5	206	15.6	07.3
8	171	40.3	254	33.6	05.4	315	20.2	01.4	205	36.1	45.4	221	17.9	07.3
9	186	42.8	269	33.6	05.3	330	21.0	02.0	220	38.4	45.3	236	20.3	07.3
10	201	45.3	284	33.6	05.2	345	21.8	02.6	235	40.7	45.2	251	22.6	07.2
11	216	47.7	299	33.6	−27 05.0	0	22.6	−14 03.1	250	42.9	−14 45.2	266	24.9	−19 07.2
12	231	50.2	314	33.6	−27 04.9	15	23.4	−14 03.7	265	45.2	−14 45.1	281	27.3	−19 07.2
13	246	52.6	329	33.6	04.8	30	24.2	04.2	280	47.5	45.0	296	29.6	07.1
14	261	55.1	344	33.5	04.6	45	25.0	04.8	295	49.7	44.9	311	31.9	07.1
15	276	57.6	359	33.5	04.5	60	25.9	05.4	310	52.0	44.9	326	34.2	07.1
16	292	00.0	14	33.5	04.4	75	26.7	05.9	325	54.3	44.8	341	36.6	07.0
17	307	02.5	29	33.5	−27 04.2	90	27.5	−14 06.5	340	56.5	−14 44.7	356	38.9	−19 07.0
18	322	05.0	44	33.5	−27 04.1	105	28.3	−14 07.1	355	58.8	−14 44.6	11	41.2	−19 07.0
19	337	07.4	59	33.5	03.9	120	29.1	07.6	11	01.1	44.6	26	43.6	06.9
20	352	09.9	74	33.5	03.8	135	29.9	08.2	26	03.3	44.5	41	45.9	06.9
21	7	12.4	89	33.5	03.7	150	30.7	08.8	41	05.6	44.4	56	48.2	06.8
22	22	14.8	104	33.5	03.5	165	31.5	09.3	56	07.9	44.4	71	50.5	06.8
23	37	17.3	119	33.5	03.4	180	32.4	09.9	71	10.1	44.3	86	52.9	06.8
24	52	19.8	134	33.5	−27 03.2	195	33.2	−14 10.4	86	12.4	−14 44.2	101	55.2	−19 06.7
Dif	—			0	+1		+8	−6		+23	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 44m.3				LUNA Edad: 8d.1 SD: 15′.4 PMG: 19h 57m PHE: 4h: 56′.6; 12h: 56′.4; 20h: 56′.2 Rº: 43m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	56.5	−17	57.5	69	53.7	−13	07.5	**60 N**	6 13	7 05	7 53	14 59	3	** **	**
1	198	56.4		58.2	84	25.6 129	−12	54.8 127	**58**	09	6 57	42	54	6	** **	**
2	213	56.4		58.9	98	57.5 129		42.0 128	**56**	05	51	33	49	9	** **	**
3	228	56.3	−17	59.5	113	29.6 131		29.3 127	**54**	6 02	45	24	44	12	0 05	79
4	243	56.2	−18	00.2	128	01.7 131		16.4 129	**52**	5 58	39	17	40	14	11	76
5	258	56.1	−18	00.8	142	33.9 132	−12	03.5 129	**50**	5 55	6 34	7 10	14 36	16	0 16	74
6	273	56.0	−18	01.5	157	06.2 133	−11	50.6 129	**45**	5 48	6 23	6 55	14 28	21	0 27	69
7	288	55.9		02.2	171	38.5 133		37.6 130	**40**	41	14	43	22	24	36	65
8	303	55.8		02.8	186	10.9 134		24.6 130	**35**	35	6 06	33	16	27	44	62
9	318	55.7		03.5	200	43.4 135	−11	11.6 130	**30**	29	5 58	23	11	30	0 51	58
10	333	55.7		04.1	215	16.0 136	−10	58.5 131	**20**	18	45	6 08	14 02	35	1 03	53
11	348	55.6	−18	04.8	229	48.7 137	−10	45.4 131	**10 N**	5 06	5 32	5 54	13 54	39	1 13	49
12	3	55.5	−18	05.5	244	21.4 137	−10	32.3 131	**0**	4 54	5 19	5 41	13 46	44	1 23	44
13	18	55.4		06.1	258	54.2 138		19.1 132	**10 S**	39	5 05	28	39	47	32	41
14	33	55.3		06.8	273	27.0 138	−10	05.8 133	**20**	22	4 50	5 13	31	52	42	36
15	48	55.2		07.4	287	59.9 139	−9	52.6 132	**30**	4 00	31	4 57	22	57	1 53	32
16	63	55.1		08.1	302	32.9 140		39.3 133	**35**	3 46	19	47	16	60	2 00	28
17	78	55.0	−18	08.7	317	06.0 141	−9	26.0 133	**40**	3 29	4 06	4 36	13 10	64	2 07	26
18	93	54.9	−18	09.4	331	39.1 141	−9	12.7 133	**45**	3 07	3 49	4 23	13 03	68	2 16	21
19	108	54.8		10.0	346	12.3 142	−8	59.3 134	**50**	2 38	29	07	12 55	72	26	17
20	123	54.7		10.7	0	45.5 142		45.9 134	**52**	23	18	4 00	51	74	31	15
21	138	54.7		11.4	15	18.8 143		32.5 134	**54**	2 04	3 07	3 51	46	77	36	12
22	153	54.6		12.0	29	52.1 143		19.0 135	**56**	1 41	2 54	42	42	79	42	10
23	168	54.5		12.7	44	25.6 145	−8	05.5 135	**58**	1 10	38	31	36	83	48	7
24	183	54.4	−18	13.3	58	59.0 144	−7	52.0 135	**60 S**	** **	2 18	3 19	12 30	87	2 55	4

UT	ARIES PMG 20h 27m.3		VENUS Mag: −4.7 PMG: 15h 02m			MARTE Mag: +1.6 PMG: 10h 57m			JÚPITER Mag: −2.5 PMG: 18h 12m			SATURNO Mag: +0.7 PMG: 17h 10m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	52	19.8	134	33.5	−27 03.2	195	33.2	−14 10.4	86	12.4	−14 44.2	101	55.2	−19 06.7
1	67	22.2	149	33.5	03.1	210	34.0	11.0	101	14.6	44.1	116	57.5	06.7
2	82	24.7	164	33.5	02.9	225	34.8	11.6	116	16.9	44.1	131	59.9	06.7
3	97	27.1	179	33.5	02.8	240	35.6	12.1	131	19.2	44.0	147	02.2	06.6
4	112	29.6	194	33.5	02.6	255	36.4	12.7	146	21.4	43.9	162	04.5	06.6
5	127	32.1	209	33.6	−27 02.5	270	37.2	−14 13.2	161	23.7	−14 43.8	177	06.8	−19 06.6
6	142	34.5	224	33.6	−27 02.3	285	38.0	−14 13.8	176	26.0	−14 43.8	192	09.2	−19 06.5
7	157	37.0	239	33.6	02.2	300	38.8	14.4	191	28.2	43.7	207	11.5	06.5
8	172	39.5	254	33.6	02.0	315	39.7	14.9	206	30.5	43.6	222	13.8	06.5
9	187	41.9	269	33.6	01.9	330	40.5	15.5	221	32.7	43.5	237	16.1	06.4
10	202	44.4	284	33.6	01.7	345	41.3	16.1	236	35.0	43.5	252	18.5	06.4
11	217	46.9	299	33.6	−27 01.6	0	42.1	−14 16.6	251	37.3	−14 43.4	267	20.8	−19 06.4
12	232	49.3	314	33.7	−27 01.4	15	42.9	−14 17.2	266	39.5	−14 43.3	282	23.1	−19 06.3
13	247	51.8	329	33.7	01.3	30	43.7	17.7	281	41.8	43.2	297	25.4	06.3
14	262	54.2	344	33.7	01.1	45	44.5	18.3	296	44.0	43.2	312	27.8	06.3
15	277	56.7	359	33.7	00.9	60	45.3	18.9	311	46.3	43.1	327	30.1	06.2
16	292	59.2	14	33.8	00.8	75	46.1	19.4	326	48.5	43.0	342	32.4	06.2
17	308	01.6	29	33.8	−27 00.6	90	46.9	−14 20.0	341	50.8	−14 42.9	357	34.7	−19 06.1
18	323	04.1	44	33.8	−27 00.4	105	47.7	−14 20.5	356	53.1	−14 42.9	12	37.1	−19 06.1
19	338	06.6	59	33.8	00.3	120	48.6	21.1	11	55.3	42.8	27	39.4	06.1
20	353	09.0	74	33.9	−27 00.1	135	49.4	21.6	26	57.6	42.7	42	41.7	06.0
21	8	11.5	89	33.9	−27 00.0	150	50.2	22.2	41	59.8	42.6	57	44.0	06.0
22	23	14.0	104	33.9	−26 59.8	165	51.0	22.8	57	02.1	42.5	72	46.4	06.0
23	38	16.4	119	34.0	59.6	180	51.8	23.3	72	04.3	42.5	87	48.7	05.9
24	53	18.9	134	34.0	−26 59.5	195	52.6	−14 23.9	87	06.6	−14 42.4	102	51.0	−19 05.9
Dif	—			0	+2		+8	−6		+23	+1		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 9^{d}.1		PHE	4^{h}: 56′.0								
	PMG: 11^{h} 44^{m}.5				SD: 15′.3			12^{h}: 55′.8								
					PMG: 20^{h} 40^{m}			20^{h}: 55′.6								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	183	54.4	−18	13.3	58	59.0	−7	52.0	**60 N**	15 32	16 21	17 13	15 02	3	1 12	85
1	198	54.3		14.0	73	32.5^{145}		38.5^{135}	**58**	44	29	17	15 00	5	16	82
2	213	54.2		14.6	88	06.1^{146}		25.0^{135}	**56**	15 53	36	21	14 58	8	20	79
3	228	54.1		15.3	102	39.8^{147}	−7	11.4^{136}	**54**	16 02	42	25	56	10	24	76
4	243	54.0		15.9	117	13.4^{146}	−6	57.8^{136}	**52**	10	47	28	54	12	27	73
5	258	53.9	−18	16.6	131	47.2^{148}	−6	44.3^{135}	**50**	16 17	16 52	17 32	14 52	15	1 30	71
6	273	53.8	−18	17.2	146	21.0^{148}	−6	30.6^{137}	**45**	16 32	17 04	17 39	14 49	18	1 36	66
7	288	53.7		17.9	160	54.8^{148}		17.0^{136}	**40**	44	13	46	46	22	41	63
8	303	53.6		18.5	175	28.7^{149}	−6	03.4^{136}	**35**	16 55	22	52	43	26	46	59
9	318	53.5		19.1	190	02.6^{149}	−5	49.7^{137}	**30**	17 04	30	17 58	41	28	49	57
10	333	53.4		19.8	204	36.6^{150}		36.0^{137}	**20**	20	44	18 10	37	33	1 56	51
11	348	53.3	−18	20.4	219	10.6^{150}	−5	22.4^{136}	**10 N**	17 35	17 57	18 22	14 33	38	2 02	47
12	3	53.2	−18	21.1	233	44.7^{151}	−5	08.7^{137}	**0**	17 48	18 10	18 35	14 30	42	2 07	43
13	18	53.1		21.7	248	18.8^{151}	−4	54.9^{138}	**10 S**	18 02	24	18 50	26	46	13	38
14	33	53.0		22.4	262	52.9^{151}		41.2^{137}	**20**	16	40	19 08	23	50	18	35
15	48	52.9		23.0	277	27.1^{152}		27.5^{137}	**30**	33	18 59	30	19	55	25	29
16	63	52.8		23.7	292	01.3^{152}	−4	13.8^{137}	**35**	43	19 11	19 45	16	59	28	27
17	78	52.7	−18	24.3	306	35.6^{153}	−4	00.0^{138}	**40**	18 54	19 25	20 02	14 14	62	2 33	23
18	93	52.6	−18	24.9	321	09.8^{152}	−3	46.3^{137}	**45**	19 08	19 42	20 25	14 11	65	2 37	20
19	108	52.5		25.6	335	44.2^{154}		32.5^{138}	**50**	24	20 03	20 55	07	70	43	15
20	123	52.4		26.2	350	18.5^{153}		18.8^{137}	**52**	32	14	21 11	05	73	46	13
21	138	52.3		26.9	4	52.9^{154}	−3	05.0^{138}	**54**	41	26	30	03	75	48	11
22	153	52.2		27.5	19	27.4^{155}	−2	51.3^{137}	**56**	19 50	40	21 54	14 01	78	52	8
23	168	52.1		28.1	34	01.8^{154}		37.5^{138}	**58**	20 01	20 56	22 30	13 59	80	55	6
24	183	52.0	−18	28.8	48	36.3^{155}	−2	23.7^{138}	**60 S**	20 14	21 16	** **	13 57	83	2 59	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.5			Mag: +0.7		
	20^{h} 23^{m}.4		PMG: 15^{h} 02^{m}			PMG: 10^{h} 56^{m}			PMG: 18^{h} 09^{m}			PMG: 17^{h} 06^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	53	18.9	134	34.0	−26 59.5	195	52.6	−14 23.9	87	06.6	−14 42.4	102	51.0	−19 05.9
1	68	21.4	149	34.1	59.3	210	53.4	24.4	102	08.9	42.3	117	53.3	05.9
2	83	23.8	164	34.1	59.1	225	54.2	25.0	117	11.1	42.2	132	55.7	05.8
3	98	26.3	179	34.1	59.0	240	55.0	25.6	132	13.4	42.2	147	58.0	05.8
4	113	28.7	194	34.2	58.8	255	55.8	26.1	147	15.6	42.1	163	00.3	05.8
5	128	31.2	209	34.2	−26 58.6	270	56.6	−14 26.7	162	17.9	−14 42.0	178	02.6	−19 05.7
6	143	33.7	224	34.3	−26 58.4	285	57.4	−14 27.2	177	20.1	−14 41.9	193	04.9	−19 05.7
7	158	36.1	239	34.3	58.3	300	58.2	27.8	192	22.4	41.9	208	07.3	05.6
8	173	38.6	254	34.4	58.1	315	59.0	28.3	207	24.6	41.8	223	09.6	05.6
9	188	41.1	269	34.4	57.9	330	59.8	28.9	222	26.9	41.7	238	11.9	05.6
10	203	43.5	284	34.5	57.7	346	00.6	29.5	237	29.1	41.6	253	14.2	05.5
11	218	46.0	299	34.5	−26 57.6	1	01.5	−14 30.0	252	31.4	−14 41.5	268	16.6	−19 05.5
12	233	48.5	314	34.6	−26 57.4	16	02.3	−14 30.6	267	33.6	−14 41.5	283	18.9	−19 05.5
13	248	50.9	329	34.6	57.2	31	03.1	31.1	282	35.9	41.4	298	21.2	05.4
14	263	53.4	344	34.7	57.0	46	03.9	31.7	297	38.1	41.3	313	23.5	05.4
15	278	55.9	359	34.8	56.8	61	04.7	32.2	312	40.4	41.2	328	25.8	05.4
16	293	58.3	14	34.8	56.7	76	05.5	32.8	327	42.6	41.1	343	28.2	05.3
17	309	00.8	29	34.9	−26 56.5	91	06.3	−14 33.3	342	44.9	−14 41.1	358	30.5	−19 05.3
18	324	03.2	44	34.9	−26 56.3	106	07.1	−14 33.9	357	47.1	−14 41.0	13	32.8	−19 05.2
19	339	05.7	59	35.0	56.1	121	07.9	34.5	12	49.4	40.9	28	35.1	05.2
20	354	08.2	74	35.1	55.9	136	08.7	35.0	27	51.6	40.8	43	37.4	05.2
21	9	10.6	89	35.1	55.7	151	09.5	35.6	42	53.9	40.8	58	39.8	05.1
22	24	13.1	104	35.2	55.6	166	10.3	36.1	57	56.1	40.7	73	42.1	05.1
23	39	15.6	119	35.3	55.4	181	11.1	36.7	72	58.4	40.6	88	44.4	05.1
24	54	18.0	134	35.4	−26 55.2	196	11.9	−14 37.2	88	00.6	−14 40.5	103	46.7	−19 05.0
Dif	—			+1	+2		+8	−6		+23	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 44m.6				LUNA Edad: 10d.1 SD: 15′.1 PMG: 21h 22m PHE: 4h: 55′.4; 12h: 55′.3; 20h: 55′.1 Rº: 41m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	52.0	−18	28.8	48	36.3	−2	23.7	**60 N**	6 17	7 09	7 58	15 05	2	2 37	83
1	198	51.9		29.4	63	10.8 155	−2	10.0 137	**58**	13	7 01	47	05	5	38	79
2	213	51.8		30.1	77	45.4 156	−1	56.2 138	**56**	09	6 55	37	06	8	39	76
3	228	51.7		30.7	92	19.9 155		42.4 138	**54**	05	48	28	06	10	40	74
4	243	51.6		31.3	106	54.5 156		28.7 137	**52**	6 01	43	20	06	13	40	72
5	258	51.5	−18	32.0	121	29.1 156	−1	14.9 138	**50**	5 58	6 37	7 13	15 07	14	2 41	70
6	273	51.4	−18	32.6	136	03.8 157	−1	01.2 137	**45**	5 50	6 26	6 58	15 07	19	2 42	66
7	288	51.3		33.2	150	38.4 156	−0	47.4 138	**40**	43	16	45	08	22	44	61
8	303	51.2		33.9	165	13.1 157		33.7 137	**35**	37	08	35	09	25	45	58
9	318	51.0		34.5	179	47.8 157		19.9 138	**30**	31	6 00	25	09	28	46	55
10	333	50.9		35.1	194	22.5 157	−0	06.2 137	**20**	19	5 46	6 09	10	33	47	50
11	348	50.8	−18	35.8	208	57.3 158	+0	07.5 137	**10 N**	5 07	5 32	5 55	15 11	37	2 49	45
12	3	50.7	−18	36.4	223	32.0 157	+0	21.2 137	**0**	4 54	5 19	5 41	15 12	41	2 50	41
13	18	50.6		37.0	238	06.8 158		34.9 137	**10 S**	39	5 05	27	12	46	51	38
14	33	50.5		37.6	252	41.6 158	+0	48.6 137	**20**	4 21	4 49	5 13	13	50	53	33
15	48	50.4		38.3	267	16.4 158	+1	02.3 137	**30**	3 58	30	4 56	14	55	54	28
16	63	50.3		38.9	281	51.2 158		16.0 137	**35**	44	18	46	15	57	55	25
17	78	50.2	−18	39.5	296	26.0 158	+1	29.6 136	**40**	3 26	4 04	4 34	15 16	60	2 56	22
18	93	50.1	−18	40.2	311	00.9 159	+1	43.3 137	**45**	3 04	3 47	4 21	15 16	65	2 57	19
19	108	50.0		40.8	325	35.7 158	+1	56.9 136	**50**	2 34	25	4 04	17	70	58	15
20	123	49.9		41.4	340	10.6 159	+2	10.5 136	**52**	2 18	15	3 57	18	71	59	12
21	138	49.7		42.0	354	45.4 158		24.1 136	**54**	1 59	3 03	48	18	74	2 59	11
22	153	49.6		42.7	9	20.3 159		37.7 136	**56**	1 34	2 49	38	19	76	3 00	8
23	168	49.5		43.3	23	55.2 159	+2	51.3 136	**58**	0 58	32	27	19	80	01	5
24	183	49.4	−18	43.9	38	30.1 159	+3	04.8 135	**60 S**	** **	2 12	3 14	15 20	82	3 02	2

UT	ARIES PMG 20h 19m.5		VENUS Mag: −4.7 PMG: 15h 02m			MARTE Mag: +1.6 PMG: 10h 55m			JÚPITER Mag: −2.4 PMG: 18h 05m			SATURNO Mag: +0.7 PMG: 17h 02m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	54	18.0	134	35.4	−26 55.2	196	11.9	−14 37.2	88	00.6	−14 40.5	103	46.7	−19 05.0
1	69	20.5	149	35.4	55.0	211	12.7	37.8	103	02.9	40.4	118	49.0	05.0
2	84	23.0	164	35.5	54.8	226	13.5	38.3	118	05.1	40.4	133	51.4	05.0
3	99	25.4	179	35.6	54.6	241	14.3	38.9	133	07.4	40.3	148	53.7	04.9
4	114	27.9	194	35.7	54.4	256	15.1	39.4	148	09.6	40.2	163	56.0	04.9
5	129	30.3	209	35.8	−26 54.2	271	15.9	−14 40.0	163	11.9	−14 40.1	178	58.3	−19 04.8
6	144	32.8	224	35.8	−26 54.0	286	16.7	−14 40.5	178	14.1	−14 40.0	194	00.6	−19 04.8
7	159	35.3	239	35.9	53.8	301	17.5	41.1	193	16.4	40.0	209	03.0	04.8
8	174	37.7	254	36.0	53.6	316	18.3	41.6	208	18.6	39.9	224	05.3	04.7
9	189	40.2	269	36.1	53.4	331	19.1	42.2	223	20.9	39.8	239	07.6	04.7
10	204	42.7	284	36.2	53.2	346	19.9	42.8	238	23.1	39.7	254	09.9	04.7
11	219	45.1	299	36.3	−26 53.0	1	20.7	−14 43.3	253	25.4	−14 39.6	269	12.2	−19 04.6
12	234	47.6	314	36.4	−26 52.8	16	21.5	−14 43.9	268	27.6	−14 39.6	284	14.5	−19 04.6
13	249	50.1	329	36.5	52.6	31	22.3	44.4	283	29.8	39.5	299	16.9	04.5
14	264	52.5	344	36.6	52.4	46	23.1	45.0	298	32.1	39.4	314	19.2	04.5
15	279	55.0	359	36.7	52.2	61	23.9	45.5	313	34.3	39.3	329	21.5	04.5
16	294	57.5	14	36.7	52.0	76	24.7	46.1	328	36.6	39.2	344	23.8	04.4
17	309	59.9	29	36.8	−26 51.8	91	25.5	−14 46.6	343	38.8	−14 39.2	359	26.1	−19 04.4
18	325	02.4	44	37.0	−26 51.6	106	26.3	−14 47.2	358	41.1	−14 39.1	14	28.5	−19 04.4
19	340	04.8	59	37.1	51.4	121	27.1	47.7	13	43.3	39.0	29	30.8	04.3
20	355	07.3	74	37.2	51.2	136	27.9	48.3	28	45.5	38.9	44	33.1	04.3
21	10	09.8	89	37.3	51.0	151	28.7	48.8	43	47.8	38.8	59	35.4	04.3
22	25	12.2	104	37.4	50.8	166	29.5	49.4	58	50.0	38.7	74	37.7	04.2
23	40	14.7	119	37.5	50.6	181	30.3	49.9	73	52.3	38.7	89	40.0	04.2
24	55	17.2	134	37.6	−26 50.4	196	31.1	−14 50.5	88	54.5	−14 38.6	104	42.4	−19 04.1
Dif	—		+1		+2	+8		−6	+22		+1	+23		0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 11ᵈ.1		PHE	4ʰ: 55′.0								
	PMG: 11ʰ 44ᵐ.8				SD: 15′.0			12ʰ: 54′.9								
					PMG: 22ʰ 03ᵐ			20ʰ: 54′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	49.4	−18	43.9	38	30.1	+3	04.8	**60 N**	15 28	16 17	17 09	15 07	3	4 00	82
1	198	49.3		44.5	53	04.9 158		18.3 135	**58**	40	25	14	10	7	3 57	79
2	213	49.2		45.2	67	39.8 159		31.8 135	**56**	50	33	18	14	8	55	77
3	228	49.1		45.8	82	14.7 159		45.3 135	**54**	15 59	39	22	16	12	54	73
4	243	49.0		46.4	96	49.6 159	+3	58.8 135	**52**	16 07	45	26	19	13	52	71
5	258	48.8	−18	47.0	111	24.5 159	+4	12.2 134	**50**	16 14	16 50	17 30	15 21	16	3 51	69
6	273	48.7	−18	47.7	125	59.4 159	+4	25.6 134	**45**	16 30	17 02	17 38	15 26	20	3 48	64
7	288	48.6		48.3	140	34.2 158		39.0 134	**40**	43	12	45	30	24	45	61
8	303	48.5		48.9	155	09.1 159	+4	52.4 134	**35**	16 54	21	51	34	27	43	57
9	318	48.4		49.5	169	44.0 159	+5	05.7 133	**30**	17 03	29	17 58	37	30	41	54
10	333	48.3		50.1	184	18.9 159		19.0 133	**20**	20	43	18 10	43	34	37	50
11	348	48.2	−18	50.7	198	53.7 158	+5	32.3 133	**10 N**	17 35	17 57	18 22	15 48	38	3 34	46
12	3	48.0	−18	51.4	213	28.6 159	+5	45.6 133	**0**	17 48	18 10	18 36	15 53	42	3 31	42
13	18	47.9		52.0	228	03.4 158	+5	58.8 132	**10 S**	18 02	25	18 51	15 58	46	29	37
14	33	47.8		52.6	242	38.3 159	+6	12.0 132	**20**	17	18 41	19 09	16 03	50	26	33
15	48	47.7		53.2	257	13.1 158		25.2 132	**30**	35	19 01	32	09	55	22	29
16	63	47.6		53.8	271	47.9 158		38.3 131	**35**	45	13	19 47	12	58	20	26
17	78	47.5	−18	54.4	286	22.7 158	+6	51.4 131	**40**	18 57	19 27	20 05	16 16	61	3 18	23
18	93	47.3	−18	55.1	300	57.5 158	+7	04.5 131	**45**	19 10	19 45	20 28	16 21	65	3 16	19
19	108	47.2		55.7	315	32.3 158		17.6 131	**50**	27	20 07	21 00	27	69	13	14
20	123	47.1		56.3	330	07.1 158		30.6 130	**52**	35	18	16	29	71	11	13
21	138	47.0		56.9	344	41.8 157		43.5 129	**54**	44	30	21 36	32	74	10	10
22	153	46.9		57.5	359	16.6 158	+7	56.5 130	**56**	19 55	20 45	22 03	35	76	08	8
23	168	46.7		58.1	13	51.3 157	+8	09.4 129	**58**	20 06	21 02	22 44	39	79	06	6
24	183	46.6	−18	58.7	28	26.0 157	+8	22.2 128	**60 S**	20 20	21 24	** **	16 42	83	3 04	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	20ʰ 15ᵐ.5		PMG: 15ʰ 01ᵐ			PMG: 10ʰ 53ᵐ			PMG: 18ʰ 02ᵐ			PMG: 16ʰ 59ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	55	17.2	134	37.6	−26 50.4	196	31.1	−14 50.5	88	54.5	−14 38.6	104	42.4	−19 04.1
1	70	19.6	149	37.7	50.2	211	31.9	51.0	103	56.8	38.5	119	44.7	04.1
2	85	22.1	164	37.8	50.0	226	32.7	51.6	118	59.0	38.4	134	47.0	04.1
3	100	24.6	179	37.9	49.8	241	33.5	52.1	134	01.2	38.3	149	49.3	04.0
4	115	27.0	194	38.1	49.5	256	34.3	52.7	149	03.5	38.3	164	51.6	04.0
5	130	29.5	209	38.2	−26 49.3	271	35.1	−14 53.2	164	05.7	−14 38.2	179	53.9	−19 03.9
6	145	31.9	224	38.3	−26 49.1	286	35.9	−14 53.8	179	08.0	−14 38.1	194	56.2	−19 03.9
7	160	34.4	239	38.4	48.9	301	36.7	54.3	194	10.2	38.0	209	58.6	03.9
8	175	36.9	254	38.5	48.7	316	37.5	54.9	209	12.4	37.9	225	00.9	03.8
9	190	39.3	269	38.7	48.5	331	38.2	55.4	224	14.7	37.8	240	03.2	03.8
10	205	41.8	284	38.8	48.3	346	39.0	55.9	239	16.9	37.8	255	05.5	03.8
11	220	44.3	299	38.9	−26 48.0	1	39.8	−14 56.5	254	19.1	−14 37.7	270	07.8	−19 03.7
12	235	46.7	314	39.1	−26 47.8	16	40.6	−14 57.0	269	21.4	−14 37.6	285	10.1	−19 03.7
13	250	49.2	329	39.2	47.6	31	41.4	57.6	284	23.6	37.5	300	12.4	03.6
14	265	51.7	344	39.3	47.4	46	42.2	58.1	299	25.9	37.4	315	14.8	03.6
15	280	54.1	359	39.5	47.1	61	43.0	58.7	314	28.1	37.3	330	17.1	03.6
16	295	56.6	14	39.6	46.9	76	43.8	59.2	329	30.3	37.3	345	19.4	03.5
17	310	59.1	29	39.7	−26 46.7	91	44.6	−14 59.8	344	32.6	−14 37.2	0	21.7	−19 03.5
18	326	01.5	44	39.9	−26 46.5	106	45.4	−15 00.3	359	34.8	−14 37.1	15	24.0	−19 03.5
19	341	04.0	59	40.0	46.3	121	46.2	00.9	14	37.0	37.0	30	26.3	03.4
20	356	06.4	74	40.2	46.0	136	47.0	01.4	29	39.3	36.9	45	28.6	03.4
21	11	08.9	89	40.3	45.8	151	47.8	02.0	44	41.5	36.8	60	31.0	03.3
22	26	11.4	104	40.4	45.6	166	48.6	02.5	59	43.7	36.8	75	33.3	03.3
23	41	13.8	119	40.6	45.3	181	49.4	03.1	74	46.0	36.7	90	35.6	03.3
24	56	16.3	134	40.7	−26 45.1	196	50.2	−15 03.6	89	48.2	−14 36.6	105	37.9	−19 03.2
Dif	—			+1	+2		+8	−5		+22	+1		+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 12^{d}.1		PHE	4^{h}: 54′.6								
	PMG: 11^{h} 45^{m}.0				SD: 14′.9			12^{h}: 54′.5								
					PMG: 22^{h} 45^{m}			20^{h}: 54′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	46.6	−18	58.7	28	26.0	+8	22.2	**60 N**	6 21	7 14	8 03	15 10	4	5 22	83
1	198	46.5		59.3	43	00.7 157		35.1 129	**58**	17	7 05	7 51		7	16	80
2	213	46.4	−18	59.9	57	35.4 157	+8	47.9 128	**56**	12	6 58	41	22	11	12	76
3	228	46.3	−19	00.6	72	10.0 156	+9	00.6 127	**54**	08	52	32	28	13	07	74
4	243	46.1		01.2	86	44.6 156		13.3 127	**52**	04	46	24	32	16	03	72
5	258	46.0	−19	01.8	101	19.2 156	+9	26.0 127	**50**	6 01	6 40	7 16	15 37	17	5 00	69
6	273	45.9	−19	02.4	115	53.8 156	+9	38.6 126	**45**	5 53	6 28	7 00	15 46	22	4 52	65
7	288	45.8		03.0	130	28.4 156	+9	51.2 126	**40**	45	18	6 48	15 54	25	46	61
8	303	45.6		03.6	145	02.9 155	+10	03.7 125	**35**	39	09	36	16 01	28	40	58
9	318	45.5		04.2	159	37.4 155		16.2 125	**30**	32	6 01	27	07	31	35	55
10	333	45.4		04.8	174	11.9 155		28.7 125	**20**	20	5 47	6 10	17	36	27	50
11	348	45.3	−19	05.4	188	46.4 155	+10	41.1 124	**10 N**	5 08	5 33	5 55	16 26	40	4 20	46
12	3	45.1	−19	06.0	203	20.8 154	+10	53.4 123	**0**	4 54	5 20	5 41	16 35	43	4 13	42
13	18	45.0		06.6	217	55.2 154	+11	05.8 124	**10 S**	39	5 05	27	44	46	4 06	39
14	33	44.9		07.2	232	29.6 154		18.0 122	**20**	4 21	4 49	5 12	16 53	51	3 59	35
15	48	44.8		07.8	247	03.9 153		30.2 122	**30**	3 57	29	4 55	17 04	55	51	30
16	63	44.6		08.4	261	38.3 154		42.4 122	**35**	42	16	45	10	58	46	28
17	78	44.5	−19	09.0	276	12.5 152	+11	54.5 121	**40**	3 24	4 02	4 33	17 17	61	3 41	24
18	93	44.4	−19	09.6	290	46.8 153	+12	06.6 121	**45**	3 01	3 45	4 19	17 26	64	3 35	20
19	108	44.3		10.2	305	21.0 152		18.6 120	**50**	2 30	22	4 02	36	69	27	17
20	123	44.1		10.8	319	55.2 152		30.6 120	**52**	2 13	3 11	3 54	40	72	24	14
21	138	44.0		11.4	334	29.4 152		42.5 119	**54**	1 53	2 59	45	46	74	20	13
22	153	43.9		12.0	349	03.5 151	+12	54.3 118	**56**	1 26	45	35	51	77	16	10
23	168	43.8		12.6	3	37.6 151	+13	06.1 118	**58**	0 45	27	23	17 58	80	12	7
24	183	43.6	−19	13.2	18	11.6 150	+13	17.8 117	**60 S**	** **	2 06	3 09	18 05	84	3 07	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	20^{h} 11^{m}.6		PMG: 15^{h} 01^{m}			PMG: 10^{h} 52^{m}			PMG: 17^{h} 58^{m}			PMG: 16^{h} 55^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	56	16.3	134	40.7	−26 45.1	196	50.2	−15 03.6	89	48.2	−14 36.6	105	37.9	−19 03.2
1	71	18.8	149	40.9	44.9	211	50.9	04.1	104	50.5	36.5	120	40.2	03.2
2	86	21.2	164	41.1	44.7	226	51.7	04.7	119	52.7	36.4	135	42.5	03.1
3	101	23.7	179	41.2	44.4	241	52.5	05.2	134	54.9	36.3	150	44.8	03.1
4	116	26.2	194	41.4	44.2	256	53.3	05.8	149	57.2	36.3	165	47.1	03.1
5	131	28.6	209	41.5	−26 44.0	271	54.1	−15 06.3	164	59.4	−14 36.2	180	49.5	−19 03.0
6	146	31.1	224	41.7	−26 43.7	286	54.9	−15 06.9	180	01.6	−14 36.1	195	51.8	−19 03.0
7	161	33.6	239	41.8	43.5	301	55.7	07.4	195	03.9	36.0	210	54.1	03.0
8	176	36.0	254	42.0	43.2	316	56.5	08.0	210	06.1	35.9	225	56.4	02.9
9	191	38.5	269	42.2	43.0	331	57.3	08.5	225	08.3	35.8	240	58.7	02.9
10	206	40.9	284	42.3	42.8	346	58.1	09.0	240	10.5	35.7	256	01.0	02.8
11	221	43.4	299	42.5	−26 42.5	1	58.9	−15 09.6	255	12.8	−14 35.7	271	03.3	−19 02.8
12	236	45.9	314	42.7	−26 42.3	16	59.6	−15 10.1	270	15.0	−14 35.6	286	05.6	−19 02.8
13	251	48.3	329	42.9	42.1	32	00.4	10.7	285	17.2	35.5	301	07.9	02.7
14	266	50.8	344	43.0	41.8	47	01.2	11.2	300	19.5	35.4	316	10.3	02.7
15	281	53.3	359	43.2	41.6	62	02.0	11.8	315	21.7	35.3	331	12.6	02.6
16	296	55.7	14	43.4	41.3	77	02.8	12.3	330	23.9	35.2	346	14.9	02.6
17	311	58.2	29	43.6	−26 41.1	92	03.6	−15 12.8	345	26.2	−14 35.1	1	17.2	−19 02.6
18	327	00.7	44	43.7	−26 40.8	107	04.4	−15 13.4	0	28.4	−14 35.1	16	19.5	−19 02.5
19	342	03.1	59	43.9	40.6	122	05.2	13.9	15	30.6	35.0	31	21.8	02.5
20	357	05.6	74	44.1	40.3	137	06.0	14.5	30	32.8	34.9	46	24.1	02.4
21	12	08.0	89	44.3	40.1	152	06.7	15.0	45	35.1	34.8	61	26.4	02.4
22	27	10.5	104	44.5	39.9	167	07.5	15.5	60	37.3	34.7	76	28.7	02.4
23	42	13.0	119	44.7	39.6	182	08.3	16.1	75	39.5	34.6	91	31.0	02.3
24	57	15.4	134	44.9	−26 39.4	197	09.1	−15 16.6	90	41.8	−14 34.5	106	33.3	−19 02.3
Dif	—			+2	+2		+8	−5		+22	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 45m.2				☾ LUNA Edad: 13d.1 SD: 14′.8 PMG: 23h 29m PHE { 4h: 54′.3; 12h: 54′.3; 20h: 54′.2 Rº: 45m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	43.6	−19	13.2	18	11.6	+13	17.8	**60 N**	15 24	16 14	17 06	15 14	7	6 45	85
1	198	43.5		13.8	32	45.6 150		29.5 117	**58**	36	22	11	24	11	36	81
2	213	43.4		14.4	47	19.6 150		41.2 117	**56**	47	30	16	33	14	28	77
3	228	43.2		15.0	61	53.6 150	+13	52.7 115	**54**	15 56	36	20	41	17	21	74
4	243	43.1		15.6	76	27.5 149	+14	04.2 115	**52**	16 05	42	24	48	19	15	71
5	258	43.0	−19	16.2	91	01.3 148	+14	15.7 115	**50**	16 12	16 48	17 28	15 54	22	6 09	69
6	273	42.8	−19	16.8	105	35.2 149	+14	27.1 114	**45**	16 28	17 00	17 36	16 08	26	5 57	64
7	288	42.7		17.3	120	09.0 148		38.4 113	**40**	41	11	43	19	29	47	61
8	303	42.6		17.9	134	42.7 147	+14	49.7 113	**35**	16 53	20	50	29	32	38	58
9	318	42.4		18.5	149	16.4 147	+15	00.9 112	**30**	17 03	28	17 57	38	34	30	56
10	333	42.3		19.1	163	50.1 147		12.0 111	**20**	20	43	18 10	16 53	38	17	52
11	348	42.2	−19	19.7	178	23.7 146	+15	23.1 111	**10 N**	17 35	17 57	18 22	17 06	41	5 06	47
12	3	42.0	−19	20.3	192	57.3 146	+15	34.1 110	**0**	17 49	18 11	18 36	17 18	45	4 55	44
13	18	41.9		20.9	207	30.8 145		45.0 109	**10 S**	18 03	25	18 52	30	49	45	40
14	33	41.8		21.5	222	04.3 145	+15	55.9 109	**20**	19	18 42	19 10	44	51	34	36
15	48	41.6		22.1	236	37.8 145	+16	06.7 108	**30**	36	19 03	34	17 59	56	21	32
16	63	41.5		22.6	251	11.2 144		17.5 108	**35**	47	15	19 50	18 08	58	14	30
17	78	41.4	−19	23.2	265	44.6 144	+16	28.1 106	**40**	18 59	19 30	20 08	18 18	61	4 05	27
18	93	41.2	−19	23.8	280	17.9 143	+16	38.7 106	**45**	19 13	19 48	20 32	18 30	65	3 55	24
19	108	41.1		24.4	294	51.1 142		49.3 106	**50**	31	20 11	21 04	45	69	44	19
20	123	41.0		25.0	309	24.4 143	+16	59.7 104	**52**	39	22	22	18 52	71	38	18
21	138	40.8		25.6	323	57.6 142	+17	10.1 104	**54**	48	35	21 43	19 00	74	33	14
22	153	40.7		26.2	338	30.7 141		20.4 103	**56**	19 59	20 50	22 12	08	77	26	12
23	168	40.6		26.7	353	03.8 141		30.7 103	**58**	20 11	21 08	23 01	18	81	19	8
24	183	40.4	−19	27.3	7	36.8 140	+17	40.8 101	**60 S**	20 25	21 31	** **	19 29	86	3 10	5

UT	ARIES PMG 20h 07m.7		VENUS Mag: −4.8 PMG: 15h 01m			MARTE Mag: +1.6 PMG: 10h 51m			JÚPITER Mag: −2.4 PMG: 17h 55m			SATURNO Mag: +0.7 PMG: 16h 51m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	57	15.4	134	44.9	−26 39.4	197	09.1	−15 16.6	90	41.8	−14 34.5	106	33.3	−19 02.3
1	72	17.9	149	45.1	39.1	212	09.9	17.2	105	44.0	34.5	121	35.7	02.2
2	87	20.4	164	45.3	38.9	227	10.7	17.7	120	46.2	34.4	136	38.0	02.2
3	102	22.8	179	45.5	38.6	242	11.5	18.2	135	48.4	34.3	151	40.3	02.2
4	117	25.3	194	45.7	38.4	257	12.2	18.8	150	50.7	34.2	166	42.6	02.1
5	132	27.8	209	45.9	−26 38.1	272	13.0	−15 19.3	165	52.9	−14 34.1	181	44.9	−19 02.1
6	147	30.2	224	46.1	−26 37.8	287	13.8	−15 19.9	180	55.1	−14 34.0	196	47.2	−19 02.0
7	162	32.7	239	46.3	37.6	302	14.6	20.4	195	57.3	33.9	211	49.5	02.0
8	177	35.2	254	46.5	37.3	317	15.4	20.9	210	59.6	33.8	226	51.8	02.0
9	192	37.6	269	46.7	37.1	332	16.2	21.5	226	01.8	33.8	241	54.1	01.9
10	207	40.1	284	46.9	36.8	347	17.0	22.0	241	04.0	33.7	256	56.4	01.9
11	222	42.5	299	47.1	−26 36.6	2	17.7	−15 22.6	256	06.2	−14 33.6	271	58.7	−19 01.8
12	237	45.0	314	47.3	−26 36.3	17	18.5	−15 23.1	271	08.5	−14 33.5	287	01.0	−19 01.8
13	252	47.5	329	47.5	36.0	32	19.3	23.6	286	10.7	33.4	302	03.3	01.8
14	267	49.9	344	47.7	35.8	47	20.1	24.2	301	12.9	33.3	317	05.7	01.7
15	282	52.4	359	48.0	35.5	62	20.9	24.7	316	15.1	33.2	332	08.0	01.7
16	297	54.9	14	48.2	35.3	77	21.7	25.2	331	17.4	33.1	347	10.3	01.6
17	312	57.3	29	48.4	−26 35.0	92	22.5	−15 25.8	346	19.6	−14 33.1	2	12.6	−19 01.6
18	327	59.8	44	48.6	−26 34.7	107	23.2	−15 26.3	1	21.8	−14 33.0	17	14.9	−19 01.6
19	343	02.3	59	48.8	34.5	122	24.0	26.9	16	24.0	32.9	32	17.2	01.5
20	358	04.7	74	49.1	34.2	137	24.8	27.4	31	26.2	32.8	47	19.5	01.5
21	13	07.2	89	49.3	33.9	152	25.6	27.9	46	28.5	32.7	62	21.8	01.4
22	28	09.7	104	49.5	33.7	167	26.4	28.5	61	30.7	32.6	77	24.1	01.4
23	43	12.1	119	49.8	33.4	182	27.1	29.0	76	32.9	32.5	92	26.4	01.4
24	58	14.6	134	50.0	−26 33.1	197	27.9	−15 29.5	91	35.1	−14 32.4	107	28.7	−19 01.3
Dif	—			+2	+3		+8	−5		+22	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 14ᵈ.1		PHE	4ʰ: 54′.1									
	PMG: 11ʰ 45ᵐ.4				SD: 14′.8			12ʰ: 54′.1									
					PMG: **ʰ **ᵐ			20ʰ: 54′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	40.4	−19	27.3	7	36.8	+17	40.8		**60 N**	6 25	7 18	8 08	15 21	11	8 10	85
1	198	40.3		27.9	22	09.8 140	+17	50.9	101	**58**	20	09	7 56	35	16	7 57	80
2	213	40.1		28.5	36	42.8 140	+18	00.9	100	**56**	15	7 02	45	47	20	45	76
3	228	40.0		29.1	51	15.7 139		10.9	100	**54**	11	6 55	35	15 58	22	35	73
4	243	39.9		29.6	65	48.5 138		20.7	98	**52**	07	49	27	16 07	25	26	71
5	258	39.7	−19	30.2	80	21.3 138	+18	30.5	98	**50**	6 04	6 43	7 19	16 16	26	7 18	69
6	273	39.6	−19	30.8	94	54.1 138	+18	40.2	97	**45**	5 55	6 31	7 03	16 34	30	7 01	65
7	288	39.4		31.4	109	26.8 137		49.8	96	**40**	48	20	6 50	16 48	34	6 48	61
8	303	39.3		31.9	123	59.4 136	+18	59.3	95	**35**	41	11	38	17 01	36	36	58
9	318	39.2		32.5	138	32.0 136	+19	08.8	95	**30**	34	6 03	28	12	38	26	56
10	333	39.0		33.1	153	04.6 136		18.2	94	**20**	21	5 48	6 11	31	41	6 09	52
11	348	38.9	−19	33.7	167	37.1 135	+19	27.5	93	**10 N**	5 08	5 34	5 56	17 47	45	5 53	49
12	3	38.7	−19	34.2	182	09.5 134	+19	36.7	92	**0**	4 54	5 20	5 42	18 03	47	5 39	46
13	18	38.6		34.8	196	41.9 134		45.8	91	**10 S**	39	5 05	27	19	49	25	43
14	33	38.5		35.4	211	14.3 134	+19	54.8	90	**20**	4 20	4 48	5 12	35	53	5 10	40
15	48	38.3		36.0	225	46.6 133	+20	03.8	90	**30**	3 56	28	4 54	18 55	56	4 53	36
16	63	38.2		36.5	240	18.8 132		12.6	88	**35**	41	15	43	19 06	58	44	33
17	78	38.0	−19	37.1	254	51.0 132	+20	21.4	88	**40**	3 22	4 00	4 31	19 19	61	4 32	31
18	93	37.9	−19	37.7	269	23.2 132	+20	30.1	87	**45**	2 58	3 42	4 17	19 35	63	4 19	28
19	108	37.7		38.2	283	55.3 131		38.7	86	**50**	26	20	3 59	19 54	68	4 03	24
20	123	37.6		38.8	298	27.3 130		47.2	85	**52**	2 09	3 08	51	20 03	70	3 56	21
21	138	37.4		39.4	312	59.3 130	+20	55.6	84	**54**	1 47	2 55	42	14	71	47	19
22	153	37.3		40.0	327	31.3 130	+21	03.9	83	**56**	1 19	40	31	25	75	38	16
23	168	37.2		40.5	342	03.1 128		12.2	83	**58**	0 29	2 22	19	39	78	27	13
24	183	37.0	−19	41.1	356	35.0 129	+21	20.3	81	**60 S**	** **	1 59	3 05	20 55	84	3 15	9

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	20ʰ 03ᵐ.7		PMG: 15ʰ 00ᵐ			PMG: 10ʰ 50ᵐ			PMG: 17ʰ 51ᵐ			PMG: 16ʰ 48ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	58	14.6	134	50.0	−26 33.1	197	27.9	−15 29.5	91	35.1	−14 32.4	107	28.7	−19 01.3
1	73	17.0	149	50.2	32.9	212	28.7	30.1	106	37.3	32.3	122	31.0	01.3
2	88	19.5	164	50.5	32.6	227	29.5	30.6	121	39.6	32.3	137	33.3	01.2
3	103	22.0	179	50.7	32.3	242	30.3	31.2	136	41.8	32.2	152	35.6	01.2
4	118	24.4	194	51.0	32.1	257	31.1	31.7	151	44.0	32.1	167	37.9	01.2
5	133	26.9	209	51.2	−26 31.8	272	31.8	−15 32.2	166	46.2	−14 32.0	182	40.2	−19 01.1
6	148	29.4	224	51.4	−26 31.5	287	32.6	−15 32.8	181	48.4	−14 31.9	197	42.5	−19 01.1
7	163	31.8	239	51.7	31.2	302	33.4	33.3	196	50.7	31.8	212	44.8	01.0
8	178	34.3	254	51.9	31.0	317	34.2	33.8	211	52.9	31.7	227	47.2	01.0
9	193	36.8	269	52.2	30.7	332	35.0	34.4	226	55.1	31.6	242	49.5	01.0
10	208	39.2	284	52.4	30.4	347	35.7	34.9	241	57.3	31.5	257	51.8	00.9
11	223	41.7	299	52.7	−26 30.1	2	36.5	−15 35.4	256	59.5	−14 31.4	272	54.1	−19 00.9
12	238	44.1	314	53.0	−26 29.9	17	37.3	−15 36.0	272	01.7	−14 31.4	287	56.4	−19 00.8
13	253	46.6	329	53.2	29.6	32	38.1	36.5	287	04.0	31.3	302	58.7	00.8
14	268	49.1	344	53.5	29.3	47	38.9	37.0	302	06.2	31.2	318	01.0	00.7
15	283	51.5	359	53.7	29.0	62	39.6	37.6	317	08.4	31.1	333	03.3	00.7
16	298	54.0	14	54.0	28.7	77	40.4	38.1	332	10.6	31.0	348	05.6	00.7
17	313	56.5	29	54.3	−26 28.5	92	41.2	−15 38.6	347	12.8	−14 30.9	3	07.9	−19 00.6
18	328	58.9	44	54.5	−26 28.2	107	42.0	−15 39.2	2	15.0	−14 30.8	18	10.2	−19 00.6
19	344	01.4	59	54.8	27.9	122	42.8	39.7	17	17.3	30.7	33	12.5	00.5
20	359	03.9	74	55.1	27.6	137	43.5	40.2	32	19.5	30.6	48	14.8	00.5
21	14	06.3	89	55.3	27.3	152	44.3	40.8	47	21.7	30.5	63	17.1	00.5
22	29	08.8	104	55.6	27.0	167	45.1	41.3	62	23.9	30.4	78	19.4	00.4
23	44	11.3	119	55.9	26.7	182	45.9	41.8	77	26.1	30.4	93	21.7	00.4
24	59	13.7	134	56.2	−26 26.5	197	46.6	−15 42.4	92	28.3	−14 30.3	108	24.0	−19 00.3
Dif	—			+3	+3		+8	−5		+22	+1		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 15^{d}.1		PHE	4^{h}: 54′.0								
	PMG: 11^{h} 45^{m}.6		SD: 14′.7			12^{h}: 54′.0								
			PMG: 0^{h} 14^{m}			20^{h}: 54′.0								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	183 37.0	−19 41.1	356 35.0		+21 20.3		**60 N**	15 20	16 11	17 04	15 32	20	9 35	81
1	198 36.9	41.7	11 06.8	128	28.3	80	**58**	33	19	09	15 51	25	17	75
2	213 36.7	42.2	25 38.5	127	36.3	80	**56**	44	27	14	16 07	28	9 01	72
3	228 36.6	42.8	40 10.2	127	44.1	78	**54**	15 54	34	18	20	31	8 48	70
4	243 36.4	43.4	54 41.8	126	51.9	78	**52**	16 02	40	22	32	32	37	67
5	258 36.3	−19 43.9	69 13.4	126	+21 59.5	76	**50**	16 10	16 46	17 26	16 42	35	8 27	65
6	273 36.1	−19 44.5	83 45.0	126	+22 07.1	76	**45**	16 26	16 59	17 35	17 04	38	8 06	62
7	288 36.0	45.0	98 16.4	124	14.6	75	**40**	40	17 09	42	22	40	7 49	59
8	303 35.8	45.6	112 47.9	125	21.9	73	**35**	16 52	19	50	37	41	34	58
9	318 35.7	46.2	127 19.3	124	29.2	73	**30**	17 02	27	17 56	17 50	43	22	56
10	333 35.5	46.7	141 50.6	123	36.4	72	**20**	19	43	18 10	18 12	46	7 01	53
11	348 35.4	−19 47.3	156 21.9	123	+22 43.4	70	**10 N**	17 35	17 57	18 23	18 32	47	6 42	51
12	3 35.2	−19 47.8	170 53.1	122	+22 50.4	70	**0**	17 49	18 11	18 37	18 50	49	6 25	49
13	18 35.1	48.4	185 24.3	122	+22 57.2	68	**10 S**	18 04	26	18 53	19 08	51	6 08	46
14	33 34.9	49.0	199 55.4	121	+23 04.0	68	**20**	20	18 44	19 12	28	53	5 50	44
15	48 34.8	49.5	214 26.5	121	10.7	67	**30**	38	19 04	36	19 51	55	29	41
16	63 34.6	50.1	228 57.6	121	17.2	65	**35**	18 49	17	19 52	20 04	57	17	39
17	78 34.5	−19 50.6	243 28.6	120	+23 23.6	64	**40**	19 01	19 32	20 11	20 20	58	5 03	37
18	93 34.3	−19 51.2	257 59.5	119	+23 30.0	64	**45**	19 16	19 51	20 35	20 38	60	4 47	34
19	108 34.2	51.7	272 30.4	119	36.2	62	**50**	34	20 14	21 09	21 02	62	27	30
20	123 34.0	52.3	287 01.2	118	42.3	61	**52**	42	26	27	13	64	17	28
21	138 33.9	52.8	301 32.0	118	48.3	60	**54**	19 52	39	21 50	25	67	4 06	26
22	153 33.7	53.4	316 02.8	118	+23 54.3	60	**56**	20 03	20 55	22 21	40	69	3 54	23
23	168 33.6	54.0	330 33.5	117	+24 00.1	58	**58**	15	21 14	23 27	21 57	72	40	20
24	183 33.4	−19 54.5	345 04.2	117	+24 05.7	56	**60 S**	20 30	21 38	** **	22 19	76	3 24	14

