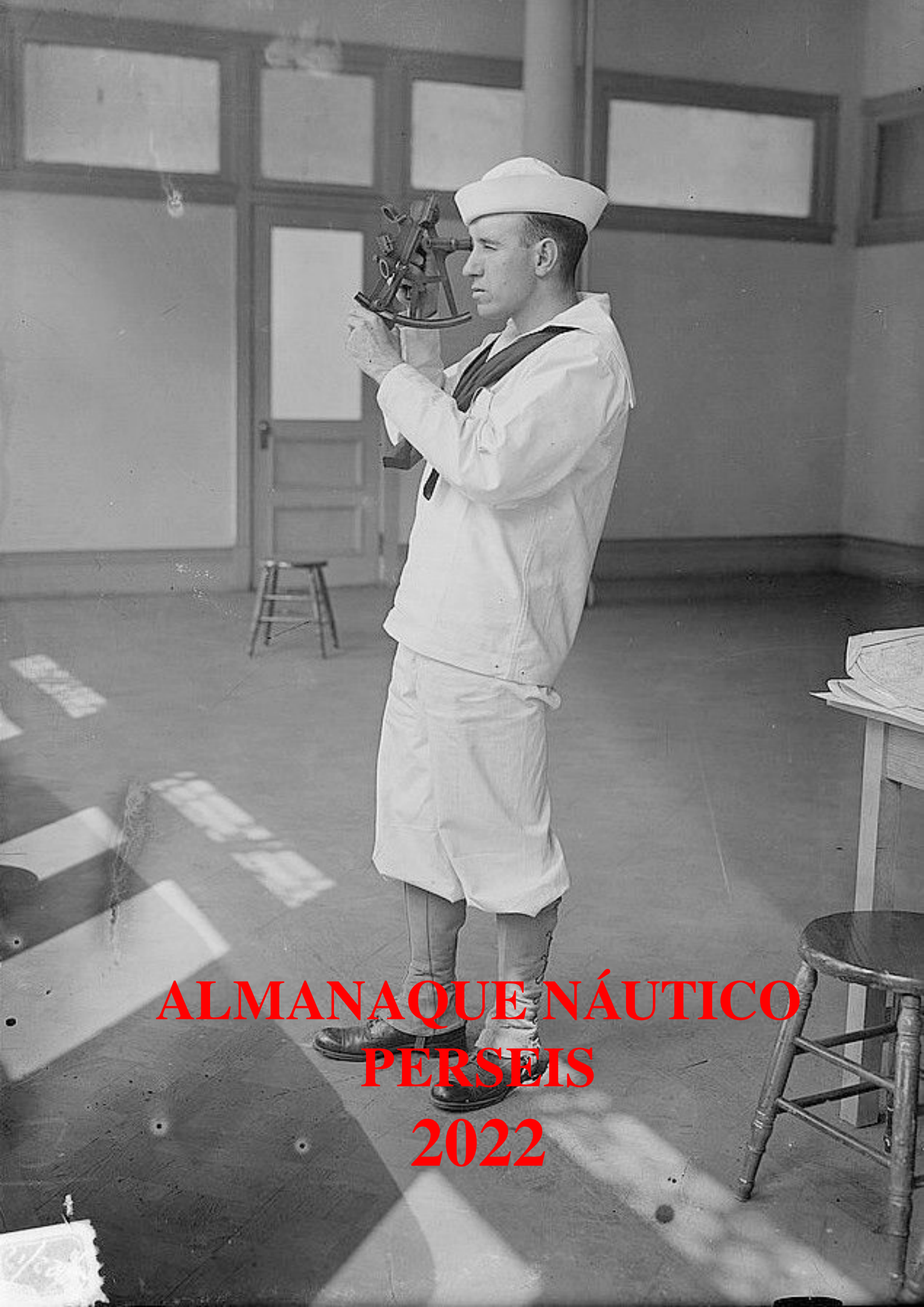


ALMANAQUE NÁUTICO PERSEIS 2022

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

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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, 2022

Estaciones

Hemisferio N	*Inicio (hora UT)*	*Duración (días)*	*Hemisferio S*
Primavera	20 de marzo a las 15^h33^m	92.75	Otoño
Verano	21 de junio a las 09^h14^m	93.66	Invierno
Otoño	23 de septiembre a las 01^h04^m	89.85	Primavera
Invierno	21 de diciembre a las 21^h48^m	88.99	Verano

Órbita terrestre

Ápside	*Fecha (hora UT)*	*Distancia (ua)*
Perihelio	4 de enero a las 06^h54^m	0.983337
Afelio	4 de julio a las 07^h11^m	1.016715

Fases de la Luna (hora UT)

Luna Nueva	*Cuarto Creciente*	*Luna Llena*	*Cuarto Menguante*
2 ene 18:33	9 ene 18:11	17 ene 23:49	25 ene 13:41
1 feb 05:46	8 feb 13:50	16 feb 16:57	23 feb 22:32
2 mar 17:35	10 mar 10:45	18 mar 07:17	25 mar 05:37
1 abr 06:24	9 abr 06:47	16 abr 18:55	23 abr 11:56
30 abr 20:28	9 may 00:21	16 may 04:14	22 may 18:43
30 may 11:30	7 jun 14:48	14 jun 11:52	21 jun 03:11
29 jun 02:52	7 jul 02:14	13 jul 18:37	20 jul 14:18
28 jul 17:55	5 ago 11:06	12 ago 01:36	19 ago 04:36
27 ago 08:17	3 sep 18:08	10 sep 09:59	17 sep 21:52
25 sep 21:54	3 oct 00:14	9 oct 20:55	17 oct 17:15
25 oct 10:49	1 nov 06:37	8 nov 11:02	16 nov 13:27
23 nov 22:57	30 nov 14:36	8 dic 04:08	16 dic 08:56
23 dic 10:17	30 dic 01:21		

Eclipses

I Eclipse parcial de Sol, el sábado 30 de abril.

II Eclipse total de Luna, el lunes 16 de mayo.

III Eclipse parcial de Sol, el martes 25 de octubre.

IV Eclipse total de Luna, el martes 8 de noviembre.

FENÓMENOS ASTRONÓMICOS RELEVANTES, 2022

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 anterior 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

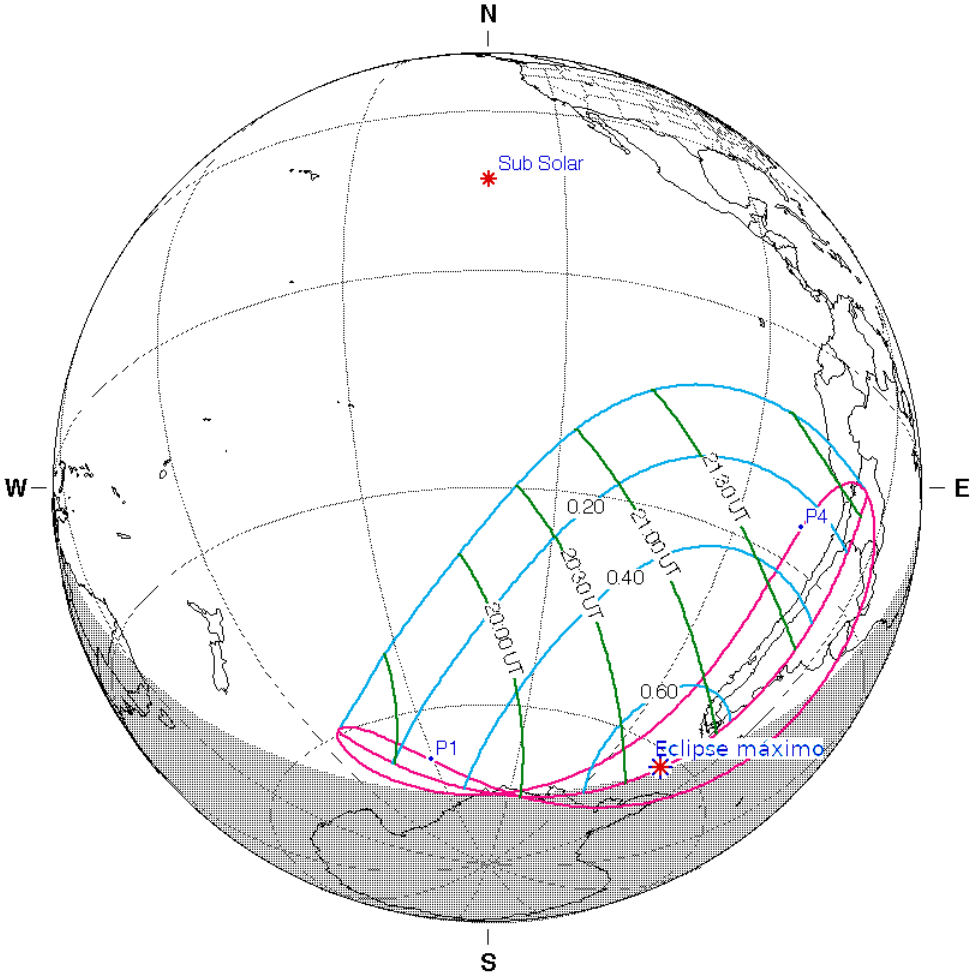
En astronomía, el término eclipse puede aplicarse a cualquier oscurecimiento, total o parcial, de la luz de un cuerpo celeste por otro. Pero el término está habitualmente restringido a un eclipse del Sol por la Luna (eclipse solar) o de la Luna por la Tierra (eclipse lunar), mientras que un eclipse del 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 parcial de Sol, sábado 30 de abril

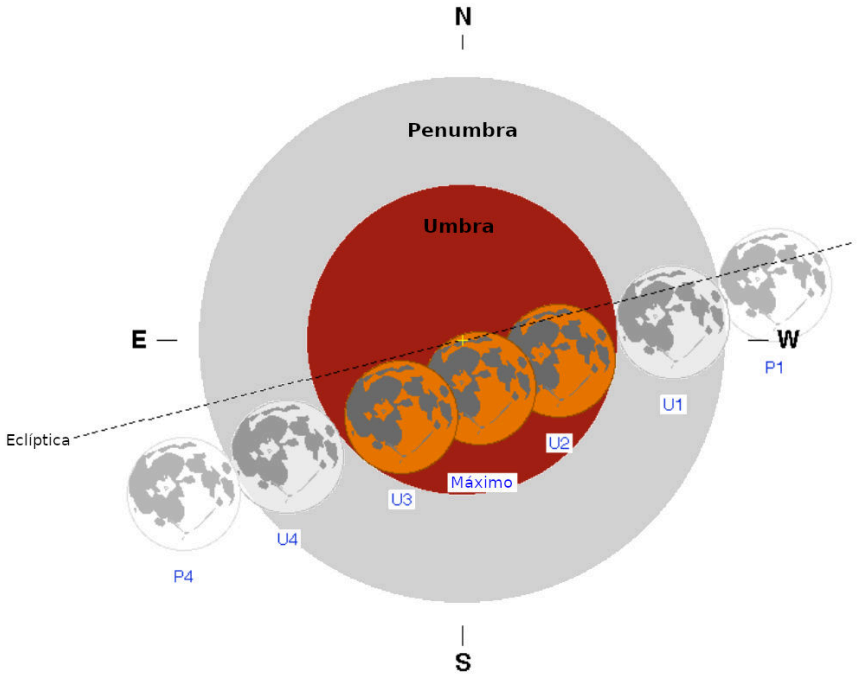
Este eclipse será visible en el Cono Sur americano, sudeste del Pacífico y en una pequeña parte de la Antártida.
La fase penumbral comenzará a la 18^h45^m UT (P1) y acabará a las 23^h38^m UT (P4). El eclipse máximo se producirá a las 20^h41^m UT

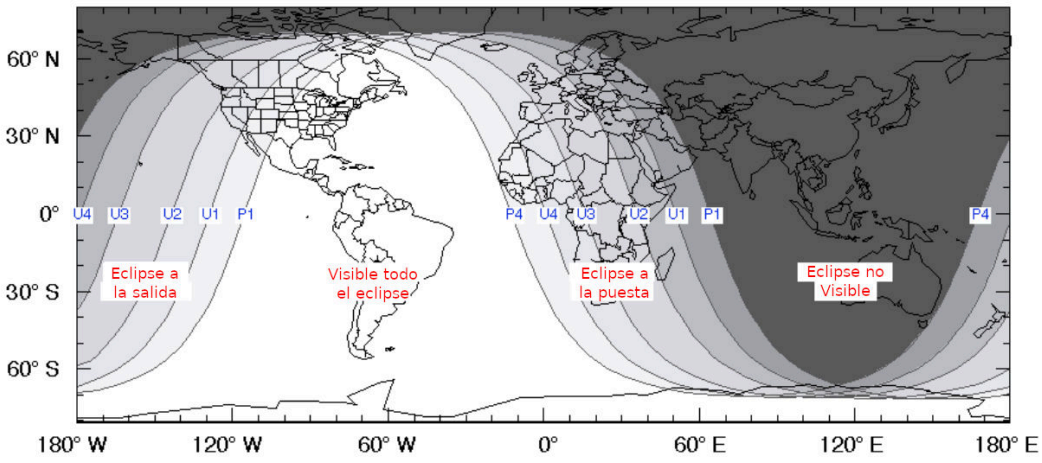


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Eclipse total de Luna, lunes 16 de mayo

Este eclipse será visible en toda América, exceptuando la parte noroccidental de América del Norte dónde la Luna ya saldrá eclipsada. En Europa y África será visible a la puesta.
La fase penumbral comenzará a la 01^h32^m UT (P1) y acabará a las 06^h51^m UT (P4). El primer contacto exterior con la umbra será a las 02^h28^m UT (U1) y el último a las 05^h55^m UT.

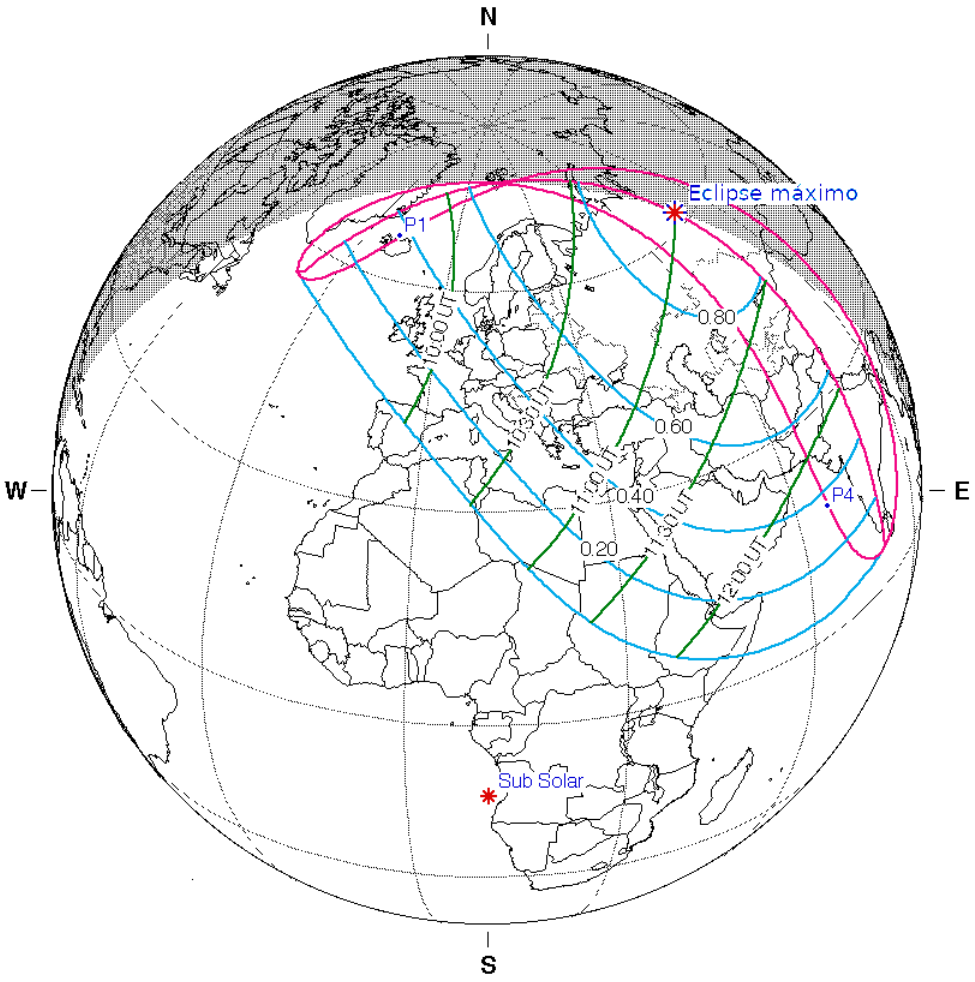




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Eclipse parcial de Sol, martes 25 de octubre

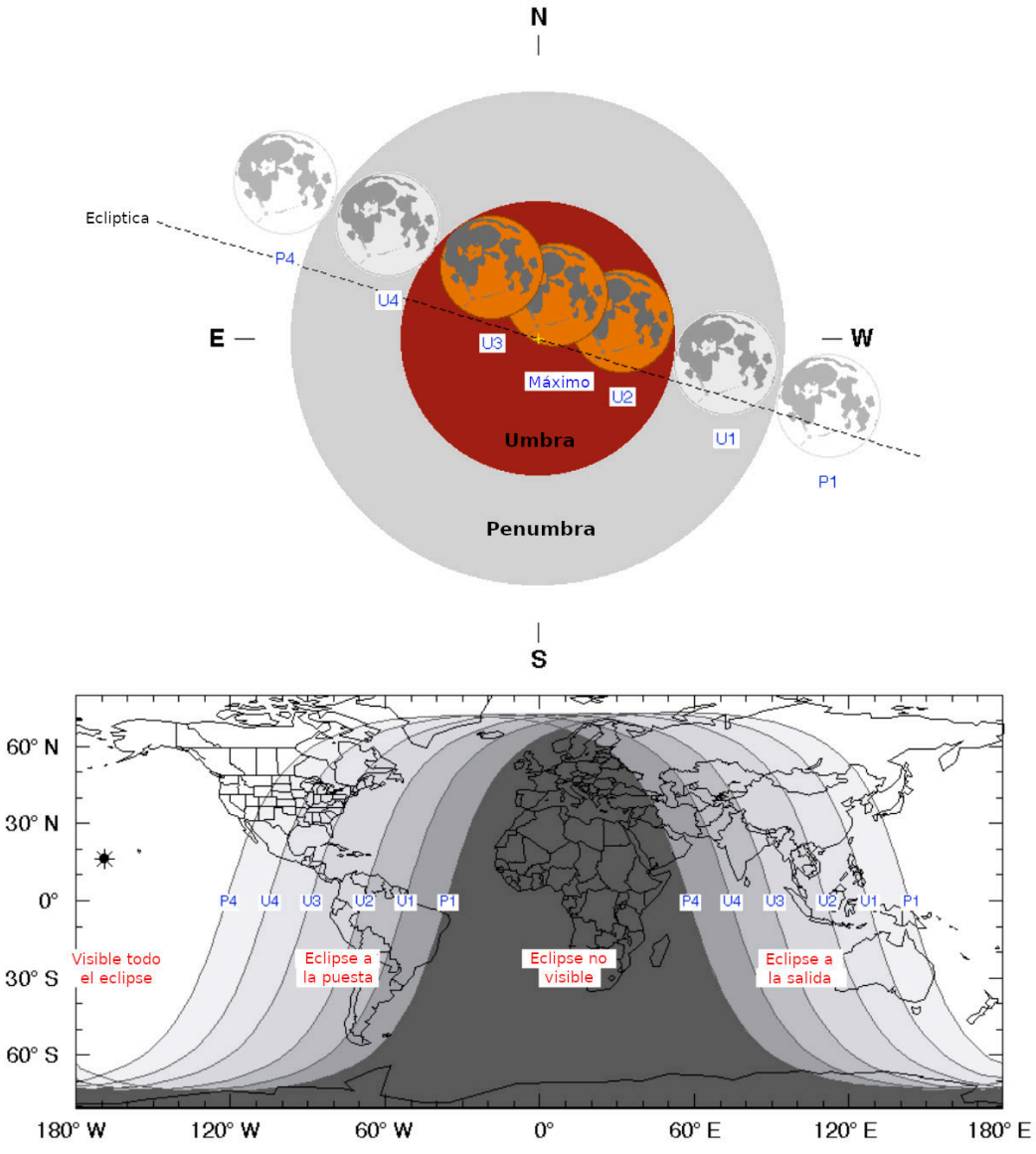
Este eclipse será visible en toda Europa a excepción de la mitad sudoccidental de la península ibérica, la parte sudoccidental de Asia y la nororiental de África.
El primer contacto con la penumbra será a las 08^h58^m UT (P1) y el último a las 13^h02^m UT (P4), siendo su duración de 4^h04^m.



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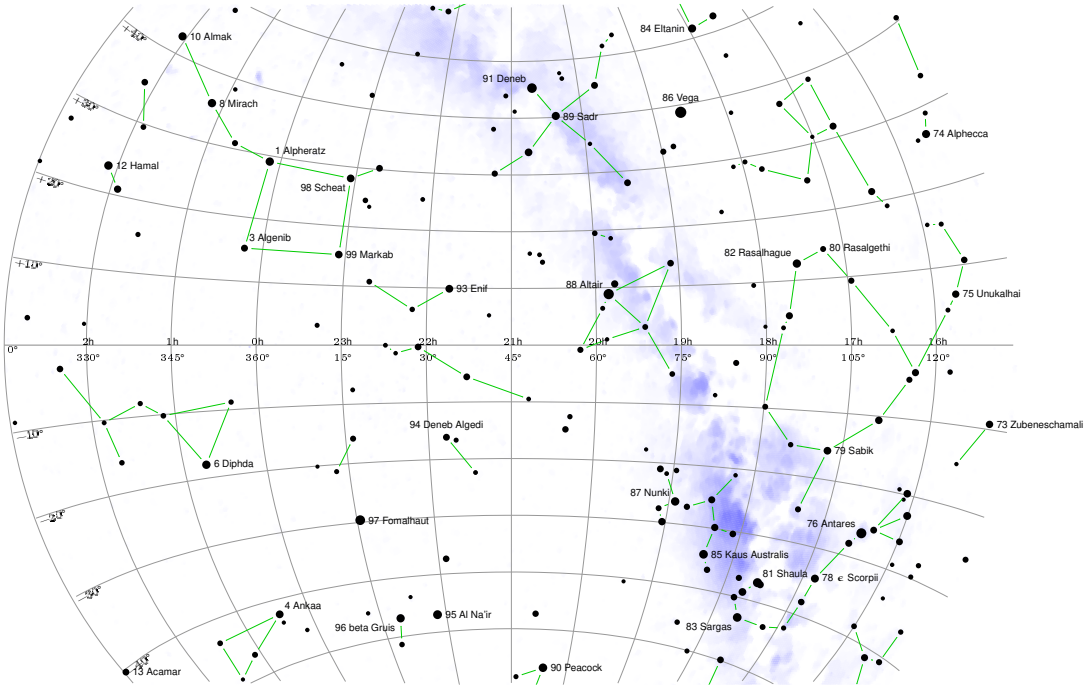
Eclipse total de Luna, martes 8 de noviembre

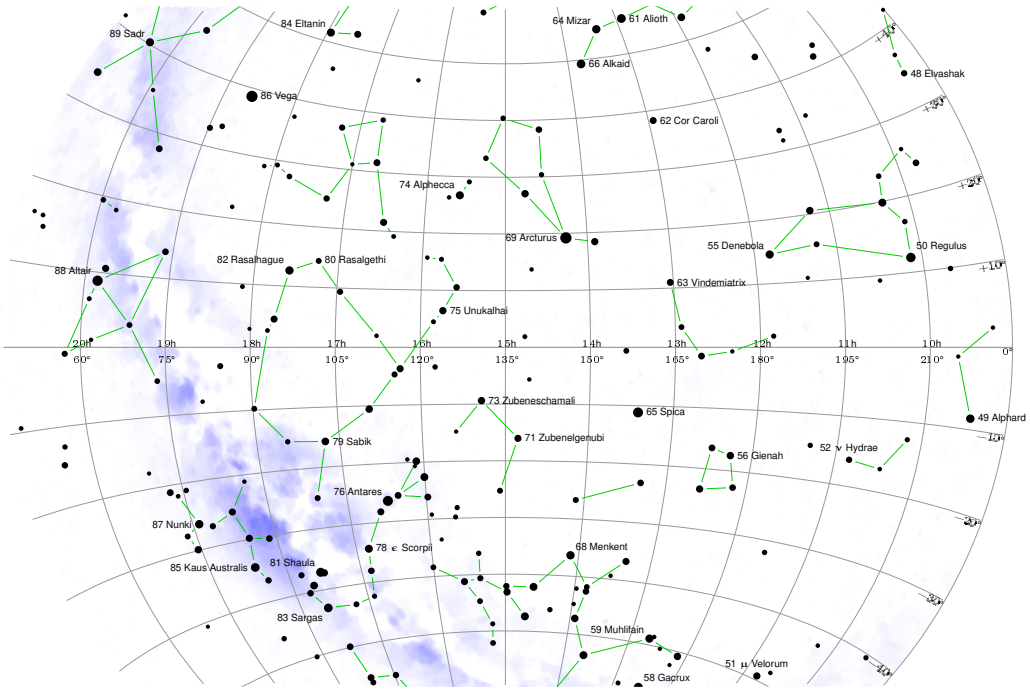
Este eclipse será visible en el Pacífico desde el extremo oriental de Asia hasta la parte noroccidental de América del Norte.
La fase penumbral comenzará a la 08^h02^m UT (P1) y acabará a las 13^h56^m UT (P4). El primer contacto exterior con la umbra será a las 09^h09^m UT (U1) y el último a las 12^h49^m UT (U4).



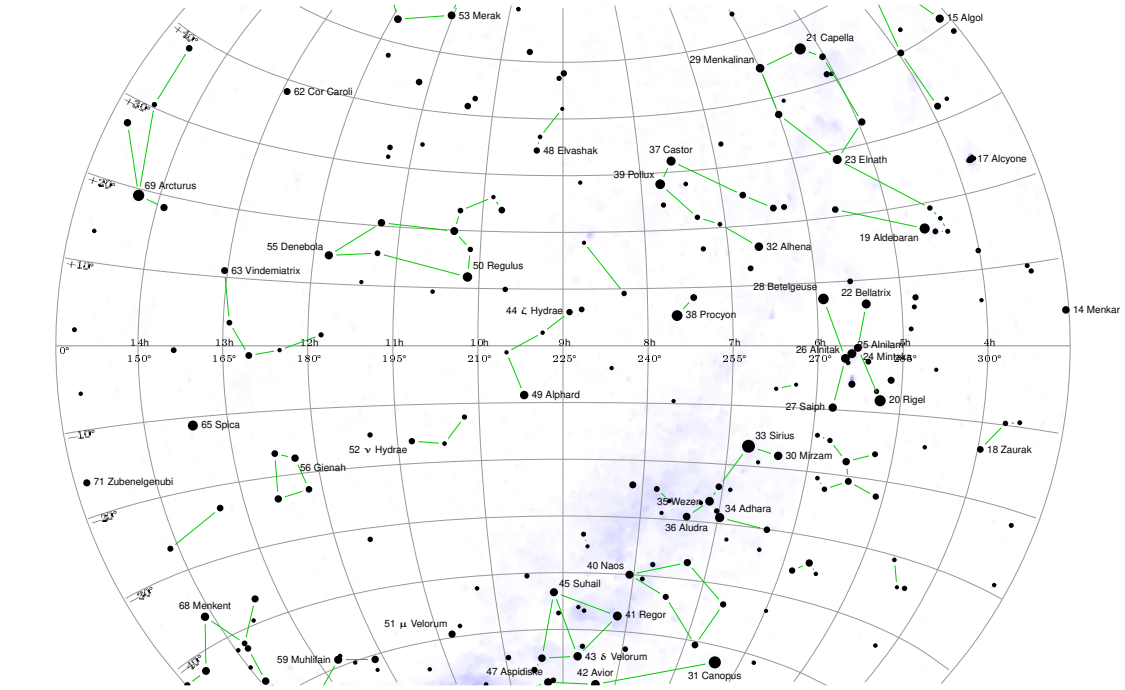
© F. Espenak

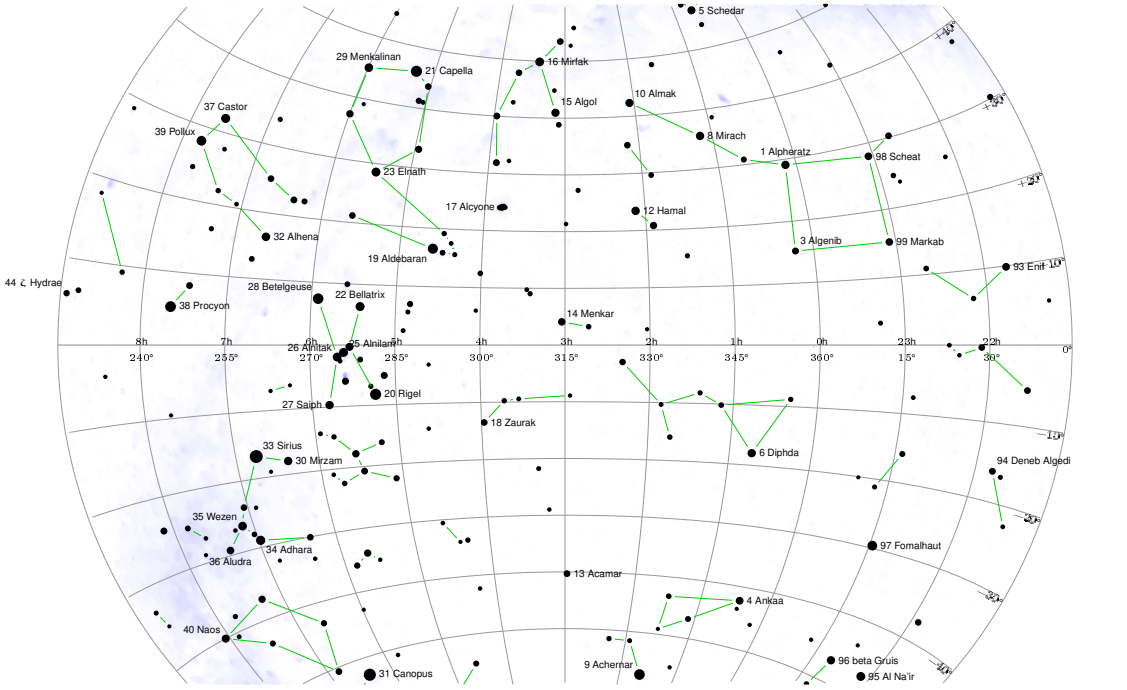
Mapas estelares





Mapas estelares





UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 27^{d}.7		PHE	4^{h}: 61′.1									
	PMG: 12^{h} 03^{m}.5				SD: 16′.6			12^{h}: 61′.2									
					PMG: 10^{h} 41^{m}			20^{h}: 61′.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	179	10.5	−23	01.2	206	32.5	−23	55.2		**60 N**	7 09	8 06	9 02	8 10	90	13 05	50
1	194	10.2		01.0	220	54.3 28	−24	02.5	73	**58**	7 02	7 54	8 45	7 47	85	30	53
2	209	09.9		00.8	235	16.1 28		09.6	71	**56**	6 56	44	31	27	83	13 49	56
3	224	09.6		00.6	249	37.8 27		16.6	70	**54**	50	35	19	7 11	81	14 06	57
4	239	09.3		00.4	263	59.4 26		23.4	68	**52**	44	28	8 08	6 58	78	20	58
5	254	09.0	−23	00.2	278	20.9 25	−24	30.0	66	**50**	6 39	7 20	7 58	6 45	78	14 32	60
6	269	08.7	−23	00.0	292	42.4 25	−24	36.4	64	**45**	6 28	7 05	7 38	6 21	75	14 58	61
7	284	08.4	−22	59.8	307	03.7 23		42.6	62	**40**	17	6 51	22	6 01	73	15 18	63
8	299	08.1		59.6	321	25.0 23		48.6	60	**35**	08	40	7 08	5 44	72	35	64
9	314	07.8		59.4	335	46.1 21	−24	54.5	59	**30**	6 00	30	6 56	30	71	15 50	64
10	329	07.5		59.2	350	07.2 21	−25	00.2	57	**20**	5 44	6 11	35	5 06	69	16 15	65
11	344	07.2	−22	58.9	4	28.3 21	−25	05.6	54	**10 N**	5 28	5 54	6 17	4 45	68	16 37	66
12	359	06.9	−22	58.7	18	49.2 19	−25	10.9	53	**0**	5 11	5 37	6 00	4 26	66	16 57	66
13	14	06.6		58.5	33	10.1 19		16.0	51	**10 S**	4 53	5 20	5 43	4 07	64	17 17	67
14	29	06.3		58.3	47	30.9 18		20.9	49	**20**	30	4 59	24	3 46	63	17 39	68
15	44	06.0		58.1	61	51.7 18		25.6	47	**30**	4 02	35	5 02	23	60	18 04	68
16	59	05.7		57.9	76	12.4 17		30.2	46	**35**	3 44	20	4 50	3 09	59	19	69
17	74	05.5	−22	57.7	90	33.0 16	−25	34.5	43	**40**	3 21	4 02	4 35	2 53	57	18 36	69
18	89	05.2	−22	57.5	104	53.6 16	−25	38.6	41	**45**	2 51	3 40	4 17	2 35	54	18 57	69
19	104	04.9		57.2	119	14.1 15		42.5	39	**50**	2 07	3 11	3 55	11	52	19 23	70
20	119	04.6		57.0	133	34.6 15		46.2	37	**52**	1 41	2 56	45	2 00	50	35	71
21	134	04.3		56.8	147	55.0 14		49.7	35	**54**	1 01	39	33	1 48	47	19 50	71
22	149	04.0		56.6	162	15.4 14		53.0	33	**56**	** **	2 18	19	33	45	20 07	71
23	164	03.7		56.4	176	35.8 14		56.2	32	**58**	** **	1 50	3 03	1 17	41	27	72
24	179	03.4	−22	56.1	190	56.1 13	−25	59.1	29	**60 S**	** **	1 06	2 43	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		
	17^{h} 14^{m}.7		PMG: 12^{h} 53^{m}			PMG: 10^{h} 04^{m}			PMG: 15^{h} 27^{m}			PMG: 14^{h} 14^{m}		
	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	13.5	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

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 28^{d}.7		PHE	4^{h}: 61′.2									
	PMG: 12^{h} 04^{m}.0				SD: 16′.7			12^{h}: 61′.2									
					PMG: 11^{h} 48^{m}			20^{h}: 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	179	03.4	−22	56.1	190	56.1 13	−25	59.1	27	**60 N**	15 07	16 03	16 59	9 40	54	13 55	84
1	194	03.1		55.9	205	16.4 12	−26	01.8	25	**58**	23	14	17 06	9 12	57	14 23	81
2	209	02.8		55.7	219	36.6 13		04.3	23	**56**	37	24	13	8 50	59	14 45	79
3	224	02.5		55.5	233	56.9 12		06.6	21	**54**	15 50	33	19	32	60	15 03	77
4	239	02.2		55.3	248	17.1 11		08.7	18	**52**	16 00	41	24	16	61	18	76
5	254	01.9	−22	55.0	262	37.2 12	−26	10.5	17	**50**	16 10	16 48	17 29	8 03	62	15 32	75
6	269	01.6	−22	54.8	276	57.4 11	−26	12.2	15	**45**	16 30	17 03	17 41	7 36	63	15 59	73
7	284	01.3		54.6	291	17.5 12		13.7	12	**40**	16 46	17	17 51	7 14	64	16 21	71
8	299	01.1		54.4	305	37.7 11		14.9	11	**35**	17 00	28	18 00	6 56	65	39	70
9	314	00.8		54.1	319	57.8 11		16.0	8	**30**	12	38	08	41	65	16 54	70
10	329	00.5		53.9	334	17.9 11		16.8	7	**20**	33	17 57	24	6 15	65	17 20	68
11	344	00.2	−22	53.7	348	38.0 12	−26	17.5	4	**10 N**	17 51	18 13	18 40	5 53	66	17 43	66
12	358	59.9	−22	53.4	2	58.2 11	−26	17.9	2	**0**	18 08	18 30	18 56	5 32	66	18 03	66
13	13	59.6		53.2	17	18.3 11		18.1	1	**10 S**	25	18 48	19 15	5 11	67	24	64
14	28	59.3		53.0	31	38.4 12		18.2	2	**20**	18 43	19 08	19 37	4 49	67	18 47	62
15	43	59.0		52.8	45	58.6 12		18.0	4	**30**	19 05	32	20 05	23	67	19 12	61
16	58	58.7		52.5	60	18.8 11		17.6	6	**35**	17	19 47	23	4 08	67	28	59
17	73	58.4	−22	52.3	74	38.9 13	−26	17.0	8	**40**	19 32	20 05	20 46	3 50	68	19 45	58
18	88	58.1	−22	52.1	88	59.2 12	−26	16.2	11	**45**	19 50	20 27	21 15	3 29	68	20 06	57
19	103	57.8		51.8	103	19.4 13		15.1	12	**50**	20 11	20 55	21 58	3 03	68	33	53
20	118	57.6		51.6	117	39.7 13		13.9	14	**52**	22	21 10	22 24	2 50	68	20 46	52
21	133	57.3		51.3	132	00.0 13		12.5	16	**54**	34	27	23 02	35	68	21 01	50
22	148	57.0		51.1	146	20.3 13		10.9	19	**56**	20 47	21 48	** **	2 18	68	18	48
23	163	56.7		50.9	160	40.7 14		09.0	20	**58**	21 03	22 15	** **	1 58	67	21 39	44
24	178	56.4	−22	50.6	175	01.1 14	−26	07.0		**60 S**	21 23	22 56	** **	1 32	67	22 05	39

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17^{h} 10^{m}.7		PMG: 12^{h} 46^{m}			PMG: 10^{h} 03^{m}			PMG: 15^{h} 24^{m}			PMG: 14^{h} 10^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	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
1	116	39.2	182	37.0	24.1	224	12.0	36.1	143	29.3	08.2	161	56.1	58.8
2	131	41.7	197	40.9	23.7	239	12.5	36.4	158	31.3	08.1	176	58.3	58.7
3	146	44.1	212	44.8	23.3	254	13.1	36.6	173	33.2	07.9	192	00.4	58.6
4	161	46.6	227	48.7	22.8	269	13.6	36.8	188	35.2	07.7	207	02.6	58.5
5	176	49.0	242	52.6	−18 22.4	284	14.2	−22 37.1	203	37.2	−12 07.5	222	04.8	−17 58.5
6	191	51.5	257	56.6	−18 22.0	299	14.7	−22 37.3	218	39.2	−12 07.4	237	07.0	−17 58.4
7	206	54.0	273	00.5	21.6	314	15.3	37.6	233	41.2	07.2	252	09.2	58.3
8	221	56.4	288	04.4	21.1	329	15.8	37.8	248	43.2	07.0	267	11.4	58.2
9	236	58.9	303	08.4	20.7	344	16.4	38.0	263	45.2	06.8	282	13.6	58.2
10	252	01.4	318	12.3	20.3	359	16.9	38.3	278	47.2	06.6	297	15.8	58.1
11	267	03.8	333	16.2	−18 19.8	14	17.5	−22 38.5	293	49.2	−12 06.5	312	18.0	−17 58.0
12	282	06.3	348	20.2	−18 19.4	29	18.0	−22 38.8	308	51.2	−12 06.3	327	20.1	−17 57.9
13	297	08.8	3	24.1	19.0	44	18.6	39.0	323	53.2	06.1	342	22.3	57.9
14	312	11.2	18	28.1	18.6	59	19.2	39.2	338	55.2	05.9	357	24.5	57.8
15	327	13.7	33	32.0	18.1	74	19.7	39.5	353	57.2	05.7	12	26.7	57.7
16	342	16.2	48	36.0	17.7	89	20.3	39.7	8	59.2	05.6	27	28.9	57.6
17	357	18.6	63	39.9	−18 17.3	104	20.8	−22 39.9	24	01.2	−12 05.4	42	31.1	−17 57.6
18	12	21.1	78	43.9	−18 16.9	119	21.4	−22 40.2	39	03.1	−12 05.2	57	33.3	−17 57.5
19	27	23.5	93	47.8	16.5	134	21.9	40.4	54	05.1	05.0	72	35.5	57.4
20	42	26.0	108	51.8	16.0	149	22.5	40.6	69	07.1	04.9	87	37.6	57.3
21	57	28.5	123	55.7	15.6	164	23.0	40.9	84	09.1	04.7	102	39.8	57.3
22	72	30.9	138	59.7	15.2	179	23.6	41.1	99	11.1	04.5	117	42.0	57.2
23	87	33.4	154	03.7	14.8	194	24.1	41.3	114	13.1	04.3	132	44.2	57.1
24	102	35.9	169	07.6	−18 14.4	209	24.7	−22 41.6	129	15.1	−12 04.1	147	46.4	−17 57.0
Dif	—			+39	+4		+6	−2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 0ᵈ.2		PHE	4ʰ: 61′.0									
	PMG: 12ʰ 04ᵐ.5				SD: 16′.6			12ʰ: 60′.9									
					PMG: 12ʰ 54ᵐ			20ʰ: 60′.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	178	56.4	−22	50.6	175	01.1	−26	07.0		**60 N**	7 09	8 05	9 01	10 34	26	15 19	104
1	193	56.1		50.4	189	21.5 14		04.7	23	**58**	7 02	7 54	8 45	10 09	32	15 44	97
2	208	55.8		50.2	203	42.0 15	−26	02.3	24	**56**	6 55	44	31	9 49	37	16 04	93
3	223	55.5		49.9	218	02.6 16	−25	59.7	26	**54**	49	35	18	32	40	20	89
4	238	55.2		49.7	232	23.2 16		56.8	29	**52**	44	27	8 08	17	43	34	87
5	253	54.9	−22	49.4	246	43.9 17	−25	53.8	30	**50**	6 39	7 20	7 58	9 05	45	16 47	84
6	268	54.7	−22	49.2	261	04.6 17	−25	50.5	33	**45**	6 28	7 05	7 38	8 39	49	17 12	80
7	283	54.4		48.9	275	25.4 18		47.1	34	**40**	18	6 52	22	18	52	32	76
8	298	54.1		48.7	289	46.3 19		43.5	36	**35**	09	40	7 08	8 01	54	17 49	74
9	313	53.8		48.4	304	07.2 19		39.6	39	**30**	6 00	30	6 56	7 46	56	18 04	71
10	328	53.5		48.2	318	28.2 20		35.6	40	**20**	5 44	6 12	36	7 20	59	28	68
11	343	53.2	−22	48.0	332	49.3 21	−25	31.4	42	**10 N**	5 29	5 55	6 18	6 59	61	18 49	65
12	358	52.9	−22	47.7	347	10.5 22	−25	27.0	44	**0**	5 12	5 38	6 01	6 38	64	19 09	61
13	13	52.6		47.5	1	31.7 22		22.4	46	**10 S**	4 54	21	5 44	6 18	65	28	59
14	28	52.4		47.2	15	53.0 23		17.6	48	**20**	32	5 01	25	5 56	68	19 49	55
15	43	52.1		47.0	30	14.5 25		12.7	49	**30**	4 03	4 36	5 04	30	71	20 13	52
16	58	51.8		46.7	44	36.0 25		07.5	52	**35**	3 45	22	4 51	5 15	73	27	49
17	73	51.5	−22	46.4	58	57.5 25	−25	02.2	53	**40**	3 23	4 04	4 37	4 58	74	20 43	47
18	88	51.2	−22	46.2	73	19.2 27	−24	56.7	55	**45**	2 53	3 42	4 19	4 37	77	21 03	42
19	103	50.9		45.9	87	41.0 28		51.0	57	**50**	2 10	3 14	3 57	4 11	80	26	39
20	118	50.6		45.7	102	02.9 29		45.1	59	**52**	1 45	2 59	47	3 58	82	38	36
21	133	50.3		45.4	116	24.8 29		39.0	61	**54**	1 06	42	35	43	84	21 51	33
22	148	50.1		45.2	130	46.9 31		32.8	62	**56**	** **	2 21	21	26	87	22 06	29
23	163	49.8		44.9	145	09.1 32		26.4	64	**58**	** **	1 54	3 05	3 05	91	23	25
24	178	49.5	−22	44.7	159	31.3 32	−24	19.8	66	**60 S**	** **	1 12	2 46	2 39	96	22 44	20