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.8		Mag: +1.6		Mag: −2.4		Mag: +0.7	
	19^{h} 59^{m}.8	PMG: 15^{h} 00^{m}		PMG: 10^{h} 48^{m}		PMG: 17^{h} 47^{m}		PMG: 16^{h} 44^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	59 13.7	134 56.2	−26 26.5	197 46.6	−15 42.4	92 28.3	−14 30.3	108 24.0	−19 00.3
1	74 16.2	149 56.5	26.2	212 47.4	42.9	107 30.5	30.2	123 26.3	00.3
2	89 18.6	164 56.7	25.9	227 48.2	43.4	122 32.8	30.1	138 28.6	00.3
3	104 21.1	179 57.0	25.6	242 49.0	43.9	137 35.0	30.0	153 30.9	00.2
4	119 23.6	194 57.3	25.3	257 49.7	44.5	152 37.2	29.9	168 33.2	00.2
5	134 26.0	209 57.6	−26 25.0	272 50.5	−15 45.0	167 39.4	−14 29.8	183 35.5	−19 00.1
6	149 28.5	224 57.9	−26 24.7	287 51.3	−15 45.5	182 41.6	−14 29.7	198 37.8	−19 00.1
7	164 31.0	239 58.2	24.4	302 52.1	46.1	197 43.8	29.6	213 40.1	−19 00.0
8	179 33.4	254 58.5	24.1	317 52.8	46.6	212 46.0	29.5	228 42.4	00.0
9	194 35.9	269 58.8	23.8	332 53.6	47.1	227 48.2	29.4	243 44.7	−19 00.0
10	209 38.4	284 59.1	23.5	347 54.4	47.7	242 50.5	29.3	258 47.0	−18 59.9
11	224 40.8	299 59.4	−26 23.3	2 55.2	−15 48.2	257 52.7	−14 29.3	273 49.3	−18 59.9
12	239 43.3	314 59.7	−26 23.0	17 55.9	−15 48.7	272 54.9	−14 29.2	288 51.6	−18 59.8
13	254 45.8	330 00.0	22.7	32 56.7	49.2	287 57.1	29.1	303 53.9	59.8
14	269 48.2	345 00.3	22.4	47 57.5	49.8	302 59.3	29.0	318 56.2	59.7
15	284 50.7	0 00.6	22.1	62 58.3	50.3	318 01.5	28.9	333 58.5	59.7
16	299 53.1	15 00.9	21.8	77 59.0	50.8	333 03.7	28.8	349 00.8	59.7
17	314 55.6	30 01.2	−26 21.5	92 59.8	−15 51.4	348 05.9	−14 28.7	4 03.1	−18 59.6
18	329 58.1	45 01.5	−26 21.2	108 00.6	−15 51.9	3 08.1	−14 28.6	19 05.4	−18 59.6
19	345 00.5	60 01.8	20.9	123 01.4	52.4	18 10.3	28.5	34 07.7	59.5
20	0 03.0	75 02.1	20.6	138 02.1	52.9	33 12.5	28.4	49 10.0	59.5
21	15 05.5	90 02.5	20.3	153 02.9	53.5	48 14.8	28.3	64 12.3	59.5
22	30 07.9	105 02.8	20.0	168 03.7	54.0	63 17.0	28.2	79 14.6	59.4
23	45 10.4	120 03.1	19.6	183 04.5	54.5	78 19.2	28.1	94 16.9	59.4
24	60 12.9	135 03.4	−26 19.3	198 05.2	−15 55.1	93 21.4	−14 28.0	109 19.2	−18 59.3
Dif	—	+3	+3	+8	−5	+22	+1	+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 16^{d}.1		PHE	4^{h}: 54′.0									
	PMG: 11^{h} 45^{m}.9				SD: 14′.7			12^{h}: 54′.0									
					PMG: 1^{h} 02^{m}			20^{h}: 54′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	33.4	−19	54.5	345	04.2	+24	05.7		**60 N**	6 29	7 22	8 13	15 52	35	10 56	69
1	198	33.2		55.1	359	34.8 116		11.3	56	**58**	24	13	8 00	16 16	38	32	66
2	213	33.1		55.6	14	05.4 116		16.8	55	**56**	19	7 05	7 49	35	40	10 13	64
3	228	32.9		56.2	28	35.9 115		22.1	53	**54**	14	6 58	39	16 51	41	9 58	61
4	243	32.8		56.7	43	06.4 115		27.4	53	**52**	10	52	30	17 04	43	44	60
5	258	32.6	−19	57.3	57	36.9 115	+24	32.5	51	**50**	6 06	6 46	7 22	17 17	43	9 32	60
6	273	32.5	−19	57.8	72	07.3 114	+24	37.5	50	**45**	5 57	6 33	7 06	17 42	45	9 08	57
7	288	32.3		58.4	86	37.6 113		42.4	49	**40**	50	23	6 52	18 02	46	8 48	56
8	303	32.2		58.9	101	08.0 114		47.2	48	**35**	42	13	40	18	48	32	54
9	318	32.0	−19	59.4	115	38.3 113		51.9	47	**30**	35	6 04	30	33	48	8 18	53
10	333	31.8	−20	00.0	130	08.5 112	+24	56.5	46	**20**	22	5 49	6 12	18 58	49	7 54	52
11	348	31.7	−20	00.5	144	38.7 112	+25	00.9	44	**10 N**	5 09	5 35	5 57	19 19	50	7 33	51
12	3	31.5	−20	01.1	159	08.9 112	+25	05.3	44	**0**	4 55	5 20	5 42	19 39	50	7 14	49
13	18	31.4		01.6	173	39.0 111		09.5	42	**10 S**	39	5 05	28	19 59	51	6 54	49
14	33	31.2		02.2	188	09.1 111		13.6	41	**20**	4 20	4 48	5 12	20 21	51	34	47
15	48	31.0		02.7	202	39.2 111		17.5	39	**30**	3 55	27	4 53	20 46	52	6 10	45
16	63	30.9		03.3	217	09.2 110		21.4	39	**35**	39	4 14	42	21 01	53	5 56	44
17	78	30.7	−20	03.8	231	39.2 110	+25	25.1	37	**40**	3 20	3 59	4 30	21 18	53	5 40	43
18	93	30.6	−20	04.3	246	09.2 110	+25	28.8	37	**45**	2 56	3 40	4 15	21 38	55	5 21	41
19	108	30.4		04.9	260	39.1 109		32.3	35	**50**	22	17	3 57	22 04	56	4 57	39
20	123	30.2		05.4	275	09.0 109		35.7	34	**52**	2 04	3 05	49	17	56	45	38
21	138	30.1		06.0	289	38.8 108		38.9	32	**54**	1 42	2 52	39	32	56	32	36
22	153	29.9		06.5	304	08.7 109		42.1	32	**56**	1 10	36	28	22 49	57	17	34
23	168	29.7		07.0	318	38.5 108		45.1	30	**58**	0 04	2 17	16	23 09	58	4 00	30
24	183	29.6	−20	07.6	333	08.2 107	+25	48.0	29	**60 S**	** **	1 53	3 01	23 35	60	3 38	26

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19^{h} 55^{m}.9		PMG: 14^{h} 59^{m}			PMG: 10^{h} 47^{m}			PMG: 17^{h} 44^{m}			PMG: 16^{h} 40^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	60	12.9	135	03.4	−26 19.3	198	05.2	−15 55.1	93	21.4	−14 28.0	109	19.2	−18 59.3
1	75	15.3	150	03.8	19.0	213	06.0	55.6	108	23.6	27.9	124	21.5	59.3
2	90	17.8	165	04.1	18.7	228	06.8	56.1	123	25.8	27.9	139	23.8	59.2
3	105	20.3	180	04.4	18.4	243	07.5	56.6	138	28.0	27.8	154	26.1	59.2
4	120	22.7	195	04.8	18.1	258	08.3	57.2	153	30.2	27.7	169	28.4	59.2
5	135	25.2	210	05.1	−26 17.8	273	09.1	−15 57.7	168	32.4	−14 27.6	184	30.7	−18 59.1
6	150	27.6	225	05.4	−26 17.5	288	09.9	−15 58.2	183	34.6	−14 27.5	199	33.0	−18 59.1
7	165	30.1	240	05.8	17.2	303	10.6	58.7	198	36.8	27.4	214	35.3	59.0
8	180	32.6	255	06.1	16.9	318	11.4	59.3	213	39.0	27.3	229	37.6	59.0
9	195	35.0	270	06.4	16.6	333	12.2	−15 59.8	228	41.2	27.2	244	39.9	58.9
10	210	37.5	285	06.8	16.3	348	12.9	−16 00.3	243	43.4	27.1	259	42.2	58.9
11	225	40.0	300	07.1	−26 15.9	3	13.7	−16 00.8	258	45.6	−14 27.0	274	44.5	−18 58.9
12	240	42.4	315	07.5	−26 15.6	18	14.5	−16 01.4	273	47.8	−14 26.9	289	46.8	−18 58.8
13	255	44.9	330	07.8	15.3	33	15.2	01.9	288	50.0	26.8	304	49.1	58.8
14	270	47.4	345	08.2	15.0	48	16.0	02.4	303	52.2	26.7	319	51.3	58.7
15	285	49.8	0	08.5	14.7	63	16.8	02.9	318	54.5	26.6	334	53.6	58.7
16	300	52.3	15	08.9	14.4	78	17.5	03.5	333	56.7	26.5	349	55.9	58.6
17	315	54.8	30	09.3	−26 14.0	93	18.3	−16 04.0	348	58.9	−14 26.4	4	58.2	−18 58.6
18	330	57.2	45	09.6	−26 13.7	108	19.1	−16 04.5	4	01.1	−14 26.3	20	00.5	−18 58.6
19	345	59.7	60	10.0	13.4	123	19.8	05.0	19	03.3	26.2	35	02.8	58.5
20	1	02.1	75	10.4	13.1	138	20.6	05.5	34	05.5	26.1	50	05.1	58.5
21	16	04.6	90	10.7	12.8	153	21.4	06.1	49	07.7	26.0	65	07.4	58.4
22	31	07.1	105	11.1	12.4	168	22.2	06.6	64	09.9	26.0	80	09.7	58.4
23	46	09.5	120	11.5	12.1	183	22.9	07.1	79	12.1	25.9	95	12.0	58.3
24	61	12.0	135	11.8	−26 11.8	198	23.7	−16 07.6	94	14.3	−14 25.8	110	14.3	−18 58.3
Dif	—			+3	+3		+8	−5		+22	+1		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 17^{d}.1		PHE	4^{h}: 54′.0									
	PMG: 11^{h} 46^{m}.2				SD: 14′.7			12^{h}: 54′.1									
					PMG: 1^{h} 51^{m}			20^{h}: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Puesta de Sol	Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	183	29.6	−20	07.6	333	08.2	+25	48.0		**60 N**	15 16	16 08	17 01	16 27	56	12 05	49
1	198	29.4		08.1	347	38.0 108		50.8	28	**58**	30	17	06	16 54	55	11 38	50
2	213	29.3		08.6	2	07.7 107		53.4	26	**56**	41	25	11	17 15	55	11 17	50
3	228	29.1		09.2	16	37.4 107		56.0	26	**54**	15 51	32	16	32	55	10 59	51
4	243	28.9		09.7	31	07.0 106	+25	58.4	24	**52**	16 00	38	20	17 47	54	44	51
5	258	28.8	−20	10.2	45	36.7 107	+26	00.7	23	**50**	16 08	16 44	17 24	18 00	54	10 32	50
6	273	28.6	−20	10.8	60	06.3 106	+26	02.8	21	**45**	16 25	16 57	17 33	18 27	53	10 05	51
7	288	28.4		11.3	74	35.9 106		04.9	21	**40**	39	17 08	41	18 48	53	9 44	51
8	303	28.3		11.8	89	05.5 106		06.8	19	**35**	16 51	18	49	19 06	52	26	51
9	318	28.1		12.4	103	35.0 105		08.6	18	**30**	17 01	27	17 56	21	52	9 11	51
10	333	27.9		12.9	118	04.5 105		10.2	16	**20**	19	43	18 09	19 47	51	8 46	51
11	348	27.8	−20	13.4	132	34.0 105	+26	11.8	16	**10 N**	17 35	17 57	18 23	20 09	51	8 24	51
12	3	27.6	−20	14.0	147	03.5 105	+26	13.2	14	**0**	17 50	18 12	18 37	20 29	51	8 03	51
13	18	27.4		14.5	161	33.0 105		14.5	13	**10 S**	18 05	27	18 54	20 50	50	7 43	50
14	33	27.3		15.0	176	02.5 105		15.7	12	**20**	21	18 45	19 13	21 12	50	7 21	50
15	48	27.1		15.5	190	31.9 104		16.7	10	**30**	40	19 06	38	38	49	6 55	50
16	63	26.9		16.1	205	01.3 104		17.6	9	**35**	18 51	19	19 54	21 54	48	40	50
17	78	26.8	−20	16.6	219	30.7 104	+26	18.4	8	**40**	19 03	19 35	20 14	22 11	48	6 23	50
18	93	26.6	−20	17.1	234	00.1 104	+26	19.1	7	**45**	19 19	19 54	20 39	22 33	47	6 02	49
19	108	26.4		17.6	248	29.5 104		19.6	5	**50**	37	20 18	21 14	23 00	45	5 36	48
20	123	26.3		18.2	262	58.9 104		20.0	4	**52**	46	30	32	13	45	23	48
21	138	26.1		18.7	277	28.3 104		20.3	3	**54**	19 56	20 44	21 56	28	44	5 08	48
22	153	25.9		19.2	291	57.6 103		20.5	2	**56**	20 07	21 00	22 30	23 46	43	4 51	47
23	168	25.7		19.7	306	27.0 104		20.5	0	**58**	20	20	** **	** **	**	30	47
24	183	25.6	−20	20.3	320	56.3 103	+26	20.4	1	**60 S**	20 35	21 45	** **	** **	**	4 04	45

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19^{h} 51^{m}.9		PMG: 14^{h} 59^{m}			PMG: 10^{h} 46^{m}			PMG: 17^{h} 40^{m}			PMG: 16^{h} 37^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	61	12.0	135	11.8	−26 11.8	198	23.7	−16 07.6	94	14.3	−14 25.8	110	14.3	−18 58.3
1	76	14.5	150	12.2	11.5	213	24.5	08.2	109	16.5	25.7	125	16.6	58.3
2	91	16.9	165	12.6	11.2	228	25.2	08.7	124	18.7	25.6	140	18.9	58.2
3	106	19.4	180	13.0	10.8	243	26.0	09.2	139	20.9	25.5	155	21.2	58.2
4	121	21.9	195	13.3	10.5	258	26.7	09.7	154	23.1	25.4	170	23.5	58.1
5	136	24.3	210	13.7	−26 10.2	273	27.5	−16 10.2	169	25.3	−14 25.3	185	25.8	−18 58.1
6	151	26.8	225	14.1	−26 09.9	288	28.3	−16 10.8	184	27.5	−14 25.2	200	28.1	−18 58.0
7	166	29.2	240	14.5	09.5	303	29.0	11.3	199	29.7	25.1	215	30.4	58.0
8	181	31.7	255	14.9	09.2	318	29.8	11.8	214	31.9	25.0	230	32.7	57.9
9	196	34.2	270	15.3	08.9	333	30.6	12.3	229	34.1	24.9	245	34.9	57.9
10	211	36.6	285	15.7	08.5	348	31.3	12.8	244	36.3	24.8	260	37.2	57.9
11	226	39.1	300	16.1	−26 08.2	3	32.1	−16 13.4	259	38.5	−14 24.7	275	39.5	−18 57.8
12	241	41.6	315	16.5	−26 07.9	18	32.9	−16 13.9	274	40.6	−14 24.6	290	41.8	−18 57.8
13	256	44.0	330	16.9	07.5	33	33.6	14.4	289	42.8	24.5	305	44.1	57.7
14	271	46.5	345	17.3	07.2	48	34.4	14.9	304	45.0	24.4	320	46.4	57.7
15	286	49.0	0	17.7	06.9	63	35.2	15.4	319	47.2	24.3	335	48.7	57.6
16	301	51.4	15	18.1	06.5	78	35.9	16.0	334	49.4	24.2	350	51.0	57.6
17	316	53.9	30	18.5	−26 06.2	93	36.7	−16 16.5	349	51.6	−14 24.1	5	53.3	−18 57.6
18	331	56.4	45	18.9	−26 05.9	108	37.4	−16 17.0	4	53.8	−14 24.0	20	55.6	−18 57.5
19	346	58.8	60	19.3	05.5	123	38.2	17.5	19	56.0	23.9	35	57.9	57.5
20	2	01.3	75	19.7	05.2	138	39.0	18.0	34	58.2	23.8	51	00.2	57.4
21	17	03.7	90	20.1	04.9	153	39.7	18.5	50	00.4	23.7	66	02.5	57.4
22	32	06.2	105	20.6	04.5	168	40.5	19.1	65	02.6	23.6	81	04.7	57.3
23	47	08.7	120	21.0	04.2	183	41.3	19.6	80	04.8	23.5	96	07.0	57.3
24	62	11.1	135	21.4	−26 03.9	198	42.0	−16 20.1	95	07.0	−14 23.4	111	09.3	−18 57.2
Dif	—			+4	+3		+8	−5		+22	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 46m.4				LUNA Edad: 18d.1 SD: 14′.7 PMG: 2h 42m PHE: 4h: 54′.2; 12h: 54′.3; 20h: 54′.4 Rº: 50m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	25.6	−20	20.3	320	56.3	+26	20.4	**60 N**	6 33	7 26	8 18	17 23	75	12 54	29
1	198	25.4		20.8	335	25.7 104		20.2 2	**58**	27	17	8 04	17 49	71	28	33
2	213	25.2		21.3	349	55.0 103		19.9 3	**56**	22	09	7 53	18 10	68	12 07	36
3	228	25.1		21.8	4	24.3 103		19.4 5	**54**	17	7 02	43	27	66	11 50	38
4	243	24.9		22.3	18	53.7 104		18.8 6	**52**	13	6 55	34	41	64	35	40
5	258	24.7	−20	22.8	33	23.0 103	+26	18.0 8	**50**	6 09	6 49	7 25	18 54	63	11 22	41
6	273	24.5	−20	23.4	47	52.3 103	+26	17.2 8	**45**	6 00	6 36	7 08	19 20	60	10 56	43
7	288	24.4		23.9	62	21.6 103		16.2 10	**40**	5 51	25	6 54	41	58	35	44
8	303	24.2		24.4	76	51.0 104		15.1 11	**35**	44	15	42	19 58	57	17	46
9	318	24.0		24.9	91	20.3 103		13.9 12	**30**	37	6 06	32	20 13	56	10 02	47
10	333	23.8		25.4	105	49.6 103		12.5 14	**20**	23	5 50	6 14	20 38	54	9 37	48
11	348	23.7	−20	25.9	120	19.0 104	+26	11.0 15	**10 N**	5 10	5 35	5 58	21 00	52	9 15	49
12	3	23.5	−20	26.5	134	48.3 103	+26	09.4 16	**0**	4 55	5 21	5 43	21 20	50	8 54	51
13	18	23.3		27.0	149	17.6 103		07.6 18	**10 S**	39	5 05	28	21 40	49	33	52
14	33	23.1		27.5	163	47.0 104		05.8 18	**20**	4 19	4 48	5 11	22 02	47	8 11	53
15	48	23.0		28.0	178	16.3 103		03.8 20	**30**	3 54	26	4 53	27	45	7 45	54
16	63	22.8		28.5	192	45.7 104	+26	01.6 22	**35**	38	4 13	42	42	43	30	55
17	78	22.6	−20	29.0	207	15.1 104	+25	59.4 22	**40**	3 19	3 58	4 29	22 59	42	7 13	55
18	93	22.4	−20	29.5	221	44.5 104	+25	57.0 24	**45**	2 53	3 39	4 14	23 20	39	6 51	57
19	108	22.3		30.0	236	13.9 104		54.5 25	**50**	19	14	3 55	45	37	24	59
20	123	22.1		30.5	250	43.3 104		51.9 26	**52**	2 00	3 02	46	23 58	35	6 11	60
21	138	21.9		31.0	265	12.7 104		49.1 28	**54**	1 36	2 48	36	** **	**	5 56	61
22	153	21.7		31.6	279	42.1 104		46.2 29	**56**	1 02	32	25	** **	**	38	62
23	168	21.5		32.1	294	11.6 105		43.2 30	**58**	** **	2 12	3 12	0 07	42	5 17	63
24	183	21.4	−20	32.6	308	41.0 104	+25	40.1 31	**60 S**	** **	1 47	2 57	0 35	39	4 49	67

UT	ARIES PMG 19h 48m.0		VENUS Mag: −4.8 PMG: 14h 58m			MARTE Mag: +1.6 PMG: 10h 45m			JÚPITER Mag: −2.4 PMG: 17h 37m			SATURNO Mag: +0.7 PMG: 16h 33m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	62	11.1	135	21.4	−26 03.9	198	42.0	−16 20.1	95	07.0	−14 23.4	111	09.3	−18 57.2
1	77	13.6	150	21.8	03.5	213	42.8	20.6	110	09.2	23.3	126	11.6	57.2
2	92	16.1	165	22.3	03.2	228	43.5	21.1	125	11.4	23.2	141	13.9	57.2
3	107	18.5	180	22.7	02.8	243	44.3	21.6	140	13.6	23.1	156	16.2	57.1
4	122	21.0	195	23.1	02.5	258	45.1	22.2	155	15.8	23.0	171	18.5	57.1
5	137	23.5	210	23.6	−26 02.1	273	45.8	−16 22.7	170	18.0	−14 22.9	186	20.8	−18 57.0
6	152	25.9	225	24.0	−26 01.8	288	46.6	−16 23.2	185	20.2	−14 22.8	201	23.1	−18 57.0
7	167	28.4	240	24.4	01.5	303	47.3	23.7	200	22.3	22.7	216	25.4	56.9
8	182	30.9	255	24.9	01.1	318	48.1	24.2	215	24.5	22.6	231	27.7	56.9
9	197	33.3	270	25.3	00.8	333	48.9	24.7	230	26.7	22.5	246	29.9	56.8
10	212	35.8	285	25.8	00.4	348	49.6	25.3	245	28.9	22.4	261	32.2	56.8
11	227	38.2	300	26.2	−26 00.1	3	50.4	−16 25.8	260	31.1	−14 22.3	276	34.5	−18 56.8
12	242	40.7	315	26.6	−25 59.7	18	51.1	−16 26.3	275	33.3	−14 22.2	291	36.8	−18 56.7
13	257	43.2	330	27.1	59.4	33	51.9	26.8	290	35.5	22.1	306	39.1	56.7
14	272	45.6	345	27.6	59.0	48	52.7	27.3	305	37.7	22.0	321	41.4	56.6
15	287	48.1	0	28.0	58.7	63	53.4	27.8	320	39.9	21.9	336	43.7	56.6
16	302	50.6	15	28.5	58.3	78	54.2	28.3	335	42.1	21.8	351	46.0	56.5
17	317	53.0	30	28.9	−25 58.0	93	54.9	−16 28.9	350	44.2	−14 21.7	6	48.3	−18 56.5
18	332	55.5	45	29.4	−25 57.6	108	55.7	−16 29.4	5	46.4	−14 21.6	21	50.5	−18 56.4
19	347	58.0	60	29.8	57.3	123	56.4	29.9	20	48.6	21.5	36	52.8	56.4
20	3	00.4	75	30.3	56.9	138	57.2	30.4	35	50.8	21.4	51	55.1	56.3
21	18	02.9	90	30.8	56.6	153	58.0	30.9	50	53.0	21.3	66	57.4	56.3
22	33	05.4	105	31.3	56.2	168	58.7	31.4	65	55.2	21.2	81	59.7	56.3
23	48	07.8	120	31.7	55.9	183	59.5	31.9	80	57.4	21.1	97	02.0	56.2
24	63	10.3	135	32.2	−25 55.5	199	00.2	−16 32.4	95	59.6	−14 21.0	112	04.3	−18 56.2
Dif	—			+4	+3		+8	−5		+22	+1		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 19ᵈ.1		PHE	4ʰ: 54′.5								
	PMG: 11ʰ 46ᵐ.7				SD: 14′.8			12ʰ: 54′.6								
					PMG: 3ʰ 32ᵐ			20ʰ: 54′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	21.4	−20	32.6	308	41.0	+25	40.1	**60 N**	15 13	16 05	16 58	18 38	86	13 23	17
1	198	21.2		33.1	323	10.5 105		36.8 33	**58**	27	14	17 04	19 00	80	13 01	22
2	213	21.0		33.6	337	40.0 105		33.5 33	**56**	38	22	09	18	76	12 43	26
3	228	20.8		34.1	352	09.5 105		29.9 36	**54**	49	30	14	33	73	28	28
4	243	20.6		34.6	6	39.0 105		26.3 36	**52**	15 58	37	19	45	71	15	30
5	258	20.5	−20	35.1	21	08.6 106	+25	22.6 37	**50**	16 06	16 43	17 23	19 57	69	12 03	32
6	273	20.3	−20	35.6	35	38.2 106	+25	18.7 39	**45**	16 23	16 56	17 32	20 20	65	11 39	36
7	288	20.1		36.1	50	07.7 105		14.7 40	**40**	38	17 07	41	39	62	19	39
8	303	19.9		36.6	64	37.3 106		10.6 41	**35**	16 50	17	48	20 55	60	11 03	41
9	318	19.7		37.1	79	07.0 107		06.3 43	**30**	17 01	26	17 56	21 09	57	10 49	42
10	333	19.5		37.6	93	36.6 106	+25	01.9 44	**20**	19	43	18 10	32	54	25	45
11	348	19.4	−20	38.1	108	06.3 107	+24	57.4 45	**10 N**	17 35	17 58	18 23	21 52	51	10 04	48
12	3	19.2	−20	38.6	122	36.0 107	+24	52.8 46	**0**	17 50	18 12	18 38	22 10	50	9 45	49
13	18	19.0		39.1	137	05.7 107		48.1 47	**10 S**	18 06	28	18 55	29	46	25	52
14	33	18.8		39.6	151	35.5 108		43.2 49	**20**	22	18 46	19 15	22 49	44	9 04	54
15	48	18.6		40.1	166	05.2 107		38.3 49	**30**	41	19 08	40	23 12	40	8 39	57
16	63	18.4		40.6	180	35.0 108		33.2 51	**35**	18 53	21	19 56	25	38	25	58
17	78	18.3	−20	41.1	195	04.9 109	+24	27.9 53	**40**	19 06	19 37	20 16	23 41	35	8 08	61
18	93	18.1	−20	41.6	209	34.7 108	+24	22.6 53	**45**	19 21	19 56	20 42	23 59	33	7 48	63
19	108	17.9		42.0	224	04.6 109		17.1 55	**50**	40	20 21	21 18	** **	**	23	66
20	123	17.7		42.5	238	34.5 109		11.6 55	**52**	49	34	21 38	** **	**	7 11	68
21	138	17.5		43.0	253	04.4 109		05.9 57	**54**	19 59	20 48	22 03	0 12	33	6 57	70
22	153	17.3		43.5	267	34.4 110	+24	00.1 58	**56**	20 11	21 05	22 41	29	30	40	73
23	168	17.1		44.0	282	04.4 110	+23	54.1 60	**58**	24	26	** **	0 49	27	6 20	77
24	183	17.0	−20	44.5	296	34.4 110	+23	48.1 60	**60 S**	20 40	21 53	** **	1 14	21	5 56	82

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19ʰ 44ᵐ.1		PMG: 14ʰ 57ᵐ			PMG: 10ʰ 43ᵐ			PMG: 17ʰ 33ᵐ			PMG: 16ʰ 29ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	63	10.3	135	32.2	−25 55.5	199	00.2	−16 32.4	95	59.6	−14 21.0	112	04.3	−18 56.2
1	78	12.7	150	32.7	55.2	214	01.0	33.0	111	01.8	20.9	127	06.6	56.1
2	93	15.2	165	33.2	54.8	229	01.7	33.5	126	03.9	20.8	142	08.9	56.1
3	108	17.7	180	33.6	54.4	244	02.5	34.0	141	06.1	20.7	157	11.1	56.0
4	123	20.1	195	34.1	54.1	259	03.3	34.5	156	08.3	20.6	172	13.4	56.0
5	138	22.6	210	34.6	−25 53.7	274	04.0	−16 35.0	171	10.5	−14 20.5	187	15.7	−18 55.9
6	153	25.1	225	35.1	−25 53.4	289	04.8	−16 35.5	186	12.7	−14 20.4	202	18.0	−18 55.9
7	168	27.5	240	35.6	53.0	304	05.5	36.0	201	14.9	20.3	217	20.3	55.9
8	183	30.0	255	36.1	52.6	319	06.3	36.5	216	17.1	20.2	232	22.6	55.8
9	198	32.5	270	36.6	52.3	334	07.0	37.0	231	19.2	20.1	247	24.9	55.8
10	213	34.9	285	37.1	51.9	349	07.8	37.6	246	21.4	20.0	262	27.1	55.7
11	228	37.4	300	37.6	−25 51.6	4	08.5	−16 38.1	261	23.6	−14 19.9	277	29.4	−18 55.7
12	243	39.9	315	38.1	−25 51.2	19	09.3	−16 38.6	276	25.8	−14 19.8	292	31.7	−18 55.6
13	258	42.3	330	38.6	50.8	34	10.0	39.1	291	28.0	19.7	307	34.0	55.6
14	273	44.8	345	39.1	50.5	49	10.8	39.6	306	30.2	19.6	322	36.3	55.5
15	288	47.2	0	39.6	50.1	64	11.5	40.1	321	32.3	19.5	337	38.6	55.5
16	303	49.7	15	40.1	49.7	79	12.3	40.6	336	34.5	19.4	352	40.9	55.4
17	318	52.2	30	40.6	−25 49.4	94	13.1	−16 41.1	351	36.7	−14 19.3	7	43.1	−18 55.4
18	333	54.6	45	41.1	−25 49.0	109	13.8	−16 41.6	6	38.9	−14 19.2	22	45.4	−18 55.3
19	348	57.1	60	41.6	48.6	124	14.6	42.1	21	41.1	19.1	37	47.7	55.3
20	3	59.6	75	42.2	48.3	139	15.3	42.6	36	43.3	19.0	52	50.0	55.3
21	19	02.0	90	42.7	47.9	154	16.1	43.1	51	45.4	18.9	67	52.3	55.2
22	34	04.5	105	43.2	47.5	169	16.8	43.7	66	47.6	18.8	82	54.6	55.2
23	49	07.0	120	43.7	47.2	184	17.6	44.2	81	49.8	18.7	97	56.9	55.1
24	64	09.4	135	44.3	−25 46.8	199	18.3	−16 44.7	96	52.0	−14 18.6	112	59.1	−18 55.1
Dif	—			+5	+4		+8	−5		+22	+1		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 20^{d}.1		PHE	4^{h}: 54′.9									
	PMG: 11^{h} 47^{m}.0				SD: 14′.9			12^{h}: 55′.1									
					PMG: 4^{h} 22^{m}			20^{h}: 55′.3									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	183	17.0	−20	44.5	296	34.4	+23	48.1		**60 N**	6 36	7 30	8 22	20 04	89	13 40	10
1	198	16.8		45.0	311	04.5 111		41.9	62	**58**	30	21	8 08	20	85	23	14
2	213	16.6		45.5	325	34.6 111		35.6	63	**56**	25	12	7 56	34	81	13 09	17
3	228	16.4		46.0	340	04.7 111		29.2	64	**54**	20	7 05	46	46	77	12 56	21
4	243	16.2		46.5	354	34.8 111		22.7	65	**52**	16	6 58	37	20 56	75	45	24
5	258	16.0	−20	46.9	9	05.0 112	+23	16.1	66	**50**	6 11	6 52	7 28	21 06	72	12 35	26
6	273	15.8	−20	47.4	23	35.2 112	+23	09.4	67	**45**	6 02	6 38	7 11	21 25	68	12 15	30
7	288	15.6		47.9	38	05.5 113	+23	02.5	69	**40**	5 53	27	6 56	41	65	11 58	33
8	303	15.4		48.4	52	35.7 112	+22	55.5	70	**35**	46	17	44	21 55	61	44	36
9	318	15.2		48.9	67	06.0 113		48.4	71	**30**	38	6 08	33	22 06	59	31	39
10	333	15.1		49.4	81	36.4 114		41.3	71	**20**	24	5 51	6 15	26	55	11 10	42
11	348	14.9	−20	49.8	96	06.8 114	+22	33.9	74	**10 N**	5 10	5 36	5 59	22 43	51	10 52	45
12	3	14.7	−20	50.3	110	37.2 114	+22	26.5	74	**0**	4 56	5 21	5 43	23 00	47	10 34	49
13	18	14.5		50.8	125	07.6 114		19.0	75	**10 S**	39	5 05	28	15	45	10 17	51
14	33	14.3		51.3	139	38.1 115		11.4	76	**20**	4 19	4 47	5 11	33	40	9 58	55
15	48	14.1		51.8	154	08.6 115	+22	03.6	78	**30**	3 53	25	4 52	23 52	37	36	59
16	63	13.9		52.2	168	39.1 115	+21	55.7	79	**35**	37	4 12	41	** **	**	23	61
17	78	13.7	−20	52.7	183	09.7 116	+21	47.8	79	**40**	3 17	3 56	4 28	** **	**	9 09	63
18	93	13.5	−20	53.2	197	40.3 116	+21	39.7	81	**45**	2 51	3 37	4 12	** **	**	8 51	67
19	108	13.3		53.7	212	10.9 116		31.5	82	**50**	2 15	12	3 53	0 22	28	29	71
20	123	13.1		54.2	226	41.6 117		23.2	83	**52**	1 56	3 00	44	33	26	19	73
21	138	12.9		54.6	241	12.3 117		14.8	84	**54**	1 30	2 45	34	45	24	8 07	76
22	153	12.7		55.1	255	43.1 118	+21	06.3	85	**56**	0 53	28	22	0 59	21	7 53	79
23	168	12.5		55.6	270	13.8 117	+20	57.7	86	**58**	** **	2 08	3 09	1 16	17	37	83
24	183	12.4	−20	56.1	284	44.7 119	+20	49.0	87	**60 S**	** **	1 40	2 53	1 35	13	7 18	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19^{h} 40^{m}.1		PMG: 14^{h} 57^{m}			PMG: 10^{h} 42^{m}			PMG: 17^{h} 30^{m}			PMG: 16^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	64	09.4	135	44.3	−25 46.8	199	18.3	−16 44.7	96	52.0	−14 18.6	112	59.1	−18 55.1
1	79	11.9	150	44.8	46.4	214	19.1	45.2	111	54.2	18.5	128	01.4	55.0
2	94	14.3	165	45.3	46.0	229	19.8	45.7	126	56.3	18.4	143	03.7	55.0
3	109	16.8	180	45.9	45.7	244	20.6	46.2	141	58.5	18.3	158	06.0	54.9
4	124	19.3	195	46.4	45.3	259	21.3	46.7	157	00.7	18.2	173	08.3	54.9
5	139	21.7	210	46.9	−25 44.9	274	22.1	−16 47.2	172	02.9	−14 18.1	188	10.6	−18 54.8
6	154	24.2	225	47.5	−25 44.5	289	22.8	−16 47.7	187	05.1	−14 18.0	203	12.8	−18 54.8
7	169	26.7	240	48.0	44.2	304	23.6	48.2	202	07.2	17.9	218	15.1	54.7
8	184	29.1	255	48.6	43.8	319	24.3	48.7	217	09.4	17.7	233	17.4	54.7
9	199	31.6	270	49.1	43.4	334	25.1	49.2	232	11.6	17.6	248	19.7	54.7
10	214	34.1	285	49.7	43.0	349	25.8	49.7	247	13.8	17.5	263	22.0	54.6
11	229	36.5	300	50.2	−25 42.7	4	26.6	−16 50.2	262	16.0	−14 17.4	278	24.3	−18 54.6
12	244	39.0	315	50.8	−25 42.3	19	27.3	−16 50.7	277	18.1	−14 17.3	293	26.5	−18 54.5
13	259	41.5	330	51.3	41.9	34	28.1	51.2	292	20.3	17.2	308	28.8	54.5
14	274	43.9	345	51.9	41.5	49	28.8	51.7	307	22.5	17.1	323	31.1	54.4
15	289	46.4	0	52.5	41.1	64	29.6	52.2	322	24.7	17.0	338	33.4	54.4
16	304	48.8	15	53.0	40.8	79	30.3	52.7	337	26.8	16.9	353	35.7	54.3
17	319	51.3	30	53.6	−25 40.4	94	31.0	−16 53.3	352	29.0	−14 16.8	8	38.0	−18 54.3
18	334	53.8	45	54.2	−25 40.0	109	31.8	−16 53.8	7	31.2	−14 16.7	23	40.2	−18 54.2
19	349	56.2	60	54.7	39.6	124	32.5	54.3	22	33.4	16.6	38	42.5	54.2
20	4	58.7	75	55.3	39.2	139	33.3	54.8	37	35.5	16.5	53	44.8	54.1
21	20	01.2	90	55.9	38.9	154	34.0	55.3	52	37.7	16.4	68	47.1	54.1
22	35	03.6	105	56.5	38.5	169	34.8	55.8	67	39.9	16.3	83	49.4	54.0
23	50	06.1	120	57.1	38.1	184	35.5	56.3	82	42.1	16.2	98	51.6	54.0
24	65	08.6	135	57.6	−25 37.7	199	36.3	−16 56.8	97	44.2	−14 16.1	113	53.9	−18 54.0
Dif	—			+6	+4		+7	−5		+22	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 47m.3				LUNA Edad: 21d.1 SD: 15′.1 PMG: 5h 11m PHE 4h: 55′.5; 12h: 55′.7; 20h: 55′.9 Rº: 47m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	12.4	−20	56.1	284	44.7	+20	49.0	**60 N**	15 10	16 02	16 56	21 33	91	13 50	6
1	198	12.2		56.5	299	15.5 118		40.2 88	**58**	24	12	17 02	45	86	37	10
2	213	12.0		57.0	313	46.4 119		31.2 90	**56**	36	20	08	21 55	82	26	14
3	228	11.8		57.5	328	17.3 119		22.2 90	**54**	46	28	13	22 03	80	17	16
4	243	11.6		57.9	342	48.2 119		13.1 91	**52**	15 56	35	17	11	77	09	18
5	258	11.4	−20	58.4	357	19.2 120	+20	03.9 92	**50**	16 04	16 41	17 22	22 18	75	13 01	21
6	273	11.2	−20	58.9	11	50.2 120	+19	54.5 94	**45**	16 22	16 55	17 31	22 33	70	12 45	25
7	288	11.0		59.3	26	21.3 121		45.1 94	**40**	37	17 07	40	46	65	31	29
8	303	10.8	−20	59.8	40	52.4 121		35.6 95	**35**	16 49	17	48	22 56	62	20	32
9	318	10.6	−21	00.3	55	23.5 121		25.9 97	**30**	17 00	26	17 55	23 05	60	12 10	35
10	333	10.4		00.7	69	54.6 121		16.2 97	**20**	19	43	18 10	21	55	11 52	40
11	348	10.2	−21	01.2	84	25.8 122	+19	06.4 98	**10 N**	17 35	17 58	18 24	23 34	51	11 37	43
12	3	10.0	−21	01.7	98	57.0 122	+18	56.4 100	**0**	17 51	18 13	18 39	23 47	47	11 23	47
13	18	09.8		02.1	113	28.2 122		46.4 100	**10 S**	18 07	29	18 56	** **	**	11 08	51
14	33	09.6		02.6	127	59.5 123		36.3 101	**20**	24	18 48	19 16	** **	**	10 53	54
15	48	09.4		03.1	142	30.8 123		26.1 102	**30**	43	19 10	42	** **	**	35	59
16	63	09.2		03.5	157	02.1 123		15.8 103	**35**	18 55	23	19 59	0 03	34	24	62
17	78	09.0	−21	04.0	171	33.5 124	+18	05.3 105	**40**	19 08	19 40	20 19	0 16	31	10 12	65
18	93	08.8	−21	04.5	186	04.9 124	+17	54.8 105	**45**	19 24	19 59	20 45	0 32	27	9 58	69
19	108	08.6		04.9	200	36.3 124		44.3 105	**50**	43	20 25	21 23	50	23	40	74
20	123	08.4		05.4	215	07.7 124		33.6 107	**52**	19 52	37	21 43	0 59	21	32	76
21	138	08.2		05.8	229	39.2 125		22.8 108	**54**	20 03	20 52	22 10	1 09	18	23	78
22	153	08.0		06.3	244	10.7 125		11.9 109	**56**	15	21 10	22 52	20	15	12	82
23	168	07.8		06.8	258	42.3 126	+17	01.0 109	**58**	29	21 31	** **	33	12	9 00	85
24	183	07.6	−21	07.2	273	13.8 125	+16	49.9 111	**60 S**	20 45	22 00	** **	1 48	7	8 46	90

UT	ARIES PMG 19h 36m.2		VENUS Mag: −4.8 PMG: 14h 56m			MARTE Mag: +1.6 PMG: 10h 41m			JÚPITER Mag: −2.4 PMG: 17h 27m			SATURNO Mag: +0.7 PMG: 16h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	65	08.6	135	57.6	−25 37.7	199	36.3	−16 56.8	97	44.2	−14 16.1	113	53.9	−18 54.0
1	80	11.0	150	58.2	37.3	214	37.0	57.3	112	46.4	16.0	128	56.2	53.9
2	95	13.5	165	58.8	36.9	229	37.8	57.8	127	48.6	15.9	143	58.5	53.9
3	110	16.0	180	59.4	36.5	244	38.5	58.3	142	50.8	15.8	159	00.8	53.8
4	125	18.4	196	00.0	36.2	259	39.2	58.8	157	52.9	15.7	174	03.0	53.8
5	140	20.9	211	00.6	−25 35.8	274	40.0	−16 59.3	172	55.1	−14 15.5	189	05.3	−18 53.7
6	155	23.3	226	01.2	−25 35.4	289	40.7	−16 59.8	187	57.3	−14 15.4	204	07.6	−18 53.7
7	170	25.8	241	01.8	35.0	304	41.5	−17 00.3	202	59.5	15.3	219	09.9	53.6
8	185	28.3	256	02.4	34.6	319	42.2	00.8	218	01.6	15.2	234	12.2	53.6
9	200	30.7	271	03.0	34.2	334	43.0	01.3	233	03.8	15.1	249	14.4	53.5
10	215	33.2	286	03.6	33.8	349	43.7	01.8	248	06.0	15.0	264	16.7	53.5
11	230	35.7	301	04.2	−25 33.4	4	44.5	−17 02.3	263	08.1	−14 14.9	279	19.0	−18 53.4
12	245	38.1	316	04.8	−25 33.0	19	45.2	−17 02.8	278	10.3	−14 14.8	294	21.3	−18 53.4
13	260	40.6	331	05.4	32.6	34	45.9	03.3	293	12.5	14.7	309	23.6	53.3
14	275	43.1	346	06.1	32.2	49	46.7	03.8	308	14.7	14.6	324	25.8	53.3
15	290	45.5	1	06.7	31.8	64	47.4	04.3	323	16.8	14.5	339	28.1	53.2
16	305	48.0	16	07.3	31.4	79	48.2	04.8	338	19.0	14.4	354	30.4	53.2
17	320	50.5	31	07.9	−25 31.1	94	48.9	−17 05.3	353	21.2	−14 14.3	9	32.7	−18 53.1
18	335	52.9	46	08.6	−25 30.7	109	49.7	−17 05.8	8	23.3	−14 14.2	24	35.0	−18 53.1
19	350	55.4	61	09.2	30.3	124	50.4	06.3	23	25.5	14.1	39	37.2	53.1
20	5	57.8	76	09.8	29.9	139	51.1	06.8	38	27.7	13.9	54	39.5	53.0
21	21	00.3	91	10.5	29.5	154	51.9	07.3	53	29.8	13.8	69	41.8	53.0
22	36	02.8	106	11.1	29.1	169	52.6	07.8	68	32.0	13.7	84	44.1	52.9
23	51	05.2	121	11.7	28.7	184	53.4	08.2	83	34.2	13.6	99	46.4	52.9
24	66	07.7	136	12.4	−25 28.3	199	54.1	−17 08.7	98	36.4	−14 13.5	114	48.6	−18 52.8
Dif	—			+6	+4		+7	−5		+22	+1		+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22^{d}.1		PHE	4^{h}: 56′.2								
	PMG: 11^{h} 47^{m}.7				SD: 15′.3			12^{h}: 56′.4								
					PMG: 5^{h} 58^{m}			20^{h}: 56′.7								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	07.6	−21	07.2	273	13.8	+16	49.9	**60 N**	6 40	7 34	8 27	23 04	91	13 56	4
1	198	07.4		07.7	287	45.4 126		38.8 111	**58**	34	24	12	11	87	47	8
2	213	07.2		08.1	302	17.0 126		27.5 113	**56**	28	15	8 00	17	84	40	11
3	228	07.0		08.6	316	48.6 126		16.2 113	**54**	23	08	7 49	23	81	33	14
4	243	06.7		09.0	331	20.3 127	+16	04.8 114	**52**	18	7 01	40	28	79	27	16
5	258	06.5	−21	09.5	345	52.0 127	+15	53.3 115	**50**	6 14	6 54	7 31	23 33	76	13 22	18
6	273	06.3	−21	09.9	0	23.7 127	+15	41.8 115	**45**	6 04	6 40	7 13	23 43	71	13 10	23
7	288	06.1		10.4	14	55.4 127		30.1 117	**40**	5 55	29	6 59	51	67	13 00	27
8	303	05.9		10.8	29	27.2 128		18.4 117	**35**	47	18	46	23 58	64	12 52	30
9	318	05.7		11.3	43	58.9 127	+15	06.5 119	**30**	40	6 09	35	** **	**	45	32
10	333	05.5		11.7	58	30.7 128	+14	54.6 119	**20**	25	5 53	16	** **	**	32	37
11	348	05.3	−21	12.2	73	02.6 129	+14	42.6 120	**10 N**	5 11	5 37	6 00	** **	**	12 20	42
12	3	05.1	−21	12.6	87	34.4 128	+14	30.6 120	**0**	4 56	5 22	5 44	** **	**	12 10	46
13	18	04.9		13.1	102	06.2 128		18.4 122	**10 S**	39	5 06	28	0 00	42	11 59	50
14	33	04.7		13.5	116	38.1 129	+14	06.2 122	**20**	4 19	4 47	5 11	13	39	47	55
15	48	04.5		14.0	131	10.0 129	+13	53.9 123	**30**	3 53	25	4 52	29	33	34	60
16	63	04.3		14.4	145	41.9 129		41.5 124	**35**	36	4 11	40	37	31	26	63
17	78	04.1	−21	14.9	160	13.8 129	+13	29.0 125	**40**	3 16	3 55	4 27	0 47	28	11 17	66
18	93	03.8	−21	15.3	174	45.8 130	+13	16.4 126	**45**	2 49	3 35	4 11	0 59	24	11 07	70
19	108	03.6		15.8	189	17.7 129	+13	03.8 126	**50**	2 12	3 10	3 51	1 13	20	10 54	75
20	123	03.4		16.2	203	49.7 130	+12	51.1 127	**52**	1 52	2 57	42	20	17	48	78
21	138	03.2		16.7	218	21.7 130		38.4 127	**54**	1 25	42	32	27	15	41	81
22	153	03.0		17.1	232	53.7 130		25.5 129	**56**	0 42	25	20	35	12	34	83
23	168	02.8		17.5	247	25.7 130	+12	12.6 129	**58**	** **	2 03	3 06	45	8	25	87
24	183	02.6	−21	18.0	261	57.7 130	+11	59.6 130	**60 S**	** **	1 34	2 50	1 55	5	10 16	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19^{h} 32^{m}.3		PMG: 14^{h} 55^{m}			PMG: 10^{h} 40^{m}			PMG: 17^{h} 23^{m}			PMG: 16^{h} 18^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	66	07.7	136	12.4	−25 28.3	199	54.1	−17 08.7	98	36.4	−14 13.5	114	48.6	−18 52.8
1	81	10.2	151	13.0	27.9	214	54.8	09.2	113	38.5	13.4	129	50.9	52.8
2	96	12.6	166	13.7	27.5	229	55.6	09.7	128	40.7	13.3	144	53.2	52.7
3	111	15.1	181	14.3	27.1	244	56.3	10.2	143	42.9	13.2	159	55.5	52.7
4	126	17.6	196	15.0	26.7	259	57.1	10.7	158	45.0	13.1	174	57.7	52.6
5	141	20.0	211	15.6	−25 26.3	274	57.8	−17 11.2	173	47.2	−14 13.0	190	00.0	−18 52.6
6	156	22.5	226	16.3	−25 25.9	289	58.5	−17 11.7	188	49.4	−14 12.9	205	02.3	−18 52.5
7	171	24.9	241	16.9	25.4	304	59.3	12.2	203	51.5	12.8	220	04.6	52.5
8	186	27.4	256	17.6	25.0	320	00.0	12.7	218	53.7	12.6	235	06.8	52.4
9	201	29.9	271	18.3	24.6	335	00.7	13.2	233	55.9	12.5	250	09.1	52.4
10	216	32.3	286	18.9	24.2	350	01.5	13.7	248	58.0	12.4	265	11.4	52.3
11	231	34.8	301	19.6	−25 23.8	5	02.2	−17 14.2	264	00.2	−14 12.3	280	13.7	−18 52.3
12	246	37.3	316	20.3	−25 23.4	20	03.0	−17 14.7	279	02.4	−14 12.2	295	16.0	−18 52.2
13	261	39.7	331	20.9	23.0	35	03.7	15.2	294	04.5	12.1	310	18.2	52.2
14	276	42.2	346	21.6	22.6	50	04.4	15.7	309	06.7	12.0	325	20.5	52.1
15	291	44.7	1	22.3	22.2	65	05.2	16.2	324	08.8	11.9	340	22.8	52.1
16	306	47.1	16	23.0	21.8	80	05.9	16.7	339	11.0	11.8	355	25.1	52.0
17	321	49.6	31	23.7	−25 21.4	95	06.6	−17 17.1	354	13.2	−14 11.7	10	27.3	−18 52.0
18	336	52.1	46	24.3	−25 21.0	110	07.4	−17 17.6	9	15.3	−14 11.6	25	29.6	−18 51.9
19	351	54.5	61	25.0	20.6	125	08.1	18.1	24	17.5	11.4	40	31.9	51.9
20	6	57.0	76	25.7	20.1	140	08.9	18.6	39	19.7	11.3	55	34.2	51.8
21	21	59.4	91	26.4	19.7	155	09.6	19.1	54	21.8	11.2	70	36.4	51.8
22	37	01.9	106	27.1	19.3	170	10.3	19.6	69	24.0	11.1	85	38.7	51.7
23	52	04.4	121	27.8	18.9	185	11.1	20.1	84	26.2	11.0	100	41.0	51.7
24	67	06.8	136	28.5	−25 18.5	200	11.8	−17 20.6	99	28.3	−14 10.9	115	43.3	−18 51.7
Dif	—			+7	+4		+7	−5		+22	+1		+23	0

UT	SOL SD: 16′.2 PMG: 11h 48m.0				LUNA Edad: 23d.1 SD: 15′.5 PMG: 6h 45m PHE 4h: 57′.0; 12h: 57′.3; 20h: 57′.6 Rº: 46m				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	183	02.6	−21	18.0	261	57.7	+11	59.6	**60 N**	15 07	16 00	16 54	** **	**	14 00	3
1	198	02.4		18.4	276	29.7 130		46.5 131	**58**	21	10	17 00	** **	**	13 55	6
2	213	02.2		18.9	291	01.7 130		33.4 131	**56**	34	19	06	** **	**	51	9
3	228	02.0		19.3	305	33.8 131		20.2 132	**54**	45	26	11	** **	**	47	12
4	243	01.7		19.7	320	05.8 130	+11	06.9 133	**52**	15 54	33	16	** **	**	43	15
5	258	01.5	−21	20.2	334	37.9 131	+10	53.6 133	**50**	16 03	16 40	17 20	** **	**	13 40	17
6	273	01.3	−21	20.6	349	09.9 130	+10	40.2 134	**45**	16 21	16 54	17 31	** **	**	13 33	21
7	288	01.1		21.0	3	42.0 131		26.7 135	**40**	36	17 06	39	** **	**	27	25
8	303	00.9		21.5	18	14.1 131	+10	13.1 136	**35**	16 49	16	48	** **	**	22	29
9	318	00.7		21.9	32	46.1 130	+9	59.5 136	**30**	17 00	26	17 55	0 05	60	17	32
10	333	00.5		22.3	47	18.2 131		45.9 136	**20**	19	43	18 10	16	55	09	38
11	348	00.2	−21	22.8	61	50.3 131	+9	32.1 138	**10 N**	17 36	17 58	18 24	0 25	50	13 02	42
12	3	00.0	−21	23.2	76	22.4 131	+9	18.3 138	**0**	17 52	18 14	18 40	0 34	46	12 56	46
13	17	59.8		23.6	90	54.4 130	+9	04.5 138	**10 S**	18 08	30	18 57	42	42	49	51
14	32	59.6		24.1	105	26.5 131	+8	50.5 140	**20**	25	18 49	19 18	0 52	37	42	55
15	47	59.4		24.5	119	58.6 131		36.5 140	**30**	45	19 12	19 44	1 02	33	34	61
16	62	59.2		24.9	134	30.6 130		22.5 140	**35**	18 56	25	20 01	08	30	29	64
17	77	59.0	−21	25.4	149	02.7 131	+8	08.4 141	**40**	19 10	19 42	20 22	1 15	26	12 23	68
18	92	58.7	−21	25.8	163	34.7 130	+7	54.3 141	**45**	19 26	20 02	20 49	1 23	22	12 17	72
19	107	58.5		26.2	178	06.8 131		40.0 143	**50**	46	28	21 27	33	17	09	77
20	122	58.3		26.6	192	38.8 130		25.8 142	**52**	19 56	41	21 48	37	15	06	79
21	137	58.1		27.1	207	10.8 130	+7	11.4 144	**54**	20 06	20 56	22 17	42	13	12 02	82
22	152	57.9		27.5	221	42.8 130	+6	57.1 143	**56**	19	21 14	23 05	47	10	11 57	85
23	167	57.6		27.9	236	14.8 130		42.6 145	**58**	33	21 37	** **	1 53	7	52	88
24	182	57.4	−21	28.3	250	46.8 130	+6	28.2 144	**60 S**	20 50	22 08	** **	2 00	4	11 47	92

UT	ARIES PMG 19h 28m.3		VENUS Mag: −4.8 PMG: 14h 53m				MARTE Mag: +1.6 PMG: 10h 39m				JÚPITER Mag: −2.4 PMG: 17h 20m				SATURNO Mag: +0.7 PMG: 16h 15m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	67	06.8	136	28.5	−25	18.5	200	11.8	−17	20.6	99	28.3	−14	10.9	115	43.3	−18	51.7
1	82	09.3	151	29.2		18.1	215	12.5		21.1	114	30.5		10.8	130	45.5		51.6
2	97	11.8	166	29.9		17.7	230	13.3		21.6	129	32.6		10.7	145	47.8		51.6
3	112	14.2	181	30.6		17.3	245	14.0		22.1	144	34.8		10.6	160	50.1		51.5
4	127	16.7	196	31.3		16.8	260	14.7		22.6	159	37.0		10.5	175	52.4		51.5
5	142	19.2	211	32.1	−25	16.4	275	15.5	−17	23.0	174	39.1	−14	10.3	190	54.6	−18	51.4
6	157	21.6	226	32.8	−25	16.0	290	16.2	−17	23.5	189	41.3	−14	10.2	205	56.9	−18	51.4
7	172	24.1	241	33.5		15.6	305	16.9		24.0	204	43.4		10.1	220	59.2		51.3
8	187	26.6	256	34.2		15.2	320	17.7		24.5	219	45.6		10.0	236	01.4		51.3
9	202	29.0	271	34.9		14.8	335	18.4		25.0	234	47.8		09.9	251	03.7		51.2
10	217	31.5	286	35.7		14.3	350	19.1		25.5	249	49.9		09.8	266	06.0		51.2
11	232	33.9	301	36.4	−25	13.9	5	19.9	−17	26.0	264	52.1	−14	09.7	281	08.3	−18	51.1
12	247	36.4	316	37.1	−25	13.5	20	20.6	−17	26.5	279	54.2	−14	09.6	296	10.5	−18	51.1
13	262	38.9	331	37.9		13.1	35	21.3		27.0	294	56.4		09.5	311	12.8		51.0
14	277	41.3	346	38.6		12.7	50	22.1		27.4	309	58.6		09.4	326	15.1		51.0
15	292	43.8	1	39.3		12.2	65	22.8		27.9	325	00.7		09.2	341	17.4		50.9
16	307	46.3	16	40.1		11.8	80	23.5		28.4	340	02.9		09.1	356	19.6		50.9
17	322	48.7	31	40.8	−25	11.4	95	24.3	−17	28.9	355	05.0	−14	09.0	11	21.9	−18	50.8
18	337	51.2	46	41.6	−25	11.0	110	25.0	−17	29.4	10	07.2	−14	08.9	26	24.2	−18	50.8
19	352	53.7	61	42.3		10.5	125	25.7		29.9	25	09.3		08.8	41	26.4		50.7
20	7	56.1	76	43.1		10.1	140	26.4		30.4	40	11.5		08.7	56	28.7		50.7
21	22	58.6	91	43.8		09.7	155	27.2		30.8	55	13.7		08.6	71	31.0		50.6
22	38	01.0	106	44.6		09.3	170	27.9		31.3	70	15.8		08.5	86	33.3		50.6
23	53	03.5	121	45.4		08.8	185	28.6		31.8	85	18.0		08.3	101	35.5		50.5
24	68	06.0	136	46.1	−25	08.4	200	29.4	−17	32.3	100	20.1	−14	08.2	116	37.8	−18	50.5
Dif	—			+7		+4		+7		−5		+22		+1		+23		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 24^{d}.1		PHE	4^{h}: 57′.9									
	PMG: 11^{h} 48^{m}.3				SD: 15′.7			12^{h}: 58′.3									
					PMG: 7^{h} 31^{m}			20^{h}: 58′.6									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	57.4	−21	28.3	250	46.8	+6	28.2		**60 N**	6 43	7 37	8 31	0 35	93	14 03	3
1	197	57.2		28.8	265	18.8 130	+6	13.6	146	**58**	37	27	16	38	90	01	7
2	212	57.0		29.2	279	50.7 129	+5	59.0	146	**56**	31	19	8 04	41	87	14 00	9
3	227	56.8		29.6	294	22.7 130		44.4	146	**54**	26	11	7 53	44	84	13 59	12
4	242	56.6		30.0	308	54.6 129		29.7	147	**52**	21	7 03	43	47	81	58	14
5	257	56.3	−21	30.5	323	26.5 129	+5	15.0	147	**50**	6 16	6 57	7 34	0 49	79	13 57	16
6	272	56.1	−21	30.9	337	58.4 129	+5	00.2	148	**45**	6 06	6 43	7 16	0 54	73	13 54	22
7	287	55.9		31.3	352	30.2 128	+4	45.4	148	**40**	5 57	31	7 01	0 58	69	52	26
8	302	55.7		31.7	7	02.1 129		30.6	148	**35**	49	20	6 48	1 02	65	51	29
9	317	55.5		32.1	21	33.9 128		15.7	149	**30**	41	6 11	37	05	62	49	33
10	332	55.2		32.5	36	05.7 128	+4	00.7	150	**20**	27	5 54	17	11	56	47	38
11	347	55.0	−21	33.0	50	37.5 128	+3	45.7	150	**10 N**	5 12	5 38	6 01	1 15	52	13 44	43
12	2	54.8	−21	33.4	65	09.2 127	+3	30.7	150	**0**	4 57	5 22	5 45	1 20	47	13 42	48
13	17	54.6		33.8	79	40.9 127		15.6	151	**10 S**	39	5 06	29	24	43	40	52
14	32	54.3		34.2	94	12.6 127	+3	00.5	151	**20**	4 19	4 47	5 11	29	38	37	58
15	47	54.1		34.6	108	44.2 126	+2	45.4	151	**30**	3 52	25	4 51	35	32	35	62
16	62	53.9		35.0	123	15.9 127		30.2	152	**35**	35	4 11	40	38	29	33	66
17	77	53.7	−21	35.4	137	47.5 126	+2	15.0	152	**40**	3 14	3 54	4 26	1 41	26	13 31	70
18	92	53.4	−21	35.8	152	19.0 125	+1	59.8	152	**45**	2 47	3 34	4 10	1 45	22	13 29	74
19	107	53.2		36.3	166	50.5 125		44.5	153	**50**	2 09	3 08	3 50	50	17	26	80
20	122	53.0		36.7	181	22.0 125		29.2	153	**52**	1 48	2 55	40	52	15	25	82
21	137	52.8		37.1	195	53.5 125	+1	13.9	153	**54**	1 19	40	30	55	12	24	84
22	152	52.5		37.5	210	24.9 124	+0	58.5	154	**56**	0 31	2 21	17	1 57	10	22	88
23	167	52.3		37.9	224	56.2 123		43.1	154	**58**	** **	1 59	3 03	2 00	7	20	92
24	182	52.1	−21	38.3	239	27.6 124	+0	27.7	154	**60 S**	** **	1 28	2 46	2 04	3	13 19	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.4			Mag: +0.7		
	19^{h} 24^{m}.4		PMG: 14^{h} 52^{m}			PMG: 10^{h} 38^{m}			PMG: 17^{h} 16^{m}			PMG: 16^{h} 11^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	68	06.0	136	46.1	−25 08.4	200	29.4	−17 32.3	100	20.1	−14 08.2	116	37.8	−18 50.5
1	83	08.4	151	46.9	08.0	215	30.1	32.8	115	22.3	08.1	131	40.1	50.4
2	98	10.9	166	47.6	07.6	230	30.8	33.3	130	24.4	08.0	146	42.3	50.4
3	113	13.4	181	48.4	07.1	245	31.6	33.8	145	26.6	07.9	161	44.6	50.3
4	128	15.8	196	49.2	06.7	260	32.3	34.2	160	28.8	07.8	176	46.9	50.3
5	143	18.3	211	50.0	−25 06.3	275	33.0	−17 34.7	175	30.9	−14 07.7	191	49.2	−18 50.2
6	158	20.8	226	50.8	−25 05.8	290	33.7	−17 35.2	190	33.1	−14 07.6	206	51.4	−18 50.2
7	173	23.2	241	51.5	05.4	305	34.5	35.7	205	35.2	07.4	221	53.7	50.1
8	188	25.7	256	52.3	05.0	320	35.2	36.2	220	37.4	07.3	236	56.0	50.1
9	203	28.2	271	53.1	04.6	335	35.9	36.7	235	39.5	07.2	251	58.2	50.0
10	218	30.6	286	53.9	04.1	350	36.6	37.1	250	41.7	07.1	267	00.5	50.0
11	233	33.1	301	54.7	−25 03.7	5	37.4	−17 37.6	265	43.8	−14 07.0	282	02.8	−18 49.9
12	248	35.5	316	55.5	−25 03.3	20	38.1	−17 38.1	280	46.0	−14 06.9	297	05.0	−18 49.9
13	263	38.0	331	56.3	02.8	35	38.8	38.6	295	48.1	06.8	312	07.3	49.8
14	278	40.5	346	57.1	02.4	50	39.6	39.1	310	50.3	06.7	327	09.6	49.8
15	293	42.9	1	57.9	02.0	65	40.3	39.6	325	52.4	06.5	342	11.9	49.7
16	308	45.4	16	58.7	01.5	80	41.0	40.0	340	54.6	06.4	357	14.1	49.7
17	323	47.9	31	59.5	−25 01.1	95	41.7	−17 40.5	355	56.7	−14 06.3	12	16.4	−18 49.6
18	338	50.3	47	00.3	−25 00.7	110	42.5	−17 41.0	10	58.9	−14 06.2	27	18.7	−18 49.6
19	353	52.8	62	01.1	−25 00.2	125	43.2	41.5	26	01.0	06.1	42	20.9	49.5
20	8	55.3	77	01.9	−24 59.8	140	43.9	42.0	41	03.2	06.0	57	23.2	49.5
21	23	57.7	92	02.8	59.3	155	44.6	42.4	56	05.3	05.9	72	25.5	49.4
22	39	00.2	107	03.6	58.9	170	45.4	42.9	71	07.5	05.7	87	27.7	49.4
23	54	02.6	122	04.4	58.5	185	46.1	43.4	86	09.6	05.6	102	30.0	49.3
24	69	05.1	137	05.2	−24 58.0	200	46.8	−17 43.9	101	11.8	−14 05.5	117	32.3	−18 49.3
Dif	—			+8	+4		+7	−5		+22	+1		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 25^{d}.1		PHE	4^{h}: 58′.9								
	PMG: 11^{h} 48^{m}.7		SD: 16′.0			12^{h}: 59′.2								
			PMG: 8^{h} 18^{m}			20^{h}: 59′.5								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	182 52.1	−21 38.3	239 27.6		+0 27.7		**60 N**	15 04	15 58	16 52	2 08	97	14 06	4
1	197 51.9	38.7	253 58.9	123	+0 12.3	154	**58**	19	16 08	16 59	08	93	08	7
2	212 51.6	39.1	268 30.1	122	−0 03.2	155	**56**	32	17	17 05	08	90	09	11
3	227 51.4	39.5	283 01.3	122	18.7	155	**54**	43	25	10	08	87	11	13
4	242 51.2	39.9	297 32.4	121	34.2	155	**52**	15 53	32	15	08	84	12	16
5	257 51.0	−21 40.3	312 03.5	121	−0 49.7	155	**50**	16 02	16 39	17 20	2 08	81	14 13	19
6	272 50.7	−21 40.7	326 34.6	121	−1 05.2	155	**45**	16 20	16 53	17 30	2 07	77	14 16	23
7	287 50.5	41.1	341 05.6	120	20.8	156	**40**	36	17 05	39	07	72	18	28
8	302 50.3	41.5	355 36.5	119	36.4	156	**35**	16 48	16	47	07	68	20	31
9	317 50.1	41.9	10 07.4	119	−1 51.9	155	**30**	17 00	26	17 55	07	65	22	34
10	332 49.8	42.3	24 38.3	119	−2 07.5	156	**20**	19	43	18 10	07	59	25	40
11	347 49.6	−21 42.7	39 09.1	118	−2 23.1	156	**10 N**	17 36	17 59	18 25	2 07	53	14 27	46
12	2 49.4	−21 43.1	53 39.8	117	−2 38.8	157	**0**	17 52	18 15	18 41	2 07	49	14 30	50
13	17 49.1	43.5	68 10.5	117	−2 54.4	156	**10 S**	18 09	31	18 58	07	44	32	55
14	32 48.9	43.9	82 41.1	116	−3 10.0	156	**20**	26	18 50	19 19	07	39	35	60
15	47 48.7	44.3	97 11.6	115	25.7	157	**30**	46	19 13	19 46	07	33	37	66
16	62 48.4	44.7	111 42.1	115	41.3	156	**35**	18 58	27	20 03	07	30	39	70
17	77 48.2	−21 45.1	126 12.6	115	−3 57.0	157	**40**	19 12	19 44	20 24	2 07	26	14 41	73
18	92 48.0	−21 45.5	140 42.9	113	−4 12.6	156	**45**	19 29	20 05	20 52	2 07	22	14 43	78
19	107 47.8	45.9	155 13.2	113	28.3	157	**50**	49	31	21 31	07	17	46	83
20	122 47.5	46.3	169 43.5	113	43.9	156	**52**	19 59	20 45	21 53	07	15	47	86
21	137 47.3	46.7	184 13.6	111	−4 59.5	156	**54**	20 10	21 00	22 23	07	12	48	89
22	152 47.1	47.1	198 43.7	111	−5 15.2	157	**56**	22	19	23 22	07	10	50	92
23	167 46.8	47.5	213 13.7	110	30.8	156	**58**	37	21 43	** **	07	7	52	95
24	182 46.6	−21 47.8	227 43.7	110	−5 46.4	156	**60 S**	20 54	22 15	** **	2 07	3	14 53	100

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.9		Mag: +1.6		Mag: −2.3		Mag: +0.7	
	19^{h} 20^{m}.5	PMG: 14^{h} 51^{m}		PMG: 10^{h} 36^{m}		PMG: 17^{h} 13^{m}		PMG: 16^{h} 07^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	69 05.1	137 05.2	−24 58.0	200 46.8	−17 43.9	101 11.8	−14 05.5	117 32.3	−18 49.3
1	84 07.6	152 06.1	57.6	215 47.5	44.4	116 13.9	05.4	132 34.5	49.2
2	99 10.0	167 06.9	57.2	230 48.3	44.8	131 16.1	05.3	147 36.8	49.2
3	114 12.5	182 07.7	56.7	245 49.0	45.3	146 18.2	05.2	162 39.1	49.1
4	129 15.0	197 08.6	56.3	260 49.7	45.8	161 20.4	05.1	177 41.3	49.1
5	144 17.4	212 09.4	−24 55.8	275 50.4	−17 46.3	176 22.5	−14 04.9	192 43.6	−18 49.0
6	159 19.9	227 10.2	−24 55.4	290 51.1	−17 46.8	191 24.7	−14 04.8	207 45.9	−18 49.0
7	174 22.4	242 11.1	54.9	305 51.9	47.2	206 26.8	04.7	222 48.1	48.9
8	189 24.8	257 11.9	54.5	320 52.6	47.7	221 29.0	04.6	237 50.4	48.9
9	204 27.3	272 12.8	54.1	335 53.3	48.2	236 31.1	04.5	252 52.7	48.8
10	219 29.8	287 13.7	53.6	350 54.0	48.7	251 33.3	04.4	267 54.9	48.8
11	234 32.2	302 14.5	−24 53.2	5 54.8	−17 49.1	266 35.4	−14 04.2	282 57.2	−18 48.7
12	249 34.7	317 15.4	−24 52.7	20 55.5	−17 49.6	281 37.6	−14 04.1	297 59.5	−18 48.7
13	264 37.1	332 16.2	52.3	35 56.2	50.1	296 39.7	04.0	313 01.7	48.6
14	279 39.6	347 17.1	51.8	50 56.9	50.6	311 41.9	03.9	328 04.0	48.6
15	294 42.1	2 18.0	51.4	65 57.6	51.1	326 44.0	03.8	343 06.3	48.5
16	309 44.5	17 18.8	51.0	80 58.4	51.5	341 46.2	03.7	358 08.5	48.4
17	324 47.0	32 19.7	−24 50.5	95 59.1	−17 52.0	356 48.3	−14 03.6	13 10.8	−18 48.4
18	339 49.5	47 20.6	−24 50.1	110 59.8	−17 52.5	11 50.5	−14 03.4	28 13.1	−18 48.3
19	354 51.9	62 21.5	49.6	126 00.5	53.0	26 52.6	03.3	43 15.3	48.3
20	9 54.4	77 22.3	49.2	141 01.2	53.4	41 54.7	03.2	58 17.6	48.2
21	24 56.9	92 23.2	48.7	156 02.0	53.9	56 56.9	03.1	73 19.9	48.2
22	39 59.3	107 24.1	48.3	171 02.7	54.4	71 59.0	03.0	88 22.1	48.1
23	55 01.8	122 25.0	47.8	186 03.4	54.9	87 01.2	02.9	103 24.4	48.1
24	70 04.3	137 25.9	−24 47.4	201 04.1	−17 55.3	102 03.3	−14 02.7	118 26.7	−18 48.0
Dif	—	+9	+4	+7	−5	+21	+1	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 26^{d}.1		PHE	4^{h}: 59′.8									
	PMG: 11^{h} 49^{m}.1				SD: 16′.3			12^{h}: 60′.1									
					PMG: 9^{h} 08^{m}			20^{h}: 60′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	46.6	−21	47.8	227	43.7	−5	46.4		**60 N**	6 46	7 41	8 35	3 45	103	14 10	5
1	197	46.4		48.2	242	13.6 109	−6	02.0	156	**58**	40	31	20	41	99	15	10
2	212	46.1		48.6	256	43.4 108		17.6	156	**56**	34	22	8 07	38	95	20	13
3	227	45.9		49.0	271	13.1 107		33.2	156	**54**	28	13	7 56	35	91	24	16
4	242	45.7		49.4	285	42.8 107	−6	48.8	156	**52**	23	7 06	46	32	88	28	19
5	257	45.4	−21	49.8	300	12.3 105	−7	04.3	155	**50**	6 19	6 59	7 37	3 29	86	14 32	21
6	272	45.2	−21	50.2	314	41.8 105	−7	19.9	156	**45**	6 08	6 45	7 18	3 24	80	14 39	27
7	287	45.0		50.6	329	11.2 104		35.4	155	**40**	5 59	33	7 03	19	75	46	31
8	302	44.7		50.9	343	40.6 104	−7	50.9	155	**35**	51	22	6 50	15	71	51	36
9	317	44.5		51.3	358	09.8 102	−8	06.3	154	**30**	43	6 12	38	12	68	14 56	39
10	332	44.2		51.7	12	39.0 102		21.8	155	**20**	28	5 55	19	06	62	15 05	44
11	347	44.0	−21	52.1	27	08.1 101	−8	37.2	154	**10 N**	5 13	5 39	6 02	3 00	57	15 13	49
12	2	43.8	−21	52.5	41	37.1 100	−8	52.6	154	**0**	4 57	5 23	5 45	2 56	52	15 20	54
13	17	43.5		52.8	56	06.0 99	−9	07.9	153	**10 S**	40	5 06	29	51	47	27	59
14	32	43.3		53.2	70	34.8 98		23.3	154	**20**	4 19	4 47	5 12	46	42	35	63
15	47	43.1		53.6	85	03.5 97		38.5	152	**30**	3 52	24	4 51	40	37	43	70
16	62	42.8		54.0	99	32.1 96	−9	53.8	153	**35**	34	4 10	39	37	33	49	73
17	77	42.6	−21	54.4	114	00.7 96	−10	09.0	152	**40**	3 13	3 53	4 25	2 33	30	15 54	77
18	92	42.4	−21	54.7	128	29.1 94	−10	24.2	152	**45**	2 46	3 33	4 09	2 29	25	16 01	82
19	107	42.1		55.1	142	57.5 94		39.3	151	**50**	2 06	3 06	3 49	24	20	09	88
20	122	41.9		55.5	157	25.7 92	−10	54.4	151	**52**	1 44	2 53	39	22	17	13	91
21	137	41.6		55.9	171	53.9 92	−11	09.4	150	**54**	1 14	37	28	19	15	17	94
22	152	41.4		56.2	186	22.0 91		24.4	150	**56**	0 15	2 18	15	17	12	22	97
23	167	41.2		56.6	200	49.9 89		39.4	150	**58**	** **	1 55	3 01	14	8	27	101
24	182	40.9	−21	57.0	215	17.8 89	−11	54.2	148	**60 S**	** **	1 22	2 43	2 10	5	16 33	106

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	19^{h} 16^{m}.6		PMG: 14^{h} 49^{m}			PMG: 10^{h} 35^{m}			PMG: 17^{h} 09^{m}			PMG: 16^{h} 04^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	70	04.3	137	25.9	−24 47.4	201	04.1	−17 55.3	102	03.3	−14 02.7	118	26.7	−18 48.0
1	85	06.7	152	26.8	46.9	216	04.8	55.8	117	05.5	02.6	133	28.9	48.0
2	100	09.2	167	27.7	46.5	231	05.5	56.3	132	07.6	02.5	148	31.2	47.9
3	115	11.6	182	28.6	46.0	246	06.3	56.8	147	09.7	02.4	163	33.5	47.9
4	130	14.1	197	29.5	45.6	261	07.0	57.2	162	11.9	02.3	178	35.7	47.8
5	145	16.6	212	30.4	−24 45.1	276	07.7	−17 57.7	177	14.0	−14 02.1	193	38.0	−18 47.8
6	160	19.0	227	31.3	−24 44.7	291	08.4	−17 58.2	192	16.2	−14 02.0	208	40.3	−18 47.7
7	175	21.5	242	32.2	44.2	306	09.1	58.6	207	18.3	01.9	223	42.5	47.7
8	190	24.0	257	33.2	43.8	321	09.9	59.1	222	20.5	01.8	238	44.8	47.6
9	205	26.4	272	34.1	43.3	336	10.6	−17 59.6	237	22.6	01.7	253	47.0	47.6
10	220	28.9	287	35.0	42.8	351	11.3	−18 00.1	252	24.7	01.6	268	49.3	47.5
11	235	31.4	302	35.9	−24 42.4	6	12.0	−18 00.5	267	26.9	−14 01.4	283	51.6	−18 47.5
12	250	33.8	317	36.8	−24 41.9	21	12.7	−18 01.0	282	29.0	−14 01.3	298	53.8	−18 47.4
13	265	36.3	332	37.8	41.5	36	13.4	01.5	297	31.2	01.2	313	56.1	47.4
14	280	38.7	347	38.7	41.0	51	14.1	01.9	312	33.3	01.1	328	58.4	47.3
15	295	41.2	2	39.6	40.6	66	14.9	02.4	327	35.4	01.0	344	00.6	47.3
16	310	43.7	17	40.6	40.1	81	15.6	02.9	342	37.6	00.9	359	02.9	47.2
17	325	46.1	32	41.5	−24 39.7	96	16.3	−18 03.4	357	39.7	−14 00.7	14	05.1	−18 47.2
18	340	48.6	47	42.5	−24 39.2	111	17.0	−18 03.8	12	41.9	−14 00.6	29	07.4	−18 47.1
19	355	51.1	62	43.4	38.7	126	17.7	04.3	27	44.0	00.5	44	09.7	47.1
20	10	53.5	77	44.4	38.3	141	18.4	04.8	42	46.1	00.4	59	11.9	47.0
21	25	56.0	92	45.3	37.8	156	19.2	05.2	57	48.3	00.3	74	14.2	46.9
22	40	58.5	107	46.3	37.4	171	19.9	05.7	72	50.4	−14 00.1	89	16.5	46.9
23	56	00.9	122	47.2	36.9	186	20.6	06.2	87	52.6	−14 00.0	104	18.7	46.8
24	71	03.4	137	48.2	−24 36.4	201	21.3	−18 06.6	102	54.7	−13 59.9	119	21.0	−18 46.8
Dif	—			+9	+5		+7	−5		+21	+1		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 27ᵈ.1		PHE	4ʰ: 60′.6								
	PMG: 11ʰ 49ᵐ.5		SD: 16′.5			12ʰ: 60′.8								
			PMG: 10ʰ 01ᵐ			20ʰ: 61′.0								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	182 40.9	−21 57.0	215 17.8	88	−11 54.2	149	**60 N**	15 01	15 56	16 51	5 28	110	14 15	9
1	197 40.7	57.3	229 45.6	86	−12 09.1	148	**58**	17	16 06	16 58	20	104	25	14
2	212 40.4	57.7	244 13.2	86	23.9	147	**56**	30	16	17 04	13	99	33	18
3	227 40.2	58.1	258 40.8	86	38.6	147	**54**	41	24	09	06	96	40	23
4	242 40.0	58.5	273 08.3	85	−12 53.2	146	**52**	15 51	31	14	5 00	93	47	25
5	257 39.7	−21 58.8	287 35.6	83	−13 07.8	146	**50**	16 00	16 38	17 19	4 55	90	14 53	28
6	272 39.5	−21 59.2	302 02.9	83	−13 22.3	145	**45**	16 20	16 53	17 29	4 44	83	15 06	34
7	287 39.2	59.6	316 30.0	81	36.8	145	**40**	35	17 05	39	34	79	17	38
8	302 39.0	−21 59.9	330 57.0	80	−13 51.2	144	**35**	16 48	16	47	26	75	27	41
9	317 38.7	−22 00.3	345 24.0	80	−14 05.5	143	**30**	17 00	26	17 55	20	71	35	45
10	332 38.5	00.7	359 50.8	78	19.8	143	**20**	20	43	18 11	4 08	66	15 49	50
11	347 38.3	−22 01.0	14 17.5	77	−14 33.9	141	**10 N**	17 37	17 59	18 26	3 57	61	16 02	55
12	2 38.0	−22 01.4	28 44.1	76	−14 48.0	141	**0**	17 53	18 15	18 41	3 48	56	16 14	59
13	17 37.8	01.7	43 10.6	75	−15 02.0	140	**10 S**	18 10	32	18 59	38	52	26	63
14	32 37.5	02.1	57 37.0	74	16.0	140	**20**	27	18 52	19 20	28	47	38	68
15	47 37.3	02.5	72 03.3	73	29.8	138	**30**	18 48	19 15	19 48	17	41	16 53	73
16	62 37.0	02.8	86 29.4	71	43.6	138	**35**	19 00	29	20 05	10	39	17 02	76
17	77 36.8	−22 03.2	100 55.5	71	−15 57.2	136	**40**	19 14	19 46	20 27	3 03	34	17 11	80
18	92 36.6	−22 03.5	115 21.4	69	−16 10.8	136	**45**	19 31	20 07	20 55	2 54	30	17 23	84
19	107 36.3	03.9	129 47.3	69	24.3	135	**50**	19 52	34	21 35	44	25	37	90
20	122 36.1	04.3	144 13.0	67	37.7	134	**52**	20 02	20 48	21 58	39	22	44	93
21	137 35.8	04.6	158 38.6	66	−16 51.0	133	**54**	13	21 04	22 30	34	19	51	96
22	152 35.6	05.0	173 04.1	65	−17 04.2	132	**56**	26	23	** **	29	15	17 59	100
23	167 35.3	05.3	187 29.4	63	17.3	131	**58**	41	21 48	** **	22	12	18 08	105
24	182 35.1	−22 05.7	201 54.7	63	−17 30.2	129	**60 S**	20 58	22 22	** **	2 15	8	18 19	111

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.9		Mag: +1.6		Mag: −2.3		Mag: +0.7	
	19ʰ 12ᵐ.6	PMG: 14ʰ 48ᵐ		PMG: 10ʰ 34ᵐ		PMG: 17ʰ 06ᵐ		PMG: 16ʰ 00ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	71 03.4	137 48.2	−24 36.4	201 21.3	−18 06.6	102 54.7	−13 59.9	119 21.0	−18 46.8
1	86 05.9	152 49.2	36.0	216 22.0	07.1	117 56.8	59.8	134 23.2	46.7
2	101 08.3	167 50.1	35.5	231 22.7	07.6	132 59.0	59.7	149 25.5	46.7
3	116 10.8	182 51.1	35.1	246 23.4	08.0	148 01.1	59.5	164 27.8	46.6
4	131 13.2	197 52.1	34.6	261 24.1	08.5	163 03.2	59.4	179 30.0	46.6
5	146 15.7	212 53.1	−24 34.1	276 24.9	−18 09.0	178 05.4	−13 59.3	194 32.3	−18 46.5
6	161 18.2	227 54.0	−24 33.7	291 25.6	−18 09.4	193 07.5	−13 59.2	209 34.6	−18 46.5
7	176 20.6	242 55.0	33.2	306 26.3	09.9	208 09.7	59.1	224 36.8	46.4
8	191 23.1	257 56.0	32.7	321 27.0	10.4	223 11.8	59.0	239 39.1	46.4
9	206 25.6	272 57.0	32.3	336 27.7	10.8	238 13.9	58.8	254 41.3	46.3
10	221 28.0	287 58.0	31.8	351 28.4	11.3	253 16.1	58.7	269 43.6	46.3
11	236 30.5	302 59.0	−24 31.3	6 29.1	−18 11.8	268 18.2	−13 58.6	284 45.9	−18 46.2
12	251 33.0	318 00.0	−24 30.9	21 29.8	−18 12.2	283 20.3	−13 58.5	299 48.1	−18 46.2
13	266 35.4	333 01.0	30.4	36 30.5	12.7	298 22.5	58.4	314 50.4	46.1
14	281 37.9	348 02.0	30.0	51 31.3	13.2	313 24.6	58.2	329 52.6	46.1
15	296 40.4	3 03.0	29.5	66 32.0	13.6	328 26.7	58.1	344 54.9	46.0
16	311 42.8	18 04.0	29.0	81 32.7	14.1	343 28.9	58.0	359 57.2	45.9
17	326 45.3	33 05.0	−24 28.5	96 33.4	−18 14.6	358 31.0	−13 57.9	14 59.4	−18 45.9
18	341 47.7	48 06.0	−24 28.1	111 34.1	−18 15.0	13 33.1	−13 57.7	30 01.7	−18 45.8
19	356 50.2	63 07.0	27.6	126 34.8	15.5	28 35.3	57.6	45 03.9	45.8
20	11 52.7	78 08.1	27.1	141 35.5	16.0	43 37.4	57.5	60 06.2	45.7
21	26 55.1	93 09.1	26.7	156 36.2	16.4	58 39.5	57.4	75 08.5	45.7
22	41 57.6	108 10.1	26.2	171 36.9	16.9	73 41.7	57.3	90 10.7	45.6
23	57 00.1	123 11.1	25.7	186 37.6	17.3	88 43.8	57.1	105 13.0	45.6
24	72 02.5	138 12.2	−24 25.3	201 38.3	−18 17.8	103 45.9	−13 57.0	120 15.2	−18 45.5
Dif	—	+10	+5	+7	−5	+21	+1	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 28ᵈ.1		PHE	4ʰ: 61′.2									
	PMG: 11ʰ 49ᵐ.9				SD: 16′.6			12ʰ: 61′.3									
					PMG: 10ʰ 58ᵐ			20ʰ: 61′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	182	35.1	−22	05.7	201	54.7	−17	30.2		**60 N**	6 49	7 44	8 39	7 18	112	14 24	17
1	197	34.8		06.0	216	19.8 61		43.1	129	**58**	42	34	24	7 04	106	39	23
2	212	34.6		06.4	230	44.9 61	−17	55.9	128	**56**	36	24	8 10	6 52	101	14 51	29
3	227	34.3		06.7	245	09.8 59	−18	08.5	126	**54**	31	16	7 59	42	96	15 03	32
4	242	34.1		07.1	259	34.6 58		21.1	126	**52**	26	09	49	33	93	12	36
5	257	33.9	−22	07.4	273	59.3 57	−18	33.5	124	**50**	6 21	7 02	7 39	6 25	90	15 21	38
6	272	33.6	−22	07.8	288	23.8 55	−18	45.8	123	**45**	6 10	6 47	7 20	6 07	85	15 40	43
7	287	33.4		08.1	302	48.3 55	−18	58.0	122	**40**	6 01	35	7 05	5 53	81	15 55	47
8	302	33.1		08.5	317	12.7 54	−19	10.1	121	**35**	5 52	24	6 51	41	77	16 08	50
9	317	32.9		08.8	331	36.9 52		22.0	119	**30**	44	6 14	40	31	74	20	52
10	332	32.6		09.2	346	01.0 51		33.8	118	**20**	29	5 56	20	5 14	69	39	57
11	347	32.4	−22	09.5	0	25.0 50	−19	45.5	117	**10 N**	5 14	5 40	6 03	4 58	65	16 57	60
12	2	32.1	−22	09.9	14	48.9 49	−19	57.1	116	**0**	4 58	5 24	5 46	4 44	61	17 13	63
13	17	31.9		10.2	29	12.7 48	−20	08.5	114	**10 S**	40	5 07	30	30	58	29	66
14	32	31.6		10.6	43	36.4 47		19.8	113	**20**	4 19	4 48	5 12	4 15	54	17 46	70
15	47	31.4		10.9	57	59.9 45		30.9	111	**30**	3 51	24	4 51	3 58	49	18 06	74
16	62	31.1		11.3	72	23.4 45		41.9	110	**35**	34	4 10	39	49	45	18	76
17	77	30.9	−22	11.6	86	46.7 43	−20	52.8	109	**40**	3 12	3 53	4 25	3 37	43	18 31	80
18	92	30.6	−22	11.9	101	10.0 43	−21	03.5	107	**45**	2 44	3 32	4 08	3 24	39	18 47	83
19	107	30.4		12.3	115	33.1 41		14.0	105	**50**	2 04	3 05	3 47	09	32	19 07	88
20	122	30.1		12.6	129	56.1 40		24.5	105	**52**	1 41	2 51	37	3 01	30	17	90
21	137	29.9		13.0	144	19.1 40		34.7	102	**54**	1 09	35	26	2 53	27	27	94
22	152	29.6		13.3	158	41.9 38		44.8	101	**56**	** **	2 16	3 13	44	24	39	97
23	167	29.4		13.6	173	04.6 37	−21	54.8	100	**58**	** **	1 51	2 58	34	19	19 53	102
24	182	29.1	−22	14.0	187	27.2 36	−22	04.6	98	**60 S**	** **	1 17	2 40	2 23	13	20 10	108

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	19ʰ 08ᵐ.7		PMG: 14ʰ 46ᵐ			PMG: 10ʰ 33ᵐ			PMG: 17ʰ 03ᵐ			PMG: 15ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	72	02.5	138	12.2	−24 25.3	201	38.3	−18 17.8	103	45.9	−13 57.0	120	15.2	−18 45.5
1	87	05.0	153	13.2	24.8	216	39.0	18.3	118	48.1	56.9	135	17.5	45.5
2	102	07.5	168	14.2	24.3	231	39.8	18.7	133	50.2	56.8	150	19.7	45.4
3	117	09.9	183	15.3	23.9	246	40.5	19.2	148	52.3	56.7	165	22.0	45.4
4	132	12.4	198	16.3	23.4	261	41.2	19.7	163	54.5	56.5	180	24.3	45.3
5	147	14.9	213	17.4	−24 22.9	276	41.9	−18 20.1	178	56.6	−13 56.4	195	26.5	−18 45.3
6	162	17.3	228	18.4	−24 22.4	291	42.6	−18 20.6	193	58.7	−13 56.3	210	28.8	−18 45.2
7	177	19.8	243	19.5	22.0	306	43.3	21.0	209	00.9	56.2	225	31.0	45.1
8	192	22.2	258	20.5	21.5	321	44.0	21.5	224	03.0	56.1	240	33.3	45.1
9	207	24.7	273	21.6	21.0	336	44.7	22.0	239	05.1	55.9	255	35.6	45.0
10	222	27.2	288	22.7	20.5	351	45.4	22.4	254	07.2	55.8	270	37.8	45.0
11	237	29.6	303	23.7	−24 20.1	6	46.1	−18 22.9	269	09.4	−13 55.7	285	40.1	−18 44.9
12	252	32.1	318	24.8	−24 19.6	21	46.8	−18 23.3	284	11.5	−13 55.6	300	42.3	−18 44.9
13	267	34.6	333	25.9	19.1	36	47.5	23.8	299	13.6	55.4	315	44.6	44.8
14	282	37.0	348	27.0	18.6	51	48.2	24.3	314	15.8	55.3	330	46.8	44.8
15	297	39.5	3	28.0	18.2	66	48.9	24.7	329	17.9	55.2	345	49.1	44.7
16	312	42.0	18	29.1	17.7	81	49.6	25.2	344	20.0	55.1	0	51.4	44.7
17	327	44.4	33	30.2	−24 17.2	96	50.3	−18 25.6	359	22.1	−13 54.9	15	53.6	−18 44.6
18	342	46.9	48	31.3	−24 16.7	111	51.0	−18 26.1	14	24.3	−13 54.8	30	55.9	−18 44.6
19	357	49.3	63	32.4	16.3	126	51.7	26.5	29	26.4	54.7	45	58.1	44.5
20	12	51.8	78	33.5	15.8	141	52.5	27.0	44	28.5	54.6	61	00.4	44.4
21	27	54.3	93	34.6	15.3	156	53.2	27.5	59	30.7	54.5	76	02.6	44.4
22	42	56.7	108	35.7	14.8	171	53.9	27.9	74	32.8	54.3	91	04.9	44.3
23	57	59.2	123	36.8	14.3	186	54.6	28.4	89	34.9	54.2	106	07.1	44.3
24	73	01.7	138	37.9	−24 13.9	201	55.3	−18 28.8	104	37.0	−13 54.1	121	09.4	−18 44.2
Dif	—			+11	+5		+7	−5		+21	+1		+23	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 29^{d}.1		PHE	4^{h}: 61′.4									
	PMG: 11^{h} 50^{m}.3				SD: 16′.7			12^{h}: 61′.5									
					PMG: 12^{h} 01^{m}			20^{h}: 61′.4									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	182	29.1	−22	14.0	187	27.2	−22	04.6		**60 N**	14 59	15 54	16 50	9 10	103	14 41	36
1	197	28.8		14.3	201	49.7 35		14.2	96	**58**	15 15	16 05	16 56	8 50	95	15 02	42
2	212	28.6		14.6	216	12.1 34		23.7	95	**56**	28	14	17 03	33	91	20	45
3	227	28.3		15.0	230	34.5 34		33.0	93	**54**	40	23	08	18	89	35	48
4	242	28.1		15.3	244	56.7 32		42.2	92	**52**	15 50	30	13	8 06	86	48	50
5	257	27.8	−22	15.6	259	18.8 31	−22	51.2	90	**50**	16 00	16 37	17 18	7 55	84	15 59	52
6	272	27.6	−22	16.0	273	40.8 30	−23	00.0	88	**45**	16 19	16 52	17 29	7 32	80	16 23	55
7	287	27.3		16.3	288	02.8 30	−23	08.6	86	**40**	35	17 05	39	7 14	77	42	58
8	302	27.1		16.6	302	24.7 29		17.1	85	**35**	16 48	16	47	6 58	75	16 58	59
9	317	26.8		17.0	316	46.4 27		25.4	83	**30**	17 00	26	17 55	45	73	17 12	61
10	332	26.6		17.3	331	08.1 27		33.5	81	**20**	20	17 44	18 11	23	70	36	63
11	347	26.3	−22	17.6	345	29.7 26	−23	41.5	80	**10 N**	17 37	18 00	18 26	6 03	68	17 57	64
12	2	26.1	−22	18.0	359	51.2 25	−23	49.2	77	**0**	17 54	18 16	18 42	5 45	66	18 16	66
13	17	25.8		18.3	14	12.7 25	−23	56.8	76	**10 S**	18 11	34	19 00	28	62	35	68
14	32	25.5		18.6	28	34.0 23	−24	04.2	74	**20**	29	18 53	22	5 09	60	18 56	69
15	47	25.3		18.9	42	55.3 23		11.4	72	**30**	18 50	19 17	19 50	4 47	57	19 20	71
16	62	25.0		19.3	57	16.5 22		18.5	71	**35**	19 02	31	20 07	34	55	34	72
17	77	24.8	−22	19.6	71	37.7 22	−24	25.3	68	**40**	19 16	19 48	20 29	4 20	52	19 51	73
18	92	24.5	−22	19.9	85	58.8 21	−24	32.0	67	**45**	19 33	20 10	20 58	4 03	49	20 10	75
19	107	24.3		20.2	100	19.8 20		38.4	64	**50**	19 54	37	21 39	3 41	45	35	77
20	122	24.0		20.5	114	40.7 19		44.7	63	**52**	20 04	20 51	22 03	31	43	20 47	78
21	137	23.7		20.9	129	01.6 19		50.8	61	**54**	16	21 08	22 37	20	40	21 01	79
22	152	23.5		21.2	143	22.5 19	−24	56.7	59	**56**	29	27	** **	3 08	36	16	82
23	167	23.2		21.5	157	43.3 18	−25	02.4	57	**58**	20 44	21 53	** **	2 53	32	35	84
24	182	23.0	−22	21.8	172	04.0 17	−25	07.9	55	**60 S**	21 03	22 30	** **	2 36	25	21 58	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	19^{h} 04^{m}.8		PMG: 14^{h} 44^{m}			PMG: 10^{h} 32^{m}			PMG: 16^{h} 59^{m}			PMG: 15^{h} 53^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	73	01.7	138	37.9	−24 13.9	201	55.3	−18 28.8	104	37.0	−13 54.1	121	09.4	−18 44.2
1	88	04.1	153	39.0	13.4	216	56.0	29.3	119	39.2	54.0	136	11.7	44.2
2	103	06.6	168	40.1	12.9	231	56.7	29.7	134	41.3	53.8	151	13.9	44.1
3	118	09.1	183	41.2	12.4	246	57.4	30.2	149	43.4	53.7	166	16.2	44.1
4	133	11.5	198	42.3	11.9	261	58.1	30.7	164	45.5	53.6	181	18.4	44.0
5	148	14.0	213	43.5	−24 11.5	276	58.8	−18 31.1	179	47.7	−13 53.5	196	20.7	−18 44.0
6	163	16.5	228	44.6	−24 11.0	291	59.5	−18 31.6	194	49.8	−13 53.3	211	22.9	−18 43.9
7	178	18.9	243	45.7	10.5	307	00.2	32.0	209	51.9	53.2	226	25.2	43.9
8	193	21.4	258	46.8	10.0	322	00.9	32.5	224	54.0	53.1	241	27.4	43.8
9	208	23.8	273	48.0	09.5	337	01.6	32.9	239	56.2	53.0	256	29.7	43.7
10	223	26.3	288	49.1	09.0	352	02.3	33.4	254	58.3	52.8	271	32.0	43.7
11	238	28.8	303	50.3	−24 08.6	7	03.0	−18 33.8	270	00.4	−13 52.7	286	34.2	−18 43.6
12	253	31.2	318	51.4	−24 08.1	22	03.7	−18 34.3	285	02.5	−13 52.6	301	36.5	−18 43.6
13	268	33.7	333	52.5	07.6	37	04.4	34.7	300	04.7	52.5	316	38.7	43.5
14	283	36.2	348	53.7	07.1	52	05.1	35.2	315	06.8	52.4	331	41.0	43.5
15	298	38.6	3	54.8	06.6	67	05.8	35.6	330	08.9	52.2	346	43.2	43.4
16	313	41.1	18	56.0	06.1	82	06.5	36.1	345	11.0	52.1	1	45.5	43.4
17	328	43.6	33	57.2	−24 05.7	97	07.2	−18 36.6	0	13.1	−13 52.0	16	47.7	−18 43.3
18	343	46.0	48	58.3	−24 05.2	112	07.9	−18 37.0	15	15.3	−13 51.9	31	50.0	−18 43.3
19	358	48.5	63	59.5	04.7	127	08.6	37.5	30	17.4	51.7	46	52.2	43.2
20	13	51.0	79	00.7	04.2	142	09.3	37.9	45	19.5	51.6	61	54.5	43.1
21	28	53.4	94	01.8	03.7	157	10.0	38.4	60	21.6	51.5	76	56.7	43.1
22	43	55.9	109	03.0	03.2	172	10.7	38.8	75	23.8	51.4	91	59.0	43.0
23	58	58.3	124	04.2	02.7	187	11.4	39.3	90	25.9	51.2	107	01.2	43.0
24	74	00.8	139	05.4	−24 02.3	202	12.1	−18 39.7	105	28.0	−13 51.1	122	03.5	−18 42.9
Dif	—			+11	+5		+7	−5		+21	+1		+23	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 0.ᵈ7		PHE	4ʰ: 61′.4								
	PMG: 11ʰ 50.ᵐ7				SD: 16′.7			12ʰ: 61′.3								
					PMG: 13ʰ 06ᵐ			20ʰ: 61′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	182	23.0	−22	21.8	172	04.0	−25	07.9	**60 N**	6 52	7 47	8 43	10 53	70	15 17	67
1	197	22.7		22.1	186	24.7 17		13.2 53	**58**	45	37	27	25	71	15 44	68
2	212	22.5		22.5	200	45.3 16		18.3 51	**56**	39	27	13	10 04	70	16 05	68
3	227	22.2		22.8	215	05.9 16		23.2 49	**54**	33	19	8 02	9 47	69	23	68
4	242	21.9		23.1	229	26.4 15		27.9 47	**52**	28	11	7 51	32	69	38	68
5	257	21.7	−22	23.4	243	47.0 16	−25	32.4 45	**50**	6 23	7 04	7 42	9 19	69	16 51	68
6	272	21.4	−22	23.7	258	07.4 14	−25	36.7 43	**45**	6 12	6 49	7 22	8 52	69	17 18	68
7	287	21.2		24.0	272	27.9 15		40.8 41	**40**	6 03	36	7 07	31	68	40	67
8	302	20.9		24.3	286	48.3 14		44.7 39	**35**	5 54	25	6 53	8 13	68	17 57	68
9	317	20.6		24.7	301	08.7 14		48.4 37	**30**	46	6 15	41	7 58	68	18 13	67
10	332	20.4		25.0	315	29.1 14		51.9 35	**20**	30	5 57	21	33	67	18 39	66
11	347	20.1	−22	25.3	329	49.4 13	−25	55.2 33	**10 N**	5 15	5 41	6 04	7 11	67	19 01	66
12	2	19.9	−22	25.6	344	09.7 13	−25	58.3 31	**0**	4 59	5 25	5 47	6 51	66	19 22	66
13	17	19.6		25.9	358	30.1 14	−26	01.2 29	**10 S**	40	5 07	30	30	66	19 43	65
14	32	19.3		26.2	12	50.4 13		03.8 26	**20**	4 19	4 48	5 12	6 09	64	20 05	65
15	47	19.1		26.5	27	10.7 13		06.3 25	**30**	3 51	24	4 51	5 44	64	31	64
16	62	18.8		26.8	41	31.0 13		08.6 23	**35**	34	4 10	39	29	63	20 46	64
17	77	18.5	−22	27.1	55	51.3 13	−26	10.6 20	**40**	3 12	3 52	4 25	5 12	63	21 04	63
18	92	18.3	−22	27.4	70	11.6 13	−26	12.5 19	**45**	2 43	3 31	4 08	4 52	61	21 25	62
19	107	18.0		27.7	84	31.9 13		14.1 16	**50**	2 02	3 03	3 46	26	60	21 52	61
20	122	17.8		28.0	98	52.2 13		15.6 15	**52**	1 38	2 49	36	14	59	22 05	60
21	137	17.5		28.3	113	12.6 14		16.8 12	**54**	1 04	33	25	4 00	58	20	59
22	152	17.2		28.6	127	32.9 13		17.8 10	**56**	** **	2 13	3 12	3 44	57	38	58
23	167	17.0		28.9	141	53.3 14		18.6 8	**58**	** **	1 48	2 56	25	54	22 59	56
24	182	16.7	−22	29.2	156	13.7 14	−26	19.3 7	**60 S**	** **	1 11	2 38	3 01	51	23 26	53

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	19ʰ 00.ᵐ8		PMG: 14ʰ 42ᵐ			PMG: 10ʰ 31ᵐ			PMG: 16ʰ 56ᵐ			PMG: 15ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	74	00.8	139	05.4	−24 02.3	202	12.1	−18 39.7	105	28.0	−13 51.1	122	03.5	−18 42.9
1	89	03.3	154	06.6	01.8	217	12.7	40.2	120	30.1	51.0	137	05.8	42.9
2	104	05.7	169	07.7	01.3	232	13.4	40.6	135	32.2	50.8	152	08.0	42.8
3	119	08.2	184	08.9	00.8	247	14.1	41.1	150	34.4	50.7	167	10.3	42.8
4	134	10.7	199	10.1	−24 00.3	262	14.8	41.5	165	36.5	50.6	182	12.5	42.7
5	149	13.1	214	11.3	−23 59.8	277	15.5	−18 42.0	180	38.6	−13 50.5	197	14.8	−18 42.6
6	164	15.6	229	12.5	−23 59.3	292	16.2	−18 42.4	195	40.7	−13 50.3	212	17.0	−18 42.6
7	179	18.1	244	13.7	58.8	307	16.9	42.9	210	42.8	50.2	227	19.3	42.5
8	194	20.5	259	15.0	58.3	322	17.6	43.3	225	44.9	50.1	242	21.5	42.5
9	209	23.0	274	16.2	57.8	337	18.3	43.8	240	47.1	50.0	257	23.8	42.4
10	224	25.5	289	17.4	57.4	352	19.0	44.2	255	49.2	49.8	272	26.0	42.4
11	239	27.9	304	18.6	−23 56.9	7	19.7	−18 44.6	270	51.3	−13 49.7	287	28.3	−18 42.3
12	254	30.4	319	19.8	−23 56.4	22	20.4	−18 45.1	285	53.4	−13 49.6	302	30.5	−18 42.3
13	269	32.8	334	21.0	55.9	37	21.1	45.5	300	55.5	49.5	317	32.8	42.2
14	284	35.3	349	22.3	55.4	52	21.8	46.0	315	57.7	49.3	332	35.0	42.1
15	299	37.8	4	23.5	54.9	67	22.5	46.4	330	59.8	49.2	347	37.3	42.1
16	314	40.2	19	24.7	54.4	82	23.2	46.9	346	01.9	49.1	2	39.5	42.0
17	329	42.7	34	26.0	−23 53.9	97	23.9	−18 47.3	1	04.0	−13 49.0	17	41.8	−18 42.0
18	344	45.2	49	27.2	−23 53.4	112	24.6	−18 47.8	16	06.1	−13 48.8	32	44.0	−18 41.9
19	359	47.6	64	28.5	52.9	127	25.3	48.2	31	08.2	48.7	47	46.3	41.9
20	14	50.1	79	29.7	52.4	142	25.9	48.7	46	10.4	48.6	62	48.5	41.8
21	29	52.6	94	31.0	51.9	157	26.6	49.1	61	12.5	48.4	77	50.8	41.8
22	44	55.0	109	32.2	51.4	172	27.3	49.6	76	14.6	48.3	92	53.0	41.7
23	59	57.5	124	33.5	50.9	187	28.0	50.0	91	16.7	48.2	107	55.3	41.6
24	75	00.0	139	34.7	−23 50.4	202	28.7	−18 50.4	106	18.8	−13 48.1	122	57.5	−18 41.6
Dif	—		+12		+5	+7		−4	+21		+1	+23		+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 1ᵈ.7		PHE	4ʰ: 60′.9									
	PMG: 11ʰ 51ᵐ.1				SD: 16′.6			12ʰ: 60′.7									
					PMG: 14ʰ 12ᵐ			20ʰ: 60′.5									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	182	16.7	−22	29.2	156	13.7 14	−26	19.3	4	**60 N**	14 57	15 53	16 49	12 03	36	16 24	96
1	197	16.4		29.5	170	34.1 14		19.7	2	**58**	15 13	16 04	16 56	11 36	41	16 52	90
2	212	16.2		29.8	184	54.5 15		19.9	0	**56**	27	13	17 02	11 14	45	17 13	86
3	227	15.9		30.1	199	15.0 15		19.9	2	**54**	39	22	08	10 56	48	31	83
4	242	15.6		30.4	213	35.5 16		19.7	4	**52**	50	30	13	41	50	46	81
5	257	15.4	−22	30.7	227	56.1 16	−26	19.3	6	**50**	15 59	16 37	17 18	10 28	51	17 59	79
6	272	15.1	−22	31.0	242	16.7 16	−26	18.7	8	**45**	16 19	16 52	17 29	10 01	54	18 26	75
7	287	14.9		31.3	256	37.3 16		17.9	10	**40**	35	17 05	39	9 39	57	18 47	73
8	302	14.6		31.6	270	58.0 17		16.9	13	**35**	16 48	16	47	21	58	19 05	71
9	317	14.3		31.9	285	18.7 17		15.6	14	**30**	17 00	26	17 56	9 06	59	20	69
10	332	14.1		32.2	299	39.5 18		14.2	16	**20**	20	17 44	18 11	8 40	61	19 45	67
11	347	13.8	−22	32.5	314	00.4 19	−26	12.6	18	**10 N**	17 38	18 01	18 27	8 18	62	20 07	65
12	2	13.5	−22	32.8	328	21.3 19	−26	10.8	20	**0**	17 55	18 17	18 43	7 57	64	20 28	62
13	17	13.3		33.1	342	42.2 19		08.8	22	**10 S**	18 12	35	19 02	36	65	20 48	60
14	32	13.0		33.4	357	03.3 21		06.6	24	**20**	30	18 54	23	7 13	67	21 10	57
15	47	12.7		33.7	11	24.4 21		04.2	26	**30**	18 51	19 18	19 51	6 48	68	35	55
16	62	12.5		33.9	25	45.5 21	−26	01.6	27	**35**	19 04	33	20 09	32	70	21 50	53
17	77	12.2	−22	34.2	40	06.8 23	−25	58.9	30	**40**	19 18	19 50	20 31	6 15	70	22 07	50
18	92	11.9	−22	34.5	54	28.1 23	−25	55.9	32	**45**	19 35	20 12	21 00	5 53	72	22 27	48
19	107	11.6		34.8	68	49.5 24		52.7	33	**50**	19 57	40	21 42	26	74	22 53	44
20	122	11.4		35.1	83	11.0 25		49.4	36	**52**	20 07	20 54	22 07	5 13	75	23 05	42
21	137	11.1		35.4	97	32.5 25		45.8	37	**54**	19	21 11	22 43	4 58	76	19	40
22	152	10.8		35.7	111	54.2 27		42.1	39	**56**	32	31	** **	41	77	36	36
23	167	10.6		35.9	126	15.9 27		38.2	41	**58**	20 48	21 58	** **	4 19	80	23 55	32
24	182	10.3	−22	36.2	140	37.7 28	−25	34.1		**60 S**	21 06	22 37	** **	3 52	84	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18ʰ 56ᵐ.9		PMG: 14ʰ 40ᵐ			PMG: 10ʰ 30ᵐ			PMG: 16ʰ 52ᵐ			PMG: 15ʰ 46ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	75	00.0	139	34.7	−23 50.4	202	28.7	−18 50.4	106	18.8	−13 48.1	122	57.5	−18 41.6
1	90	02.4	154	36.0	50.0	217	29.4	50.9	121	20.9	47.9	137	59.8	41.5
2	105	04.9	169	37.3	49.5	232	30.1	51.3	136	23.0	47.8	153	02.0	41.5
3	120	07.3	184	38.5	49.0	247	30.8	51.8	151	25.2	47.7	168	04.3	41.4
4	135	09.8	199	39.8	48.5	262	31.5	52.2	166	27.3	47.5	183	06.5	41.4
5	150	12.3	214	41.1	−23 48.0	277	32.2	−18 52.7	181	29.4	−13 47.4	198	08.8	−18 41.3
6	165	14.7	229	42.4	−23 47.5	292	32.9	−18 53.1	196	31.5	−13 47.3	213	11.0	−18 41.3
7	180	17.2	244	43.7	47.0	307	33.6	53.5	211	33.6	47.2	228	13.3	41.2
8	195	19.7	259	44.9	46.5	322	34.2	54.0	226	35.7	47.0	243	15.5	41.1
9	210	22.1	274	46.2	46.0	337	34.9	54.4	241	37.8	46.9	258	17.8	41.1
10	225	24.6	289	47.5	45.5	352	35.6	54.9	256	40.0	46.8	273	20.0	41.0
11	240	27.1	304	48.8	−23 45.0	7	36.3	−18 55.3	271	42.1	−13 46.7	288	22.3	−18 41.0
12	255	29.5	319	50.1	−23 44.5	22	37.0	−18 55.7	286	44.2	−13 46.5	303	24.5	−18 40.9
13	270	32.0	334	51.4	44.0	37	37.7	56.2	301	46.3	46.4	318	26.8	40.9
14	285	34.5	349	52.7	43.5	52	38.4	56.6	316	48.4	46.3	333	29.0	40.8
15	300	36.9	4	54.1	43.0	67	39.1	57.1	331	50.5	46.1	348	31.3	40.7
16	315	39.4	19	55.4	42.5	82	39.8	57.5	346	52.6	46.0	3	33.5	40.7
17	330	41.8	34	56.7	−23 42.0	97	40.4	−18 58.0	1	54.7	−13 45.9	18	35.8	−18 40.6
18	345	44.3	49	58.0	−23 41.5	112	41.1	−18 58.4	16	56.8	−13 45.7	33	38.0	−18 40.6
19	0	46.8	64	59.3	41.0	127	41.8	58.8	31	59.0	45.6	48	40.3	40.5
20	15	49.2	80	00.7	40.5	142	42.5	59.3	47	01.1	45.5	63	42.5	40.5
21	30	51.7	95	02.0	40.0	157	43.2	−18 59.7	62	03.2	45.4	78	44.7	40.4
22	45	54.2	110	03.3	39.5	172	43.9	−19 00.1	77	05.3	45.2	93	47.0	40.4
23	60	56.6	125	04.7	39.0	187	44.6	00.6	92	07.4	45.1	108	49.2	40.3
24	75	59.1	140	06.0	−23 38.5	202	45.3	−19 01.0	107	09.5	−13 45.0	123	51.5	−18 40.2
Dif	—		+13		+5	+7		−4	+21		+1	+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 2.ᵈ7		PHE	4ʰ: 60′.3									
	PMG: 11ʰ 51.ᵐ5				SD: 16′.4			12ʰ: 60′.0									
					PMG: 15ʰ 15ᵐ			20ʰ: 59′.7									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	182	10.3	−22	36.2	140	37.7	−25	34.1		**60 N**	6 55	7 50	8 46	12 39	17	18 00	103
1	197	10.0		36.5	154	59.7 30		29.8	43	**58**	48	39	30	12 17	24	22	96
2	212	09.8		36.8	169	21.7 30		25.4	44	**56**	41	30	16	11 59	28	39	92
3	227	09.5		37.1	183	43.8 31		20.7	47	**54**	35	21	8 04	44	32	18 54	88
4	242	09.2		37.3	198	06.0 32		15.9	48	**52**	30	13	7 54	31	34	19 07	85
5	257	09.0	−22	37.6	212	28.3 33	−25	10.9	50	**50**	6 25	7 06	7 44	11 19	37	19 18	82
6	272	08.7	−22	37.9	226	50.7 34	−25	05.8	51	**45**	6 14	6 51	7 24	10 55	41	19 41	78
7	287	08.4		38.2	241	13.2 35	−25	00.4	54	**40**	6 04	38	7 08	36	44	20 00	74
8	302	08.1		38.4	255	35.9 37	−24	54.9	55	**35**	5 55	27	6 55	19	48	16	70
9	317	07.9		38.7	269	58.6 37		49.3	56	**30**	47	6 17	43	10 05	50	29	68
10	332	07.6		39.0	284	21.5 39		43.4	59	**20**	31	5 59	22	9 41	54	20 52	64
11	347	07.3	−22	39.3	298	44.4 39	−24	37.4	60	**10 N**	5 16	5 42	6 05	9 20	57	21 12	60
12	2	07.1	−22	39.5	313	07.5 41	−24	31.2	62	**0**	4 59	5 25	5 48	9 01	59	21 30	57
13	17	06.8		39.8	327	30.7 42		24.9	63	**10 S**	41	5 08	31	8 41	63	21 48	53
14	32	06.5		40.1	341	54.0 43		18.4	65	**20**	4 19	4 48	5 13	8 20	66	22 07	50
15	47	06.2		40.4	356	17.4 44		11.7	67	**30**	3 51	24	4 51	7 56	69	30	45
16	62	06.0		40.6	10	40.9 45	−24	04.9	68	**35**	33	4 10	39	42	71	43	43
17	77	05.7	−22	40.9	25	04.6 47	−23	58.0	69	**40**	3 11	3 52	4 24	7 25	74	22 57	40
18	92	05.4	−22	41.2	39	28.3 47	−23	50.9	71	**45**	2 42	3 30	4 07	7 05	77	23 15	36
19	107	05.2		41.4	53	52.2 49		43.6	73	**50**	2 00	3 02	3 46	6 40	82	37	31
20	122	04.9		41.7	68	16.2 50		36.2	74	**52**	1 35	2 48	35	28	84	47	29
21	137	04.6		42.0	82	40.4 52		28.6	76	**54**	0 59	31	24	6 14	87	23 59	26
22	152	04.3		42.2	97	04.6 52		20.9	77	**56**	** **	2 11	3 10	5 58	90	** **	**
23	167	04.1		42.5	111	29.0 54		13.0	79	**58**	** **	1 45	2 55	39	94	** **	**
24	182	03.8	−22	42.8	125	53.5 55	−23	05.0	80	**60 S**	** **	1 06	2 36	5 16	100	0 19	26