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17ʰ 06ᵐ.8		PMG: 12ʰ 40ᵐ			PMG: 10ʰ 02ᵐ			PMG: 15ʰ 21ᵐ			PMG: 14ʰ 07ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	102	35.9	169	07.6	−18 14.4	209	24.7	−22 41.6	129	15.1	−12 04.1	147	46.4	−17 57.0
1	117	38.3	184	11.6	13.9	224	25.2	41.8	144	17.1	04.0	162	48.6	57.0
2	132	40.8	199	15.6	13.5	239	25.8	42.0	159	19.1	03.8	177	50.8	56.9
3	147	43.3	214	19.6	13.1	254	26.3	42.3	174	21.1	03.6	192	53.0	56.8
4	162	45.7	229	23.5	12.7	269	26.9	42.5	189	23.1	03.4	207	55.1	56.7
5	177	48.2	244	27.5	−18 12.3	284	27.4	−22 42.7	204	25.0	−12 03.2	222	57.3	−17 56.7
6	192	50.7	259	31.5	−18 11.8	299	28.0	−22 43.0	219	27.0	−12 03.1	237	59.5	−17 56.6
7	207	53.1	274	35.5	11.4	314	28.5	43.2	234	29.0	02.9	253	01.7	56.5
8	222	55.6	289	39.5	11.0	329	29.1	43.4	249	31.0	02.7	268	03.9	56.4
9	237	58.0	304	43.5	10.6	344	29.6	43.6	264	33.0	02.5	283	06.1	56.4
10	253	00.5	319	47.5	10.2	359	30.2	43.9	279	35.0	02.3	298	08.3	56.3
11	268	03.0	334	51.5	−18 09.8	14	30.7	−22 44.1	294	37.0	−12 02.2	313	10.5	−17 56.2
12	283	05.4	349	55.5	−18 09.4	29	31.3	−22 44.3	309	39.0	−12 02.0	328	12.6	−17 56.1
13	298	07.9	4	59.5	08.9	44	31.8	44.6	324	41.0	01.8	343	14.8	56.1
14	313	10.4	20	03.5	08.5	59	32.4	44.8	339	43.0	01.6	358	17.0	56.0
15	328	12.8	35	07.5	08.1	74	32.9	45.0	354	44.9	01.4	13	19.2	55.9
16	343	15.3	50	11.5	07.7	89	33.5	45.2	9	46.9	01.3	28	21.4	55.8
17	358	17.8	65	15.5	−18 07.3	104	34.0	−22 45.5	24	48.9	−12 01.1	43	23.6	−17 55.7
18	13	20.2	80	19.5	−18 06.9	119	34.6	−22 45.7	39	50.9	−12 00.9	58	25.8	−17 55.7
19	28	22.7	95	23.5	06.5	134	35.1	45.9	54	52.9	00.7	73	27.9	55.6
20	43	25.2	110	27.5	06.1	149	35.6	46.1	69	54.9	00.5	88	30.1	55.5
21	58	27.6	125	31.5	05.6	164	36.2	46.4	84	56.9	00.4	103	32.3	55.4
22	73	30.1	140	35.5	05.2	179	36.7	46.6	99	58.9	−12 00.2	118	34.5	55.4
23	88	32.5	155	39.5	04.8	194	37.3	46.8	115	00.8	−12 00.0	133	36.7	55.3
24	103	35.0	170	43.6	−18 04.4	209	37.8	−22 47.0	130	02.8	−11 59.8	148	38.9	−17 55.2
Dif	—			+40	+4		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 1^{d}.2		PHE	4^{h}: 60′.5									
	PMG: 12^{h} 04^{m}.9				SD: 16′.5			12^{h}: 60′.2									
					PMG: 13^{h} 56^{m}			20^{h}: 60′.0									
	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	49.5	−22	44.7	159	31.3	−24	19.8		**60 N**	15 10	16 06	17 02	11 00	12	17 03	106
1	193	49.2		44.4	173	53.7 34		13.1	67	**58**	26	17	09	10 41	19	21	100
2	208	48.9		44.1	188	16.2 35	−24	06.2	69	**56**	40	26	15	26	22	37	94
3	223	48.6		43.9	202	38.8 36	−23	59.1	71	**54**	15 52	35	21	12	27	17 49	91
4	238	48.3		43.6	217	01.5 37		51.9	72	**52**	16 03	43	26	10 00	30	18 01	87
5	253	48.1	−22	43.4	231	24.4 39	−23	44.5	74	**50**	16 12	16 50	17 31	9 50	32	18 11	85
6	268	47.8	−22	43.1	245	47.3 39	−23	36.9	76	**45**	16 32	17 05	17 42	9 28	37	18 32	79
7	283	47.5		42.8	260	10.4 41		29.2	77	**40**	16 48	18	17 52	9 10	41	18 48	76
8	298	47.2		42.6	274	33.5 41		21.3	79	**35**	17 02	30	18 01	8 55	44	19 03	71
9	313	46.9		42.3	288	56.8 43		13.2	81	**30**	13	40	09	42	47	15	69
10	328	46.6		42.0	303	20.2 44	−23	05.0	82	**20**	34	17 58	25	19	52	36	64
11	343	46.4	−22	41.8	317	43.8 46	−22	56.7	83	**10 N**	17 52	18 15	18 41	8 00	55	19 54	59
12	358	46.1	−22	41.5	332	07.4 46	−22	48.2	85	**0**	18 09	18 31	18 57	7 42	58	20 10	56
13	13	45.8		41.2	346	31.2 48		39.6	86	**10 S**	26	18 49	19 15	23	63	27	52
14	28	45.5		41.0	0	55.1 49		30.8	88	**20**	18 44	19 08	19 37	7 04	66	20 44	48
15	43	45.2		40.7	15	19.2 51		21.9	89	**30**	19 05	32	20 05	6 41	70	21 05	43
16	58	44.9		40.4	29	43.3 51		12.8	91	**35**	18	19 47	23	28	73	16	41
17	73	44.7	−22	40.2	44	07.6 53	−22	03.6	92	**40**	19 32	20 05	20 46	6 12	76	21 30	37
18	88	44.4	−22	39.9	58	32.0 54	−21	54.2	94	**45**	19 49	20 26	21 15	5 54	80	21 45	33
19	103	44.1		39.6	72	56.5 55		44.8	94	**50**	20 11	20 54	21 57	31	85	22 05	27
20	118	43.8		39.3	87	21.2 57		35.1	97	**52**	21	21 09	22 22	20	87	14	25
21	133	43.5		39.1	101	46.0 58		25.4	97	**54**	33	25	22 58	5 07	91	24	22
22	148	43.2		38.8	116	10.9 59		15.5	99	**56**	20 46	21 46	** **	4 53	94	35	19
23	163	43.0		38.5	130	36.0 61	−21	05.5	100	**58**	21 02	22 12	** **	36	99	22 48	15
24	178	42.7	−22	38.2	145	01.1 61	−20	55.4	101	**60 S**	21 21	22 52	** **	4 15	105	23 04	9

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	17^{h} 02^{m}.9		PMG: 12^{h} 34^{m}			PMG: 10^{h} 01^{m}			PMG: 15^{h} 18^{m}			PMG: 14^{h} 03^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	103	35.0	170	43.6	−18 04.4	209	37.8	−22 47.0	130	02.8	−11 59.8	148	38.9	−17 55.2
1	118	37.5	185	47.6	04.0	224	38.4	47.3	145	04.8	59.6	163	41.1	55.1
2	133	39.9	200	51.6	03.6	239	38.9	47.5	160	06.8	59.5	178	43.3	55.1
3	148	42.4	215	55.6	03.2	254	39.5	47.7	175	08.8	59.3	193	45.4	55.0
4	163	44.9	230	59.7	02.8	269	40.0	47.9	190	10.8	59.1	208	47.6	54.9
5	178	47.3	246	03.7	−18 02.4	284	40.6	−22 48.2	205	12.8	−11 58.9	223	49.8	−17 54.8
6	193	49.8	261	07.7	−18 02.0	299	41.1	−22 48.4	220	14.8	−11 58.7	238	52.0	−17 54.8
7	208	52.3	276	11.8	01.6	314	41.7	48.6	235	16.7	58.6	253	54.2	54.7
8	223	54.7	291	15.8	01.2	329	42.2	48.8	250	18.7	58.4	268	56.4	54.6
9	238	57.2	306	19.8	00.8	344	42.7	49.0	265	20.7	58.2	283	58.6	54.5
10	253	59.7	321	23.9	−18 00.4	359	43.3	49.3	280	22.7	58.0	299	00.7	54.5
11	269	02.1	336	27.9	−18 00.0	14	43.8	−22 49.5	295	24.7	−11 57.8	314	02.9	−17 54.4
12	284	04.6	351	32.0	−17 59.6	29	44.4	−22 49.7	310	26.7	−11 57.6	329	05.1	−17 54.3
13	299	07.0	6	36.0	59.2	44	44.9	49.9	325	28.7	57.5	344	07.3	54.2
14	314	09.5	21	40.1	58.8	59	45.5	50.1	340	30.7	57.3	359	09.5	54.1
15	329	12.0	36	44.1	58.4	74	46.0	50.4	355	32.6	57.1	14	11.7	54.1
16	344	14.4	51	48.2	58.0	89	46.6	50.6	10	34.6	56.9	29	13.8	54.0
17	359	16.9	66	52.2	−17 57.6	104	47.1	−22 50.8	25	36.6	−11 56.7	44	16.0	−17 53.9
18	14	19.4	81	56.3	−17 57.2	119	47.6	−22 51.0	40	38.6	−11 56.6	59	18.2	−17 53.8
19	29	21.8	97	00.3	56.8	134	48.2	51.2	55	40.6	56.4	74	20.4	53.8
20	44	24.3	112	04.4	56.4	149	48.7	51.4	70	42.6	56.2	89	22.6	53.7
21	59	26.8	127	08.4	56.0	164	49.3	51.7	85	44.5	56.0	104	24.8	53.6
22	74	29.2	142	12.5	55.6	179	49.8	51.9	100	46.5	55.8	119	27.0	53.5
23	89	31.7	157	16.6	55.2	194	50.4	52.1	115	48.5	55.6	134	29.1	53.5
24	104	34.1	172	20.6	−17 54.8	209	50.9	−22 52.3	130	50.5	−11 55.5	149	31.3	−17 53.4
Dif	—			+40	+4		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 2ᵈ.2		PHE	4ʰ: 59′.7									
	PMG: 12ʰ 05ᵐ.4				SD: 16′.3			12ʰ: 59′.4									
					PMG: 14ʰ 53ᵐ			20ʰ: 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	178	42.7	−22	38.2	145	01.1	−20	55.4		**60 N**	7 08	8 04	9 00	11 12	7	18 49	99
1	193	42.4		38.0	159	26.5 64		45.2	102	**58**	7 01	7 53	8 43	11 00	11	19 01	94
2	208	42.1		37.7	173	51.9 64		34.8	104	**56**	6 55	43	30	10 48	16	11	91
3	223	41.8		37.4	188	17.5 66		24.3	105	**54**	49	35	18	39	18	20	88
4	238	41.6		37.1	202	43.2 67		13.7	106	**52**	44	27	8 07	30	21	28	85
5	253	41.3	−22	36.8	217	09.0 68	−20	03.0	107	**50**	6 39	7 20	7 58	10 22	24	19 36	81
6	268	41.0	−22	36.6	231	35.0 70	−19	52.2	108	**45**	6 28	7 05	7 38	10 05	29	19 51	76
7	283	40.7		36.3	246	01.1 71		41.3	109	**40**	18	6 52	22	9 51	33	20 04	72
8	298	40.4		36.0	260	27.3 72		30.2	111	**35**	09	41	7 08	39	37	14	69
9	313	40.2		35.7	274	53.7 74		19.1	111	**30**	6 01	30	6 57	29	39	24	65
10	328	39.9		35.4	289	20.1 74	−19	07.8	113	**20**	5 45	6 12	36	9 11	44	40	59
11	343	39.6	−22	35.1	303	46.8 77	−18	56.5	113	**10 N**	5 30	5 56	6 18	8 55	49	20 53	55
12	358	39.3	−22	34.9	318	13.5 77	−18	45.0	115	**0**	5 13	5 39	6 02	8 40	53	21 06	51
13	13	39.0		34.6	332	40.4 79		33.5	115	**10 S**	4 55	22	5 45	26	57	19	46
14	28	38.8		34.3	347	07.4 80		21.8	117	**20**	33	5 02	26	8 10	61	32	42
15	43	38.5		34.0	1	34.5 81	−18	10.1	117	**30**	4 05	4 38	5 05	7 51	67	48	37
16	58	38.2		33.7	16	01.8 83	−17	58.3	118	**35**	3 47	23	4 53	41	70	21 57	33
17	73	37.9	−22	33.4	30	29.1 83	−17	46.4	119	**40**	3 25	4 06	4 38	7 28	74	22 07	30
18	88	37.7	−22	33.1	44	56.7 86	−17	34.4	120	**45**	2 56	3 44	4 21	7 14	78	22 18	27
19	103	37.4		32.8	59	24.3 86		22.3	121	**50**	2 14	16	4 00	6 56	83	32	22
20	118	37.1		32.5	73	52.1 88	−17	10.1	122	**52**	1 49	3 02	3 49	47	86	39	19
21	133	36.8		32.3	88	19.9 88	−16	57.8	123	**54**	1 13	2 45	38	38	89	46	16
22	148	36.5		32.0	102	47.9 90		45.5	123	**56**	** **	2 25	24	27	93	22 54	13
23	163	36.3		31.7	117	16.1 92		33.1	124	**58**	** **	1 58	3 09	15	97	23 03	10
24	178	36.0	−22	31.4	131	44.3 92	−16	20.6	125	**60 S**	** **	1 19	2 50	6 00	102	23 13	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	16ʰ 58ᵐ.9		PMG: 12ʰ 27ᵐ			PMG: 10ʰ 00ᵐ			PMG: 15ʰ 15ᵐ			PMG: 14ʰ 00ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	104	34.1	172	20.6	−17 54.8	209	50.9	−22 52.3	130	50.5	−11 55.5	149	31.3	−17 53.4
1	119	36.6	187	24.7	54.4	224	51.4	52.5	145	52.5	55.3	164	33.5	53.3
2	134	39.1	202	28.8	54.0	239	52.0	52.7	160	54.5	55.1	179	35.7	53.2
3	149	41.5	217	32.8	53.6	254	52.5	52.9	175	56.5	54.9	194	37.9	53.2
4	164	44.0	232	36.9	53.2	269	53.1	53.2	190	58.4	54.7	209	40.1	53.1
5	179	46.5	247	41.0	−17 52.8	284	53.6	−22 53.4	206	00.4	−11 54.6	224	42.3	−17 53.0
6	194	48.9	262	45.0	−17 52.4	299	54.2	−22 53.6	221	02.4	−11 54.4	239	44.4	−17 52.9
7	209	51.4	277	49.1	52.0	314	54.7	53.8	236	04.4	54.2	254	46.6	52.8
8	224	53.9	292	53.2	51.7	329	55.2	54.0	251	06.4	54.0	269	48.8	52.8
9	239	56.3	307	57.3	51.3	344	55.8	54.2	266	08.4	53.8	284	51.0	52.7
10	254	58.8	323	01.3	50.9	359	56.3	54.4	281	10.3	53.6	299	53.2	52.6
11	270	01.3	338	05.4	−17 50.5	14	56.9	−22 54.6	296	12.3	−11 53.5	314	55.4	−17 52.5
12	285	03.7	353	09.5	−17 50.1	29	57.4	−22 54.9	311	14.3	−11 53.3	329	57.5	−17 52.5
13	300	06.2	8	13.6	49.7	44	57.9	55.1	326	16.3	53.1	344	59.7	52.4
14	315	08.6	23	17.7	49.3	59	58.5	55.3	341	18.3	52.9	0	01.9	52.3
15	330	11.1	38	21.7	48.9	74	59.0	55.5	356	20.3	52.7	15	04.1	52.2
16	345	13.6	53	25.8	48.5	89	59.6	55.7	11	22.2	52.5	30	06.3	52.2
17	0	16.0	68	29.9	−17 48.2	105	00.1	−22 55.9	26	24.2	−11 52.4	45	08.5	−17 52.1
18	15	18.5	83	34.0	−17 47.8	120	00.6	−22 56.1	41	26.2	−11 52.2	60	10.6	−17 52.0
19	30	21.0	98	38.1	47.4	135	01.2	56.3	56	28.2	52.0	75	12.8	51.9
20	45	23.4	113	42.2	47.0	150	01.7	56.5	71	30.2	51.8	90	15.0	51.8
21	60	25.9	128	46.3	46.6	165	02.3	56.7	86	32.1	51.6	105	17.2	51.8
22	75	28.4	143	50.4	46.2	180	02.8	56.9	101	34.1	51.4	120	19.4	51.7
23	90	30.8	158	54.5	45.9	195	03.3	57.1	116	36.1	51.3	135	21.6	51.6
24	105	33.3	173	58.6	−17 45.5	210	03.9	−22 57.3	131	38.1	−11 51.1	150	23.7	−17 51.5
Dif	—			+41	+4		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 3ᵈ.2		PHE	4ʰ: 58′.8								
	PMG: 12ʰ 05ᵐ.8				SD: 16′.1			12ʰ: 58′.5								
					PMG: 15ʰ 45ᵐ			20ʰ: 58′.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	36.0	−22	31.4	131	44.3	−16	20.6	**60 N**	15 13	16 09	17 04	11 19	5	20 28	93
1	193	35.7		31.1	146	12.7 94	−16	08.0 126	**58**	29	20	11	11	8	35	89
2	208	35.4		30.8	160	41.2 95	−15	55.4 126	**56**	43	29	17	11 04	11	42	85
3	223	35.2		30.5	175	09.8 96		42.7 127	**54**	15 55	38	23	10 57	14	48	82
4	238	34.9		30.2	189	38.6 98		29.9 128	**52**	16 05	45	28	51	16	53	79
5	253	34.6	−22	29.9	204	07.4 98	−15	17.1 128	**50**	16 14	16 52	17 33	10 46	18	20 57	77
6	268	34.3	−22	29.6	218	36.4 100	−15	04.2 129	**45**	16 34	17 07	17 44	10 34	24	21 07	72
7	283	34.1		29.3	233	05.5 101	−14	51.2 130	**40**	16 50	20	17 54	24	28	16	67
8	298	33.8		29.0	247	34.7 102		38.2 130	**35**	17 03	31	18 03	16	31	23	64
9	313	33.5		28.7	262	04.0 103		25.1 131	**30**	15	41	11	10 08	34	29	61
10	328	33.2		28.4	276	33.4 104	−14	12.0 131	**20**	35	17 59	26	9 55	40	39	56
11	343	33.0	−22	28.1	291	03.0 106	−13	58.7 133	**10 N**	17 53	18 16	18 42	9 44	44	21 48	51
12	358	32.7	−22	27.8	305	32.6 106	−13	45.5 132	**0**	18 10	18 32	18 58	9 33	49	21 57	47
13	13	32.4		27.5	320	02.4 108		32.2 133	**10 S**	26	18 49	19 16	23	52	22 05	43
14	28	32.1		27.2	334	32.3 109		18.8 134	**20**	18 44	19 09	19 38	9 11	58	14	38
15	43	31.9		26.8	349	02.2 109	−13	05.4 134	**30**	19 05	33	20 05	8 58	63	25	32
16	58	31.6		26.5	3	32.3 111	−12	51.9 135	**35**	18	19 47	23	51	65	30	30
17	73	31.3	−22	26.2	18	02.5 112	−12	38.4 135	**40**	19 32	20 04	20 45	8 42	69	22 37	26
18	88	31.0	−22	25.9	32	32.8 113	−12	24.9 135	**45**	19 49	20 26	21 14	8 32	73	22 45	22
19	103	30.8		25.6	47	03.2 114	−12	11.3 136	**50**	20 10	20 53	21 55	19	79	54	17
20	118	30.5		25.3	61	33.7 115	−11	57.7 136	**52**	20	21 07	22 19	13	82	22 58	15
21	133	30.2		25.0	76	04.3 116		44.0 137	**54**	32	24	22 53	07	84	23 02	13
22	148	30.0		24.7	90	35.0 117		30.3 137	**56**	20 45	21 44	** **	8 00	87	07	11
23	163	29.7		24.4	105	05.8 118		16.5 138	**58**	21 00	22 09	** **	7 52	91	13	7
24	178	29.4	−22	24.1	119	36.7 119	−11	02.7 138	**60 S**	21 19	22 46	** **	7 42	96	23 19	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.2			Mag: +0.7		
	16ʰ 55ᵐ.0		PMG: 12ʰ 21ᵐ			PMG: 9ʰ 59ᵐ			PMG: 15ʰ 11ᵐ			PMG: 13ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	105	33.3	173	58.6	−17 45.5	210	03.9	−22 57.3	131	38.1	−11 51.1	150	23.7	−17 51.5
1	120	35.8	189	02.7	45.1	225	04.4	57.6	146	40.1	50.9	165	25.9	51.5
2	135	38.2	204	06.8	44.7	240	05.0	57.8	161	42.1	50.7	180	28.1	51.4
3	150	40.7	219	10.9	44.3	255	05.5	58.0	176	44.0	50.5	195	30.3	51.3
4	165	43.1	234	15.0	44.0	270	06.0	58.2	191	46.0	50.3	210	32.5	51.2
5	180	45.6	249	19.1	−17 43.6	285	06.6	−22 58.4	206	48.0	−11 50.2	225	34.7	−17 51.2
6	195	48.1	264	23.2	−17 43.2	300	07.1	−22 58.6	221	50.0	−11 50.0	240	36.8	−17 51.1
7	210	50.5	279	27.3	42.8	315	07.6	58.8	236	52.0	49.8	255	39.0	51.0
8	225	53.0	294	31.4	42.4	330	08.2	59.0	251	53.9	49.6	270	41.2	50.9
9	240	55.5	309	35.5	42.1	345	08.7	59.2	266	55.9	49.4	285	43.4	50.8
10	255	57.9	324	39.6	41.7	0	09.3	59.4	281	57.9	49.2	300	45.6	50.8
11	271	00.4	339	43.7	−17 41.3	15	09.8	−22 59.6	296	59.9	−11 49.1	315	47.8	−17 50.7
12	286	02.9	354	47.8	−17 40.9	30	10.3	−22 59.8	312	01.9	−11 48.9	330	49.9	−17 50.6
13	301	05.3	9	51.9	40.6	45	10.9	−23 00.0	327	03.8	48.7	345	52.1	50.5
14	316	07.8	24	56.0	40.2	60	11.4	−23 00.2	342	05.8	48.5	0	54.3	50.5
15	331	10.3	40	00.1	39.8	75	11.9	00.4	357	07.8	48.3	15	56.5	50.4
16	346	12.7	55	04.2	39.5	90	12.5	00.6	12	09.8	48.1	30	58.7	50.3
17	1	15.2	70	08.3	−17 39.1	105	13.0	−23 00.8	27	11.8	−11 47.9	46	00.8	−17 50.2
18	16	17.6	85	12.4	−17 38.7	120	13.5	−23 01.0	42	13.7	−11 47.8	61	03.0	−17 50.1
19	31	20.1	100	16.6	38.3	135	14.1	01.2	57	15.7	47.6	76	05.2	50.1
20	46	22.6	115	20.7	38.0	150	14.6	01.4	72	17.7	47.4	91	07.4	50.0
21	61	25.0	130	24.8	37.6	165	15.1	01.6	87	19.7	47.2	106	09.6	49.9
22	76	27.5	145	28.9	37.2	180	15.7	01.8	102	21.6	47.0	121	11.8	49.8
23	91	30.0	160	33.0	36.9	195	16.2	02.0	117	23.6	46.8	136	13.9	49.8
24	106	32.4	175	37.1	−17 36.5	210	16.8	−23 02.2	132	25.6	−11 46.6	151	16.1	−17 49.7
Dif	—			+41	+4		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 4ᵈ.2		PHE	4ʰ: 57′.8								
	PMG: 12ʰ 06ᵐ.3				SD: 15′.8			12ʰ: 57′.5								
					PMG: 16ʰ 33ᵐ			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	178	29.4	−22	24.1	119	36.7	−11	02.7	**60 N**	7 07	8 03	8 58	11 24	2	22 01	87
1	193	29.1		23.7	134	07.7 120	−10	48.9 138	**58**	7 00	7 52	42	19	6	04	84
2	208	28.9		23.4	148	38.8 121		35.0 139	**56**	6 54	42	28	15	9	07	81
3	223	28.6		23.1	163	10.0 122		21.2 138	**54**	49	34	17	11	11	10	78
4	238	28.3		22.8	177	41.2 122	−10	07.2 140	**52**	43	26	8 06	07	14	12	76
5	253	28.1	−22	22.5	192	12.6 124	−9	53.3 139	**50**	6 38	7 19	7 57	11 04	16	22 14	74
6	268	27.8	−22	22.2	206	44.1 125	−9	39.3 140	**45**	6 28	7 04	7 38	10 58	20	22 19	69
7	283	27.5		21.8	221	15.6 125		25.3 140	**40**	18	6 52	22	52	24	23	65
8	298	27.2		21.5	235	47.2 126	−9	11.3 140	**35**	09	41	7 09	47	28	27	61
9	313	27.0		21.2	250	18.9 127	−8	57.3 140	**30**	6 01	31	6 57	42	31	30	58
10	328	26.7		20.9	264	50.7 128		43.2 141	**20**	5 46	6 13	37	35	36	35	53
11	343	26.4	−22	20.6	279	22.6 129	−8	29.1 141	**10 N**	5 30	5 56	6 19	10 28	41	22 39	48
12	358	26.2	−22	20.2	293	54.6 130	−8	15.0 141	**0**	5 14	5 40	6 03	10 22	45	22 44	43
13	13	25.9		19.9	308	26.6 130	−8	00.9 141	**10 S**	4 56	23	5 46	15	50	48	39
14	28	25.6		19.6	322	58.7 131	−7	46.7 142	**20**	35	5 03	28	09	54	52	35
15	43	25.4		19.3	337	30.9 132		32.6 141	**30**	4 07	4 40	5 07	10 01	59	22 57	30
16	58	25.1		18.9	352	03.2 133		18.4 142	**35**	3 49	25	4 55	9 56	63	23 00	27
17	73	24.8	−22	18.6	6	35.6 134	−7	04.2 142	**40**	3 27	4 08	4 40	9 51	66	23 03	24
18	88	24.6	−22	18.3	21	08.0 134	−6	50.0 142	**45**	2 59	3 47	4 23	9 45	70	23 07	20
19	103	24.3		17.9	35	40.5 135		35.8 142	**50**	2 17	19	4 02	38	75	11	15
20	118	24.0		17.6	50	13.0 135		21.6 142	**52**	1 53	3 05	3 52	35	77	13	13
21	133	23.8		17.3	64	45.7 137	−6	07.4 142	**54**	1 19	2 49	40	31	80	15	11
22	148	23.5		17.0	79	18.4 137	−5	53.1 143	**56**	** **	29	27	27	83	18	8
23	163	23.2		16.6	93	51.2 138		38.9 142	**58**	** **	2 03	3 12	23	85	20	6
24	178	23.0	−22	16.3	108	24.0 138	−5	24.6 143	**60 S**	** **	1 26	2 54	9 18	89	23 23	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16ʰ 51ᵐ.1		PMG: 12ʰ 14ᵐ			PMG: 9ʰ 59ᵐ			PMG: 15ʰ 08ᵐ			PMG: 13ʰ 53ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	106	32.4	175	37.1	−17 36.5	210	16.8	−23 02.2	132	25.6	−11 46.6	151	16.1	−17 49.7
1	121	34.9	190	41.3	36.1	225	17.3	02.4	147	27.6	46.5	166	18.3	49.6
2	136	37.4	205	45.4	35.8	240	17.8	02.6	162	29.6	46.3	181	20.5	49.5
3	151	39.8	220	49.5	35.4	255	18.4	02.8	177	31.5	46.1	196	22.7	49.5
4	166	42.3	235	53.6	35.0	270	18.9	03.0	192	33.5	45.9	211	24.9	49.4
5	181	44.7	250	57.7	−17 34.7	285	19.4	−23 03.2	207	35.5	−11 45.7	226	27.0	−17 49.3
6	196	47.2	266	01.8	−17 34.3	300	20.0	−23 03.4	222	37.5	−11 45.5	241	29.2	−17 49.2
7	211	49.7	281	06.0	34.0	315	20.5	03.5	237	39.4	45.4	256	31.4	49.1
8	226	52.1	296	10.1	33.6	330	21.0	03.7	252	41.4	45.2	271	33.6	49.1
9	241	54.6	311	14.2	33.2	345	21.6	03.9	267	43.4	45.0	286	35.8	49.0
10	256	57.1	326	18.3	32.9	0	22.1	04.1	282	45.4	44.8	301	37.9	48.9
11	271	59.5	341	22.5	−17 32.5	15	22.6	−23 04.3	297	47.4	−11 44.6	316	40.1	−17 48.8
12	287	02.0	356	26.6	−17 32.1	30	23.2	−23 04.5	312	49.3	−11 44.4	331	42.3	−17 48.8
13	302	04.5	11	30.7	31.8	45	23.7	04.7	327	51.3	44.2	346	44.5	48.7
14	317	06.9	26	34.8	31.4	60	24.2	04.9	342	53.3	44.1	1	46.7	48.6
15	332	09.4	41	38.9	31.1	75	24.8	05.1	357	55.3	43.9	16	48.8	48.5
16	347	11.9	56	43.1	30.7	90	25.3	05.3	12	57.2	43.7	31	51.0	48.4
17	2	14.3	71	47.2	−17 30.4	105	25.8	−23 05.5	27	59.2	−11 43.5	46	53.2	−17 48.4
18	17	16.8	86	51.3	−17 30.0	120	26.3	−23 05.7	43	01.2	−11 43.3	61	55.4	−17 48.3
19	32	19.2	101	55.5	29.7	135	26.9	05.8	58	03.2	43.1	76	57.6	48.2
20	47	21.7	116	59.6	29.3	150	27.4	06.0	73	05.1	42.9	91	59.7	48.1
21	62	24.2	132	03.7	28.9	165	27.9	06.2	88	07.1	42.7	107	01.9	48.0
22	77	26.6	147	07.8	28.6	180	28.5	06.4	103	09.1	42.6	122	04.1	48.0
23	92	29.1	162	12.0	28.2	195	29.0	06.6	118	11.1	42.4	137	06.3	47.9
24	107	31.6	177	16.1	−17 27.9	210	29.5	−23 06.8	133	13.0	−11 42.2	152	08.5	−17 47.8
Dif	—			+41	+4		+5	−2		+20	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 06m.7				LUNA Edad: 5d.2 SD: 15′.5 PMG: 17h 17m PHE 4h: 56′.9; 12h: 56′.6; 20h: 56′.3 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	178	23.0	−22	16.3	108	24.0	−5	24.6	**60 N**	15 17	16 12	17 07	11 26	3	23 28	84
1	193	22.7		16.0	122	56.9 139	−5	10.4 142	**58**	33	22	14	25	5	28	81
2	208	22.4		15.6	137	29.9 140	−4	56.1 143	**56**	46	32	20	24	8	28	78
3	223	22.2		15.3	152	02.9 140		41.9 142	**54**	15 58	40	26	22	11	28	75
4	238	21.9		15.0	166	36.0 141		27.6 143	**52**	16 08	48	31	21	13	28	73
5	253	21.6	−22	14.6	181	09.1 141	−4	13.4 142	**50**	16 17	16 54	17 35	11 20	15	23 28	71
6	268	21.4	−22	14.3	195	42.3 142	−3	59.1 143	**45**	16 36	17 09	17 46	11 18	19	23 28	66
7	283	21.1		13.9	210	15.6 143		44.9 142	**40**	16 52	22	17 56	16	23	28	62
8	298	20.8		13.6	224	48.9 143		30.6 143	**35**	17 05	33	18 04	15	26	28	59
9	313	20.6		13.3	239	22.3 144		16.4 142	**30**	17	17 43	12	13	29	28	56
10	328	20.3		12.9	253	55.7 144	−3	02.1 143	**20**	37	18 00	28	11	34	28	50
11	343	20.0	−22	12.6	268	29.2 145	−2	47.9 142	**10 N**	17 54	18 17	18 43	11 09	38	23 27	47
12	358	19.8	−22	12.3	283	02.7 145	−2	33.6 143	**0**	18 10	18 33	18 59	11 07	43	23 27	43
13	13	19.5		11.9	297	36.3 146		19.4 142	**10 S**	27	18 50	19 17	05	47	27	38
14	28	19.3		11.6	312	09.9 146	−2	05.2 142	**20**	18 45	19 09	19 38	03	51	27	34
15	43	19.0		11.2	326	43.6 147	−1	51.0 142	**30**	19 05	33	20 05	11 00	57	27	29
16	58	18.7		10.9	341	17.3 147		36.8 142	**35**	18	19 47	23	10 59	59	27	26
17	73	18.5	−22	10.5	355	51.0 147	−1	22.6 142	**40**	19 32	20 04	20 44	10 57	63	23 27	23
18	88	18.2	−22	10.2	10	24.8 148	−1	08.5 141	**45**	19 49	20 25	21 13	10 55	67	23 27	19
19	103	17.9		09.8	24	58.7 149	−0	54.3 142	**50**	20 09	20 52	21 53	53	72	26	15
20	118	17.7		09.5	39	32.6 149		40.2 141	**52**	19	21 06	22 16	52	74	26	13
21	133	17.4		09.1	54	06.5 149		26.0 142	**54**	31	22	22 48	51	76	26	11
22	148	17.2		08.8	68	40.4 149	−0	11.9 141	**56**	44	21 41	** **	50	79	26	8
23	163	16.9		08.4	83	14.4 150	+0	02.2 141	**58**	20 59	22 06	** **	48	82	26	6
24	178	16.6	−22	08.1	97	48.5 151	+0	16.2 140	**60 S**	21 17	22 41	** **	10 47	85	23 26	3