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18ʰ 53.ᵐ0		PMG: 14ʰ 38ᵐ			PMG: 10ʰ 29ᵐ			PMG: 16ʰ 49ᵐ			PMG: 15ʰ 42ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	75	59.1	140	06.0	−23 38.5	202	45.3	−19 01.0	107	09.5	−13 45.0	123	51.5	−18 40.2
1	91	01.6	155	07.4	38.0	217	45.9	01.5	122	11.6	44.8	138	53.7	40.2
2	106	04.0	170	08.7	37.5	232	46.6	01.9	137	13.7	44.7	153	56.0	40.1
3	121	06.5	185	10.1	37.0	247	47.3	02.3	152	15.8	44.6	168	58.2	40.1
4	136	09.0	200	11.4	36.5	262	48.0	02.8	167	17.9	44.5	184	00.5	40.0
5	151	11.4	215	12.8	−23 36.0	277	48.7	−19 03.2	182	20.1	−13 44.3	199	02.7	−18 40.0
6	166	13.9	230	14.1	−23 35.5	292	49.4	−19 03.6	197	22.2	−13 44.2	214	05.0	−18 39.9
7	181	16.3	245	15.5	35.0	307	50.1	04.1	212	24.3	44.1	229	07.2	39.8
8	196	18.8	260	16.9	34.4	322	50.7	04.5	227	26.4	43.9	244	09.5	39.8
9	211	21.3	275	18.3	33.9	337	51.4	04.9	242	28.5	43.8	259	11.7	39.7
10	226	23.7	290	19.6	33.4	352	52.1	05.4	257	30.6	43.7	274	13.9	39.7
11	241	26.2	305	21.0	−23 32.9	7	52.8	−19 05.8	272	32.7	−13 43.5	289	16.2	−18 39.6
12	256	28.7	320	22.4	−23 32.4	22	53.5	−19 06.3	287	34.8	−13 43.4	304	18.4	−18 39.6
13	271	31.1	335	23.8	31.9	37	54.2	06.7	302	36.9	43.3	319	20.7	39.5
14	286	33.6	350	25.2	31.4	52	54.8	07.1	317	39.0	43.1	334	22.9	39.4
15	301	36.1	5	26.6	30.9	67	55.5	07.6	332	41.1	43.0	349	25.2	39.4
16	316	38.5	20	28.0	30.4	82	56.2	08.0	347	43.2	42.9	4	27.4	39.3
17	331	41.0	35	29.4	−23 29.9	97	56.9	−19 08.4	2	45.3	−13 42.8	19	29.7	−18 39.3
18	346	43.5	50	30.8	−23 29.4	112	57.6	−19 08.9	17	47.4	−13 42.6	34	31.9	−18 39.2
19	1	45.9	65	32.2	28.9	127	58.3	09.3	32	49.5	42.5	49	34.2	39.2
20	16	48.4	80	33.6	28.4	142	58.9	09.7	47	51.6	42.4	64	36.4	39.1
21	31	50.8	95	35.0	27.9	157	59.6	10.2	62	53.8	42.2	79	38.6	39.0
22	46	53.3	110	36.4	27.4	173	00.3	10.6	77	55.9	42.1	94	40.9	39.0
23	61	55.8	125	37.9	26.9	188	01.0	11.0	92	58.0	42.0	109	43.1	38.9
24	76	58.2	140	39.3	−23 26.3	203	01.7	−19 11.4	108	00.1	−13 41.8	124	45.4	−18 38.9
Dif	—			+14	+5		+7	−4		+21	+1		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 52m.0		Edad: 3d.7 SD: 16′.2 PMG: 16h 14m		PHE 4h: 59′.4 12h: 59′.1 20h: 58′.8 Rº: 52m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉	Dec	hG ☾	Dif	Dec	Dif								
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	182 03.8	−22 42.8	125 53.5	57	−23 05.0	81	**60 N**	14 56	15 52	16 48	12 56	9	19 43	99
1	197 03.5	43.0	140 18.2	58	−22 56.9	83	**58**	15 12	16 03	16 55	41	14	19 58	94
2	212 03.2	43.3	154 43.0	59	48.6	84	**56**	26	13	17 01	27	18	20 11	90
3	227 03.0	43.5	169 07.9	60	40.2	85	**54**	38	21	07	16	21	22	86
4	242 02.7	43.8	183 32.9	61	31.7	87	**52**	49	29	13	12 05	24	32	83
5	257 02.4	−22 44.1	197 58.0	63	−22 23.0	88	**50**	15 58	16 36	17 18	11 56	27	20 40	81
6	272 02.1	−22 44.3	212 23.3	64	−22 14.2	90	**45**	16 18	16 52	17 29	11 36	32	20 59	75
7	287 01.9	44.6	226 48.7	66	−22 05.2	90	**40**	35	17 05	39	20	36	21 14	71
8	302 01.6	44.8	241 14.3	66	−21 56.2	92	**35**	16 48	16	48	11 07	39	26	68
9	317 01.3	45.1	255 39.9	68	47.0	93	**30**	17 00	26	17 56	10 55	42	37	65
10	332 01.0	45.4	270 05.7	70	37.7	95	**20**	21	17 45	18 12	35	46	21 56	59
11	347 00.8	−22 45.6	284 31.7	70	−21 28.2	95	**10 N**	17 39	18 01	18 28	10 17	50	22 12	55
12	2 00.5	−22 45.9	298 57.7	70	−21 18.7	95	**0**	17 56	18 18	18 44	10 00	54	22 27	51
13	17 00.2	46.1	313 23.9	72	−21 09.0	97	**10 S**	18 13	36	19 03	9 44	57	41	48
14	31 59.9	46.4	327 50.3	74	−20 59.2	98	**20**	31	18 56	25	26	61	22 57	44
15	46 59.7	46.6	342 16.7	74	49.4	98	**30**	18 53	19 20	19 53	9 05	66	23 15	39
16	61 59.4	46.9	356 43.3	76	39.4	100	**35**	19 05	35	20 11	8 53	69	26	35
17	76 59.1	−22 47.1	11 10.0	77	−20 29.2	102	**40**	19 20	19 52	20 33	8 39	72	23 37	33
18	91 58.8	−22 47.4	25 36.8	78	−20 19.0	102	**45**	19 37	20 14	21 03	8 22	77	23 51	29
19	106 58.5	47.6	40 03.8	80	−20 08.7	103	**50**	19 59	43	21 46	8 02	81	** **	**
20	121 58.3	47.9	54 30.9	81	−19 58.3	104	**52**	20 09	20 57	22 11	7 52	84	** **	**
21	136 58.0	48.1	68 58.1	82	47.7	106	**54**	21	21 14	22 49	41	87	** **	**
22	151 57.7	48.4	83 25.5	84	37.1	106	**56**	35	21 35	** **	28	91	0 12	23
23	166 57.4	48.6	97 53.0	85	26.4	107	**58**	20 51	22 02	** **	7 13	96	27	19
24	181 57.2	−22 48.8	112 20.6	86	−19 15.5	109	**60 S**	21 10	22 43	** **	6 56	101	0 45	13

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 18h 49m.0	Mag: −4.9 PMG: 14h 36m		Mag: +1.6 PMG: 10h 27m		Mag: −2.3 PMG: 16h 46m		Mag: +0.7 PMG: 15h 39m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	76 58.2	140 39.3	−23 26.3	203 01.7	−19 11.4	108 00.1	−13 41.8	124 45.4	−18 38.9
1	92 00.7	155 40.7	25.8	218 02.3	11.9	123 02.2	41.7	139 47.6	38.8
2	107 03.2	170 42.2	25.3	233 03.0	12.3	138 04.3	41.6	154 49.9	38.8
3	122 05.6	185 43.6	24.8	248 03.7	12.7	153 06.4	41.4	169 52.1	38.7
4	137 08.1	200 45.0	24.3	263 04.4	13.2	168 08.5	41.3	184 54.4	38.6
5	152 10.6	215 46.5	−23 23.8	278 05.1	−19 13.6	183 10.6	−13 41.2	199 56.6	−18 38.6
6	167 13.0	230 47.9	−23 23.3	293 05.7	−19 14.0	198 12.7	−13 41.0	214 58.8	−18 38.5
7	182 15.5	245 49.4	22.8	308 06.4	14.5	213 14.8	40.9	230 01.1	38.5
8	197 18.0	260 50.8	22.3	323 07.1	14.9	228 16.9	40.8	245 03.3	38.4
9	212 20.4	275 52.3	21.8	338 07.8	15.3	243 19.0	40.6	260 05.6	38.4
10	227 22.9	290 53.8	21.3	353 08.5	15.7	258 21.1	40.5	275 07.8	38.3
11	242 25.3	305 55.2	−23 20.7	8 09.1	−19 16.2	273 23.2	−13 40.4	290 10.1	−18 38.2
12	257 27.8	320 56.7	−23 20.2	23 09.8	−19 16.6	288 25.3	−13 40.2	305 12.3	−18 38.2
13	272 30.3	335 58.2	19.7	38 10.5	17.0	303 27.4	40.1	320 14.5	38.1
14	287 32.7	350 59.6	19.2	53 11.2	17.5	318 29.5	40.0	335 16.8	38.1
15	302 35.2	6 01.1	18.7	68 11.9	17.9	333 31.6	39.8	350 19.0	38.0
16	317 37.7	21 02.6	18.2	83 12.5	18.3	348 33.7	39.7	5 21.3	37.9
17	332 40.1	36 04.1	−23 17.7	98 13.2	−19 18.7	3 35.8	−13 39.6	20 23.5	−18 37.9
18	347 42.6	51 05.6	−23 17.2	113 13.9	−19 19.2	18 37.9	−13 39.4	35 25.8	−18 37.8
19	2 45.1	66 07.1	16.6	128 14.6	19.6	33 40.0	39.3	50 28.0	37.8
20	17 47.5	81 08.6	16.1	143 15.2	20.0	48 42.1	39.2	65 30.2	37.7
21	32 50.0	96 10.1	15.6	158 15.9	20.4	63 44.2	39.0	80 32.5	37.7
22	47 52.4	111 11.6	15.1	173 16.6	20.9	78 46.3	38.9	95 34.7	37.6
23	62 54.9	126 13.1	14.6	188 17.3	21.3	93 48.4	38.8	110 37.0	37.5
24	77 57.4	141 14.6	−23 14.1	203 17.9	−19 21.7	108 50.5	−13 38.6	125 39.2	−18 37.5
Dif	—	+15	+5	+7	−4	+21	+1	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 4ᵈ.7		PHE	4ʰ: 58′.5									
	PMG: 11ʰ 52ᵐ.4				SD: 16′.0			12ʰ: 58′.1									
					PMG: 17ʰ 06ᵐ			20ʰ: 57′.8									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′			h m	h m	h m	h m	m	h m	m
0	181	57.2	−22	48.8	112	20.6	−19	15.5		**60 N**	6 57	7 53	8 50	13 05	5	21 22	93
1	196	56.9		49.1	126	48.3 87	−19	04.6 109		**58**	50	42	33	12 55	9	32	89
2	211	56.6		49.3	141	16.2 89	−18	53.6 110		**56**	43	32	19	45	13	41	85
3	226	56.3		49.6	155	44.1 89		42.5 111		**54**	38	23	8 07	37	15	48	82
4	241	56.0		49.8	170	12.2 91		31.3 112		**52**	32	15	7 56	29	18	21 55	79
5	256	55.8	−22	50.1	184	40.5 93	−18	20.0 113		**50**	6 27	7 08	7 46	12 23	20	22 01	77
6	271	55.5	−22	50.3	199	08.8 93	−18	08.7 113		**45**	6 16	6 53	7 26	12 08	25	22 14	72
7	286	55.2		50.5	213	37.3 95	−17	57.2 115		**40**	6 06	40	7 10	11 56	29	25	67
8	301	54.9		50.8	228	05.9 96		45.7 115		**35**	5 57	28	6 56	46	32	34	64
9	316	54.6		51.0	242	34.6 97		34.1 116		**30**	48	18	44	37	35	42	61
10	331	54.4		51.3	257	03.5 99		22.4 117		**20**	32	6 00	24	21	40	22 55	56
11	346	54.1	−22	51.5	271	32.4 99	−17	10.6 118		**10 N**	5 17	5 43	6 06	11 07	45	23 07	51
12	1	53.8	−22	51.7	286	01.5 101	−16	58.8 118		**0**	5 00	5 26	5 49	10 54	49	23 18	47
13	16	53.5		52.0	300	30.7 102		46.9 119		**10 S**	4 42	5 09	32	41	53	29	43
14	31	53.2		52.2	315	00.0 103		34.9 120		**20**	4 20	4 49	5 13	27	58	41	38
15	46	53.0		52.4	329	29.4 104		22.8 121		**30**	3 51	24	4 52	11	63	23 54	33
16	61	52.7		52.7	343	59.0 106	−16	10.7 121		**35**	33	4 10	39	10 02	66	** **	**
17	76	52.4	−22	52.9	358	28.6 106	−15	58.5 122		**40**	3 11	3 52	4 24	9 51	69	** **	**
18	91	52.1	−22	53.1	12	58.4 108	−15	46.3 122		**45**	2 41	3 30	4 07	9 39	73	** **	**
19	106	51.8		53.4	27	28.3 109		33.9 124		**50**	1 58	3 01	3 45	23	79	0 08	24
20	121	51.5		53.6	41	58.3 110		21.6 123		**52**	1 33	2 47	35	16	81	16	21
21	136	51.3		53.8	56	28.4 111	−15	09.1 125		**54**	0 55	30	23	9 08	84	25	18
22	151	51.0		54.0	70	58.6 112	−14	56.6 125		**56**	** **	2 09	3 09	8 59	87	35	15
23	166	50.7		54.3	85	28.9 113		44.0 126		**58**	** **	1 42	2 53	49	90	46	11
24	181	50.4	−22	54.5	99	59.3 114	−14	31.4 126		**60 S**	** **	1 01	2 34	8 37	95	0 58	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18ʰ 45ᵐ.1		PMG: 14ʰ 34ᵐ			PMG: 10ʰ 26ᵐ			PMG: 16ʰ 42ᵐ			PMG: 15ʰ 35ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	77	57.4	141	14.6	−23 14.1	203	17.9	−19 21.7	108	50.5	−13 38.6	125	39.2	−18 37.5
1	92	59.8	156	16.1	13.6	218	18.6	22.1	123	52.6	38.5	140	41.4	37.4
2	108	02.3	171	17.7	13.1	233	19.3	22.6	138	54.7	38.4	155	43.7	37.4
3	123	04.8	186	19.2	12.5	248	20.0	23.0	153	56.8	38.2	170	45.9	37.3
4	138	07.2	201	20.7	12.0	263	20.6	23.4	168	58.9	38.1	185	48.2	37.2
5	153	09.7	216	22.2	−23 11.5	278	21.3	−19 23.8	184	01.0	−13 38.0	200	50.4	−18 37.2
6	168	12.2	231	23.8	−23 11.0	293	22.0	−19 24.3	199	03.1	−13 37.8	215	52.6	−18 37.1
7	183	14.6	246	25.3	10.5	308	22.7	24.7	214	05.2	37.7	230	54.9	37.1
8	198	17.1	261	26.9	10.0	323	23.3	25.1	229	07.3	37.6	245	57.1	37.0
9	213	19.6	276	28.4	09.5	338	24.0	25.5	244	09.4	37.4	260	59.4	37.0
10	228	22.0	291	30.0	08.9	353	24.7	26.0	259	11.5	37.3	276	01.6	36.9
11	243	24.5	306	31.5	−23 08.4	8	25.4	−19 26.4	274	13.6	−13 37.2	291	03.8	−18 36.8
12	258	26.9	321	33.1	−23 07.9	23	26.0	−19 26.8	289	15.7	−13 37.0	306	06.1	−18 36.8
13	273	29.4	336	34.6	07.4	38	26.7	27.2	304	17.8	36.9	321	08.3	36.7
14	288	31.9	351	36.2	06.9	53	27.4	27.6	319	19.9	36.8	336	10.6	36.7
15	303	34.3	6	37.8	06.4	68	28.1	28.1	334	22.0	36.6	351	12.8	36.6
16	318	36.8	21	39.4	05.8	83	28.7	28.5	349	24.0	36.5	6	15.0	36.5
17	333	39.3	36	40.9	−23 05.3	98	29.4	−19 28.9	4	26.1	−13 36.4	21	17.3	−18 36.5
18	348	41.7	51	42.5	−23 04.8	113	30.1	−19 29.3	19	28.2	−13 36.2	36	19.5	−18 36.4
19	3	44.2	66	44.1	04.3	128	30.7	29.7	34	30.3	36.1	51	21.8	36.4
20	18	46.7	81	45.7	03.8	143	31.4	30.2	49	32.4	35.9	66	24.0	36.3
21	33	49.1	96	47.3	03.3	158	32.1	30.6	64	34.5	35.8	81	26.2	36.3
22	48	51.6	111	48.9	02.7	173	32.8	31.0	79	36.6	35.7	96	28.5	36.2
23	63	54.1	126	50.5	02.2	188	33.4	31.4	94	38.7	35.5	111	30.7	36.1
24	78	56.5	141	52.1	−23 01.7	203	34.1	−19 31.8	109	40.8	−13 35.4	126	33.0	−18 36.1
Dif	—			+16	+5		+7	−4		+21	+1		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 52m.9		Edad: 5d.7 SD: 15′.7 PMG: 17h 54m		PHE 4h: 57′.5 12h: 57′.2 20h: 56′.9 Rº: 45m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉	Dec	hG ☾	Dif	Dec	Dif								
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	181 50.4	−22 54.5	99 59.3		−14 31.4		**60 N**	14 54	15 51	16 47	13 10	4	22 55	87
1	196 50.1	54.7	114 29.8	115	18.8	126	**58**	15 11	16 02	16 55	13 04	6	23 01	83
2	211 49.8	54.9	129 00.5	117	−14 06.0	128	**56**	25	12	17 01	12 58	9	06	80
3	226 49.6	55.2	143 31.2	117	−13 53.3	127	**54**	38	21	07	52	12	10	78
4	241 49.3	55.4	158 02.0	118	40.4	129	**52**	48	29	12	47	15	14	75
5	256 49.0	−22 55.6	172 32.9	119	−13 27.5	129	**50**	15 58	16 36	17 18	12 43	17	23 18	73
6	271 48.7	−22 55.8	187 04.0	121	−13 14.6	129	**45**	16 18	16 52	17 29	12 33	22	23 26	68
7	286 48.4	56.0	201 35.1	121	−13 01.6	130	**40**	35	17 05	39	25	25	32	64
8	301 48.1	56.3	216 06.3	122	−12 48.6	130	**35**	16 49	17	48	18	29	38	60
9	316 47.9	56.5	230 37.7	124	35.6	130	**30**	17 01	27	17 57	12	32	43	57
10	331 47.6	56.7	245 09.1	124	22.5	131	**20**	21	17 45	18 13	12 01	37	51	53
11	346 47.3	−22 56.9	259 40.6	125	−12 09.3	132	**10 N**	17 40	18 02	18 29	11 52	41	23 58	48
12	1 47.0	−22 57.1	274 12.2	126	−11 56.1	132	**0**	17 57	18 19	18 45	11 43	45	** **	**
13	16 46.7	57.4	288 43.9	127	42.9	132	**10 S**	18 14	37	19 04	34	50	** **	**
14	31 46.4	57.6	303 15.7	128	29.6	133	**20**	32	18 57	26	25	54	** **	**
15	46 46.2	57.8	317 47.5	128	16.3	133	**30**	18 54	19 21	19 55	14	59	** **	**
16	61 45.9	58.0	332 19.5	130	−11 03.0	133	**35**	19 07	36	20 13	08	62	0 01	31
17	76 45.6	−22 58.2	346 51.5	130	−10 49.6	134	**40**	19 21	19 54	20 35	11 00	66	0 10	27
18	91 45.3	−22 58.4	1 23.6	131	−10 36.3	133	**45**	19 39	20 16	21 05	10 52	70	0 20	23
19	106 45.0	58.6	15 55.9	133	22.8	135	**50**	20 01	20 45	21 49	42	74	32	18
20	121 44.7	58.8	30 28.1	132	−10 09.4	134	**52**	12	21 00	22 15	37	77	37	16
21	136 44.4	59.1	45 00.5	134	−9 55.9	135	**54**	24	17	22 55	32	79	43	14
22	151 44.2	59.3	59 33.0	135	42.4	135	**56**	37	21 38	** **	26	82	50	11
23	166 43.9	59.5	74 05.5	135	28.8	136	**58**	20 54	22 06	** **	19	86	0 57	8
24	181 43.6	−22 59.7	88 38.1	136	−9 15.2	136	**60 S**	21 13	22 50	** **	10 12	89	1 06	4

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 18h 41m.2	Mag: −4.9 PMG: 14h 31m		Mag: +1.6 PMG: 10h 25m		Mag: −2.3 PMG: 16h 39m		Mag: +0.7 PMG: 15h 31m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	78 56.5	141 52.1	−23 01.7	203 34.1	−19 31.8	109 40.8	−13 35.4	126 33.0	−18 36.1
1	93 59.0	156 53.7	01.2	218 34.8	32.3	124 42.9	35.3	141 35.2	36.0
2	109 01.4	171 55.3	00.7	233 35.4	32.7	139 45.0	35.1	156 37.4	36.0
3	124 03.9	186 56.9	−23 00.1	248 36.1	33.1	154 47.1	35.0	171 39.7	35.9
4	139 06.4	201 58.5	−22 59.6	263 36.8	33.5	169 49.2	34.9	186 41.9	35.8
5	154 08.8	217 00.2	−22 59.1	278 37.4	−19 33.9	184 51.3	−13 34.7	201 44.1	−18 35.8
6	169 11.3	232 01.8	−22 58.6	293 38.1	−19 34.3	199 53.4	−13 34.6	216 46.4	−18 35.7
7	184 13.8	247 03.4	58.1	308 38.8	34.8	214 55.4	34.5	231 48.6	35.7
8	199 16.2	262 05.0	57.6	323 39.5	35.2	229 57.5	34.3	246 50.9	35.6
9	214 18.7	277 06.7	57.0	338 40.1	35.6	244 59.6	34.2	261 53.1	35.5
10	229 21.2	292 08.3	56.5	353 40.8	36.0	260 01.7	34.0	276 55.3	35.5
11	244 23.6	307 10.0	−22 56.0	8 41.5	−19 36.4	275 03.8	−13 33.9	291 57.6	−18 35.4
12	259 26.1	322 11.6	−22 55.5	23 42.1	−19 36.8	290 05.9	−13 33.8	306 59.8	−18 35.4
13	274 28.6	337 13.3	55.0	38 42.8	37.2	305 08.0	33.6	322 02.0	35.3
14	289 31.0	352 14.9	54.4	53 43.5	37.7	320 10.1	33.5	337 04.3	35.2
15	304 33.5	7 16.6	53.9	68 44.1	38.1	335 12.2	33.4	352 06.5	35.2
16	319 35.9	22 18.3	53.4	83 44.8	38.5	350 14.3	33.2	7 08.8	35.1
17	334 38.4	37 19.9	−22 52.9	98 45.5	−19 38.9	5 16.4	−13 33.1	22 11.0	−18 35.1
18	349 40.9	52 21.6	−22 52.4	113 46.1	−19 39.3	20 18.4	−13 32.9	37 13.2	−18 35.0
19	4 43.3	67 23.3	51.8	128 46.8	39.7	35 20.5	32.8	52 15.5	34.9
20	19 45.8	82 25.0	51.3	143 47.5	40.1	50 22.6	32.7	67 17.7	34.9
21	34 48.3	97 26.6	50.8	158 48.1	40.6	65 24.7	32.5	82 19.9	34.8
22	49 50.7	112 28.3	50.3	173 48.8	41.0	80 26.8	32.4	97 22.2	34.8
23	64 53.2	127 30.0	49.7	188 49.5	41.4	95 28.9	32.3	112 24.4	34.7
24	79 55.7	142 31.7	−22 49.2	203 50.1	−19 41.8	110 31.0	−13 32.1	127 26.7	−18 34.6
Dif	—	+17	+5	+7	−4	+21	+1	+22	+1

UT	SOL SD: 16′.2 PMG: 11h 53m.3				LUNA Edad: 6d.7 SD: 15′.5 PMG: 18h 39m PHE 4h: 56′.6; 12h: 56′.4; 20h: 56′.1 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	43.6	−22	59.7	88	38.1	−9	15.2	**60 N**	6 59	7 56	8 52	13 14	2	** **	**
1	196	43.3	−22	59.9	103	10.8 137	−9	01.7 135	**58**	52	44	36	10	6	** **	**
2	211	43.0	−23	00.1	117	43.5 137	−8	48.0 137	**56**	45	34	21	07	9	** **	**
3	226	42.7		00.3	132	16.4 139		34.4 136	**54**	39	25	8 09	04	11	** **	**
4	241	42.4		00.5	146	49.2 138		20.7 137	**52**	34	17	7 58	02	13	** **	**
5	256	42.1	−23	00.7	161	22.2 140	−8	07.1 136	**50**	6 29	7 10	7 48	13 00	15	** **	**
6	271	41.9	−23	00.9	175	55.3 141	−7	53.4 137	**45**	6 17	6 55	7 28	12 55	19	** **	**
7	286	41.6		01.1	190	28.4 141		39.7 137	**40**	6 07	41	7 12	50	24	** **	**
8	301	41.3		01.3	205	01.5 141		25.9 138	**35**	5 58	30	6 58	47	26	** **	**
9	316	41.0		01.5	219	34.8 143	−7	12.2 137	**30**	50	19	46	44	29	** **	**
10	331	40.7		01.7	234	08.1 143	−6	58.4 138	**20**	34	6 01	25	38	34	** **	**
11	346	40.4	−23	01.9	248	41.4 143	−6	44.6 138	**10 N**	5 18	5 44	6 07	12 33	38	** **	**
12	1	40.1	−23	02.1	263	14.8 144	−6	30.9 137	**0**	5 01	5 27	5 50	12 28	43	0 05	44
13	16	39.8		02.3	277	48.3 145		17.1 138	**10 S**	4 42	5 09	32	24	46	12	40
14	31	39.5		02.5	292	21.9 146	−6	03.2 139	**20**	4 20	4 49	5 14	19	51	19	35
15	46	39.3		02.7	306	55.5 146	−5	49.4 138	**30**	3 52	25	4 52	13	56	27	30
16	61	39.0		02.9	321	29.1 146		35.6 138	**35**	33	4 10	39	10	59	32	27
17	76	38.7	−23	03.1	336	02.8 147	−5	21.8 138	**40**	3 11	3 52	4 25	12 06	63	0 37	24
18	91	38.4	−23	03.3	350	36.6 148	−5	07.9 139	**45**	2 41	3 30	4 07	12 02	66	0 43	20
19	106	38.1		03.5	5	10.4 148	−4	54.1 138	**50**	1 57	3 01	3 45	11 56	72	50	16
20	121	37.8		03.6	19	44.3 149		40.2 139	**52**	1 31	2 46	34	54	73	53	14
21	136	37.5		03.8	34	18.2 149		26.3 139	**54**	0 51	29	22	51	76	0 57	11
22	151	37.2		04.0	48	52.1 149	−4	12.5 138	**56**	** **	2 08	3 09	48	79	1 01	9
23	166	36.9		04.2	63	26.2 151	−3	58.6 139	**58**	** **	1 40	2 52	45	82	05	6
24	181	36.6	−23	04.4	78	00.2 150	−3	44.7 139	**60 S**	** **	0 56	2 33	11 41	85	1 10	3

UT	ARIES PMG 18h 37m.2		VENUS Mag: −4.9 PMG: 14h 28m			MARTE Mag: +1.6 PMG: 10h 24m			JÚPITER Mag: −2.3 PMG: 16h 36m			SATURNO Mag: +0.7 PMG: 15h 28m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	79	55.7	142	31.7	−22 49.2	203	50.1	−19 41.8	110	31.0	−13 32.1	127	26.7	−18 34.6
1	94	58.1	157	33.4	48.7	218	50.8	42.2	125	33.1	32.0	142	28.9	34.6
2	110	00.6	172	35.1	48.2	233	51.5	42.6	140	35.2	31.8	157	31.1	34.5
3	125	03.0	187	36.8	47.7	248	52.1	43.0	155	37.2	31.7	172	33.4	34.5
4	140	05.5	202	38.5	47.1	263	52.8	43.4	170	39.3	31.6	187	35.6	34.4
5	155	08.0	217	40.3	−22 46.6	278	53.4	−19 43.8	185	41.4	−13 31.4	202	37.8	−18 34.3
6	170	10.4	232	42.0	−22 46.1	293	54.1	−19 44.2	200	43.5	−13 31.3	217	40.1	−18 34.3
7	185	12.9	247	43.7	45.6	308	54.8	44.7	215	45.6	31.1	232	42.3	34.2
8	200	15.4	262	45.4	45.1	323	55.4	45.1	230	47.7	31.0	247	44.5	34.2
9	215	17.8	277	47.2	44.5	338	56.1	45.5	245	49.8	30.9	262	46.8	34.1
10	230	20.3	292	48.9	44.0	353	56.8	45.9	260	51.9	30.7	277	49.0	34.0
11	245	22.8	307	50.6	−22 43.5	8	57.4	−19 46.3	275	53.9	−13 30.6	292	51.2	−18 34.0
12	260	25.2	322	52.4	−22 43.0	23	58.1	−19 46.7	290	56.0	−13 30.5	307	53.5	−18 33.9
13	275	27.7	337	54.1	42.4	38	58.8	47.1	305	58.1	30.3	322	55.7	33.9
14	290	30.2	352	55.9	41.9	53	59.4	47.5	321	00.2	30.2	337	57.9	33.8
15	305	32.6	7	57.6	41.4	69	00.1	47.9	336	02.3	30.0	353	00.2	33.7
16	320	35.1	22	59.4	40.9	84	00.7	48.3	351	04.4	29.9	8	02.4	33.7
17	335	37.5	38	01.2	−22 40.3	99	01.4	−19 48.7	6	06.4	−13 29.8	23	04.6	−18 33.6
18	350	40.0	53	02.9	−22 39.8	114	02.1	−19 49.1	21	08.5	−13 29.6	38	06.9	−18 33.6
19	5	42.5	68	04.7	39.3	129	02.7	49.6	36	10.6	29.5	53	09.1	33.5
20	20	44.9	83	06.5	38.8	144	03.4	50.0	51	12.7	29.3	68	11.3	33.4
21	35	47.4	98	08.3	38.2	159	04.0	50.4	66	14.8	29.2	83	13.6	33.4
22	50	49.9	113	10.0	37.7	174	04.7	50.8	81	16.9	29.1	98	15.8	33.3
23	65	52.3	128	11.8	37.2	189	05.4	51.2	96	19.0	28.9	113	18.0	33.3
24	80	54.8	143	13.6	−22 36.7	204	06.0	−19 51.6	111	21.0	−13 28.8	128	20.3	−18 33.2
Dif	—			+17	+5		+7	−4		+21	+1		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 7ᵈ.7		PHE	4ʰ: 55′.9								
	PMG: 11ʰ 53ᵐ.8		SD: 15′.3			12ʰ: 55′.7								
			PMG: 19ʰ 21ᵐ			20ʰ: 55′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	181 36.6	−23 04.4	78 00.2		−3 44.7		**60 N**	14 54	15 51	16 47	13 16	3	0 22	84
1	196 36.4	04.6	92 34.3	151	30.9	138	**58**	15 11	16 02	16 54	16	5	24	81
2	211 36.1	04.8	107 08.5	152	17.0	139	**56**	25	12	17 01	16	7	26	78
3	226 35.8	05.0	121 42.6	151	−3 03.1	139	**54**	37	21	07	15	10	28	75
4	241 35.5	05.2	136 16.9	153	−2 49.3	138	**52**	48	29	13	15	12	29	73
5	256 35.2	−23 05.3	150 51.1	152	−2 35.4	139	**50**	15 58	16 36	17 18	13 15	14	0 31	70
6	271 34.9	−23 05.5	165 25.4	153	−2 21.5	139	**45**	16 18	16 52	17 29	13 14	19	0 34	66
7	286 34.6	05.7	179 59.8	154	−2 07.7	138	**40**	35	17 05	39	14	22	36	62
8	301 34.3	05.9	194 34.2	154	−1 53.8	139	**35**	16 49	17	49	13	26	38	59
9	316 34.0	06.1	209 08.6	154	40.0	138	**30**	17 01	27	17 57	13	28	40	56
10	331 33.7	06.2	223 43.0	154	26.2	138	**20**	22	17 46	18 13	12	33	44	50
11	346 33.4	−23 06.4	238 17.5	155	−1 12.3	139	**10 N**	17 40	18 03	18 29	13 11	38	0 46	46
12	1 33.2	−23 06.6	252 52.0	155	−0 58.5	138	**0**	17 58	18 20	18 46	13 11	41	0 49	42
13	16 32.9	06.8	267 26.5	155	44.7	138	**10 S**	18 15	38	19 05	10	46	52	37
14	31 32.6	07.0	282 01.1	156	30.9	138	**20**	34	18 58	27	10	50	54	34
15	46 32.3	07.1	296 35.7	156	17.1	138	**30**	18 55	19 23	19 56	09	55	57	29
16	61 32.0	07.3	311 10.3	156	−0 03.3	138	**35**	19 08	38	20 14	09	58	0 59	26
17	76 31.7	−23 07.5	325 45.0	157	+0 10.5	138	**40**	19 23	19 56	20 37	13 09	61	1 01	23
18	91 31.4	−23 07.7	340 19.6	156	+0 24.2	137	**45**	19 41	20 18	21 07	13 08	65	1 03	19
19	106 31.1	07.8	354 54.3	157	38.0	138	**50**	20 03	20 47	21 52	08	69	06	14
20	121 30.8	08.0	9 29.1	158	+0 51.7	137	**52**	14	21 02	22 18	07	72	07	13
21	136 30.5	08.2	24 03.8	157	+1 05.4	137	**54**	26	20	23 01	07	74	08	11
22	151 30.2	08.3	38 38.5	157	19.1	137	**56**	40	21 41	** **	07	77	10	8
23	166 29.9	08.5	53 13.3	158	32.8	137	**58**	20 56	22 10	** **	07	79	11	6
24	181 29.6	−23 08.7	67 48.1	158	+1 46.4	136	**60 S**	21 16	22 56	** **	13 06	83	1 13	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18ʰ 33ᵐ.3		PMG: 14ʰ 25ᵐ			PMG: 10ʰ 23ᵐ			PMG: 16ʰ 32ᵐ			PMG: 15ʰ 24ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º ′		º ′		º ′	º ′		º ′	º ′		º ′	º ′		º ′
0	80 54.8		143 13.6		−22 36.7	204 06.0		−19 51.6	111 21.0		−13 28.8	128 20.3		−18 33.2
1	95 57.3		158 15.4		36.1	219 06.7		52.0	126 23.1		28.6	143 22.5		33.1
2	110 59.7		173 17.2		35.6	234 07.3		52.4	141 25.2		28.5	158 24.7		33.1
3	126 02.2		188 19.0		35.1	249 08.0		52.8	156 27.3		28.4	173 27.0		33.0
4	141 04.6		203 20.8		34.6	264 08.7		53.2	171 29.4		28.2	188 29.2		33.0
5	156 07.1		218 22.6		−22 34.0	279 09.3		−19 53.6	186 31.4		−13 28.1	203 31.4		−18 32.9
6	171 09.6		233 24.5		−22 33.5	294 10.0		−19 54.0	201 33.5		−13 27.9	218 33.7		−18 32.8
7	186 12.0		248 26.3		33.0	309 10.6		54.4	216 35.6		27.8	233 35.9		32.8
8	201 14.5		263 28.1		32.5	324 11.3		54.8	231 37.7		27.7	248 38.1		32.7
9	216 17.0		278 29.9		31.9	339 12.0		55.2	246 39.8		27.5	263 40.4		32.7
10	231 19.4		293 31.8		31.4	354 12.6		55.6	261 41.9		27.4	278 42.6		32.6
11	246 21.9		308 33.6		−22 30.9	9 13.3		−19 56.0	276 43.9		−13 27.2	293 44.8		−18 32.5
12	261 24.4		323 35.4		−22 30.4	24 13.9		−19 56.4	291 46.0		−13 27.1	308 47.1		−18 32.5
13	276 26.8		338 37.3		29.8	39 14.6		56.8	306 48.1		27.0	323 49.3		32.4
14	291 29.3		353 39.1		29.3	54 15.2		57.2	321 50.2		26.8	338 51.5		32.3
15	306 31.8		8 41.0		28.8	69 15.9		57.6	336 52.3		26.7	353 53.8		32.3
16	321 34.2		23 42.8		28.3	84 16.6		58.0	351 54.3		26.5	8 56.0		32.2
17	336 36.7		38 44.7		−22 27.7	99 17.2		−19 58.4	6 56.4		−13 26.4	23 58.2		−18 32.2
18	351 39.1		53 46.6		−22 27.2	114 17.9		−19 58.8	21 58.5		−13 26.2	39 00.5		−18 32.1
19	6 41.6		68 48.4		26.7	129 18.5		59.2	37 00.6		26.1	54 02.7		32.0
20	21 44.1		83 50.3		26.2	144 19.2		−19 59.6	52 02.7		26.0	69 04.9		32.0
21	36 46.5		98 52.2		25.6	159 19.8		−20 00.0	67 04.7		25.8	84 07.2		31.9
22	51 49.0		113 54.1		25.1	174 20.5		−20 00.4	82 06.8		25.7	99 09.4		31.9
23	66 51.5		128 55.9		24.6	189 21.1		00.8	97 08.9		25.5	114 11.6		31.8
24	81 53.9		143 57.8		−22 24.1	204 21.8		−20 01.2	112 11.0		−13 25.4	129 13.8		−18 31.7
Dif	—		+18		+5	+7		−4	+21		+1	+22		+1

UT	SOL SD: 16′.2 PMG: 11h 54m.3				LUNA Edad: 8d.7 SD: 15′.1 PMG: 20h 02m PHE: 4h: 55′.2; 12h: 55′.1; 20h: 54′.9 Rº: 42m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	29.6	−23	08.7	67	48.1	+1	46.4	**60 N**	7 01	7 58	8 55	13 19	2	1 46	82
1	196	29.3		08.8	82	22.9 158	+2	00.1 137	**58**	6 54	46	38	21	6	45	79
2	211	29.0		09.0	96	57.7 158		13.7 136	**56**	47	36	23	23	9	44	76
3	226	28.8		09.2	111	32.6 159		27.3 136	**54**	41	27	11	25	11	43	73
4	241	28.5		09.3	126	07.4 158		40.9 136	**52**	36	19	8 00	27	13	42	71
5	256	28.2	−23	09.5	140	42.3 159	+2	54.5 136	**50**	6 31	7 12	7 50	13 29	15	1 41	69
6	271	27.9	−23	09.7	155	17.1 158	+3	08.0 135	**45**	6 19	6 56	7 30	13 33	19	1 40	64
7	286	27.6		09.8	169	52.0 159		21.5 135	**40**	09	43	7 13	36	23	38	61
8	301	27.3		10.0	184	26.9 159		35.0 135	**35**	6 00	31	6 59	39	25	37	57
9	316	27.0		10.2	199	01.8 159	+3	48.5 135	**30**	5 51	21	47	41	29	36	55
10	331	26.7		10.3	213	36.7 159	+4	01.9 134	**20**	35	6 02	26	45	34	34	50
11	346	26.4	−23	10.5	228	11.6 159	+4	15.4 135	**10 N**	5 19	5 45	6 08	13 49	37	1 32	46
12	1	26.1	−23	10.6	242	46.5 159	+4	28.8 134	**0**	5 02	5 28	5 51	13 52	42	1 31	41
13	16	25.8		10.8	257	21.4 159		42.1 133	**10 S**	4 43	5 10	33	13 56	45	29	38
14	31	25.5		11.0	271	56.3 159	+4	55.5 134	**20**	4 21	4 50	5 14	14 00	49	28	33
15	46	25.2		11.1	286	31.3 160	+5	08.8 133	**30**	3 52	25	4 53	04	55	26	28
16	61	24.9		11.3	301	06.2 159		22.1 133	**35**	34	4 10	40	07	57	25	25
17	76	24.6	−23	11.4	315	41.1 159	+5	35.3 132	**40**	3 11	3 52	4 25	14 10	60	1 24	22
18	91	24.3	−23	11.6	330	16.0 159	+5	48.6 133	**45**	2 41	3 30	4 07	14 13	64	1 22	19
19	106	24.0		11.7	344	50.9 159	+6	01.7 131	**50**	1 56	3 01	3 45	17	69	20	15
20	121	23.7		11.9	359	25.8 159		14.9 132	**52**	1 30	2 46	34	19	71	20	12
21	136	23.4		12.0	14	00.7 159		28.0 131	**54**	0 47	28	22	21	74	19	10
22	151	23.1		12.2	28	35.6 159		41.1 131	**56**	** **	2 07	3 08	24	75	18	8
23	166	22.8		12.3	43	10.5 159	+6	54.2 131	**58**	** **	1 38	2 52	26	79	17	5
24	181	22.5	−23	12.5	57	45.3 158	+7	07.2 130	**60 S**	** **	0 52	2 32	14 29	82	1 16	2

UT	ARIES PMG 18h 29m.4		VENUS Mag: −4.9 PMG: 14h 22m			MARTE Mag: +1.6 PMG: 10h 22m			JÚPITER Mag: −2.3 PMG: 16h 29m			SATURNO Mag: +0.7 PMG: 15h 21m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	81	53.9	143	57.8	−22 24.1	204	21.8	−20 01.2	112	11.0	−13 25.4	129	13.8	−18 31.7
1	96	56.4	158	59.7	23.5	219	22.5	01.6	127	13.1	25.3	144	16.1	31.7
2	111	58.9	174	01.6	23.0	234	23.1	02.0	142	15.1	25.1	159	18.3	31.6
3	127	01.3	189	03.5	22.5	249	23.8	02.4	157	17.2	25.0	174	20.5	31.5
4	142	03.8	204	05.4	22.0	264	24.4	02.8	172	19.3	24.8	189	22.8	31.5
5	157	06.3	219	07.3	−22 21.4	279	25.1	−20 03.2	187	21.4	−13 24.7	204	25.0	−18 31.4
6	172	08.7	234	09.3	−22 20.9	294	25.7	−20 03.6	202	23.4	−13 24.5	219	27.2	−18 31.4
7	187	11.2	249	11.2	20.4	309	26.4	04.0	217	25.5	24.4	234	29.5	31.3
8	202	13.6	264	13.1	19.8	324	27.0	04.4	232	27.6	24.3	249	31.7	31.2
9	217	16.1	279	15.0	19.3	339	27.7	04.8	247	29.7	24.1	264	33.9	31.2
10	232	18.6	294	17.0	18.8	354	28.3	05.2	262	31.7	24.0	279	36.1	31.1
11	247	21.0	309	18.9	−22 18.3	9	29.0	−20 05.6	277	33.8	−13 23.8	294	38.4	−18 31.1
12	262	23.5	324	20.8	−22 17.7	24	29.6	−20 06.0	292	35.9	−13 23.7	309	40.6	−18 31.0
13	277	26.0	339	22.8	17.2	39	30.3	06.3	307	38.0	23.5	324	42.8	30.9
14	292	28.4	354	24.7	16.7	54	30.9	06.7	322	40.0	23.4	339	45.1	30.9
15	307	30.9	9	26.7	16.2	69	31.6	07.1	337	42.1	23.3	354	47.3	30.8
16	322	33.4	24	28.6	15.6	84	32.2	07.5	352	44.2	23.1	9	49.5	30.7
17	337	35.8	39	30.6	−22 15.1	99	32.9	−20 07.9	7	46.3	−13 23.0	24	51.8	−18 30.7
18	352	38.3	54	32.6	−22 14.6	114	33.5	−20 08.3	22	48.3	−13 22.8	39	54.0	−18 30.6
19	7	40.7	69	34.5	14.0	129	34.2	08.7	37	50.4	22.7	54	56.2	30.6
20	22	43.2	84	36.5	13.5	144	34.8	09.1	52	52.5	22.5	69	58.4	30.5
21	37	45.7	99	38.5	13.0	159	35.5	09.5	67	54.6	22.4	85	00.7	30.4
22	52	48.1	114	40.5	12.5	174	36.1	09.9	82	56.6	22.3	100	02.9	30.4
23	67	50.6	129	42.4	11.9	189	36.8	10.3	97	58.7	22.1	115	05.1	30.3
24	82	53.1	144	44.4	−22 11.4	204	37.4	−20 10.7	113	00.8	−13 22.0	130	07.4	−18 30.2
Dif	—			+19	+5		+7	−4		+21	+1		+22	+1

UT	SOL SD: 16′.2 PMG: 11ʰ 54ᵐ.7				LUNA Edad: 9ᵈ.7 SD: 14′.9 PMG: 20ʰ 44ᵐ PHE 4ʰ: 54′.7 12ʰ: 54′.6 20ʰ: 54′.5 Rº: 43ᵐ				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	22.5	−23	12.5	57	45.3	+7	07.2	**60 N**	14 53	15 50	16 47	13 21	4	3 08	83
1	196	22.2		12.6	72	20.2 159		20.2 130	**58**	15 10	16 02	16 54	27	7	04	79
2	211	22.0		12.8	86	55.1 159		33.2 130	**56**	25	12	17 01	32	10	3 00	76
3	226	21.7		12.9	101	29.9 158		46.1 129	**54**	37	21	07	36	13	2 56	74
4	241	21.4		13.1	116	04.7 158	+7	59.0 129	**52**	48	29	13	40	15	53	71
5	256	21.1	−23	13.2	130	39.5 158	+8	11.8 128	**50**	15 58	16 37	17 18	13 44	17	2 50	69
6	271	20.8	−23	13.4	145	14.3 158	+8	24.6 128	**45**	16 19	16 52	17 30	13 52	21	2 44	64
7	286	20.5		13.5	159	49.1 158		37.4 128	**40**	35	17 06	40	13 59	24	39	60
8	301	20.2		13.7	174	23.9 158	+8	50.1 127	**35**	16 49	18	49	14 04	28	34	58
9	316	19.9		13.8	188	58.7 158	+9	02.8 127	**30**	17 02	28	17 58	10	30	31	54
10	331	19.6		13.9	203	33.4 157		15.5 127	**20**	23	17 47	18 14	19	34	24	50
11	346	19.3	−23	14.1	218	08.1 157	+9	28.1 126	**10 N**	17 41	18 04	18 30	14 26	39	2 18	45
12	1	19.0	−23	14.2	232	42.8 157	+9	40.6 125	**0**	17 58	18 21	18 47	14 34	42	2 12	42
13	16	18.7		14.4	247	17.5 157	+9	53.1 125	**10 S**	18 16	39	19 06	41	46	07	38
14	31	18.4		14.5	261	52.1 156	+10	05.6 125	**20**	35	18 59	29	49	51	2 01	34
15	46	18.1		14.6	276	26.8 157		18.0 124	**30**	18 57	19 24	19 57	14 59	54	1 54	29
16	61	17.8		14.8	291	01.4 156		30.4 124	**35**	19 10	39	20 16	15 04	58	50	27
17	76	17.5	−23	14.9	305	36.0 156	+10	42.8 124	**40**	19 25	19 57	20 39	15 10	61	1 46	24
18	91	17.2	−23	15.0	320	10.5 155	+10	55.1 123	**45**	19 42	20 20	21 09	15 17	65	1 41	20
19	106	16.9		15.2	334	45.1 156	+11	07.3 122	**50**	20 05	20 49	21 54	26	69	35	16
20	121	16.6		15.3	349	19.6 155		19.5 122	**52**	16	21 04	22 21	30	71	32	14
21	136	16.3		15.4	3	54.0 154		31.6 121	**54**	28	22	23 05	35	73	29	12
22	151	16.0		15.6	18	28.5 155		43.7 121	**56**	42	21 44	** **	39	77	26	9
23	166	15.7		15.7	33	02.9 154	+11	55.8 121	**58**	20 58	22 13	** **	45	79	22	7
24	181	15.4	−23	15.8	47	37.3 154	+12	07.8 120	**60 S**	21 19	23 01	** **	15 51	83	1 18	3