UT	ARIES PMG 16h 47m.1		VENUS Mag: −4.4 PMG: 12h 08m			MARTE Mag: +1.5 PMG: 9h 58m			JÚPITER Mag: −2.1 PMG: 15h 05m			SATURNO Mag: +0.7 PMG: 13h 49m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	107	31.6	177	16.1	−17 27.9	210	29.5	−23 06.8	133	13.0	−11 42.2	152	08.5	−17 47.8
1	122	34.0	192	20.2	27.5	225	30.1	07.0	148	15.0	42.0	167	10.7	47.7
2	137	36.5	207	24.3	27.2	240	30.6	07.2	163	17.0	41.8	182	12.8	47.7
3	152	39.0	222	28.5	26.8	255	31.1	07.3	178	19.0	41.6	197	15.0	47.6
4	167	41.4	237	32.6	26.5	270	31.7	07.5	193	20.9	41.4	212	17.2	47.5
5	182	43.9	252	36.7	−17 26.1	285	32.2	−23 07.7	208	22.9	−11 41.3	227	19.4	−17 47.4
6	197	46.4	267	40.8	−17 25.8	300	32.7	−23 07.9	223	24.9	−11 41.1	242	21.6	−17 47.3
7	212	48.8	282	45.0	25.4	315	33.2	08.1	238	26.9	40.9	257	23.7	47.3
8	227	51.3	297	49.1	25.1	330	33.8	08.3	253	28.8	40.7	272	25.9	47.2
9	242	53.7	312	53.2	24.7	345	34.3	08.5	268	30.8	40.5	287	28.1	47.1
10	257	56.2	327	57.4	24.4	0	34.8	08.6	283	32.8	40.3	302	30.3	47.0
11	272	58.7	343	01.5	−17 24.1	15	35.4	−23 08.8	298	34.8	−11 40.1	317	32.5	−17 47.0
12	288	01.1	358	05.6	−17 23.7	30	35.9	−23 09.0	313	36.7	−11 39.9	332	34.6	−17 46.9
13	303	03.6	13	09.7	23.4	45	36.4	09.2	328	38.7	39.8	347	36.8	46.8
14	318	06.1	28	13.9	23.0	60	36.9	09.4	343	40.7	39.6	2	39.0	46.7
15	333	08.5	43	18.0	22.7	75	37.5	09.6	358	42.7	39.4	17	41.2	46.6
16	348	11.0	58	22.1	22.3	90	38.0	09.7	13	44.6	39.2	32	43.4	46.6
17	3	13.5	73	26.3	−17 22.0	105	38.5	−23 09.9	28	46.6	−11 39.0	47	45.5	−17 46.5
18	18	15.9	88	30.4	−17 21.7	120	39.1	−23 10.1	43	48.6	−11 38.8	62	47.7	−17 46.4
19	33	18.4	103	34.5	21.3	135	39.6	10.3	58	50.5	38.6	77	49.9	46.3
20	48	20.8	118	38.6	21.0	150	40.1	10.5	73	52.5	38.4	92	52.1	46.2
21	63	23.3	133	42.8	20.7	165	40.6	10.6	88	54.5	38.3	107	54.3	46.2
22	78	25.8	148	46.9	20.3	180	41.2	10.8	103	56.5	38.1	122	56.4	46.1
23	93	28.2	163	51.0	20.0	195	41.7	11.0	118	58.4	37.9	137	58.6	46.0
24	108	30.7	178	55.1	−17 19.6	210	42.2	−23 11.2	134	00.4	−11 37.7	153	00.8	−17 45.9
Dif	—			+41	+3		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 6ᵈ.2		PHE	4ʰ: 56′.0									
	PMG: 12ʰ 07ᵐ.1				SD: 15′.3			12ʰ: 55′.8									
					PMG: 18ʰ 00ᵐ			20ʰ: 55′.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	16.6	−22	08.1	97	48.5	+0	16.2		**60 N**	7 06	8 01	8 56	11 29	3	** **	**
1	193	16.4		07.7	112	22.5 150		30.3	141	**58**	6 59	7 51	40	30	6	** **	**
2	208	16.1		07.4	126	56.6 151		44.3	140	**56**	53	41	27	32	8	** **	**
3	223	15.9		07.0	141	30.7 151	+0	58.4	141	**54**	48	33	16	33	11	** **	**
4	238	15.6		06.7	156	04.9 152	+1	12.3	139	**52**	43	26	8 05	34	13	** **	**
5	253	15.3	−22	06.3	170	39.1 152	+1	26.3	140	**50**	6 38	7 19	7 56	11 35	15	** **	**
6	268	15.1	−22	06.0	185	13.3 152	+1	40.3	140	**45**	6 27	7 04	7 37	11 37	20	** **	**
7	283	14.8		05.6	199	47.5 152	+1	54.2	139	**40**	18	6 52	22	39	23	** **	**
8	298	14.6		05.3	214	21.8 153	+2	08.1	139	**35**	09	41	7 08	41	26	** **	**
9	313	14.3		04.9	228	56.1 153		22.0	139	**30**	6 01	31	6 57	42	29	** **	**
10	328	14.0		04.6	243	30.4 153		35.9	139	**20**	5 46	6 13	37	45	34	** **	**
11	343	13.8	−22	04.2	258	04.7 153	+2	49.7	138	**10 N**	5 31	5 57	6 20	11 47	38	** **	**
12	358	13.5	−22	03.8	272	39.1 154	+3	03.5	138	**0**	5 15	5 41	6 03	11 50	42	** **	**
13	13	13.3		03.5	287	13.4 153		17.3	138	**10 S**	4 57	24	5 47	52	46	** **	**
14	28	13.0		03.1	301	47.8 154		31.0	137	**20**	36	5 05	29	54	51	** **	**
15	43	12.8		02.8	316	22.2 154		44.8	138	**30**	4 09	4 41	5 08	57	55	23 56	29
16	58	12.5		02.4	330	56.6 154	+3	58.4	136	**35**	3 51	27	4 56	11 58	59	53	26
17	73	12.2	−22	02.0	345	31.1 155	+4	12.1	137	**40**	3 30	4 10	4 42	12 00	62	23 50	23
18	88	12.0	−22	01.7	0	05.5 154	+4	25.7	136	**45**	3 01	3 49	4 25	12 02	66	23 46	20
19	103	11.7		01.3	14	40.0 155		39.3	136	**50**	2 21	22	4 05	05	70	41	16
20	118	11.5		00.9	29	14.5 155	+4	52.9	136	**52**	1 58	3 08	3 55	06	72	39	14
21	133	11.2		00.6	43	48.9 154	+5	06.4	135	**54**	1 26	2 52	43	07	75	37	11
22	148	11.0	−22	00.2	58	23.4 155		19.9	135	**56**	** **	33	31	09	77	34	9
23	163	10.7	−21	59.8	72	57.9 155		33.4	135	**58**	** **	2 08	3 16	10	81	32	6
24	178	10.5	−21	59.5	87	32.4 155	+5	46.8	134	**60 S**	** **	1 33	2 58	12 12	84	23 29	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16ʰ 43ᵐ.2		PMG: 12ʰ 01ᵐ			PMG: 9ʰ 57ᵐ			PMG: 15ʰ 02ᵐ			PMG: 13ʰ 46ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	108	30.7	178	55.1	−17 19.6	210	42.2	−23 11.2	134	00.4	−11 37.7	153	00.8	−17 45.9
1	123	33.2	193	59.3	19.3	225	42.8	11.4	149	02.4	37.5	168	03.0	45.9
2	138	35.6	209	03.4	19.0	240	43.3	11.5	164	04.4	37.3	183	05.2	45.8
3	153	38.1	224	07.5	18.6	255	43.8	11.7	179	06.3	37.1	198	07.3	45.7
4	168	40.6	239	11.6	18.3	270	44.3	11.9	194	08.3	36.9	213	09.5	45.6
5	183	43.0	254	15.8	−17 18.0	285	44.9	−23 12.1	209	10.3	−11 36.8	228	11.7	−17 45.5
6	198	45.5	269	19.9	−17 17.6	300	45.4	−23 12.2	224	12.2	−11 36.6	243	13.9	−17 45.5
7	213	48.0	284	24.0	17.3	315	45.9	12.4	239	14.2	36.4	258	16.0	45.4
8	228	50.4	299	28.1	17.0	330	46.4	12.6	254	16.2	36.2	273	18.2	45.3
9	243	52.9	314	32.3	16.7	345	47.0	12.8	269	18.2	36.0	288	20.4	45.2
10	258	55.3	329	36.4	16.3	0	47.5	12.9	284	20.1	35.8	303	22.6	45.1
11	273	57.8	344	40.5	−17 16.0	15	48.0	−23 13.1	299	22.1	−11 35.6	318	24.8	−17 45.1
12	289	00.3	359	44.6	−17 15.7	30	48.5	−23 13.3	314	24.1	−11 35.4	333	26.9	−17 45.0
13	304	02.7	14	48.7	15.3	45	49.1	13.5	329	26.0	35.2	348	29.1	44.9
14	319	05.2	29	52.9	15.0	60	49.6	13.6	344	28.0	35.1	3	31.3	44.8
15	334	07.7	44	57.0	14.7	75	50.1	13.8	359	30.0	34.9	18	33.5	44.8
16	349	10.1	60	01.1	14.4	90	50.6	14.0	14	31.9	34.7	33	35.7	44.7
17	4	12.6	75	05.2	−17 14.0	105	51.2	−23 14.2	29	33.9	−11 34.5	48	37.8	−17 44.6
18	19	15.1	90	09.3	−17 13.7	120	51.7	−23 14.3	44	35.9	−11 34.3	63	40.0	−17 44.5
19	34	17.5	105	13.5	13.4	135	52.2	14.5	59	37.9	34.1	78	42.2	44.4
20	49	20.0	120	17.6	13.1	150	52.7	14.7	74	39.8	33.9	93	44.4	44.4
21	64	22.4	135	21.7	12.8	165	53.3	14.8	89	41.8	33.7	108	46.5	44.3
22	79	24.9	150	25.8	12.4	180	53.8	15.0	104	43.8	33.5	123	48.7	44.2
23	94	27.4	165	29.9	12.1	195	54.3	15.2	119	45.7	33.4	138	50.9	44.1
24	109	29.8	180	34.0	−17 11.8	210	54.8	−23 15.4	134	47.7	−11 33.2	153	53.1	−17 44.0
Dif	—			+41	+3		+5	−2		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 7ᵈ.2		PHE	4ʰ: 55′.3									
	PMG: 12ʰ 07ᵐ.5				SD: 15′.1			12ʰ: 55′.1									
					PMG: 18ʰ 42ᵐ			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	178	10.5	−21	59.5	87	32.4	+5	46.8		**60 N**	15 21	16 15	17 10	11 32	3	0 52	84
1	193	10.2		59.1	102	06.9 155	+6	00.2 134		**58**	36	26	17	36	7	49	80
2	208	10.0		58.7	116	41.5 156		13.6 134		**56**	15 49	35	23	40	10	46	77
3	223	09.7		58.4	131	16.0 155		26.9 133		**54**	16 01	43	28	44	12	43	74
4	238	09.4		58.0	145	50.5 155		40.2 133		**52**	11	50	33	47	14	41	72
5	253	09.2	−21	57.6	160	25.0 155	+6	53.4 132		**50**	16 19	16 57	17 38	11 50	16	0 39	69
6	268	08.9	−21	57.2	174	59.5 155	+7	06.6 132		**45**	16 38	17 11	17 48	11 57	20	0 34	65
7	283	08.7		56.9	189	34.1 156		19.8 132		**40**	16 54	24	17 57	12 02	24	30	61
8	298	08.4		56.5	204	08.6 155		32.9 131		**35**	17 07	35	18 06	07	27	27	58
9	313	08.2		56.1	218	43.1 155		46.0 131		**30**	18	17 44	14	11	30	24	55
10	328	07.9		55.7	233	17.6 155	+7	59.0 130		**20**	38	18 02	29	19	34	18	51
11	343	07.7	−21	55.4	247	52.1 155	+8	12.0 130		**10 N**	17 55	18 18	18 44	12 25	39	0 14	46
12	358	07.4	−21	55.0	262	26.6 155	+8	25.0 130		**0**	18 11	18 33	18 59	12 32	42	0 10	42
13	13	07.2		54.6	277	01.1 155		37.9 129		**10 S**	28	18 50	19 17	38	46	05	39
14	28	06.9		54.2	291	35.6 155	+8	50.7 128		**20**	18 45	19 09	19 38	45	50	0 01	34
15	43	06.7		53.9	306	10.1 155	+9	03.5 128		**30**	19 05	32	20 05	52	55	** **	**
16	58	06.4		53.5	320	44.5 154		16.3 128		**35**	18	19 47	22	12 57	57	** **	**
17	73	06.2	−21	53.1	335	19.0 155	+9	29.0 127		**40**	19 31	20 03	20 44	13 02	61	** **	**
18	88	05.9	−21	52.7	349	53.4 154	+9	41.7 127		**45**	19 48	20 24	21 11	13 08	65	** **	**
19	103	05.7		52.3	4	27.8 154	+9	54.3 126		**50**	20 08	20 51	21 51	15	69	23 57	17
20	118	05.4		51.9	19	02.2 154	+10	06.9 126		**52**	18	21 04	22 13	18	72	53	15
21	133	05.2		51.6	33	36.6 154		19.5 126		**54**	29	20	22 43	22	74	48	13
22	148	04.9		51.2	48	11.0 154		31.9 124		**56**	42	21 39	** **	26	77	43	11
23	163	04.7		50.8	62	45.4 154		44.4 125		**58**	20 56	22 02	** **	31	79	38	7
24	178	04.4	−21	50.4	77	19.7 153	+10	56.8 124		**60 S**	21 14	22 35	** **	13 36	83	23 31	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16ʰ 39ᵐ.3		PMG: 11ʰ 54ᵐ			PMG: 9ʰ 56ᵐ			PMG: 14ʰ 59ᵐ			PMG: 13ʰ 42ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	109	29.8	180	34.0	−17 11.8	210	54.8	−23 15.4	134	47.7	−11 33.2	153	53.1	−17 44.0
1	124	32.3	195	38.2	11.5	225	55.4	15.5	149	49.7	33.0	168	55.3	44.0
2	139	34.8	210	42.3	11.2	240	55.9	15.7	164	51.6	32.8	183	57.4	43.9
3	154	37.2	225	46.4	10.8	255	56.4	15.9	179	53.6	32.6	198	59.6	43.8
4	169	39.7	240	50.5	10.5	270	56.9	16.0	194	55.6	32.4	214	01.8	43.7
5	184	42.2	255	54.6	−17 10.2	285	57.4	−23 16.2	209	57.6	−11 32.2	229	04.0	−17 43.6
6	199	44.6	270	58.7	−17 09.9	300	58.0	−23 16.4	224	59.5	−11 32.0	244	06.2	−17 43.6
7	214	47.1	286	02.8	09.6	315	58.5	16.5	240	01.5	31.8	259	08.3	43.5
8	229	49.6	301	06.9	09.3	330	59.0	16.7	255	03.5	31.6	274	10.5	43.4
9	244	52.0	316	11.0	09.0	345	59.5	16.9	270	05.4	31.5	289	12.7	43.3
10	259	54.5	331	15.1	08.7	1	00.1	17.0	285	07.4	31.3	304	14.9	43.2
11	274	56.9	346	19.2	−17 08.3	16	00.6	−23 17.2	300	09.4	−11 31.1	319	17.0	−17 43.2
12	289	59.4	1	23.3	−17 08.0	31	01.1	−23 17.4	315	11.3	−11 30.9	334	19.2	−17 43.1
13	305	01.9	16	27.5	07.7	46	01.6	17.5	330	13.3	30.7	349	21.4	43.0
14	320	04.3	31	31.6	07.4	61	02.1	17.7	345	15.3	30.5	4	23.6	42.9
15	335	06.8	46	35.7	07.1	76	02.7	17.8	0	17.2	30.3	19	25.7	42.9
16	350	09.3	61	39.8	06.8	91	03.2	18.0	15	19.2	30.1	34	27.9	42.8
17	5	11.7	76	43.9	−17 06.5	106	03.7	−23 18.2	30	21.2	−11 29.9	49	30.1	−17 42.7
18	20	14.2	91	48.0	−17 06.2	121	04.2	−23 18.3	45	23.1	−11 29.7	64	32.3	−17 42.6
19	35	16.7	106	52.0	05.9	136	04.8	18.5	60	25.1	29.6	79	34.5	42.5
20	50	19.1	121	56.1	05.6	151	05.3	18.7	75	27.1	29.4	94	36.6	42.5
21	65	21.6	137	00.2	05.3	166	05.8	18.8	90	29.0	29.2	109	38.8	42.4
22	80	24.1	152	04.3	05.0	181	06.3	19.0	105	31.0	29.0	124	41.0	42.3
23	95	26.5	167	08.4	04.7	196	06.8	19.1	120	33.0	28.8	139	43.2	42.2
24	110	29.0	182	12.5	−17 04.4	211	07.4	−23 19.3	135	34.9	−11 28.6	154	45.3	−17 42.1
Dif	—			+41	+3		+5	−2		+20	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 07m.9				LUNA Edad: 8d.2 SD: 14′.9 PMG: 19h 24m PHE: 4h: 54′.8; 12h: 54′.6; 20h: 54′.5 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	04.4	−21	50.4	77	19.7	+10	56.8	**60 N**	7 04	7 59	8 53	11 35	5	2 16	83
1	193	04.2		50.0	91	54.1 154	+11	09.1 123	**58**	6 58	49	38	43	8	09	80
2	208	03.9		49.6	106	28.4 153		21.4 123	**56**	52	40	25	50	11	2 03	76
3	223	03.7		49.2	121	02.7 153		33.6 122	**54**	47	32	14	11 56	14	1 57	74
4	238	03.4		48.9	135	36.9 152		45.7 121	**52**	42	25	8 04	12 01	17	53	71
5	253	03.2	−21	48.5	150	11.2 153	+11	57.9 122	**50**	6 37	7 18	7 55	12 06	19	1 48	70
6	268	02.9	−21	48.1	164	45.4 152	+12	09.9 120	**45**	6 27	7 04	7 37	12 17	23	1 39	65
7	283	02.7		47.7	179	19.6 152		21.9 120	**40**	18	6 51	21	26	27	31	61
8	298	02.4		47.3	193	53.8 152		33.9 120	**35**	09	41	7 08	34	30	25	57
9	313	02.2		46.9	208	27.9 151		45.8 119	**30**	6 01	31	6 57	41	32	19	55
10	328	02.0		46.5	223	02.0 151	+12	57.6 118	**20**	5 47	6 14	37	12 53	37	09	50
11	343	01.7	−21	46.1	237	36.1 151	+13	09.4 118	**10 N**	5 32	5 58	6 20	13 04	40	1 00	47
12	358	01.5	−21	45.7	252	10.2 151	+13	21.1 117	**0**	5 16	5 42	6 04	13 14	43	0 52	43
13	13	01.2		45.3	266	44.2 150		32.7 116	**10 S**	4 58	25	5 48	24	47	44	39
14	28	01.0		44.9	281	18.2 150		44.3 116	**20**	37	5 06	30	35	51	35	35
15	43	00.7		44.5	295	52.2 150	+13	55.9 116	**30**	4 10	4 43	5 10	47	56	25	31
16	58	00.5		44.1	310	26.1 149	+14	07.3 114	**35**	3 53	29	4 58	13 54	58	19	29
17	73	00.2	−21	43.7	325	00.0 149	+14	18.7 114	**40**	3 32	4 12	4 44	14 03	61	0 13	25
18	88	00.0	−21	43.3	339	33.9 149	+14	30.1 114	**45**	3 04	3 52	4 28	14 13	64	0 06	21
19	102	59.8		42.9	354	07.7 148		41.4 113	**50**	2 25	25	4 07	24	69	** **	**
20	117	59.5		42.5	8	41.6 149	+14	52.6 112	**52**	2 03	3 12	3 58	30	71	** **	**
21	132	59.3		42.1	23	15.3 147	+15	03.7 111	**54**	1 32	2 56	47	36	74	** **	**
22	147	59.0		41.7	37	49.1 148		14.8 111	**56**	0 31	37	34	43	76	23 54	13
23	162	58.8		41.3	52	22.8 147		25.8 110	**58**	** **	2 13	19	50	81	45	10
24	177	58.5	−21	40.9	66	56.4 146	+15	36.8 110	**60 S**	** **	1 41	3 02	14 59	84	23 35	7

UT	ARIES PMG 16h 35m.3		VENUS Mag: −4.3 PMG: 11h 48m			MARTE Mag: +1.5 PMG: 9h 55m			JÚPITER Mag: −2.1 PMG: 14h 56m			SATURNO Mag: +0.7 PMG: 13h 39m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	110	29.0	182	12.5	−17 04.4	211	07.4	−23 19.3	135	34.9	−11 28.6	154	45.3	−17 42.1
1	125	31.4	197	16.6	04.1	226	07.9	19.5	150	36.9	28.4	169	47.5	42.1
2	140	33.9	212	20.7	03.8	241	08.4	19.6	165	38.9	28.2	184	49.7	42.0
3	155	36.4	227	24.8	03.5	256	08.9	19.8	180	40.8	28.0	199	51.9	41.9
4	170	38.8	242	28.9	03.2	271	09.4	19.9	195	42.8	27.8	214	54.1	41.8
5	185	41.3	257	33.0	−17 02.9	286	10.0	−23 20.1	210	44.8	−11 27.6	229	56.2	−17 41.7
6	200	43.8	272	37.0	−17 02.6	301	10.5	−23 20.3	225	46.7	−11 27.5	244	58.4	−17 41.7
7	215	46.2	287	41.1	02.3	316	11.0	20.4	240	48.7	27.3	260	00.6	41.6
8	230	48.7	302	45.2	02.0	331	11.5	20.6	255	50.7	27.1	275	02.8	41.5
9	245	51.2	317	49.3	01.7	346	12.0	20.7	270	52.6	26.9	290	04.9	41.4
10	260	53.6	332	53.4	01.4	1	12.5	20.9	285	54.6	26.7	305	07.1	41.3
11	275	56.1	347	57.4	−17 01.1	16	13.1	−23 21.0	300	56.6	−11 26.5	320	09.3	−17 41.3
12	290	58.5	3	01.5	−17 00.8	31	13.6	−23 21.2	315	58.5	−11 26.3	335	11.5	−17 41.2
13	306	01.0	18	05.6	00.5	46	14.1	21.3	331	00.5	26.1	350	13.6	41.1
14	321	03.5	33	09.7	−17 00.2	61	14.6	21.5	346	02.5	25.9	5	15.8	41.0
15	336	05.9	48	13.7	−17 00.0	76	15.1	21.7	1	04.4	25.7	20	18.0	40.9
16	351	08.4	63	17.8	−16 59.7	91	15.7	21.8	16	06.4	25.5	35	20.2	40.9
17	6	10.9	78	21.9	−16 59.4	106	16.2	−23 22.0	31	08.3	−11 25.3	50	22.3	−17 40.8
18	21	13.3	93	25.9	−16 59.1	121	16.7	−23 22.1	46	10.3	−11 25.2	65	24.5	−17 40.7
19	36	15.8	108	30.0	58.8	136	17.2	22.3	61	12.3	25.0	80	26.7	40.6
20	51	18.3	123	34.1	58.5	151	17.7	22.4	76	14.2	24.8	95	28.9	40.5
21	66	20.7	138	38.1	58.2	166	18.2	22.6	91	16.2	24.6	110	31.1	40.5
22	81	23.2	153	42.2	58.0	181	18.8	22.7	106	18.2	24.4	125	33.2	40.4
23	96	25.7	168	46.2	57.7	196	19.3	22.9	121	20.1	24.2	140	35.4	40.3
24	111	28.1	183	50.3	−16 57.4	211	19.8	−23 23.0	136	22.1	−11 24.0	155	37.6	−17 40.2
Dif	—			+41	+3		+5	−2		+20	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 08m.3		LUNA Edad: 9d.2 SD: 14′.8 PMG: 20h 08m PHE 4h: 54′.4 12h: 54′.3 20h: 54′.2 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	177 58.5	−21 40.9	66 56.4		+15 36.8		**60 N**	15 25	16 19	17 13	11 40	8	3 39	85
1	192 58.3	40.5	81 30.0	146	47.7	109	**58**	40	29	20	11 51	13	29	80
2	207 58.1	40.1	96 03.6	146	+15 58.5	108	**56**	15 53	38	25	12 01	16	19	77
3	222 57.8	39.7	110 37.2	146	+16 09.2	107	**54**	16 04	46	31	10	18	11	74
4	237 57.6	39.3	125 10.7	145	19.9	107	**52**	13	53	36	18	21	3 04	71
5	252 57.3	−21 38.9	139 44.1	144	+16 30.5	106	**50**	16 22	16 59	17 40	12 25	23	2 58	68
6	267 57.1	−21 38.5	154 17.6	145	+16 41.1	106	**45**	16 41	17 14	17 50	12 40	27	2 44	64
7	282 56.9	38.1	168 50.9	143	+16 51.5	104	**40**	16 56	26	17 59	12 53	30	32	61
8	297 56.6	37.7	183 24.3	144	+17 01.9	104	**35**	17 09	36	18 08	13 04	33	22	58
9	312 56.4	37.3	197 57.6	143	12.2	103	**30**	20	17 46	15	13	35	2 14	55
10	327 56.1	36.8	212 30.8	142	22.5	103	**20**	39	18 03	30	30	39	1 59	52
11	342 55.9	−21 36.4	227 04.0	142	+17 32.7	102	**10 N**	17 56	18 19	18 45	13 44	42	1 47	47
12	357 55.7	−21 36.0	241 37.2	142	+17 42.8	101	**0**	18 12	18 34	19 00	13 57	46	1 35	44
13	12 55.4	35.6	256 10.3	141	+17 52.8	100	**10 S**	28	18 51	17	14 11	49	23	41
14	27 55.2	35.2	270 43.4	141	+18 02.7	99	**20**	18 45	19 09	19 38	26	51	1 10	38
15	42 54.9	34.8	285 16.4	140	12.6	99	**30**	19 05	32	20 05	43	55	0 56	33
16	57 54.7	34.4	299 49.4	140	22.4	98	**35**	17	19 46	22	14 52	58	48	31
17	72 54.5	−21 34.0	314 22.3	139	+18 32.1	97	**40**	19 31	20 03	20 43	15 04	60	0 38	28
18	87 54.2	−21 33.5	328 55.2	139	+18 41.7	96	**45**	19 47	20 23	21 10	15 17	64	0 27	25
19	102 54.0	33.1	343 28.0	138	+18 51.3	96	**50**	20 07	20 49	21 48	33	69	14	20
20	117 53.8	32.7	358 00.8	138	+19 00.7	94	**52**	17	21 02	22 09	41	71	08	18
21	132 53.5	32.3	12 33.5	137	10.1	94	**54**	27	17	22 38	50	73	0 01	16
22	147 53.3	31.9	27 06.2	137	19.4	93	**56**	40	36	23 28	15 59	77	** **	**
23	162 53.0	31.4	41 38.8	136	28.6	92	**58**	20 54	21 58	** **	16 11	79	23 55	15
24	177 52.8	−21 31.0	56 11.4	136	+19 37.8	92	**60 S**	21 11	22 29	** **	16 23	85	23 42	10

UT	ARIES PMG 16h 31m.4	VENUS Mag: −4.3 PMG: 11h 41m		MARTE Mag: +1.5 PMG: 9h 54m		JÚPITER Mag: −2.1 PMG: 14h 53m		SATURNO Mag: +0.7 PMG: 13h 36m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	111 28.1	183 50.3	−16 57.4	211 19.8	−23 23.0	136 22.1	−11 24.0	155 37.6	−17 40.2
1	126 30.6	198 54.4	57.1	226 20.3	23.2	151 24.1	23.8	170 39.8	40.1
2	141 33.0	213 58.4	56.8	241 20.8	23.3	166 26.0	23.6	185 41.9	40.1
3	156 35.5	229 02.5	56.5	256 21.3	23.5	181 28.0	23.4	200 44.1	40.0
4	171 38.0	244 06.5	56.3	271 21.9	23.6	196 30.0	23.2	215 46.3	39.9
5	186 40.4	259 10.6	−16 56.0	286 22.4	−23 23.8	211 31.9	−11 23.0	230 48.5	−17 39.8
6	201 42.9	274 14.6	−16 55.7	301 22.9	−23 23.9	226 33.9	−11 22.8	245 50.6	−17 39.7
7	216 45.4	289 18.7	55.4	316 23.4	24.1	241 35.8	22.7	260 52.8	39.7
8	231 47.8	304 22.7	55.2	331 23.9	24.2	256 37.8	22.5	275 55.0	39.6
9	246 50.3	319 26.7	54.9	346 24.4	24.4	271 39.8	22.3	290 57.2	39.5
10	261 52.8	334 30.8	54.6	1 24.9	24.5	286 41.7	22.1	305 59.3	39.4
11	276 55.2	349 34.8	−16 54.3	16 25.5	−23 24.7	301 43.7	−11 21.9	321 01.5	−17 39.3
12	291 57.7	4 38.9	−16 54.1	31 26.0	−23 24.8	316 45.7	−11 21.7	336 03.7	−17 39.3
13	307 00.2	19 42.9	53.8	46 26.5	25.0	331 47.6	21.5	351 05.9	39.2
14	322 02.6	34 46.9	53.5	61 27.0	25.1	346 49.6	21.3	6 08.0	39.1
15	337 05.1	49 50.9	53.2	76 27.5	25.2	1 51.5	21.1	21 10.2	39.0
16	352 07.5	64 55.0	53.0	91 28.0	25.4	16 53.5	20.9	36 12.4	38.9
17	7 10.0	79 59.0	−16 52.7	106 28.6	−23 25.5	31 55.5	−11 20.7	51 14.6	−17 38.9
18	22 12.5	95 03.0	−16 52.4	121 29.1	−23 25.7	46 57.4	−11 20.5	66 16.7	−17 38.8
19	37 14.9	110 07.1	52.2	136 29.6	25.8	61 59.4	20.3	81 18.9	38.7
20	52 17.4	125 11.1	51.9	151 30.1	26.0	77 01.4	20.1	96 21.1	38.6
21	67 19.9	140 15.1	51.6	166 30.6	26.1	92 03.3	20.0	111 23.3	38.5
22	82 22.3	155 19.1	51.4	181 31.1	26.2	107 05.3	19.8	126 25.4	38.5
23	97 24.8	170 23.1	51.1	196 31.6	26.4	122 07.2	19.6	141 27.6	38.4
24	112 27.3	185 27.1	−16 50.8	211 32.1	−23 26.5	137 09.2	−11 19.4	156 29.8	−17 38.3
Dif	—	+40	+3	+5	−1	+20	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 10^{d}.2		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 08^{m}.7				SD: 14′.8			12^{h}: 54′.1									
					PMG: 20^{h} 54^{m}			20^{h}: 54′.1									
	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	52.8	−21	31.0	56	11.4	+19	37.8		**60 N**	7 03	7 57	8 51	11 48	14	5 04	83
1	192	52.6		30.6	70	44.0 136		46.8	90	**58**	6 57	47	36	12 04	18	4 49	78
2	207	52.3		30.2	85	16.4 134	+19	55.8	90	**56**	51	38	23	17	22	36	75
3	222	52.1		29.8	99	48.9 135	+20	04.7	89	**54**	46	31	12	28	25	25	72
4	237	51.9		29.3	114	21.3 134		13.5	88	**52**	41	23	8 03	39	27	15	70
5	252	51.6	−21	28.9	128	53.6 133	+20	22.2	87	**50**	6 36	7 17	7 54	12 48	29	4 06	68
6	267	51.4	−21	28.5	143	25.9 133	+20	30.8	86	**45**	6 26	7 03	7 36	13 07	33	3 48	63
7	282	51.2		28.1	157	58.1 132		39.3	85	**40**	17	6 51	21	23	36	33	60
8	297	50.9		27.6	172	30.3 132		47.8	85	**35**	09	40	7 08	37	38	20	58
9	312	50.7		27.2	187	02.4 131	+20	56.1	83	**30**	6 01	31	6 57	13 48	40	3 09	56
10	327	50.5		26.8	201	34.4 130	+21	04.4	83	**20**	5 47	6 14	38	14 09	42	2 51	52
11	342	50.2	−21	26.3	216	06.5 131	+21	12.6	82	**10 N**	5 32	5 58	6 21	14 26	46	2 34	50
12	357	50.0	−21	25.9	230	38.4 129	+21	20.7	81	**0**	5 17	5 43	6 05	14 43	48	2 19	47
13	12	49.8		25.5	245	10.3 129		28.6	79	**10 S**	5 00	26	5 49	15 00	50	2 04	44
14	27	49.5		25.1	259	42.2 129		36.5	79	**20**	4 39	5 08	32	17	53	1 48	41
15	42	49.3		24.6	274	14.0 128		44.3	78	**30**	4 12	4 45	12	38	56	29	38
16	57	49.1		24.2	288	45.7 127		52.0	77	**35**	3 55	31	5 00	15 50	58	19	35
17	72	48.8	−21	23.8	303	17.4 127	+21	59.7	77	**40**	3 35	4 15	4 46	16 04	60	1 06	33
18	87	48.6	−21	23.3	317	49.1 127	+22	07.2	75	**45**	3 08	3 54	4 30	16 21	62	0 52	30
19	102	48.4		22.9	332	20.7 126		14.6	74	**50**	2 29	28	10	42	66	34	26
20	117	48.2		22.5	346	52.2 125		21.9	73	**52**	2 08	15	4 01	16 52	68	26	24
21	132	47.9		22.0	1	23.7 125		29.1	72	**54**	1 39	3 00	3 50	17 03	70	17	21
22	147	47.7		21.6	15	55.1 124		36.2	71	**56**	0 50	2 42	38	16	73	0 07	18
23	162	47.5		21.1	30	26.5 124		43.2	70	**58**	** **	2 19	23	30	77	** **	**
24	177	47.2	−21	20.7	44	57.8 123	+22	50.2	70	**60 S**	** **	1 48	3 06	17 48	82	23 52	17

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16^{h} 27^{m}.5		PMG: 11^{h} 35^{m}			PMG: 9^{h} 54^{m}			PMG: 14^{h} 49^{m}			PMG: 13^{h} 32^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	112	27.3	185	27.1	−16 50.8	211	32.1	−23 26.5	137	09.2	−11 19.4	156	29.8	−17 38.3
1	127	29.7	200	31.1	50.6	226	32.7	26.7	152	11.2	19.2	171	32.0	38.2
2	142	32.2	215	35.2	50.3	241	33.2	26.8	167	13.1	19.0	186	34.1	38.1
3	157	34.7	230	39.2	50.1	256	33.7	27.0	182	15.1	18.8	201	36.3	38.1
4	172	37.1	245	43.2	49.8	271	34.2	27.1	197	17.0	18.6	216	38.5	38.0
5	187	39.6	260	47.2	−16 49.5	286	34.7	−23 27.2	212	19.0	−11 18.4	231	40.7	−17 37.9
6	202	42.0	275	51.2	−16 49.3	301	35.2	−23 27.4	227	21.0	−11 18.2	246	42.8	−17 37.8
7	217	44.5	290	55.2	49.0	316	35.7	27.5	242	22.9	18.0	261	45.0	37.7
8	232	47.0	305	59.2	48.8	331	36.2	27.6	257	24.9	17.8	276	47.2	37.6
9	247	49.4	321	03.2	48.5	346	36.8	27.8	272	26.8	17.6	291	49.4	37.6
10	262	51.9	336	07.2	48.3	1	37.3	27.9	287	28.8	17.4	306	51.5	37.5
11	277	54.4	351	11.1	−16 48.0	16	37.8	−23 28.1	302	30.8	−11 17.2	321	53.7	−17 37.4
12	292	56.8	6	15.1	−16 47.8	31	38.3	−23 28.2	317	32.7	−11 17.0	336	55.9	−17 37.3
13	307	59.3	21	19.1	47.5	46	38.8	28.3	332	34.7	16.8	351	58.1	37.2
14	323	01.8	36	23.1	47.2	61	39.3	28.5	347	36.6	16.7	7	00.2	37.2
15	338	04.2	51	27.1	47.0	76	39.8	28.6	2	38.6	16.5	22	02.4	37.1
16	353	06.7	66	31.1	46.7	91	40.3	28.7	17	40.6	16.3	37	04.6	37.0
17	8	09.1	81	35.0	−16 46.5	106	40.8	−23 28.9	32	42.5	−11 16.1	52	06.8	−17 36.9
18	23	11.6	96	39.0	−16 46.2	121	41.4	−23 29.0	47	44.5	−11 15.9	67	08.9	−17 36.8
19	38	14.1	111	43.0	46.0	136	41.9	29.1	62	46.4	15.7	82	11.1	36.8
20	53	16.5	126	46.9	45.8	151	42.4	29.3	77	48.4	15.5	97	13.3	36.7
21	68	19.0	141	50.9	45.5	166	42.9	29.4	92	50.4	15.3	112	15.5	36.6
22	83	21.5	156	54.9	45.3	181	43.4	29.5	107	52.3	15.1	127	17.6	36.5
23	98	23.9	171	58.8	45.0	196	43.9	29.7	122	54.3	14.9	142	19.8	36.4
24	113	26.4	187	02.8	−16 44.8	211	44.4	−23 29.8	137	56.2	−11 14.7	157	22.0	−17 36.4
Dif	—			+40	+3		+5	−1		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 11^{d}.2		PHE	4^{h}: 54′.0									
	PMG: 12^{h} 09^{m}.0				SD: 14′.7			12^{h}: 54′.0									
					PMG: 21^{h} 42^{m}			20^{h}: 54′.0									
	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	h m	m	h m	m
0	177	47.2	−21	20.7	44	57.8		+22	50.2		**60 N**	15 29	16 23	17 17	12 02	24	6 27	78
1	192	47.0		20.3	59	29.1	123	+22	57.0	68	**58**	44	32	23	22	29	6 07	73
2	207	46.8		19.8	74	00.3	122	+23	03.7	67	**56**	15 56	41	28	39	32	5 51	69
3	222	46.6		19.4	88	31.4	121		10.3	66	**54**	16 07	49	33	12 53	35	37	67
4	237	46.3		18.9	103	02.6	122		16.8	65	**52**	17	16 56	38	13 06	36	25	65
5	252	46.1	−21	18.5	117	33.6	120	+23	23.2	64	**50**	16 25	17 02	17 43	13 17	38	5 14	63
6	267	45.9	−21	18.1	132	04.6	120	+23	29.5	63	**45**	16 43	17 16	17 52	13 40	40	4 51	61
7	282	45.6		17.6	146	35.6	120		35.7	62	**40**	16 58	28	18 01	13 59	42	33	59
8	297	45.4		17.2	161	06.5	119		41.8	61	**35**	17 11	38	09	14 15	43	18	57
9	312	45.2		16.7	175	37.3	118		47.8	60	**30**	22	17 47	17	28	45	4 05	55
10	327	45.0		16.3	190	08.1	118		53.7	59	**20**	40	18 04	31	14 51	47	3 43	53
11	342	44.7	−21	15.8	204	38.9	118	+23	59.4	57	**10 N**	17 57	18 20	18 46	15 12	48	3 24	50
12	357	44.5	−21	15.4	219	09.6	117	+24	05.1	57	**0**	18 13	18 35	19 01	15 31	49	3 06	48
13	12	44.3		14.9	233	40.2	116		10.7	56	**10 S**	28	18 51	18	15 50	51	2 48	47
14	27	44.1		14.5	248	10.8	116		16.1	54	**20**	18 45	19 10	19 38	16 10	53	29	44
15	42	43.8		14.0	262	41.4	116		21.4	53	**30**	19 05	32	20 04	34	54	2 07	42
16	57	43.6		13.6	277	11.9	115		26.6	52	**35**	17	19 46	21	16 48	55	1 54	41
17	72	43.4	−21	13.1	291	42.3	114	+24	31.7	51	**40**	19 30	20 02	20 41	17 04	57	1 39	39
18	87	43.2	−21	12.7	306	12.7	114	+24	36.7	50	**45**	19 46	20 22	21 08	17 23	59	1 22	36
19	102	42.9		12.2	320	43.1	114		41.6	49	**50**	20 06	20 47	21 45	17 48	60	1 00	33
20	117	42.7		11.8	335	13.4	113		46.4	48	**52**	15	21 00	22 06	18 00	61	0 50	31
21	132	42.5		11.3	349	43.7	113		51.0	46	**54**	25	15	22 33	13	63	38	29
22	147	42.3		10.9	4	13.9	112	+24	55.6	46	**56**	37	32	23 16	29	65	25	27
23	162	42.1		10.4	18	44.1	112	+25	00.0	44	**58**	20 51	21 54	** **	18 47	68	0 10	23
24	177	41.8	−21	10.0	33	14.2	111	+25	04.3	43	**60 S**	21 08	22 23	** **	19 10	72	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16^{h} 23^{m}.5		PMG: 11^{h} 29^{m}			PMG: 9^{h} 53^{m}			PMG: 14^{h} 46^{m}			PMG: 13^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	113	26.4	187	02.8	−16 44.8	211	44.4	−23 29.8	137	56.2	−11 14.7	157	22.0	−17 36.4
1	128	28.9	202	06.8	44.5	226	44.9	29.9	152	58.2	14.5	172	24.2	36.3
2	143	31.3	217	10.7	44.3	241	45.4	30.1	168	00.1	14.3	187	26.3	36.2
3	158	33.8	232	14.7	44.1	256	46.0	30.2	183	02.1	14.1	202	28.5	36.1
4	173	36.3	247	18.6	43.8	271	46.5	30.3	198	04.1	13.9	217	30.7	36.0
5	188	38.7	262	22.6	−16 43.6	286	47.0	−23 30.5	213	06.0	−11 13.7	232	32.8	−17 36.0
6	203	41.2	277	26.5	−16 43.3	301	47.5	−23 30.6	228	08.0	−11 13.5	247	35.0	−17 35.9
7	218	43.6	292	30.4	43.1	316	48.0	30.7	243	09.9	13.3	262	37.2	35.8
8	233	46.1	307	34.4	42.9	331	48.5	30.9	258	11.9	13.1	277	39.4	35.7
9	248	48.6	322	38.3	42.6	346	49.0	31.0	273	13.9	13.0	292	41.5	35.6
10	263	51.0	337	42.2	42.4	1	49.5	31.1	288	15.8	12.8	307	43.7	35.5
11	278	53.5	352	46.2	−16 42.2	16	50.0	−23 31.2	303	17.8	−11 12.6	322	45.9	−17 35.5
12	293	56.0	7	50.1	−16 41.9	31	50.5	−23 31.4	318	19.7	−11 12.4	337	48.1	−17 35.4
13	308	58.4	22	54.0	41.7	46	51.0	31.5	333	21.7	12.2	352	50.2	35.3
14	324	00.9	37	58.0	41.5	61	51.5	31.6	348	23.6	12.0	7	52.4	35.2
15	339	03.4	53	01.9	41.2	76	52.1	31.7	3	25.6	11.8	22	54.6	35.1
16	354	05.8	68	05.8	41.0	91	52.6	31.9	18	27.6	11.6	37	56.8	35.1
17	9	08.3	83	09.7	−16 40.8	106	53.1	−23 32.0	33	29.5	−11 11.4	52	58.9	−17 35.0
18	24	10.8	98	13.6	−16 40.5	121	53.6	−23 32.1	48	31.5	−11 11.2	68	01.1	−17 34.9
19	39	13.2	113	17.5	40.3	136	54.1	32.2	63	33.4	11.0	83	03.3	34.8
20	54	15.7	128	21.4	40.1	151	54.6	32.4	78	35.4	10.8	98	05.4	34.7
21	69	18.1	143	25.3	39.9	166	55.1	32.5	93	37.3	10.6	113	07.6	34.7
22	84	20.6	158	29.2	39.6	181	55.6	32.6	108	39.3	10.4	128	09.8	34.6
23	99	23.1	173	33.1	39.4	196	56.1	32.7	123	41.2	10.2	143	12.0	34.5
24	114	25.5	188	37.0	−16 39.2	211	56.6	−23 32.9	138	43.2	−11 10.0	158	14.1	−17 34.4
Dif	—			+39	+2		+5	−1		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 12^{d}.2		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 09^{m}.4				SD: 14′.7			12^{h}: 54′.1									
					PMG: 22^{h} 33^{m}			20^{h}: 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	41.8	−21	10.0	33	14.2	+25	04.3		**60 N**	7 01	7 55	8 48	12 26	43	7 45	63
1	192	41.6		09.5	47	44.3 111		08.5	42	**58**	6 55	45	33	12 51	45	20	61
2	207	41.4		09.1	62	14.3 110		12.6	41	**56**	49	37	21	13 11	46	7 00	59
3	222	41.2		08.6	76	44.3 110		16.5	39	**54**	44	29	11	28	46	6 44	58
4	237	41.0		08.1	91	14.3 110		20.4	39	**52**	40	22	8 01	42	47	30	57
5	252	40.7	−21	07.7	105	44.2 109	+25	24.1	37	**50**	6 35	7 16	7 53	13 55	47	6 17	57
6	267	40.5	−21	07.2	120	14.1 109	+25	27.7	36	**45**	6 26	7 02	7 35	14 20	49	5 52	55
7	282	40.3		06.8	134	43.9 108		31.2	35	**40**	17	6 50	20	41	49	32	54
8	297	40.1		06.3	149	13.7 108		34.5	33	**35**	09	40	7 08	14 58	50	15	54
9	312	39.9		05.8	163	43.5 108		37.8	33	**30**	6 01	31	6 57	15 13	50	5 00	53
10	327	39.6		05.4	178	13.2 107		40.9	31	**20**	5 47	6 14	38	15 38	51	4 36	52
11	342	39.4	−21	04.9	192	42.9 107	+25	43.9	30	**10 N**	5 33	5 59	6 21	16 00	51	4 14	52
12	357	39.2	−21	04.5	207	12.5 106	+25	46.8	29	**0**	5 18	5 44	6 06	16 20	51	3 54	51
13	12	39.0		04.0	221	42.2 107		49.5	27	**10 S**	5 01	27	5 50	16 41	51	35	49
14	27	38.8		03.5	236	11.8 106		52.2	27	**20**	4 40	5 09	33	17 03	51	3 13	49
15	42	38.5		03.1	250	41.3 105		54.7	25	**30**	4 14	4 47	13	28	52	2 49	47
16	57	38.3		02.6	265	10.8 105		57.1	24	**35**	3 58	33	5 02	17 43	52	35	46
17	72	38.1	−21	02.1	279	40.3 105	+25	59.3	22	**40**	3 37	4 17	4 49	18 01	52	2 18	46
18	87	37.9	−21	01.7	294	09.8 105	+26	01.5	22	**45**	3 11	3 57	4 33	18 22	52	1 58	44
19	102	37.7		01.2	308	39.2 104		03.5	20	**50**	2 34	32	13	18 48	53	33	43
20	117	37.5		00.7	323	08.6 104		05.4	19	**52**	2 13	19	4 04	19 01	53	21	42
21	132	37.2	−21	00.3	337	38.0 104		07.1	17	**54**	1 46	3 04	3 53	16	53	1 07	41
22	147	37.0	−20	59.8	352	07.3 103		08.8	17	**56**	1 03	2 46	41	34	52	0 52	38
23	162	36.8		59.3	6	36.6 103		10.3	15	**58**	** **	2 25	28	19 55	52	33	36
24	177	36.6	−20	58.8	21	05.9 103	+26	11.6	13	**60 S**	** **	1 56	3 11	20 22	52	0 09	32