UT	ARIES PMG 18ʰ 25ᵐ.4		VENUS Mag: −4.9 PMG: 14ʰ 19ᵐ			MARTE Mag: +1.6 PMG: 10ʰ 21ᵐ			JÚPITER Mag: −2.3 PMG: 16ʰ 26ᵐ			SATURNO Mag: +0.7 PMG: 15ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	82	53.1	144	44.4	−22 11.4	204	37.4	−20 10.7	113	00.8	−13 22.0	130	07.4	−18 30.2
1	97	55.5	159	46.4	10.9	219	38.1	11.1	128	02.9	21.8	145	09.6	30.2
2	112	58.0	174	48.4	10.3	234	38.7	11.4	143	04.9	21.7	160	11.8	30.1
3	128	00.5	189	50.4	09.8	249	39.4	11.8	158	07.0	21.5	175	14.0	30.1
4	143	02.9	204	52.4	09.3	264	40.0	12.2	173	09.1	21.4	190	16.3	30.0
5	158	05.4	219	54.4	−22 08.8	279	40.7	−20 12.6	188	11.2	−13 21.2	205	18.5	−18 29.9
6	173	07.9	234	56.5	−22 08.2	294	41.3	−20 13.0	203	13.2	−13 21.1	220	20.7	−18 29.9
7	188	10.3	249	58.5	07.7	309	42.0	13.4	218	15.3	21.0	235	22.9	29.8
8	203	12.8	265	00.5	07.2	324	42.6	13.8	233	17.4	20.8	250	25.2	29.8
9	218	15.2	280	02.5	06.7	339	43.3	14.2	248	19.4	20.7	265	27.4	29.7
10	233	17.7	295	04.6	06.1	354	43.9	14.6	263	21.5	20.5	280	29.6	29.6
11	248	20.2	310	06.6	−22 05.6	9	44.6	−20 14.9	278	23.6	−13 20.4	295	31.9	−18 29.6
12	263	22.6	325	08.6	−22 05.1	24	45.2	−20 15.3	293	25.7	−13 20.2	310	34.1	−18 29.5
13	278	25.1	340	10.7	04.5	39	45.9	15.7	308	27.7	20.1	325	36.3	29.4
14	293	27.6	355	12.7	04.0	54	46.5	16.1	323	29.8	19.9	340	38.5	29.4
15	308	30.0	10	14.8	03.5	69	47.2	16.5	338	31.9	19.8	355	40.8	29.3
16	323	32.5	25	16.8	03.0	84	47.8	16.9	353	33.9	19.7	10	43.0	29.3
17	338	35.0	40	18.9	−22 02.4	99	48.5	−20 17.3	8	36.0	−13 19.5	25	45.2	−18 29.2
18	353	37.4	55	21.0	−22 01.9	114	49.1	−20 17.6	23	38.1	−13 19.4	40	47.4	−18 29.1
19	8	39.9	70	23.0	01.4	129	49.7	18.0	38	40.1	19.2	55	49.7	29.1
20	23	42.4	85	25.1	00.8	144	50.4	18.4	53	42.2	19.1	70	51.9	29.0
21	38	44.8	100	27.2	−22 00.3	159	51.0	18.8	68	44.3	18.9	85	54.1	28.9
22	53	47.3	115	29.3	−21 59.8	174	51.7	19.2	83	46.4	18.8	100	56.3	28.9
23	68	49.7	130	31.4	59.3	189	52.3	19.6	98	48.4	18.6	115	58.6	28.8
24	83	52.2	145	33.5	−21 58.7	204	53.0	−20 20.0	113	50.5	−13 18.5	131	00.8	−18 28.7
Dif	—			+20	+5		+6	−4		+21	+1		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 10^{d}.7		PHE	4^{h}: 54′.4								
	PMG: 11^{h} 55^{m}.2				SD: 14′.8			12^{h}: 54′.3								
					PMG: 21^{h} 27^{m}			20^{h}: 54′.2								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	181	15.4	−23	15.8	47	37.3	+12	07.8	**60 N**	7 03	8 00	8 57	13 25	6	4 31	84
1	196	15.1		16.0	62	11.7 154		19.7 119	**58**	6 56	7 48	40	34	10	23	80
2	211	14.8		16.1	76	46.0 153		31.6 119	**56**	49	38	25	42	12	16	76
3	226	14.5		16.2	91	20.3 153		43.4 118	**54**	43	29	13	49	15	10	73
4	241	14.2		16.4	105	54.6 153	+12	55.2 118	**52**	37	21	8 02	13 55	18	4 04	71
5	256	13.9	−23	16.5	120	28.8 152	+13	06.9 117	**50**	6 32	7 14	7 52	14 01	20	3 59	69
6	271	13.6	−23	16.6	135	03.0 152	+13	18.6 117	**45**	6 20	6 58	7 31	14 13	24	3 48	65
7	286	13.3		16.7	149	37.1 151		30.2 116	**40**	10	44	15	23	28	39	61
8	301	13.0		16.9	164	11.3 152		41.8 116	**35**	6 01	32	7 01	32	30	32	57
9	316	12.7		17.0	178	45.4 151	+13	53.2 114	**30**	5 52	22	6 48	40	33	25	55
10	331	12.4		17.1	193	19.4 150	+14	04.7 115	**20**	36	6 03	27	14 53	37	14	50
11	346	12.1	−23	17.2	207	53.4 150	+14	16.1 114	**10 N**	5 20	5 46	6 09	15 05	41	3 03	47
12	1	11.8	−23	17.3	222	27.4 150	+14	27.4 113	**0**	5 03	5 29	5 51	15 16	44	2 54	43
13	16	11.5		17.5	237	01.3 149		38.6 112	**10 S**	4 44	5 11	34	27	48	45	39
14	31	11.2		17.6	251	35.2 149	+14	49.8 112	**20**	4 21	4 51	5 15	40	51	35	36
15	46	10.9		17.7	266	09.1 149	+15	01.0 112	**30**	3 52	26	4 53	15 53	56	23	32
16	61	10.6		17.8	280	42.9 148		12.0 110	**35**	34	4 11	40	16 02	57	17	29
17	76	10.3	−23	17.9	295	16.7 148	+15	23.0 110	**40**	3 11	3 53	4 25	16 11	61	2 10	26
18	91	10.0	−23	18.0	309	50.4 147	+15	34.0 110	**45**	2 41	3 30	4 07	16 22	64	2 01	22
19	106	09.7		18.2	324	24.1 147		44.9 109	**50**	1 56	3 01	3 45	35	69	1 51	18
20	121	09.4		18.3	338	57.7 146	+15	55.7 108	**52**	1 28	2 46	34	41	71	46	16
21	136	09.1		18.4	353	31.3 146	+16	06.4 107	**54**	0 44	28	22	48	74	41	14
22	151	08.8		18.5	8	04.9 146		17.1 107	**56**	** **	2 06	3 08	16 56	76	35	11
23	166	08.5		18.6	22	38.4 145		27.7 106	**58**	** **	1 37	2 51	17 04	81	29	8
24	181	08.2	−23	18.7	37	11.8 144	+16	38.2 105	**60 S**	** **	0 49	2 31	17 14	85	1 21	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18^{h} 21^{m}.5		PMG: 14^{h} 16^{m}			PMG: 10^{h} 20^{m}			PMG: 16^{h} 22^{m}			PMG: 15^{h} 14^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	83	52.2	145	33.5	−21 58.7	204	53.0	−20 20.0	113	50.5	−13 18.5	131	00.8	−18 28.7
1	98	54.7	160	35.6	58.2	219	53.6	20.3	128	52.6	18.3	146	03.0	28.7
2	113	57.1	175	37.7	57.7	234	54.3	20.7	143	54.6	18.2	161	05.3	28.6
3	128	59.6	190	39.8	57.1	249	54.9	21.1	158	56.7	18.1	176	07.5	28.6
4	144	02.1	205	41.9	56.6	264	55.5	21.5	173	58.8	17.9	191	09.7	28.5
5	159	04.5	220	44.0	−21 56.1	279	56.2	−20 21.9	189	00.8	−13 17.8	206	11.9	−18 28.4
6	174	07.0	235	46.1	−21 55.6	294	56.8	−20 22.2	204	02.9	−13 17.6	221	14.2	−18 28.4
7	189	09.5	250	48.2	55.0	309	57.5	22.6	219	05.0	17.5	236	16.4	28.3
8	204	11.9	265	50.3	54.5	324	58.1	23.0	234	07.0	17.3	251	18.6	28.2
9	219	14.4	280	52.5	54.0	339	58.8	23.4	249	09.1	17.2	266	20.8	28.2
10	234	16.8	295	54.6	53.4	354	59.4	23.8	264	11.2	17.0	281	23.1	28.1
11	249	19.3	310	56.8	−21 52.9	10	00.0	−20 24.2	279	13.2	−13 16.9	296	25.3	−18 28.1
12	264	21.8	325	58.9	−21 52.4	25	00.7	−20 24.5	294	15.3	−13 16.7	311	27.5	−18 28.0
13	279	24.2	341	01.0	51.9	40	01.3	24.9	309	17.4	16.6	326	29.7	27.9
14	294	26.7	356	03.2	51.3	55	02.0	25.3	324	19.4	16.4	341	32.0	27.9
15	309	29.2	11	05.4	50.8	70	02.6	25.7	339	21.5	16.3	356	34.2	27.8
16	324	31.6	26	07.5	50.3	85	03.2	26.0	354	23.6	16.1	11	36.4	27.7
17	339	34.1	41	09.7	−21 49.7	100	03.9	−20 26.4	9	25.6	−13 16.0	26	38.6	−18 27.7
18	354	36.6	56	11.9	−21 49.2	115	04.5	−20 26.8	24	27.7	−13 15.9	41	40.8	−18 27.6
19	9	39.0	71	14.0	48.7	130	05.2	27.2	39	29.8	15.7	56	43.1	27.5
20	24	41.5	86	16.2	48.2	145	05.8	27.6	54	31.8	15.6	71	45.3	27.5
21	39	44.0	101	18.4	47.6	160	06.4	27.9	69	33.9	15.4	86	47.5	27.4
22	54	46.4	116	20.6	47.1	175	07.1	28.3	84	36.0	15.3	101	49.7	27.4
23	69	48.9	131	22.8	46.6	190	07.7	28.7	99	38.0	15.1	116	52.0	27.3
24	84	51.3	146	25.0	−21 46.0	205	08.4	−20 29.1	114	40.1	−13 15.0	131	54.2	−18 27.2
Dif	—			+21	+5		+6	−4		+21	+1		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 11ᵈ.7		PHE	4ʰ: 54′.1								
	PMG: 11ʰ 55ᵐ.7				SD: 14′.8			12ʰ: 54′.1								
					PMG: 22ʰ 11ᵐ			20ʰ: 54′.0								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	181	08.2	−23	18.7	37	11.8	+16	38.2	**60 N**	14 53	15 51	16 47	13 31	9	5 55	84
1	196	07.9		18.8	51	45.2 144		48.7 105	**58**	15 10	16 02	16 55	44	13	43	80
2	211	07.6		18.9	66	18.6 144	+16	59.1 104	**56**	25	12	17 01	13 54	18	32	77
3	226	07.3		19.1	80	51.9 143	+17	09.4 103	**54**	38	21	08	14 04	20	23	74
4	241	07.0		19.2	95	25.2 143		19.7 103	**52**	49	30	13	13	22	15	71
5	256	06.7	−23	19.3	109	58.4 142	+17	29.9 102	**50**	15 59	16 37	17 19	14 21	24	5 08	69
6	271	06.4	−23	19.4	124	31.6 142	+17	40.0 101	**45**	16 19	16 53	17 30	14 37	29	4 53	64
7	286	06.0		19.5	139	04.7 141	+17	50.0 100	**40**	36	17 06	41	14 51	32	40	61
8	301	05.7		19.6	153	37.8 141	+18	00.0 100	**35**	16 50	18	50	15 02	35	29	59
9	316	05.4		19.7	168	10.8 140	+18	09.9 99	**30**	17 02	29	17 59	13	36	20	56
10	331	05.1		19.8	182	43.8 140		19.7 98	**20**	24	17 48	18 15	30	41	4 04	52
11	346	04.8	−23	19.9	197	16.7 139	+18	29.4 97	**10 N**	17 42	18 05	18 31	15 46	43	3 50	49
12	1	04.5	−23	20.0	211	49.6 139	+18	39.1 97	**0**	17 59	18 22	18 48	16 00	47	3 37	45
13	16	04.2		20.1	226	22.4 138		48.6 95	**10 S**	18 17	18 40	19 07	15	49	24	42
14	31	03.9		20.2	240	55.2 138	+18	58.1 95	**20**	36	19 00	30	31	52	3 11	38
15	46	03.6		20.3	255	27.9 137	+19	07.5 94	**30**	18 58	25	19 59	49	56	2 55	35
16	61	03.3		20.4	270	00.6 137		16.9 94	**35**	19 11	41	20 17	16 59	58	46	32
17	76	03.0	−23	20.5	284	33.2 136	+19	26.1 92	**40**	19 26	19 59	20 40	17 12	60	2 36	29
18	91	02.7	−23	20.6	299	05.8 136	+19	35.3 92	**45**	19 44	20 21	21 11	17 26	64	2 23	27
19	106	02.4		20.7	313	38.3 135		44.4 91	**50**	20 06	20 51	21 56	44	68	09	22
20	121	02.1		20.8	328	10.7 134	+19	53.4 90	**52**	17	21 06	22 24	17 52	70	2 02	20
21	136	01.8		20.9	342	43.1 134	+20	02.3 89	**54**	29	24	23 09	18 02	72	1 55	17
22	151	01.5		21.0	357	15.5 134		11.1 88	**56**	20 44	21 46	** **	12	76	46	15
23	166	01.2		21.1	11	47.8 133		19.8 87	**58**	21 00	22 16	** **	25	79	37	11
24	181	00.9	−23	21.1	26	20.0 132	+20	28.5 87	**60 S**	21 21	23 05	** **	18 39	84	1 26	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.3			Mag: +0.7		
	18ʰ 17ᵐ.6		PMG: 14ʰ 12ᵐ			PMG: 10ʰ 19ᵐ			PMG: 16ʰ 19ᵐ			PMG: 15ʰ 10ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	84	51.3	146	25.0	−21 46.0	205	08.4	−20 29.1	114	40.1	−13 15.0	131	54.2	−18 27.2
1	99	53.8	161	27.2	45.5	220	09.0	29.4	129	42.1	14.8	146	56.4	27.2
2	114	56.3	176	29.4	45.0	235	09.6	29.8	144	44.2	14.7	161	58.6	27.1
3	129	58.7	191	31.6	44.5	250	10.3	30.2	159	46.3	14.5	177	00.9	27.0
4	145	01.2	206	33.8	43.9	265	10.9	30.6	174	48.3	14.4	192	03.1	27.0
5	160	03.7	221	36.0	−21 43.4	280	11.6	−20 30.9	189	50.4	−13 14.2	207	05.3	−18 26.9
6	175	06.1	236	38.2	−21 42.9	295	12.2	−20 31.3	204	52.5	−13 14.1	222	07.5	−18 26.8
7	190	08.6	251	40.5	42.3	310	12.8	31.7	219	54.5	13.9	237	09.7	26.8
8	205	11.1	266	42.7	41.8	325	13.5	32.1	234	56.6	13.8	252	12.0	26.7
9	220	13.5	281	44.9	41.3	340	14.1	32.4	249	58.6	13.6	267	14.2	26.7
10	235	16.0	296	47.2	40.8	355	14.7	32.8	265	00.7	13.5	282	16.4	26.6
11	250	18.5	311	49.4	−21 40.2	10	15.4	−20 33.2	280	02.8	−13 13.3	297	18.6	−18 26.5
12	265	20.9	326	51.7	−21 39.7	25	16.0	−20 33.6	295	04.8	−13 13.2	312	20.9	−18 26.5
13	280	23.4	341	53.9	39.2	40	16.6	33.9	310	06.9	13.0	327	23.1	26.4
14	295	25.8	356	56.2	38.6	55	17.3	34.3	325	09.0	12.9	342	25.3	26.3
15	310	28.3	11	58.5	38.1	70	17.9	34.7	340	11.0	12.7	357	27.5	26.3
16	325	30.8	27	00.7	37.6	85	18.6	35.1	355	13.1	12.6	12	29.7	26.2
17	340	33.2	42	03.0	−21 37.1	100	19.2	−20 35.4	10	15.1	−13 12.4	27	32.0	−18 26.1
18	355	35.7	57	05.3	−21 36.5	115	19.8	−20 35.8	25	17.2	−13 12.3	42	34.2	−18 26.1
19	10	38.2	72	07.6	36.0	130	20.5	36.2	40	19.3	12.1	57	36.4	26.0
20	25	40.6	87	09.8	35.5	145	21.1	36.5	55	21.3	12.0	72	38.6	25.9
21	40	43.1	102	12.1	34.9	160	21.7	36.9	70	23.4	11.8	87	40.9	25.9
22	55	45.6	117	14.4	34.4	175	22.4	37.3	85	25.4	11.7	102	43.1	25.8
23	70	48.0	132	16.7	33.9	190	23.0	37.6	100	27.5	11.5	117	45.3	25.8
24	85	50.5	147	19.0	−21 33.4	205	23.6	−20 38.0	115	29.6	−13 11.4	132	47.5	−18 25.7
Dif	—			+23	+5		+6	−4		+21	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 12^{d}.7		PHE	4^{h}: 54′.0									
	PMG: 11^{h} 56^{m}.2				SD: 14′.7			12^{h}: 54′.0									
					PMG: 22^{h} 58^{m}			20^{h}: 54′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	181	00.9	−23	21.1	26	20.0	+20	28.5		**60 N**	7 05	8 02	8 59	13 40	17	7 19	83
1	196	00.6		21.2	40	52.2 132		37.1	86	**58**	6 57	7 50	42	13 57	22	7 03	77
2	211	00.3		21.3	55	24.3 131		45.5	84	**56**	51	40	27	14 12	25	6 49	74
3	226	00.0		21.4	69	56.4 131	+20	53.9	84	**54**	44	31	14	24	28	37	71
4	240	59.7		21.5	84	28.4 130	+21	02.2	83	**52**	39	22	8 03	35	30	26	69
5	255	59.4	−23	21.6	99	00.4 130	+21	10.4	82	**50**	6 33	7 15	7 54	14 45	32	6 17	66
6	270	59.1	−23	21.7	113	32.3 129	+21	18.5	81	**45**	6 22	6 59	7 33	15 06	35	5 57	63
7	285	58.8		21.8	128	04.2 129		26.6	81	**40**	11	45	16	23	37	41	60
8	300	58.5		21.8	142	36.0 128		34.5	79	**35**	6 02	34	7 02	37	40	28	57
9	315	58.1		21.9	157	07.7 127		42.3	78	**30**	5 53	23	6 50	15 49	42	5 16	56
10	330	57.8		22.0	171	39.4 127		50.1	78	**20**	37	6 04	28	16 11	44	4 56	52
11	345	57.5	−23	22.1	186	11.1 127	+21	57.7	76	**10 N**	5 21	5 47	6 10	16 29	47	4 39	49
12	0	57.2	−23	22.2	200	42.7 126	+22	05.2	75	**0**	5 04	5 30	5 52	16 47	48	4 22	48
13	15	56.9		22.3	215	14.2 125		12.7	75	**10 S**	4 45	5 12	35	17 04	51	4 06	45
14	30	56.6		22.3	229	45.7 125		20.0	73	**20**	4 22	4 51	5 16	23	53	3 49	42
15	45	56.3		22.4	244	17.1 124		27.3	73	**30**	3 53	26	4 54	45	55	30	39
16	60	56.0		22.5	258	48.5 124		34.4	71	**35**	35	4 11	41	17 57	58	18	37
17	75	55.7	−23	22.6	273	19.8 123	+22	41.5	71	**40**	3 11	3 53	4 26	18 12	59	3 05	35
18	90	55.4	−23	22.7	287	51.1 123	+22	48.4	69	**45**	2 41	3 31	4 08	18 30	61	2 50	31
19	105	55.1		22.7	302	22.3 122	+22	55.3	69	**50**	1 56	3 01	3 45	18 52	65	31	28
20	120	54.8		22.8	316	53.5 122	+23	02.0	67	**52**	1 28	2 46	35	19 02	67	22	26
21	135	54.5		22.9	331	24.6 121		08.7	67	**54**	0 42	28	22	14	69	12	23
22	150	54.2		23.0	345	55.6 120		15.2	65	**56**	** **	2 06	3 08	28	71	2 01	20
23	165	53.9		23.0	0	26.6 120		21.7	65	**58**	** **	1 36	2 51	19 44	75	1 48	17
24	180	53.6	−23	23.1	14	57.6 120	+23	28.0	63	**60 S**	** **	0 47	2 31	20 03	80	1 33	12

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.2			Mag: +0.7		
	18^{h} 13^{m}.6		PMG: 14^{h} 09^{m}			PMG: 10^{h} 18^{m}			PMG: 16^{h} 16^{m}			PMG: 15^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	85	50.5	147	19.0	−21 33.4	205	23.6	−20 38.0	115	29.6	−13 11.4	132	47.5	−18 25.7
1	100	53.0	162	21.3	32.8	220	24.3	38.4	130	31.6	11.2	147	49.7	25.6
2	115	55.4	177	23.6	32.3	235	24.9	38.8	145	33.7	11.1	162	52.0	25.6
3	130	57.9	192	26.0	31.8	250	25.5	39.1	160	35.7	10.9	177	54.2	25.5
4	146	00.3	207	28.3	31.3	265	26.2	39.5	175	37.8	10.8	192	56.4	25.4
5	161	02.8	222	30.6	−21 30.7	280	26.8	−20 39.9	190	39.8	−13 10.6	207	58.6	−18 25.4
6	176	05.3	237	32.9	−21 30.2	295	27.4	−20 40.2	205	41.9	−13 10.5	223	00.8	−18 25.3
7	191	07.7	252	35.3	29.7	310	28.1	40.6	220	44.0	10.3	238	03.1	25.2
8	206	10.2	267	37.6	29.1	325	28.7	41.0	235	46.0	10.2	253	05.3	25.2
9	221	12.7	282	40.0	28.6	340	29.3	41.3	250	48.1	10.0	268	07.5	25.1
10	236	15.1	297	42.3	28.1	355	30.0	41.7	265	50.1	09.9	283	09.7	25.0
11	251	17.6	312	44.7	−21 27.6	10	30.6	−20 42.1	280	52.2	−13 09.7	298	11.9	−18 25.0
12	266	20.1	327	47.0	−21 27.0	25	31.2	−20 42.4	295	54.2	−13 09.6	313	14.2	−18 24.9
13	281	22.5	342	49.4	26.5	40	31.9	42.8	310	56.3	09.4	328	16.4	24.8
14	296	25.0	357	51.7	26.0	55	32.5	43.2	325	58.4	09.3	343	18.6	24.8
15	311	27.4	12	54.1	25.5	70	33.1	43.5	341	00.4	09.1	358	20.8	24.7
16	326	29.9	27	56.5	24.9	85	33.7	43.9	356	02.5	09.0	13	23.0	24.7
17	341	32.4	42	58.9	−21 24.4	100	34.4	−20 44.2	11	04.5	−13 08.8	28	25.3	−18 24.6
18	356	34.8	58	01.3	−21 23.9	115	35.0	−20 44.6	26	06.6	−13 08.7	43	27.5	−18 24.5
19	11	37.3	73	03.6	23.4	130	35.6	45.0	41	08.6	08.5	58	29.7	24.5
20	26	39.8	88	06.0	22.8	145	36.3	45.3	56	10.7	08.4	73	31.9	24.4
21	41	42.2	103	08.4	22.3	160	36.9	45.7	71	12.8	08.2	88	34.1	24.3
22	56	44.7	118	10.8	21.8	175	37.5	46.1	86	14.8	08.1	103	36.4	24.3
23	71	47.2	133	13.2	21.2	190	38.1	46.4	101	16.9	07.9	118	38.6	24.2
24	86	49.6	148	15.7	−21 20.7	205	38.8	−20 46.8	116	18.9	−13 07.8	133	40.8	−18 24.1
Dif	—			+24	+5		+6	−4		+21	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 13^{d}.7		PHE	4^{h}: 54′.0								
	PMG: 11^{h} 56^{m}.7		SD: 14′.7			12^{h}: 54′.0								
			PMG: 23^{h} 47^{m}			20^{h}: 54′.0								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 53.6	−23 23.1	14 57.6		+23 28.0		**60 N**	14 53	15 51	16 48	13 57	29	8 42	74
1	195 53.3	23.2	29 28.5	119	34.2	62	**58**	15 11	16 03	16 55	14 19	33	20	70
2	210 53.0	23.2	43 59.4	119	40.3	61	**56**	25	13	17 02	37	36	8 03	66
3	225 52.6	23.3	58 30.2	118	46.4	61	**54**	38	22	08	14 52	38	7 48	64
4	240 52.3	23.4	73 00.9	117	52.3	59	**52**	49	30	14	15 05	40	35	63
5	255 52.0	−23 23.4	87 31.6	117	+23 58.1	58	**50**	15 59	16 38	17 19	15 17	41	7 23	62
6	270 51.7	−23 23.5	102 02.3	117	+24 03.8	57	**45**	16 20	16 54	17 31	15 41	43	7 00	59
7	285 51.4	23.6	116 32.9	116	09.3	55	**40**	37	17 07	41	16 00	45	6 41	57
8	300 51.1	23.6	131 03.5	116	14.8	55	**35**	16 51	19	51	17	45	25	56
9	315 50.8	23.7	145 34.0	115	20.2	54	**30**	17 03	30	17 59	31	46	6 12	54
10	330 50.5	23.8	160 04.4	114	25.4	52	**20**	24	17 48	18 16	16 55	48	5 48	53
11	345 50.2	−23 23.8	174 34.9	115	+24 30.5	51	**10 N**	17 43	18 06	18 32	17 16	49	5 28	51
12	0 49.9	−23 23.9	189 05.2	113	+24 35.6	51	**0**	18 00	18 23	18 49	17 35	50	5 10	49
13	15 49.6	24.0	203 35.6	114	40.5	49	**10 S**	18	18 41	19 08	17 55	51	4 51	48
14	30 49.3	24.0	218 05.9	113	45.3	48	**20**	37	19 02	19 31	18 16	52	31	46
15	45 49.0	24.1	232 36.1	112	49.9	46	**30**	18 59	27	20 00	40	54	4 09	43
16	60 48.7	24.1	247 06.3	112	54.5	46	**35**	19 12	19 42	19	18 55	54	3 55	43
17	75 48.4	−23 24.2	261 36.5	112	+24 58.9	44	**40**	19 27	20 00	20 42	19 11	56	3 40	41
18	90 48.1	−23 24.3	276 06.6	111	+25 03.3	44	**45**	19 45	20 23	21 12	19 31	57	3 21	39
19	105 47.7	24.3	290 36.6	110	07.5	42	**50**	20 08	20 52	21 58	19 57	58	2 59	35
20	120 47.4	24.4	305 06.7	111	11.6	41	**52**	19	21 07	22 26	20 09	59	48	34
21	135 47.1	24.4	319 36.7	110	15.6	40	**54**	31	25	23 13	23	60	35	33
22	150 46.8	24.5	334 06.6	109	19.4	38	**56**	20 45	21 48	** **	39	62	21	30
23	165 46.5	24.5	348 36.6	110	23.2	38	**58**	21 02	22 18	** **	20 59	63	2 05	26
24	180 46.2	−23 24.6	3 06.4	108	+25 26.8	36	**60 S**	21 22	23 08	** **	21 23	67	1 45	22

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.8		Mag: +1.6		Mag: −2.2		Mag: +0.7	
	18^{h} 09^{m}.7	PMG: 14^{h} 05^{m}		PMG: 10^{h} 17^{m}		PMG: 16^{h} 13^{m}		PMG: 15^{h} 03^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	86 49.6	148 15.7	−21 20.7	205 38.8	−20 46.8	116 18.9	−13 07.8	133 40.8	−18 24.1
1	101 52.1	163 18.1	20.2	220 39.4	47.1	131 21.0	07.6	148 43.0	24.1
2	116 54.6	178 20.5	19.7	235 40.0	47.5	146 23.0	07.5	163 45.2	24.0
3	131 57.0	193 22.9	19.1	250 40.7	47.9	161 25.1	07.3	178 47.4	23.9
4	146 59.5	208 25.4	18.6	265 41.3	48.2	176 27.1	07.2	193 49.7	23.9
5	162 01.9	223 27.8	−21 18.1	280 41.9	−20 48.6	191 29.2	−13 07.0	208 51.9	−18 23.8
6	177 04.4	238 30.2	−21 17.6	295 42.5	−20 49.0	206 31.2	−13 06.9	223 54.1	−18 23.7
7	192 06.9	253 32.7	17.0	310 43.2	49.3	221 33.3	06.7	238 56.3	23.7
8	207 09.3	268 35.1	16.5	325 43.8	49.7	236 35.3	06.6	253 58.5	23.6
9	222 11.8	283 37.6	16.0	340 44.4	50.0	251 37.4	06.4	269 00.8	23.5
10	237 14.3	298 40.0	15.5	355 45.0	50.4	266 39.5	06.3	284 03.0	23.5
11	252 16.7	313 42.5	−21 14.9	10 45.7	−20 50.7	281 41.5	−13 06.1	299 05.2	−18 23.4
12	267 19.2	328 45.0	−21 14.4	25 46.3	−20 51.1	296 43.6	−13 06.0	314 07.4	−18 23.3
13	282 21.7	343 47.4	13.9	40 46.9	51.5	311 45.6	05.8	329 09.6	23.3
14	297 24.1	358 49.9	13.4	55 47.6	51.8	326 47.7	05.6	344 11.8	23.2
15	312 26.6	13 52.4	12.8	70 48.2	52.2	341 49.7	05.5	359 14.1	23.1
16	327 29.1	28 54.9	12.3	85 48.8	52.5	356 51.8	05.3	14 16.3	23.1
17	342 31.5	43 57.4	−21 11.8	100 49.4	−20 52.9	11 53.8	−13 05.2	29 18.5	−18 23.0
18	357 34.0	58 59.9	−21 11.3	115 50.1	−20 53.2	26 55.9	−13 05.0	44 20.7	−18 23.0
19	12 36.4	74 02.4	10.7	130 50.7	53.6	41 57.9	04.9	59 22.9	22.9
20	27 38.9	89 04.9	10.2	145 51.3	54.0	57 00.0	04.7	74 25.1	22.8
21	42 41.4	104 07.4	09.7	160 51.9	54.3	72 02.0	04.6	89 27.4	22.8
22	57 43.8	119 09.9	09.2	175 52.5	54.7	87 04.1	04.4	104 29.6	22.7
23	72 46.3	134 12.4	08.6	190 53.2	55.0	102 06.1	04.3	119 31.8	22.6
24	87 48.8	149 14.9	−21 08.1	205 53.8	−20 55.4	117 08.2	−13 04.1	134 34.0	−18 22.6
Dif	—	+25	+5	+6	−4	+21	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 14ᵈ7		PHE	4ʰ: 54′.0									
	PMG: 11ʰ 57ᵐ2				SD: 14′.7			12ʰ: 54′.0									
					PMG: **ʰ **ᵐ			20ʰ: 54′.1									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	180	46.2	−23	24.6	3	06.4	+25	26.8		**60 N**	7 06	8 03	9 01	14 26	50	9 56	56
1	195	45.9		24.6	17	36.3 109		30.3	35	**58**	6 59	7 51	8 43	14 52	50	30	55
2	210	45.6		24.7	32	06.1 108		33.7	34	**56**	52	41	29	15 13	50	9 09	55
3	225	45.3		24.7	46	35.9 108		37.0	33	**54**	46	32	16	30	51	8 52	55
4	240	45.0		24.8	61	05.6 107		40.1	31	**52**	40	24	8 05	45	51	38	54
5	255	44.7	−23	24.8	75	35.3 107	+25	43.1	30	**50**	6 35	7 16	7 55	15 58	50	8 25	54
6	270	44.4	−23	24.9	90	05.0 107	+25	46.0	29	**45**	6 23	7 00	7 34	16 24	51	7 59	53
7	285	44.1		24.9	104	34.6 106		48.8	28	**40**	13	6 47	17	16 45	51	38	53
8	300	43.7		25.0	119	04.3 107		51.4	26	**35**	6 03	35	7 03	17 02	51	21	53
9	315	43.4		25.0	133	33.8 105		54.0	26	**30**	5 54	24	6 51	17	51	7 06	53
10	330	43.1		25.1	148	03.4 106		56.4	24	**20**	38	6 05	29	17 43	51	6 41	52
11	345	42.8	−23	25.1	162	32.9 105	+25	58.7	23	**10 N**	5 22	5 48	6 11	18 05	51	6 19	52
12	0	42.5	−23	25.1	177	02.4 105	+26	00.8	21	**0**	5 05	5 31	5 53	18 25	51	5 59	51
13	15	42.2		25.2	191	31.9 105		02.9	21	**10 S**	4 46	5 13	36	18 46	51	39	50
14	30	41.9		25.2	206	01.4 105		04.8	19	**20**	4 23	4 52	5 17	19 08	51	5 17	50
15	45	41.6		25.3	220	30.8 104		06.6	18	**30**	3 54	27	4 55	34	50	4 52	49
16	60	41.3		25.3	235	00.2 104		08.2	16	**35**	35	4 12	42	19 49	50	38	48
17	75	41.0	−23	25.3	249	29.6 104	+26	09.8	16	**40**	3 12	3 54	4 27	20 07	50	4 21	47
18	90	40.7	−23	25.4	263	59.0 104	+26	11.2	14	**45**	2 41	3 31	4 09	20 28	50	4 00	47
19	105	40.4		25.4	278	28.3 103		12.4	12	**50**	1 56	3 01	3 46	20 55	49	3 34	46
20	120	40.0		25.5	292	57.7 104		13.6	12	**52**	1 28	2 46	35	21 08	49	22	45
21	135	39.7		25.5	307	27.0 103		14.6	10	**54**	0 41	28	23	23	48	3 08	44
22	150	39.4		25.5	321	56.3 103		15.5	9	**56**	** **	2 06	3 09	21 41	47	2 51	43
23	165	39.1		25.6	336	25.6 103		16.3	8	**58**	** **	1 36	2 52	22 02	47	31	42
24	180	38.8	−23	25.6	350	54.8 102	+26	17.0	7	**60 S**	** **	0 45	2 31	22 30	45	2 07	38

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.6			Mag: −2.2			Mag: +0.7		
	18ʰ 05ᵐ8		PMG: 14ʰ 01ᵐ			PMG: 10ʰ 16ᵐ			PMG: 16ʰ 09ᵐ			PMG: 15ʰ 00ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	87	48.8	149	14.9	−21 08.1	205	53.8	−20 55.4	117	08.2	−13 04.1	134	34.0	−18 22.6
1	102	51.2	164	17.4	07.6	220	54.4	55.7	132	10.2	04.0	149	36.2	22.5
2	117	53.7	179	20.0	07.1	235	55.0	56.1	147	12.3	03.8	164	38.4	22.4
3	132	56.2	194	22.5	06.5	250	55.7	56.4	162	14.3	03.7	179	40.7	22.4
4	147	58.6	209	25.0	06.0	265	56.3	56.8	177	16.4	03.5	194	42.9	22.3
5	163	01.1	224	27.6	−21 05.5	280	56.9	−20 57.1	192	18.4	−13 03.4	209	45.1	−18 22.2
6	178	03.6	239	30.1	−21 05.0	295	57.5	−20 57.5	207	20.5	−13 03.2	224	47.3	−18 22.2
7	193	06.0	254	32.7	04.5	310	58.2	57.9	222	22.5	03.0	239	49.5	22.1
8	208	08.5	269	35.3	03.9	325	58.8	58.2	237	24.6	02.9	254	51.7	22.0
9	223	10.9	284	37.8	03.4	340	59.4	58.6	252	26.6	02.7	269	54.0	22.0
10	238	13.4	299	40.4	02.9	356	00.0	58.9	267	28.7	02.6	284	56.2	21.9
11	253	15.9	314	43.0	−21 02.4	11	00.6	−20 59.3	282	30.7	−13 02.4	299	58.4	−18 21.8
12	268	18.3	329	45.5	−21 01.8	26	01.3	−20 59.6	297	32.8	−13 02.3	315	00.6	−18 21.8
13	283	20.8	344	48.1	01.3	41	01.9	−21 00.0	312	34.8	02.1	330	02.8	21.7
14	298	23.3	359	50.7	00.8	56	02.5	−21 00.3	327	36.9	02.0	345	05.0	21.6
15	313	25.7	14	53.3	−21 00.3	71	03.1	00.7	342	38.9	01.8	0	07.2	21.6
16	328	28.2	29	55.9	−20 59.8	86	03.7	01.0	357	40.9	01.7	15	09.5	21.5
17	343	30.7	44	58.5	−20 59.2	101	04.4	−21 01.4	12	43.0	−13 01.5	30	11.7	−18 21.4
18	358	33.1	60	01.1	−20 58.7	116	05.0	−21 01.7	27	45.0	−13 01.3	45	13.9	−18 21.4
19	13	35.6	75	03.7	58.2	131	05.6	02.1	42	47.1	01.2	60	16.1	21.3
20	28	38.1	90	06.3	57.7	146	06.2	02.4	57	49.1	01.0	75	18.3	21.2
21	43	40.5	105	08.9	57.1	161	06.8	02.8	72	51.2	00.9	90	20.5	21.2
22	58	43.0	120	11.6	56.6	176	07.5	03.1	87	53.2	00.7	105	22.7	21.1
23	73	45.4	135	14.2	56.1	191	08.1	03.4	102	55.3	00.6	120	25.0	21.0
24	88	47.9	150	16.8	−20 55.6	206	08.7	−21 03.8	117	57.3	−13 00.4	135	27.2	−18 21.0
Dif	—			+26	+5		+6	−4		+20	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3 PMG: 11h 57m.7		Edad: 15d.7 SD: 14′.7 PMG: 0h 38m		PHE: 4h: 54′.1; 12h: 54′.2; 20h: 54′.3 Rº: 51m				Civil	Náutico	Hora	Rº	Hora	Rº
	hG ☉	Dec	hG ☾	Dif	Dec	Dif								
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 38.8	−23 25.6	350 54.8	103	+26 17.0	5	**60 N**	14 54	15 52	16 49	15 16	70	10 52	35
1	195 38.5	25.6	5 24.1	102	17.5	4	**58**	15 11	16 03	16 56	15 42	67	25	39
2	210 38.2	25.7	19 53.3	103	17.9	2	**56**	26	14	17 03	16 03	65	10 04	41
3	225 37.9	25.7	34 22.6	102	18.1	2	**54**	39	23	09	21	62	9 47	42
4	240 37.6	25.7	48 51.8	102	18.3	0	**52**	15 50	31	15	36	61	32	43
5	255 37.3	−23 25.8	63 21.0	102	+26 18.3	1	**50**	16 00	16 38	17 20	16 48	61	9 19	44
6	270 37.0	−23 25.8	77 50.2	102	+26 18.2	3	**45**	16 21	16 55	17 32	17 15	58	8 52	46
7	285 36.7	25.8	92 19.4	102	17.9	4	**40**	38	17 08	42	36	57	31	47
8	300 36.3	25.8	106 48.6	102	17.5	5	**35**	16 52	20	17 52	17 53	56	8 14	47
9	315 36.0	25.9	121 17.8	102	17.0	6	**30**	17 04	31	18 00	18 08	55	7 59	48
10	330 35.7	25.9	135 47.0	102	16.4	8	**20**	25	17 49	17	34	53	33	49
11	345 35.4	−23 25.9	150 16.2	102	+26 15.6	8	**10 N**	17 44	18 07	18 33	18 56	52	7 11	50
12	0 35.1	−23 25.9	164 45.4	102	+26 14.8	8	**0**	18 01	18 24	18 50	19 16	51	6 50	51
13	15 34.8	26.0	179 14.6	102	13.7	11	**10 S**	19	18 42	19 09	37	49	29	52
14	30 34.5	26.0	193 43.8	102	12.6	11	**20**	18 38	19 03	19 32	19 59	48	6 07	52
15	45 34.2	26.0	208 13.0	102	11.3	13	**30**	19 00	28	20 01	20 24	46	5 41	53
16	60 33.9	26.0	222 42.2	102	09.9	14	**35**	13	19 43	20	39	45	26	54
17	75 33.6	−23 26.0	237 11.4	102	+26 08.4	15	**40**	19 28	20 01	20 43	20 57	43	5 08	54
18	90 33.3	−23 26.1	251 40.6	102	+26 06.7	17	**45**	19 46	20 24	21 14	21 18	41	4 47	55
19	105 32.9	26.1	266 09.8	102	05.0	17	**50**	20 09	20 54	21 59	44	39	20	56
20	120 32.6	26.1	280 39.0	102	03.0	20	**52**	20	21 09	22 27	21 57	38	4 07	56
21	135 32.3	26.1	295 08.3	103	+26 01.0	20	**54**	32	27	23 15	22 11	37	3 52	57
22	150 32.0	26.1	309 37.5	102	+25 58.8	22	**56**	20 46	21 49	** **	28	34	34	58
23	165 31.7	26.1	324 06.8	103	56.5	23	**58**	21 03	22 19	** **	22 49	31	3 13	58
24	180 31.4	−23 26.1	338 36.0	102	+25 54.1	24	**60 S**	21 24	23 10	** **	23 15	26	2 45	60

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 18h 01m.8	Mag: −4.8 PMG: 13h 56m		Mag: +1.6 PMG: 10h 15m		Mag: −2.2 PMG: 16h 06m		Mag: +0.7 PMG: 14h 56m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	88 47.9	150 16.8	−20 55.6	206 08.7	−21 03.8	117 57.3	−13 00.4	135 27.2	−18 21.0
1	103 50.4	165 19.4	55.1	221 09.3	04.1	132 59.4	00.3	150 29.4	20.9
2	118 52.8	180 22.1	54.5	236 09.9	04.5	148 01.4	−13 00.1	165 31.6	20.8
3	133 55.3	195 24.7	54.0	251 10.5	04.8	163 03.5	−12 59.9	180 33.8	20.8
4	148 57.8	210 27.4	53.5	266 11.2	05.2	178 05.5	59.8	195 36.0	20.7
5	164 00.2	225 30.0	−20 53.0	281 11.8	−21 05.5	193 07.5	−12 59.6	210 38.2	−18 20.6
6	179 02.7	240 32.7	−20 52.5	296 12.4	−21 05.9	208 09.6	−12 59.5	225 40.5	−18 20.6
7	194 05.2	255 35.4	51.9	311 13.0	06.2	223 11.6	59.3	240 42.7	20.5
8	209 07.6	270 38.0	51.4	326 13.6	06.6	238 13.7	59.2	255 44.9	20.4
9	224 10.1	285 40.7	50.9	341 14.2	06.9	253 15.7	59.0	270 47.1	20.4
10	239 12.6	300 43.4	50.4	356 14.9	07.2	268 17.8	58.9	285 49.3	20.3
11	254 15.0	315 46.1	−20 49.9	11 15.5	−21 07.6	283 19.8	−12 58.7	300 51.5	−18 20.2
12	269 17.5	330 48.8	−20 49.3	26 16.1	−21 07.9	298 21.9	−12 58.5	315 53.7	−18 20.2
13	284 19.9	345 51.5	48.8	41 16.7	08.3	313 23.9	58.4	330 56.0	20.1
14	299 22.4	0 54.2	48.3	56 17.3	08.6	328 25.9	58.2	345 58.2	20.0
15	314 24.9	15 56.9	47.8	71 17.9	09.0	343 28.0	58.1	1 00.4	20.0
16	329 27.3	30 59.6	47.3	86 18.6	09.3	358 30.0	57.9	16 02.6	19.9
17	344 29.8	46 02.3	−20 46.7	101 19.2	−21 09.6	13 32.1	−12 57.8	31 04.8	−18 19.8
18	359 32.3	61 05.0	−20 46.2	116 19.8	−21 10.0	28 34.1	−12 57.6	46 07.0	−18 19.8
19	14 34.7	76 07.7	45.7	131 20.4	10.3	43 36.2	57.4	61 09.2	19.7
20	29 37.2	91 10.4	45.2	146 21.0	10.7	58 38.2	57.3	76 11.4	19.6
21	44 39.7	106 13.2	44.7	161 21.6	11.0	73 40.2	57.1	91 13.7	19.6
22	59 42.1	121 15.9	44.2	176 22.2	11.3	88 42.3	57.0	106 15.9	19.5
23	74 44.6	136 18.6	43.6	191 22.8	11.7	103 44.3	56.8	121 18.1	19.4
24	89 47.1	151 21.4	−20 43.1	206 23.5	−21 12.0	118 46.4	−12 56.7	136 20.3	−18 19.4
Dif	—	+27	+5	+6	−3	+20	+2	+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 16^{d}.7 SD: 14′.8		PHE	4^{h}: 54′.4 12^{h}: 54′.4 20^{h}: 54′.5								
	PMG: 11^{h} 58^{m}.2				PMG: 1^{h} 29^{m}			Rº: 50^{m}								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	31.4	−23	26.1	338	36.0	+25	54.1	**60 N**	7 07	8 04	9 02	16 26	83	11 27	20
1	195	31.1		26.2	353	05.3 103		51.6 25	**58**	7 00	7 52	8 44	16 49	78	11 04	25
2	210	30.8		26.2	7	34.6 103		48.9 27	**56**	6 53	42	30	17 08	74	10 45	28
3	225	30.5		26.2	22	03.9 103		46.1 28	**54**	47	33	17	23	72	29	31
4	240	30.2		26.2	36	33.2 103		43.2 29	**52**	41	25	8 06	37	69	15	33
5	255	29.9	−23	26.2	51	02.6 104	+25	40.1 31	**50**	6 36	7 17	7 56	17 49	67	10 03	35
6	270	29.5	−23	26.2	65	31.9 103	+25	36.9 32	**45**	6 24	7 01	7 35	18 13	64	9 38	38
7	285	29.2		26.2	80	01.3 104		33.6 33	**40**	14	6 48	18	33	61	18	40
8	300	28.9		26.2	94	30.7 104		30.2 34	**35**	6 04	36	7 04	18 49	59	9 01	43
9	315	28.6		26.2	109	00.1 104		26.6 36	**30**	5 55	25	6 52	19 03	57	8 47	44
10	330	28.3		26.2	123	29.6 105		23.0 36	**20**	39	6 06	30	27	54	22	46
11	345	28.0	−23	26.2	137	59.0 104	+25	19.2 38	**10 N**	5 23	5 49	6 12	19 48	51	8 01	48
12	0	27.7	−23	26.2	152	28.5 105	+25	15.2 40	**0**	5 06	5 32	5 54	20 07	49	7 41	50
13	15	27.4		26.2	166	58.0 105		11.2 40	**10 S**	4 47	5 14	37	26	47	7 21	52
14	30	27.1		26.2	181	27.5 105		07.0 42	**20**	4 24	4 53	5 18	20 47	44	6 59	54
15	45	26.8		26.2	195	57.1 106	+25	02.7 43	**30**	3 55	28	4 56	21 10	42	34	57
16	60	26.4		26.2	210	26.7 106	+24	58.3 44	**35**	36	4 13	43	24	40	20	57
17	75	26.1	−23	26.2	224	56.3 106	+24	53.7 46	**40**	3 13	3 55	4 28	21 40	38	6 02	60
18	90	25.8	−23	26.2	239	25.9 106	+24	49.1 46	**45**	2 42	3 32	4 09	21 59	35	5 42	61
19	105	25.5		26.2	253	55.6 107		44.3 48	**50**	1 57	3 02	3 47	22 23	31	16	64
20	120	25.2		26.2	268	25.3 107		39.4 49	**52**	1 29	2 47	36	35	28	5 03	66
21	135	24.9		26.2	282	55.0 107		34.4 50	**54**	0 41	29	24	22 48	26	4 49	67
22	150	24.6		26.2	297	24.8 108		29.2 52	**56**	** **	2 07	3 09	23 02	24	32	70
23	165	24.3		26.2	311	54.6 108		23.9 53	**58**	** **	1 37	2 53	20	20	4 11	74
24	180	24.0	−23	26.2	326	24.4 108	+24	18.6 53	**60 S**	** **	0 45	2 32	23 41	15	3 45	79

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.2			Mag: +0.7		
	17^{h} 57^{m}.9		PMG: 13^{h} 52^{m}			PMG: 10^{h} 14^{m}			PMG: 16^{h} 03^{m}			PMG: 14^{h} 52^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	89	47.1	151	21.4	−20 43.1	206	23.5	−21 12.0	118	46.4	−12 56.7	136	20.3	−18 19.4
1	104	49.5	166	24.1	42.6	221	24.1	12.4	133	48.4	56.5	151	22.5	19.3
2	119	52.0	181	26.9	42.1	236	24.7	12.7	148	50.4	56.4	166	24.7	19.2
3	134	54.4	196	29.6	41.6	251	25.3	13.0	163	52.5	56.2	181	26.9	19.2
4	149	56.9	211	32.4	41.0	266	25.9	13.4	178	54.5	56.0	196	29.1	19.1
5	164	59.4	226	35.2	−20 40.5	281	26.5	−21 13.7	193	56.6	−12 55.9	211	31.3	−18 19.0
6	180	01.8	241	37.9	−20 40.0	296	27.1	−21 14.1	208	58.6	−12 55.7	226	33.6	−18 19.0
7	195	04.3	256	40.7	39.5	311	27.7	14.4	224	00.6	55.6	241	35.8	18.9
8	210	06.8	271	43.5	39.0	326	28.4	14.7	239	02.7	55.4	256	38.0	18.8
9	225	09.2	286	46.3	38.5	341	29.0	15.1	254	04.7	55.2	271	40.2	18.8
10	240	11.7	301	49.1	37.9	356	29.6	15.4	269	06.8	55.1	286	42.4	18.7
11	255	14.2	316	51.9	−20 37.4	11	30.2	−21 15.7	284	08.8	−12 54.9	301	44.6	−18 18.6
12	270	16.6	331	54.7	−20 36.9	26	30.8	−21 16.1	299	10.8	−12 54.8	316	46.8	−18 18.5
13	285	19.1	346	57.5	36.4	41	31.4	16.4	314	12.9	54.6	331	49.0	18.5
14	300	21.5	2	00.3	35.9	56	32.0	16.7	329	14.9	54.5	346	51.2	18.4
15	315	24.0	17	03.1	35.4	71	32.6	17.1	344	17.0	54.3	1	53.5	18.3
16	330	26.5	32	05.9	34.9	86	33.2	17.4	359	19.0	54.1	16	55.7	18.3
17	345	28.9	47	08.7	−20 34.3	101	33.8	−21 17.7	14	21.0	−12 54.0	31	57.9	−18 18.2
18	0	31.4	62	11.6	−20 33.8	116	34.5	−21 18.1	29	23.1	−12 53.8	47	00.1	−18 18.1
19	15	33.9	77	14.4	33.3	131	35.1	18.4	44	25.1	53.7	62	02.3	18.1
20	30	36.3	92	17.2	32.8	146	35.7	18.7	59	27.1	53.5	77	04.5	18.0
21	45	38.8	107	20.1	32.3	161	36.3	19.1	74	29.2	53.3	92	06.7	17.9
22	60	41.3	122	22.9	31.8	176	36.9	19.4	89	31.2	53.2	107	08.9	17.9
23	75	43.7	137	25.8	31.3	191	37.5	19.7	104	33.3	53.0	122	11.1	17.8
24	90	46.2	152	28.6	−20 30.7	206	38.1	−21 20.1	119	35.3	−12 52.9	137	13.3	−18 17.7
Dif	—			+28	+5		+6	−3		+20	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 17^{d}.7		PHE	4^{h}: 54′.7								
	PMG: 11^{h} 58^{m}.6		SD: 14′.9			12^{h}: 54′.8								
			PMG: 2^{h} 19^{m}			20^{h}: 54′.9								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	° ′	° ′	° ′		° ′		°	h m	h m	h m	h m	m	h m	m
0	180 24.0	−23 26.2	326 24.4		+24 18.6		**60 N**	14 55	15 53	16 50	17 49	88	11 47	12
1	195 23.7	26.2	340 54.3	109	13.1	55	**58**	15 12	16 04	16 57	18 07	83	29	16
2	210 23.3	26.2	355 24.2	109	07.4	57	**56**	27	15	17 04	22	79	13	20
3	225 23.0	26.2	9 54.1	109	+24 01.7	57	**54**	40	24	10	35	76	11 00	23
4	240 22.7	26.2	24 24.1	110	+23 55.8	59	**52**	15 51	32	16	46	73	10 48	26
5	255 22.4	−23 26.2	38 54.1	110	+23 49.9	59	**50**	16 01	16 39	17 21	18 56	71	10 38	27
6	270 22.1	−23 26.2	53 24.1	110	+23 43.8	61	**45**	16 22	16 56	17 33	19 17	67	10 16	32
7	285 21.8	26.2	67 54.2	111	37.6	62	**40**	39	17 09	43	34	63	9 58	35
8	300 21.5	26.1	82 24.3	111	31.2	64	**35**	16 53	21	17 53	19 48	61	44	37
9	315 21.2	26.1	96 54.4	111	24.8	64	**30**	17 05	31	18 01	20 00	58	31	39
10	330 20.9	26.1	111 24.6	112	18.3	65	**20**	26	17 50	18	21	54	9 08	43
11	345 20.6	−23 26.1	125 54.8	112	+23 11.6	67	**10 N**	17 45	18 08	18 34	20 39	51	8 49	46
12	0 20.2	−23 26.1	140 25.1	113	+23 04.8	68	**0**	18 02	18 25	18 51	20 56	48	8 31	49
13	15 19.9	26.1	154 55.4	113	+22 57.9	69	**10 S**	20	18 43	19 10	21 13	45	8 13	51
14	30 19.6	26.1	169 25.7	113	50.9	70	**20**	18 39	19 04	19 33	31	41	7 53	54
15	45 19.3	26.0	183 56.1	114	43.8	71	**30**	19 01	29	20 02	21 52	37	31	57
16	60 19.0	26.0	198 26.5	114	36.6	72	**35**	14	19 44	21	22 04	35	17	60
17	75 18.7	−23 26.0	212 57.0	115	+22 29.3	73	**40**	19 29	20 02	20 44	22 18	32	7 02	62
18	90 18.4	−23 26.0	227 27.5	115	+22 21.8	75	**45**	19 47	20 25	21 15	22 34	29	6 43	66
19	105 18.1	26.0	241 58.0	115	14.3	75	**50**	20 10	20 55	22 00	22 54	24	20	70
20	120 17.8	25.9	256 28.6	116	+22 06.6	77	**52**	21	21 10	22 28	23 03	23	6 09	72
21	135 17.5	25.9	270 59.2	116	+21 58.9	77	**54**	33	28	23 15	14	20	5 56	75
22	150 17.1	25.9	285 29.8	116	51.0	79	**56**	20 47	21 50	** **	26	17	42	77
23	165 16.8	25.9	300 00.6	118	43.0	80	**58**	21 04	22 20	** **	40	13	25	81
24	180 16.5	−23 25.8	314 31.3	117	+21 34.9	81	**60 S**	21 25	23 11	** **	23 56	9	5 04	86