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16^{h} 19^{m}.6		PMG: 11^{h} 23^{m}			PMG: 9^{h} 52^{m}			PMG: 14^{h} 43^{m}			PMG: 13^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	114	25.5	188	37.0	−16 39.2	211	56.6	−23 32.9	138	43.2	−11 10.0	158	14.1	−17 34.4
1	129	28.0	203	40.9	39.0	226	57.1	33.0	153	45.2	09.8	173	16.3	34.3
2	144	30.5	218	44.8	38.7	241	57.6	33.1	168	47.1	09.6	188	18.5	34.2
3	159	32.9	233	48.7	38.5	256	58.1	33.2	183	49.1	09.4	203	20.7	34.2
4	174	35.4	248	52.6	38.3	271	58.6	33.3	198	51.0	09.2	218	22.8	34.1
5	189	37.9	263	56.5	−16 38.1	286	59.2	−23 33.5	213	53.0	−11 09.0	233	25.0	−17 34.0
6	204	40.3	279	00.3	−16 37.9	301	59.7	−23 33.6	228	54.9	−11 08.8	248	27.2	−17 33.9
7	219	42.8	294	04.2	37.6	317	00.2	33.7	243	56.9	08.6	263	29.3	33.8
8	234	45.3	309	08.1	37.4	332	00.7	33.8	258	58.8	08.4	278	31.5	33.8
9	249	47.7	324	12.0	37.2	347	01.2	33.9	274	00.8	08.2	293	33.7	33.7
10	264	50.2	339	15.8	37.0	2	01.7	34.1	289	02.8	08.1	308	35.9	33.6
11	279	52.6	354	19.7	−16 36.8	17	02.2	−23 34.2	304	04.7	−11 07.9	323	38.0	−17 33.5
12	294	55.1	9	23.6	−16 36.6	32	02.7	−23 34.3	319	06.7	−11 07.7	338	40.2	−17 33.4
13	309	57.6	24	27.4	36.4	47	03.2	34.4	334	08.6	07.5	353	42.4	33.4
14	325	00.0	39	31.3	36.1	62	03.7	34.5	349	10.6	07.3	8	44.6	33.3
15	340	02.5	54	35.1	35.9	77	04.2	34.6	4	12.5	07.1	23	46.7	33.2
16	355	05.0	69	39.0	35.7	92	04.7	34.8	19	14.5	06.9	38	48.9	33.1
17	10	07.4	84	42.8	−16 35.5	107	05.2	−23 34.9	34	16.4	−11 06.7	53	51.1	−17 33.0
18	25	09.9	99	46.7	−16 35.3	122	05.7	−23 35.0	49	18.4	−11 06.5	68	53.2	−17 32.9
19	40	12.4	114	50.5	35.1	137	06.2	35.1	64	20.3	06.3	83	55.4	32.9
20	55	14.8	129	54.3	34.9	152	06.7	35.2	79	22.3	06.1	98	57.6	32.8
21	70	17.3	144	58.2	34.7	167	07.2	35.3	94	24.3	05.9	113	59.8	32.7
22	85	19.8	160	02.0	34.5	182	07.7	35.5	109	26.2	05.7	129	01.9	32.6
23	100	22.2	175	05.8	34.3	197	08.2	35.6	124	28.2	05.5	144	04.1	32.5
24	115	24.7	190	09.7	−16 34.1	212	08.7	−23 35.7	139	30.1	−11 05.3	159	06.3	−17 32.5
Dif	—			+39	+2		+5	−1		+20	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 13ᵈ.2		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 09ᵐ.7				SD: 14′.8			12ʰ: 54′.3									
					PMG: 23ʰ 24ᵐ			20ʰ: 54′.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	177	36.6	−20	58.8	21	05.9	+26	11.6		**60 N**	15 34	16 26	17 20	13 09	65	8 48	41
1	192	36.4		58.4	35	35.2 103		12.9	13	**58**	15 48	36	26	36	62	8 21	44
2	207	36.2		57.9	50	04.5 103		14.0	11	**56**	16 00	44	31	13 57	61	7 59	46
3	222	36.0		57.4	64	33.7 102		15.0	10	**54**	10	52	36	14 14	60	42	46
4	237	35.7		56.9	79	02.9 102		15.9	9	**52**	20	16 59	41	29	59	27	47
5	252	35.5	−20	56.5	93	32.1 102	+26	16.7	8	**50**	16 28	17 05	17 45	14 42	58	7 14	47
6	267	35.3	−20	56.0	108	01.3 102	+26	17.3	6	**45**	16 46	17 18	17 55	15 09	57	6 47	49
7	282	35.1		55.5	122	30.4 101		17.8	5	**40**	17 00	30	18 03	30	56	26	49
8	297	34.9		55.0	136	59.5 101		18.1	3	**35**	12	40	11	15 48	55	6 09	49
9	312	34.7		54.6	151	28.7 102		18.4	3	**30**	23	17 49	18	16 03	54	5 53	50
10	327	34.5		54.1	165	57.8 101		18.5	1	**20**	42	18 05	32	29	53	28	50
11	342	34.3	−20	53.6	180	26.9 101	+26	18.4	1	**10 N**	17 58	18 20	18 46	16 51	52	5 06	51
12	357	34.0	−20	53.1	194	56.0 101	+26	18.3	1	**0**	18 13	18 36	19 01	17 11	52	4 45	51
13	12	33.8		52.6	209	25.0 100		18.0	3	**10 S**	29	18 51	18	32	50	24	52
14	27	33.6		52.2	223	54.1 101		17.6	4	**20**	18 45	19 10	19 38	17 54	49	4 02	52
15	42	33.4		51.7	238	23.2 101		17.0	6	**30**	19 05	31	20 04	18 20	48	3 36	52
16	57	33.2		51.2	252	52.2 100		16.4	6	**35**	16	19 45	20	35	47	21	52
17	72	33.0	−20	50.7	267	21.3 101	+26	15.6	8	**40**	19 29	20 01	20 40	18 53	46	3 04	52
18	87	32.8	−20	50.2	281	50.3 100	+26	14.6	10	**45**	19 45	20 20	21 06	19 14	44	2 42	53
19	102	32.6		49.7	296	19.3 100		13.6	10	**50**	20 04	45	21 42	41	42	16	53
20	117	32.4		49.3	310	48.4 101		12.4	12	**52**	13	20 58	22 02	19 54	41	2 03	53
21	132	32.2		48.8	325	17.4 100		11.1	13	**54**	23	21 12	22 27	20 09	40	1 48	53
22	147	32.0		48.3	339	46.4 100		09.6	15	**56**	35	29	23 05	26	38	30	53
23	162	31.7		47.8	354	15.5 101		08.0	16	**58**	20 48	21 50	** **	20 47	36	1 09	53
24	177	31.5	−20	47.3	8	44.5 100	+26	06.3	17	**60 S**	21 04	22 17	** **	21 14	32	0 41	54

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16ʰ 15ᵐ.7		PMG: 11ʰ 16ᵐ			PMG: 9ʰ 51ᵐ			PMG: 14ʰ 40ᵐ			PMG: 13ʰ 22ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	115	24.7	190	09.7	−16 34.1	212	08.7	−23 35.7	139	30.1	−11 05.3	159	06.3	−17 32.5
1	130	27.1	205	13.5	33.9	227	09.2	35.8	154	32.1	05.1	174	08.5	32.4
2	145	29.6	220	17.3	33.7	242	09.8	35.9	169	34.0	04.9	189	10.6	32.3
3	160	32.1	235	21.1	33.5	257	10.3	36.0	184	36.0	04.7	204	12.8	32.2
4	175	34.5	250	24.9	33.3	272	10.8	36.1	199	37.9	04.5	219	15.0	32.1
5	190	37.0	265	28.7	−16 33.1	287	11.3	−23 36.2	214	39.9	−11 04.3	234	17.1	−17 32.0
6	205	39.5	280	32.5	−16 32.9	302	11.8	−23 36.3	229	41.8	−11 04.1	249	19.3	−17 32.0
7	220	41.9	295	36.3	32.7	317	12.3	36.5	244	43.8	03.9	264	21.5	31.9
8	235	44.4	310	40.1	32.5	332	12.8	36.6	259	45.7	03.7	279	23.7	31.8
9	250	46.9	325	43.9	32.3	347	13.3	36.7	274	47.7	03.5	294	25.8	31.7
10	265	49.3	340	47.7	32.1	2	13.8	36.8	289	49.6	03.3	309	28.0	31.6
11	280	51.8	355	51.5	−16 31.9	17	14.3	−23 36.9	304	51.6	−11 03.1	324	30.2	−17 31.6
12	295	54.2	10	55.3	−16 31.7	32	14.8	−23 37.0	319	53.6	−11 02.9	339	32.3	−17 31.5
13	310	56.7	25	59.1	31.5	47	15.3	37.1	334	55.5	02.7	354	34.5	31.4
14	325	59.2	41	02.9	31.3	62	15.8	37.2	349	57.5	02.5	9	36.7	31.3
15	341	01.6	56	06.6	31.1	77	16.3	37.3	4	59.4	02.3	24	38.9	31.2
16	356	04.1	71	10.4	31.0	92	16.8	37.4	20	01.4	02.1	39	41.0	31.1
17	11	06.6	86	14.2	−16 30.8	107	17.3	−23 37.5	35	03.3	−11 01.9	54	43.2	−17 31.1
18	26	09.0	101	17.9	−16 30.6	122	17.8	−23 37.6	50	05.3	−11 01.7	69	45.4	−17 31.0
19	41	11.5	116	21.7	30.4	137	18.3	37.8	65	07.2	01.5	84	47.5	30.9
20	56	14.0	131	25.5	30.2	152	18.8	37.9	80	09.2	01.3	99	49.7	30.8
21	71	16.4	146	29.2	30.0	167	19.3	38.0	95	11.1	01.1	114	51.9	30.7
22	86	18.9	161	33.0	29.8	182	19.8	38.1	110	13.1	00.9	129	54.1	30.7
23	101	21.4	176	36.7	29.7	197	20.3	38.2	125	15.0	00.7	144	56.2	30.6
24	116	23.8	191	40.5	−16 29.5	212	20.8	−23 38.3	140	17.0	−11 00.5	159	58.4	−17 30.5
Dif	—			+38	+2		+5	−1		+20	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 10.m1				☾ LUNA Edad: 14.d2 SD: 14′.8 PMG: **h **m PHE 4h: 54′.4 / 12h: 54′.5 / 20h: 54′.6 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	177	31.5	−20	47.3	8	44.5	+26	06.3	**60 N**	6 59	7 52	8 44	14 14	80	9 29	24
1	192	31.3		46.8	23	13.5 100		04.5 18	**58**	53	43	31	38	76	9 05	28
2	207	31.1		46.3	37	42.6 101		02.5 20	**56**	48	35	19	14 58	72	8 45	32
3	222	30.9		45.8	52	11.6 100	+26	00.4 21	**54**	43	27	8 08	15 14	70	28	35
4	237	30.7		45.3	66	40.7 101	+25	58.2 22	**52**	38	21	7 59	28	68	14	36
5	252	30.5	−20	44.9	81	09.7 100	+25	55.8 24	**50**	6 34	7 14	7 51	15 40	67	8 01	38
6	267	30.3	−20	44.4	95	38.8 101	+25	53.3 25	**45**	6 25	7 01	7 34	16 06	63	7 36	40
7	282	30.1		43.9	110	07.8 100		50.7 26	**40**	16	6 50	19	26	60	7 15	43
8	297	29.9		43.4	124	36.9 101		48.0 27	**35**	09	40	7 07	43	58	6 58	44
9	312	29.7		42.9	139	06.0 101		45.1 29	**30**	6 01	31	6 56	16 57	57	43	46
10	327	29.5		42.4	153	35.1 101		42.1 30	**20**	5 47	6 14	38	17 22	54	6 18	48
11	342	29.3	−20	41.9	168	04.3 102	+25	39.0 31	**10 N**	5 33	5 59	6 22	17 43	52	5 57	49
12	357	29.1	−20	41.4	182	33.4 101	+25	35.7 33	**0**	5 19	5 44	6 06	18 03	50	5 36	51
13	12	28.9		40.9	197	02.6 102		32.3 34	**10 S**	5 02	28	5 51	22	49	5 16	52
14	27	28.7		40.4	211	31.7 101		28.8 35	**20**	4 42	5 10	34	18 43	46	4 54	54
15	42	28.5		39.9	226	00.9 102		25.2 36	**30**	16	4 49	15	19 08	43	28	56
16	57	28.3		39.4	240	30.1 102		21.4 38	**35**	4 00	35	5 04	22	42	4 13	57
17	72	28.1	−20	38.9	254	59.3 102	+25	17.5 39	**40**	3 40	4 19	4 51	19 39	39	3 56	58
18	87	27.9	−20	38.4	269	28.6 103	+25	13.5 40	**45**	3 14	4 00	4 35	19 58	37	3 35	60
19	102	27.7		37.9	283	57.9 103		09.4 41	**50**	2 38	3 35	16	20 23	34	3 09	62
20	117	27.4		37.4	298	27.1 102		05.1 43	**52**	2 19	23	4 07	35	32	2 56	63
21	132	27.2		36.9	312	56.5 104	+25	00.7 44	**54**	1 53	3 08	3 57	20 49	29	41	65
22	147	27.0		36.4	327	25.8 103	+24	56.2 45	**56**	1 15	2 51	45	21 04	27	23	68
23	162	26.8		35.9	341	55.2 104		51.5 47	**58**	** **	30	32	23	23	2 02	70
24	177	26.6	−20	35.4	356	24.5 103	+24	46.8 47	**60 S**	** **	2 03	3 16	21 46	18	1 35	75

UT	ARIES PMG 16h 11.m8		VENUS Mag: −4.3 PMG: 11h 11m			MARTE Mag: +1.5 PMG: 9h 50m			JÚPITER Mag: −2.1 PMG: 14h 37m			SATURNO Mag: +0.7 PMG: 13h 18m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	116	23.8	191	40.5	−16 29.5	212	20.8	−23 38.3	140	17.0	−11 00.5	159	58.4	−17 30.5
1	131	26.3	206	44.2	29.3	227	21.3	38.4	155	18.9	00.3	175	00.6	30.4
2	146	28.7	221	47.9	29.1	242	21.8	38.5	170	20.9	−11 00.1	190	02.7	30.3
3	161	31.2	236	51.7	28.9	257	22.3	38.6	185	22.8	−10 59.9	205	04.9	30.2
4	176	33.7	251	55.4	28.8	272	22.8	38.7	200	24.8	59.7	220	07.1	30.2
5	191	36.1	266	59.1	−16 28.6	287	23.3	−23 38.8	215	26.7	−10 59.5	235	09.3	−17 30.1
6	206	38.6	282	02.8	−16 28.4	302	23.8	−23 38.9	230	28.7	−10 59.3	250	11.4	−17 30.0
7	221	41.1	297	06.6	28.2	317	24.3	39.0	245	30.6	59.1	265	13.6	29.9
8	236	43.5	312	10.3	28.1	332	24.8	39.1	260	32.6	58.9	280	15.8	29.8
9	251	46.0	327	14.0	27.9	347	25.3	39.2	275	34.5	58.7	295	17.9	29.7
10	266	48.5	342	17.7	27.7	2	25.8	39.3	290	36.5	58.5	310	20.1	29.7
11	281	50.9	357	21.4	−16 27.5	17	26.3	−23 39.4	305	38.4	−10 58.3	325	22.3	−17 29.6
12	296	53.4	12	25.1	−16 27.4	32	26.8	−23 39.5	320	40.4	−10 58.1	340	24.5	−17 29.5
13	311	55.9	27	28.8	27.2	47	27.3	39.6	335	42.3	57.9	355	26.6	29.4
14	326	58.3	42	32.5	27.0	62	27.8	39.7	350	44.3	57.7	10	28.8	29.3
15	342	00.8	57	36.2	26.9	77	28.3	39.8	5	46.2	57.6	25	31.0	29.3
16	357	03.2	72	39.9	26.7	92	28.8	39.9	20	48.2	57.4	40	33.1	29.2
17	12	05.7	87	43.6	−16 26.5	107	29.3	−23 40.0	35	50.1	−10 57.2	55	35.3	−17 29.1
18	27	08.2	102	47.3	−16 26.4	122	29.8	−23 40.1	50	52.1	−10 57.0	70	37.5	−17 29.0
19	42	10.6	117	50.9	26.2	137	30.3	40.2	65	54.0	56.8	85	39.6	28.9
20	57	13.1	132	54.6	26.0	152	30.8	40.3	80	56.0	56.6	100	41.8	28.8
21	72	15.6	147	58.3	25.9	167	31.3	40.4	95	57.9	56.4	115	44.0	28.8
22	87	18.0	163	01.9	25.7	182	31.8	40.4	110	59.9	56.2	130	46.2	28.7
23	102	20.5	178	05.6	25.5	197	32.3	40.5	126	01.8	56.0	145	48.3	28.6
24	117	23.0	193	09.3	−16 25.4	212	32.8	−23 40.6	141	03.8	−10 55.8	160	50.5	−17 28.5
Dif	—			+37	+2		+5	−1		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 15ᵈ.2		PHE	4ʰ: 54′.7								
	PMG: 12ʰ 10ᵐ.4				SD: 14′.9			12ʰ: 54′.8								
					PMG: 0ʰ 15ᵐ			20ʰ: 55′.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	26.6	−20	35.4	356	24.5	+24	46.8	**60 N**	15 39	16 30	17 24	15 34	89	9 53	14
1	192	26.4		34.9	10	54.0 105		41.9 49	**58**	15 52	40	29	15 54	83	33	19
2	207	26.2		34.4	25	23.4 104		36.9 50	**56**	16 04	48	35	16 10	79	17	22
3	222	26.0		33.9	39	52.9 105		31.7 52	**54**	14	16 55	39	24	76	9 03	25
4	237	25.8		33.4	54	22.4 105		26.5 52	**52**	23	17 02	44	36	73	8 50	28
5	252	25.7	−20	32.8	68	51.9 105	+24	21.1 54	**50**	16 31	17 08	17 48	16 47	71	8 39	30
6	267	25.5	−20	32.3	83	21.5 106	+24	15.6 55	**45**	16 48	17 21	17 57	17 09	66	8 16	34
7	282	25.3		31.8	97	51.1 106		09.9 57	**40**	17 02	32	18 05	26	64	7 58	37
8	297	25.1		31.3	112	20.7 106	+24	04.2 57	**35**	14	42	13	41	61	42	39
9	312	24.9		30.8	126	50.4 107	+23	58.3 59	**30**	25	17 51	20	17 54	59	29	41
10	327	24.7		30.3	141	20.0 106		52.3 60	**20**	43	18 07	34	18 16	55	7 06	44
11	342	24.5	−20	29.8	155	49.8 108	+23	46.2 61	**10 N**	17 59	18 21	18 47	18 35	52	6 46	47
12	357	24.3	−20	29.3	170	19.5 107	+23	40.0 62	**0**	18 14	18 36	19 02	18 53	49	6 27	50
13	12	24.1		28.8	184	49.3 108		33.7 63	**10 S**	29	18 52	18	19 11	45	6 08	52
14	27	23.9		28.2	199	19.2 109		27.2 65	**20**	18 45	19 09	19 38	29	43	5 48	55
15	42	23.7		27.7	213	49.0 108		20.6 66	**30**	19 04	31	20 03	19 51	39	24	58
16	57	23.5		27.2	228	18.9 109		13.9 67	**35**	15	19 44	19	20 04	36	5 10	60
17	72	23.3	−20	26.7	242	48.9 110	+23	07.1 68	**40**	19 28	20 00	20 39	20 18	34	4 54	63
18	87	23.1	−20	26.2	257	18.9 110	+23	00.2 69	**45**	19 43	20 18	21 04	20 35	31	4 35	65
19	102	22.9		25.7	271	48.9 110	+22	53.2 70	**50**	20 02	43	39	20 57	26	4 11	69
20	117	22.7		25.1	286	19.0 111		46.0 72	**52**	11	20 55	21 58	21 07	24	3 59	71
21	132	22.5		24.6	300	49.1 111		38.7 73	**54**	21	21 09	22 22	18	22	46	74
22	147	22.3		24.1	315	19.2 111		31.4 73	**56**	32	25	22 56	31	19	31	76
23	162	22.1		23.6	329	49.4 112		23.9 75	**58**	20 45	21 45	** **	21 46	15	3 12	81
24	177	21.9	−20	23.1	344	19.6 112	+22	16.3 76	**60 S**	21 00	22 11	** **	22 04	10	2 50	85

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16ʰ 07ᵐ.8		PMG: 11ʰ 05ᵐ			PMG: 9ʰ 49ᵐ			PMG: 14ʰ 34ᵐ			PMG: 13ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	117	23.0	193	09.3	−16 25.4	212	32.8	−23 40.6	141	03.8	−10 55.8	160	50.5	−17 28.5
1	132	25.4	208	12.9	25.2	227	33.3	40.7	156	05.7	55.6	175	52.7	28.4
2	147	27.9	223	16.6	25.1	242	33.8	40.8	171	07.7	55.4	190	54.8	28.3
3	162	30.4	238	20.2	24.9	257	34.3	40.9	186	09.6	55.2	205	57.0	28.3
4	177	32.8	253	23.9	24.7	272	34.8	41.0	201	11.6	55.0	220	59.2	28.2
5	192	35.3	268	27.5	−16 24.6	287	35.3	−23 41.1	216	13.5	−10 54.8	236	01.4	−17 28.1
6	207	37.7	283	31.1	−16 24.4	302	35.8	−23 41.2	231	15.5	−10 54.6	251	03.5	−17 28.0
7	222	40.2	298	34.8	24.3	317	36.3	41.3	246	17.4	54.4	266	05.7	27.9
8	237	42.7	313	38.4	24.1	332	36.8	41.4	261	19.4	54.2	281	07.9	27.9
9	252	45.1	328	42.0	24.0	347	37.2	41.5	276	21.3	54.0	296	10.0	27.8
10	267	47.6	343	45.6	23.8	2	37.7	41.6	291	23.3	53.8	311	12.2	27.7
11	282	50.1	358	49.3	−16 23.7	17	38.2	−23 41.6	306	25.2	−10 53.6	326	14.4	−17 27.6
12	297	52.5	13	52.9	−16 23.5	32	38.7	−23 41.7	321	27.1	−10 53.3	341	16.5	−17 27.5
13	312	55.0	28	56.5	23.4	47	39.2	41.8	336	29.1	53.1	356	18.7	27.4
14	327	57.5	44	00.1	23.2	62	39.7	41.9	351	31.0	52.9	11	20.9	27.4
15	342	59.9	59	03.7	23.1	77	40.2	42.0	6	33.0	52.7	26	23.1	27.3
16	358	02.4	74	07.3	22.9	92	40.7	42.1	21	34.9	52.5	41	25.2	27.2
17	13	04.9	89	10.9	−16 22.8	107	41.2	−23 42.2	36	36.9	−10 52.3	56	27.4	−17 27.1
18	28	07.3	104	14.5	−16 22.6	122	41.7	−23 42.3	51	38.8	−10 52.1	71	29.6	−17 27.0
19	43	09.8	119	18.1	22.5	137	42.2	42.3	66	40.8	51.9	86	31.7	26.9
20	58	12.2	134	21.6	22.3	152	42.7	42.4	81	42.7	51.7	101	33.9	26.9
21	73	14.7	149	25.2	22.2	167	43.2	42.5	96	44.7	51.5	116	36.1	26.8
22	88	17.2	164	28.8	22.0	182	43.7	42.6	111	46.6	51.3	131	38.2	26.7
23	103	19.6	179	32.4	21.9	197	44.2	42.7	126	48.6	51.1	146	40.4	26.6
24	118	22.1	194	35.9	−16 21.8	212	44.7	−23 42.8	141	50.5	−10 50.9	161	42.6	−17 26.5
Dif	—			+36	+2		+5	−1		+19	+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}.2		PHE	4^{h}: 55′.1									
	PMG: 12^{h} 10^{m}.7				SD: 15′.0			12^{h}: 55′.2									
					PMG: 1^{h} 05^{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	177	21.9	−20	23.1	344	19.6	+22	16.3		**60 N**	6 56	7 50	8 41	17 03	89	10 07	8
1	192	21.7		22.5	358	49.9 113		08.6	77	**58**	51	41	28	17	85	9 52	12
2	207	21.6		22.0	13	20.2 113	+22	00.8	78	**56**	46	32	16	29	81	39	16
3	222	21.4		21.5	27	50.6 114	+21	52.8	80	**54**	41	25	8 06	40	78	28	19
4	237	21.2		21.0	42	20.9 113		44.8	80	**52**	37	19	7 57	49	76	18	21
5	252	21.0	−20	20.4	56	51.4 115	+21	36.6	82	**50**	6 33	7 13	7 49	17 58	73	9 09	24
6	267	20.8	−20	19.9	71	21.9 115	+21	28.4	82	**45**	6 24	7 00	7 32	18 15	69	8 50	28
7	282	20.6		19.4	85	52.4 115		20.0	84	**40**	16	6 49	18	30	65	35	31
8	297	20.4		18.9	100	23.0 116		11.6	84	**35**	08	39	7 06	42	62	21	35
9	312	20.2		18.3	114	53.6 116	+21	03.0	86	**30**	6 01	30	6 56	18 53	59	8 10	37
10	327	20.0		17.8	129	24.2 116	+20	54.3	87	**20**	5 47	14	38	19 11	54	7 50	41
11	342	19.8	−20	17.3	143	54.9 117	+20	45.6	87	**10 N**	5 34	6 00	6 22	19 27	50	7 33	44
12	357	19.6	−20	16.8	158	25.7 118	+20	36.7	89	**0**	5 19	5 45	6 07	19 42	47	7 17	47
13	12	19.5		16.2	172	56.5 118		27.7	90	**10 S**	5 03	29	5 52	19 56	44	7 00	51
14	27	19.3		15.7	187	27.3 118		18.6	91	**20**	4 44	5 12	36	20 12	39	6 43	54
15	42	19.1		15.2	201	58.2 119		09.4	92	**30**	18	4 50	17	30	35	22	59
16	57	18.9		14.6	216	29.1 119	+20	00.2	92	**35**	4 02	37	5 06	40	33	6 10	62
17	72	18.7	−20	14.1	231	00.0 119	+19	50.8	94	**40**	3 43	4 22	4 53	20 52	29	5 57	64
18	87	18.5	−20	13.6	245	31.1 121	+19	41.3	95	**45**	3 18	4 03	4 38	21 06	26	5 40	68
19	102	18.3		13.0	260	02.1 120		31.7	96	**50**	2 43	3 39	19	23	21	20	72
20	117	18.2		12.5	274	33.2 121		22.1	96	**52**	24	27	11	31	19	10	75
21	132	18.0		12.0	289	04.4 122		12.3	98	**54**	2 00	3 13	4 01	40	16	5 00	77
22	147	17.8		11.4	303	35.5 121	+19	02.5	98	**56**	1 25	2 56	3 49	21 50	13	4 47	81
23	162	17.6		10.9	318	06.8 123	+18	52.5	100	**58**	** **	36	36	22 01	10	33	84
24	177	17.4	−20	10.4	332	38.1 123	+18	42.5	100	**60 S**	** **	2 11	3 21	22 14	6	4 15	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.5			Mag: −2.1			Mag: +0.7		
	16^{h} 03^{m}.9		PMG: 10^{h} 59^{m}			PMG: 9^{h} 49^{m}			PMG: 14^{h} 31^{m}			PMG: 13^{h} 11^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	118	22.1	194	35.9	−16 21.8	212	44.7	−23 42.8	141	50.5	−10 50.9	161	42.6	−17 26.5
1	133	24.6	209	39.5	21.6	227	45.2	42.8	156	52.5	50.7	176	44.8	26.4
2	148	27.0	224	43.0	21.5	242	45.7	42.9	171	54.4	50.5	191	46.9	26.4
3	163	29.5	239	46.6	21.4	257	46.2	43.0	186	56.4	50.3	206	49.1	26.3
4	178	32.0	254	50.2	21.2	272	46.7	43.1	201	58.3	50.1	221	51.3	26.2
5	193	34.4	269	53.7	−16 21.1	287	47.2	−23 43.2	217	00.2	−10 49.9	236	53.4	−17 26.1
6	208	36.9	284	57.2	−16 20.9	302	47.7	−23 43.3	232	02.2	−10 49.7	251	55.6	−17 26.0
7	223	39.3	300	00.8	20.8	317	48.1	43.3	247	04.1	49.5	266	57.8	26.0
8	238	41.8	315	04.3	20.7	332	48.6	43.4	262	06.1	49.3	281	59.9	25.9
9	253	44.3	330	07.8	20.5	347	49.1	43.5	277	08.0	49.1	297	02.1	25.8
10	268	46.7	345	11.4	20.4	2	49.6	43.6	292	10.0	48.9	312	04.3	25.7
11	283	49.2	0	14.9	−16 20.3	17	50.1	−23 43.7	307	11.9	−10 48.7	327	06.4	−17 25.6
12	298	51.7	15	18.4	−16 20.2	32	50.6	−23 43.7	322	13.9	−10 48.5	342	08.6	−17 25.5
13	313	54.1	30	21.9	20.0	47	51.1	43.8	337	15.8	48.3	357	10.8	25.5
14	328	56.6	45	25.4	19.9	62	51.6	43.9	352	17.8	48.1	12	13.0	25.4
15	343	59.1	60	28.9	19.8	77	52.1	44.0	7	19.7	47.9	27	15.1	25.3
16	359	01.5	75	32.4	19.6	92	52.6	44.1	22	21.6	47.7	42	17.3	25.2
17	14	04.0	90	35.9	−16 19.5	107	53.1	−23 44.1	37	23.6	−10 47.5	57	19.5	−17 25.1
18	29	06.5	105	39.4	−16 19.4	122	53.6	−23 44.2	52	25.5	−10 47.3	72	21.6	−17 25.0
19	44	08.9	120	42.9	19.3	137	54.1	44.3	67	27.5	47.1	87	23.8	25.0
20	59	11.4	135	46.4	19.1	152	54.6	44.4	82	29.4	46.9	102	26.0	24.9
21	74	13.8	150	49.9	19.0	167	55.1	44.4	97	31.4	46.7	117	28.1	24.8
22	89	16.3	165	53.4	18.9	182	55.5	44.5	112	33.3	46.5	132	30.3	24.7
23	104	18.8	180	56.9	18.8	197	56.0	44.6	127	35.3	46.3	147	32.5	24.6
24	119	21.2	196	00.3	−16 18.7	212	56.5	−23 44.7	142	37.2	−10 46.1	162	34.6	−17 24.5
Dif	—			+35	+1		+5	−1		+19	+2		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 11m.0				☽ LUNA Edad: 17d.2 SD: 15′.1 PMG: 1h 53m PHE 4h: 55′.5; 12h: 55′.7; 20h: 55′.8 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	177	17.4	−20	10.4	332	38.1	+18	42.5	**60 N**	15 43	16 35	17 28	18 32	89	10 15	5
1	192	17.2		09.8	347	09.4 123		32.3 102	**58**	15 56	43	33	42	85	10 04	9
2	207	17.0		09.3	1	40.7 123		22.1 102	**56**	16 08	51	38	50	82	9 55	12
3	222	16.9		08.7	16	12.2 125		11.8 103	**54**	18	16 58	42	18 58	78	47	14
4	237	16.7		08.2	30	43.6 124	+18	01.4 104	**52**	26	17 05	47	19 05	76	39	17
5	252	16.5	−20	07.7	45	15.1 125	+17	50.9 105	**50**	16 34	17 11	17 50	19 11	73	9 33	19
6	267	16.3	−20	07.1	59	46.6 125	+17	40.3 106	**45**	16 51	17 23	17 59	19 24	69	9 18	24
7	282	16.1		06.6	74	18.2 126		29.6 107	**40**	17 05	34	18 07	35	64	9 06	28
8	297	15.9		06.0	88	49.8 126		18.9 107	**35**	16	44	15	44	61	8 56	31
9	312	15.8		05.5	103	21.5 127	+17	08.0 109	**30**	27	17 52	21	19 52	58	47	33
10	327	15.6		05.0	117	53.2 127	+16	57.1 109	**20**	17 44	18 08	35	20 05	54	31	38
11	342	15.4	−20	04.4	132	25.0 128	+16	46.1 110	**10 N**	18 00	18 22	18 48	20 17	50	8 17	43
12	357	15.2	−20	03.9	146	56.8 128	+16	35.0 111	**0**	18 15	18 37	19 02	20 29	45	8 04	46
13	12	15.0		03.3	161	28.6 128		23.8 112	**10 S**	29	18 52	18	40	41	7 51	50
14	27	14.9		02.8	176	00.5 129		12.6 112	**20**	18 45	19 09	19 37	20 51	38	37	54
15	42	14.7		02.2	190	32.4 129	+16	01.2 114	**30**	19 04	30	20 02	21 05	32	21	59
16	57	14.5		01.7	205	04.3 129	+15	49.8 114	**35**	15	43	18	13	29	12	61
17	72	14.3	−20	01.1	219	36.3 130	+15	38.3 115	**40**	19 27	19 58	20 37	21 21	27	7 01	65
18	87	14.1	−20	00.6	234	08.3 130	+15	26.7 116	**45**	19 42	20 17	21 01	21 32	22	6 48	69
19	102	14.0	−20	00.0	248	40.4 131		15.1 116	**50**	20 00	40	35	44	18	32	74
20	117	13.8	−19	59.5	263	12.5 131	+15	03.4 117	**52**	09	20 52	21 53	50	16	25	76
21	132	13.6		58.9	277	44.7 132	+14	51.6 118	**54**	18	21 06	22 16	21 56	13	17	78
22	147	13.4		58.4	292	16.8 131		39.7 119	**56**	29	21	22 48	22 03	11	6 08	81
23	162	13.2		57.8	306	49.1 133		27.7 120	**58**	42	21 40	** **	11	7	5 57	85
24	177	13.1	−19	57.3	321	21.3 132	+14	15.7 120	**60 S**	20 57	22 05	** **	22 20	4	5 45	89