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.7		Mag: +1.6		Mag: −2.2		Mag: +0.7	
	17^{h} 54^{m}.0	PMG: 13^{h} 47^{m}		PMG: 10^{h} 13^{m}		PMG: 15^{h} 59^{m}		PMG: 14^{h} 49^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	90 46.2	152 28.6	−20 30.7	206 38.1	−21 20.1	119 35.3	−12 52.9	137 13.3	−18 17.7
1	105 48.7	167 31.5	30.2	221 38.7	20.4	134 37.3	52.7	152 15.6	17.7
2	120 51.1	182 34.3	29.7	236 39.3	20.7	149 39.4	52.6	167 17.8	17.6
3	135 53.6	197 37.2	29.2	251 39.9	21.1	164 41.4	52.4	182 20.0	17.5
4	150 56.0	212 40.1	28.7	266 40.5	21.4	179 43.4	52.2	197 22.2	17.5
5	165 58.5	227 43.0	−20 28.2	281 41.1	−21 21.7	194 45.5	−12 52.1	212 24.4	−18 17.4
6	181 01.0	242 45.8	−20 27.7	296 41.8	−21 22.1	209 47.5	−12 51.9	227 26.6	−18 17.3
7	196 03.4	257 48.7	27.2	311 42.4	22.4	224 49.6	51.8	242 28.8	17.3
8	211 05.9	272 51.6	26.6	326 43.0	22.7	239 51.6	51.6	257 31.0	17.2
9	226 08.4	287 54.5	26.1	341 43.6	23.0	254 53.6	51.4	272 33.2	17.1
10	241 10.8	302 57.4	25.6	356 44.2	23.4	269 55.7	51.3	287 35.4	17.1
11	256 13.3	318 00.3	−20 25.1	11 44.8	−21 23.7	284 57.7	−12 51.1	302 37.6	−18 17.0
12	271 15.8	333 03.2	−20 24.6	26 45.4	−21 24.0	299 59.7	−12 51.0	317 39.9	−18 16.9
13	286 18.2	348 06.2	24.1	41 46.0	24.4	315 01.8	50.8	332 42.1	16.8
14	301 20.7	3 09.1	23.6	56 46.6	24.7	330 03.8	50.6	347 44.3	16.8
15	316 23.2	18 12.0	23.1	71 47.2	25.0	345 05.8	50.5	2 46.5	16.7
16	331 25.6	33 14.9	22.6	86 47.8	25.3	0 07.9	50.3	17 48.7	16.6
17	346 28.1	48 17.9	−20 22.0	101 48.4	−21 25.7	15 09.9	−12 50.2	32 50.9	−18 16.6
18	1 30.5	63 20.8	−20 21.5	116 49.0	−21 26.0	30 11.9	−12 50.0	47 53.1	−18 16.5
19	16 33.0	78 23.7	21.0	131 49.6	26.3	45 14.0	49.8	62 55.3	16.4
20	31 35.5	93 26.7	20.5	146 50.2	26.6	60 16.0	49.7	77 57.5	16.4
21	46 37.9	108 29.6	20.0	161 50.8	27.0	75 18.0	49.5	92 59.7	16.3
22	61 40.4	123 32.6	19.5	176 51.4	27.3	90 20.1	49.4	108 01.9	16.2
23	76 42.9	138 35.6	19.0	191 52.0	27.6	105 22.1	49.2	123 04.1	16.2
24	91 45.3	153 38.5	−20 18.5	206 52.6	−21 27.9	120 24.1	−12 49.0	138 06.4	−18 16.1
Dif	—	+29	+5	+6	−3	+20	+2	+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 18^{d}.7		PHE	4^{h}: 55′.0								
	PMG: 11^{h} 59^{m}.1				SD: 15′.0			12^{h}: 55′.2								
					PMG: 3^{h} 08^{m}			20^{h}: 55′.4								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	16.5	−23	25.8	314	31.3	+21	34.9	**60 N**	7 08	8 05	9 03	19 17	89	11 59	7
1	195	16.2		25.8	329	02.1 118		26.8 81	**58**	7 01	7 53	8 45	30	84	45	11
2	210	15.9		25.8	343	32.9 118		18.5 83	**56**	6 54	43	31	41	81	33	15
3	225	15.6		25.7	358	03.8 119		10.1 84	**54**	48	34	18	51	78	23	17
4	240	15.3		25.7	12	34.7 119	+21	01.6 85	**52**	42	26	8 07	19 59	76	14	19
5	255	15.0	−23	25.7	27	05.6 119	+20	53.0 86	**50**	6 37	7 18	7 57	20 07	73	11 05	22
6	270	14.7	−23	25.7	41	36.6 120	+20	44.3 87	**45**	6 25	7 02	7 36	20 24	68	10 48	26
7	285	14.4		25.6	56	07.7 121		35.5 88	**40**	15	6 49	19	37	64	33	30
8	300	14.0		25.6	70	38.8 121		26.6 89	**35**	6 05	37	7 05	49	61	21	33
9	315	13.7		25.6	85	09.9 121		17.6 90	**30**	5 56	26	6 53	20 58	59	10 10	35
10	330	13.4		25.5	99	41.0 121	+20	08.5 91	**20**	40	6 07	31	21 15	54	9 51	40
11	345	13.1	−23	25.5	114	12.3 123	+19	59.3 92	**10 N**	5 24	5 50	6 13	21 30	50	9 35	43
12	0	12.8	−23	25.5	128	43.5 122	+19	50.0 93	**0**	5 07	5 33	5 55	21 44	46	9 20	46
13	15	12.5		25.4	143	14.8 123		40.6 94	**10 S**	4 48	5 15	38	21 58	42	9 04	50
14	30	12.2		25.4	157	46.1 123		31.1 95	**20**	4 25	4 54	5 19	22 12	39	8 47	54
15	45	11.9		25.3	172	17.5 124		21.5 96	**30**	3 56	29	4 57	29	34	28	59
16	60	11.6		25.3	186	48.9 124		11.9 96	**35**	37	4 14	44	39	31	17	61
17	75	11.3	−23	25.3	201	20.4 125	+19	02.1 98	**40**	3 14	3 56	4 29	22 50	28	8 04	64
18	90	10.9	−23	25.2	215	51.9 125	+18	52.2 99	**45**	2 43	3 33	4 11	23 03	24	7 49	67
19	105	10.6		25.2	230	23.4 125		42.3 99	**50**	1 58	3 03	3 48	18	20	30	72
20	120	10.3		25.1	244	55.0 126		32.2 101	**52**	1 30	2 48	37	26	17	21	74
21	135	10.0		25.1	259	26.6 126		22.1 101	**54**	0 42	30	25	34	15	7 11	77
22	150	09.7		25.1	273	58.2 126		11.9 102	**56**	** **	2 08	3 10	43	12	6 59	80
23	165	09.4		25.0	288	29.9 127	+18	01.6 103	**58**	** **	1 38	2 54	23 53	9	46	84
24	180	09.1	−23	25.0	303	01.7 128	+17	51.2 104	**60 S**	** **	0 47	2 33	** **	**	6 30	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.6			Mag: −2.2			Mag: +0.7		
	17^{h} 50^{m}.0		PMG: 13^{h} 43^{m}			PMG: 10^{h} 12^{m}			PMG: 15^{h} 56^{m}			PMG: 14^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	91	45.3	153	38.5	−20 18.5	206	52.6	−21 27.9	120	24.1	−12 49.0	138	06.4	−18 16.1
1	106	47.8	168	41.5	18.0	221	53.2	28.3	135	26.2	48.9	153	08.6	16.0
2	121	50.3	183	44.5	17.5	236	53.8	28.6	150	28.2	48.7	168	10.8	16.0
3	136	52.7	198	47.5	16.9	251	54.4	28.9	165	30.2	48.6	183	13.0	15.9
4	151	55.2	213	50.4	16.4	266	55.0	29.2	180	32.3	48.4	198	15.2	15.8
5	166	57.7	228	53.4	−20 15.9	281	55.6	−21 29.6	195	34.3	−12 48.2	213	17.4	−18 15.8
6	182	00.1	243	56.4	−20 15.4	296	56.2	−21 29.9	210	36.3	−12 48.1	228	19.6	−18 15.7
7	197	02.6	258	59.4	14.9	311	56.8	30.2	225	38.4	47.9	243	21.8	15.6
8	212	05.0	274	02.4	14.4	326	57.4	30.5	240	40.4	47.8	258	24.0	15.5
9	227	07.5	289	05.4	13.9	341	58.0	30.8	255	42.4	47.6	273	26.2	15.5
10	242	10.0	304	08.4	13.4	356	58.6	31.2	270	44.5	47.4	288	28.4	15.4
11	257	12.4	319	11.5	−20 12.9	11	59.2	−21 31.5	285	46.5	−12 47.3	303	30.6	−18 15.3
12	272	14.9	334	14.5	−20 12.4	26	59.8	−21 31.8	300	48.5	−12 47.1	318	32.8	−18 15.3
13	287	17.4	349	17.5	11.9	42	00.4	32.1	315	50.5	46.9	333	35.0	15.2
14	302	19.8	4	20.5	11.4	57	01.0	32.4	330	52.6	46.8	348	37.3	15.1
15	317	22.3	19	23.6	10.9	72	01.6	32.8	345	54.6	46.6	3	39.5	15.1
16	332	24.8	34	26.6	10.4	87	02.2	33.1	0	56.6	46.5	18	41.7	15.0
17	347	27.2	49	29.7	−20 09.9	102	02.8	−21 33.4	15	58.7	−12 46.3	33	43.9	−18 14.9
18	2	29.7	64	32.7	−20 09.4	117	03.4	−21 33.7	31	00.7	−12 46.1	48	46.1	−18 14.9
19	17	32.1	79	35.8	08.8	132	04.0	34.0	46	02.7	46.0	63	48.3	14.8
20	32	34.6	94	38.8	08.3	147	04.6	34.3	61	04.8	45.8	78	50.5	14.7
21	47	37.1	109	41.9	07.8	162	05.2	34.7	76	06.8	45.6	93	52.7	14.6
22	62	39.5	124	45.0	07.3	177	05.8	35.0	91	08.8	45.5	108	54.9	14.6
23	77	42.0	139	48.0	06.8	192	06.4	35.3	106	10.8	45.3	123	57.1	14.5
24	92	44.5	154	51.1	−20 06.3	207	07.0	−21 35.6	121	12.9	−12 45.2	138	59.3	−18 14.4
Dif	—			+30	+5		+6	−3		+20	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 19^{d}.7		PHE	4^{h}: 55′.5								
	PMG: 11^{h} 59^{m}.6				SD: 15′.1			12^{h}: 55′.7								
					PMG: 3^{h} 55^{m}			20^{h}: 55′.9								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	180	09.1	−23	25.0	303	01.7	+17	51.2	**60 N**	14 56	15 54	16 51	20 46	88	12 06	4
1	195	08.8		24.9	317	33.4 127		40.7 105	**58**	15 14	16 06	16 58	20 54	85	11 56	8
2	210	08.5		24.9	332	05.2 128		30.1 106	**56**	28	16	17 05	21 02	81	48	11
3	225	08.2		24.8	346	37.1 129		19.5 106	**54**	41	25	11	09	78	40	14
4	240	07.8		24.8	1	09.0 129	+17	08.7 108	**52**	15 52	33	17	15	76	33	17
5	255	07.5	−23	24.7	15	40.9 129	+16	57.9 108	**50**	16 02	16 41	17 22	21 20	74	11 27	19
6	270	07.2	−23	24.7	30	12.8 129	+16	47.0 109	**45**	16 23	16 57	17 34	21 32	69	11 14	23
7	285	06.9		24.6	44	44.8 130		36.0 110	**40**	40	17 10	44	41	65	11 03	27
8	300	06.6		24.6	59	16.9 131		24.9 111	**35**	16 54	22	17 54	50	61	10 54	30
9	315	06.3		24.5	73	48.9 130		13.7 112	**30**	17 06	33	18 02	21 57	58	45	33
10	330	06.0		24.5	88	21.0 131	+16	02.5 112	**20**	27	17 51	19	22 09	54	31	37
11	345	05.7	−23	24.4	102	53.2 132	+15	51.2 113	**10 N**	17 46	18 09	18 35	22 20	49	10 18	42
12	0	05.4	−23	24.4	117	25.3 131	+15	39.7 115	**0**	18 03	18 26	18 52	22 30	45	10 06	46
13	15	05.1		24.3	131	57.5 132		28.3 114	**10 S**	21	18 44	19 11	40	41	9 54	50
14	30	04.7		24.2	146	29.7 132		16.7 116	**20**	18 40	19 05	19 34	22 51	37	41	54
15	45	04.4		24.2	161	02.0 133	+15	05.1 116	**30**	19 02	29	20 03	23 03	32	27	58
16	60	04.1		24.1	175	34.3 133	+14	53.4 117	**35**	15	19 45	21	10	29	18	61
17	75	03.8	−23	24.1	190	06.6 133	+14	41.6 118	**40**	19 30	20 03	20 45	23 18	26	9 08	64
18	90	03.5	−23	24.0	204	39.0 134	+14	29.7 119	**45**	19 48	20 26	21 15	23 27	22	8 56	69
19	105	03.2		24.0	219	11.3 133		17.8 119	**50**	20 11	20 55	22 01	38	18	42	73
20	120	02.9		23.9	233	43.7 134	+14	05.8 120	**52**	21	21 10	22 29	43	16	35	76
21	135	02.6		23.8	248	16.2 135	+13	53.7 121	**54**	34	28	23 15	49	13	28	78
22	150	02.3		23.8	262	48.6 134		41.5 122	**56**	20 48	21 51	** **	23 55	10	19	82
23	165	02.0		23.7	277	21.1 135		29.3 122	**58**	21 05	22 20	** **	** **	**	8 10	85
24	180	01.6	−23	23.6	291	53.6 135	+13	17.0 123	**60 S**	21 25	23 11	** **	0 05	5	7 59	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.6			Mag: −2.2			Mag: +0.7		
	17^{h} 46^{m}.1		PMG: 13^{h} 38^{m}			PMG: 10^{h} 11^{m}			PMG: 15^{h} 53^{m}			PMG: 14^{h} 42^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	92	44.5	154	51.1	−20 06.3	207	07.0	−21 35.6	121	12.9	−12 45.2	138	59.3	−18 14.4
1	107	46.9	169	54.2	05.8	222	07.6	35.9	136	14.9	45.0	154	01.5	14.4
2	122	49.4	184	57.3	05.3	237	08.2	36.2	151	16.9	44.8	169	03.7	14.3
3	137	51.9	200	00.4	04.8	252	08.8	36.6	166	19.0	44.7	184	05.9	14.2
4	152	54.3	215	03.5	04.3	267	09.4	36.9	181	21.0	44.5	199	08.1	14.2
5	167	56.8	230	06.6	−20 03.8	282	10.0	−21 37.2	196	23.0	−12 44.3	214	10.3	−18 14.1
6	182	59.3	245	09.7	−20 03.3	297	10.6	−21 37.5	211	25.0	−12 44.2	229	12.5	−18 14.0
7	198	01.7	260	12.8	02.8	312	11.2	37.8	226	27.1	44.0	244	14.7	14.0
8	213	04.2	275	15.9	02.3	327	11.8	38.1	241	29.1	43.9	259	17.0	13.9
9	228	06.6	290	19.0	01.8	342	12.4	38.4	256	31.1	43.7	274	19.2	13.8
10	243	09.1	305	22.1	01.3	357	13.0	38.8	271	33.1	43.5	289	21.4	13.7
11	258	11.6	320	25.2	−20 00.8	12	13.6	−21 39.1	286	35.2	−12 43.4	304	23.6	−18 13.7
12	273	14.0	335	28.4	−20 00.3	27	14.2	−21 39.4	301	37.2	−12 43.2	319	25.8	−18 13.6
13	288	16.5	350	31.5	−19 59.8	42	14.8	39.7	316	39.2	43.0	334	28.0	13.5
14	303	19.0	5	34.7	59.3	57	15.4	40.0	331	41.3	42.9	349	30.2	13.5
15	318	21.4	20	37.8	58.8	72	16.0	40.3	346	43.3	42.7	4	32.4	13.4
16	333	23.9	35	40.9	58.3	87	16.6	40.6	1	45.3	42.6	19	34.6	13.3
17	348	26.4	50	44.1	−19 57.8	102	17.2	−21 40.9	16	47.3	−12 42.4	34	36.8	−18 13.3
18	3	28.8	65	47.3	−19 57.3	117	17.8	−21 41.2	31	49.4	−12 42.2	49	39.0	−18 13.2
19	18	31.3	80	50.4	56.8	132	18.4	41.6	46	51.4	42.1	64	41.2	13.1
20	33	33.8	95	53.6	56.3	147	18.9	41.9	61	53.4	41.9	79	43.4	13.0
21	48	36.2	110	56.8	55.8	162	19.5	42.2	76	55.4	41.7	94	45.6	13.0
22	63	38.7	125	59.9	55.3	177	20.1	42.5	91	57.5	41.6	109	47.8	12.9
23	78	41.1	141	03.1	54.8	192	20.7	42.8	106	59.5	41.4	124	50.0	12.8
24	93	43.6	156	06.3	−19 54.3	207	21.3	−21 43.1	122	01.5	−12 41.2	139	52.2	−18 12.8
Dif	—			+31	+5		+6	−3		+20	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 00m.1				LUNA Edad: 20d.7 SD: 15′.3 PMG: 4h 41m PHE 4h: 56′.1; 12h: 56′.4; 20h: 56′.6 Rº: 45m				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	180	01.6	−23	23.6	291	53.6	+13	17.0	**60 N**	7 09	8 06	9 03	22 14	89	12 10	3
1	195	01.3		23.6	306	26.2 136	+13	04.7 123	**58**	7 01	7 54	8 46	19	86	12 04	7
2	210	01.0		23.5	320	58.7 135	+12	52.2 125	**56**	6 55	44	31	23	83	11 59	9
3	225	00.7		23.4	335	31.3 136		39.7 125	**54**	48	35	19	27	80	54	12
4	240	00.4		23.4	350	03.9 136		27.2 125	**52**	43	27	8 07	31	77	50	14
5	255	00.1	−23	23.3	4	36.6 137	+12	14.5 127	**50**	6 38	7 19	7 58	22 34	75	11 46	16
6	269	59.8	−23	23.2	19	09.2 136	+12	01.8 127	**45**	6 26	7 03	7 37	22 41	69	11 37	21
7	284	59.5		23.2	33	41.9 137	+11	49.1 127	**40**	15	6 50	20	46	66	30	25
8	299	59.2		23.1	48	14.6 137		36.2 129	**35**	6 06	38	7 06	51	62	24	28
9	314	58.9		23.0	62	47.3 137		23.3 129	**30**	5 57	27	6 54	22 55	60	18	31
10	329	58.6		22.9	77	20.0 137	+11	10.4 129	**20**	41	6 08	32	23 03	54	08	36
11	344	58.2	−23	22.9	91	52.7 137	+10	57.4 130	**10 N**	5 25	5 51	6 14	23 09	49	11 00	40
12	359	57.9	−23	22.8	106	25.5 138	+10	44.3 131	**0**	5 08	5 34	5 56	23 15	45	10 52	45
13	14	57.6		22.7	120	58.2 137		31.2 131	**10 S**	4 49	5 16	39	21	41	44	49
14	29	57.3		22.6	135	31.0 138		18.0 132	**20**	4 26	4 55	5 20	28	36	35	53
15	44	57.0		22.6	150	03.8 138	+10	04.7 133	**30**	3 57	30	4 58	35	31	25	59
16	59	56.7		22.5	164	36.6 138	+9	51.4 133	**35**	38	4 15	45	39	28	19	62
17	74	56.4	−23	22.4	179	09.4 138	+9	38.1 133	**40**	3 15	3 57	4 30	23 44	24	10 12	66
18	89	56.1	−23	22.3	193	42.3 139	+9	24.7 134	**45**	2 45	3 34	4 12	23 49	21	10 05	69
19	104	55.8		22.2	208	15.1 138	+9	11.2 135	**50**	1 59	3 05	3 49	56	16	9 55	74
20	119	55.5		22.2	222	47.9 138	+8	57.7 135	**52**	1 31	2 49	38	23 59	14	51	76
21	134	55.2		22.1	237	20.8 139		44.1 136	**54**	0 45	32	26	** **	**	46	79
22	149	54.8		22.0	251	53.6 138		30.4 137	**56**	** **	2 09	3 12	** **	**	41	81
23	164	54.5		21.9	266	26.5 139		16.8 136	**58**	** **	1 39	2 55	0 02	7	35	85
24	179	54.2	−23	21.8	280	59.4 139	+8	03.0 138	**60 S**	** **	0 49	2 35	0 10	4	9 28	88

UT	ARIES PMG 17h 42m.2		VENUS Mag: −4.6 PMG: 13h 33m			MARTE Mag: +1.6 PMG: 10h 10m			JÚPITER Mag: −2.2 PMG: 15h 50m			SATURNO Mag: +0.7 PMG: 14h 38m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	93	43.6	156	06.3	−19 54.3	207	21.3	−21 43.1	122	01.5	−12 41.2	139	52.2	−18 12.8
1	108	46.1	171	09.5	53.8	222	21.9	43.4	137	03.5	41.1	154	54.4	12.7
2	123	48.5	186	12.7	53.3	237	22.5	43.7	152	05.6	40.9	169	56.6	12.6
3	138	51.0	201	15.9	52.8	252	23.1	44.0	167	07.6	40.7	184	58.8	12.6
4	153	53.5	216	19.1	52.3	267	23.7	44.3	182	09.6	40.6	200	01.0	12.5
5	168	55.9	231	22.3	−19 51.8	282	24.3	−21 44.6	197	11.6	−12 40.4	215	03.2	−18 12.4
6	183	58.4	246	25.5	−19 51.3	297	24.9	−21 44.9	212	13.7	−12 40.3	230	05.4	−18 12.3
7	199	00.9	261	28.7	50.8	312	25.5	45.2	227	15.7	40.1	245	07.6	12.3
8	214	03.3	276	31.9	50.3	327	26.1	45.6	242	17.7	39.9	260	09.8	12.2
9	229	05.8	291	35.2	49.8	342	26.6	45.9	257	19.7	39.8	275	12.1	12.1
10	244	08.3	306	38.4	49.3	357	27.2	46.2	272	21.7	39.6	290	14.3	12.1
11	259	10.7	321	41.6	−19 48.9	12	27.8	−21 46.5	287	23.8	−12 39.4	305	16.5	−18 12.0
12	274	13.2	336	44.9	−19 48.4	27	28.4	−21 46.8	302	25.8	−12 39.3	320	18.7	−18 11.9
13	289	15.6	351	48.1	47.9	42	29.0	47.1	317	27.8	39.1	335	20.9	11.9
14	304	18.1	6	51.4	47.4	57	29.6	47.4	332	29.8	38.9	350	23.1	11.8
15	319	20.6	21	54.6	46.9	72	30.2	47.7	347	31.9	38.8	5	25.3	11.7
16	334	23.0	36	57.9	46.4	87	30.8	48.0	2	33.9	38.6	20	27.5	11.6
17	349	25.5	52	01.1	−19 45.9	102	31.4	−21 48.3	17	35.9	−12 38.4	35	29.7	−18 11.6
18	4	28.0	67	04.4	−19 45.4	117	32.0	−21 48.6	32	37.9	−12 38.3	50	31.9	−18 11.5
19	19	30.4	82	07.7	44.9	132	32.5	48.9	47	39.9	38.1	65	34.1	11.4
20	34	32.9	97	10.9	44.4	147	33.1	49.2	62	42.0	37.9	80	36.3	11.4
21	49	35.4	112	14.2	43.9	162	33.7	49.5	77	44.0	37.8	95	38.5	11.3
22	64	37.8	127	17.5	43.4	177	34.3	49.8	92	46.0	37.6	110	40.7	11.2
23	79	40.3	142	20.8	42.9	192	34.9	50.1	107	48.0	37.4	125	42.9	11.2
24	94	42.7	157	24.1	−19 42.4	207	35.5	−21 50.4	122	50.1	−12 37.3	140	45.1	−18 11.1
Dif	—			+32	+5		+6	−3		+20	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 21^{d}.7		PHE	4^{h}: 56′.8								
	PMG: 12^{h} 00^{m}.6		SD: 15′.4			12^{h}: 57′.1								
			PMG: 5^{h} 26^{m}			20^{h}: 57′.4								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	179 54.2	−23 21.8	280 59.4		+8 03.0		**60 N**	14 58	15 55	16 52	23 43	92	12 13	3
1	194 53.9	21.7	295 32.2	138	+7 49.2	138	**58**	15 15	16 07	17 00	45	88	11	6
2	209 53.6	21.7	310 05.1	139	35.4	138	**56**	30	17	06	46	85	08	9
3	224 53.3	21.6	324 38.0	139	21.5	139	**54**	43	26	13	47	82	06	11
4	239 53.0	21.5	339 10.8	138	+7 07.6	139	**52**	15 54	35	18	48	79	04	14
5	254 52.7	−23 21.4	353 43.7	139	+6 53.6	140	**50**	16 03	16 42	17 23	23 49	77	12 02	16
6	269 52.4	−23 21.3	8 16.6	139	+6 39.6	140	**45**	16 24	16 58	17 35	23 50	72	11 58	21
7	284 52.1	21.2	22 49.4	138	25.6	140	**40**	41	17 11	46	52	68	55	24
8	299 51.8	21.1	37 22.3	139	+6 11.4	142	**35**	16 55	23	17 55	53	64	52	28
9	314 51.5	21.0	51 55.1	138	+5 57.3	141	**30**	17 07	34	18 04	55	60	49	31
10	329 51.1	20.9	66 28.0	139	43.1	142	**20**	29	17 53	20	57	55	44	37
11	344 50.8	−23 20.9	81 00.8	138	+5 28.9	142	**10 N**	17 47	18 10	18 36	23 58	51	11 40	41
12	359 50.5	−23 20.8	95 33.6	138	+5 14.6	143	**0**	18 04	18 27	18 53	** **	**	11 37	45
13	14 50.2	20.7	110 06.5	139	+5 00.3	143	**10 S**	22	18 45	19 12	** **	**	33	49
14	29 49.9	20.6	124 39.3	138	+4 45.9	144	**20**	18 41	19 05	19 35	** **	**	28	55
15	44 49.6	20.5	139 12.1	138	31.5	144	**30**	19 03	30	20 04	** **	**	24	59
16	59 49.3	20.4	153 44.8	137	17.1	144	**35**	16	19 45	22	** **	**	21	63
17	74 49.0	−23 20.3	168 17.6	138	+4 02.7	144	**40**	19 31	20 04	20 45	** **	**	11 18	66
18	89 48.7	−23 20.2	182 50.3	137	+3 48.2	145	**45**	19 49	20 26	21 16	** **	**	11 14	71
19	104 48.4	20.1	197 23.1	138	33.6	146	**50**	20 11	20 56	22 01	** **	**	09	76
20	119 48.1	20.0	211 55.8	137	19.1	145	**52**	22	21 11	22 28	** **	**	07	78
21	134 47.8	19.9	226 28.5	137	+3 04.5	146	**54**	34	29	23 14	0 02	11	05	81
22	149 47.4	19.8	241 01.1	136	+2 49.9	146	**56**	20 48	21 51	** **	05	10	02	84
23	164 47.1	19.7	255 33.8	137	35.2	147	**58**	21 05	22 20	** **	09	7	11 00	86
24	179 46.8	−23 19.6	270 06.4	136	+2 20.5	147	**60 S**	21 25	23 09	** **	0 14	3	10 56	90

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.6		Mag: +1.6		Mag: −2.2		Mag: +0.7	
	17^{h} 38^{m}.3	PMG: 13^{h} 27^{m}		PMG: 10^{h} 09^{m}		PMG: 15^{h} 47^{m}		PMG: 14^{h} 35^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	94 42.7	157 24.1	−19 42.4	207 35.5	−21 50.4	122 50.1	−12 37.3	140 45.1	−18 11.1
1	109 45.2	172 27.4	41.9	222 36.1	50.7	137 52.1	37.1	155 47.3	11.0
2	124 47.7	187 30.7	41.5	237 36.7	51.0	152 54.1	37.0	170 49.5	10.9
3	139 50.1	202 34.0	41.0	252 37.2	51.3	167 56.1	36.8	185 51.7	10.9
4	154 52.6	217 37.3	40.5	267 37.8	51.6	182 58.1	36.6	200 53.9	10.8
5	169 55.1	232 40.6	−19 40.0	282 38.4	−21 51.9	198 00.2	−12 36.5	215 56.1	−18 10.7
6	184 57.5	247 43.9	−19 39.5	297 39.0	−21 52.2	213 02.2	−12 36.3	230 58.3	−18 10.7
7	200 00.0	262 47.2	39.0	312 39.6	52.5	228 04.2	36.1	246 00.5	10.6
8	215 02.5	277 50.6	38.5	327 40.2	52.8	243 06.2	36.0	261 02.7	10.5
9	230 04.9	292 53.9	38.0	342 40.8	53.1	258 08.2	35.8	276 04.9	10.4
10	245 07.4	307 57.2	37.5	357 41.3	53.4	273 10.2	35.6	291 07.1	10.4
11	260 09.9	323 00.6	−19 37.1	12 41.9	−21 53.7	288 12.3	−12 35.5	306 09.3	−18 10.3
12	275 12.3	338 03.9	−19 36.6	27 42.5	−21 54.0	303 14.3	−12 35.3	321 11.5	−18 10.2
13	290 14.8	353 07.3	36.1	42 43.1	54.3	318 16.3	35.1	336 13.7	10.2
14	305 17.2	8 10.6	35.6	57 43.7	54.6	333 18.3	35.0	351 15.9	10.1
15	320 19.7	23 14.0	35.1	72 44.3	54.9	348 20.3	34.8	6 18.1	10.0
16	335 22.2	38 17.3	34.6	87 44.9	55.1	3 22.4	34.6	21 20.3	09.9
17	350 24.6	53 20.7	−19 34.1	102 45.4	−21 55.4	18 24.4	−12 34.5	36 22.5	−18 09.9
18	5 27.1	68 24.1	−19 33.6	117 46.0	−21 55.7	33 26.4	−12 34.3	51 24.7	−18 09.8
19	20 29.6	83 27.4	33.2	132 46.6	56.0	48 28.4	34.1	66 26.9	09.7
20	35 32.0	98 30.8	32.7	147 47.2	56.3	63 30.4	34.0	81 29.1	09.7
21	50 34.5	113 34.2	32.2	162 47.8	56.6	78 32.4	33.8	96 31.3	09.6
22	65 37.0	128 37.6	31.7	177 48.4	56.9	93 34.5	33.6	111 33.5	09.5
23	80 39.4	143 41.0	31.2	192 48.9	57.2	108 36.5	33.4	126 35.7	09.5
24	95 41.9	158 44.4	−19 30.7	207 49.5	−21 57.5	123 38.5	−12 33.3	141 37.9	−18 09.4
Dif	—	+33	+5	+6	−3	+20	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 22^{d}.7		PHE	4^{h}: 57′.6									
	PMG: 12^{h} 01^{m}.1				SD: 15′.7			12^{h}: 57′.9									
					PMG: 6^{h} 11^{m}			20^{h}: 58′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	46.8	−23	19.6	270	06.4	+2	20.5		**60 N**	7 09	8 06	9 04	** **	**	12 16	3
1	194	46.5		19.5	284	39.0 136	+2	05.8 147		**58**	7 02	7 54	8 46	** **	**	17	6
2	209	46.2		19.4	299	11.6 136	+1	51.1 147		**56**	6 55	44	32	** **	**	17	9
3	224	45.9		19.2	313	44.1 135		36.3 148		**54**	49	35	19	** **	**	17	12
4	239	45.6		19.1	328	16.6 135		21.5 148		**52**	43	27	8 08	** **	**	18	14
5	254	45.3	−23	19.0	342	49.1 135	+1	06.7 148		**50**	6 38	7 20	7 58	** **	**	12 18	17
6	269	45.0	−23	18.9	357	21.6 135	+0	51.9 148		**45**	6 26	7 04	7 37	** **	**	12 19	21
7	284	44.7		18.8	11	54.0 134		37.0 149		**40**	16	6 50	21	** **	**	19	26
8	299	44.4		18.7	26	26.4 134		22.1 149		**35**	6 07	38	7 07	** **	**	20	29
9	314	44.1		18.6	40	58.7 133	+0	07.2 149		**30**	5 58	28	6 54	** **	**	20	32
10	329	43.8		18.5	55	31.1 134	−0	07.7 149		**20**	42	6 09	33	** **	**	21	37
11	344	43.5	−23	18.4	70	03.3 132	−0	22.6 149		**10 N**	5 26	5 52	6 15	** **	**	12 21	43
12	359	43.1	−23	18.3	84	35.6 133	−0	37.6 150		**0**	5 09	5 35	5 57	0 00	46	12 22	47
13	14	42.8		18.1	99	07.8 132	−0	52.5 149		**10 S**	4 50	5 17	40	02	41	22	52
14	29	42.5		18.0	113	40.0 132	−1	07.5 150		**20**	4 27	4 56	5 21	04	36	23	56
15	44	42.2		17.9	128	12.1 131		22.5 150		**30**	3 58	32	4 59	06	31	23	62
16	59	41.9		17.8	142	44.1 130		37.5 150		**35**	40	4 16	46	07	28	24	65
17	74	41.6	−23	17.7	157	16.2 131	−1	52.5 150		**40**	3 17	3 58	4 31	0 08	25	12 24	69
18	89	41.3	−23	17.6	171	48.2 130	−2	07.5 150		**45**	2 46	3 36	4 13	0 10	21	12 25	73
19	104	41.0		17.4	186	20.1 129		22.6 151		**50**	2 01	3 06	3 51	12	16	25	78
20	119	40.7		17.3	200	52.0 129		37.6 150		**52**	1 33	2 51	40	13	14	25	81
21	134	40.4		17.2	215	23.8 128	−2	52.7 151		**54**	0 48	33	28	13	12	26	83
22	149	40.1		17.1	229	55.6 128	−3	07.7 150		**56**	** **	2 11	3 13	15	9	26	86
23	164	39.8		16.9	244	27.3 127		22.8 151		**58**	** **	1 42	2 57	16	6	26	90
24	179	39.5	−23	16.8	258	59.0 127	−3	37.8 150		**60 S**	** **	0 53	2 36	0 17	3	12 26	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17^{h} 34^{m}.3		PMG: 13^{h} 22^{m}			PMG: 10^{h} 08^{m}			PMG: 15^{h} 43^{m}			PMG: 14^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	95	41.9	158	44.4	−19 30.7	207	49.5	−21 57.5	123	38.5	−12 33.3	141	37.9	−18 09.4
1	110	44.3	173	47.8	30.2	222	50.1	57.8	138	40.5	33.1	156	40.1	09.3
2	125	46.8	188	51.2	29.8	237	50.7	58.1	153	42.5	32.9	171	42.3	09.2
3	140	49.3	203	54.6	29.3	252	51.3	58.4	168	44.5	32.8	186	44.5	09.2
4	155	51.7	218	58.0	28.8	267	51.9	58.7	183	46.6	32.6	201	46.7	09.1
5	170	54.2	234	01.4	−19 28.3	282	52.4	−21 58.9	198	48.6	−12 32.4	216	48.9	−18 09.0
6	185	56.7	249	04.8	−19 27.8	297	53.0	−21 59.2	213	50.6	−12 32.3	231	51.1	−18 09.0
7	200	59.1	264	08.2	27.3	312	53.6	59.5	228	52.6	32.1	246	53.3	08.9
8	216	01.6	279	11.7	26.9	327	54.2	−21 59.8	243	54.6	31.9	261	55.5	08.8
9	231	04.1	294	15.1	26.4	342	54.8	−22 00.1	258	56.6	31.8	276	57.7	08.7
10	246	06.5	309	18.5	25.9	357	55.3	00.4	273	58.7	31.6	291	59.9	08.7
11	261	09.0	324	22.0	−19 25.4	12	55.9	−22 00.7	289	00.7	−12 31.4	307	02.1	−18 08.6
12	276	11.5	339	25.4	−19 24.9	27	56.5	−22 01.0	304	02.7	−12 31.3	322	04.3	−18 08.5
13	291	13.9	354	28.9	24.5	42	57.1	01.3	319	04.7	31.1	337	06.5	08.4
14	306	16.4	9	32.3	24.0	57	57.7	01.5	334	06.7	30.9	352	08.7	08.4
15	321	18.8	24	35.8	23.5	72	58.2	01.8	349	08.7	30.8	7	10.9	08.3
16	336	21.3	39	39.2	23.0	87	58.8	02.1	4	10.7	30.6	22	13.1	08.2
17	351	23.8	54	42.7	−19 22.5	102	59.4	−22 02.4	19	12.8	−12 30.4	37	15.3	−18 08.2
18	6	26.2	69	46.2	−19 22.1	118	00.0	−22 02.7	34	14.8	−12 30.3	52	17.5	−18 08.1
19	21	28.7	84	49.7	21.6	133	00.6	03.0	49	16.8	30.1	67	19.7	08.0
20	36	31.2	99	53.1	21.1	148	01.1	03.3	64	18.8	29.9	82	21.9	07.9
21	51	33.6	114	56.6	20.6	163	01.7	03.5	79	20.8	29.7	97	24.1	07.9
22	66	36.1	130	00.1	20.1	178	02.3	03.8	94	22.8	29.6	112	26.3	07.8
23	81	38.6	145	03.6	19.7	193	02.9	04.1	109	24.8	29.4	127	28.5	07.7
24	96	41.0	160	07.1	−19 19.2	208	03.5	−22 04.4	124	26.9	−12 29.2	142	30.7	−18 07.7
Dif	—			+34	+5		+6	−3		+20	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 23ᵈ.7		PHE	4ʰ: 58′.5								
	PMG: 12ʰ 01ᵐ.6				SD: 15′.9			12ʰ: 58′.8								
					PMG: 6ʰ 57ᵐ			20ʰ: 59′.1								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	°	′	°	′	°	′	°	′	°	h m	h m	h m	h m	m	h m	m
0	179	39.5	−23	16.8	258	59.0	−3	37.8	**60 N**	15 00	15 57	16 54	1 15	96	12 19	5
1	194	39.2		16.7	273	30.6 126	−3	52.9 151	**58**	17	16 09	17 01	13	92	23	8
2	209	38.9		16.6	288	02.2 126	−4	08.0 151	**56**	32	19	08	11	88	26	12
3	224	38.5		16.4	302	33.7 125		23.0 150	**54**	44	28	14	09	86	29	14
4	239	38.2		16.3	317	05.1 124		38.1 151	**52**	15 55	36	20	07	83	32	17
5	254	37.9	−23	16.2	331	36.5 124	−4	53.1 150	**50**	16 05	16 43	17 25	1 06	80	12 35	19
6	269	37.6	−23	16.1	346	07.8 123	−5	08.2 151	**45**	16 26	16 59	17 37	1 02	76	12 40	24
7	284	37.3		15.9	0	39.1 123		23.2 150	**40**	42	17 13	47	1 00	70	45	28
8	299	37.0		15.8	15	10.3 122		38.3 151	**35**	16 56	24	17 56	0 57	67	49	32
9	314	36.7		15.7	29	41.4 121	−5	53.3 150	**30**	17 09	35	18 05	55	64	52	35
10	329	36.4		15.5	44	12.5 121	−6	08.3 150	**20**	30	17 54	21	52	58	12 58	41
11	344	36.1	−23	15.4	58	43.5 120	−6	23.3 150	**10 N**	17 48	18 11	18 37	0 49	53	13 04	45
12	359	35.8	−23	15.3	73	14.4 119	−6	38.3 150	**0**	18 05	18 28	18 54	0 46	48	13 09	50
13	14	35.5		15.1	87	45.2 118	−6	53.3 150	**10 S**	23	18 46	19 13	43	44	14	54
14	29	35.2		15.0	102	16.0 118	−7	08.2 149	**20**	18 42	19 06	19 35	40	39	19	60
15	44	34.9		14.9	116	46.7 117		23.2 150	**30**	19 04	31	20 04	37	34	25	66
16	59	34.6		14.7	131	17.3 116		38.1 149	**35**	16	19 46	23	35	31	29	68
17	74	34.3	−23	14.6	145	47.9 116	−7	53.0 149	**40**	19 31	20 04	20 46	0 33	27	13 33	72
18	89	34.0	−23	14.5	160	18.3 114	−8	07.9 149	**45**	19 49	20 26	21 16	0 31	22	13 38	77
19	104	33.7		14.3	174	48.7 114		22.8 149	**50**	20 12	20 56	22 01	28	18	43	83
20	119	33.4		14.2	189	19.0 113		37.6 148	**52**	22	21 11	22 28	27	15	46	85
21	134	33.1		14.0	203	49.2 112	−8	52.4 148	**54**	34	28	23 11	25	13	49	88
22	149	32.7		13.9	218	19.4 112	−9	07.2 148	**56**	20 48	21 50	** **	24	10	52	91
23	164	32.4		13.8	232	49.4 110		21.9 147	**58**	21 05	22 19	** **	22	7	13 56	94
24	179	32.1	−23	13.6	247	19.4 110	−9	36.7 148	**60 S**	21 25	23 06	** **	0 20	4	14 00	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17ʰ 30ᵐ.4		PMG: 13ʰ 16ᵐ			PMG: 10ʰ 07ᵐ			PMG: 15ʰ 40ᵐ			PMG: 14ʰ 28ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	96	41.0	160	07.1	−19 19.2	208	03.5	−22 04.4	124	26.9	−12 29.2	142	30.7	−18 07.7
1	111	43.5	175	10.6	18.7	223	04.0	04.7	139	28.9	29.1	157	32.9	07.6
2	126	46.0	190	14.1	18.2	238	04.6	05.0	154	30.9	28.9	172	35.1	07.5
3	141	48.4	205	17.6	17.8	253	05.2	05.2	169	32.9	28.7	187	37.3	07.4
4	156	50.9	220	21.1	17.3	268	05.8	05.5	184	34.9	28.6	202	39.5	07.4
5	171	53.3	235	24.6	−19 16.8	283	06.3	−22 05.8	199	36.9	−12 28.4	217	41.7	−18 07.3
6	186	55.8	250	28.1	−19 16.3	298	06.9	−22 06.1	214	38.9	−12 28.2	232	43.9	−18 07.2
7	201	58.3	265	31.7	15.9	313	07.5	06.4	229	40.9	28.1	247	46.1	07.2
8	217	00.7	280	35.2	15.4	328	08.1	06.7	244	42.9	27.9	262	48.2	07.1
9	232	03.2	295	38.7	14.9	343	08.6	06.9	259	45.0	27.7	277	50.4	07.0
10	247	05.7	310	42.2	14.4	358	09.2	07.2	274	47.0	27.5	292	52.6	06.9
11	262	08.1	325	45.8	−19 14.0	13	09.8	−22 07.5	289	49.0	−12 27.4	307	54.8	−18 06.9
12	277	10.6	340	49.3	−19 13.5	28	10.4	−22 07.8	304	51.0	−12 27.2	322	57.0	−18 06.8
13	292	13.1	355	52.9	13.0	43	11.0	08.1	319	53.0	27.0	337	59.2	06.7
14	307	15.5	10	56.4	12.5	58	11.5	08.3	334	55.0	26.9	353	01.4	06.7
15	322	18.0	26	00.0	12.1	73	12.1	08.6	349	57.0	26.7	8	03.6	06.6
16	337	20.4	41	03.5	11.6	88	12.7	08.9	4	59.0	26.5	23	05.8	06.5
17	352	22.9	56	07.1	−19 11.1	103	13.2	−22 09.2	20	01.0	−12 26.3	38	08.0	−18 06.4
18	7	25.4	71	10.7	−19 10.7	118	13.8	−22 09.4	35	03.1	−12 26.2	53	10.2	−18 06.4
19	22	27.8	86	14.2	10.2	133	14.4	09.7	50	05.1	26.0	68	12.4	06.3
20	37	30.3	101	17.8	09.7	148	15.0	10.0	65	07.1	25.8	83	14.6	06.2
21	52	32.8	116	21.4	09.2	163	15.5	10.3	80	09.1	25.7	98	16.8	06.1
22	67	35.2	131	25.0	08.8	178	16.1	10.5	95	11.1	25.5	113	19.0	06.1
23	82	37.7	146	28.6	08.3	193	16.7	10.8	110	13.1	25.3	128	21.2	06.0
24	97	40.2	161	32.1	−19 07.8	208	17.3	−22 11.1	125	15.1	−12 25.2	143	23.4	−18 05.9
Dif	—			+35	+5		+6	−3		+20	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 24ᵈ.7		PHE	4ʰ: 59′.3								
	PMG: 12ʰ 02ᵐ.1				SD: 16′.1			12ʰ: 59′.6								
					PMG: 7ʰ 46ᵐ			20ʰ: 59′.9								
	hG ☉		Dec		hG ☾	Dif	Dec	Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′	º	h m	h m	h m	h m	m	h m	m
0	179	32.1	−23	13.6	247	19.4	−9	36.7	**60 N**	7 09	8 06	9 03	2 51	103	12 24	6
1	194	31.8		13.5	261	49.3 109	−9	51.3 146	**58**	7 02	7 55	8 46	45	98	31	11
2	209	31.5		13.3	276	19.1 108	−10	06.0 147	**56**	6 55	44	32	39	94	38	14
3	224	31.2		13.2	290	48.8 107		20.6 146	**54**	49	35	19	35	90	43	19
4	239	30.9		13.0	305	18.4 106		35.2 146	**52**	44	27	8 08	30	88	49	21
5	254	30.6	−23	12.9	319	47.9 105	−10	49.7 145	**50**	6 39	7 20	7 58	2 26	85	12 54	23
6	269	30.3	−23	12.7	334	17.3 104	−11	04.2 145	**45**	6 27	7 04	7 38	2 18	79	13 04	29
7	284	30.0		12.6	348	46.6 103		18.7 145	**40**	17	6 51	21	10	75	13	33
8	299	29.7		12.4	3	15.9 103		33.1 144	**35**	6 08	39	7 07	2 04	71	21	36
9	314	29.4		12.3	17	45.0 101	−11	47.5 144	**30**	5 59	29	6 55	1 59	67	27	40
10	329	29.1		12.1	32	14.0 100	−12	01.8 143	**20**	43	6 10	34	50	61	39	45
11	344	28.8	−23	12.0	46	43.0 100	−12	16.1 143	**10 N**	5 27	5 53	6 16	1 42	57	13 49	50
12	359	28.5	−23	11.8	61	11.8 98	−12	30.3 142	**0**	5 10	5 36	5 58	1 34	53	13 59	54
13	14	28.2		11.7	75	40.5 97		44.5 142	**10 S**	4 51	5 18	41	27	48	14 08	59
14	29	27.9		11.5	90	09.2 97	−12	58.6 141	**20**	28	4 58	22	19	43	19	63
15	44	27.6		11.4	104	37.7 95	−13	12.6 140	**30**	4 00	33	5 00	11	37	31	69
16	59	27.3		11.2	119	06.1 94		26.6 140	**35**	3 41	18	4 47	06	34	37	73
17	74	27.0	−23	11.1	133	34.4 93	−13	40.6 140	**40**	3 18	4 00	4 32	1 00	31	14 45	76
18	89	26.7	−23	10.9	148	02.6 92	−13	54.4 138	**45**	2 48	3 37	4 15	0 53	27	14 55	80
19	104	26.4		10.7	162	30.7 91	−14	08.3 139	**50**	2 03	3 08	3 52	46	21	15 06	86
20	119	26.1		10.6	176	58.7 90		22.0 137	**52**	1 36	2 53	42	42	19	11	89
21	134	25.8		10.4	191	26.6 89		35.7 137	**54**	0 53	35	29	38	16	17	92
22	149	25.5		10.3	205	54.4 88	−14	49.3 136	**56**	** **	2 14	3 15	34	13	23	96
23	164	25.2		10.1	220	22.0 86	−15	02.8 135	**58**	** **	1 45	2 59	29	10	30	100
24	179	24.9	−23	09.9	234	49.6 86	−15	16.3 135	**60 S**	** **	0 57	2 39	0 24	5	15 39	105

UT	ARIES		VENUS			MARTE		JÚPITER		SATURNO	
	PMG		Mag: −4.4			Mag: +1.5		Mag: −2.2		Mag: +0.7	
	17ʰ 26ᵐ.5		PMG: 13ʰ 11ᵐ			PMG: 10ʰ 06ᵐ		PMG: 15ʰ 37ᵐ		PMG: 14ʰ 24ᵐ	
	hG ♈		hG ♀	Dec		hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º	′	º	′	º ′	º	′ º ′	º	′ º ′	º	′ º ′
0	97	40.2	161	32.1	−19 07.8	208	17.3 −22 11.1	125	15.1 −12 25.2	143	23.4 −18 05.9
1	112	42.6	176	35.7	07.4	223	17.8 11.4	140	17.1 25.0	158	25.6 05.9
2	127	45.1	191	39.3	06.9	238	18.4 11.6	155	19.1 24.8	173	27.8 05.8
3	142	47.6	206	42.9	06.4	253	19.0 11.9	170	21.1 24.6	188	30.0 05.7
4	157	50.0	221	46.5	06.0	268	19.6 12.2	185	23.1 24.5	203	32.2 05.6
5	172	52.5	236	50.1	−19 05.5	283	20.1 −22 12.5	200	25.2 −12 24.3	218	34.4 −18 05.6
6	187	54.9	251	53.8	−19 05.0	298	20.7 −22 12.7	215	27.2 −12 24.1	233	36.6 −18 05.5
7	202	57.4	266	57.4	04.6	313	21.3 13.0	230	29.2 24.0	248	38.8 05.4
8	217	59.9	282	01.0	04.1	328	21.8 13.3	245	31.2 23.8	263	41.0 05.3
9	233	02.3	297	04.6	03.6	343	22.4 13.6	260	33.2 23.6	278	43.2 05.3
10	248	04.8	312	08.2	03.2	358	23.0 13.8	275	35.2 23.4	293	45.4 05.2
11	263	07.3	327	11.9	−19 02.7	13	23.6 −22 14.1	290	37.2 −12 23.3	308	47.5 −18 05.1
12	278	09.7	342	15.5	−19 02.2	28	24.1 −22 14.4	305	39.2 −12 23.1	323	49.7 −18 05.1
13	293	12.2	357	19.2	01.8	43	24.7 14.6	320	41.2 22.9	338	51.9 05.0
14	308	14.7	12	22.8	01.3	58	25.3 14.9	335	43.2 22.8	353	54.1 04.9
15	323	17.1	27	26.4	00.8	73	25.8 15.2	350	45.2 22.6	8	56.3 04.8
16	338	19.6	42	30.1	−19 00.4	88	26.4 15.5	5	47.2 22.4	23	58.5 04.8
17	353	22.1	57	33.7	−18 59.9	103	27.0 −22 15.7	20	49.2 −12 22.2	39	00.7 −18 04.7
18	8	24.5	72	37.4	−18 59.5	118	27.6 −22 16.0	35	51.2 −12 22.1	54	02.9 −18 04.6
19	23	27.0	87	41.1	59.0	133	28.1 16.3	50	53.3 21.9	69	05.1 04.5
20	38	29.4	102	44.7	58.5	148	28.7 16.5	65	55.3 21.7	84	07.3 04.5
21	53	31.9	117	48.4	58.1	163	29.3 16.8	80	57.3 21.5	99	09.5 04.4
22	68	34.4	132	52.1	57.6	178	29.8 17.1	95	59.3 21.4	114	11.7 04.3
23	83	36.8	147	55.7	57.1	193	30.4 17.3	111	01.3 21.2	129	13.9 04.3
24	98	39.3	162	59.4	−18 56.7	208	31.0 −22 17.6	126	03.3 −12 21.0	144	16.1 −18 04.2
Dif	—			+36	+5		+6 −3		+20 +2		+22 +1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 25.ᵈ7		PHE	4ʰ: 60′.1								
	PMG: 12ʰ 02.ᵐ6		SD: 16′.3			12ʰ: 60′.4								
			PMG: 8ʰ 40ᵐ			20ʰ: 60′.6								
	hG ☉	Dec	hG ☾	Dif	Dec	Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º ′	º ′	º ′		º ′		º	h m	h m	h m	h m	m	h m	m
0	179 24.9	−23 09.9	234 49.6	84	−15 16.3	134	**60 N**	15 02	15 59	16 56	4 34	108	12 30	12
1	194 24.6	09.8	249 17.0	83	29.7	133	**58**	19	16 11	17 03	23	102	42	17
2	209 24.3	09.6	263 44.3	82	43.0	132	**56**	34	21	10	13	98	12 52	22
3	224 24.0	09.5	278 11.5	82	−15 56.2	132	**54**	46	30	16	4 05	94	13 02	25
4	239 23.7	09.3	292 38.6	81	−16 09.4	132	**52**	15 57	38	21	3 58	90	10	28
5	254 23.3	−23 09.1	307 05.6	80	−16 22.4	130	**50**	16 07	16 45	17 27	3 51	88	13 17	32
6	269 23.0	−23 09.0	321 32.4	78	−16 35.4	130	**45**	16 27	17 01	17 38	3 37	82	13 33	37
7	284 22.7	08.8	335 59.1	77	−16 48.3	129	**40**	44	14	48	25	78	46	41
8	299 22.4	08.6	350 25.8	77	−17 01.1	128	**35**	16 58	26	17 57	15	74	13 57	45
9	314 22.1	08.4	4 52.3	75	13.8	127	**30**	17 10	36	18 06	3 06	71	14 07	47
10	329 21.8	08.3	19 18.6	73	26.4	126	**20**	31	17 55	22	2 51	66	24	52
11	344 21.5	−23 08.1	33 44.9	73	−17 38.9	125	**10 N**	17 49	18 12	18 38	2 39	61	14 39	56
12	359 21.2	−23 07.9	48 11.0	71	−17 51.3	124	**0**	18 06	18 29	18 55	2 27	57	14 53	60
13	14 20.9	07.8	62 37.0	70	−18 03.7	124	**10 S**	24	18 47	19 14	15	53	15 07	63
14	29 20.6	07.6	77 02.9	69	15.9	122	**20**	18 42	19 07	19 36	2 02	49	22	68
15	44 20.3	07.4	91 28.7	68	28.0	121	**30**	19 04	31	20 05	1 48	44	40	72
16	59 20.0	07.2	105 54.4	67	40.0	120	**35**	17	19 47	23	40	40	15 50	75
17	74 19.7	−23 07.1	120 19.9	65	−18 51.9	119	**40**	19 32	20 04	20 46	1 31	37	16 01	79
18	89 19.4	−23 06.9	134 45.3	64	−19 03.7	118	**45**	19 49	20 27	21 16	1 20	32	16 15	82
19	104 19.1	06.7	149 10.6	63	15.4	117	**50**	20 12	20 56	22 00	07	27	32	88
20	119 18.8	06.5	163 35.7	61	26.9	115	**52**	22	21 11	22 27	1 01	25	40	90
21	134 18.5	06.3	178 00.8	61	38.4	115	**54**	34	28	23 08	0 54	22	49	94
22	149 18.2	06.2	192 25.7	59	−19 49.7	113	**56**	20 48	21 50	** **	47	18	16 59	97
23	164 17.9	06.0	206 50.5	58	−20 00.9	112	**58**	21 05	22 18	** **	39	14	17 10	103
24	179 17.6	−23 05.8	221 15.2	57	−20 12.0	111	**60 S**	21 24	23 03	** **	0 29	10	17 24	108