UT	ARIES PMG 16h 00m.0		VENUS Mag: −4.5 PMG: 10h 53m			MARTE Mag: +1.5 PMG: 9h 48m			JÚPITER Mag: −2.1 PMG: 14h 28m			SATURNO Mag: +0.7 PMG: 13h 08m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	119	21.2	196	00.3	−16 18.7	212	56.5	−23 44.7	142	37.2	−10 46.1	162	34.6	−17 24.5
1	134	23.7	211	03.8	18.5	227	57.0	44.7	157	39.1	45.9	177	36.8	24.5
2	149	26.2	226	07.2	18.4	242	57.5	44.8	172	41.1	45.7	192	39.0	24.4
3	164	28.6	241	10.7	18.3	257	58.0	44.9	187	43.0	45.5	207	41.2	24.3
4	179	31.1	256	14.2	18.2	272	58.5	45.0	202	45.0	45.3	222	43.3	24.2
5	194	33.6	271	17.6	−16 18.1	287	59.0	−23 45.0	217	46.9	−10 45.1	237	45.5	−17 24.1
6	209	36.0	286	21.1	−16 18.0	302	59.5	−23 45.1	232	48.9	−10 44.9	252	47.7	−17 24.0
7	224	38.5	301	24.5	17.8	318	00.0	45.2	247	50.8	44.7	267	49.8	24.0
8	239	41.0	316	27.9	17.7	333	00.5	45.2	262	52.7	44.5	282	52.0	23.9
9	254	43.4	331	31.4	17.6	348	01.0	45.3	277	54.7	44.3	297	54.2	23.8
10	269	45.9	346	34.8	17.5	3	01.5	45.4	292	56.6	44.1	312	56.3	23.7
11	284	48.3	1	38.2	−16 17.4	18	01.9	−23 45.5	307	58.6	−10 43.9	327	58.5	−17 23.6
12	299	50.8	16	41.6	−16 17.3	33	02.4	−23 45.5	323	00.5	−10 43.7	343	00.7	−17 23.5
13	314	53.3	31	45.0	17.2	48	02.9	45.6	338	02.5	43.5	358	02.8	23.5
14	329	55.7	46	48.5	17.1	63	03.4	45.7	353	04.4	43.3	13	05.0	23.4
15	344	58.2	61	51.9	17.0	78	03.9	45.7	8	06.4	43.1	28	07.2	23.3
16	0	00.7	76	55.3	16.9	93	04.4	45.8	23	08.3	42.9	43	09.3	23.2
17	15	03.1	91	58.7	−16 16.8	108	04.9	−23 45.9	38	10.2	−10 42.7	58	11.5	−17 23.1
18	30	05.6	107	02.1	−16 16.7	123	05.4	−23 45.9	53	12.2	−10 42.4	73	13.7	−17 23.0
19	45	08.1	122	05.4	16.6	138	05.9	46.0	68	14.1	42.2	88	15.9	23.0
20	60	10.5	137	08.8	16.4	153	06.4	46.1	83	16.1	42.0	103	18.0	22.9
21	75	13.0	152	12.2	16.3	168	06.8	46.1	98	18.0	41.8	118	20.2	22.8
22	90	15.5	167	15.6	16.2	183	07.3	46.2	113	19.9	41.6	133	22.4	22.7
23	105	17.9	182	19.0	16.1	198	07.8	46.3	128	21.9	41.4	148	24.5	22.6
24	120	20.4	197	22.3	−16 16.0	213	08.3	−23 46.3	143	23.8	−10 41.2	163	26.7	−17 22.5
Dif	—			+34	+1		+5	−1		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3 PMG: $12^h\ 11^m.3$				Edad: $18^d.2$ SD: 15′.2 PMG: $2^h\ 39^m$		PHE: 4^h: 56′.0, 12^h: 56′.1, 20^h: 56′.3; Rº: 46^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	177	13.1	−19	57.3	321	21.3	+14	15.7	**60 N**	6 54	7 47	8 37	20 01	88	10 20	3
1	192	12.9		56.7	335	53.6 133	+14	03.6 121	**58**	48	38	25	07	85	13	7
2	207	12.7		56.2	350	25.9 133	+13	51.5 121	**56**	44	30	13	12	82	07	10
3	222	12.5		55.6	4	58.3 134		39.3 122	**54**	39	23	8 04	16	79	10 01	13
4	237	12.4		55.1	19	30.7 134		27.0 123	**52**	35	17	7 55	21	76	9 56	15
5	252	12.2	−19	54.5	34	03.1 134	+13	14.6 124	**50**	6 31	7 11	7 47	20 24	74	9 52	17
6	267	12.0	−19	54.0	48	35.5 134	+13	02.2 124	**45**	6 22	6 58	7 31	20 33	69	9 42	21
7	282	11.8		53.4	63	08.0 135	+12	49.7 125	**40**	15	48	17	39	65	34	25
8	297	11.7		52.8	77	40.5 135		37.1 126	**35**	07	38	7 05	45	62	27	28
9	312	11.5		52.3	92	13.1 136		24.5 126	**30**	6 01	30	6 55	50	59	20	32
10	327	11.3		51.7	106	45.6 135	+12	11.8 127	**20**	5 47	14	38	20 59	53	09	37
11	342	11.1	−19	51.2	121	18.2 136	+11	59.0 128	**10 N**	5 34	6 00	6 22	21 07	48	9 00	40
12	357	11.0	−19	50.6	135	50.9 137	+11	46.2 128	**0**	5 20	5 46	6 08	21 14	44	8 50	45
13	12	10.8		50.0	150	23.5 136		33.4 128	**10 S**	5 04	30	5 53	21	40	41	49
14	27	10.6		49.5	164	56.2 137		20.4 130	**20**	4 45	5 13	37	29	35	31	54
15	42	10.4		48.9	179	28.9 137	+11	07.4 130	**30**	20	4 52	19	37	31	20	58
16	57	10.3		48.4	194	01.7 138	+10	54.4 130	**35**	4 05	40	5 08	42	28	13	62
17	72	10.1	−19	47.8	208	34.4 137	+10	41.3 131	**40**	3 46	4 24	4 56	21 48	24	8 06	64
18	87	09.9	−19	47.2	223	07.2 138	+10	28.1 132	**45**	3 21	4 06	4 41	21 54	21	7 57	69
19	102	09.8		46.7	237	40.0 138		14.9 132	**50**	2 48	3 42	23	22 02	16	46	74
20	117	09.6		46.1	252	12.8 138	+10	01.6 133	**52**	29	31	14	06	14	41	76
21	132	09.4		45.5	266	45.7 139	+9	48.3 133	**54**	2 07	17	4 04	09	12	35	79
22	147	09.2		45.0	281	18.5 138		34.9 134	**56**	1 35	3 01	3 54	14	9	29	82
23	162	09.1		44.4	295	51.4 139		21.5 134	**58**	** **	2 42	41	18	7	22	85
24	177	08.9	−19	43.8	310	24.3 139	+9	08.0 135	**60 S**	** **	2 18	3 26	22 24	3	7 14	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG $15^h\ 56^m.0$		Mag: −4.5 PMG: $10^h\ 48^m$			Mag: +1.5 PMG: $9^h\ 47^m$			Mag: −2.1 PMG: $14^h\ 25^m$			Mag: +0.7 PMG: $13^h\ 04^m$		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	120	20.4	197	22.3	−16 16.0	213	08.3	−23 46.3	143	23.8	−10 41.2	163	26.7	−17 22.5
1	135	22.8	212	25.7	15.9	228	08.8	46.4	158	25.8	41.0	178	28.9	22.5
2	150	25.3	227	29.1	15.8	243	09.3	46.5	173	27.7	40.8	193	31.0	22.4
3	165	27.8	242	32.4	15.8	258	09.8	46.5	188	29.7	40.6	208	33.2	22.3
4	180	30.2	257	35.8	15.7	273	10.3	46.6	203	31.6	40.4	223	35.4	22.2
5	195	32.7	272	39.1	−16 15.6	288	10.8	−23 46.6	218	33.5	−10 40.2	238	37.5	−17 22.1
6	210	35.2	287	42.4	−16 15.5	303	11.3	−23 46.7	233	35.5	−10 40.0	253	39.7	−17 22.0
7	225	37.6	302	45.8	15.4	318	11.7	46.8	248	37.4	39.8	268	41.9	22.0
8	240	40.1	317	49.1	15.3	333	12.2	46.8	263	39.4	39.6	283	44.0	21.9
9	255	42.6	332	52.5	15.2	348	12.7	46.9	278	41.3	39.4	298	46.2	21.8
10	270	45.0	347	55.8	15.1	3	13.2	47.0	293	43.2	39.2	313	48.4	21.7
11	285	47.5	2	59.1	−16 15.0	18	13.7	−23 47.0	308	45.2	−10 39.0	328	50.5	−17 21.6
12	300	49.9	18	02.4	−16 14.9	33	14.2	−23 47.1	323	47.1	−10 38.8	343	52.7	−17 21.5
13	315	52.4	33	05.7	14.8	48	14.7	47.1	338	49.1	38.6	358	54.9	21.5
14	330	54.9	48	09.0	14.7	63	15.2	47.2	353	51.0	38.4	13	57.0	21.4
15	345	57.3	63	12.3	14.7	78	15.7	47.3	8	53.0	38.2	28	59.2	21.3
16	0	59.8	78	15.6	14.6	93	16.1	47.3	23	54.9	38.0	44	01.4	21.2
17	16	02.3	93	18.9	−16 14.5	108	16.6	−23 47.4	38	56.8	−10 37.8	59	03.6	−17 21.1
18	31	04.7	108	22.2	−16 14.4	123	17.1	−23 47.4	53	58.8	−10 37.6	74	05.7	−17 21.0
19	46	07.2	123	25.5	14.3	138	17.6	47.5	69	00.7	37.4	89	07.9	21.0
20	61	09.7	138	28.8	14.2	153	18.1	47.5	84	02.7	37.1	104	10.1	20.9
21	76	12.1	153	32.1	14.2	168	18.6	47.6	99	04.6	36.9	119	12.2	20.8
22	91	14.6	168	35.3	14.1	183	19.1	47.6	114	06.5	36.7	134	14.4	20.7
23	106	17.1	183	38.6	14.0	198	19.6	47.7	129	08.5	36.5	149	16.6	20.6
24	121	19.5	198	41.9	−16 13.9	213	20.0	−23 47.8	144	10.4	−10 36.3	164	18.7	−17 20.5
Dif	—			+33	+1		+5	−1		+19	+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}.2		PHE	4^{h}: 56′.5								
	PMG: 12^{h} 11^{m}.5				SD: 15′.4			12^{h}: 56′.7								
					PMG: 3^{h} 25^{m}			20^{h}: 56′.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	08.9	−19	43.8	310	24.3	+9	08.0	**60 N**	15 48	16 39	17 31	21 29	90	10 23	3
1	192	08.7		43.3	324	57.2 139	+8	54.5 135	**58**	16 01	47	37	32	85	20	6
2	207	08.6		42.7	339	30.1 139		40.9 136	**56**	12	16 55	41	34	82	17	8
3	222	08.4		42.1	354	03.1 140		27.3 136	**54**	21	17 02	45	35	80	14	11
4	237	08.2		41.6	8	36.1 140	+8	13.6 137	**52**	30	08	49	37	77	11	14
5	252	08.1	−19	41.0	23	09.0 139	+7	59.9 137	**50**	16 37	17 13	17 53	21 38	76	10 09	15
6	267	07.9	−19	40.4	37	42.0 140	+7	46.2 137	**45**	16 54	17 26	18 02	21 42	70	10 03	21
7	282	07.7		39.8	52	15.0 140		32.4 138	**40**	17 07	36	09	44	66	9 59	24
8	297	07.6		39.3	66	48.0 140		18.5 139	**35**	18	46	16	47	62	55	27
9	312	07.4		38.7	81	21.1 141	+7	04.6 139	**30**	28	17 54	23	49	59	52	30
10	327	07.2		38.1	95	54.1 140	+6	50.7 139	**20**	17 46	18 09	36	52	54	46	35
11	342	07.1	−19	37.5	110	27.1 140	+6	36.7 140	**10 N**	18 01	18 23	18 49	21 55	50	9 40	40
12	357	06.9	−19	37.0	125	00.2 141	+6	22.7 140	**0**	18 15	18 37	19 03	21 58	45	9 35	45
13	12	06.7		36.4	139	33.2 140	+6	08.7 140	**10 S**	30	18 52	18	22 01	41	30	49
14	27	06.6		35.8	154	06.3 141	+5	54.6 141	**20**	18 45	19 09	19 37	04	36	25	53
15	42	06.4		35.2	168	39.3 140		40.5 141	**30**	19 03	29	20 01	08	31	18	59
16	57	06.2		34.7	183	12.4 141		26.3 142	**35**	14	42	16	10	28	15	62
17	72	06.1	−19	34.1	197	45.4 140	+5	12.1 142	**40**	19 26	19 57	20 35	22 12	24	9 10	66
18	87	05.9	−19	33.5	212	18.5 141	+4	57.9 142	**45**	19 40	20 15	20 59	22 15	20	9 06	69
19	102	05.7		32.9	226	51.6 141		43.6 143	**50**	19 58	38	21 32	18	16	9 00	74
20	117	05.6		32.3	241	24.6 140		29.4 142	**52**	20 06	20 49	21 49	20	13	8 57	77
21	132	05.4		31.8	255	57.7 141		15.0 144	**54**	16	21 02	22 10	21	11	54	79
22	147	05.3		31.2	270	30.7 140	+4	00.7 143	**56**	26	17	22 39	23	9	51	82
23	162	05.1		30.6	285	03.8 141	+3	46.3 144	**58**	38	35	23 29	25	6	47	85
24	177	04.9	−19	30.0	299	36.8 140	+3	31.9 144	**60 S**	20 52	21 58	** **	22 27	3	8 43	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 52^{m}.1		PMG: 10^{h} 43^{m}			PMG: 9^{h} 46^{m}			PMG: 14^{h} 21^{m}			PMG: 13^{h} 01^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	121	19.5	198	41.9	−16 13.9	213	20.0	−23 47.8	144	10.4	−10 36.3	164	18.7	−17 20.5
1	136	22.0	213	45.1	13.8	228	20.5	47.8	159	12.4	36.1	179	20.9	20.4
2	151	24.4	228	48.4	13.8	243	21.0	47.9	174	14.3	35.9	194	23.1	20.4
3	166	26.9	243	51.6	13.7	258	21.5	47.9	189	16.2	35.7	209	25.2	20.3
4	181	29.4	258	54.9	13.6	273	22.0	48.0	204	18.2	35.5	224	27.4	20.2
5	196	31.8	273	58.1	−16 13.5	288	22.5	−23 48.0	219	20.1	−10 35.3	239	29.6	−17 20.1
6	211	34.3	289	01.4	−16 13.5	303	23.0	−23 48.1	234	22.1	−10 35.1	254	31.7	−17 20.0
7	226	36.8	304	04.6	13.4	318	23.5	48.1	249	24.0	34.9	269	33.9	19.9
8	241	39.2	319	07.8	13.3	333	23.9	48.2	264	25.9	34.7	284	36.1	19.9
9	256	41.7	334	11.0	13.2	348	24.4	48.2	279	27.9	34.5	299	38.2	19.8
10	271	44.2	349	14.3	13.2	3	24.9	48.3	294	29.8	34.3	314	40.4	19.7
11	286	46.6	4	17.5	−16 13.1	18	25.4	−23 48.3	309	31.8	−10 34.1	329	42.6	−17 19.6
12	301	49.1	19	20.7	−16 13.0	33	25.9	−23 48.4	324	33.7	−10 33.9	344	44.7	−17 19.5
13	316	51.5	34	23.9	13.0	48	26.4	48.4	339	35.6	33.7	359	46.9	19.4
14	331	54.0	49	27.1	12.9	63	26.9	48.5	354	37.6	33.5	14	49.1	19.4
15	346	56.5	64	30.3	12.8	78	27.3	48.5	9	39.5	33.3	29	51.2	19.3
16	1	58.9	79	33.5	12.7	93	27.8	48.6	24	41.4	33.1	44	53.4	19.2
17	17	01.4	94	36.7	−16 12.7	108	28.3	−23 48.6	39	43.4	−10 32.8	59	55.6	−17 19.1
18	32	03.9	109	39.9	−16 12.6	123	28.8	−23 48.7	54	45.3	−10 32.6	74	57.7	−17 19.0
19	47	06.3	124	43.0	12.6	138	29.3	48.7	69	47.3	32.4	89	59.9	18.9
20	62	08.8	139	46.2	12.5	153	29.8	48.8	84	49.2	32.2	105	02.1	18.9
21	77	11.3	154	49.4	12.4	168	30.3	48.8	99	51.1	32.0	120	04.2	18.8
22	92	13.7	169	52.5	12.4	183	30.7	48.9	114	53.1	31.8	135	06.4	18.7
23	107	16.2	184	55.7	12.3	198	31.2	48.9	129	55.0	31.6	150	08.6	18.6
24	122	18.7	199	58.9	−16 12.2	213	31.7	−23 49.0	144	57.0	−10 31.4	165	10.7	−17 18.5
Dif	—		+32		+1	+5		0	+19		+2	+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 20^{d}.2		PHE	4^{h}: 57′.0									
	PMG: 12^{h} 11^{m}.8				SD: 15′.5			12^{h}: 57′.2									
					PMG: 4^{h} 09^{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	177	04.9	−19	30.0	299	36.8	+3	31.9		**60 N**	6 51	7 43	8 33	22 59	92	10 26	3
1	192	04.8		29.4	314	09.9 141		17.5	144	**58**	46	35	21	57	89	26	6
2	207	04.6		28.8	328	42.9 140	+3	03.0	145	**56**	41	28	10	56	85	25	9
3	222	04.4		28.3	343	15.9 140	+2	48.5	145	**54**	37	21	8 01	55	82	25	11
4	237	04.3		27.7	357	48.9 140		34.0	145	**52**	33	15	7 53	54	80	25	13
5	252	04.1	−19	27.1	12	21.9 140	+2	19.5	145	**50**	6 30	7 09	7 45	22 54	77	10 24	16
6	267	04.0	−19	26.5	26	54.9 140	+2	05.0	145	**45**	6 21	6 57	7 29	22 52	72	10 24	20
7	282	03.8		25.9	41	27.9 140	+1	50.4	146	**40**	14	47	16	50	68	23	24
8	297	03.7		25.3	56	00.8 139		35.8	146	**35**	07	37	7 05	49	64	22	28
9	312	03.5		24.7	70	33.8 140		21.2	146	**30**	6 00	29	6 55	48	61	22	31
10	327	03.3		24.1	85	06.7 139	+1	06.6	146	**20**	5 47	14	37	46	56	21	36
11	342	03.2	−19	23.6	99	39.6 139	+0	51.9	147	**10 N**	5 35	6 00	6 22	22 45	50	10 20	41
12	357	03.0	−19	23.0	114	12.5 139	+0	37.3	146	**0**	5 21	5 46	6 08	22 43	46	10 20	45
13	12	02.9		22.4	128	45.3 138		22.6	147	**10 S**	5 05	31	5 54	42	42	19	50
14	27	02.7		21.8	143	18.2 139	+0	07.9	147	**20**	4 47	5 15	38	40	37	18	55
15	42	02.5		21.2	157	51.0 138	−0	06.8	147	**30**	23	4 54	20	39	31	17	60
16	57	02.4		20.6	172	23.8 138		21.5	147	**35**	4 07	42	5 10	38	28	17	63
17	72	02.2	−19	20.0	186	56.5 137	−0	36.2	147	**40**	3 49	4 27	4 58	22 36	26	10 16	67
18	87	02.1	−19	19.4	201	29.3 138	−0	51.0	148	**45**	3 25	4 09	4 44	22 35	22	10 15	71
19	102	01.9		18.8	216	02.0 137	−1	05.7	147	**50**	2 52	3 46	26	34	16	14	76
20	117	01.8		18.2	230	34.7 137		20.4	147	**52**	35	35	18	33	14	14	78
21	132	01.6		17.6	245	07.3 136		35.2	148	**54**	2 14	22	4 08	32	12	13	81
22	147	01.5		17.0	259	39.9 136	−1	50.0	148	**56**	1 45	3 07	3 58	32	9	13	83
23	162	01.3		16.4	274	12.5 136	−2	04.7	147	**58**	0 54	2 48	46	31	6	12	87
24	177	01.2	−19	15.8	288	45.1 136	−2	19.5	148	**60 S**	** **	2 26	3 32	22 30	3	10 12	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 48^{m}.2		PMG: 10^{h} 38^{m}			PMG: 9^{h} 46^{m}			PMG: 14^{h} 18^{m}			PMG: 12^{h} 57^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	122	18.7	199	58.9	−16 12.2	213	31.7	−23 49.0	144	57.0	−10 31.4	165	10.7	−17 18.5
1	137	21.1	215	02.0	12.2	228	32.2	49.0	159	58.9	31.2	180	12.9	18.4
2	152	23.6	230	05.2	12.1	243	32.7	49.0	175	00.8	31.0	195	15.1	18.3
3	167	26.0	245	08.3	12.1	258	33.2	49.1	190	02.8	30.8	210	17.2	18.3
4	182	28.5	260	11.4	12.0	273	33.6	49.1	205	04.7	30.6	225	19.4	18.2
5	197	31.0	275	14.6	−16 12.0	288	34.1	−23 49.2	220	06.6	−10 30.4	240	21.6	−17 18.1
6	212	33.4	290	17.7	−16 11.9	303	34.6	−23 49.2	235	08.6	−10 30.2	255	23.7	−17 18.0
7	227	35.9	305	20.8	11.8	318	35.1	49.3	250	10.5	30.0	270	25.9	17.9
8	242	38.4	320	24.0	11.8	333	35.6	49.3	265	12.5	29.8	285	28.1	17.8
9	257	40.8	335	27.1	11.7	348	36.1	49.3	280	14.4	29.6	300	30.2	17.8
10	272	43.3	350	30.2	11.7	3	36.6	49.4	295	16.3	29.3	315	32.4	17.7
11	287	45.8	5	33.3	−16 11.6	18	37.0	−23 49.4	310	18.3	−10 29.1	330	34.6	−17 17.6
12	302	48.2	20	36.4	−16 11.6	33	37.5	−23 49.5	325	20.2	−10 28.9	345	36.7	−17 17.5
13	317	50.7	35	39.5	11.5	48	38.0	49.5	340	22.1	28.7	0	38.9	17.4
14	332	53.2	50	42.6	11.5	63	38.5	49.5	355	24.1	28.5	15	41.1	17.3
15	347	55.6	65	45.7	11.4	78	39.0	49.6	10	26.0	28.3	30	43.2	17.3
16	2	58.1	80	48.8	11.4	93	39.5	49.6	25	27.9	28.1	45	45.4	17.2
17	18	00.5	95	51.8	−16 11.3	108	39.9	−23 49.7	40	29.9	−10 27.9	60	47.6	−17 17.1
18	33	03.0	110	54.9	−16 11.3	123	40.4	−23 49.7	55	31.8	−10 27.7	75	49.7	−17 17.0
19	48	05.5	125	58.0	11.2	138	40.9	49.7	70	33.8	27.5	90	51.9	16.9
20	63	07.9	141	01.1	11.2	153	41.4	49.8	85	35.7	27.3	105	54.1	16.8
21	78	10.4	156	04.1	11.2	168	41.9	49.8	100	37.6	27.1	120	56.2	16.7
22	93	12.9	171	07.2	11.1	183	42.4	49.8	115	39.6	26.9	135	58.4	16.7
23	108	15.3	186	10.2	11.1	198	42.8	49.9	130	41.5	26.7	151	00.6	16.6
24	123	17.8	201	13.3	−16 11.0	213	43.3	−23 49.9	145	43.4	−10 26.5	166	02.7	−17 16.5
Dif	—			+31	+1		+5	0		+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 12m.0				Edad: 21d.2 SD: 15′.7 PMG: 4h 54m		PHE 4h: 57′.6 12h: 57′.8 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	177	01.2	−19	15.8	288	45.1	−2	19.5	**60 N**	15 53	16 43	17 35	** **	**	10 29	3
1	192	01.0		15.2	303	17.6 135		34.3 148	**58**	16 05	51	40	** **	**	32	7
2	207	00.8		14.6	317	50.1 135	−2	49.0 147	**56**	16	16 59	45	** **	**	34	10
3	222	00.7		14.0	332	22.5 134	−3	03.8 148	**54**	25	17 05	49	** **	**	36	13
4	237	00.5		13.4	346	54.9 134		18.6 148	**52**	33	11	52	** **	**	38	15
5	252	00.4	−19	12.8	1	27.3 134	−3	33.3 147	**50**	16 41	17 16	17 56	** **	**	10 40	18
6	267	00.2	−19	12.2	15	59.6 133	−3	48.1 148	**45**	16 56	17 28	18 04	** **	**	10 44	22
7	282	00.1		11.6	30	31.9 133	−4	02.8 147	**40**	17 09	39	11	23 58	71	47	27
8	296	59.9		11.0	45	04.1 132		17.6 148	**35**	20	47	18	53	67	50	30
9	311	59.8		10.4	59	36.3 132		32.3 147	**30**	30	17 56	25	49	64	53	33
10	326	59.6		09.8	74	08.5 132	−4	47.1 148	**20**	17 47	18 10	37	42	58	10 57	39
11	341	59.5	−19	09.2	88	40.6 131	−5	01.8 147	**10 N**	18 02	18 24	18 49	23 35	54	11 01	43
12	356	59.3	−19	08.6	103	12.6 130	−5	16.5 147	**0**	18 16	18 38	19 03	23 29	49	11 05	47
13	11	59.2		08.0	117	44.6 130		31.2 147	**10 S**	30	18 52	18	24	44	09	51
14	26	59.0		07.4	132	16.5 129	−5	45.9 147	**20**	18 45	19 08	19 36	17	40	13	56
15	41	58.9		06.8	146	48.4 129	−6	00.6 147	**30**	19 02	29	20 00	10	35	17	62
16	56	58.7		06.2	161	20.3 129		15.2 146	**35**	13	41	15	06	32	20	65
17	71	58.6	−19	05.6	175	52.0 127	−6	29.9 147	**40**	19 24	19 55	20 33	23 02	28	11 23	69
18	86	58.4	−19	05.0	190	23.8 128	−6	44.5 146	**45**	19 38	20 13	20 56	22 57	23	11 26	73
19	101	58.3		04.4	204	55.4 126	−6	59.1 146	**50**	19 55	35	21 28	50	19	30	79
20	116	58.1		03.7	219	27.0 126	−7	13.7 146	**52**	20 04	46	21 44	47	17	32	81
21	131	58.0		03.1	233	58.6 126		28.2 145	**54**	13	20 58	22 05	44	14	34	84
22	146	57.9		02.5	248	30.1 125		42.8 146	**56**	23	21 13	22 31	41	11	36	87
23	161	57.7		01.9	263	01.5 124	−7	57.3 145	**58**	34	30	23 13	37	8	39	90
24	176	57.6	−19	01.3	277	32.9 124	−8	11.8 145	**60 S**	20 48	21 52	** **	22 33	4	11 42	94

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 15h 44m.2		Mag: −4.6 PMG: 10h 33m			Mag: +1.4 PMG: 9h 45m			Mag: −2.1 PMG: 14h 15m			Mag: +0.7 PMG: 12h 54m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	123	17.8	201	13.3	−16 11.0	213	43.3	−23 49.9	145	43.4	−10 26.5	166	02.7	−17 16.5
1	138	20.3	216	16.3	11.0	228	43.8	49.9	160	45.4	26.2	181	04.9	16.4
2	153	22.7	231	19.4	10.9	243	44.3	50.0	175	47.3	26.0	196	07.1	16.3
3	168	25.2	246	22.4	10.9	258	44.8	50.0	190	49.2	25.8	211	09.2	16.2
4	183	27.6	261	25.4	10.9	273	45.2	50.0	205	51.2	25.6	226	11.4	16.2
5	198	30.1	276	28.4	−16 10.8	288	45.7	−23 50.1	220	53.1	−10 25.4	241	13.6	−17 16.1
6	213	32.6	291	31.5	−16 10.8	303	46.2	−23 50.1	235	55.0	−10 25.2	256	15.7	−17 16.0
7	228	35.0	306	34.5	10.8	318	46.7	50.1	250	57.0	25.0	271	17.9	15.9
8	243	37.5	321	37.5	10.7	333	47.2	50.2	265	58.9	24.8	286	20.1	15.8
9	258	40.0	336	40.5	10.7	348	47.7	50.2	281	00.9	24.6	301	22.2	15.7
10	273	42.4	351	43.5	10.7	3	48.1	50.2	296	02.8	24.4	316	24.4	15.7
11	288	44.9	6	46.5	−16 10.6	18	48.6	−23 50.3	311	04.7	−10 24.2	331	26.6	−17 15.6
12	303	47.4	21	49.5	−16 10.6	33	49.1	−23 50.3	326	06.7	−10 24.0	346	28.7	−17 15.5
13	318	49.8	36	52.5	10.6	48	49.6	50.3	341	08.6	23.8	1	30.9	15.4
14	333	52.3	51	55.5	10.5	63	50.1	50.4	356	10.5	23.6	16	33.1	15.3
15	348	54.8	66	58.4	10.5	78	50.6	50.4	11	12.5	23.3	31	35.2	15.2
16	3	57.2	82	01.4	10.5	93	51.0	50.4	26	14.4	23.1	46	37.4	15.1
17	18	59.7	97	04.4	−16 10.4	108	51.5	−23 50.4	41	16.3	−10 22.9	61	39.6	−17 15.1
18	34	02.1	112	07.4	−16 10.4	123	52.0	−23 50.5	56	18.3	−10 22.7	76	41.7	−17 15.0
19	49	04.6	127	10.3	10.4	138	52.5	50.5	71	20.2	22.5	91	43.9	14.9
20	64	07.1	142	13.3	10.4	153	53.0	50.5	86	22.1	22.3	106	46.1	14.8
21	79	09.5	157	16.2	10.3	168	53.4	50.6	101	24.1	22.1	121	48.2	14.7
22	94	12.0	172	19.2	10.3	183	53.9	50.6	116	26.0	21.9	136	50.4	14.6
23	109	14.5	187	22.1	10.3	198	54.4	50.6	131	27.9	21.7	151	52.6	14.6
24	124	16.9	202	25.1	−16 10.3	213	54.9	−23 50.6	146	29.9	−10 21.5	166	54.7	−17 14.5
Dif	—			+30	0		+5	0		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22^{d}.2		PHE	4^{h}: 58′.3									
	PMG: 12^{h} 12^{m}.3				SD: 15′.8			12^{h}: 58′.5									
					PMG: 5^{h} 41^{m}			20^{h}: 58′.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	57.6	−19	01.3	277	32.9	−8	11.8		**60 N**	6 48	7 40	8 29	0 31	96	10 32	6
1	191	57.4		00.7	292	04.1 122		26.3 145		**58**	43	32	18	26	92	39	9
2	206	57.3	−19	00.1	306	35.4 123		40.7 144		**56**	39	25	8 07	21	89	44	13
3	221	57.1	−18	59.5	321	06.5 121	−8	55.1 144		**54**	35	18	7 58	17	86	49	16
4	236	57.0		58.8	335	37.6 121	−9	09.5 144		**52**	31	12	50	14	83	53	19
5	251	56.8	−18	58.2	350	08.6 120	−9	23.8 143		**50**	6 28	7 07	7 43	0 11	80	10 58	20
6	266	56.7	−18	57.6	4	39.6 120	−9	38.1 143		**45**	6 20	6 55	7 27	0 04	75	11 06	26
7	281	56.6		57.0	19	10.4 118	−9	52.4 143		**40**	13	45	14	** **	**	14	30
8	296	56.4		56.4	33	41.2 118	−10	06.6 142		**35**	6 06	36	7 03	** **	**	20	34
9	311	56.3		55.8	48	12.0 118		20.8 142		**30**	5 59	28	6 54	** **	**	26	36
10	326	56.1		55.1	62	42.6 116		35.0 142		**20**	47	14	37	** **	**	36	41
11	341	56.0	−18	54.5	77	13.2 116	−10	49.1 141		**10 N**	5 35	6 00	6 23	** **	**	11 44	47
12	356	55.8	−18	53.9	91	43.7 115	−11	03.2 141		**0**	5 21	5 47	6 09	** **	**	11 52	51
13	11	55.7		53.3	106	14.1 114		17.2 140		**10 S**	5 06	32	5 55	** **	**	12 00	55
14	26	55.6		52.7	120	44.4 113		31.2 140		**20**	4 48	5 16	40	23 57	45	09	60
15	41	55.4		52.0	135	14.7 113		45.2 140		**30**	25	4 56	22	45	39	19	65
16	56	55.3		51.4	149	44.8 111	−11	59.1 139		**35**	4 10	44	12	38	36	25	68
17	71	55.1	−18	50.8	164	14.9 111	−12	12.9 138		**40**	3 52	4 30	5 00	23 30	33	12 32	71
18	86	55.0	−18	50.2	178	44.9 110	−12	26.7 138		**45**	3 29	4 12	4 46	23 20	29	12 39	77
19	101	54.9		49.5	193	14.8 109		40.5 138		**50**	2 57	3 50	29	09	24	49	81
20	116	54.7		48.9	207	44.6 108	−12	54.2 137		**52**	41	39	21	23 04	21	53	84
21	131	54.6		48.3	222	14.3 107	−13	07.8 136		**54**	2 20	26	12	22 58	19	12 58	87
22	146	54.4		47.7	236	44.0 107		21.4 136		**56**	1 54	3 12	4 02	52	15	13 03	91
23	161	54.3		47.0	251	13.5 105		34.9 135		**58**	1 12	2 55	3 51	45	12	09	95
24	176	54.2	−18	46.4	265	42.9 104	−13	48.4 135		**60 S**	** **	2 33	3 37	22 37	7	13 16	99

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 40^{m}.3		PMG: 10^{h} 28^{m}			PMG: 9^{h} 44^{m}			PMG: 14^{h} 12^{m}			PMG: 12^{h} 50^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	124	16.9	202	25.1	−16 10.3	213	54.9	−23 50.6	146	29.9	−10 21.5	166	54.7	−17 14.5
1	139	19.4	217	28.0	10.2	228	55.4	50.7	161	31.8	21.3	181	56.9	14.4
2	154	21.9	232	30.9	10.2	243	55.8	50.7	176	33.7	21.1	196	59.1	14.3
3	169	24.3	247	33.8	10.2	258	56.3	50.7	191	35.7	20.9	212	01.2	14.2
4	184	26.8	262	36.8	10.2	273	56.8	50.7	206	37.6	20.6	227	03.4	14.1
5	199	29.2	277	39.7	−16 10.1	288	57.3	−23 50.8	221	39.5	−10 20.4	242	05.6	−17 14.0
6	214	31.7	292	42.6	−16 10.1	303	57.8	−23 50.8	236	41.5	−10 20.2	257	07.7	−17 14.0
7	229	34.2	307	45.5	10.1	318	58.2	50.8	251	43.4	20.0	272	09.9	13.9
8	244	36.6	322	48.4	10.1	333	58.7	50.8	266	45.3	19.8	287	12.1	13.8
9	259	39.1	337	51.3	10.1	348	59.2	50.8	281	47.3	19.6	302	14.2	13.7
10	274	41.6	352	54.2	10.0	3	59.7	50.9	296	49.2	19.4	317	16.4	13.6
11	289	44.0	7	57.1	−16 10.0	19	00.2	−23 50.9	311	51.1	−10 19.2	332	18.6	−17 13.5
12	304	46.5	23	00.0	−16 10.0	34	00.6	−23 50.9	326	53.1	−10 19.0	347	20.7	−17 13.4
13	319	49.0	38	02.8	10.0	49	01.1	50.9	341	55.0	18.8	2	22.9	13.4
14	334	51.4	53	05.7	10.0	64	01.6	50.9	356	56.9	18.6	17	25.1	13.3
15	349	53.9	68	08.6	10.0	79	02.1	51.0	11	58.9	18.4	32	27.2	13.2
16	4	56.4	83	11.4	10.0	94	02.6	51.0	27	00.8	18.1	47	29.4	13.1
17	19	58.8	98	14.3	−16 09.9	109	03.0	−23 51.0	42	02.7	−10 17.9	62	31.6	−17 13.0
18	35	01.3	113	17.2	−16 09.9	124	03.5	−23 51.0	57	04.7	−10 17.7	77	33.7	−17 12.9
19	50	03.7	128	20.0	09.9	139	04.0	51.0	72	06.6	17.5	92	35.9	12.9
20	65	06.2	143	22.9	09.9	154	04.5	51.0	87	08.5	17.3	107	38.1	12.8
21	80	08.7	158	25.7	09.9	169	05.0	51.1	102	10.5	17.1	122	40.2	12.7
22	95	11.1	173	28.5	09.9	184	05.4	51.1	117	12.4	16.9	137	42.4	12.6
23	110	13.6	188	31.4	09.9	199	05.9	51.1	132	14.3	16.7	152	44.6	12.5
24	125	16.1	203	34.2	−16 09.9	214	06.4	−23 51.1	147	16.3	−10 16.5	167	46.7	−17 12.4
Dif	—			+29	0		+5	0		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.5				LUNA Edad: 23d.2 SD: 16′.0 PMG: 6h 31m PHE 4h: 58′.9; 12h: 59′.1; 20h: 59′.3 Rº: 54m				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	54.2	−18	46.4	265	42.9	−13	48.4	**60 N**	15 58	16 48	17 39	2 07	103	10 38	8
1	191	54.0		45.8	280	12.3 104	−14	01.8 134	**58**	16 10	16 55	44	1 58	98	48	13
2	206	53.9		45.2	294	41.6 103		15.1 133	**56**	20	17 02	48	50	93	10 57	17
3	221	53.8		44.5	309	10.7 101		28.4 133	**54**	29	09	52	43	90	11 05	21
4	236	53.6		43.9	323	39.8 101		41.6 132	**52**	37	14	56	37	86	12	24
5	251	53.5	−18	43.3	338	08.8 100	−14	54.7 131	**50**	16 44	17 20	17 59	1 31	84	11 18	27
6	266	53.3	−18	42.6	352	37.6 98	−15	07.8 131	**45**	16 59	17 31	18 07	1 19	78	11 32	32
7	281	53.2		42.0	7	06.4 98		20.8 130	**40**	17 12	41	14	09	73	44	36
8	296	53.1		41.4	21	35.1 97		33.7 129	**35**	22	49	20	1 00	70	11 54	39
9	311	52.9		40.7	36	03.7 96		46.6 129	**30**	32	17 57	26	0 53	67	12 02	42
10	326	52.8		40.1	50	32.1 94	−15	59.3 127	**20**	17 48	18 11	38	40	62	17	47
11	341	52.7	−18	39.5	65	00.5 94	−16	12.0 127	**10 N**	18 03	18 25	18 50	0 29	57	12 31	51
12	356	52.5	−18	38.8	79	28.8 93	−16	24.6 126	**0**	18 16	18 38	19 03	0 18	53	12 43	55
13	11	52.4		38.2	93	56.9 91		37.2 126	**10 S**	30	18 52	18	0 08	49	12 55	60
14	26	52.3		37.6	108	25.0 91	−16	49.6 124	**20**	18 44	19 08	36	** **	**	13 09	63
15	41	52.1		36.9	122	52.9 89	−17	02.0 124	**30**	19 01	28	19 59	** **	**	24	68
16	56	52.0		36.3	137	20.8 89		14.3 123	**35**	11	39	20 13	** **	**	33	71
17	71	51.9	−18	35.7	151	48.5 87	−17	26.5 122	**40**	19 23	19 53	20 31	** **	**	13 43	75
18	86	51.7	−18	35.0	166	16.1 86	−17	38.6 121	**45**	19 36	20 10	20 53	23 49	36	13 56	78
19	101	51.6		34.4	180	43.6 85	−17	50.6 120	**50**	19 53	32	21 24	33	31	14 10	85
20	116	51.5		33.7	195	11.0 84	−18	02.5 119	**52**	20 01	43	40	25	29	17	87
21	131	51.4		33.1	209	38.3 83		14.3 118	**54**	09	20 55	21 59	17	25	25	90
22	146	51.2		32.5	224	05.5 82		26.1 118	**56**	19	21 09	22 24	23 07	23	34	93
23	161	51.1		31.8	238	32.6 81		37.7 116	**58**	31	25	23 00	22 57	18	44	98
24	176	51.0	−18	31.2	252	59.6 80	−18	49.2 115	**60 S**	20 44	21 46	** **	22 44	13	14 55	104

UT	ARIES PMG 15h 36m.4		VENUS Mag: −4.7 PMG: 10h 24m			MARTE Mag: +1.4 PMG: 9h 43m			JÚPITER Mag: −2.1 PMG: 14h 09m			SATURNO Mag: +0.7 PMG: 12h 47m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	125	16.1	203	34.2	−16 09.9	214	06.4	−23 51.1	147	16.3	−10 16.5	167	46.7	−17 12.4
1	140	18.5	218	37.0	09.9	229	06.9	51.1	162	18.2	16.3	182	48.9	12.3
2	155	21.0	233	39.8	09.9	244	07.3	51.1	177	20.1	16.1	197	51.1	12.3
3	170	23.5	248	42.7	09.9	259	07.8	51.2	192	22.1	15.8	212	53.2	12.2
4	185	25.9	263	45.5	09.9	274	08.3	51.2	207	24.0	15.6	227	55.4	12.1
5	200	28.4	278	48.3	−16 09.9	289	08.8	−23 51.2	222	25.9	−10 15.4	242	57.5	−17 12.0
6	215	30.9	293	51.1	−16 09.9	304	09.3	−23 51.2	237	27.9	−10 15.2	257	59.7	−17 11.9
7	230	33.3	308	53.9	09.9	319	09.7	51.2	252	29.8	15.0	273	01.9	11.8
8	245	35.8	323	56.7	09.8	334	10.2	51.2	267	31.7	14.8	288	04.0	11.7
9	260	38.2	338	59.4	09.8	349	10.7	51.2	282	33.6	14.6	303	06.2	11.7
10	275	40.7	354	02.2	09.8	4	11.2	51.2	297	35.6	14.4	318	08.4	11.6
11	290	43.2	9	05.0	−16 09.8	19	11.6	−23 51.3	312	37.5	−10 14.2	333	10.5	−17 11.5
12	305	45.6	24	07.8	−16 09.8	34	12.1	−23 51.3	327	39.4	−10 14.0	348	12.7	−17 11.4
13	320	48.1	39	10.5	09.8	49	12.6	51.3	342	41.4	13.7	3	14.9	11.3
14	335	50.6	54	13.3	09.9	64	13.1	51.3	357	43.3	13.5	18	17.0	11.2
15	350	53.0	69	16.1	09.9	79	13.6	51.3	12	45.2	13.3	33	19.2	11.2
16	5	55.5	84	18.8	09.9	94	14.0	51.3	27	47.2	13.1	48	21.4	11.1
17	20	58.0	99	21.6	−16 09.9	109	14.5	−23 51.3	42	49.1	−10 12.9	63	23.5	−17 11.0
18	36	00.4	114	24.3	−16 09.9	124	15.0	−23 51.3	57	51.0	−10 12.7	78	25.7	−17 10.9
19	51	02.9	129	27.1	09.9	139	15.5	51.3	72	53.0	12.5	93	27.9	10.8
20	66	05.4	144	29.8	09.9	154	15.9	51.3	87	54.9	12.3	108	30.0	10.7
21	81	07.8	159	32.5	09.9	169	16.4	51.3	102	56.8	12.1	123	32.2	10.6
22	96	10.3	174	35.3	09.9	184	16.9	51.3	117	58.7	11.9	138	34.4	10.6
23	111	12.7	189	38.0	09.9	199	17.4	51.4	133	00.7	11.6	153	36.5	10.5
24	126	15.2	204	40.7	−16 09.9	214	17.9	−23 51.4	148	02.6	−10 11.4	168	38.7	−17 10.4
Dif	—			+28	0		+5	0		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.7				LUNA Edad: 24d.2 SD: 16′.2 PMG: 7h 25m PHE 4h: 59′.5; 12h: 59′.7; 20h: 59′.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	51.0	−18	31.2	252	59.6	−18	49.2	**60 N**	6 45	7 36	8 25	3 50	105	10 46	16
1	191	50.8		30.5	267	26.4 78	−19	00.6 114	**58**	40	29	14	36	99	11 01	23
2	206	50.7		29.9	281	53.2 78		11.9 113	**56**	36	22	8 04	23	94	14	27
3	221	50.6		29.3	296	19.8 76		23.2 113	**54**	32	16	7 55	13	90	26	30
4	236	50.4		28.6	310	46.3 75		34.3 111	**52**	29	10	47	3 03	87	36	33
5	251	50.3	−18	28.0	325	12.7 74	−19	45.3 110	**50**	6 26	7 05	7 40	2 55	84	11 45	36
6	266	50.2	−18	27.3	339	39.0 73	−19	56.1 108	**45**	6 18	6 54	7 25	2 37	79	12 04	41
7	281	50.1		26.7	354	05.2 72	−20	06.9 108	**40**	11	44	13	22	76	20	44
8	296	49.9		26.0	8	31.2 70		17.6 107	**35**	6 05	35	7 02	10	72	33	47
9	311	49.8		25.4	22	57.2 70		28.1 105	**30**	5 59	28	6 53	2 00	69	12 44	50
10	326	49.7		24.7	37	23.0 68		38.5 104	**20**	47	14	37	1 42	64	13 04	54
11	341	49.6	−18	24.1	51	48.8 68	−20	48.8 103	**10 N**	5 35	6 00	6 23	1 26	61	13 22	57
12	356	49.4	−18	23.4	66	14.4 66	−20	59.0 102	**0**	5 22	5 47	6 09	1 11	58	13 38	60
13	11	49.3		22.8	80	39.9 65	−21	09.0 100	**10 S**	5 07	33	5 56	0 57	54	13 55	62
14	26	49.2		22.1	95	05.3 64		19.0 100	**20**	4 50	5 17	41	42	50	14 12	66
15	41	49.1		21.5	109	30.5 62		28.8 98	**30**	27	4 58	24	24	46	32	70
16	56	48.9		20.8	123	55.7 62		38.4 96	**35**	4 12	46	14	14	43	44	72
17	71	48.8	−18	20.2	138	20.7 60	−21	48.0 96	**40**	3 55	4 32	5 03	0 02	41	14 58	75
18	86	48.7	−18	19.5	152	45.7 60	−21	57.4 94	**45**	3 32	4 15	4 49	** **	**	15 14	79
19	101	48.6		18.9	167	10.5 58	−22	06.6 92	**50**	3 02	3 54	33	** **	**	35	82
20	116	48.4		18.2	181	35.2 57		15.8 92	**52**	2 46	43	25	23 54	41	44	85
21	131	48.3		17.6	195	59.8 56		24.7 89	**54**	27	31	16	42	39	15 55	88
22	146	48.2		16.9	210	24.3 55		33.6 89	**56**	2 02	17	4 07	30	34	16 07	92
23	161	48.1		16.3	224	48.7 54		42.3 87	**58**	1 26	3 01	3 55	23 15	30	22	96
24	176	48.0	−18	15.6	239	13.0 53	−22	50.9 86	**60 S**	** **	2 40	3 42	22 57	24	16 39	102

UT	ARIES PMG 15h 32m.4		VENUS Mag: −4.7 PMG: 10h 19m			MARTE Mag: +1.4 PMG: 9h 43m			JÚPITER Mag: −2.1 PMG: 14h 06m			SATURNO Mag: +0.7 PMG: 12h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	126	15.2	204	40.7	−16 09.9	214	17.9	−23 51.4	148	02.6	−10 11.4	168	38.7	−17 10.4
1	141	17.7	219	43.4	09.9	229	18.3	51.4	163	04.5	11.2	183	40.9	10.3
2	156	20.1	234	46.1	09.9	244	18.8	51.4	178	06.5	11.0	198	43.0	10.2
3	171	22.6	249	48.8	09.9	259	19.3	51.4	193	08.4	10.8	213	45.2	10.1
4	186	25.1	264	51.5	09.9	274	19.8	51.4	208	10.3	10.6	228	47.4	10.0
5	201	27.5	279	54.2	−16 10.0	289	20.2	−23 51.4	223	12.3	−10 10.4	243	49.5	−17 10.0
6	216	30.0	294	56.9	−16 10.0	304	20.7	−23 51.4	238	14.2	−10 10.2	258	51.7	−17 09.9
7	231	32.5	309	59.6	10.0	319	21.2	51.4	253	16.1	10.0	273	53.8	09.8
8	246	34.9	325	02.3	10.0	334	21.7	51.4	268	18.0	09.8	288	56.0	09.7
9	261	37.4	340	05.0	10.0	349	22.1	51.4	283	20.0	09.5	303	58.2	09.6
10	276	39.8	355	07.6	10.0	4	22.6	51.4	298	21.9	09.3	319	00.3	09.5
11	291	42.3	10	10.3	−16 10.0	19	23.1	−23 51.4	313	23.8	−10 09.1	334	02.5	−17 09.4
12	306	44.8	25	13.0	−16 10.1	34	23.6	−23 51.4	328	25.8	−10 08.9	349	04.7	−17 09.4
13	321	47.2	40	15.6	10.1	49	24.0	51.4	343	27.7	08.7	4	06.8	09.3
14	336	49.7	55	18.3	10.1	64	24.5	51.4	358	29.6	08.5	19	09.0	09.2
15	351	52.2	70	20.9	10.1	79	25.0	51.4	13	31.5	08.3	34	11.2	09.1
16	6	54.6	85	23.6	10.1	94	25.5	51.4	28	33.5	08.1	49	13.3	09.0
17	21	57.1	100	26.2	−16 10.1	109	25.9	−23 51.4	43	35.4	−10 07.9	64	15.5	−17 08.9
18	36	59.6	115	28.9	−16 10.2	124	26.4	−23 51.4	58	37.3	−10 07.6	79	17.7	−17 08.8
19	52	02.0	130	31.5	10.2	139	26.9	51.4	73	39.3	07.4	94	19.8	08.8
20	67	04.5	145	34.1	10.2	154	27.4	51.4	88	41.2	07.2	109	22.0	08.7
21	82	07.0	160	36.7	10.2	169	27.9	51.4	103	43.1	07.0	124	24.2	08.6
22	97	09.4	175	39.4	10.2	184	28.3	51.4	118	45.1	06.8	139	26.3	08.5
23	112	11.9	190	42.0	10.3	199	28.8	51.4	133	47.0	06.6	154	28.5	08.4
24	127	14.3	205	44.6	−16 10.3	214	29.3	−23 51.4	148	48.9	−10 06.4	169	30.7	−17 08.3
Dif	—			+27	0		+5	0		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.9				LUNA Edad: 25d.2 SD: 16′.3 PMG: 8h 23m PHE 4h: 60′.0; 12h: 60′.2; 20h: 60′.3 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	176	48.0	−18	15.6	239	13.0 51	−22	50.9 84	**60 N**	16 04	16 52	17 44	5 35	98	11 02	34
1	191	47.8		15.0	253	37.1 51	−22	59.3 82	**58**	15	17 00	48	5 15	91	24	40
2	206	47.7		14.3	268	01.2 50	−23	07.5 81	**56**	24	06	52	4 57	88	41	44
3	221	47.6		13.6	282	25.2 48		15.6 80	**54**	33	12	55	43	84	11 56	47
4	236	47.5		13.0	296	49.0 48		23.6 78	**52**	40	18	17 59	30	82	12 09	49
5	251	47.4	−18	12.3	311	12.8 48	−23	31.4 77	**50**	16 47	17 23	18 02	4 19	80	12 21	50
6	266	47.2	−18	11.7	325	36.4 46	−23	39.1 75	**45**	17 02	17 34	18 09	3 56	76	12 45	53
7	281	47.1		11.0	340	00.0 46		46.6 73	**40**	14	43	16	38	73	13 04	55
8	296	47.0		10.4	354	23.4 44	−23	53.9 72	**35**	25	51	22	22	72	20	57
9	311	46.9		09.7	8	46.8 44	−24	01.1 70	**30**	34	17 59	28	3 09	70	34	58
10	326	46.8		09.0	23	10.0 42		08.1 69	**20**	17 49	18 13	39	2 46	67	13 58	60
11	341	46.6	−18	08.4	37	33.2 42	−24	15.0 67	**10 N**	18 03	18 25	18 51	2 27	64	14 19	62
12	356	46.5	−18	07.7	51	56.2 40	−24	21.7 65	**0**	18 16	18 38	19 03	2 09	62	14 38	64
13	11	46.4		07.0	66	19.2 40		28.2 64	**10 S**	30	18 52	18	1 51	60	14 57	66
14	26	46.3		06.4	80	42.1 39		34.6 61	**20**	18 44	19 07	35	32	57	15 18	67
15	41	46.2		05.7	95	04.8 37		40.7 61	**30**	19 00	26	19 58	1 10	54	42	69
16	56	46.1		05.1	109	27.5 37		46.8 58	**35**	10	38	20 12	0 57	52	15 56	70
17	71	45.9	−18	04.4	123	50.2 37	−24	52.6 57	**40**	19 21	19 51	20 29	0 43	49	16 13	71
18	86	45.8	−18	03.7	138	12.7 35	−24	58.3 55	**45**	19 34	20 08	20 51	0 25	47	16 33	72
19	101	45.7		03.1	152	35.1 34	−25	03.8 53	**50**	50	29	21 20	0 04	43	16 57	75
20	116	45.6		02.4	166	57.5 34		09.1 51	**52**	19 58	39	35	** **	**	17 09	76
21	131	45.5		01.7	181	19.8 33		14.2 50	**54**	20 06	20 51	21 53	** **	**	23	77
22	146	45.4		01.1	195	42.0 32		19.2 48	**56**	16	21 04	22 16	** **	**	39	79
23	161	45.3	−18	00.4	210	04.1 31		24.0 46	**58**	26	20	22 48	23 45	53	17 58	81
24	176	45.1	−17	59.7	224	26.2 31	−25	28.6 46	**60 S**	20 39	21 39	** **	23 21	50	18 21	85

UT	ARIES PMG 15h 28m.5		VENUS Mag: −4.8 PMG: 10h 15m			MARTE Mag: +1.4 PMG: 9h 42m			JÚPITER Mag: −2.1 PMG: 14h 03m			SATURNO Mag: +0.7 PMG: 12h 40m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	127	14.3	205	44.6	−16 10.3	214	29.3	−23 51.4	148	48.9	−10 06.4	169	30.7	−17 08.3
1	142	16.8	220	47.2	10.3	229	29.8	51.4	163	50.8	06.2	184	32.8	08.2
2	157	19.3	235	49.8	10.3	244	30.2	51.3	178	52.8	06.0	199	35.0	08.2
3	172	21.7	250	52.4	10.4	259	30.7	51.3	193	54.7	05.7	214	37.2	08.1
4	187	24.2	265	55.0	10.4	274	31.2	51.3	208	56.6	05.5	229	39.3	08.0
5	202	26.7	280	57.6	−16 10.4	289	31.7	−23 51.3	223	58.5	−10 05.3	244	41.5	−17 07.9
6	217	29.1	296	00.1	−16 10.4	304	32.1	−23 51.3	239	00.5	−10 05.1	259	43.6	−17 07.8
7	232	31.6	311	02.7	10.5	319	32.6	51.3	254	02.4	04.9	274	45.8	07.7
8	247	34.1	326	05.3	10.5	334	33.1	51.3	269	04.3	04.7	289	48.0	07.6
9	262	36.5	341	07.9	10.5	349	33.6	51.3	284	06.3	04.5	304	50.1	07.6
10	277	39.0	356	10.4	10.6	4	34.0	51.3	299	08.2	04.3	319	52.3	07.5
11	292	41.5	11	13.0	−16 10.6	19	34.5	−23 51.3	314	10.1	−10 04.1	334	54.5	−17 07.4
12	307	43.9	26	15.6	−16 10.6	34	35.0	−23 51.3	329	12.0	−10 03.8	349	56.6	−17 07.3
13	322	46.4	41	18.1	10.6	49	35.4	51.3	344	14.0	03.6	4	58.8	07.2
14	337	48.8	56	20.6	10.7	64	35.9	51.3	359	15.9	03.4	20	01.0	07.1
15	352	51.3	71	23.2	10.7	79	36.4	51.2	14	17.8	03.2	35	03.1	07.0
16	7	53.8	86	25.7	10.7	94	36.9	51.2	29	19.8	03.0	50	05.3	07.0
17	22	56.2	101	28.3	−16 10.8	109	37.3	−23 51.2	44	21.7	−10 02.8	65	07.5	−17 06.9
18	37	58.7	116	30.8	−16 10.8	124	37.8	−23 51.2	59	23.6	−10 02.6	80	09.6	−17 06.8
19	53	01.2	131	33.3	10.8	139	38.3	51.2	74	25.5	02.4	95	11.8	06.7
20	68	03.6	146	35.8	10.9	154	38.8	51.2	89	27.5	02.2	110	14.0	06.6
21	83	06.1	161	38.3	10.9	169	39.2	51.2	104	29.4	01.9	125	16.1	06.5
22	98	08.6	176	40.9	10.9	184	39.7	51.2	119	31.3	01.7	140	18.3	06.4
23	113	11.0	191	43.4	11.0	199	40.2	51.1	134	33.2	01.5	155	20.4	06.4
24	128	13.5	206	45.9	−16 11.0	214	40.7	−23 51.1	149	35.2	−10 01.3	170	22.6	−17 06.3
Dif	—			+26	0		+5	0		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 26^{d}.2		PHE	4^{h}: 60′.4									
	PMG: 12^{h} 13^{m}.1				SD: 16′.4			12^{h}: 60′.5									
					PMG: 9^{h} 26^{m}			20^{h}: 60′.5									
	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	45.1	−17	59.7	224	26.2	−25	28.6		**60 N**	6 41	7 33	8 21	7 13	70	11 36	66
1	191	45.0		59.0	238	48.1 29		33.0	44	**58**	37	25	10	6 46	69	12 04	66
2	206	44.9		58.4	253	10.1 30		37.2	42	**56**	33	19	8 00	25	69	25	66
3	221	44.8		57.7	267	31.9 28		41.3	41	**54**	30	13	7 52	6 07	69	43	66
4	236	44.7		57.0	281	53.7 28		45.1	38	**52**	27	07	45	5 52	68	12 58	66
5	251	44.6	−17	56.4	296	15.4 27	−25	48.8	37	**50**	6 23	7 03	7 38	5 39	68	13 11	66
6	266	44.5	−17	55.7	310	37.1 27	−25	52.3	35	**45**	6 16	6 52	7 23	5 12	68	13 38	66
7	281	44.4		55.0	324	58.7 26		55.6	33	**40**	10	42	11	4 51	68	13 59	67
8	296	44.3		54.3	339	20.3 26	−25	58.7	31	**35**	6 04	34	7 01	34	67	14 17	66
9	311	44.1		53.7	353	41.8 25	−26	01.6	29	**30**	5 58	27	6 52	4 19	66	32	66
10	326	44.0		53.0	8	03.2 24		04.3	27	**20**	47	13	36	3 53	66	14 58	66
11	341	43.9	−17	52.3	22	24.7 25	−26	06.9	26	**10 N**	5 35	6 01	6 23	3 31	66	15 21	65
12	356	43.8	−17	51.6	36	46.0 23	−26	09.2	23	**0**	5 23	5 48	6 10	3 11	65	15 42	65
13	11	43.7		51.0	51	07.4 24		11.4	22	**10 S**	5 08	34	5 56	2 51	64	16 03	64
14	26	43.6		50.3	65	28.7 23		13.3	19	**20**	4 51	19	42	29	63	25	64
15	41	43.5		49.6	79	49.9 22		15.1	18	**30**	29	5 00	26	2 04	63	16 51	63
16	56	43.4		48.9	94	11.1 22		16.6	15	**35**	4 15	4 48	16	1 49	62	17 06	63
17	71	43.3	−17	48.3	108	32.3 22	−26	18.0	14	**40**	3 58	4 35	5 05	1 32	61	17 24	62
18	86	43.2	−17	47.6	122	53.5 22	−26	19.1	11	**45**	3 36	4 18	4 52	1 12	60	17 45	62
19	101	43.1		46.9	137	14.7 22		20.1	10	**50**	3 07	3 58	36	0 47	58	18 12	60
20	116	43.0		46.2	151	35.8 21		20.9	8	**52**	2 52	47	29	35	57	25	60
21	131	42.8		45.5	165	56.9 21		21.5	6	**54**	33	36	20	21	56	40	59
22	146	42.7		44.9	180	18.0 21		21.8	3	**56**	2 10	23	11	0 04	55	18 58	57
23	161	42.6		44.2	194	39.1 21		22.0	2	**58**	1 38	3 07	4 00	** **	**	19 19	56
24	176	42.5	−17	43.5	209	00.2 21	−26	22.0	0	**60 S**	** **	2 47	3 48	** **	**	19 46	53

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 24^{m}.6		PMG: 10^{h} 11^{m}			PMG: 9^{h} 41^{m}			PMG: 14^{h} 00^{m}			PMG: 12^{h} 37^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	128	13.5	206	45.9	−16 11.0	214	40.7	−23 51.1	149	35.2	−10 01.3	170	22.6	−17 06.3
1	143	16.0	221	48.4	11.1	229	41.1	51.1	164	37.1	01.1	185	24.8	06.2
2	158	18.4	236	50.9	11.1	244	41.6	51.1	179	39.0	00.9	200	26.9	06.1
3	173	20.9	251	53.3	11.1	259	42.1	51.1	194	40.9	00.7	215	29.1	06.0
4	188	23.3	266	55.8	11.2	274	42.6	51.1	209	42.9	00.5	230	31.3	05.9
5	203	25.8	281	58.3	−16 11.2	289	43.0	−23 51.0	224	44.8	−10 00.2	245	33.4	−17 05.8
6	218	28.3	297	00.8	−16 11.3	304	43.5	−23 51.0	239	46.7	−10 00.0	260	35.6	−17 05.8
7	233	30.7	312	03.3	11.3	319	44.0	51.0	254	48.7	−9 59.8	275	37.8	05.7
8	248	33.2	327	05.7	11.3	334	44.4	51.0	269	50.6	59.6	290	39.9	05.6
9	263	35.7	342	08.2	11.4	349	44.9	51.0	284	52.5	59.4	305	42.1	05.5
10	278	38.1	357	10.6	11.4	4	45.4	51.0	299	54.4	59.2	320	44.3	05.4
11	293	40.6	12	13.1	−16 11.5	19	45.9	−23 50.9	314	56.4	−9 59.0	335	46.4	−17 05.3
12	308	43.1	27	15.5	−16 11.5	34	46.3	−23 50.9	329	58.3	−9 58.8	350	48.6	−17 05.2
13	323	45.5	42	18.0	11.5	49	46.8	50.9	345	00.2	58.5	5	50.8	05.2
14	338	48.0	57	20.4	11.6	64	47.3	50.9	0	02.1	58.3	20	52.9	05.1
15	353	50.5	72	22.9	11.6	79	47.8	50.9	15	04.1	58.1	35	55.1	05.0
16	8	52.9	87	25.3	11.7	94	48.2	50.8	30	06.0	57.9	50	57.2	04.9
17	23	55.4	102	27.7	−16 11.7	109	48.7	−23 50.8	45	07.9	−9 57.7	65	59.4	−17 04.8
18	38	57.8	117	30.1	−16 11.8	124	49.2	−23 50.8	60	09.8	−9 57.5	81	01.6	−17 04.7
19	54	00.3	132	32.6	11.8	139	49.6	50.8	75	11.8	57.3	96	03.7	04.6
20	69	02.8	147	35.0	11.9	154	50.1	50.7	90	13.7	57.0	111	05.9	04.6
21	84	05.2	162	37.4	11.9	169	50.6	50.7	105	15.6	56.8	126	08.1	04.5
22	99	07.7	177	39.8	12.0	184	51.1	50.7	120	17.5	56.6	141	10.2	04.4
23	114	10.2	192	42.2	12.0	199	51.5	50.7	135	19.5	56.4	156	12.4	04.3
24	129	12.6	207	44.6	−16 12.1	214	52.0	−23 50.6	150	21.4	−9 56.2	171	14.6	−17 04.2
Dif	—			+24	0		+5	0		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.2				LUNA Edad: 27d.2 SD: 16′.5 PMG: 10h 31m PHE 4h: 60′.5; 12h: 60′.5; 20h: 60′.5 Rº: 64m				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	42.5	−17	43.5	209	00.2	−26	22.0	**60 N**	16 09	16 57	17 48	8 23	37	12 42	97
1	191	42.4		42.8	223	21.2 20		21.8 2	**58**	19	17 04	52	7 55	43	13 10	90
2	206	42.3		42.1	237	42.3 21		21.3 5	**56**	29	10	55	34	46	31	87
3	221	42.2		41.4	252	03.4 21		20.7 6	**54**	37	16	17 59	16	48	13 49	84
4	236	42.1		40.8	266	24.4 20		19.9 8	**52**	44	21	18 02	7 00	51	14 04	82
5	251	42.0	−17	40.1	280	45.5 21	−26	18.9 10	**50**	16 51	17 26	18 05	6 47	52	14 17	80
6	266	41.9	−17	39.4	295	06.6 21	−26	17.7 12	**45**	17 05	17 36	18 12	6 20	55	14 44	77
7	281	41.8		38.7	309	27.7 21		16.2 15	**40**	17	45	18	5 59	57	15 06	74
8	296	41.7		38.0	323	48.8 21		14.6 16	**35**	27	17 53	24	41	58	23	72
9	311	41.6		37.3	338	10.0 22		12.8 18	**30**	35	18 01	29	5 25	60	15 38	71
10	326	41.5		36.6	352	31.1 21		10.8 20	**20**	17 51	14	40	4 59	62	16 04	68
11	341	41.4	−17	36.0	6	52.3 22	−26	08.6 22	**10 N**	18 04	18 26	18 51	4 37	63	16 26	65
12	356	41.3	−17	35.3	21	13.5 22	−26	06.2 24	**0**	18 17	18 38	19 04	4 16	64	16 47	63
13	11	41.2		34.6	35	34.7 22		03.6 26	**10 S**	30	18 52	18	3 55	66	17 07	61
14	26	41.1		33.9	49	56.0 23	−26	00.8 28	**20**	43	19 07	34	32	68	29	59
15	41	41.0		33.2	64	17.3 23	−25	57.8 30	**30**	18 59	25	19 56	3 07	68	17 54	56
16	56	40.9		32.5	78	38.7 24		54.7 31	**35**	19 09	36	20 10	2 51	70	18 09	54
17	71	40.8	−17	31.8	93	00.0 23	−25	51.3 34	**40**	19 19	19 50	20 26	2 33	71	18 26	52
18	86	40.7	−17	31.1	107	21.5 25	−25	47.7 36	**45**	19 32	20 05	20 48	2 12	72	18 47	48
19	101	40.6		30.4	121	43.0 25		44.0 37	**50**	47	26	21 16	1 45	74	19 12	45
20	116	40.5		29.7	136	04.5 25		40.0 40	**52**	19 55	35	30	32	75	25	43
21	131	40.4		29.0	150	26.1 26		35.9 41	**54**	20 03	47	21 47	1 17	76	39	40
22	146	40.3		28.3	164	47.7 26		31.6 43	**56**	12	20 59	22 09	0 59	78	19 55	38
23	161	40.2		27.7	179	09.4 27		27.0 46	**58**	22	21 15	22 38	38	80	20 15	33
24	176	40.1	−17	27.0	193	31.1 27	−25	22.3 47	**60 S**	20 34	21 33	23 28	0 11	82	20 39	27

UT	ARIES PMG 15h 20m.6		VENUS Mag: −4.8 PMG: 10h 07m			MARTE Mag: +1.4 PMG: 9h 40m			JÚPITER Mag: −2.1 PMG: 13h 57m			SATURNO Mag: +0.7 PMG: 12h 33m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	′	º	′	′	º	′	′	º	′	′
0	129	12.6	207	44.6	−16 12.1	214	52.0	−23 50.6	150	21.4	−9 56.2	171	14.6	−17 04.2
1	144	15.1	222	47.0	12.1	229	52.5	50.6	165	23.3	56.0	186	16.7	04.1
2	159	17.6	237	49.4	12.2	244	53.0	50.6	180	25.2	55.8	201	18.9	04.0
3	174	20.0	252	51.7	12.2	259	53.4	50.6	195	27.2	55.6	216	21.1	04.0
4	189	22.5	267	54.1	12.3	274	53.9	50.5	210	29.1	55.3	231	23.2	03.9
5	204	25.0	282	56.5	−16 12.3	289	54.4	−23 50.5	225	31.0	−9 55.1	246	25.4	−17 03.8
6	219	27.4	297	58.9	−16 12.4	304	54.8	−23 50.5	240	32.9	−9 54.9	261	27.5	−17 03.7
7	234	29.9	313	01.2	12.4	319	55.3	50.5	255	34.9	54.7	276	29.7	03.6
8	249	32.3	328	03.6	12.5	334	55.8	50.4	270	36.8	54.5	291	31.9	03.5
9	264	34.8	343	06.0	12.5	349	56.3	50.4	285	38.7	54.3	306	34.0	03.4
10	279	37.3	358	08.3	12.6	4	56.7	50.4	300	40.6	54.1	321	36.2	03.4
11	294	39.7	13	10.7	−16 12.6	19	57.2	−23 50.4	315	42.6	−9 53.8	336	38.4	−17 03.3
12	309	42.2	28	13.0	−16 12.7	34	57.7	−23 50.3	330	44.5	−9 53.6	351	40.5	−17 03.2
13	324	44.7	43	15.3	12.7	49	58.1	50.3	345	46.4	53.4	6	42.7	03.1
14	339	47.1	58	17.7	12.8	64	58.6	50.3	0	48.3	53.2	21	44.9	03.0
15	354	49.6	73	20.0	12.9	79	59.1	50.2	15	50.3	53.0	36	47.0	02.9
16	9	52.1	88	22.3	12.9	94	59.6	50.2	30	52.2	52.8	51	49.2	02.8
17	24	54.5	103	24.6	−16 13.0	110	00.0	−23 50.2	45	54.1	−9 52.6	66	51.4	−17 02.8
18	39	57.0	118	27.0	−16 13.0	125	00.5	−23 50.1	60	56.0	−9 52.4	81	53.5	−17 02.7
19	54	59.5	133	29.3	13.1	140	01.0	50.1	75	57.9	52.1	96	55.7	02.6
20	70	01.9	148	31.6	13.1	155	01.4	50.1	90	59.9	51.9	111	57.8	02.5
21	85	04.4	163	33.9	13.2	170	01.9	50.0	106	01.8	51.7	127	00.0	02.4
22	100	06.8	178	36.2	13.3	185	02.4	50.0	121	03.7	51.5	142	02.2	02.3
23	115	09.3	193	38.5	13.3	200	02.9	50.0	136	05.6	51.3	157	04.3	02.2
24	130	11.8	208	40.8	−16 13.4	215	03.3	−23 49.9	151	07.6	−9 51.1	172	06.5	−17 02.2
Dif	—			+23	−1		+5	0		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 28^{d}.2		PHE	4^{h}: 60′.4									
	PMG: 12^{h} 13^{m}.4				SD: 16′.5			12^{h}: 60′.3									
					PMG: 11^{h} 35^{m}			20^{h}: 60′.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	176	40.1	−17	27.0	193	31.1	−25	22.3		**60 N**	6 38	7 29	8 16	9 00	18	14 19	107
1	191	40.0		26.3	207	52.9 28		17.4	49	**58**	34	22	8 06	8 38	24	40	101
2	206	39.9		25.6	222	14.8 29		12.4	50	**56**	30	15	7 57	20	29	14 58	96
3	221	39.8		24.9	236	36.8 30		07.1	53	**54**	27	10	49	8 04	33	15 13	92
4	236	39.7		24.2	250	58.8 30	−25	01.7	54	**52**	24	05	42	7 51	36	26	88
5	251	39.6	−17	23.5	265	20.9 31	−24	56.1	56	**50**	6 21	7 00	7 35	7 39	38	15 37	86
6	266	39.6	−17	22.8	279	43.0 31	−24	50.3	58	**45**	6 14	6 50	7 21	7 15	43	16 01	80
7	281	39.5		22.1	294	05.3 33		44.3	60	**40**	08	41	10	6 56	46	20	76
8	296	39.4		21.4	308	27.6 33		38.1	62	**35**	6 03	33	7 00	39	49	35	74
9	311	39.3		20.7	322	50.0 34		31.8	63	**30**	5 57	26	6 51	25	51	16 49	70
10	326	39.2		20.0	337	12.5 35		25.3	65	**20**	46	13	36	6 01	55	17 12	66
11	341	39.1	−17	19.3	351	35.0 35	−24	18.6	67	**10 N**	5 35	6 01	6 22	5 40	58	17 31	63
12	356	39.0	−17	18.6	5	57.7 37	−24	11.8	68	**0**	5 23	5 48	6 10	5 20	61	17 50	59
13	11	38.9		17.9	20	20.4 37	−24	04.8	70	**10 S**	5 09	35	5 57	5 01	64	18 08	56
14	26	38.8		17.2	34	43.2 38	−23	57.6	72	**20**	4 52	20	43	4 40	67	28	51
15	41	38.7		16.5	49	06.2 40		50.2	74	**30**	31	5 02	28	15	71	18 50	47
16	56	38.6		15.8	63	29.2 40		42.7	75	**35**	17	4 51	18	4 01	73	19 03	45
17	71	38.5	−17	15.1	77	52.3 41	−23	35.0	77	**40**	4 01	4 38	5 08	3 44	76	19 18	41
18	86	38.4	−17	14.3	92	15.5 42	−23	27.2	78	**45**	3 40	4 22	4 55	3 24	79	19 35	38
19	101	38.4		13.6	106	38.8 43		19.2	80	**50**	3 12	4 02	40	2 59	83	19 57	33
20	116	38.3		12.9	121	02.2 44		11.0	82	**52**	2 57	3 52	33	47	86	20 08	30
21	131	38.2		12.2	135	25.7 45	−23	02.7	83	**54**	40	41	25	33	89	19	27
22	146	38.1		11.5	149	49.3 46	−22	54.2	85	**56**	2 18	28	16	2 17	92	33	23
23	161	38.0		10.8	164	13.0 47		45.6	86	**58**	1 49	3 13	4 05	1 58	96	20 48	19
24	176	37.9	−17	10.1	178	36.8 48	−22	36.8	88	**60 S**	0 59	2 55	3 53	1 33	103	21 06	14