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.4		Mag: +1.5		Mag: −2.2		Mag: +0.7	
	17ʰ 22.ᵐ5	PMG: 13ʰ 05ᵐ		PMG: 10ʰ 06ᵐ		PMG: 15ʰ 34ᵐ		PMG: 14ʰ 21ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	98 39.3	162 59.4	−18 56.7	208 31.0	−22 17.6	126 03.3	−12 21.0	144 16.1	−18 04.2
1	113 41.8	178 03.1	56.2	223 31.5	17.9	141 05.3	20.9	159 18.3	04.1
2	128 44.2	193 06.8	55.8	238 32.1	18.1	156 07.3	20.7	174 20.5	04.0
3	143 46.7	208 10.5	55.3	253 32.7	18.4	171 09.3	20.5	189 22.7	04.0
4	158 49.2	223 14.2	54.8	268 33.2	18.7	186 11.3	20.3	204 24.9	03.9
5	173 51.6	238 17.9	−18 54.4	283 33.8	−22 18.9	201 13.3	−12 20.2	219 27.0	−18 03.8
6	188 54.1	253 21.6	−18 53.9	298 34.4	−22 19.2	216 15.3	−12 20.0	234 29.2	−18 03.7
7	203 56.6	268 25.3	53.5	313 34.9	19.5	231 17.3	19.8	249 31.4	03.7
8	218 59.0	283 29.0	53.0	328 35.5	19.7	246 19.3	19.6	264 33.6	03.6
9	234 01.5	298 32.7	52.6	343 36.1	20.0	261 21.3	19.5	279 35.8	03.5
10	249 03.9	313 36.4	52.1	358 36.6	20.3	276 23.3	19.3	294 38.0	03.4
11	264 06.4	328 40.1	−18 51.6	13 37.2	−22 20.5	291 25.3	−12 19.1	309 40.2	−18 03.4
12	279 08.9	343 43.8	−18 51.2	28 37.8	−22 20.8	306 27.3	−12 19.0	324 42.4	−18 03.3
13	294 11.3	358 47.6	50.7	43 38.3	21.0	321 29.3	18.8	339 44.6	03.2
14	309 13.8	13 51.3	50.3	58 38.9	21.3	336 31.3	18.6	354 46.8	03.1
15	324 16.3	28 55.0	49.8	73 39.5	21.6	351 33.3	18.4	9 49.0	03.1
16	339 18.7	43 58.8	49.4	88 40.0	21.8	6 35.3	18.3	24 51.2	03.0
17	354 21.2	59 02.5	−18 48.9	103 40.6	−22 22.1	21 37.3	−12 18.1	39 53.4	−18 02.9
18	9 23.7	74 06.2	−18 48.5	118 41.2	−22 22.3	36 39.4	−12 17.9	54 55.6	−18 02.9
19	24 26.1	89 10.0	48.0	133 41.7	22.6	51 41.4	17.7	69 57.8	02.8
20	39 28.6	104 13.7	47.5	148 42.3	22.9	66 43.4	17.6	84 59.9	02.7
21	54 31.0	119 17.5	47.1	163 42.9	23.1	81 45.4	17.4	100 02.1	02.6
22	69 33.5	134 21.2	46.6	178 43.4	23.4	96 47.4	17.2	115 04.3	02.6
23	84 36.0	149 25.0	46.2	193 44.0	23.6	111 49.4	17.0	130 06.5	02.5
24	99 38.4	164 28.8	−18 45.7	208 44.6	−22 23.9	126 51.4	−12 16.9	145 08.7	−18 02.4
Dif	—	+37	+5	+6	−3	+20	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 26ᵈ.7		PHE	4ʰ: 60′.8									
	PMG: 12ʰ 03ᵐ.1				SD: 16′.5			12ʰ: 60′.9									
					PMG: 9ʰ 38ᵐ			20ʰ: 61′.0									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Náutico	Civil		Hora	Rº	Hora	Rº
h	º	′	º	′	º	′	º	′		º	h m	h m	h m	h m	m	h m	m
0	179	17.6	−23	05.8	221	15.2	−20	12.0		**60 N**	7 09	8 06	9 03	6 22	108	12 42	23
1	194	17.3		05.6	235	39.7 55		22.9	109	**58**	7 02	7 54	8 46	6 05	102	12 59	31
2	209	17.0		05.4	250	04.2 55		33.7	108	**56**	6 56	44	31	5 51	96	13 14	35
3	224	16.7		05.3	264	28.5 53		44.4	107	**54**	50	36	19	39	92	27	39
4	239	16.4		05.1	278	52.7 52	−20	55.0	106	**52**	44	28	8 08	28	90	38	42
5	254	16.1	−23	04.9	293	16.7 50	−21	05.4	104	**50**	6 39	7 20	7 59	5 19	86	13 49	43
6	269	15.8	−23	04.7	307	40.7 50	−21	15.7	103	**45**	6 27	7 05	7 38	4 59	82	14 10	48
7	284	15.5		04.5	322	04.5 48		25.8	101	**40**	17	6 51	22	43	78	27	51
8	299	15.2		04.3	336	28.3 48		35.9	101	**35**	08	40	7 08	29	75	42	53
9	314	14.9		04.1	350	51.9 46		45.7	98	**30**	6 00	29	6 56	4 17	73	14 54	56
10	329	14.6		03.9	5	15.3 44	−21	55.4	97	**20**	5 43	6 11	35	3 57	69	15 16	59
11	344	14.3	−23	03.8	19	38.7 44	−22	05.0	96	**10 N**	5 27	5 54	6 16	3 40	65	15 35	62
12	359	14.0	−23	03.6	34	02.0 43	−22	14.4	94	**0**	5 11	5 37	5 59	3 24	62	15 53	64
13	14	13.7		03.4	48	25.1 41		23.7	93	**10 S**	4 52	5 19	42	3 08	59	16 10	67
14	29	13.5		03.2	62	48.1 40		32.8	91	**20**	30	4 59	23	2 51	55	30	69
15	44	13.2		03.0	77	11.0 39		41.8	90	**30**	4 01	34	5 02	32	51	16 52	72
16	59	12.9		02.8	91	33.8 38		50.6	88	**35**	3 43	19	4 49	20	49	17 05	74
17	74	12.6	−23	02.6	105	56.5 37	−22	59.3	87	**40**	3 20	4 01	4 34	2 08	45	17 20	76
18	89	12.3	−23	02.4	120	19.1 36	−23	07.8	85	**45**	2 50	3 39	4 16	1 52	43	17 37	80
19	104	12.0		02.2	134	41.6 35		16.1	83	**50**	2 06	3 10	3 54	34	37	18 00	83
20	119	11.7		02.0	149	04.0 34		24.2	81	**52**	1 39	2 55	44	26	34	10	85
21	134	11.4		01.8	163	26.2 32		32.2	80	**54**	0 58	38	32	16	32	23	87
22	149	11.1		01.6	177	48.4 32		40.1	79	**56**	** **	2 16	18	1 05	28	36	91
23	164	10.8		01.4	192	10.5 31		47.7	76	**58**	** **	1 48	3 01	0 53	24	18 53	94
24	179	10.5	−23	01.2	206	32.5 30	−23	55.2	75	**60 S**	** **	1 03	2 41	0 39	17	19 12	101

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17ʰ 18ᵐ.6		PMG: 12ʰ 59ᵐ			PMG: 10ʰ 05ᵐ			PMG: 15ʰ 31ᵐ			PMG: 14ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	99	38.4	164	28.8	−18 45.7	208	44.6	−22 23.9	126	51.4	−12 16.9	145	08.7	−18 02.4
1	114	40.9	179	32.5	45.3	223	45.1	24.2	141	53.4	16.7	160	10.9	02.3
2	129	43.4	194	36.3	44.8	238	45.7	24.4	156	55.4	16.5	175	13.1	02.3
3	144	45.8	209	40.1	44.4	253	46.2	24.7	171	57.4	16.3	190	15.3	02.2
4	159	48.3	224	43.9	43.9	268	46.8	24.9	186	59.4	16.2	205	17.5	02.1
5	174	50.8	239	47.6	−18 43.5	283	47.4	−22 25.2	202	01.4	−12 16.0	220	19.7	−18 02.0
6	189	53.2	254	51.4	−18 43.0	298	47.9	−22 25.4	217	03.4	−12 15.8	235	21.9	−18 02.0
7	204	55.7	269	55.2	42.6	313	48.5	25.7	232	05.4	15.6	250	24.1	01.9
8	219	58.2	284	59.0	42.1	328	49.1	26.0	247	07.4	15.5	265	26.3	01.8
9	235	00.6	300	02.8	41.7	343	49.6	26.2	262	09.4	15.3	280	28.4	01.7
10	250	03.1	315	06.6	41.2	358	50.2	26.5	277	11.4	15.1	295	30.6	01.7
11	265	05.5	330	10.4	−18 40.8	13	50.7	−22 26.7	292	13.4	−12 14.9	310	32.8	−18 01.6
12	280	08.0	345	14.2	−18 40.4	28	51.3	−22 27.0	307	15.4	−12 14.8	325	35.0	−18 01.5
13	295	10.5	0	18.0	39.9	43	51.9	27.2	322	17.4	14.6	340	37.2	01.5
14	310	12.9	15	21.8	39.5	58	52.4	27.5	337	19.4	14.4	355	39.4	01.4
15	325	15.4	30	25.6	39.0	73	53.0	27.7	352	21.4	14.2	10	41.6	01.3
16	340	17.9	45	29.4	38.6	88	53.6	28.0	7	23.4	14.1	25	43.8	01.2
17	355	20.3	60	33.2	−18 38.1	103	54.1	−22 28.2	22	25.4	−12 13.9	40	46.0	−18 01.2
18	10	22.8	75	37.1	−18 37.7	118	54.7	−22 28.5	37	27.4	−12 13.7	55	48.2	−18 01.1
19	25	25.3	90	40.9	37.2	133	55.2	28.7	52	29.4	13.5	70	50.4	01.0
20	40	27.7	105	44.7	36.8	148	55.8	29.0	67	31.4	13.4	85	52.6	00.9
21	55	30.2	120	48.5	36.4	163	56.4	29.2	82	33.4	13.2	100	54.7	00.9
22	70	32.7	135	52.4	35.9	178	56.9	29.5	97	35.4	13.0	115	56.9	00.8
23	85	35.1	150	56.2	35.5	193	57.5	29.7	112	37.4	12.8	130	59.1	00.7
24	100	37.6	166	00.0	−18 35.0	208	58.0	−22 30.0	127	39.4	−12 12.7	146	01.3	−18 00.6
Dif	—			+38	+4		+6	−3		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 27ᵈ.7		PHE	4ʰ: 61′.1									
	PMG: 12ʰ 03ᵐ.5				SD: 16′.6			12ʰ: 61′.2									
					PMG: 10ʰ 41ᵐ			20ʰ: 61′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif			Civil	Náutico	Hora	Rº	Hora	Rº
h	º	′	º	′	º	′		º	′		h m	h m	h m	h m	m	h m	m
0	179	10.5	−23	01.2	206	32.5		−23	55.2		**60 N**	15 05	16 02	16 58	8 10	90	13 05	50
1	194	10.2		01.0	220	54.3	28	−24	02.5	73	**58**	22	13	17 05	7 47	85	30	53
2	209	09.9		00.8	235	16.1	28		09.6	71	**56**	36	23	12	27	83	13 49	56
3	224	09.6		00.6	249	37.8	27		16.6	70	**54**	48	32	18	7 11	81	14 06	57
4	239	09.3		00.4	263	59.4	26		23.4	68	**52**	15 59	40	23	6 58	78	20	58
5	254	09.0	−23	00.2	278	20.9	25	−24	30.0	66	**50**	16 09	16 47	17 28	6 45	78	14 32	60
6	269	08.7	−23	00.0	292	42.3	24	−24	36.4	64	**45**	16 29	17 03	17 40	6 21	75	14 58	61
7	284	08.4	−22	59.8	307	03.7	24		42.6	62	**40**	45	16	50	6 01	73	15 18	63
8	299	08.1		59.6	321	24.9	22		48.6	60	**35**	16 59	27	17 59	5 44	72	35	64
9	314	07.8		59.4	335	46.1	22	−24	54.5	59	**30**	17 11	38	18 07	30	71	15 50	64
10	329	07.5		59.2	350	07.2	21	−25	00.2	57	**20**	32	17 56	23	5 06	69	16 15	65
11	344	07.2	−22	58.9	4	28.3	21	−25	05.7	55	**10 N**	17 50	18 13	18 39	4 45	68	16 37	66
12	359	06.9	−22	58.7	18	49.2	19	−25	10.9	52	**0**	18 07	18 30	18 56	4 26	66	16 57	66
13	14	06.6		58.5	33	10.1	19		16.0	51	**10 S**	24	18 47	19 14	4 07	64	17 17	67
14	29	06.3		58.3	47	30.9	18		20.9	49	**20**	18 43	19 08	19 37	3 46	63	17 39	68
15	44	06.0		58.1	61	51.7	18		25.6	47	**30**	19 05	32	20 05	23	60	18 04	68
16	59	05.7		57.9	76	12.4	17		30.2	46	**35**	17	19 47	23	3 09	59	19	69
17	74	05.5	−22	57.7	90	33.0	16	−25	34.5	43	**40**	19 32	20 05	20 46	2 53	57	18 36	69
18	89	05.2	−22	57.5	104	53.6	16	−25	38.6	41	**45**	19 50	20 27	21 16	2 35	54	18 57	69
19	104	04.9		57.2	119	14.1	15		42.5	39	**50**	20 12	20 55	21 59	11	52	19 23	70
20	119	04.6		57.0	133	34.6	15		46.2	37	**52**	22	21 10	22 25	2 00	50	35	71
21	134	04.3		56.8	147	55.0	14		49.7	35	**54**	34	27	23 04	1 48	47	19 50	71
22	149	04.0		56.6	162	15.4	14		53.0	33	**56**	20 48	21 48	** **	33	45	20 07	71
23	164	03.7		56.4	176	35.8	14		56.2	32	**58**	21 04	22 16	** **	1 17	41	27	72
24	179	03.4	−22	56.1	190	56.1	13	−25	59.1	29	**60 S**	21 23	22 59	** **	0 56	36	20 53	72

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17ʰ 14ᵐ.7		PMG: 12ʰ 53ᵐ			PMG: 10ʰ 04ᵐ			PMG: 15ʰ 27ᵐ			PMG: 14ʰ 14ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	100	37.6	166	00.0	−18 35.0	208	58.0	−22 30.0	127	39.4	−12 12.7	146	01.3	−18 00.6
1	115	40.0	181	03.9	34.6	223	58.6	30.2	142	41.4	12.5	161	03.5	00.6
2	130	42.5	196	07.7	34.1	238	59.1	30.5	157	43.4	12.3	176	05.7	00.5
3	145	45.0	211	11.6	33.7	253	59.7	30.7	172	45.4	12.1	191	07.9	00.4
4	160	47.4	226	15.4	33.3	269	00.3	31.0	187	47.3	12.0	206	10.1	00.3
5	175	49.9	241	19.3	−18 32.8	284	00.8	−22 31.2	202	49.3	−12 11.8	221	12.3	−18 00.3
6	190	52.4	256	23.1	−18 32.4	299	01.4	−22 31.5	217	51.3	−12 11.6	236	14.5	−18 00.2
7	205	54.8	271	27.0	31.9	314	01.9	31.7	232	53.3	11.4	251	16.6	−18 00.1
8	220	57.3	286	30.9	31.5	329	02.5	32.0	247	55.3	11.3	266	18.8	−18 00.0
9	235	59.8	301	34.7	31.1	344	03.1	32.2	262	57.3	11.1	281	21.0	−18 00.0
10	251	02.2	316	38.6	30.6	359	03.6	32.5	277	59.3	10.9	296	23.2	−17 59.9
11	266	04.7	331	42.5	−18 30.2	14	04.2	−22 32.7	293	01.3	−12 10.7	311	25.4	−17 59.8
12	281	07.2	346	46.3	−18 29.8	29	04.7	−22 33.0	308	03.3	−12 10.5	326	27.6	−17 59.7
13	296	09.6	1	50.2	29.3	44	05.3	33.2	323	05.3	10.4	341	29.8	59.7
14	311	12.1	16	54.1	28.9	59	05.8	33.5	338	07.3	10.2	356	32.0	59.6
15	326	14.5	31	58.0	28.5	74	06.4	33.7	353	09.3	10.0	11	34.2	59.5
16	341	17.0	47	01.9	28.0	89	07.0	33.9	8	11.3	09.8	26	36.4	59.4
17	356	19.5	62	05.8	−18 27.6	104	07.5	−22 34.2	23	13.3	−12 09.7	41	38.5	−17 59.4
18	11	21.9	77	09.7	−18 27.2	119	08.1	−22 34.4	38	15.3	−12 09.5	56	40.7	−17 59.3
19	26	24.4	92	13.6	26.7	134	08.6	34.7	53	17.3	09.3	71	42.9	59.2
20	41	26.9	107	17.4	26.3	149	09.2	34.9	68	19.3	09.1	86	45.1	59.1
21	56	29.3	122	21.3	25.9	164	09.7	35.2	83	21.3	09.0	101	47.3	59.1
22	71	31.8	137	25.3	25.4	179	10.3	35.4	98	23.3	08.8	116	49.5	59.0
23	86	34.3	152	29.2	25.0	194	10.8	35.6	113	25.3	08.6	131	51.7	58.9
24	101	36.7	167	33.1	−18 24.6	209	11.4	−22 35.9	128	27.3	−12 08.4	146	53.9	−17 58.8
Dif	—			+39	+4		+6	−2		+20	+2		+22	+1

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
1 - α And	*Alpheratz*	2.1	**357**	38.2	38.3	38.3	38.2	38.1	37.8	37.6	37.3	37.2	37.2	37.2	37.3
2 - β Cas	*Caph*	2.3	**357**	25.8	26.0	26.1	26.0	25.8	25.4	25.0	24.7	24.5	24.5	24.6	24.8
3 - γ Peg	*Algenib*	2.8	**356**	25.5	25.6	25.6	25.6	25.4	25.2	24.9	24.7	24.6	24.6	24.6	24.7
4 - α Phe	*Ankaa*	2.4	**353**	10.5	10.7	10.7	10.6	10.5	10.2	9.9	9.6	9.5	9.4	9.5	9.6
5 - α Cas	*Schedar*	2.2	**349**	34.7	34.9	35.0	35.0	34.8	34.4	34.1	33.8	33.5	33.5	33.5	33.7
6 - β Cet	*Diphda*	2.0	**348**	50.6	50.7	50.8	50.7	50.6	50.3	50.1	49.9	49.7	49.7	49.7	49.7
7 - γ Cas	*Navi*	1.6	**345**	30.5	30.8	30.9	30.9	30.7	30.3	29.9	29.5	29.3	29.2	29.2	29.4
8 - β And	*Mirach*	2.1	**342**	16.6	16.7	16.8	16.7	16.6	16.4	16.1	15.8	15.6	15.5	15.5	15.6
9 - α Eri	*Achernar*	0.5	**335**	22.7	22.9	23.1	23.1	23.0	22.8	22.4	22.1	21.8	21.6	21.7	21.8
10 - γ And	*Almak*	2.3	**328**	42.2	42.4	42.5	42.6	42.5	42.2	41.9	41.6	41.4	41.2	41.2	41.2
12 - α Ari	*Hamal*	2.0	**327**	54.7	54.9	55.0	55.0	54.9	54.7	54.5	54.2	54.0	53.9	53.8	53.8
11 - α UMi	*Polaris*	2.0	**314**	78.4	93.3	105.6	113.4	112.9	104.8	91.9	76.2	61.1	50.3	45.6	48.4
13 - θ Eri	*Acamar*	3.3	**315**	14.1	14.3	14.4	14.5	14.5	14.4	14.1	13.9	13.6	13.4	13.3	13.4
14 - α Cet	*Menkar*	2.5	**314**	9.4	9.5	9.6	9.7	9.6	9.5	9.3	9.0	8.8	8.6	8.5	8.5
15 - β Per	*Algol*	2.1	**312**	36.9	37.1	37.2	37.3	37.3	37.1	36.8	36.5	36.3	36.0	35.9	35.9
16 - α Per	*Mirfak*	1.8	**308**	32.6	32.7	32.9	33.1	33.0	32.8	32.5	32.2	31.9	31.6	31.4	31.4
17 - η Tau	*Alcyone*	2.9	**302**	49.0	49.1	49.2	49.3	49.3	49.2	49.0	48.7	48.5	48.2	48.1	48.0
18 - γ Eri	*Zaurak*	3.0	**300**	14.8	14.9	15.1	15.2	15.2	15.1	14.9	14.7	14.4	14.2	14.1	14.1
19 - α Tau	*Aldebaran*	0.9	**290**	43.1	43.1	43.3	43.4	43.4	43.3	43.1	42.9	42.7	42.4	42.3	42.2
20 - β Ori	*Rigel*	0.1	**281**	6.7	6.8	6.9	7.0	7.1	7.0	6.9	6.7	6.5	6.3	6.1	6.0
21 - α Aur	*Capella*	0.1	**280**	26.2	26.3	26.5	26.7	26.8	26.7	26.5	26.2	25.9	25.6	25.3	25.1
22 - γ Ori	*Bellatrix*	1.6	**278**	26.0	26.1	26.2	26.4	26.4	26.4	26.2	26.0	25.8	25.6	25.4	25.3
23 - β Tau	*Elnath*	1.7	**278**	5.6	5.7	5.8	5.9	6.0	5.9	5.8	5.6	5.3	5.0	4.8	4.7
24 - δ Ori	*Mintaka*	2.2	**276**	43.7	43.8	43.9	44.0	44.1	44.0	43.9	43.7	43.5	43.3	43.1	42.9
25 - ε Ori	*Alnilam*	1.7	**275**	40.7	40.8	40.9	41.0	41.1	41.0	40.9	40.7	40.5	40.3	40.1	40.0
26 - ζ Ori	*Alnitak*	1.9	**274**	32.6	32.7	32.8	32.9	33.0	32.9	32.8	32.6	32.4	32.2	32.0	31.9
27 - κ Ori	*Saiph*	2.1	**272**	48.6	48.6	48.8	48.9	49.0	48.9	48.8	48.7	48.4	48.2	48.0	47.9
28 - α Ori	*Betelgeuse*	0.4	**270**	55.3	55.3	55.4	55.6	55.6	55.6	55.5	55.3	55.1	54.8	54.6	54.5
29 - β Aur	*Menkalinan*	1.9	**269**	43.8	43.9	44.0	44.2	44.3	44.3	44.1	43.9	43.6	43.3	43.0	42.8
30 - β CMa	*Mirzam*	2.0	**264**	5.5	5.5	5.6	5.8	5.9	5.9	5.8	5.7	5.4	5.2	5.0	4.8
31 - α Car	*Canopus*	–0.7	**263**	53.3	53.4	53.7	53.9	54.1	54.2	54.2	54.0	53.7	53.4	53.1	53.0
32 - γ Gem	*Alhena*	1.9	**260**	16.0	16.0	16.1	16.3	16.4	16.3	16.3	16.1	15.9	15.6	15.4	15.2
33 - α CMa	*Sirius*	–1.5	**258**	28.7	28.8	28.9	29.0	29.1	29.2	29.1	29.0	28.7	28.5	28.3	28.1
34 - ε CMa	*Adhara*	1.5	**255**	8.0	8.0	8.2	8.3	8.5	8.5	8.5	8.3	8.1	7.9	7.7	7.5
35 - δ CMa	*Wezen*	1.9	**252**	41.1	41.1	41.3	41.4	41.5	41.6	41.5	41.4	41.2	41.0	40.8	40.6
36 - η CMa	*Aludra*	2.5	**248**	45.9	45.9	46.0	46.2	46.3	46.4	46.4	46.2	46.1	45.8	45.6	45.4
37 - α Gem	*Castor*	2.0	**245**	60.8	60.8	60.9	61.0	61.1	61.1	61.1	60.9	60.7	60.5	60.2	59.9
38 - α CMi	*Procyon*	0.4	**244**	53.9	53.9	53.9	54.1	54.2	54.2	54.1	54.0	53.8	53.6	53.4	53.2
39 - β Gem	*Pollux*	1.1	**243**	20.9	20.9	20.9	21.1	21.2	21.2	21.2	21.1	20.8	20.6	20.3	20.1
40 - ζ Pup	*Naos*	2.3	**238**	54.9	54.9	55.0	55.2	55.3	55.5	55.5	55.4	55.2	55.0	54.7	54.5
41 - γ Vel	*Regor*	1.8	**237**	26.9	27.0	27.1	27.3	27.5	27.6	27.7	27.6	27.4	27.2	26.9	26.6
42 - ε Car	*Avior*	1.9	**234**	15.3	15.3	15.5	15.8	16.1	16.4	16.5	16.4	16.2	15.9	15.5	15.2
43 - δ Velorum		2.0	**228**	40.3	40.3	40.4	40.7	40.9	41.1	41.2	41.2	41.0	40.8	40.4	40.1
44 - ζ Hydrae		3.1	**225**	52.4	52.3	52.3	52.4	52.5	52.6	52.6	52.5	52.4	52.2	52.0	51.7
45 - λ Vel	*Suhail*	2.2	**222**	48.2	48.1	48.2	48.4	48.5	48.7	48.8	48.8	48.6	48.4	48.1	47.8
46 - β Car	*Miaplacidus*	1.7	**221**	37.9	37.9	38.1	38.4	38.9	39.3	39.6	39.7	39.5	39.1	38.6	38.1
47 - ι Car	*Aspidiske*	2.3	**220**	34.8	34.7	34.8	35.1	35.3	35.6	35.8	35.8	35.7	35.4	35.0	34.7
48 - α Lyn	*Elvashak*	3.1	**219**	24.9	24.8	24.8	24.9	25.1	25.2	25.2	25.1	25.0	24.8	24.5	24.2
49 - α Hyd	*Alphard*	2.0	**217**	50.6	50.5	50.5	50.6	50.7	50.8	50.8	50.8	50.7	50.5	50.3	50.1
50 - α Leo	*Regulus*	1.4	**207**	37.6	37.5	37.5	37.5	37.6	37.7	37.7	37.7	37.6	37.5	37.3	37.0

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
1 - α And	*Alpheratz*	2.1	**+29**	12.4	12.3	12.2	12.2	12.2	12.2	12.4	12.5	12.6	12.7	12.8	12.8
2 - β Cas	*Caph*	2.3	**+59**	16.1	16.0	15.9	15.7	15.7	15.7	15.8	15.9	16.1	16.3	16.4	16.5
3 - γ Peg	*Algenib*	2.8	**+15**	18.0	17.9	17.9	17.8	17.9	18.0	18.1	18.2	18.3	18.3	18.3	18.3
4 - α Phe	*Ankaa*	2.4	**–42**	11.9	11.8	11.7	11.6	11.4	11.3	11.2	11.2	11.2	11.3	11.5	11.5
5 - α Cas	*Schedar*	2.2	**+56**	39.3	39.2	39.1	39.0	38.9	38.9	39.0	39.1	39.3	39.4	39.6	39.6
6 - β Cet	*Diphda*	2.0	**–17**	52.5	52.5	52.5	52.4	52.3	52.2	52.1	52.0	52.0	52.0	52.1	52.2
7 - γ Cas	*Navi*	1.6	**+60**	50.0	49.9	49.8	49.7	49.6	49.6	49.6	49.7	49.9	50.1	50.2	50.3
8 - β And	*Mirach*	2.1	**+35**	44.0	43.9	43.8	43.7	43.7	43.7	43.8	43.9	44.1	44.2	44.3	44.3
9 - α Eri	*Achernar*	0.5	**–57**	8.2	8.2	8.1	7.9	7.7	7.5	7.4	7.4	7.5	7.6	7.7	7.9
10 - γ And	*Almak*	2.3	**+42**	25.9	25.9	25.8	25.7	25.6	25.6	25.7	25.8	25.9	26.0	26.1	26.2
12 - α Ari	*Hamal*	2.0	**+23**	33.7	33.6	33.6	33.6	33.5	33.6	33.7	33.7	33.8	33.9	34.0	34.0
11 - α UMi	*Polaris*	2.0	**+89**	21.4	21.4	21.4	21.2	21.1	21.0	20.9	20.9	21.0	21.2	21.4	21.5
13 - θ Eri	*Acamar*	3.3	**–40**	13.6	13.6	13.5	13.4	13.3	13.1	13.0	12.9	12.9	13.0	13.1	13.2
14 - α Cet	*Menkar*	2.5	**+4**	10.2	10.2	10.1	10.2	10.2	10.3	10.4	10.5	10.5	10.5	10.5	10.5
15 - β Per	*Algol*	2.1	**+41**	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.2	2.3	2.4	2.4
16 - α Per	*Mirfak*	1.8	**+49**	56.2	56.2	56.2	56.1	56.0	56.0	56.0	56.0	56.1	56.2	56.3	56.4
17 - η Tau	*Alcyone*	2.9	**+24**	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.2	10.2	10.3	10.3	10.4
18 - γ Eri	*Zaurak*	3.0	**–13**	27.1	27.2	27.2	27.1	27.0	26.9	26.8	26.7	26.7	26.7	26.8	26.9
19 - α Tau	*Aldebaran*	0.9	**+16**	33.0	33.0	33.0	33.0	33.0	33.0	33.1	33.1	33.1	33.2	33.2	33.2
20 - β Ori	*Rigel*	0.1	**–8**	10.8	10.9	10.9	10.8	10.8	10.7	10.6	10.5	10.5	10.5	10.5	10.6
21 - α Aur	*Capella*	0.1	**+46**	1.1	1.2	1.2	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.2
22 - γ Ori	*Bellatrix*	1.6	**+6**	22.0	22.0	22.0	22.0	22.0	22.1	22.1	22.2	22.2	22.2	22.2	22.1
23 - β Tau	*Elnath*	1.7	**+28**	37.4	37.5	37.5	37.5	37.4	37.4	37.4	37.4	37.4	37.5	37.5	37.5
24 - δ Ori	*Mintaka*	2.2	**–0**	17.2	17.2	17.2	17.2	17.1	17.1	17.0	16.9	16.9	16.9	16.9	17.0
25 - ε Ori	*Alnilam*	1.7	**–1**	11.5	11.5	11.5	11.5	11.4	11.4	11.3	11.2	11.2	11.2	11.2	11.3
26 - ζ Ori	*Alnitak*	1.9	**–1**	56.0	56.1	56.1	56.1	56.0	55.9	55.9	55.8	55.8	55.8	55.8	55.9
27 - κ Ori	*Saiph*	2.1	**–9**	39.9	39.9	40.0	39.9	39.9	39.8	39.7	39.6	39.6	39.6	39.6	39.7
28 - α Ori	*Betelgeuse*	0.4	**+7**	24.5	24.5	24.5	24.5	24.5	24.6	24.6	24.7	24.7	24.7	24.7	24.6
29 - β Aur	*Menkalinan*	1.9	**+44**	56.9	57.0	57.0	57.0	57.0	56.9	56.8	56.8	56.8	56.8	56.8	56.9
30 - β CMa	*Mirzam*	2.0	**–17**	58.1	58.2	58.2	58.2	58.2	58.1	57.9	57.8	57.8	57.8	57.9	58.0
31 - α Car	*Canopus*	–0.7	**–52**	42.6	42.7	42.7	42.7	42.6	42.5	42.3	42.2	42.1	42.1	42.2	42.4
32 - γ Gem	*Alhena*	1.9	**+16**	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.9	22.9	22.9	22.8	22.8
33 - α CMa	*Sirius*	–1.5	**–16**	44.8	44.9	44.9	44.9	44.9	44.8	44.7	44.6	44.5	44.5	44.6	44.7
34 - ε CMa	*Adhara*	1.5	**–28**	60.1	60.3	60.3	60.3	60.3	60.2	60.0	59.9	59.8	59.8	59.9	60.0
35 - δ CMa	*Wezen*	1.9	**–26**	25.7	25.8	25.9	25.9	25.8	25.7	25.6	25.5	25.4	25.4	25.5	25.6
36 - η CMa	*Aludra*	2.5	**–29**	20.7	20.8	20.9	20.9	20.9	20.8	20.6	20.5	20.4	20.4	20.5	20.6
37 - α Gem	*Castor*	2.0	**+31**	50.5	50.5	50.5	50.6	50.6	50.5	50.5	50.5	50.4	50.4	50.4	50.3
38 - α CMi	*Procyon*	0.4	**+5**	10.2	10.1	10.1	10.1	10.2	10.2	10.2	10.3	10.3	10.3	10.2	10.1
39 - β Gem	*Pollux*	1.1	**+27**	58.4	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.4	58.4	58.3	58.3
40 - ζ Pup	*Naos*	2.3	**–40**	3.7	3.9	4.0	4.0	4.0	3.9	3.8	3.7	3.5	3.5	3.6	3.7
41 - γ Vel	*Regor*	1.8	**–47**	23.9	24.1	24.2	24.2	24.2	24.1	24.0	23.8	23.7	23.7	23.7	23.9
42 - ε Car	*Avior*	1.9	**–59**	34.6	34.7	34.9	34.9	34.9	34.9	34.7	34.5	34.4	34.4	34.4	34.5
43 - δ Velorum		2.0	**–54**	47.1	47.2	47.4	47.5	47.5	47.4	47.3	47.1	47.0	46.9	46.9	47.1
44 - ζ Hydrae		3.1	**+5**	51.9	51.8	51.8	51.8	51.8	51.9	51.9	51.9	51.9	51.9	51.8	51.8
45 - λ Vel	*Suhail*	2.2	**–43**	31.0	31.1	31.3	31.3	31.3	31.3	31.2	31.0	30.9	30.9	30.9	31.0
46 - β Car	*Miaplacidus*	1.7	**–69**	48.0	48.2	48.4	48.5	48.5	48.5	48.4	48.2	48.1	48.0	48.0	48.1
47 - ι Car	*Aspidiske*	2.3	**–59**	21.6	21.8	22.0	22.1	22.1	22.1	22.0	21.8	21.7	21.6	21.6	21.7
48 - α Lyn	*Elvashak*	3.1	**+34**	18.1	18.1	18.2	18.3	18.3	18.3	18.3	18.2	18.1	18.0	17.9	17.9
49 - α Hyd	*Alphard*	2.0	**–8**	45.0	45.1	45.1	45.2	45.1	45.1	45.0	45.0	44.9	44.9	45.0	45.1
50 - α Leo	*Regulus*	1.4	**+11**	51.8	51.8	51.8	51.8	51.8	51.9	51.9	51.9	51.9	51.8	51.7	51.6

Nº NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
		°	′	′	′	′	′	′	′	′	′	′	′	′
51 - μ Velorum	2.7	**198**	4.7	4.5	4.5	4.6	4.7	4.9	5.1	5.2	5.1	5.0	4.7	4.4
52 - ν Hydrae	3.1	**197**	20.0	19.9	19.8	19.9	20.0	20.0	20.1	20.1	20.1	20.0	19.8	19.5
53 - β UMa *Merak*	2.4	**194**	13.4	13.1	13.0	13.1	13.3	13.5	13.6	13.7	13.7	13.5	13.2	12.8
54 - α UMa *Dubhe*	1.8	**193**	44.7	44.4	44.3	44.4	44.6	44.8	45.0	45.1	45.1	44.9	44.5	44.1
55 - β Leo *Denebola*	2.1	**182**	28.1	27.9	27.8	27.8	27.9	27.9	28.0	28.1	28.1	28.0	27.8	27.6
56 - γ Crv *Gienah*	2.6	**175**	46.8	46.6	46.5	46.4	46.5	46.5	46.6	46.7	46.7	46.6	46.5	46.2
57 - α Cru *Acrux*	1.4	**173**	3.3	3.0	2.8	2.8	2.9	3.1	3.4	3.6	3.7	3.7	3.4	3.0
58 - γ Cru *Gacrux*	1.6	**171**	55.0	54.6	54.5	54.4	54.5	54.7	54.9	55.1	55.2	55.1	54.9	54.6
59 - γ Cen *Muhlifain*	2.2	**169**	19.9	19.6	19.4	19.4	19.4	19.5	19.7	19.8	19.9	19.9	19.7	19.4
60 - β Cru *Mimosa*	1.3	**167**	45.7	45.4	45.2	45.1	45.1	45.3	45.5	45.8	45.9	45.9	45.7	45.3
61 - ε UMa *Alioth*	1.8	**166**	15.8	15.5	15.3	15.2	15.3	15.4	15.6	15.8	15.9	15.9	15.8	15.5
62 - α^2 CVn *Cor Caroli*	2.9	**165**	45.0	44.7	44.6	44.5	44.5	44.6	44.7	44.9	44.9	44.9	44.8	44.5
63 - ε Vir *Vindemiatrix*	2.8	**164**	11.8	11.6	11.5	11.4	11.4	11.4	11.5	11.6	11.6	11.6	11.5	11.3
64 - ζ UMa *Mizar*	2.3	**158**	48.6	48.2	48.0	47.9	47.9	48.1	48.3	48.5	48.6	48.7	48.5	48.3
65 - α Vir *Spica*	1.0	**158**	25.7	25.4	25.3	25.2	25.2	25.2	25.3	25.4	25.4	25.4	25.3	25.1
66 - η UMa *Alkaid*	1.9	**152**	54.7	54.3	54.1	54.0	54.0	54.1	54.3	54.4	54.6	54.6	54.6	54.3
67 - β Cen *Hadar*	0.6	**148**	40.6	40.1	39.8	39.6	39.6	39.6	39.8	40.1	40.3	40.4	40.3	40.0
68 - θ Cen *Menkent*	2.1	**148**	1.4	1.2	1.0	0.8	0.8	0.8	0.9	1.0	1.1	1.1	1.1	0.8
69 - α Boo *Arcturus*	0.0	**145**	51.0	50.7	50.5	50.4	50.4	50.4	50.5	50.6	50.7	50.7	50.6	50.5
70 - α^1 Cen *Rigil Kentaurus*	0.0	**139**	44.9	44.5	44.2	43.9	43.8	43.9	44.1	44.3	44.6	44.7	44.6	44.4
71 - α^2 Lib *Zubenelgenubi*	2.8	**136**	59.7	59.4	59.2	59.1	59.0	59.0	59.0	59.1	59.2	59.3	59.2	59.1
72 - β UMi *Kochab*	2.1	**137**	20.4	19.7	19.1	18.8	18.7	19.0	19.4	20.0	20.6	20.9	21.0	20.8
73 - β Lib *Zubeneschamali*	2.6	**130**	28.3	28.0	27.8	27.7	27.6	27.5	27.6	27.7	27.8	27.8	27.8	27.7
74 - α CrB *Alphecca*	2.2	**126**	6.7	6.4	6.2	6.0	5.9	5.9	6.0	6.1	6.2	6.3	6.3	6.2
75 - α Ser *Unukalhai*	2.7	**123**	40.8	40.6	40.4	40.2	40.1	40.0	40.1	40.2	40.3	40.4	40.4	40.3
76 - α Sco *Antares*	0.9	**112**	20.0	19.8	19.6	19.3	19.2	19.1	19.0	19.1	19.3	19.4	19.4	19.3
77 - α TrA *Atria*	1.9	**107**	17.6	17.0	16.5	15.9	15.5	15.3	15.3	15.6	16.0	16.3	16.5	16.4
78 - ε Scorpii	2.3	**107**	7.7	7.4	7.2	6.9	6.7	6.6	6.6	6.6	6.8	6.9	7.0	6.9
79 - η Oph *Sabik*	2.4	**102**	6.8	6.5	6.3	6.1	5.9	5.8	5.7	5.8	5.9	6.0	6.1	6.0
80 - α Her *Rasalgethi*	3.1	**101**	6.4	6.2	6.0	5.7	5.6	5.5	5.5	5.5	5.7	5.8	5.8	5.8
81 - λ Sco *Shaula*	1.6	**96**	15.1	14.8	14.6	14.3	14.1	13.9	13.8	13.9	14.0	14.2	14.3	14.2
82 - α Oph *Rasalhague*	2.1	**96**	1.8	1.6	1.4	1.2	1.0	0.9	0.9	0.9	1.1	1.2	1.3	1.2
83 - θ Sco *Sargas*	1.9	**95**	18.3	18.0	17.7	17.4	17.1	17.0	16.9	17.0	17.1	17.3	17.4	17.3
84 - γ Dra *Eltanin*	2.2	**90**	44.2	44.0	43.7	43.4	43.1	43.0	43.0	43.1	43.4	43.6	43.8	43.9
85 - ε Sgr *Kaus Australis*	1.9	**83**	37.2	37.0	36.7	36.4	36.2	36.0	35.9	35.9	36.0	36.2	36.3	36.3
86 - α Lyr *Vega*	0.0	**80**	35.8	35.6	35.4	35.2	34.9	34.8	34.7	34.8	34.9	35.1	35.3	35.4
87 - σ Sgr *Nunki*	2.0	**75**	52.1	52.0	51.7	51.5	51.2	51.0	50.9	50.9	51.0	51.1	51.2	51.3
88 - α Aql *Altair*	0.8	**62**	3.4	3.3	3.2	2.9	2.7	2.5	2.4	2.4	2.4	2.5	2.7	2.7
89 - γ Cyg *Sadr*	2.2	**54**	15.9	15.8	15.6	15.4	15.1	14.9	14.7	14.7	14.8	15.0	15.2	15.3
90 - α Pav *Peacock*	1.9	**53**	11.5	11.3	11.1	10.7	10.3	9.9	9.7	9.6	9.6	9.8	10.1	10.2
91 - α Cyg *Deneb*	1.3	**49**	28.4	28.3	28.2	28.0	27.7	27.4	27.2	27.2	27.3	27.5	27.7	27.8
92 - α Cep *Alderamin*	2.4	**40**	14.6	14.6	14.5	14.2	13.8	13.4	13.2	13.1	13.2	13.5	13.8	14.1
93 - ε Peg *Enif*	0.7	**33**	42.2	42.2	42.1	42.0	41.7	41.5	41.3	41.2	41.2	41.2	41.3	41.4
94 - δ Cap *Deneb Algedi*	2.9	**32**	57.6	57.5	57.4	57.3	57.0	56.8	56.6	56.4	56.4	56.5	56.6	56.7
95 - α Gru *Al Na'ir*	1.7	**27**	37.4	37.4	37.3	37.1	36.8	36.4	36.2	36.0	35.9	36.0	36.2	36.3
96 - β Gruis	2.1	**19**	1.9	1.9	1.8	1.6	1.4	1.0	0.7	0.5	0.4	0.5	0.6	0.8
97 - α PsA *Fomalhaut*	1.2	**15**	18.3	18.4	18.3	18.2	18.0	17.7	17.4	17.3	17.2	17.2	17.3	17.4
98 - β Peg *Scheat*	2.4	**13**	48.5	48.6	48.5	48.4	48.2	47.9	47.7	47.5	47.5	47.5	47.6	47.7
99 - α Peg *Markab*	2.5	**13**	33.3	33.3	33.3	33.2	33.0	32.7	32.5	32.3	32.3	32.3	32.4	32.5

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
51 -	μ Velorum	2.7	**–49**	31.6	31.8	32.0	32.1	32.2	32.2	32.1	32.0	31.9	31.8	31.8	31.8
52 -	ν Hydrae	3.1	**–16**	18.1	18.3	18.3	18.4	18.4	18.4	18.3	18.3	18.2	18.2	18.2	18.3
53 -	β UMa *Merak*	2.4	**+56**	16.0	16.1	16.2	16.3	16.4	16.4	16.4	16.2	16.1	15.9	15.8	15.7
54 -	α UMa *Dubhe*	1.8	**+61**	38.0	38.1	38.2	38.4	38.5	38.5	38.4	38.3	38.1	38.0	37.8	37.7
55 -	β Leo *Denebola*	2.1	**+14**	27.2	27.2	27.2	27.2	27.3	27.3	27.3	27.3	27.3	27.2	27.1	27.0
56 -	γ Crv *Gienah*	2.6	**–17**	39.4	39.5	39.6	39.6	39.7	39.7	39.6	39.6	39.5	39.5	39.5	39.6
57 -	α Cru *Acrux*	1.4	**–63**	12.6	12.7	12.9	13.0	13.2	13.3	13.3	13.2	13.1	12.9	12.8	12.8
58 -	γ Cru *Gacrux*	1.6	**–57**	13.5	13.6	13.8	14.0	14.1	14.2	14.2	14.1	14.0	13.9	13.8	13.8
59 -	γ Cen *Muhlifain*	2.2	**–49**	4.2	4.3	4.5	4.6	4.7	4.8	4.8	4.7	4.6	4.5	4.4	4.5
60 -	β Cru *Mimosa*	1.3	**–59**	47.8	48.0	48.1	48.3	48.4	48.5	48.5	48.5	48.4	48.2	48.1	48.1
61 -	ε UMa *Alioth*	1.8	**+55**	50.5	50.5	50.6	50.8	50.9	51.0	51.0	50.9	50.8	50.6	50.4	50.3
62 -	α^2 CVn *Cor Caroli*	2.9	**+38**	12.1	12.1	12.2	12.3	12.4	12.5	12.5	12.4	12.4	12.2	12.1	11.9
63 -	ε Vir *Vindemiatrix*	2.8	**+10**	50.8	50.7	50.7	50.7	50.7	50.8	50.8	50.8	50.8	50.7	50.6	50.5
64 -	ζ UMa *Mizar*	2.3	**+54**	48.7	48.7	48.8	48.9	49.1	49.2	49.2	49.1	49.0	48.9	48.7	48.5
65 -	α Vir *Spica*	1.0	**–11**	16.1	16.2	16.3	16.3	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.4
66 -	η UMa *Alkaid*	1.9	**+49**	12.3	12.3	12.3	12.5	12.6	12.7	12.7	12.7	12.6	12.5	12.3	12.1
67 -	β Cen *Hadar*	0.6	**–60**	28.1	28.2	28.3	28.4	28.6	28.7	28.7	28.7	28.6	28.5	28.4	28.4
68 -	θ Cen *Menkent*	2.1	**–36**	28.1	28.2	28.3	28.4	28.5	28.6	28.6	28.6	28.5	28.4	28.4	28.4
69 -	α Boo *Arcturus*	0.0	**+19**	4.3	4.2	4.2	4.3	4.4	4.4	4.5	4.5	4.5	4.4	4.2	4.1
70 -	α^1 Cen *Rigil Kentaurus*	0.0	**–60**	54.9	55.0	55.1	55.3	55.4	55.5	55.6	55.6	55.5	55.4	55.3	55.2
71 -	α^2 Lib *Zubenelgenubi*	2.8	**–16**	7.6	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.8	7.8
72 -	β UMi *Kochab*	2.1	**+74**	3.9	3.9	3.9	4.0	4.2	4.3	4.4	4.4	4.3	4.1	3.9	3.8
73 -	β Lib *Zubeneschamali*	2.6	**–9**	27.5	27.6	27.7	27.7	27.7	27.7	27.6	27.6	27.6	27.6	27.6	27.7
74 -	α CrB *Alphecca*	2.2	**+26**	38.6	38.5	38.4	38.5	38.6	38.7	38.8	38.8	38.8	38.7	38.6	38.5
75 -	α Ser *Unukalhai*	2.7	**+6**	21.6	21.5	21.5	21.5	21.5	21.6	21.6	21.7	21.7	21.6	21.6	21.5
76 -	α Sco *Antares*	0.9	**–26**	28.5	28.6	28.6	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
77 -	α TrA *Atria*	1.9	**–69**	3.6	3.6	3.6	3.7	3.8	3.9	4.0	4.1	4.1	4.1	4.0	3.9
78 -	ε Scorpii	2.3	**–34**	19.7	19.7	19.7	19.8	19.8	19.9	19.9	19.9	19.9	19.9	19.9	19.9
79 -	η Oph *Sabik*	2.4	**–15**	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
80 -	α Her *Rasalgethi*	3.1	**+14**	22.0	21.9	21.8	21.8	21.9	22.0	22.1	22.2	22.2	22.2	22.1	22.0
81 -	λ Sco *Shaula*	1.6	**–37**	7.0	7.0	7.0	7.0	7.0	7.1	7.1	7.2	7.2	7.2	7.1	7.1
82 -	α Oph *Rasalhague*	2.1	**+12**	32.7	32.6	32.5	32.5	32.6	32.7	32.8	32.9	32.9	32.9	32.8	32.7
83 -	θ Sco *Sargas*	1.9	**–43**	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6
84 -	γ Dra *Eltanin*	2.2	**+51**	29.1	28.9	28.9	28.9	29.0	29.2	29.3	29.4	29.5	29.5	29.4	29.2
85 -	ε Sgr *Kaus Australis*	1.9	**–34**	22.4	22.4	22.4	22.3	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.4
86 -	α Lyr *Vega*	0.0	**+38**	48.1	48.0	47.9	47.9	48.0	48.2	48.3	48.4	48.5	48.5	48.4	48.3
87 -	σ Sgr *Nunki*	2.0	**–26**	16.2	16.2	16.2	16.2	16.1	16.1	16.1	16.2	16.2	16.2	16.2	16.2
88 -	α Aql *Altair*	0.8	**+8**	55.4	55.3	55.3	55.3	55.4	55.5	55.6	55.6	55.7	55.7	55.7	55.6
89 -	γ Cyg *Sadr*	2.2	**+40**	19.4	19.3	19.2	19.1	19.2	19.3	19.5	19.6	19.8	19.8	19.8	19.7
90 -	α Pav *Peacock*	1.9	**–56**	40.1	40.0	39.9	39.8	39.8	39.8	39.8	39.9	40.0	40.1	40.1	40.1
91 -	α Cyg *Deneb*	1.3	**+45**	21.3	21.2	21.1	21.0	21.1	21.2	21.3	21.5	21.6	21.7	21.7	21.7
92 -	α Cep *Alderamin*	2.4	**+62**	40.5	40.4	40.2	40.1	40.2	40.3	40.4	40.6	40.8	40.9	40.9	40.9
93 -	ε Peg *Enif*	0.7	**+9**	58.2	58.1	58.1	58.1	58.2	58.3	58.4	58.5	58.6	58.6	58.6	58.5
94 -	δ Cap *Deneb Algedi*	2.9	**–16**	2.1	2.1	2.0	2.0	1.9	1.8	1.7	1.7	1.7	1.7	1.8	1.8
95 -	α Gru *Al Na'ir*	1.7	**–46**	51.8	51.7	51.6	51.4	51.3	51.3	51.3	51.3	51.4	51.5	51.6	51.6
96 -	β Gruis	2.1	**–46**	46.8	46.7	46.6	46.4	46.3	46.2	46.2	46.2	46.3	46.4	46.5	46.5
97 -	α PsA *Fomalhaut*	1.2	**–29**	30.9	30.9	30.8	30.7	30.6	30.5	30.4	30.4	30.4	30.5	30.6	30.6
98 -	β Peg *Scheat*	2.4	**+28**	11.8	11.7	11.6	11.6	11.6	11.7	11.8	11.9	12.1	12.2	12.2	12.2
99 -	α Peg *Markab*	2.5	**+15**	19.0	19.0	18.9	18.9	19.0	19.0	19.2	19.3	19.4	19.4	19.4	19.4

Horas UT de paso por el meridiano origen el primer día de cada mes

Nº	NOMBRE		Mag	Ene	Feb	Mar	Abr	May	Jun	Jul
				h m	h m	h m	h m	h m	h m	h m
1 - α	Andromedae	*Alpheratz*	2.1	17 23	15 21	13 31	11 29	9 31	7 29	5 32
2 - β	Cassiopeae	*Caph*	2.3	17 24	15 22	13 32	11 30	9 32	7 30	5 32
6 - β	Ceti	*Diphda*	2.0	17 58	15 56	14 06	12 04	10 06	8 05	6 07
9 - α	Eridani	*Achernar*	0.5	18 52	16 50	15 00	12 58	11 00	8 58	7 00
12 - α	Arietis	*Hamal*	2.0	19 22	17 20	15 30	13 28	11 30	9 28	7 30
13 - θ	Eridani	*Acamar*	3.3	20 12	18 10	16 20	14 18	12 20	10 19	8 21
16 - α	Persei	*Mirfak*	1.8	20 39	18 37	16 47	14 45	12 47	10 45	8 47
19 - α	Tauri	*Aldebaran*	0.9	21 50	19 48	17 58	15 56	13 58	11 56	9 58
20 - β	Orionis	*Rigel*	0.1	22 28	20 27	18 36	16 35	14 37	12 35	10 37
21 - α	Aurigae	*Capella*	0.1	22 31	20 29	18 39	16 37	14 39	12 37	10 39
22 - γ	Orionis	*Bellatrix*	1.6	22 39	20 37	18 47	16 45	14 47	12 45	10 47
28 - α	Orionis	*Betelgeuse*	0.4	23 09	21 07	19 17	17 15	15 17	13 15	11 17
31 - α	Carinae	*Canopus*	–0.7	23 37	21 35	19 45	17 43	15 45	13 43	11 45
33 - α	Canis Majoris	*Sirius*	–1.5	0 03	21 57	20 07	18 05	16 07	14 05	12 07
34 - ε	Canis Majoris	*Adhara*	1.5	0 16	22 10	20 20	18 18	16 20	14 18	12 20
38 - α	Canis Minoris	*Procyon*	0.4	0 57	22 51	21 01	18 59	17 01	14 59	13 01
39 - β	Geminorum	*Pollux*	1.1	1 03	22 57	21 07	19 05	17 07	15 05	13 07
42 - ε	Carinae	*Avior*	1.9	1 39	23 33	21 43	19 41	17 43	15 42	13 44
45 - λ	Velorum	*Suhail*	2.2	2 25	0 23	22 29	20 27	18 29	16 27	14 29
46 - β	Carinae	*Miaplacidus*	1.7	2 30	0 28	22 34	20 32	18 34	16 32	14 34
49 - α	Hydrae	*Alphard*	2.0	2 45	0 43	22 49	20 47	18 49	16 47	14 49
50 - α	Leonis	*Regulus*	1.4	3 25	1 24	23 30	21 28	19 30	17 28	15 30
54 - α	Ursae Majoris	*Dubhe*	1.8	4 21	2 19	0 29	22 23	20 25	18 23	16 25
55 - β	Leonis	*Denebola*	2.1	5 06	3 04	1 14	23 08	21 10	19 08	17 10
57 - α	Crucis	*Acrux*	1.4	5 43	3 42	1 51	23 46	21 48	19 46	17 48
58 - γ	Crucis	*Gacrux*	1.6	5 48	3 46	1 56	23 50	21 52	19 50	17 52
60 - β	Crucis	*Mimosa*	1.3	6 04	4 03	2 13	0 11	22 09	20 07	18 09
61 - ε	Ursae Majoris	*Alioth*	1.8	6 10	4 09	2 19	0 17	22 15	20 13	18 15
64 - ζ	Ursae Majoris	*Mizar*	2.3	6 40	4 38	2 48	0 46	22 45	20 43	18 45
65 - α	Virginis	*Spica*	1.0	6 42	4 40	2 50	0 48	22 46	20 44	18 46
68 - θ	Centauri	*Menkent*	2.1	7 23	5 21	3 31	1 29	23 28	21 26	19 28
69 - α	Bootis	*Arcturus*	0.0	7 32	5 30	3 40	1 38	23 36	21 34	19 36
70 - α^1	Centauri	*Rigil Kentaurus*	0.0	7 56	5 54	4 04	2 02	0 04	21 59	20 01
72 - β	Ursae Minoris	*Kochab*	2.1	8 06	6 04	4 14	2 12	0 14	22 08	20 10
74 - α	Coronae Borealis	*Alphecca*	2.2	8 51	6 49	4 59	2 57	0 59	22 53	20 55
76 - α	Scorpii	*Antares*	0.9	9 46	7 44	5 54	3 52	1 54	23 48	21 50
77 - α	Trianguli Aust.	*Atria*	1.9	10 06	8 04	6 14	4 12	2 14	0 12	22 10
81 - λ	Scorpii	*Shaula*	1.6	10 50	8 48	6 58	4 56	2 58	0 56	22 54
82 - α	Ophiuchi	*Rasalhague*	2.1	10 51	8 49	6 59	4 57	2 59	0 57	22 55
84 - γ	Draconis	*Eltanin*	2.2	11 12	9 10	7 20	5 18	3 20	1 18	23 16
85 - ε	Sagitarii	*Kaus Australis*	1.9	11 40	9 38	7 48	5 46	3 48	1 47	23 45
86 - α	Lyrae	*Vega*	0.0	11 52	9 50	8 00	5 58	4 00	1 59	0 01
87 - σ	Sagitarii	*Nunki*	2.0	12 11	10 09	8 19	6 17	4 19	2 17	0 19
88 - α	Aquilae	*Altair*	0.8	13 06	11 04	9 14	7 12	5 14	3 13	1 15
90 - α	Pavonis	*Peacock*	1.9	13 42	11 40	9 50	7 48	5 50	3 48	1 50
91 - α	Cygni	*Deneb*	1.3	13 56	11 54	10 04	8 03	6 05	4 03	2 05
93 - ε	Pegasi	*Enif*	0.7	14 59	12 57	11 07	9 05	7 07	5 06	3 08
95 - α	Gruis	*Al Na'ir*	1.7	15 24	13 22	11 32	9 30	7 32	5 30	3 32
97 - α	Piscis Austrini	*Fomalhaut*	1.2	16 13	14 11	12 21	10 19	8 21	6 19	4 21
99 - α	Pegasi	*Markab*	2.5	16 20	14 18	12 28	10 26	8 28	6 26	4 28

Horas UT de paso por el meridiano origen el primer día de cada mes

Nº	NOMBRE		Mag	Ago	Sep	Oct	Nov	Dic
				h m	h m	h m	h m	h m
1 - α	Andromedae	*Alpheratz*	2.1	3 30	1 28	23 26	21 24	19 26
2 - β	Cassiopeae	*Caph*	2.3	3 30	1 29	23 27	21 25	19 27
6 - β	Ceti	*Diphda*	2.0	4 05	2 03	0 05	21 59	20 01
9 - α	Eridani	*Achernar*	0.5	4 58	2 57	0 59	22 53	20 55
12 - α	Arietis	*Hamal*	2.0	5 28	3 26	1 28	23 23	21 25
13 - θ	Eridani	*Acamar*	3.3	6 19	4 17	2 19	0 17	22 15
16 - α	Persei	*Mirfak*	1.8	6 45	4 44	2 46	0 44	22 42
19 - α	Tauri	*Aldebaran*	0.9	7 57	5 55	3 57	1 55	23 53
20 - β	Orionis	*Rigel*	0.1	8 35	6 33	4 35	2 33	0 35
21 - α	Aurigae	*Capella*	0.1	8 38	6 36	4 38	2 36	0 38
22 - γ	Orionis	*Bellatrix*	1.6	8 46	6 44	4 46	2 44	0 46
28 - α	Orionis	*Betelgeuse*	0.4	9 15	7 14	5 16	3 14	1 16
31 - α	Carinae	*Canopus*	–0.7	9 44	7 42	5 44	3 42	1 44
33 - α	Canis Majoris	*Sirius*	–1.5	10 05	8 03	6 05	4 03	2 05
34 - ε	Canis Majoris	*Adhara*	1.5	10 18	8 17	6 19	4 17	2 19
38 - α	Canis Minoris	*Procyon*	0.4	10 59	8 57	6 59	4 58	3 00
39 - β	Geminorum	*Pollux*	1.1	11 05	9 04	7 06	5 04	3 06
42 - ε	Carinae	*Avior*	1.9	11 42	9 40	7 42	5 40	3 42
45 - λ	Velorum	*Suhail*	2.2	12 27	10 26	8 28	6 26	4 28
46 - β	Carinae	*Miaplacidus*	1.7	12 32	10 30	8 32	6 30	4 32
49 - α	Hydrae	*Alphard*	2.0	12 47	10 45	8 47	6 46	4 48
50 - α	Leonis	*Regulus*	1.4	13 28	11 26	9 28	7 26	5 28
54 - α	Ursae Majoris	*Dubhe*	1.8	14 23	12 21	10 24	8 22	6 24
55 - β	Leonis	*Denebola*	2.1	15 08	13 06	11 09	9 07	7 09
57 - α	Crucis	*Acrux*	1.4	15 46	13 44	11 46	9 44	7 46
58 - γ	Crucis	*Gacrux*	1.6	15 50	13 49	11 51	9 49	7 51
60 - β	Crucis	*Mimosa*	1.3	16 07	14 05	12 07	10 05	8 07
61 - ε	Ursae Majoris	*Alioth*	1.8	16 13	14 11	12 13	10 11	8 13
64 - ζ	Ursae Majoris	*Mizar*	2.3	16 43	14 41	12 43	10 41	8 43
65 - α	Virginis	*Spica*	1.0	16 44	14 42	12 44	10 43	8 45
68 - θ	Centauri	*Menkent*	2.1	17 26	15 24	13 26	11 24	9 26
69 - α	Bootis	*Arcturus*	0.0	17 34	15 33	13 35	11 33	9 35
70 - α^1	Centauri	*Rigil Kentaurus*	0.0	17 59	15 57	13 59	11 57	9 59
72 - β	Ursae Minoris	*Kochab*	2.1	18 08	16 06	14 09	12 07	10 09
74 - α	Coronae Borealis	*Alphecca*	2.2	18 53	16 51	14 53	12 51	10 54
76 - α	Scorpii	*Antares*	0.9	19 48	17 46	15 48	13 46	11 48
77 - α	Trianguli Aust.	*Atria*	1.9	20 08	18 06	16 08	14 07	12 09
81 - λ	Scorpii	*Shaula*	1.6	20 52	18 50	16 53	14 51	12 53
82 - α	Ophiuchi	*Rasalhague*	2.1	20 53	18 51	16 53	14 51	12 54
84 - γ	Draconis	*Eltanin*	2.2	21 14	19 12	17 14	15 13	13 15
85 - ε	Sagitarii	*Kaus Australis*	1.9	21 43	19 41	17 43	15 41	13 43
86 - α	Lyrae	*Vega*	0.0	21 55	19 53	17 55	15 53	13 55
87 - σ	Sagitarii	*Nunki*	2.0	22 14	20 12	18 14	16 12	14 14
88 - α	Aquilae	*Altair*	0.8	23 09	21 07	19 09	17 07	15 09
90 - α	Pavonis	*Peacock*	1.9	23 44	21 42	19 44	17 42	15 44
91 - α	Cygni	*Deneb*	1.3	0 03	21 57	19 59	17 57	15 59
93 - ε	Pegasi	*Enif*	0.7	1 06	23 00	21 02	19 00	17 02
95 - α	Gruis	*Al Na'ir*	1.7	1 30	23 24	21 26	19 24	17 26
97 - α	Piscis Austrini	*Fomalhaut*	1.2	2 19	0 17	22 15	20 14	18 16
99 - α	Pegasi	*Markab*	2.5	2 26	0 24	22 22	20 20	18 23

1ª CORRECCIÓN

Se restará para obtener la hora del paso en otro día del mismo mes.