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 16^{m}.7		PMG: 10^{h} 04^{m}			PMG: 9^{h} 39^{m}			PMG: 13^{h} 54^{m}			PMG: 12^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	130	11.8	208	40.8	−16 13.4	215	03.3	−23 49.9	151	07.6	−9 51.1	172	06.5	−17 02.2
1	145	14.2	223	43.1	13.4	230	03.8	49.9	166	09.5	50.9	187	08.7	02.1
2	160	16.7	238	45.4	13.5	245	04.3	49.9	181	11.4	50.6	202	10.8	02.0
3	175	19.2	253	47.6	13.6	260	04.7	49.8	196	13.3	50.4	217	13.0	01.9
4	190	21.6	268	49.9	13.6	275	05.2	49.8	211	15.3	50.2	232	15.2	01.8
5	205	24.1	283	52.2	−16 13.7	290	05.7	−23 49.8	226	17.2	−9 50.0	247	17.3	−17 01.7
6	220	26.6	298	54.4	−16 13.8	305	06.2	−23 49.7	241	19.1	−9 49.8	262	19.5	−17 01.6
7	235	29.0	313	56.7	13.8	320	06.6	49.7	256	21.0	49.6	277	21.7	01.5
8	250	31.5	328	59.0	13.9	335	07.1	49.6	271	22.9	49.4	292	23.8	01.5
9	265	33.9	344	01.2	14.0	350	07.6	49.6	286	24.9	49.1	307	26.0	01.4
10	280	36.4	359	03.5	14.0	5	08.0	49.6	301	26.8	48.9	322	28.1	01.3
11	295	38.9	14	05.7	−16 14.1	20	08.5	−23 49.5	316	28.7	−9 48.7	337	30.3	−17 01.2
12	310	41.3	29	07.9	−16 14.1	35	09.0	−23 49.5	331	30.6	−9 48.5	352	32.5	−17 01.1
13	325	43.8	44	10.2	14.2	50	09.4	49.4	346	32.6	48.3	7	34.6	01.0
14	340	46.3	59	12.4	14.3	65	09.9	49.4	1	34.5	48.1	22	36.8	00.9
15	355	48.7	74	14.6	14.3	80	10.4	49.4	16	36.4	47.9	37	39.0	00.9
16	10	51.2	89	16.9	14.4	95	10.9	49.3	31	38.3	47.6	52	41.1	00.8
17	25	53.7	104	19.1	−16 14.5	110	11.3	−23 49.3	46	40.3	−9 47.4	67	43.3	−17 00.7
18	40	56.1	119	21.3	−16 14.6	125	11.8	−23 49.2	61	42.2	−9 47.2	82	45.5	−17 00.6
19	55	58.6	134	23.5	14.6	140	12.3	49.2	76	44.1	47.0	97	47.6	00.5
20	71	01.1	149	25.7	14.7	155	12.7	49.2	91	46.0	46.8	112	49.8	00.4
21	86	03.5	164	27.9	14.8	170	13.2	49.1	106	47.9	46.6	127	51.9	00.3
22	101	06.0	179	30.1	14.8	185	13.7	49.1	121	49.9	46.3	142	54.1	00.3
23	116	08.4	194	32.3	14.9	200	14.2	49.0	136	51.8	46.1	157	56.3	00.2
24	131	10.9	209	34.5	−16 15.0	215	14.6	−23 49.0	151	53.7	−9 45.9	172	58.4	−17 00.1
Dif	—			+22	−1		+5	0		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 29^{d}.2		PHE	4^{h}: 60′.1									
	PMG: 12^{h} 13^{m}.5				SD: 16′.4			12^{h}: 59′.9									
					PMG: 12^{h} 35^{m}			20^{h}: 59′.7									
	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	176	37.9	−17	10.1	178	36.8	−22	36.8		**60 N**	16 14	17 01	17 52	9 18	9	16 06	105
1	191	37.8		09.4	193	00.7 49		27.9	89	**58**	24	08	56	9 02	14	21	99
2	206	37.7		08.7	207	24.8 51		18.8	91	**56**	33	14	17 59	8 49	18	34	94
3	221	37.7		08.0	221	48.9 51		09.6	92	**54**	41	19	18 02	37	22	45	91
4	236	37.6		07.3	236	13.2 53	−22	00.3	93	**52**	48	24	05	27	25	16 54	88
5	251	37.5	−17	06.6	250	37.5 53	−21	50.8	95	**50**	16 54	17 29	18 08	8 17	28	17 03	85
6	266	37.4	−17	05.8	265	02.0 55	−21	41.1	97	**45**	17 08	17 39	18 14	7 58	33	17 21	80
7	281	37.3		05.1	279	26.5 55		31.3	98	**40**	19	48	20	42	37	36	75
8	296	37.2		04.4	293	51.2 57		21.4	99	**35**	29	17 55	25	28	41	49	71
9	311	37.1		03.7	308	16.0 58		11.4	100	**30**	37	18 02	31	7 16	44	17 59	69
10	326	37.1		03.0	322	41.0 60	−21	01.2	102	**20**	17 52	15	41	6 56	48	18 18	63
11	341	37.0	−17	02.3	337	06.0 60	−20	50.9	103	**10 N**	18 05	18 27	18 52	6 38	53	18 34	58
12	356	36.9	−17	01.6	351	31.1 61	−20	40.5	104	**0**	18 17	18 39	19 04	6 21	57	18 49	54
13	11	36.8		00.9	5	56.4 63		29.9	106	**10 S**	29	18 51	17	6 05	60	19 04	50
14	26	36.7	−17	00.1	20	21.8 64		19.2	107	**20**	43	19 06	34	5 47	64	19	46
15	41	36.6	−16	59.4	34	47.2 64	−20	08.4	108	**30**	18 58	24	19 55	26	70	37	41
16	56	36.6		58.7	49	12.8 66	−19	57.5	109	**35**	19 07	35	20 08	14	72	48	37
17	71	36.5	−16	58.0	63	38.6 68	−19	46.4	111	**40**	19 18	19 47	20 24	5 00	76	19 59	34
18	86	36.4	−16	57.3	78	04.4 68	−19	35.3	111	**45**	19 30	20 03	20 44	4 43	80	20 13	30
19	101	36.3		56.6	92	30.4 70		24.0	113	**50**	45	22	21 11	22	86	30	24
20	116	36.2		55.8	106	56.4 70		12.6	114	**52**	51	32	25	13	88	38	21
21	131	36.2		55.1	121	22.6 72	−19	01.1	115	**54**	19 59	42	21 42	4 02	91	46	19
22	146	36.1		54.4	135	48.9 73	−18	49.5	116	**56**	20 08	20 55	22 02	3 49	95	20 56	16
23	161	36.0		53.7	150	15.3 74		37.8	117	**58**	18	21 09	22 28	34	100	21 07	12
24	176	35.9	−16	53.0	164	41.9 76	−18	26.0	118	**60 S**	20 29	21 26	23 09	3 16	106	21 20	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 12^{m}.8		PMG: 10^{h} 00^{m}			PMG: 9^{h} 39^{m}			PMG: 13^{h} 51^{m}			PMG: 12^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	131	10.9	209	34.5	−16 15.0	215	14.6	−23 49.0	151	53.7	−9 45.9	172	58.4	−17 00.1
1	146	13.4	224	36.7	15.0	230	15.1	48.9	166	55.6	45.7	188	00.6	−17 00.0
2	161	15.8	239	38.9	15.1	245	15.6	48.9	181	57.5	45.5	203	02.8	−16 59.9
3	176	18.3	254	41.0	15.2	260	16.0	48.8	196	59.5	45.3	218	04.9	59.8
4	191	20.8	269	43.2	15.3	275	16.5	48.8	212	01.4	45.1	233	07.1	59.7
5	206	23.2	284	45.4	−16 15.3	290	17.0	−23 48.7	227	03.3	−9 44.8	248	09.3	−16 59.6
6	221	25.7	299	47.6	−16 15.4	305	17.4	−23 48.7	242	05.2	−9 44.6	263	11.4	−16 59.6
7	236	28.2	314	49.7	15.5	320	17.9	48.7	257	07.2	44.4	278	13.6	59.5
8	251	30.6	329	51.9	15.5	335	18.4	48.6	272	09.1	44.2	293	15.8	59.4
9	266	33.1	344	54.0	15.6	350	18.9	48.6	287	11.0	44.0	308	17.9	59.3
10	281	35.6	359	56.2	15.7	5	19.3	48.5	302	12.9	43.8	323	20.1	59.2
11	296	38.0	14	58.3	−16 15.8	20	19.8	−23 48.5	317	14.8	−9 43.5	338	22.2	−16 59.1
12	311	40.5	30	00.5	−16 15.8	35	20.3	−23 48.4	332	16.8	−9 43.3	353	24.4	−16 59.0
13	326	42.9	45	02.6	15.9	50	20.7	48.4	347	18.7	43.1	8	26.6	59.0
14	341	45.4	60	04.7	16.0	65	21.2	48.3	2	20.6	42.9	23	28.7	58.9
15	356	47.9	75	06.9	16.1	80	21.7	48.3	17	22.5	42.7	38	30.9	58.8
16	11	50.3	90	09.0	16.1	95	22.1	48.2	32	24.4	42.5	53	33.1	58.7
17	26	52.8	105	11.1	−16 16.2	110	22.6	−23 48.2	47	26.4	−9 42.3	68	35.2	−16 58.6
18	41	55.3	120	13.2	−16 16.3	125	23.1	−23 48.1	62	28.3	−9 42.0	83	37.4	−16 58.5
19	56	57.7	135	15.3	16.4	140	23.5	48.0	77	30.2	41.8	98	39.6	58.4
20	72	00.2	150	17.4	16.5	155	24.0	48.0	92	32.1	41.6	113	41.7	58.4
21	87	02.7	165	19.5	16.5	170	24.5	47.9	107	34.1	41.4	128	43.9	58.3
22	102	05.1	180	21.6	16.6	185	25.0	47.9	122	36.0	41.2	143	46.1	58.2
23	117	07.6	195	23.7	16.7	200	25.4	47.8	137	37.9	41.0	158	48.2	58.1
24	132	10.1	210	25.8	−16 16.8	215	25.9	−23 47.8	152	39.8	−9 40.7	173	50.4	−16 58.0
Dif	—			+21	−1		+5	0		+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.8		PHE	4ʰ: 59′.5									
	PMG: 12ʰ 13ᵐ.7				SD: 16′.2			12ʰ: 59′.3									
					PMG: 13ʰ 31ᵐ			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	176	35.9	−16	53.0	164	41.9	−18	26.0		**60 N**	6 34	7 25	8 12	9 27	5	17 51	98
1	191	35.8		52.2	179	08.5 76		14.1	119	**58**	30	18	8 02	16	10	18 00	94
2	206	35.8		51.5	193	35.3 78	−18	02.1	120	**56**	27	12	7 53	9 07	13	08	90
3	221	35.7		50.8	208	02.2 79	−17	50.0	121	**54**	24	07	45	8 59	16	16	86
4	236	35.6		50.1	222	29.2 80		37.8	122	**52**	21	7 02	38	52	18	22	84
5	251	35.5	−16	49.3	236	56.3 81	−17	25.5	123	**50**	6 19	6 57	7 32	8 45	21	18 28	81
6	266	35.4	−16	48.6	251	23.5 82	−17	13.1	124	**45**	6 12	6 48	7 19	8 31	26	18 41	76
7	281	35.4		47.9	265	50.9 84	−17	00.6	125	**40**	07	39	7 08	19	30	18 51	72
8	296	35.3		47.2	280	18.3 84	−16	48.0	126	**35**	6 01	32	6 58	09	34	19 00	68
9	311	35.2		46.4	294	45.9 86		35.4	126	**30**	5 56	25	50	8 00	37	08	64
10	326	35.1		45.7	309	13.6 87		22.6	128	**20**	46	12	35	7 44	43	21	59
11	341	35.1	−16	45.0	323	41.4 88	−16	09.8	128	**10 N**	5 35	6 00	6 22	7 31	47	19 32	54
12	356	35.0	−16	44.3	338	09.3 89	−15	56.9	129	**0**	5 23	5 49	6 10	7 18	52	19 43	50
13	11	34.9		43.5	352	37.3 90		43.9	130	**10 S**	5 10	36	5 58	7 05	56	19 54	45
14	26	34.8		42.8	7	05.5 92		30.9	130	**20**	4 54	21	45	6 51	61	20 05	40
15	41	34.8		42.1	21	33.7 92		17.7	132	**30**	33	5 04	29	36	66	18	35
16	56	34.7		41.4	36	02.1 94	−15	04.5	132	**35**	20	4 53	20	26	70	25	32
17	71	34.6	−16	40.6	50	30.5 94	−14	51.3	132	**40**	4 04	4 40	5 10	6 16	73	20 33	29
18	86	34.5	−16	39.9	64	59.1 96	−14	37.9	134	**45**	3 43	4 25	4 58	6 03	78	20 43	24
19	101	34.5		39.2	79	27.8 97		24.5	134	**50**	16	4 05	43	5 48	83	54	19
20	116	34.4		38.4	93	56.6 98	−14	11.1	134	**52**	3 03	3 56	36	41	86	20 59	17
21	131	34.3		37.7	108	25.5 99	−13	57.5	136	**54**	2 46	45	29	33	89	21 05	15
22	146	34.3		37.0	122	54.5 100		43.9	136	**56**	26	33	20	24	92	12	11
23	161	34.2		36.2	137	23.6 101		30.3	136	**58**	2 00	19	4 10	14	96	19	8
24	176	34.1	−16	35.5	151	52.8 102	−13	16.6	137	**60 S**	1 19	3 02	3 59	5 02	101	21 27	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15ʰ 08ᵐ.8		PMG: 9ʰ 57ᵐ			PMG: 9ʰ 38ᵐ			PMG: 13ʰ 48ᵐ			PMG: 12ʰ 23ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	132	10.1	210	25.8	−16 16.8	215	25.9	−23 47.8	152	39.8	−9 40.7	173	50.4	−16 58.0
1	147	12.5	225	27.9	16.9	230	26.4	47.7	167	41.7	40.5	188	52.5	57.9
2	162	15.0	240	30.0	16.9	245	26.8	47.7	182	43.7	40.3	203	54.7	57.8
3	177	17.4	255	32.1	17.0	260	27.3	47.6	197	45.6	40.1	218	56.9	57.7
4	192	19.9	270	34.1	17.1	275	27.8	47.6	212	47.5	39.9	233	59.0	57.7
5	207	22.4	285	36.2	−16 17.2	290	28.2	−23 47.5	227	49.4	−9 39.7	249	01.2	−16 57.6
6	222	24.8	300	38.3	−16 17.3	305	28.7	−23 47.4	242	51.3	−9 39.4	264	03.4	−16 57.5
7	237	27.3	315	40.3	17.3	320	29.2	47.4	257	53.3	39.2	279	05.5	57.4
8	252	29.8	330	42.4	17.4	335	29.6	47.3	272	55.2	39.0	294	07.7	57.3
9	267	32.2	345	44.4	17.5	350	30.1	47.3	287	57.1	38.8	309	09.9	57.2
10	282	34.7	0	46.5	17.6	5	30.6	47.2	302	59.0	38.6	324	12.0	57.1
11	297	37.2	15	48.5	−16 17.7	20	31.0	−23 47.1	318	00.9	−9 38.4	339	14.2	−16 57.1
12	312	39.6	30	50.6	−16 17.8	35	31.5	−23 47.1	333	02.9	−9 38.1	354	16.3	−16 57.0
13	327	42.1	45	52.6	17.8	50	32.0	47.0	348	04.8	37.9	9	18.5	56.9
14	342	44.5	60	54.6	17.9	65	32.5	47.0	3	06.7	37.7	24	20.7	56.8
15	357	47.0	75	56.7	18.0	80	32.9	46.9	18	08.6	37.5	39	22.8	56.7
16	12	49.5	90	58.7	18.1	95	33.4	46.8	33	10.5	37.3	54	25.0	56.6
17	27	51.9	106	00.7	−16 18.2	110	33.9	−23 46.8	48	12.4	−9 37.1	69	27.2	−16 56.5
18	42	54.4	121	02.7	−16 18.3	125	34.3	−23 46.7	63	14.4	−9 36.9	84	29.3	−16 56.4
19	57	56.9	136	04.8	18.3	140	34.8	46.7	78	16.3	36.6	99	31.5	56.4
20	72	59.3	151	06.8	18.4	155	35.3	46.6	93	18.2	36.4	114	33.7	56.3
21	88	01.8	166	08.8	18.5	170	35.7	46.5	108	20.1	36.2	129	35.8	56.2
22	103	04.3	181	10.8	18.6	185	36.2	46.5	123	22.0	36.0	144	38.0	56.1
23	118	06.7	196	12.8	18.7	200	36.7	46.4	138	24.0	35.8	159	40.2	56.0
24	133	09.2	211	14.8	−16 18.8	215	37.1	−23 46.3	153	25.9	−9 35.6	174	42.3	−16 55.9
Dif	—			+20	−1		+5	+1		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 1^{d}.8		PHE	4^{h}: 58′.7								
	PMG: 12^{h} 13^{m}.8				SD: 16′.0			12^{h}: 58′.5								
					PMG: 14^{h} 21^{m}			20^{h}: 58′.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	34.1	−16	35.5	151	52.8	−13	16.6	**60 N**	16 19	17 06	17 56	9 32	4	19 29	92
1	191	34.0		34.8	166	22.1 103	−13	02.8 138	**58**	29	12	18 00	26	7	34	88
2	206	34.0		34.0	180	51.5 104	−12	49.0 138	**56**	37	18	03	20	10	38	86
3	221	33.9		33.3	195	21.0 105		35.1 139	**54**	45	23	06	15	13	42	83
4	236	33.8		32.6	209	50.6 106		21.2 139	**52**	51	28	08	10	16	46	80
5	251	33.8	−16	31.8	224	20.3 107	−12	07.2 140	**50**	16 58	17 32	18 11	9 06	18	19 49	78
6	266	33.7	−16	31.1	238	50.1 108	−11	53.2 140	**45**	17 11	17 42	18 17	8 57	22	19 57	72
7	281	33.6		30.4	253	20.0 109		39.1 141	**40**	21	50	22	49	27	20 03	67
8	296	33.6		29.6	267	50.0 110		25.0 141	**35**	31	17 57	27	43	30	08	64
9	311	33.5		28.9	282	20.1 111	−11	10.9 141	**30**	39	18 04	32	37	33	12	61
10	326	33.4		28.2	296	50.3 112	−10	56.7 142	**20**	17 53	16	42	27	38	20	55
11	341	33.4	−16	27.4	311	20.6 113	−10	42.5 142	**10 N**	18 05	18 27	18 53	8 18	43	20 26	51
12	356	33.3	−16	26.7	325	50.9 113	−10	28.2 143	**0**	18 17	18 39	19 04	8 10	47	20 33	46
13	11	33.2		25.9	340	21.4 115	−10	13.9 143	**10 S**	29	18 51	17	8 01	52	39	42
14	26	33.2		25.2	354	51.9 115	−9	59.6 143	**20**	42	19 05	33	7 52	57	45	37
15	41	33.1		24.5	9	22.6 117		45.2 144	**30**	18 57	22	19 53	42	62	53	31
16	56	33.0		23.7	23	53.3 117		30.8 144	**35**	19 06	33	20 06	36	66	20 57	29
17	71	33.0	−16	23.0	38	24.1 118	−9	16.4 144	**40**	19 16	19 45	20 22	7 29	69	21 02	25
18	86	32.9	−16	22.2	52	55.0 119	−9	01.9 145	**45**	19 27	20 00	20 41	7 21	74	21 07	21
19	101	32.8		21.5	67	26.0 120	−8	47.4 145	**50**	41	19	21 07	11	79	13	17
20	116	32.8		20.7	81	57.0 120		32.9 145	**52**	48	28	20	07	81	16	15
21	131	32.7		20.0	96	28.2 122		18.4 145	**54**	19 56	38	36	7 02	84	20	12
22	146	32.6		19.3	110	59.4 122	−8	03.8 146	**56**	20 04	20 50	21 55	6 56	88	23	10
23	161	32.6		18.5	125	30.7 123	−7	49.3 145	**58**	13	21 03	22 19	50	91	27	7
24	176	32.5	−16	17.8	140	02.1 124	−7	34.7 146	**60 S**	20 24	21 20	22 54	6 43	95	21 32	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15^{h} 04^{m}.9		PMG: 9^{h} 54^{m}			PMG: 9^{h} 37^{m}			PMG: 13^{h} 45^{m}			PMG: 12^{h} 19^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	133	09.2	211	14.8	−16 18.8	215	37.1	−23 46.3	153	25.9	−9 35.6	174	42.3	−16 55.9
1	148	11.7	226	16.7	18.9	230	37.6	46.3	168	27.8	35.3	189	44.5	55.8
2	163	14.1	241	18.7	19.0	245	38.1	46.2	183	29.7	35.1	204	46.6	55.8
3	178	16.6	256	20.7	19.0	260	38.5	46.1	198	31.6	34.9	219	48.8	55.7
4	193	19.0	271	22.7	19.1	275	39.0	46.1	213	33.6	34.7	234	51.0	55.6
5	208	21.5	286	24.7	−16 19.2	290	39.5	−23 46.0	228	35.5	−9 34.5	249	53.1	−16 55.5
6	223	24.0	301	26.6	−16 19.3	305	40.0	−23 45.9	243	37.4	−9 34.2	264	55.3	−16 55.4
7	238	26.4	316	28.6	19.4	320	40.4	45.9	258	39.3	34.0	279	57.5	55.3
8	253	28.9	331	30.6	19.5	335	40.9	45.8	273	41.2	33.8	294	59.6	55.2
9	268	31.4	346	32.5	19.6	350	41.4	45.7	288	43.2	33.6	310	01.8	55.2
10	283	33.8	1	34.5	19.7	5	41.8	45.7	303	45.1	33.4	325	04.0	55.1
11	298	36.3	16	36.4	−16 19.8	20	42.3	−23 45.6	318	47.0	−9 33.2	340	06.1	−16 55.0
12	313	38.8	31	38.4	−16 19.8	35	42.8	−23 45.5	333	48.9	−9 32.9	355	08.3	−16 54.9
13	328	41.2	46	40.3	19.9	50	43.2	45.5	348	50.8	32.7	10	10.4	54.8
14	343	43.7	61	42.2	20.0	65	43.7	45.4	3	52.7	32.5	25	12.6	54.7
15	358	46.2	76	44.2	20.1	80	44.2	45.3	18	54.7	32.3	40	14.8	54.6
16	13	48.6	91	46.1	20.2	95	44.6	45.2	33	56.6	32.1	55	16.9	54.5
17	28	51.1	106	48.0	−16 20.3	110	45.1	−23 45.2	48	58.5	−9 31.9	70	19.1	−16 54.5
18	43	53.5	121	50.0	−16 20.4	125	45.6	−23 45.1	64	00.4	−9 31.6	85	21.3	−16 54.4
19	58	56.0	136	51.9	20.5	140	46.0	45.0	79	02.3	31.4	100	23.4	54.3
20	73	58.5	151	53.8	20.6	155	46.5	45.0	94	04.2	31.2	115	25.6	54.2
21	89	00.9	166	55.7	20.7	170	47.0	44.9	109	06.2	31.0	130	27.8	54.1
22	104	03.4	181	57.6	20.8	185	47.4	44.8	124	08.1	30.8	145	29.9	54.0
23	119	05.9	196	59.5	20.9	200	47.9	44.7	139	10.0	30.6	160	32.1	53.9
24	134	08.3	212	01.4	−16 21.0	215	48.4	−23 44.7	154	11.9	−9 30.3	175	34.2	−16 53.9
Dif	—			+19	−1		+5	+1		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 2ᵈ.8		PHE	4ʰ: 57′.9								
	PMG: 12ʰ 13ᵐ.9				SD: 15′.8			12ʰ: 57′.6								
					PMG: 15ʰ 08ᵐ			20ʰ: 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	176	32.5	−16	17.8	140	02.1	−7	34.7	**60 N**	6 30	7 20	8 07	9 36	2	21 01	88
1	191	32.5		17.0	154	33.5 124		20.1 146	**58**	27	14	7 57	33	5	02	85
2	206	32.4		16.3	169	05.1 126	−7	05.5 146	**56**	24	09	49	30	9	04	81
3	221	32.3		15.5	183	36.7 126	−6	50.8 147	**54**	21	7 03	42	28	11	05	79
4	236	32.3		14.8	198	08.4 127		36.2 146	**52**	19	6 59	35	26	13	06	76
5	251	32.2	−16	14.0	212	40.1 127	−6	21.5 147	**50**	6 16	6 55	7 29	9 24	15	21 07	74
6	266	32.2	−16	13.3	227	11.9 128	−6	06.8 147	**45**	6 10	6 45	7 16	9 19	21	21 09	69
7	281	32.1		12.5	241	43.8 129	−5	52.1 147	**40**	05	37	7 06	16	24	10	66
8	296	32.0		11.8	256	15.8 130		37.4 147	**35**	6 00	30	6 57	13	27	12	61
9	311	32.0		11.0	270	47.8 130		22.7 147	**30**	5 55	24	48	10	31	13	59
10	326	31.9		10.3	285	19.9 131	−5	08.0 147	**20**	45	12	34	05	36	15	53
11	341	31.9	−16	09.5	299	52.1 132	−4	53.3 147	**10 N**	5 35	6 00	6 22	9 01	41	21 17	49
12	356	31.8	−16	08.8	314	24.3 132	−4	38.6 147	**0**	5 24	5 49	6 10	8 57	45	21 19	44
13	11	31.7		08.0	328	56.6 133		23.9 147	**10 S**	5 11	37	5 59	53	50	21	39
14	26	31.7		07.3	343	28.9 133	−4	09.2 147	**20**	4 55	23	46	49	54	22	36
15	41	31.6		06.5	358	01.3 134	−3	54.5 147	**30**	35	5 06	31	44	60	24	30
16	56	31.6		05.8	12	33.8 135		39.8 147	**35**	22	4 55	22	42	62	26	27
17	71	31.5	−16	05.0	27	06.3 135	−3	25.1 147	**40**	4 07	4 43	5 13	8 38	67	21 27	24
18	86	31.5	−16	04.3	41	38.8 135	−3	10.3 148	**45**	3 47	4 28	5 01	8 35	70	21 28	20
19	101	31.4		03.5	56	11.5 137	−2	55.6 147	**50**	21	09	4 47	30	76	30	15
20	116	31.4		02.8	70	44.2 137		41.0 146	**52**	3 08	4 00	40	28	78	31	13
21	131	31.3		02.0	85	16.9 137		26.3 147	**54**	2 52	3 50	33	26	80	32	11
22	146	31.2		01.3	99	49.7 138	−2	11.6 147	**56**	34	39	25	24	83	33	8
23	161	31.2	−16	00.5	114	22.5 138	−1	56.9 147	**58**	2 09	25	15	21	86	34	5
24	176	31.1	−15	59.8	128	55.4 139	−1	42.3 146	**60 S**	1 34	3 09	4 04	8 18	90	21 35	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	15ʰ 01ᵐ.0		PMG: 9ʰ 51ᵐ			PMG: 9ʰ 36ᵐ			PMG: 13ʰ 41ᵐ			PMG: 12ʰ 16ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	134	08.3	212	01.4	−16 21.0	215	48.4	−23 44.7	154	11.9	−9 30.3	175	34.2	−16 53.9
1	149	10.8	227	03.3	21.0	230	48.8	44.6	169	13.8	30.1	190	36.4	53.8
2	164	13.3	242	05.2	21.1	245	49.3	44.5	184	15.8	29.9	205	38.6	53.7
3	179	15.7	257	07.1	21.2	260	49.8	44.4	199	17.7	29.7	220	40.7	53.6
4	194	18.2	272	09.0	21.3	275	50.2	44.4	214	19.6	29.5	235	42.9	53.5
5	209	20.6	287	10.8	−16 21.4	290	50.7	−23 44.3	229	21.5	−9 29.2	250	45.1	−16 53.4
6	224	23.1	302	12.7	−16 21.5	305	51.2	−23 44.2	244	23.4	−9 29.0	265	47.2	−16 53.3
7	239	25.6	317	14.6	21.6	320	51.6	44.1	259	25.3	28.8	280	49.4	53.2
8	254	28.0	332	16.5	21.7	335	52.1	44.0	274	27.3	28.6	295	51.6	53.2
9	269	30.5	347	18.3	21.8	350	52.6	44.0	289	29.2	28.4	310	53.7	53.1
10	284	33.0	2	20.2	21.9	5	53.1	43.9	304	31.1	28.2	325	55.9	53.0
11	299	35.4	17	22.0	−16 22.0	20	53.5	−23 43.8	319	33.0	−9 27.9	340	58.1	−16 52.9
12	314	37.9	32	23.9	−16 22.1	35	54.0	−23 43.7	334	34.9	−9 27.7	356	00.2	−16 52.8
13	329	40.4	47	25.7	22.2	50	54.5	43.6	349	36.8	27.5	11	02.4	52.7
14	344	42.8	62	27.6	22.3	65	54.9	43.6	4	38.8	27.3	26	04.5	52.6
15	359	45.3	77	29.4	22.4	80	55.4	43.5	19	40.7	27.1	41	06.7	52.6
16	14	47.8	92	31.3	22.5	95	55.9	43.4	34	42.6	26.8	56	08.9	52.5
17	29	50.2	107	33.1	−16 22.6	110	56.3	−23 43.3	49	44.5	−9 26.6	71	11.0	−16 52.4
18	44	52.7	122	34.9	−16 22.7	125	56.8	−23 43.2	64	46.4	−9 26.4	86	13.2	−16 52.3
19	59	55.1	137	36.8	22.8	140	57.3	43.2	79	48.3	26.2	101	15.4	52.2
20	74	57.6	152	38.6	22.9	155	57.7	43.1	94	50.3	26.0	116	17.5	52.1
21	90	00.1	167	40.4	23.0	170	58.2	43.0	109	52.2	25.8	131	19.7	52.0
22	105	02.5	182	42.2	23.1	185	58.7	42.9	124	54.1	25.5	146	21.9	51.9
23	120	05.0	197	44.0	23.2	200	59.1	42.8	139	56.0	25.3	161	24.0	51.9
24	135	07.5	212	45.8	−16 23.3	215	59.6	−23 42.7	154	57.9	−9 25.1	176	26.2	−16 51.8
Dif	—			+19	−1		+5	+1		+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.0				Edad: 3d.8 SD: 15′.6 PMG: 15h 53m		PHE	4h: 57′.0 12h: 56′.7 20h: 56′.4 Rº: 43m			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	31.1	−15	59.8	128	55.4	−1	42.3	**60 N**	16 25	17 11	18 01	9 38	3	22 29	86
1	191	31.1		59.0	143	28.3 139		27.6 147	**58**	34	17	04	38	6	27	82
2	206	31.0		58.2	158	01.3 140	−1	13.0 146	**56**	42	22	07	39	8	25	80
3	221	31.0		57.5	172	34.3 140	−0	58.4 146	**54**	49	27	09	39	11	24	76
4	236	30.9		56.7	187	07.4 141		43.8 146	**52**	16 55	31	12	39	13	22	74
5	251	30.9	−15	56.0	201	40.5 141	−0	29.2 146	**50**	17 01	17 35	18 14	9 39	15	22 21	72
6	266	30.8	−15	55.2	216	13.7 142	−0	14.6 146	**45**	17 13	17 44	18 19	9 40	19	22 18	67
7	281	30.8		54.4	230	46.9 142	−0	00.1 145	**40**	24	52	24	40	24	16	63
8	296	30.7		53.7	245	20.1 142	+0	14.5 146	**35**	33	17 59	29	40	27	13	60
9	311	30.7		52.9	259	53.4 143		29.0 145	**30**	40	18 05	34	41	29	12	57
10	326	30.6		52.2	274	26.7 143		43.5 145	**20**	17 54	17	43	41	35	08	52
11	341	30.6	−15	51.4	289	00.0 143	+0	57.9 144	**10 N**	18 06	18 28	18 53	9 42	39	22 06	47
12	356	30.5	−15	50.6	303	33.4 144	+1	12.4 145	**0**	18 17	18 39	19 04	9 42	44	22 03	43
13	11	30.5		49.9	318	06.8 144		26.8 144	**10 S**	29	18 51	16	43	47	22 00	39
14	26	30.4		49.1	332	40.2 144		41.2 144	**20**	41	19 04	32	43	52	21 58	34
15	41	30.4		48.3	347	13.7 145	+1	55.6 144	**30**	18 56	21	19 51	44	57	54	30
16	56	30.3		47.6	1	47.2 145	+2	09.9 143	**35**	19 04	31	20 04	44	61	53	26
17	71	30.3	−15	46.8	16	20.7 145	+2	24.2 143	**40**	19 13	19 43	20 19	9 45	64	21 51	23
18	86	30.2	−15	46.1	30	54.3 146	+2	38.5 143	**45**	19 25	19 57	20 38	9 45	68	21 48	20
19	101	30.2		45.3	45	27.9 146	+2	52.8 143	**50**	38	20 15	21 03	46	73	45	16
20	116	30.1		44.5	60	01.5 146	+3	07.0 142	**52**	45	24	15	46	75	44	13
21	131	30.1		43.8	74	35.1 146		21.2 142	**54**	19 52	34	30	46	78	43	11
22	146	30.1		43.0	89	08.8 147		35.4 142	**56**	20 00	45	21 48	47	80	41	9
23	161	30.0		42.2	103	42.4 146	+3	49.5 141	**58**	09	20 58	22 10	47	83	39	6
24	176	30.0	−15	41.5	118	16.1 147	+4	03.6 141	**60 S**	20 19	21 13	22 41	9 48	86	21 37	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 14h 57m.0		Mag: −4.9 PMG: 9h 48m			Mag: +1.4 PMG: 9h 36m			Mag: −2.1 PMG: 13h 38m			Mag: +0.7 PMG: 12h 12m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	135	07.5	212	45.8	−16 23.3	215	59.6	−23 42.7	154	57.9	−9 25.1	176	26.2	−16 51.8
1	150	09.9	227	47.6	23.4	231	00.1	42.6	169	59.8	24.9	191	28.4	51.7
2	165	12.4	242	49.4	23.5	246	00.5	42.6	185	01.8	24.7	206	30.5	51.6
3	180	14.9	257	51.2	23.6	261	01.0	42.5	200	03.7	24.4	221	32.7	51.5
4	195	17.3	272	53.0	23.7	276	01.5	42.4	215	05.6	24.2	236	34.9	51.4
5	210	19.8	287	54.8	−16 23.8	291	01.9	−23 42.3	230	07.5	−9 24.0	251	37.0	−16 51.3
6	225	22.2	302	56.6	−16 23.9	306	02.4	−23 42.2	245	09.4	−9 23.8	266	39.2	−16 51.3
7	240	24.7	317	58.4	24.0	321	02.9	42.1	260	11.3	23.6	281	41.3	51.2
8	255	27.2	333	00.1	24.1	336	03.3	42.0	275	13.3	23.4	296	43.5	51.1
9	270	29.6	348	01.9	24.2	351	03.8	42.0	290	15.2	23.1	311	45.7	51.0
10	285	32.1	3	03.7	24.3	6	04.3	41.9	305	17.1	22.9	326	47.8	50.9
11	300	34.6	18	05.5	−16 24.4	21	04.7	−23 41.8	320	19.0	−9 22.7	341	50.0	−16 50.8
12	315	37.0	33	07.2	−16 24.5	36	05.2	−23 41.7	335	20.9	−9 22.5	356	52.2	−16 50.7
13	330	39.5	48	09.0	24.6	51	05.7	41.6	350	22.8	22.3	11	54.3	50.6
14	345	42.0	63	10.7	24.7	66	06.1	41.5	5	24.8	22.0	26	56.5	50.6
15	0	44.4	78	12.5	24.8	81	06.6	41.4	20	26.7	21.8	41	58.7	50.5
16	15	46.9	93	14.2	24.9	96	07.1	41.3	35	28.6	21.6	57	00.8	50.4
17	30	49.4	108	16.0	−16 25.0	111	07.5	−23 41.2	50	30.5	−9 21.4	72	03.0	−16 50.3
18	45	51.8	123	17.7	−16 25.1	126	08.0	−23 41.1	65	32.4	−9 21.2	87	05.2	−16 50.2
19	60	54.3	138	19.4	25.2	141	08.5	41.0	80	34.3	20.9	102	07.3	50.1
20	75	56.7	153	21.2	25.3	156	08.9	40.9	95	36.2	20.7	117	09.5	50.0
21	90	59.2	168	22.9	25.4	171	09.4	40.9	110	38.2	20.5	132	11.6	49.9
22	106	01.7	183	24.6	25.5	186	09.9	40.8	125	40.1	20.3	147	13.8	49.9
23	121	04.1	198	26.4	25.6	201	10.3	40.7	140	42.0	20.1	162	16.0	49.8
24	136	06.6	213	28.1	−16 25.7	216	10.8	−23 40.6	155	43.9	−9 19.8	177	18.1	−16 49.7
Dif	—			+18	−1		+5	+1		+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.8		PHE	4ʰ: 56′.2									
	PMG: 12ʰ 14ᵐ.0				SD: 15′.3			12ʰ: 55′.9									
					PMG: 16ʰ 36ᵐ			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	176	30.0	−15	41.5	118	16.1	+4	03.6		**60 N**	6 26	7 16	8 02	9 41	3	23 55	85
1	191	29.9		40.7	132	49.9 148		17.7 141		**58**	23	10	7 53	44	6	49	82
2	206	29.9		39.9	147	23.6 147		31.7 140		**56**	20	05	45	47	9	45	78
3	221	29.8		39.1	161	57.4 148		45.7 140		**54**	18	7 00	38	50	11	40	76
4	236	29.8		38.4	176	31.1 147	+4	59.6 139		**52**	16	6 56	32	52	14	36	73
5	251	29.7	−15	37.6	191	04.9 148	+5	13.6 140		**50**	6 13	6 52	7 26	9 54	16	23 33	71
6	266	29.7	−15	36.8	205	38.7 148	+5	27.4 138		**45**	6 08	6 43	7 14	9 59	21	23 25	66
7	281	29.7		36.1	220	12.5 148		41.3 139		**40**	6 03	35	7 04	10 04	24	19	62
8	296	29.6		35.3	234	46.3 148	+5	55.1 138		**35**	5 58	28	6 55	07	27	13	59
9	311	29.6		34.5	249	20.2 149	+6	08.9 138		**30**	54	22	47	10	30	09	56
10	326	29.5		33.8	263	54.0 148		22.6 137		**20**	45	11	34	16	35	23 00	52
11	341	29.5	−15	33.0	278	27.9 149	+6	36.2 136		**10 N**	5 35	6 00	6 22	10 21	39	22 53	47
12	356	29.4	−15	32.2	293	01.7 148	+6	49.9 137		**0**	5 24	5 49	6 11	10 26	43	22 46	44
13	11	29.4		31.4	307	35.6 149	+7	03.5 136		**10 S**	5 12	37	5 59	30	47	39	40
14	26	29.4		30.7	322	09.5 149		17.0 135		**20**	4 57	24	47	35	52	32	36
15	41	29.3		29.9	336	43.3 148		30.5 135		**30**	37	5 07	33	41	57	24	31
16	56	29.3		29.1	351	17.2 149		44.0 135		**35**	25	4 57	25	45	59	19	28
17	71	29.2	−15	28.3	5	51.1 149	+7	57.4 134		**40**	4 10	4 46	5 15	10 49	62	22 14	25
18	86	29.2	−15	27.6	20	25.0 149	+8	10.7 133		**45**	3 51	4 31	5 04	10 53	67	22 08	21
19	101	29.2		26.8	34	58.9 149		24.0 133		**50**	26	13	4 50	10 59	71	22 01	16
20	116	29.1		26.0	49	32.7 148		37.3 133		**52**	3 13	4 05	44	11 01	74	21 57	15
21	131	29.1		25.2	64	06.6 149	+8	50.5 132		**54**	2 59	3 55	37	04	76	54	12
22	146	29.1		24.4	78	40.5 149	+9	03.7 132		**56**	41	44	29	07	79	50	9
23	161	29.0		23.7	93	14.4 149		16.8 131		**58**	2 18	31	20	10	82	45	7
24	176	29.0	−15	22.9	107	48.2 148	+9	29.8 130		**60 S**	1 48	3 16	4 10	11 14	86	21 40	4

UT	ARIES		VENUS			MARTE				JÚPITER				SATURNO			
	PMG		Mag: −4.9			Mag: +1.4				Mag: −2.1				Mag: +0.7			
	14ʰ 53ᵐ.1		PMG: 9ʰ 45ᵐ			PMG: 9ʰ 35ᵐ				PMG: 13ʰ 35ᵐ				PMG: 12ʰ 09ᵐ			
	hG ♈		hG ♀		Dec	hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º ′	º	′	º	′	º	′	º	′	º	′	º	′
0	136	06.6	213	28.1	−16 25.7	216	10.8	−23	40.6	155	43.9	−9	19.8	177	18.1	−16	49.7
1	151	09.1	228	29.8	25.8	231	11.3		40.5	170	45.8		19.6	192	20.3		49.6
2	166	11.5	243	31.5	25.9	246	11.7		40.4	185	47.7		19.4	207	22.5		49.5
3	181	14.0	258	33.2	26.0	261	12.2		40.3	200	49.6		19.2	222	24.6		49.4
4	196	16.5	273	34.9	26.1	276	12.7		40.2	215	51.6		19.0	237	26.8		49.3
5	211	18.9	288	36.6	−16 26.2	291	13.1	−23	40.1	230	53.5	−9	18.7	252	29.0	−16	49.2
6	226	21.4	303	38.3	−16 26.3	306	13.6	−23	40.0	245	55.4	−9	18.5	267	31.1	−16	49.2
7	241	23.9	318	40.0	26.4	321	14.1		39.9	260	57.3		18.3	282	33.3		49.1
8	256	26.3	333	41.7	26.5	336	14.5		39.8	275	59.2		18.1	297	35.5		49.0
9	271	28.8	348	43.4	26.6	351	15.0		39.7	291	01.1		17.9	312	37.6		48.9
10	286	31.2	3	45.0	26.7	6	15.5		39.6	306	03.1		17.7	327	39.8		48.8
11	301	33.7	18	46.7	−16 26.8	21	15.9	−23	39.5	321	05.0	−9	17.4	342	41.9	−16	48.7
12	316	36.2	33	48.4	−16 26.9	36	16.4	−23	39.4	336	06.9	−9	17.2	357	44.1	−16	48.6
13	331	38.6	48	50.1	27.0	51	16.9		39.3	351	08.8		17.0	12	46.3		48.5
14	346	41.1	63	51.7	27.1	66	17.3		39.2	6	10.7		16.8	27	48.4		48.5
15	1	43.6	78	53.4	27.2	81	17.8		39.1	21	12.6		16.6	42	50.6		48.4
16	16	46.0	93	55.1	27.3	96	18.3		39.0	36	14.5		16.3	57	52.8		48.3
17	31	48.5	108	56.7	−16 27.5	111	18.7	−23	38.9	51	16.5	−9	16.1	72	54.9	−16	48.2
18	46	51.0	123	58.4	−16 27.6	126	19.2	−23	38.8	66	18.4	−9	15.9	87	57.1	−16	48.1
19	61	53.4	139	00.0	27.7	141	19.7		38.7	81	20.3		15.7	102	59.3		48.0
20	76	55.9	154	01.7	27.8	156	20.1		38.6	96	22.2		15.5	118	01.4		47.9
21	91	58.3	169	03.3	27.9	171	20.6		38.5	111	24.1		15.2	133	03.6		47.9
22	107	00.8	184	04.9	28.0	186	21.1		38.4	126	26.0		15.0	148	05.8		47.8
23	122	03.3	199	06.6	28.1	201	21.5		38.3	141	27.9		14.8	163	07.9		47.7
24	137	05.7	214	08.2	−16 28.2	216	22.0	−23	38.2	156	29.9	−9	14.6	178	10.1	−16	47.6
Dif	—			+17	−1		+5		+1		+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}.8		PHE	4^{h}: 55′.5								
	PMG: 12^{h} 14^{m}.1				SD: 15′.1			12^{h}: 55′.3								
					PMG: 17^{h} 19^{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	176	29.0	−15	22.9	107	48.2	+9	29.8	**60 N**	16 30	17 16	18 05	9 44	4	** **	**
1	191	28.9		22.1	122	22.1^{149}		42.9^{131}	**58**	38	21	08	50	8	** **	**
2	206	28.9		21.3	136	56.0^{149}	+9	55.8^{129}	**56**	46	26	10	9 56	11	** **	**
3	221	28.9		20.6	151	29.8^{148}	+10	08.7^{129}	**54**	53	31	13	10 01	14	** **	**
4	236	28.8		19.8	166	03.6^{148}		21.6^{129}	**52**	16 59	35	15	06	16	** **	**
5	251	28.8	−15	19.0	180	37.5^{149}	+10	34.3^{127}	**50**	17 04	17 39	18 17	10 10	18	** **	**
6	266	28.8	−15	18.2	195	11.3^{148}	+10	47.1^{128}	**45**	17 16	17 47	18 22	10 20	22	** **	**
7	281	28.7		17.4	209	45.1^{148}	+10	59.8^{127}	**40**	26	17 54	27	28	25	** **	**
8	296	28.7		16.6	224	18.9^{148}	+11	12.4^{126}	**35**	35	18 01	31	34	29	** **	**
9	311	28.7		15.9	238	52.7^{148}		24.9^{125}	**30**	42	07	35	40	32	** **	**
10	326	28.6		15.1	253	26.5^{148}		37.4^{125}	**20**	17 55	18	44	10 51	36	23 52	51
11	341	28.6	−15	14.3	268	00.2^{147}	+11	49.9^{125}	**10 N**	18 07	18 28	18 53	11 00	40	23 40	48
12	356	28.6	−15	13.5	282	34.0^{148}	+12	02.3^{124}	**0**	18 18	18 39	19 04	11 09	43	23 30	44
13	11	28.5		12.7	297	07.7^{147}		14.6^{123}	**10 S**	29	18 50	16	17	48	19	41
14	26	28.5		11.9	311	41.4^{147}		26.9^{123}	**20**	40	19 03	31	27	51	23 08	37
15	41	28.5		11.2	326	15.1^{147}		39.1^{122}	**30**	18 54	19	19 50	38	56	22 55	33
16	56	28.4		10.4	340	48.7^{146}	+12	51.2^{121}	**35**	19 02	29	20 02	44	59	47	31
17	71	28.4	−15	09.6	355	22.4^{147}	+13	03.3^{121}	**40**	19 11	19 41	20 16	11 51	62	22 39	27
18	86	28.4	−15	08.8	9	56.0^{146}	+13	15.3^{120}	**45**	19 22	19 54	20 34	12 00	65	22 29	24
19	101	28.4		08.0	24	29.6^{146}		27.2^{119}	**50**	35	20 12	20 58	10	70	17	20
20	116	28.3		07.2	39	03.2^{146}		39.1^{119}	**52**	41	20	21 10	15	72	12	17
21	131	28.3		06.4	53	36.7^{145}	+13	50.9^{118}	**54**	48	29	24	20	75	22 06	15
22	146	28.3		05.6	68	10.3^{146}	+14	02.7^{118}	**56**	19 55	40	21 41	26	78	21 59	12
23	161	28.2		04.9	82	43.8^{145}		14.3^{116}	**58**	20 04	20 52	22 02	32	82	52	9
24	176	28.2	−15	04.1	97	17.3^{145}	+14	26.0^{117}	**60 S**	20 14	21 07	22 29	12 40	85	21 44	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	14^{h} 49^{m}.2		PMG: 9^{h} 42^{m}			PMG: 9^{h} 34^{m}			PMG: 13^{h} 32^{m}			PMG: 12^{h} 06^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	137	05.7	214	08.2	−16 28.2	216	22.0	−23 38.2	156	29.9	−9 14.6	178	10.1	−16 47.6
1	152	08.2	229	09.8	28.3	231	22.5	38.1	171	31.8	14.4	193	12.2	47.5
2	167	10.7	244	11.5	28.4	246	22.9	38.0	186	33.7	14.1	208	14.4	47.4
3	182	13.1	259	13.1	28.5	261	23.4	37.8	201	35.6	13.9	223	16.6	47.3
4	197	15.6	274	14.7	28.6	276	23.9	37.7	216	37.5	13.7	238	18.7	47.2
5	212	18.1	289	16.3	−16 28.7	291	24.3	−23 37.6	231	39.4	−9 13.5	253	20.9	−16 47.2
6	227	20.5	304	17.9	−16 28.8	306	24.8	−23 37.5	246	41.3	−9 13.3	268	23.1	−16 47.1
7	242	23.0	319	19.5	28.9	321	25.3	37.4	261	43.2	13.0	283	25.2	47.0
8	257	25.5	334	21.1	29.0	336	25.7	37.3	276	45.2	12.8	298	27.4	46.9
9	272	27.9	349	22.7	29.1	351	26.2	37.2	291	47.1	12.6	313	29.6	46.8
10	287	30.4	4	24.3	29.2	6	26.7	37.1	306	49.0	12.4	328	31.7	46.7
11	302	32.8	19	25.9	−16 29.4	21	27.1	−23 37.0	321	50.9	−9 12.1	343	33.9	−16 46.6
12	317	35.3	34	27.5	−16 29.5	36	27.6	−23 36.9	336	52.8	−9 11.9	358	36.1	−16 46.5
13	332	37.8	49	29.1	29.6	51	28.1	36.8	351	54.7	11.7	13	38.2	46.5
14	347	40.2	64	30.7	29.7	66	28.5	36.6	6	56.6	11.5	28	40.4	46.4
15	2	42.7	79	32.2	29.8	81	29.0	36.5	21	58.6	11.3	43	42.6	46.3
16	17	45.2	94	33.8	29.9	96	29.5	36.4	37	00.5	11.0	58	44.7	46.2
17	32	47.6	109	35.4	−16 30.0	111	30.0	−23 36.3	52	02.4	−9 10.8	73	46.9	−16 46.1
18	47	50.1	124	37.0	−16 30.1	126	30.4	−23 36.2	67	04.3	−9 10.6	88	49.0	−16 46.0
19	62	52.6	139	38.5	30.2	141	30.9	36.1	82	06.2	10.4	103	51.2	45.9
20	77	55.0	154	40.1	30.3	156	31.4	36.0	97	08.1	10.2	118	53.4	45.8
21	92	57.5	169	41.6	30.4	171	31.8	35.9	112	10.0	09.9	133	55.5	45.8
22	107	59.9	184	43.2	30.5	186	32.3	35.7	127	11.9	09.7	148	57.7	45.7
23	123	02.4	199	44.8	30.6	201	32.8	35.6	142	13.9	09.5	163	59.9	45.6
24	138	04.9	214	46.3	−16 30.7	216	33.2	−23 35.5	157	15.8	−9 09.3	179	02.0	−16 45.5
Dif	—		+16		−1	+5		+1	+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.8		PHE	4ʰ: 54′.9									
	PMG: 12ʰ 14ᵐ.1				SD: 15′.0			12ʰ: 54′.7									
					PMG: 18ʰ 03ᵐ			20ʰ: 54′.6									
	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	28.2	−15	04.1	97	17.3	+14	26.0		**60 N**	6 22	7 11	7 57	9 48	6	1 20	86
1	191	28.2		03.3	111	50.7 144		37.5 115		**58**	19	06	48	9 58	10	11	81
2	206	28.2		02.5	126	24.1 144	+14	49.0 115		**56**	17	7 01	41	10 07	14	1 03	78
3	221	28.1		01.7	140	57.5 144	+15	00.4 114		**54**	15	6 57	34	15	16	0 56	75
4	236	28.1		00.9	155	30.9 144		11.7 113		**52**	13	53	28	22	19	49	73
5	251	28.1	−15	00.1	170	04.3 144	+15	23.0 113		**50**	6 11	6 49	7 23	10 28	21	0 44	70
6	266	28.1	−14	59.3	184	37.6 143	+15	34.2 112		**45**	6 06	6 40	7 11	10 42	26	0 31	66
7	281	28.0		58.5	199	10.9 143		45.3 111		**40**	6 01	33	7 01	10 53	29	21	62
8	296	28.0		57.7	213	44.1 142	+15	56.3 110		**35**	5 57	27	6 53	11 03	32	12	59
9	311	28.0		56.9	228	17.3 142	+16	07.3 110		**30**	53	21	46	12	34	0 05	56
10	326	28.0		56.2	242	50.5 142		18.2 109		**20**	44	10	33	27	38	** **	**
11	341	27.9	−14	55.4	257	23.7 142	+16	29.0 108		**10 N**	5 35	6 00	6 21	11 40	42	** **	**
12	356	27.9	−14	54.6	271	56.8 141	+16	39.8 108		**0**	5 24	5 49	6 11	11 52	46	** **	**
13	11	27.9		53.8	286	29.9 141	+16	50.5 107		**10 S**	5 12	38	6 00	12 05	48	** **	**
14	26	27.9		53.0	301	02.9 140	+17	01.1 106		**20**	4 58	25	5 48	18	52	23 45	40
15	41	27.8		52.2	315	35.9 140		11.6 105		**30**	39	09	35	34	56	28	36
16	56	27.8		51.4	330	08.9 140		22.0 104		**35**	27	5 00	27	43	58	18	33
17	71	27.8	−14	50.6	344	41.8 139	+17	32.4 104		**40**	4 13	4 48	5 18	12 53	62	23 06	31
18	86	27.8	−14	49.8	359	14.7 139	+17	42.7 103		**45**	3 54	4 35	5 07	13 05	65	22 53	28
19	101	27.7		49.0	13	47.6 139	+17	52.9 102		**50**	31	17	4 54	20	70	37	23
20	116	27.7		48.2	28	20.4 138	+18	03.0 101		**52**	19	09	48	27	72	29	22
21	131	27.7		47.4	42	53.2 138		13.0 100		**54**	3 05	4 00	41	35	74	21	19
22	146	27.7		46.6	57	25.9 137		23.0 100		**56**	2 48	3 49	34	44	77	11	17
23	161	27.7		45.8	71	58.6 137		32.9 99		**58**	27	37	25	13 54	81	22 01	12
24	176	27.6	−14	45.0	86	31.3 137	+18	42.7 98		**60 S**	2 00	3 22	4 16	14 05	86	21 49	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	14ʰ 45ᵐ.3		PMG: 9ʰ 40ᵐ			PMG: 9ʰ 33ᵐ			PMG: 13ʰ 29ᵐ			PMG: 12ʰ 02ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	138	04.9	214	46.3	−16 30.7	216	33.2	−23 35.5	157	15.8	−9 09.3	179	02.0	−16 45.5
1	153	07.3	229	47.8	30.8	231	33.7	35.4	172	17.7	09.1	194	04.2	45.4
2	168	09.8	244	49.4	31.0	246	34.2	35.3	187	19.6	08.8	209	06.4	45.3
3	183	12.3	259	50.9	31.1	261	34.6	35.2	202	21.5	08.6	224	08.5	45.2
4	198	14.7	274	52.5	31.2	276	35.1	35.0	217	23.4	08.4	239	10.7	45.1
5	213	17.2	289	54.0	−16 31.3	291	35.6	−23 34.9	232	25.3	−9 08.2	254	12.9	−16 45.1
6	228	19.7	304	55.5	−16 31.4	306	36.0	−23 34.8	247	27.3	−9 08.0	269	15.0	−16 45.0
7	243	22.1	319	57.0	31.5	321	36.5	34.7	262	29.2	07.7	284	17.2	44.9
8	258	24.6	334	58.6	31.6	336	37.0	34.6	277	31.1	07.5	299	19.4	44.8
9	273	27.1	350	00.1	31.7	351	37.4	34.5	292	33.0	07.3	314	21.5	44.7
10	288	29.5	5	01.6	31.8	6	37.9	34.3	307	34.9	07.1	329	23.7	44.6
11	303	32.0	20	03.1	−16 31.9	21	38.4	−23 34.2	322	36.8	−9 06.8	344	25.8	−16 44.5
12	318	34.4	35	04.6	−16 32.0	36	38.8	−23 34.1	337	38.7	−9 06.6	359	28.0	−16 44.4
13	333	36.9	50	06.1	32.1	51	39.3	34.0	352	40.6	06.4	14	30.2	44.4
14	348	39.4	65	07.6	32.2	66	39.8	33.9	7	42.6	06.2	29	32.3	44.3
15	3	41.8	80	09.1	32.4	81	40.2	33.7	22	44.5	06.0	44	34.5	44.2
16	18	44.3	95	10.6	32.5	96	40.7	33.6	37	46.4	05.7	59	36.7	44.1
17	33	46.8	110	12.1	−16 32.6	111	41.2	−23 33.5	52	48.3	−9 05.5	74	38.8	−16 44.0
18	48	49.2	125	13.6	−16 32.7	126	41.6	−23 33.4	67	50.2	−9 05.3	89	41.0	−16 43.9
19	63	51.7	140	15.0	32.8	141	42.1	33.2	82	52.1	05.1	104	43.2	43.8
20	78	54.2	155	16.5	32.9	156	42.6	33.1	97	54.0	04.9	119	45.3	43.8
21	93	56.6	170	18.0	33.0	171	43.0	33.0	112	55.9	04.6	134	47.5	43.7
22	108	59.1	185	19.5	33.1	186	43.5	32.9	127	57.8	04.4	149	49.7	43.6
23	124	01.6	200	20.9	33.2	201	44.0	32.8	142	59.8	04.2	164	51.8	43.5
24	139	04.0	215	22.4	−16 33.3	216	44.4	−23 32.6	158	01.7	−9 04.0	179	54.0	−16 43.4
Dif	—			+15	−1		+5	+1		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.2				LUNA Edad: 7d.8 SD: 14′.8 PMG: 18h 49m PHE 4h: 54′.5; 12h: 54′.4; 20h: 54′.3 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	176	27.6	−14	45.0	86	31.3	+18	42.7	**60 N**	16 35	17 20	18 10	9 54	11	2 46	85
1	191	27.6		44.2	101	03.9 136	+18	52.4 97	**58**	43	26	12	10 08	16	32	81
2	206	27.6		43.4	115	36.5 136	+19	02.0 96	**56**	50	30	14	21	19	21	76
3	221	27.6		42.6	130	09.0 135		11.5 95	**54**	16 57	34	16	31	23	11	73
4	236	27.6		41.8	144	41.5 135		21.0 95	**52**	17 03	38	18	41	24	2 02	71
5	251	27.6	−14	41.0	159	13.9 134	+19	30.4 94	**50**	17 08	17 42	18 20	10 49	27	1 54	68
6	266	27.5	−14	40.2	173	46.3 134	+19	39.6 92	**45**	17 19	17 50	18 24	11 08	30	1 37	64
7	281	27.5		39.4	188	18.7 134		48.8 92	**40**	29	17 57	29	22	34	23	61
8	296	27.5		38.6	202	51.0 133	+19	57.9 91	**35**	37	18 03	33	35	36	11	58
9	311	27.5		37.8	217	23.3 133	+20	07.0 91	**30**	44	09	37	11 46	38	1 01	56
10	326	27.5		37.0	231	55.5 132		15.9 89	**20**	17 56	19	45	12 05	42	0 43	53
11	341	27.5	−14	36.2	246	27.7 132	+20	24.7 88	**10 N**	18 07	18 29	18 54	12 22	44	0 28	49
12	356	27.4	−14	35.4	260	59.8 131	+20	33.5 88	**0**	18 18	18 39	19 04	12 38	47	0 14	46
13	11	27.4		34.6	275	31.9 131		42.1 86	**10 S**	28	18 50	15	12 53	50	0 00	43
14	26	27.4		33.7	290	03.9 130		50.7 86	**20**	39	19 02	29	13 10	53	**	** **
15	41	27.4		32.9	304	35.9 130	+20	59.1 84	**30**	18 53	18	48	30	56	**	** **
16	56	27.4		32.1	319	07.9 130	+21	07.5 84	**35**	19 00	27	19 59	41	58	23 51	39
17	71	27.4	−14	31.3	333	39.8 129	+21	15.8 83	**40**	19 09	19 38	20 13	13 55	60	23 37	37
18	86	27.4	−14	30.5	348	11.6 128	+21	24.0 82	**45**	19 19	19 51	20 31	14 10	64	23 21	34
19	101	27.3		29.7	2	43.4 128		32.1 81	**50**	32	20 08	20 54	30	67	23 00	31
20	116	27.3		28.9	17	15.2 128		40.1 80	**52**	37	16	21 05	39	69	22 51	28
21	131	27.3		28.1	31	46.9 127		48.0 79	**54**	44	25	19	14 49	72	40	26
22	146	27.3		27.3	46	18.6 127	+21	55.8 78	**56**	51	35	34	15 01	75	28	23
23	161	27.3		26.5	60	50.2 126	+22	03.5 77	**58**	19 59	20 46	21 54	15	79	22 13	20
24	176	27.3	−14	25.7	75	21.8 126	+22	11.1 76	**60 S**	20 08	21 00	22 19	15 31	84	21 57	14