Día	Corr.
	h m
1	0 00
2	0 04
3	0 08
4	0 12
5	0 16
6	0 20
7	0 24
8	0 28
9	0 31
10	0 35
11	0 39
12	0 43
13	0 47
14	0 51
15	0 55
16	0 59
17	1 03
18	1 07
19	1 11
20	1 15
21	1 19
22	1 23
23	1 27
24	1 30
25	1 34
26	1 38
27	1 42
28	1 46
29	1 50
30	1 54
31	1 58

Si el resultado es negativo sumar $23^h\ 56^m$.

2ª CORRECCIÓN

Se aplicará para tener la hora civil del paso por otro meridiano.

Long.	Corr.
°	m
180 W	–2
138 W	–1
46 W	0
46 E	+1
136 E	+2
180 E	

TABLA I

h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.
° ′	′	° ′	′	° ′	′	° ′	′	° ′	′	° ′	′	° ′	′
0 00	–27.6	26 00	–36.7	52 00	–38.5	78 00	–32.4	104 00	–19.8	130 00	–3.2	156 00	+14.1
0 30	–27.8	26 30	–36.8	52 30	–38.4	78 30	–32.2	104 30	–19.5	130 30	–2.8	156 30	+14.4
1 00	–28.1	27 00	–37.0	53 00	–38.4	79 00	–32.0	105 00	–19.2	131 00	–2.5	157 00	+14.7
1 30	–28.3	27 30	–37.1	53 30	–38.3	79 30	–31.8	105 30	–18.9	131 30	–2.1	157 30	+15.1
2 00	–28.5	28 00	–37.1	54 00	–38.3	80 00	–31.6	106 00	–18.6	132 00	–1.8	158 00	+15.4
2 30	–28.7	28 30	–37.2	54 30	–38.2	80 30	–31.4	106 30	–18.3	132 30	–1.5	158 30	+15.7
3 00	–29.0	29 00	–37.3	55 00	–38.1	81 00	–31.2	107 00	–18.0	133 00	–1.1	159 00	+16.0
3 30	–29.2	29 30	–37.4	55 30	–38.1	81 30	–31.0	107 30	–17.7	133 30	–0.8	159 30	+16.3
4 00	–29.4	30 00	–37.5	56 00	–38.0	82 00	–30.8	108 00	–17.4	134 00	–0.4	160 00	+16.6
4 30	–29.6	30 30	–37.6	56 30	–38.0	82 30	–30.6	108 30	–17.1	134 30	–0.1	160 30	+16.9
5 00	–29.9	31 00	–37.7	57 00	–37.9	83 00	–30.4	109 00	–16.8	135 00	+ 0.2	161 00	+17.2
5 30	–30.1	31 30	–37.8	57 30	–37.8	83 30	–30.2	109 30	–16.5	135 30	+ 0.6	161 30	+17.5
6 00	–30.3	32 00	–37.8	58 00	–37.7	84 00	–30.0	110 00	–16.2	136 00	+ 0.9	162 00	+17.8
6 30	–30.5	32 30	–37.9	58 30	–37.7	84 30	–29.8	110 30	–15.9	136 30	+ 1.2	162 30	+18.1
7 00	–30.7	33 00	–38.0	59 00	–37.6	85 00	–29.6	111 00	–15.6	137 00	+ 1.6	163 00	+18.4
7 30	–30.9	33 30	–38.0	59 30	–37.5	85 30	–29.3	111 30	–15.3	137 30	+ 1.9	163 30	+18.7
8 00	–31.1	34 00	–38.1	60 00	–37.4	86 00	–29.1	112 00	–14.9	138 00	+ 2.3	164 00	+19.0
8 30	–31.3	34 30	–38.2	60 30	–37.3	86 30	–28.9	112 30	–14.6	138 30	+ 2.6	164 30	+19.3
9 00	–31.5	35 00	–38.2	61 00	–37.2	87 00	–28.7	113 00	–14.3	139 00	+ 2.9	165 00	+19.6
9 30	–31.7	35 30	–38.3	61 30	–37.1	87 30	–28.4	113 30	–14.0	139 30	+ 3.3	165 30	+19.9
10 00	–31.9	36 00	–38.3	62 00	–37.0	88 00	–28.2	114 00	–13.7	140 00	+ 3.6	166 00	+20.2
10 30	–32.1	36 30	–38.4	62 30	–36.9	88 30	–28.0	114 30	–13.4	140 30	+ 3.9	166 30	+20.5
11 00	–32.3	37 00	–38.4	63 00	–36.8	89 00	–27.7	115 00	–13.0	141 00	+ 4.3	167 00	+20.7
11 30	–32.5	37 30	–38.5	63 30	–36.7	89 30	–27.5	115 30	–12.7	141 30	+ 4.6	167 30	+21.0
12 00	–32.6	38 00	–38.5	64 00	–36.6	90 00	–27.3	116 00	–12.4	142 00	+ 5.0	168 00	+21.3
12 30	–32.8	38 30	–38.6	64 30	–36.5	90 30	–27.0	116 30	–12.1	142 30	+ 5.3	168 30	+21.6
13 00	–33.0	39 00	–38.6	65 00	–36.4	91 00	–26.8	117 00	–11.8	143 00	+ 5.6	169 00	+21.9
13 30	–33.2	39 30	–38.6	65 30	–36.2	91 30	–26.5	117 30	–11.4	143 30	+ 6.0	169 30	+22.2
14 00	–33.4	40 00	–38.6	66 00	–36.1	92 00	–26.3	118 00	–11.1	144 00	+ 6.3	170 00	+22.4
14 30	–33.5	40 30	–38.7	66 30	–36.0	92 30	–26.0	118 30	–10.8	144 30	+ 6.6	170 30	+22.7
15 00	–33.7	41 00	–38.7	67 00	–35.9	93 00	–25.8	119 00	–10.5	145 00	+ 7.0	171 00	+23.0
15 30	–33.9	41 30	–38.7	67 30	–35.7	93 30	–25.5	119 30	–10.1	145 30	+ 7.3	171 30	+23.2
16 00	–34.0	42 00	–38.7	68 00	–35.6	94 00	–25.3	120 00	–9.8	146 00	+ 7.6	172 00	+23.5
16 30	–34.2	42 30	–38.8	68 30	–35.5	94 30	–25.0	120 30	–9.5	146 30	+ 8.0	172 30	+23.8
17 00	–34.3	43 00	–38.8	69 00	–35.3	95 00	–24.8	121 00	–9.2	147 00	+ 8.3	173 00	+24.1
17 30	–34.5	43 30	–38.8	69 30	–35.2	95 30	–24.5	121 30	–8.8	147 30	+ 8.6	173 30	+24.3
18 00	–34.7	44 00	–38.8	70 00	–35.0	96 00	–24.2	122 00	–8.5	148 00	+ 8.9	174 00	+24.6
18 30	–34.8	44 30	–38.8	70 30	–34.9	96 30	–24.0	122 30	–8.2	148 30	+ 9.3	174 30	+24.8
19 00	–35.0	45 00	–38.8	71 00	–34.8	97 00	–23.7	123 00	–7.8	149 00	+ 9.6	175 00	+25.1
19 30	–35.1	45 30	–38.8	71 30	–34.6	97 30	–23.4	123 30	–7.5	149 30	+ 9.9	175 30	+25.4
20 00	–35.2	46 00	–38.8	72 00	–34.4	98 00	–23.2	124 00	–7.2	150 00	+10.3	176 00	+25.6
20 30	–35.4	46 30	–38.8	72 30	–34.3	98 30	–22.9	124 30	–6.8	150 30	+10.6	176 30	+25.9
21 00	–35.5	47 00	–38.7	73 00	–34.1	99 00	–22.6	125 00	–6.5	151 00	+10.9	177 00	+26.1
21 30	–35.7	47 30	–38.7	73 30	–34.0	99 30	–22.3	125 30	–6.2	151 30	+11.2	177 30	+26.4
22 00	–35.8	48 00	–38.7	74 00	–33.8	100 00	–22.1	126 00	–5.8	152 00	+11.6	178 00	+26.6
22 30	–35.9	48 30	–38.7	74 30	–33.6	100 30	–21.8	126 30	–5.5	152 30	+11.9	178 30	+26.9
23 00	–36.0	49 00	–38.7	75 00	–33.5	101 00	–21.5	127 00	–5.2	153 00	+12.2	179 00	+27.1
23 30	–36.2	49 30	–38.6	75 30	–33.3	101 30	–21.2	127 30	–4.8	153 30	+12.5	179 30	+27.3
24 00	–36.3	50 00	–38.6	76 00	–33.1	102 00	–20.9	128 00	–4.5	154 00	+12.8	180 00	+27.6
24 30	–36.4	50 30	–38.6	76 30	–32.9	102 30	–20.6	128 30	–4.2	154 30	+13.2	180 30	+27.8
25 00	–36.5	51 00	–38.5	77 00	–32.8	103 00	–20.4	129 00	–3.8	155 00	+13.5	181 00	+28.1
25 30	–36.6	51 30	–38.5	77 30	–32.6	103 30	–20.1	129 30	–3.5	155 30	+13.8	181 30	+28.3
26 00	–36.7	52 00	–38.5	78 00	–32.4	104 00	–19.8	130 00	–3.2	156 00	+14.1	182 00	+28.5

TABLA I

h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.	h.L.♈	Corr.
° ′	′	° ′	′	° ′	′	° ′	′	° ′	′	° ′	′	° ′	′
182 00	+28.5	208 00	+37.1	234 00	+38.3	260 00	+31.6	286 00	+18.6	312 00	+ 1.8	338 00	–15.4
182 30	+28.7	208 30	+37.2	234 30	+38.2	260 30	+31.4	286 30	+18.3	312 30	+ 1.5	338 30	–15.7
183 00	+29.0	209 00	+37.3	235 00	+38.1	261 00	+31.2	287 00	+18.0	313 00	+ 1.1	339 00	–16.0
183 30	+29.2	209 30	+37.4	235 30	+38.1	261 30	+31.0	287 30	+17.7	313 30	+ 0.8	339 30	–16.3
184 00	+29.4	210 00	+37.5	236 00	+38.0	262 00	+30.8	288 00	+17.4	314 00	+ 0.4	340 00	–16.6
184 30	+29.6	210 30	+37.6	236 30	+38.0	262 30	+30.6	288 30	+17.1	314 30	+ 0.1	340 30	–16.9
185 00	+29.9	211 00	+37.7	237 00	+37.9	263 00	+30.4	289 00	+16.8	315 00	–0.2	341 00	–17.2
185 30	+30.1	211 30	+37.8	237 30	+37.8	263 30	+30.2	289 30	+16.5	315 30	–0.6	341 30	–17.5
186 00	+30.3	212 00	+37.8	238 00	+37.7	264 00	+30.0	290 00	+16.2	316 00	–0.9	342 00	–17.8
186 30	+30.5	212 30	+37.9	238 30	+37.7	264 30	+29.8	290 30	+15.9	316 30	–1.2	342 30	–18.1
187 00	+30.7	213 00	+38.0	239 00	+37.6	265 00	+29.6	291 00	+15.6	317 00	–1.6	343 00	–18.4
187 30	+30.9	213 30	+38.0	239 30	+37.5	265 30	+29.3	291 30	+15.3	317 30	–1.9	343 30	–18.7
188 00	+31.1	214 00	+38.1	240 00	+37.4	266 00	+29.1	292 00	+14.9	318 00	–2.3	344 00	–19.0
188 30	+31.3	214 30	+38.2	240 30	+37.3	266 30	+28.9	292 30	+14.6	318 30	–2.6	344 30	–19.3
189 00	+31.5	215 00	+38.2	241 00	+37.2	267 00	+28.7	293 00	+14.3	319 00	–2.9	345 00	–19.6
189 30	+31.7	215 30	+38.3	241 30	+37.1	267 30	+28.4	293 30	+14.0	319 30	–3.3	345 30	–19.9
190 00	+31.9	216 00	+38.3	242 00	+37.0	268 00	+28.2	294 00	+13.7	320 00	–3.6	346 00	–20.2
190 30	+32.1	216 30	+38.4	242 30	+36.9	268 30	+28.0	294 30	+13.4	320 30	–3.9	346 30	–20.5
191 00	+32.3	217 00	+38.4	243 00	+36.8	269 00	+27.7	295 00	+13.0	321 00	–4.3	347 00	–20.7
191 30	+32.5	217 30	+38.5	243 30	+36.7	269 30	+27.5	295 30	+12.7	321 30	–4.6	347 30	–21.0
192 00	+32.6	218 00	+38.5	244 00	+36.6	270 00	+27.3	296 00	+12.4	322 00	–5.0	348 00	–21.3
192 30	+32.8	218 30	+38.6	244 30	+36.5	270 30	+27.0	296 30	+12.1	322 30	–5.3	348 30	–21.6
193 00	+33.0	219 00	+38.6	245 00	+36.4	271 00	+26.8	297 00	+11.8	323 00	–5.6	349 00	–21.9
193 30	+33.2	219 30	+38.6	245 30	+36.2	271 30	+26.5	297 30	+11.4	323 30	–6.0	349 30	–22.2
194 00	+33.4	220 00	+38.6	246 00	+36.1	272 00	+26.3	298 00	+11.1	324 00	–6.3	350 00	–22.4
194 30	+33.5	220 30	+38.7	246 30	+36.0	272 30	+26.0	298 30	+10.8	324 30	–6.6	350 30	–22.7
195 00	+33.7	221 00	+38.7	247 00	+35.9	273 00	+25.8	299 00	+10.5	325 00	–7.0	351 00	–23.0
195 30	+33.9	221 30	+38.7	247 30	+35.7	273 30	+25.5	299 30	+10.1	325 30	–7.3	351 30	–23.2
196 00	+34.0	222 00	+38.7	248 00	+35.6	274 00	+25.3	300 00	+ 9.8	326 00	–7.6	352 00	–23.5
196 30	+34.2	222 30	+38.8	248 30	+35.5	274 30	+25.0	300 30	+ 9.5	326 30	–8.0	352 30	–23.8
197 00	+34.3	223 00	+38.8	249 00	+35.3	275 00	+24.8	301 00	+ 9.2	327 00	–8.3	353 00	–24.1
197 30	+34.5	223 30	+38.8	249 30	+35.2	275 30	+24.5	301 30	+ 8.8	327 30	–8.6	353 30	–24.3
198 00	+34.7	224 00	+38.8	250 00	+35.0	276 00	+24.2	302 00	+ 8.5	328 00	–8.9	354 00	–24.6
198 30	+34.8	224 30	+38.8	250 30	+34.9	276 30	+24.0	302 30	+ 8.2	328 30	–9.3	354 30	–24.8
199 00	+35.0	225 00	+38.8	251 00	+34.8	277 00	+23.7	303 00	+ 7.8	329 00	–9.6	355 00	–25.1
199 30	+35.1	225 30	+38.8	251 30	+34.6	277 30	+23.4	303 30	+ 7.5	329 30	–9.9	355 30	–25.4
200 00	+35.2	226 00	+38.8	252 00	+34.4	278 00	+23.2	304 00	+ 7.2	330 00	–10.3	356 00	–25.6
200 30	+35.4	226 30	+38.8	252 30	+34.3	278 30	+22.9	304 30	+ 6.8	330 30	–10.6	356 30	–25.9
201 00	+35.5	227 00	+38.7	253 00	+34.1	279 00	+22.6	305 00	+ 6.5	331 00	–10.9	357 00	–26.1
201 30	+35.7	227 30	+38.7	253 30	+34.0	279 30	+22.3	305 30	+ 6.2	331 30	–11.2	357 30	–26.4
202 00	+35.8	228 00	+38.7	254 00	+33.8	280 00	+22.1	306 00	+ 5.8	332 00	–11.6	358 00	–26.6
202 30	+35.9	228 30	+38.7	254 30	+33.6	280 30	+21.8	306 30	+ 5.5	332 30	–11.9	358 30	–26.9
203 00	+36.0	229 00	+38.7	255 00	+33.5	281 00	+21.5	307 00	+ 5.2	333 00	–12.2	359 00	–27.1
203 30	+36.2	229 30	+38.6	255 30	+33.3	281 30	+21.2	307 30	+ 4.8	333 30	–12.5	359 30	–27.3
204 00	+36.3	230 00	+38.6	256 00	+33.1	282 00	+20.9	308 00	+ 4.5	334 00	–12.8	360 00	–27.6
204 30	+36.4	230 30	+38.6	256 30	+32.9	282 30	+20.6	308 30	+ 4.2	334 30	–13.2		
205 00	+36.5	231 00	+38.5	257 00	+32.8	283 00	+20.4	309 00	+ 3.8	335 00	–13.5		
205 30	+36.6	231 30	+38.5	257 30	+32.6	283 30	+20.1	309 30	+ 3.5	335 30	–13.8		
206 00	+36.7	232 00	+38.5	258 00	+32.4	284 00	+19.8	310 00	+ 3.2	336 00	–14.1		
206 30	+36.8	232 30	+38.4	258 30	+32.2	284 30	+19.5	310 30	+ 2.8	336 30	–14.4		
207 00	+37.0	233 00	+38.4	259 00	+32.0	285 00	+19.2	311 00	+ 2.5	337 00	–14.7		
207 30	+37.1	233 30	+38.3	259 30	+31.8	285 30	+18.9	311 30	+ 2.1	337 30	–15.1		
208 00	+37.1	234 00	+38.3	260 00	+31.6	286 00	+18.6	312 00	+ 1.8	338 00	–15.4		

TABLA II

(SIEMPRE POSITIVA)

hL♈	**Altura**											
	10°	**15°**	**20°**	**25°**	**30°**	**35°**	**40°**	**45°**	**50°**	**55°**	**60°**	**65°**
°	′	′	′	′	′	′	′	′	′	′	′	′
0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
100	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
120	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4
140	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
160	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
180	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
220	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
260	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
280	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
300	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4
320	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
340	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
360	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2

TABLA III

hL♈	Ene 1	Feb 1	Mar 1	Abr 1	May 1	Jun 1	Jul 1	Ago 1	Sep 1	Oct 1	Nov 1	Dic 1	Dic 32
°	′	′	′	′	′	′	′	′	′	′	′	′	′
0	+0.1	+0.1	0.0	–0.2	–0.3	–0.4	–0.4	–0.3	–0.1	+0.1	+0.3	+0.4	+0.5
20	+0.1	+0.2	+0.1	–0.1	–0.2	–0.3	–0.4	–0.3	–0.2	0.0	+0.2	+0.4	+0.5
40	+0.1	+0.2	+0.2	+0.1	–0.1	–0.2	–0.3	–0.3	–0.2	–0.1	+0.1	+0.3	+0.4
60	+0.1	+0.2	+0.2	+0.2	0.0	–0.1	–0.2	–0.3	–0.3	–0.2	0.0	+0.1	+0.3
80	0.0	+0.2	+0.3	+0.3	+0.2	0.0	–0.1	–0.2	–0.3	–0.3	–0.2	0.0	+0.1
100	0.0	+0.2	+0.3	+0.3	+0.3	+0.2	0.0	–0.2	–0.3	–0.3	–0.3	–0.2	0.0
120	–0.1	+0.1	+0.3	+0.4	+0.4	+0.3	+0.1	0.0	–0.2	–0.3	–0.4	–0.3	–0.2
140	–0.1	+0.1	+0.2	+0.3	+0.4	+0.3	+0.2	+0.1	–0.1	–0.3	–0.4	–0.4	–0.3
160	–0.1	0.0	+0.1	+0.3	+0.4	+0.4	+0.3	+0.2	0.0	–0.2	–0.4	–0.4	–0.4
180	–0.1	–0.1	0.0	+0.2	+0.3	+0.4	+0.4	+0.3	+0.1	–0.1	–0.3	–0.4	–0.5
200	–0.1	–0.2	–0.1	+0.1	+0.2	+0.3	+0.4	+0.3	+0.2	0.0	–0.2	–0.4	–0.5
220	–0.1	–0.2	–0.2	–0.1	+0.1	+0.2	+0.3	+0.3	+0.2	+0.1	–0.1	–0.3	–0.4
240	–0.1	–0.2	–0.2	–0.2	0.0	+0.1	+0.2	+0.3	+0.3	+0.2	0.0	–0.1	–0.3
260	0.0	–0.2	–0.3	–0.3	–0.2	0.0	+0.1	+0.2	+0.3	+0.3	+0.2	0.0	–0.1
280	0.0	–0.2	–0.3	–0.3	–0.3	–0.2	0.0	+0.2	+0.3	+0.3	+0.3	+0.2	0.0
300	+0.1	–0.1	–0.3	–0.4	–0.4	–0.3	–0.1	0.0	+0.2	+0.3	+0.4	+0.3	+0.2
320	+0.1	–0.1	–0.2	–0.3	–0.4	–0.3	–0.2	–0.1	+0.1	+0.3	+0.4	+0.4	+0.3
340	+0.1	0.0	–0.1	–0.3	–0.4	–0.4	–0.3	–0.2	0.0	+0.2	+0.4	+0.4	+0.4
360	+0.1	+0.1	0.0	–0.2	–0.3	–0.4	–0.4	–0.3	–0.1	+0.1	+0.3	+0.4	+0.5

Dic 32 corresponde al 1 de enero del año siguiente

hL♈	Latitud												hL♈
	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	
°	°	°	°	°	°	°	°	°	°	°	°	°	°
0	+0.5	+0.5	+0.5	+0.5	+0.5	+0.6	+0.6	+0.6	+0.7	+0.8	+0.9	+1.1	**0**
10	+0.4	+0.4	+0.4	+0.4	+0.4	+0.5	+0.5	+0.5	+0.6	+0.6	+0.7	+0.9	**10**
20	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.4	+0.4	+0.4	+0.5	+0.5	+0.7	**20**
30	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.3	+0.3	+0.3	+0.4	**30**
40	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	**40**
50	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	**50**
60	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.3	–0.3	–0.3	–0.4	**60**
70	–0.3	–0.3	–0.3	–0.3	–0.3	–0.3	–0.4	–0.4	–0.4	–0.5	–0.6	–0.7	**70**
80	–0.4	–0.4	–0.4	–0.4	–0.4	–0.5	–0.5	–0.5	–0.6	–0.7	–0.8	–0.9	**80**
90	–0.5	–0.5	–0.5	–0.5	–0.5	–0.6	–0.6	–0.7	–0.7	–0.8	–0.9	–1.1	**90**
100	–0.5	–0.6	–0.6	–0.6	–0.6	–0.7	–0.7	–0.8	–0.8	–0.9	–1.1	–1.3	**100**
110	–0.6	–0.6	–0.6	–0.6	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.2	–1.4	**110**
120	–0.6	–0.6	–0.7	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.1	–1.3	–1.5	**120**
130	–0.7	–0.7	–0.7	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.1	–1.3	–1.5	**130**
140	–0.7	–0.7	–0.7	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.1	–1.3	–1.5	**140**
150	–0.6	–0.6	–0.7	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.1	–1.2	–1.5	**150**
160	–0.6	–0.6	–0.6	–0.6	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.2	–1.4	**160**
170	–0.5	–0.5	–0.6	–0.6	–0.6	–0.6	–0.7	–0.7	–0.8	–0.9	–1.0	–1.2	**170**
180	–0.5	–0.5	–0.5	–0.5	–0.5	–0.6	–0.6	–0.6	–0.7	–0.8	–0.9	–1.1	**180**
190	–0.4	–0.4	–0.4	–0.4	–0.4	–0.4	–0.5	–0.5	–0.6	–0.6	–0.7	–0.9	**190**
200	–0.3	–0.3	–0.3	–0.3	–0.3	–0.3	–0.3	–0.4	–0.4	–0.5	–0.5	–0.6	**200**
210	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.2	–0.3	–0.3	–0.3	–0.4	**210**
220	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	**220**
230	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	**230**
240	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.3	+0.3	+0.3	+0.4	**240**
250	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.4	+0.4	+0.4	+0.5	+0.5	+0.6	**250**
260	+0.4	+0.4	+0.4	+0.4	+0.4	+0.5	+0.5	+0.5	+0.6	+0.6	+0.7	+0.9	**260**
270	+0.5	+0.5	+0.5	+0.5	+0.5	+0.6	+0.6	+0.6	+0.7	+0.8	+0.9	+1.1	**270**
280	+0.5	+0.5	+0.6	+0.6	+0.6	+0.6	+0.7	+0.7	+0.8	+0.9	+1.1	+1.2	**280**
290	+0.6	+0.6	+0.6	+0.6	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.2	+1.4	**290**
300	+0.6	+0.6	+0.7	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.1	+1.2	+1.5	**300**
310	+0.7	+0.7	+0.7	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.1	+1.3	+1.5	**310**
320	+0.7	+0.7	+0.7	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.1	+1.3	+1.5	**320**
330	+0.6	+0.6	+0.7	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.1	+1.3	+1.5	**330**
340	+0.6	+0.6	+0.6	+0.6	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.2	+1.4	**340**
350	+0.5	+0.5	+0.6	+0.6	+0.6	+0.6	+0.7	+0.8	+0.8	+0.9	+1.1	+1.3	**350**
360	+0.5	+0.5	+0.5	+0.5	+0.5	+0.6	+0.6	+0.6	+0.7	+0.8	+0.9	+1.1	**360**

Cuando el signo es +, la Polar está al E del meridiano.
Cuando el signo es –, la Polar está al W del meridiano.

Long	Retardo diario																	
	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m	55m	60m	65m	70m	75m	80m	85m	90m
°	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
10	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3
15	0	0	1	1	1	1	1	2	2	2	2	3	3	3	3	3	4	4
20	0	1	1	1	1	2	2	2	3	3	3	3	4	4	4	4	5	5
25	0	1	1	1	2	2	2	3	3	3	4	4	5	5	5	6	6	6
30	0	1	1	2	2	3	3	3	4	4	5	5	5	6	6	7	7	8
35	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
40	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10
45	1	1	2	3	3	4	4	5	6	6	7	8	8	9	9	10	11	11
50	1	1	2	3	3	4	5	6	6	7	8	8	9	10	10	11	12	13
55	1	2	2	3	4	5	5	6	7	8	8	9	10	11	11	12	13	14
60	1	2	3	3	4	5	6	7	8	8	9	10	11	12	13	13	14	15
65	1	2	3	4	5	5	6	7	8	9	10	11	12	13	14	14	15	16
70	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
75	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
80	1	2	3	4	6	7	8	9	10	11	12	13	14	16	17	18	19	20
85	1	2	4	5	6	7	8	9	11	12	13	14	15	17	18	19	20	21
90	1	3	4	5	6	8	9	10	11	13	14	15	16	18	19	20	21	23
95	1	3	4	5	7	8	9	11	12	13	15	16	17	18	20	21	22	24
100	1	3	4	6	7	8	10	11	13	14	15	17	18	19	21	22	24	25
105	1	3	4	6	7	9	10	12	13	15	16	18	19	20	22	23	25	26
110	2	3	5	6	8	9	11	12	14	15	17	18	20	21	23	24	26	28
115	2	3	5	6	8	10	11	13	14	16	18	19	21	22	24	26	27	29
120	2	3	5	7	8	10	12	13	15	17	18	20	22	23	25	27	28	30
125	2	3	5	7	9	10	12	14	16	17	19	21	23	24	26	28	30	31
130	2	4	5	7	9	11	13	14	16	18	20	22	23	25	27	29	31	33
135	2	4	6	8	9	11	13	15	17	19	21	23	24	26	28	30	32	34
140	2	4	6	8	10	12	14	16	18	19	21	23	25	27	29	31	33	35
145	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
150	2	4	6	8	10	13	15	17	19	21	23	25	27	29	31	33	35	38
155	2	4	6	9	11	13	15	17	19	22	24	26	28	30	32	34	37	39
160	2	4	7	9	11	13	16	18	20	22	24	27	29	31	33	36	38	40
165	2	5	7	9	11	14	16	18	21	23	25	28	30	32	34	37	39	41
170	2	5	7	9	12	14	17	19	21	24	26	28	31	33	35	38	40	43
175	2	5	7	10	12	15	17	19	22	24	27	29	32	34	36	39	41	44
180	3	5	8	10	13	15	18	20	23	25	28	30	33	35	38	40	43	45

TABLA A

Depresión del horizonte

Elevación del observador m	Corrección ′	Elevación del observador m	Corrección ′
1.6	–2.3	12.7	–6.4
1.7	–2.4	13.1	–6.5
1.9	–2.5	13.6	–6.6
2.0	–2.6	14.0	–6.7
2.2	–2.7	14.4	–6.8
2.3	–2.8	14.8	–6.9
2.5	–2.9	15.3	–7.0
2.7	–3.0	15.7	–7.1
2.9	–3.1	16.2	–7.2
3.1	–3.2	16.6	–7.3
3.3	–3.3	17.1	–7.4
3.5	–3.4	17.6	–7.5
3.7	–3.5	18.0	–7.6
3.9	–3.6	18.5	–7.7
4.2	–3.7	19.0	–7.8
4.4	–3.8	19.5	–7.9
4.7	–3.9	20.0	–8.0
4.9	–4.0	20.5	–8.1
5.2	–4.1	21.0	–8.2
5.4	–4.2	21.5	–8.3
5.7	–4.3	22.1	–8.4
6.0	–4.4	22.6	–8.5
6.2	–4.5	23.1	–8.6
6.5	–4.6	23.7	–8.7
6.8	–4.7	24.2	–8.8
7.1	–4.8	24.8	–8.9
7.4	–4.9	25.4	–9.0
7.7	–5.0	25.9	–9.1
8.0	–5.1	26.5	–9.2
8.4	–5.2	27.1	–9.3
8.7	–5.3	27.7	–9.4
9.0	–5.4	28.3	–9.5
9.4	–5.5	28.9	–9.6
9.7	–5.6	29.5	–9.7
10.1	–5.7	30.1	–9.8
10.4	–5.8	30.7	–9.9
10.8	–5.9	31.3	–10.0
11.2	–6.0	32.0	–10.1
11.6	–6.1	32.6	–10.2
11.9	–6.2	33.3	–10.3
12.3	–6.3	33.9	–10.4
12.7		34.6	

TABLA B = SOL (LIMBO INFERIOR)

Semidiámetro, refracción y paralaje

Altura apte. ☉ ° ′	Corrección ′	Altura apte. ☉ ° ′	Corrección ′	Altura apte. ☉ ° ′	Corrección ′	Altura apte. ☉ ° ′	Corrección ′
6 15	+8.2	8 45	+10.2	13 23	+12.2	25 59	+14.2
6 21	+8.3	8 54	+10.3	13 44	+12.3	27 12	+14.3
6 27	+8.4	9 05	+10.4	14 06	+12.4	28 32	+14.4
6 33	+8.5	9 15	+10.5	14 29	+12.5	29 59	+14.5
6 40	+8.6	9 26	+10.6	14 53	+12.6	31 34	+14.6
6 46	+8.7	9 37	+10.7	15 18	+12.7	33 19	+14.7
6 53	+8.8	9 47	+10.8	15 45	+12.8	35 16	+14.8
7 00	+8.9	10 00	+10.9	16 13	+12.9	37 25	+14.9
7 06	+9.0	10 12	+11.0	16 43	+13.0	39 49	+15.0
7 14	+9.1	10 25	+11.1	17 14	+13.1	42 30	+15.1
7 21	+9.2	10 38	+11.2	17 47	+13.2	45 30	+15.2
7 28	+9.3	10 52	+11.3	18 23	+13.3	48 53	+15.3
7 36	+9.4	11 06	+11.4	19 01	+13.4	52 43	+15.4
7 44	+9.5	11 21	+11.5	19 41	+13.5	57 01	+15.5
7 52	+9.6	11 36	+11.6	20 24	+13.6	61 51	+15.6
8 00	+9.7	11 52	+11.7	21 10	+13.7	67 16	+15.7
8 08	+9.8	12 09	+11.8	21 59	+13.8	73 14	+15.8
8 17	+9.9	12 26	+11.9	22 53	+13.9	79 42	+15.9
8 26	+10.0	12 44	+12.0	23 50	+14.0	86 30	+16.0
8 35	+10.1	13 03	+12.1	24 52	+14.1	90 00	
8 45		13 23		25 59			

Correc. adicional (2021)

Ene 1	+0′.3
Ene 23	+0′.2
Feb 27	+0′.1
Mar 22	0′.0
Abr 13	–0′.1
May 7	–0′.2
Jun 11	–0′.3
Jul 27	–0′.2
Sep 1	–0′.1
Sep 25	0′.0
Oct 17	+0′.1
Nov 10	+0′.2
Dic 15	+0′.3
Dic 31	

TABLA C = PLANETAS Y ESTRELLAS

Refracción

Altura apte. ° ′	Corrección ′	Altura apte. ° ′	Corrección ′
6 30	–7.8	14 00	–3.8
6 40	–7.6	15 00	–3.6
6 50	–7.5	16 00	–3.3
7 00	–7.3	17 00	–3.1
7 15	–7.1	18 00	–3.0
7 30	–6.9	19 00	–2.8
7 45	–6.7	20 00	–2.6
8 00	–6.5	21 00	–2.5
8 15	–6.3	22 00	–2.4
8 30	–6.2	24 00	–2.2
8 45	–6.0	26 00	–2.0
9 00	–5.9	28 00	–1.8
9 20	–5.7	32 00	–1.6
9 40	–5.5	36 00	–1.3
10 00	–5.3	40 00	–1.2
10 30	–5.1	45 00	–1.0
11 00	–4.8	50 00	–0.8
11 30	–4.6	60 00	–0.6
12 00	–4.5	70 00	–0.4
12 30	–4.3	80 00	–0.2
13 00	–4.1	90 00	0.0

Paralaje (2021)

Fechas	Venus para cualquier altura	Marte Altura aparente < 30°	> 30° < 60°	> 60°
Ene 1	+0′.1	+0′.2	+0′.1	+0′.1
Ene 3	+0′.1	+0′.1	+0′.1	+0′.1
Ene 12	+0′.1	+0′.1	+0′.1	0′.0
May 7	+0′.1	+0′.1	0′.0	0′.0
Oct 1	+0′.2	+0′.1	0′.0	0′.0
Nov 16	+0′.3	+0′.1	0′.0	0′.0
Dic 8	+0′.4	+0′.1	0′.0	0′.0
Dic 24	+0′.5	+0′.1	0′.0	0′.0
Dic 31				

La altura aparente es la observada corregida por depresión del horizonte.
En estas tablas, para los valores explícitos tomar el valor superior.

Altura ap.	LIMBO INFERIOR — Paralaje Horizontal							
	54′	55′	56′	57′	58′	59′	60′	61′
°	′	′	′	′	′	′	′	′
10	62.6	63.9	65.1	66.4	67.7	68.9	70.2	71.4
11	62.9	64.2	65.4	66.7	67.9	69.2	70.4	71.7
12	63.1	64.4	65.6	66.9	68.1	69.4	70.6	71.9
13	63.3	64.5	65.7	67.0	68.2	69.5	70.7	72.0
14	63.3	64.6	65.8	67.1	68.3	69.5	70.8	72.0
15	63.3	64.6	65.8	67.1	68.3	69.5	70.8	72.0
16	63.3	64.6	65.8	67.0	68.3	69.5	70.7	72.0
17	63.3	64.5	65.7	66.9	68.2	69.4	70.6	71.9
18	63.2	64.4	65.6	66.8	68.1	69.3	70.5	71.7
19	63.0	64.2	65.5	66.7	67.9	69.1	70.3	71.5
20	62.9	64.1	65.3	66.5	67.7	68.9	70.1	71.3
21	62.7	63.9	65.1	66.3	67.5	68.7	69.9	71.1
22	62.4	63.6	64.8	66.0	67.2	68.4	69.6	70.8
23	62.2	63.4	64.6	65.8	67.0	68.2	69.4	70.5
24	61.9	63.1	64.3	65.5	66.7	67.9	69.0	70.2
25	61.6	62.8	64.0	65.2	66.3	67.5	68.7	69.9
26	61.3	62.5	63.7	64.8	66.0	67.2	68.3	69.5
27	61.0	62.1	63.3	64.5	65.6	66.8	68.0	69.1
28	60.6	61.8	62.9	64.1	65.2	66.4	67.6	68.7
29	60.2	61.4	62.5	63.7	64.8	66.0	67.1	68.3
30	59.8	61.0	62.1	63.3	64.4	65.5	66.7	67.8
31	59.4	60.6	61.7	62.8	64.0	65.1	66.2	67.3
32	59.0	60.1	61.2	62.4	63.5	64.6	65.7	66.8
33	58.6	59.7	60.8	61.9	63.0	64.1	65.2	66.3
34	58.1	59.2	60.3	61.4	62.5	63.6	64.7	65.8
35	57.6	58.7	59.8	60.9	62.0	63.1	64.2	65.3
36	57.1	58.2	59.3	60.4	61.4	62.5	63.6	64.7
37	56.6	57.7	58.7	59.8	60.9	62.0	63.0	64.1
38	56.1	57.1	58.2	59.3	60.3	61.4	62.4	63.5
39	55.5	56.6	57.6	58.7	59.7	60.8	61.8	62.9
40	55.0	56.0	57.0	58.1	59.1	60.2	61.2	62.2
41	54.4	55.4	56.4	57.5	58.5	59.5	60.6	61.6
42	53.8	54.8	55.8	56.9	57.9	58.9	59.9	60.9
43	53.2	54.2	55.2	56.2	57.2	58.2	59.2	60.2
44	52.6	53.6	54.6	55.6	56.6	57.6	58.6	59.5
45	52.0	52.9	53.9	54.9	55.9	56.9	57.9	58.8
46	51.3	52.3	53.3	54.2	55.2	56.2	57.1	58.1
47	50.7	51.6	52.6	53.5	54.5	55.5	56.4	57.4
48	50.0	51.0	51.9	52.8	53.8	54.7	55.7	56.6
49	49.3	50.3	51.2	52.1	53.1	54.0	54.9	55.8
50	48.7	49.6	50.5	51.4	52.3	53.2	54.1	55.1
51	48.0	48.9	49.8	50.7	51.6	52.5	53.4	54.3
52	47.2	48.1	49.0	49.9	50.8	51.7	52.6	53.5
53	46.5	47.4	48.3	49.1	50.0	50.9	51.8	52.6
54	45.8	46.7	47.5	48.4	49.2	50.1	51.0	51.8
55	45.0	45.9	46.7	47.6	48.4	49.3	50.1	51.0

Altura ap.	LIMBO SUPERIOR — Paralaje Horizontal							
	54′	55′	56′	57′	58′	59′	60′	61′
°	′	′	′	′	′	′	′	′
10	33.1	33.8	34.5	35.2	36.0	36.7	37.4	38.1
11	33.4	34.1	34.8	35.5	36.2	36.9	37.7	38.4
12	33.6	34.3	35.0	35.7	36.4	37.1	37.8	38.5
13	33.7	34.4	35.1	35.8	36.5	37.2	37.9	38.6
14	33.8	34.5	35.2	35.9	36.6	37.3	38.0	38.7
15	33.8	34.5	35.2	35.9	36.6	37.3	38.0	38.7
16	33.8	34.5	35.2	35.9	36.6	37.2	37.9	38.6
17	33.7	34.4	35.1	35.8	36.5	37.2	37.8	38.5
18	33.6	34.3	35.0	35.7	36.4	37.0	37.7	38.4
19	33.5	34.2	34.9	35.5	36.2	36.9	37.5	38.2
20	33.3	34.0	34.7	35.3	36.0	36.7	37.3	38.0
21	33.1	33.8	34.5	35.1	35.8	36.4	37.1	37.8
22	32.9	33.6	34.2	34.9	35.5	36.2	36.8	37.5
23	32.7	33.3	34.0	34.6	35.3	35.9	36.6	37.2
24	32.4	33.0	33.7	34.3	35.0	35.6	36.2	36.9
25	32.1	32.7	33.4	34.0	34.6	35.3	35.9	36.5
26	31.8	32.4	33.0	33.7	34.3	34.9	35.5	36.2
27	31.5	32.1	32.7	33.3	33.9	34.5	35.2	35.8
28	31.1	31.7	32.3	32.9	33.5	34.2	34.8	35.4
29	30.7	31.3	31.9	32.5	33.1	33.7	34.3	34.9
30	30.3	30.9	31.5	32.1	32.7	33.3	33.9	34.5
31	29.9	30.5	31.1	31.7	32.3	32.8	33.4	34.0
32	29.5	30.1	30.6	31.2	31.8	32.4	32.9	33.5
33	29.0	29.6	30.2	30.7	31.3	31.9	32.4	33.0
34	28.6	29.1	29.7	30.2	30.8	31.4	31.9	32.5
35	28.1	28.6	29.2	29.7	30.3	30.8	31.4	31.9
36	27.6	28.1	28.7	29.2	29.7	30.3	30.8	31.3
37	27.1	27.6	28.1	28.7	29.2	29.7	30.2	30.8
38	26.6	27.1	27.6	28.1	28.6	29.1	29.6	30.2
39	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5
40	25.5	25.9	26.4	26.9	27.4	27.9	28.4	28.9
41	24.9	25.4	25.8	26.3	26.8	27.3	27.8	28.3
42	24.3	24.8	25.2	25.7	26.2	26.6	27.1	27.6
43	23.7	24.2	24.6	25.1	25.5	26.0	26.4	26.9
44	23.1	23.5	24.0	24.4	24.9	25.3	25.8	26.2
45	22.5	22.9	23.3	23.8	24.2	24.6	25.1	25.5
46	21.8	22.2	22.7	23.1	23.5	23.9	24.3	24.8
47	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0
48	20.5	20.9	21.3	21.7	22.1	22.5	22.9	23.3
49	19.8	20.2	20.6	21.0	21.4	21.7	22.1	22.5
50	19.1	19.5	19.9	20.2	20.6	21.0	21.4	21.7
51	18.4	18.8	19.2	19.5	19.9	20.2	20.6	20.9
52	17.7	18.1	18.4	18.8	19.1	19.4	19.8	20.1
53	17.0	17.3	17.7	18.0	18.3	18.7	19.0	19.3
54	16.3	16.6	16.9	17.2	17.5	17.9	18.2	18.5
55	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6

Altura ap.	LIMBO INFERIOR Paralaje Horizontal								Altura ap.	LIMBO SUPERIOR Paralaje Horizontal							
	54′	55′	56′	57′	58′	59′	60′	61′		54′	55′	56′	57′	58′	59′	60′	61′
°	′	′	′	′	′	′	′	′	°	′	′	′	′	′	′	′	′
55	45.0	45.9	46.7	47.6	48.4	49.3	50.1	51.0	**55**	15.5	15.8	16.1	16.4	16.7	17.0	17.3	17.6
56	44.3	45.1	46.0	46.8	47.6	48.5	49.3	50.1	**56**	14.8	15.1	15.4	15.6	15.9	16.2	16.5	16.8
57	43.5	44.4	45.2	46.0	46.8	47.6	48.4	49.3	**57**	14.0	14.3	14.6	14.8	15.1	15.4	15.7	15.9
58	42.8	43.6	44.4	45.2	46.0	46.8	47.6	48.4	**58**	13.3	13.5	13.8	14.0	14.3	14.5	14.8	15.0
59	42.0	42.8	43.6	44.3	45.1	45.9	46.7	47.5	**59**	12.5	12.7	13.0	13.2	13.4	13.7	13.9	14.2
60	41.2	42.0	42.7	43.5	44.3	45.1	45.8	46.6	**60**	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.3
61	40.4	41.2	41.9	42.7	43.4	44.2	44.9	45.7	**61**	10.9	11.1	11.3	11.5	11.7	11.9	12.2	12.4
62	39.6	40.3	41.1	41.8	42.6	43.3	44.0	44.8	**62**	10.1	10.3	10.5	10.7	10.9	11.1	11.3	11.5
63	38.8	39.5	40.2	41.0	41.7	42.4	43.1	43.9	**63**	9.3	9.4	9.6	9.8	10.0	10.2	10.3	10.5
64	38.0	38.7	39.4	40.1	40.8	41.5	42.2	42.9	**64**	8.4	8.6	8.8	8.9	9.1	9.3	9.4	9.6
65	37.1	37.8	38.5	39.2	39.9	40.6	41.3	42.0	**65**	7.6	7.8	7.9	8.1	8.2	8.4	8.5	8.7
66	36.3	37.0	37.6	38.3	39.0	39.7	40.4	41.0	**66**	6.8	6.9	7.0	7.2	7.3	7.4	7.6	7.7
67	35.4	36.1	36.8	37.4	38.1	38.8	39.4	40.1	**67**	5.9	6.0	6.2	6.3	6.4	6.5	6.6	6.8
68	34.6	35.2	35.9	36.5	37.2	37.8	38.5	39.1	**68**	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8
69	33.7	34.4	35.0	35.6	36.3	36.9	37.5	38.2	**69**	4.2	4.3	4.4	4.5	4.6	4.6	4.7	4.8
70	32.9	33.5	34.1	34.7	35.3	35.9	36.6	37.2	**70**	3.4	3.4	3.5	3.6	3.6	3.7	3.8	3.8
71	32.0	32.6	33.2	33.8	34.4	35.0	35.6	36.2	**71**	2.5	2.5	2.6	2.6	2.7	2.8	2.8	2.9
72	31.1	31.7	32.3	32.9	33.5	34.0	34.6	35.2	**72**	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9
73	30.2	30.8	31.4	31.9	32.5	33.1	33.6	34.2	**73**	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9
74	29.4	29.9	30.5	31.0	31.6	32.1	32.7	33.2	**74**	–0.2	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1	–0.1
75	28.5	29.0	29.5	30.1	30.6	31.1	31.7	32.2	**75**	–1.0	–1.1	–1.1	–1.1	–1.1	–1.1	–1.1	–1.1
76	27.6	28.1	28.6	29.1	29.6	30.2	30.7	31.2	**76**	–1.9	–2.0	–2.0	–2.0	–2.1	–2.1	–2.1	–2.2
77	26.7	27.2	27.7	28.2	28.7	29.2	29.7	30.2	**77**	–2.8	–2.9	–2.9	–3.0	–3.0	–3.1	–3.1	–3.2
78	25.8	26.3	26.7	27.2	27.7	28.2	28.7	29.1	**78**	–3.7	–3.8	–3.9	–3.9	–4.0	–4.1	–4.1	–4.2
79	24.9	25.3	25.8	26.3	26.7	27.2	27.7	28.1	**79**	–4.6	–4.7	–4.8	–4.9	–5.0	–5.1	–5.1	–5.2
80	24.0	24.4	24.9	25.3	25.7	26.2	26.6	27.1	**80**	–5.6	–5.6	–5.7	–5.8	–5.9	–6.0	–6.1	–6.2

La altura aparente es la observada corregida por depresión del horizonte con los datos de la tabla A de la página 387.

PARTES PROPORCIONALES

Variación tabular por grado de altura
(corrección sustractiva, excepto para alturas <15°, que es aditiva)

Minutos de altura	0′.0	0′.1	0′.2	0′.3	0′.4	0′.5	0′.6	0′.7	0′.8	0′.9	1′.0	1′.1	1′.2	1′.3	Minutos de paralaje
00′	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	0′.0	**0′.0**
06′	0′.0	0′.0	0′.0	0′.0	0′.0	0′.1	0′.1	0′.1	0′.1	0′.1	0′.1	0′.1	0′.1	0′.1	**0′.1**
12′	0′.0	0′.0	0′.0	0′.1	0′.1	0′.1	0′.1	0′.1	0′.2	0′.2	0′.2	0′.2	0′.2	0′.3	**0′.2**
18′	0′.0	0′.0	0′.1	0′.1	0′.1	0′.2	0′.2	0′.2	0′.2	0′.3	0′.3	0′.3	0′.4	0′.4	**0′.3**
24′	0′.0	0′.0	0′.1	0′.1	0′.2	0′.2	0′.2	0′.3	0′.3	0′.4	0′.4	0′.4	0′.5	0′.5	**0′.4**
30′	0′.0	0′.1	0′.1	0′.2	0′.2	0′.3	0′.3	0′.4	0′.4	0′.5	0′.5	0′.6	0′.6	0′.7	**0′.5**
36′	0′.0	0′.1	0′.1	0′.2	0′.2	0′.3	0′.4	0′.4	0′.5	0′.5	0′.6	0′.7	0′.7	0′.8	**0′.6**
42′	0′.0	0′.1	0′.1	0′.2	0′.3	0′.4	0′.4	0′.5	0′.6	0′.6	0′.7	0′.8	0′.8	0′.9	**0′.7**
48′	0′.0	0′.1	0′.2	0′.2	0′.3	0′.4	0′.5	0′.6	0′.6	0′.7	0′.8	0′.9	1′.0	1′.0	**0′.8**
54′	0′.0	0′.1	0′.2	0′.3	0′.4	0′.5	0′.5	0′.6	0′.7	0′.8	0′.9	1′.0	1′.1	1′.2	**0′.9**
60′	0′.0	0′.1	0′.2	0′.3	0′.4	0′.5	0′.6	0′.7	0′.8	0′.9	1′.0	1′.1	1′.2	1′.3	**1′.0**
	0′.0	**0′.1**	**0′.2**	**0′.3**	**0′.4**	**0′.5**	**0′.6**	**0′.7**	**0′.8**	**0′.9**	**1′.0**	**1′.1**	**1′.2**	**1′.3**	

Variación tabular por minuto de paralaje
(corrección aditiva)