UT	ARIES PMG 14h 41m.3		VENUS Mag: −4.9 PMG: 9h 38m			MARTE Mag: +1.4 PMG: 9h 33m			JÚPITER Mag: −2.1 PMG: 13h 26m			SATURNO Mag: +0.7 PMG: 11h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	139	04.0	215	22.4	−16 33.3	216	44.4	−23 32.6	158	01.7	−9 04.0	179	54.0	−16 43.4
1	154	06.5	230	23.9	33.4	231	44.9	32.5	173	03.6	03.7	194	56.2	43.3
2	169	08.9	245	25.3	33.5	246	45.4	32.4	188	05.5	03.5	209	58.3	43.2
3	184	11.4	260	26.8	33.6	261	45.8	32.2	203	07.4	03.3	225	00.5	43.1
4	199	13.9	275	28.2	33.8	276	46.3	32.1	218	09.3	03.1	240	02.6	43.1
5	214	16.3	290	29.7	−16 33.9	291	46.8	−23 32.0	233	11.2	−9 02.9	255	04.8	−16 43.0
6	229	18.8	305	31.1	−16 34.0	306	47.2	−23 31.9	248	13.1	−9 02.6	270	07.0	−16 42.9
7	244	21.3	320	32.6	34.1	321	47.7	31.7	263	15.1	02.4	285	09.1	42.8
8	259	23.7	335	34.0	34.2	336	48.2	31.6	278	17.0	02.2	300	11.3	42.7
9	274	26.2	350	35.5	34.3	351	48.6	31.5	293	18.9	02.0	315	13.5	42.6
10	289	28.7	5	36.9	34.4	6	49.1	31.4	308	20.8	01.7	330	15.6	42.5
11	304	31.1	20	38.3	−16 34.5	21	49.6	−23 31.2	323	22.7	−9 01.5	345	17.8	−16 42.4
12	319	33.6	35	39.7	−16 34.6	36	50.0	−23 31.1	338	24.6	−9 01.3	0	20.0	−16 42.4
13	334	36.1	50	41.2	34.7	51	50.5	31.0	353	26.5	01.1	15	22.1	42.3
14	349	38.5	65	42.6	34.8	66	51.0	30.8	8	28.4	00.9	30	24.3	42.2
15	4	41.0	80	44.0	34.9	81	51.4	30.7	23	30.3	00.6	45	26.5	42.1
16	19	43.4	95	45.4	35.0	96	51.9	30.6	38	32.3	00.4	60	28.6	42.0
17	34	45.9	110	46.8	−16 35.1	111	52.4	−23 30.4	53	34.2	−9 00.2	75	30.8	−16 41.9
18	49	48.4	125	48.2	−16 35.3	126	52.8	−23 30.3	68	36.1	−9 00.0	90	33.0	−16 41.8
19	64	50.8	140	49.6	35.4	141	53.3	30.2	83	38.0	−8 59.8	105	35.1	41.7
20	79	53.3	155	51.0	35.5	156	53.8	30.0	98	39.9	59.5	120	37.3	41.7
21	94	55.8	170	52.4	35.6	171	54.2	29.9	113	41.8	59.3	135	39.5	41.6
22	109	58.2	185	53.8	35.7	186	54.7	29.8	128	43.7	59.1	150	41.6	41.5
23	125	00.7	200	55.2	35.8	201	55.2	29.6	143	45.6	58.9	165	43.8	41.4
24	140	03.2	215	56.6	−16 35.9	216	55.6	−23 29.5	158	47.5	−8 58.6	180	46.0	−16 41.3
Dif	—			+14	−1		+5	+1		+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.8		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 14ᵐ.2				SD: 14′.8			12ʰ: 54′.2									
					PMG: 19ʰ 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	176	27.3	−14	25.7	75	21.8	+22	11.1		**60 N**	6 17	7 07	7 52	10 05	20	4 11	81
1	191	27.3		24.9	89	53.3 125		18.6	75	**58**	15	7 02	44	24	25	3 53	75
2	206	27.3		24.0	104	24.7 124		26.0	74	**56**	13	6 57	37	40	28	37	72
3	221	27.2		23.2	118	56.2 125		33.3	73	**54**	11	53	30	10 54	30	24	69
4	236	27.2		22.4	133	27.5 123		40.5	72	**52**	09	49	25	11 05	33	13	67
5	251	27.2	−14	21.6	147	58.9 124	+22	47.6	71	**50**	6 08	6 46	7 19	11 16	34	3 02	66
6	266	27.2	−14	20.8	162	30.1 122	+22	54.6	70	**45**	6 03	6 38	7 08	11 38	38	2 41	62
7	281	27.2		20.0	177	01.4 123	+23	01.5	69	**40**	5 59	31	6 59	11 56	40	24	59
8	296	27.2		19.2	191	32.5 121		08.3	68	**35**	55	25	51	12 11	42	2 09	58
9	311	27.2		18.4	206	03.7 122		15.0	67	**30**	51	19	44	24	43	1 57	56
10	326	27.2		17.5	220	34.8 121		21.6	66	**20**	43	6 09	32	12 47	45	36	52
11	341	27.2	−14	16.7	235	05.8 120	+23	28.1	65	**10 N**	5 34	5 59	6 21	13 06	48	1 17	51
12	356	27.2	−14	15.9	249	36.8 120	+23	34.4	63	**0**	5 25	5 49	6 11	13 25	49	1 00	48
13	11	27.2		15.1	264	07.7 119		40.7	63	**10 S**	5 13	39	6 00	13 43	51	0 43	46
14	26	27.2		14.3	278	38.6 119		46.9	62	**20**	4 59	26	5 49	14 03	53	25	43
15	41	27.1		13.5	293	09.5 119		52.9	60	**30**	41	11	36	26	55	0 04	40
16	56	27.1		12.7	307	40.3 118	+23	58.9	60	**35**	29	5 02	29	39	57	** **	**
17	71	27.1	−14	11.8	322	11.0 117	+24	04.7	58	**40**	4 15	4 51	5 20	14 55	58	** **	**
18	86	27.1	−14	11.0	336	41.7 117	+24	10.4	57	**45**	3 58	4 38	5 10	15 14	60	23 55	41
19	101	27.1		10.2	351	12.4 117		16.0	56	**50**	35	21	4 57	37	63	31	38
20	116	27.1		09.4	5	43.0 116		21.5	55	**52**	24	13	52	15 48	65	19	37
21	131	27.1		08.6	20	13.5 115		26.9	54	**54**	3 11	4 04	45	16 01	66	23 06	36
22	146	27.1		07.7	34	44.1 116		32.2	53	**56**	2 55	3 54	38	16	69	22 51	33
23	161	27.1		06.9	49	14.5 114		37.4	52	**58**	36	43	30	34	71	33	30
24	176	27.1	−14	06.1	63	45.0 115	+24	42.4	50	**60 S**	2 10	3 29	4 21	16 55	77	22 11	26

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.4			Mag: −2.1			Mag: +0.7		
	14ʰ 37ᵐ.4		PMG: 9ʰ 35ᵐ			PMG: 9ʰ 32ᵐ			PMG: 13ʰ 23ᵐ			PMG: 11ʰ 55ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	140	03.2	215	56.6	−16 35.9	216	55.6	−23 29.5	158	47.5	−8 58.6	180	46.0	−16 41.3
1	155	05.6	230	58.0	36.0	231	56.1	29.4	173	49.5	58.4	195	48.1	41.2
2	170	08.1	245	59.4	36.1	246	56.6	29.2	188	51.4	58.2	210	50.3	41.1
3	185	10.5	261	00.8	36.2	261	57.0	29.1	203	53.3	58.0	225	52.4	41.0
4	200	13.0	276	02.1	36.3	276	57.5	29.0	218	55.2	57.7	240	54.6	41.0
5	215	15.5	291	03.5	−16 36.4	291	58.0	−23 28.8	233	57.1	−8 57.5	255	56.8	−16 40.9
6	230	17.9	306	04.9	−16 36.5	306	58.4	−23 28.7	248	59.0	−8 57.3	270	58.9	−16 40.8
7	245	20.4	321	06.2	36.6	321	58.9	28.5	264	00.9	57.1	286	01.1	40.7
8	260	22.9	336	07.6	36.8	336	59.4	28.4	279	02.8	56.9	301	03.3	40.6
9	275	25.3	351	09.0	36.9	351	59.8	28.3	294	04.7	56.6	316	05.4	40.5
10	290	27.8	6	10.3	37.0	7	00.3	28.1	309	06.7	56.4	331	07.6	40.4
11	305	30.3	21	11.7	−16 37.1	22	00.8	−23 28.0	324	08.6	−8 56.2	346	09.8	−16 40.3
12	320	32.7	36	13.0	−16 37.2	37	01.2	−23 27.8	339	10.5	−8 56.0	1	11.9	−16 40.3
13	335	35.2	51	14.4	37.3	52	01.7	27.7	354	12.4	55.7	16	14.1	40.2
14	350	37.7	66	15.7	37.4	67	02.2	27.6	9	14.3	55.5	31	16.3	40.1
15	5	40.1	81	17.0	37.5	82	02.6	27.4	24	16.2	55.3	46	18.4	40.0
16	20	42.6	96	18.4	37.6	97	03.1	27.3	39	18.1	55.1	61	20.6	39.9
17	35	45.0	111	19.7	−16 37.7	112	03.6	−23 27.1	54	20.0	−8 54.9	76	22.8	−16 39.8
18	50	47.5	126	21.0	−16 37.8	127	04.0	−23 27.0	69	21.9	−8 54.6	91	24.9	−16 39.7
19	65	50.0	141	22.4	37.9	142	04.5	26.8	84	23.8	54.4	106	27.1	39.6
20	80	52.4	156	23.7	38.0	157	05.0	26.7	99	25.8	54.2	121	29.3	39.6
21	95	54.9	171	25.0	38.1	172	05.4	26.6	114	27.7	54.0	136	31.4	39.5
22	110	57.4	186	26.3	38.2	187	05.9	26.4	129	29.6	53.7	151	33.6	39.4
23	125	59.8	201	27.7	38.3	202	06.4	26.3	144	31.5	53.5	166	35.8	39.3
24	141	02.3	216	29.0	−16 38.4	217	06.8	−23 26.1	159	33.4	−8 53.3	181	37.9	−16 39.2
Dif	—			+13	−1		+5	+1		+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.8		PHE	4ʰ: 54′.2								
	PMG: 12ʰ 14ᵐ.2		SD: 14′.7			12ʰ: 54′.2								
			PMG: 20ʰ 26ᵐ			20ʰ: 54′.2								
						Rº: 51ᵐ								
	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 27.1	−14 06.1	63 45.0		+24 42.4		**60 N**	16 40	17 25	18 14	10 25	35	5 32	69
1	191 27.1	05.3	78 15.4	114	47.4	50	**58**	48	30	16	10 49	38	5 08	66
2	206 27.1	04.5	92 45.7	113	52.2	48	**56**	16 55	34	18	11 08	41	4 49	64
3	221 27.1	03.6	107 16.0	113	+24 56.9	47	**54**	17 01	38	20	24	42	33	62
4	236 27.1	02.8	121 46.3	113	+25 01.5	46	**52**	06	42	22	38	43	20	60
5	251 27.1	−14 02.0	136 16.5	112	+25 06.0	45	**50**	17 11	17 45	18 23	11 50	44	4 08	59
6	266 27.1	−14 01.2	150 46.6	111	+25 10.4	44	**45**	17 22	17 53	18 27	12 16	45	3 43	57
7	281 27.1	−14 00.4	165 16.8	112	14.6	42	**40**	31	17 59	31	36	46	23	56
8	296 27.1	−13 59.5	179 46.9	111	18.8	42	**35**	39	18 05	35	12 53	47	3 07	55
9	311 27.1	58.7	194 16.9	110	22.8	40	**30**	45	10	38	13 07	48	2 53	54
10	326 27.1	57.9	208 46.9	110	26.7	39	**20**	17 57	20	46	32	49	28	53
11	341 27.1	−13 57.1	223 16.9	110	+25 30.5	38	**10 N**	18 08	18 29	18 54	13 54	50	2 08	51
12	356 27.1	−13 56.2	237 46.8	109	+25 34.1	36	**0**	18 18	18 39	19 04	14 14	50	1 48	50
13	11 27.1	55.4	252 16.7	109	37.7	36	**10 S**	28	18 49	15	34	51	29	48
14	26 27.1	54.6	266 46.5	108	41.1	34	**20**	38	19 01	28	14 56	52	1 08	47
15	41 27.1	53.8	281 16.4	109	44.4	33	**30**	51	16	46	15 21	53	0 44	46
16	56 27.1	52.9	295 46.1	107	47.6	32	**35**	18 58	25	19 57	36	53	30	45
17	71 27.1	−13 52.1	310 15.9	108	+25 50.6	30	**40**	19 06	19 35	20 10	15 53	54	0 14	43
18	86 27.1	−13 51.3	324 45.6	107	+25 53.6	30	**45**	19 16	19 48	20 27	16 14	54	** **	**
19	101 27.1	50.5	339 15.2	106	56.4	28	**50**	28	20 04	20 49	40	55	** **	**
20	116 27.1	49.6	353 44.9	107	+25 59.1	27	**52**	34	11	21 00	16 53	56	23 56	49
21	131 27.1	48.8	8 14.5	106	+26 01.6	25	**54**	40	20	13	17 07	57	42	48
22	146 27.1	48.0	22 44.1	106	04.1	25	**56**	46	30	28	25	57	24	48
23	161 27.1	47.1	37 13.6	105	06.4	23	**58**	19 54	41	21 46	17 45	59	23 03	47
24	176 27.1	−13 46.3	51 43.1	105	+26 08.6	22	**60 S**	20 03	20 54	22 09	18 12	60	22 37	45

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.9		Mag: +1.4		Mag: −2.0		Mag: +0.7	
	14ʰ 33ᵐ.5	PMG: 9ʰ 33ᵐ		PMG: 9ʰ 31ᵐ		PMG: 13ʰ 20ᵐ		PMG: 11ʰ 52ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	141 02.3	216 29.0	−16 38.4	217 06.8	−23 26.1	159 33.4	−8 53.3	181 37.9	−16 39.2
1	156 04.8	231 30.3	38.5	232 07.3	26.0	174 35.3	53.1	196 40.1	39.1
2	171 07.2	246 31.6	38.7	247 07.8	25.8	189 37.2	52.8	211 42.3	39.0
3	186 09.7	261 32.9	38.8	262 08.2	25.7	204 39.1	52.6	226 44.4	38.9
4	201 12.2	276 34.2	38.9	277 08.7	25.5	219 41.0	52.4	241 46.6	38.9
5	216 14.6	291 35.5	−16 39.0	292 09.2	−23 25.4	234 42.9	−8 52.2	256 48.8	−16 38.8
6	231 17.1	306 36.8	−16 39.1	307 09.6	−23 25.2	249 44.9	−8 52.0	271 50.9	−16 38.7
7	246 19.5	321 38.1	39.2	322 10.1	25.1	264 46.8	51.7	286 53.1	38.6
8	261 22.0	336 39.3	39.3	337 10.6	25.0	279 48.7	51.5	301 55.3	38.5
9	276 24.5	351 40.6	39.4	352 11.0	24.8	294 50.6	51.3	316 57.4	38.4
10	291 26.9	6 41.9	39.5	7 11.5	24.7	309 52.5	51.1	331 59.6	38.3
11	306 29.4	21 43.2	−16 39.6	22 12.0	−23 24.5	324 54.4	−8 50.8	347 01.7	−16 38.2
12	321 31.9	36 44.5	−16 39.7	37 12.4	−23 24.4	339 56.3	−8 50.6	2 03.9	−16 38.2
13	336 34.3	51 45.7	39.8	52 12.9	24.2	354 58.2	50.4	17 06.1	38.1
14	351 36.8	66 47.0	39.9	67 13.4	24.1	10 00.1	50.2	32 08.2	38.0
15	6 39.3	81 48.3	40.0	82 13.8	23.9	25 02.0	49.9	47 10.4	37.9
16	21 41.7	96 49.5	40.1	97 14.3	23.7	40 03.9	49.7	62 12.6	37.8
17	36 44.2	111 50.8	−16 40.2	112 14.8	−23 23.6	55 05.9	−8 49.5	77 14.7	−16 37.7
18	51 46.7	126 52.0	−16 40.3	127 15.2	−23 23.4	70 07.8	−8 49.3	92 16.9	−16 37.6
19	66 49.1	141 53.3	40.4	142 15.7	23.3	85 09.7	49.1	107 19.1	37.5
20	81 51.6	156 54.6	40.5	157 16.2	23.1	100 11.6	48.8	122 21.2	37.5
21	96 54.0	171 55.8	40.6	172 16.6	23.0	115 13.5	48.6	137 23.4	37.4
22	111 56.5	186 57.0	40.7	187 17.1	22.8	130 15.4	48.4	152 25.6	37.3
23	126 59.0	201 58.3	40.8	202 17.6	22.7	145 17.3	48.2	167 27.7	37.2
24	142 01.4	216 59.5	−16 40.9	217 18.0	−23 22.5	160 19.2	−8 47.9	182 29.9	−16 37.1
Dif	—	+13	−1	+5	+2	+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}.8		PHE	4^{h}: 54′.2									
	PMG: 12^{h} 14^{m}.2				SD: 14′.8			12^{h}: 54′.3									
					PMG: 21^{h} 17^{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	176	27.1	−13	46.3	51	43.1	+26	08.6		**60 N**	6 13	7 02	7 46	11 00	57	6 41	49
1	191	27.1		45.5	66	12.6 105		10.7	21	**58**	11	6 57	39	27	57	6 14	50
2	206	27.1		44.6	80	42.1 105		12.6	19	**56**	09	53	32	11 49	55	5 53	50
3	221	27.2		43.8	95	11.5 104		14.4	18	**54**	08	49	26	12 06	56	35	51
4	236	27.2		43.0	109	40.9 104		16.1	17	**52**	06	46	21	21	55	20	51
5	251	27.2	−13	42.2	124	10.2 103	+26	17.7	16	**50**	6 04	6 42	7 16	12 34	55	5 07	51
6	266	27.2	−13	41.3	138	39.6 104	+26	19.1	14	**45**	6 01	6 35	7 06	13 01	54	4 40	51
7	281	27.2		40.5	153	08.9 103		20.4	13	**40**	5 57	29	6 57	22	54	19	51
8	296	27.2		39.7	167	38.2 103		21.6	12	**35**	53	23	49	40	53	4 02	51
9	311	27.2		38.8	182	07.5 103		22.7	11	**30**	50	18	43	13 55	53	3 47	51
10	326	27.2		38.0	196	36.7 102		23.6	9	**20**	42	6 08	31	14 21	53	3 21	51
11	341	27.2	−13	37.2	211	06.0 103	+26	24.4	8	**10 N**	5 34	5 59	6 21	14 44	51	2 59	51
12	356	27.2	−13	36.3	225	35.2 102	+26	25.1	7	**0**	5 25	5 49	6 11	15 04	52	2 38	51
13	11	27.2		35.5	240	04.4 102		25.7	6	**10 S**	14	39	6 01	25	51	2 17	51
14	26	27.2		34.7	254	33.5 101		26.1	4	**20**	5 00	27	5 50	15 48	50	1 55	51
15	41	27.2		33.8	269	02.7 102		26.4	3	**30**	4 43	13	38	16 14	49	30	50
16	56	27.3		33.0	283	31.8 101		26.5	1	**35**	32	5 04	31	29	49	1 15	50
17	71	27.3	−13	32.2	298	01.0 102	+26	26.6	1	**40**	4 18	4 53	5 22	16 47	48	0 57	50
18	86	27.3	−13	31.3	312	30.1 101	+26	26.5	1	**45**	4 02	4 41	5 13	17 08	47	0 36	50
19	101	27.3		30.5	326	59.2 101		26.2	3	**50**	3 40	25	5 01	35	46	0 09	50
20	116	27.3		29.6	341	28.3 101		25.9	3	**52**	29	18	4 56	17 49	45	** **	**
21	131	27.3		28.8	355	57.3 100		25.4	5	**54**	16	09	50	18 04	44	** **	**
22	146	27.3		28.0	10	26.4 101		24.8	6	**56**	3 02	4 00	43	22	43	** **	**
23	161	27.3		27.1	24	55.4 100		24.0	8	**58**	2 44	3 49	35	18 44	41	23 50	66
24	176	27.4	−13	26.3	39	24.5 101	+26	23.2	8	**60 S**	2 21	3 36	4 27	19 12	38	23 22	69

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.3			Mag: −2.0			Mag: +0.7		
	14^{h} 29^{m}.5		PMG: 9^{h} 31^{m}			PMG: 9^{h} 31^{m}			PMG: 13^{h} 17^{m}			PMG: 11^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	142	01.4	216	59.5	−16 40.9	217	18.0	−23 22.5	160	19.2	−8 47.9	182	29.9	−16 37.1
1	157	03.9	232	00.8	41.0	232	18.5	22.4	175	21.1	47.7	197	32.1	37.0
2	172	06.4	247	02.0	41.1	247	19.0	22.2	190	23.0	47.5	212	34.2	36.9
3	187	08.8	262	03.2	41.2	262	19.4	22.1	205	24.9	47.3	227	36.4	36.9
4	202	11.3	277	04.4	41.3	277	19.9	21.9	220	26.9	47.0	242	38.6	36.8
5	217	13.8	292	05.7	−16 41.4	292	20.4	−23 21.7	235	28.8	−8 46.8	257	40.7	−16 36.7
6	232	16.2	307	06.9	−16 41.5	307	20.9	−23 21.6	250	30.7	−8 46.6	272	42.9	−16 36.6
7	247	18.7	322	08.1	41.6	322	21.3	21.4	265	32.6	46.4	287	45.1	36.5
8	262	21.1	337	09.3	41.7	337	21.8	21.3	280	34.5	46.1	302	47.2	36.4
9	277	23.6	352	10.5	41.8	352	22.3	21.1	295	36.4	45.9	317	49.4	36.3
10	292	26.1	7	11.7	41.9	7	22.7	20.9	310	38.3	45.7	332	51.6	36.2
11	307	28.5	22	13.0	−16 42.1	22	23.2	−23 20.8	325	40.2	−8 45.5	347	53.7	−16 36.2
12	322	31.0	37	14.2	−16 42.2	37	23.7	−23 20.6	340	42.1	−8 45.2	2	55.9	−16 36.1
13	337	33.5	52	15.4	42.3	52	24.1	20.5	355	44.0	45.0	17	58.1	36.0
14	352	35.9	67	16.6	42.4	67	24.6	20.3	10	45.9	44.8	33	00.2	35.9
15	7	38.4	82	17.7	42.5	82	25.1	20.1	25	47.9	44.6	48	02.4	35.8
16	22	40.9	97	18.9	42.6	97	25.5	20.0	40	49.8	44.4	63	04.6	35.7
17	37	43.3	112	20.1	−16 42.7	112	26.0	−23 19.8	55	51.7	−8 44.1	78	06.7	−16 35.6
18	52	45.8	127	21.3	−16 42.8	127	26.5	−23 19.7	70	53.6	−8 43.9	93	08.9	−16 35.5
19	67	48.3	142	22.5	42.8	142	26.9	19.5	85	55.5	43.7	108	11.1	35.5
20	82	50.7	157	23.7	42.9	157	27.4	19.3	100	57.4	43.5	123	13.2	35.4
21	97	53.2	172	24.8	43.0	172	27.9	19.2	115	59.3	43.2	138	15.4	35.3
22	112	55.6	187	26.0	43.1	187	28.3	19.0	131	01.2	43.0	153	17.6	35.2
23	127	58.1	202	27.2	43.2	202	28.8	18.8	146	03.1	42.8	168	19.7	35.1
24	143	00.6	217	28.4	−16 43.3	217	29.3	−23 18.7	161	05.0	−8 42.6	183	21.9	−16 35.0
Dif	—			+12	−1		+5	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 11^{d}.8		PHE	4^{h}: 54′.5									
	PMG: 12^{h} 14^{m}.2				SD: 14′.8			12^{h}: 54′.6									
					PMG: 22^{h} 08^{m}			20^{h}: 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	176	27.4	−13	26.3	39	24.5	+26	23.2		**60 N**	16 46	17 30	18 19	11 57	78	7 30	29
1	191	27.4		25.4	53	53.5 100		22.2	10	**58**	53	34	21	12 24	72	7 04	33
2	206	27.4		24.6	68	22.6 101		21.0	12	**56**	16 59	38	22	12 44	70	6 43	36
3	221	27.4		23.8	82	51.6 100		19.8	12	**54**	17 05	42	24	13 02	67	26	38
4	236	27.4		22.9	97	20.6 100		18.4	14	**52**	10	45	25	16	66	6 11	40
5	251	27.4	−13	22.1	111	49.6 100	+26	16.8	16	**50**	17 15	17 48	18 26	13 29	64	5 58	41
6	266	27.4	−13	21.2	126	18.6 100	+26	15.2	16	**45**	17 25	17 55	18 30	13 55	62	5 31	44
7	281	27.5		20.4	140	47.6 100		13.4	18	**40**	33	18 01	33	14 16	60	5 10	45
8	296	27.5		19.6	155	16.7 101		11.5	19	**35**	41	07	36	33	58	4 53	46
9	311	27.5		18.7	169	45.7 100		09.4	21	**30**	47	12	40	14 48	57	38	47
10	326	27.5		17.9	184	14.7 100		07.3	21	**20**	17 58	21	47	15 14	54	4 12	49
11	341	27.5	−13	17.0	198	43.7 100	+26	05.0	23	**10 N**	18 08	18 30	18 55	15 35	53	3 50	50
12	356	27.5	−13	16.2	213	12.7 100	+26	02.5	25	**0**	18 18	18 39	19 03	15 56	51	3 29	51
13	11	27.6		15.4	227	41.7 100	+25	59.9	26	**10 S**	27	18 49	14	16 16	49	3 08	53
14	26	27.6		14.5	242	10.8 101		57.2	27	**20**	37	19 00	27	16 38	47	2 46	54
15	41	27.6		13.7	256	39.8 100		54.4	28	**30**	49	14	44	17 03	45	20	55
16	56	27.6		12.8	271	08.9 101		51.5	29	**35**	18 56	23	19 55	18	43	2 05	56
17	71	27.6	−13	12.0	285	37.9 100	+25	48.4	31	**40**	19 04	19 33	20 08	17 35	42	1 47	57
18	86	27.6	−13	11.1	300	07.0 101	+25	45.2	32	**45**	19 13	19 45	20 24	17 55	40	1 26	58
19	101	27.7		10.3	314	36.1 101		41.8	34	**50**	24	20 00	45	18 21	37	0 59	59
20	116	27.7		09.4	329	05.1 100		38.3	35	**52**	30	07	20 55	34	35	45	61
21	131	27.7		08.6	343	34.2 101		34.7	36	**54**	35	15	21 07	18 48	33	30	62
22	146	27.7		07.7	358	03.4 102		31.0	37	**56**	42	24	21	19 05	30	0 12	63
23	161	27.7		06.9	12	32.5 101		27.1	39	**58**	49	35	38	25	26	** **	**
24	176	27.8	−13	06.0	27	01.6 101	+25	23.1	40	**60 S**	19 57	20 47	21 59	19 50	21	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.9			Mag: +1.3			Mag: −2.0			Mag: +0.7		
	14^{h} 25^{m}.6		PMG: 9^{h} 29^{m}			PMG: 9^{h} 30^{m}			PMG: 13^{h} 14^{m}			PMG: 11^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	143	00.6	217	28.4	−16 43.3	217	29.3	−23 18.7	161	05.0	−8 42.6	183	21.9	−16 35.0
1	158	03.0	232	29.5	43.4	232	29.7	18.5	176	06.9	42.3	198	24.1	34.9
2	173	05.5	247	30.7	43.5	247	30.2	18.3	191	08.8	42.1	213	26.2	34.8
3	188	08.0	262	31.8	43.6	262	30.7	18.2	206	10.8	41.9	228	28.4	34.8
4	203	10.4	277	33.0	43.7	277	31.1	18.0	221	12.7	41.7	243	30.6	34.7
5	218	12.9	292	34.2	−16 43.8	292	31.6	−23 17.8	236	14.6	−8 41.4	258	32.7	−16 34.6
6	233	15.4	307	35.3	−16 43.9	307	32.1	−23 17.7	251	16.5	−8 41.2	273	34.9	−16 34.5
7	248	17.8	322	36.5	44.0	322	32.5	17.5	266	18.4	41.0	288	37.1	34.4
8	263	20.3	337	37.6	44.1	337	33.0	17.3	281	20.3	40.8	303	39.2	34.3
9	278	22.8	352	38.7	44.2	352	33.5	17.2	296	22.2	40.5	318	41.4	34.2
10	293	25.2	7	39.9	44.3	7	34.0	17.0	311	24.1	40.3	333	43.6	34.1
11	308	27.7	22	41.0	−16 44.4	22	34.4	−23 16.8	326	26.0	−8 40.1	348	45.7	−16 34.1
12	323	30.1	37	42.2	−16 44.5	37	34.9	−23 16.7	341	27.9	−8 39.9	3	47.9	−16 34.0
13	338	32.6	52	43.3	44.6	52	35.4	16.5	356	29.8	39.6	18	50.1	33.9
14	353	35.1	67	44.4	44.7	67	35.8	16.3	11	31.7	39.4	33	52.2	33.8
15	8	37.5	82	45.5	44.8	82	36.3	16.1	26	33.6	39.2	48	54.4	33.7
16	23	40.0	97	46.7	44.9	97	36.8	16.0	41	35.6	39.0	63	56.6	33.6
17	38	42.5	112	47.8	−16 45.0	112	37.2	−23 15.8	56	37.5	−8 38.7	78	58.7	−16 33.5
18	53	44.9	127	48.9	−16 45.1	127	37.7	−23 15.6	71	39.4	−8 38.5	94	00.9	−16 33.4
19	68	47.4	142	50.0	45.2	142	38.2	15.5	86	41.3	38.3	109	03.1	33.4
20	83	49.9	157	51.1	45.3	157	38.6	15.3	101	43.2	38.1	124	05.2	33.3
21	98	52.3	172	52.2	45.4	172	39.1	15.1	116	45.1	37.8	139	07.4	33.2
22	113	54.8	187	53.3	45.5	187	39.6	14.9	131	47.0	37.6	154	09.6	33.1
23	128	57.3	202	54.4	45.6	202	40.0	14.8	146	48.9	37.4	169	11.7	33.0
24	143	59.7	217	55.5	−16 45.6	217	40.5	−23 14.6	161	50.8	−8 37.2	184	13.9	−16 32.9
Dif	—			+11	−1		+5	+2		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.1				LUNA Edad: 12d.8 SD: 14′.9 PMG: 22h 59m PHE: 4h: 54′.8; 12h: 54′.9; 20h: 55′.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	176	27.8	−13	06.0	27	01.6	+25	23.1	**60 N**	6 08	6 57	7 41	13 15	87	7 59	16
1	191	27.8		05.2	41	30.8 102		19.0 41	**58**	07	53	34	36	82	37	21
2	206	27.8		04.4	56	00.0 102		14.8 42	**56**	05	49	28	13 54	78	19	25
3	221	27.8		03.5	70	29.2 102		10.4 44	**54**	04	45	22	14 09	75	7 04	28
4	236	27.8		02.7	84	58.4 102		05.9 45	**52**	03	42	17	22	72	6 51	30
5	251	27.9	−13	01.8	99	27.6 102	+25	01.3 46	**50**	6 01	6 39	7 12	14 33	71	6 39	32
6	266	27.9	−13	01.0	113	56.9 103	+24	56.5 48	**45**	5 58	6 32	7 03	14 57	66	6 15	36
7	281	27.9	−13	00.1	128	26.1 102		51.6 49	**40**	55	26	6 54	15 16	63	5 55	39
8	296	27.9	−12	59.3	142	55.4 103		46.6 50	**35**	52	21	47	31	61	39	41
9	311	28.0		58.4	157	24.7 103		41.5 51	**30**	48	16	41	15 45	59	25	43
10	326	28.0		57.6	171	54.1 104		36.2 53	**20**	41	6 07	30	16 08	55	5 01	46
11	341	28.0	−12	56.7	186	23.4 103	+24	30.9 53	**10 N**	5 34	5 59	6 20	16 28	52	4 40	48
12	356	28.0	−12	55.9	200	52.8 104	+24	25.4 55	**0**	5 25	5 50	6 11	16 47	49	4 20	51
13	11	28.1		55.0	215	22.3 105		19.7 57	**10 S**	14	40	6 01	17 05	47	4 01	52
14	26	28.1		54.1	229	51.7 104		14.0 57	**20**	5 02	28	5 51	25	44	3 40	55
15	41	28.1		53.3	244	21.2 105		08.1 59	**30**	4 45	14	39	17 48	41	15	58
16	56	28.1		52.4	258	50.7 105	+24	02.1 60	**35**	34	5 06	33	18 01	39	3 01	59
17	71	28.2	−12	51.6	273	20.2 105	+23	56.0 61	**40**	4 21	4 56	5 25	18 17	36	2 44	62
18	86	28.2	−12	50.7	287	49.8 106	+23	49.7 63	**45**	4 05	4 44	5 16	18 35	33	2 24	64
19	101	28.2		49.9	302	19.4 106		43.4 63	**50**	3 44	29	5 05	18 58	28	1 58	68
20	116	28.2		49.0	316	49.0 106		36.9 65	**52**	34	22	4 59	19 09	26	46	70
21	131	28.3		48.2	331	18.6 106		30.3 66	**54**	22	14	54	21	24	32	72
22	146	28.3		47.3	345	48.3 107		23.6 67	**56**	3 08	4 05	47	35	21	1 15	75
23	161	28.3		46.5	0	18.0 107		16.7 69	**58**	2 51	3 54	40	19 51	17	0 56	78
24	176	28.4	−12	45.6	14	47.8 108	+23	09.7 70	**60 S**	2 30	3 42	4 32	20 11	12	0 31	84

UT	ARIES PMG 14h 21m.7		VENUS Mag: −4.9 PMG: 9h 28m			MARTE Mag: +1.3 PMG: 9h 29m			JÚPITER Mag: −2.0 PMG: 13h 11m			SATURNO Mag: +0.7 PMG: 11h 41m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	143	59.7	217	55.5	−16 45.6	217	40.5	−23 14.6	161	50.8	−8 37.2	184	13.9	−16 32.9
1	159	02.2	232	56.6	45.7	232	41.0	14.4	176	52.7	36.9	199	16.1	32.8
2	174	04.6	247	57.7	45.8	247	41.4	14.2	191	54.6	36.7	214	18.2	32.7
3	189	07.1	262	58.8	45.9	262	41.9	14.1	206	56.5	36.5	229	20.4	32.7
4	204	09.6	277	59.9	46.0	277	42.4	13.9	221	58.4	36.3	244	22.6	32.6
5	219	12.0	293	01.0	−16 46.1	292	42.9	−23 13.7	237	00.4	−8 36.0	259	24.7	−16 32.5
6	234	14.5	308	02.1	−16 46.2	307	43.3	−23 13.5	252	02.3	−8 35.8	274	26.9	−16 32.4
7	249	17.0	323	03.2	46.3	322	43.8	13.3	267	04.2	35.6	289	29.1	32.3
8	264	19.4	338	04.2	46.4	337	44.3	13.2	282	06.1	35.4	304	31.2	32.2
9	279	21.9	353	05.3	46.5	352	44.7	13.0	297	08.0	35.1	319	33.4	32.1
10	294	24.4	8	06.4	46.6	7	45.2	12.8	312	09.9	34.9	334	35.6	32.0
11	309	26.8	23	07.4	−16 46.7	22	45.7	−23 12.6	327	11.8	−8 34.7	349	37.7	−16 32.0
12	324	29.3	38	08.5	−16 46.7	37	46.1	−23 12.5	342	13.7	−8 34.5	4	39.9	−16 31.9
13	339	31.7	53	09.6	46.8	52	46.6	12.3	357	15.6	34.2	19	42.1	31.8
14	354	34.2	68	10.6	46.9	67	47.1	12.1	12	17.5	34.0	34	44.2	31.7
15	9	36.7	83	11.7	47.0	82	47.5	11.9	27	19.4	33.8	49	46.4	31.6
16	24	39.1	98	12.8	47.1	97	48.0	11.7	42	21.3	33.6	64	48.6	31.5
17	39	41.6	113	13.8	−16 47.2	112	48.5	−23 11.5	57	23.2	−8 33.3	79	50.7	−16 31.4
18	54	44.1	128	14.9	−16 47.3	127	48.9	−23 11.4	72	25.1	−8 33.1	94	52.9	−16 31.3
19	69	46.5	143	15.9	47.4	142	49.4	11.2	87	27.1	32.9	109	55.1	31.3
20	84	49.0	158	17.0	47.5	157	49.9	11.0	102	29.0	32.7	124	57.2	31.2
21	99	51.5	173	18.0	47.6	172	50.4	10.8	117	30.9	32.4	139	59.4	31.1
22	114	53.9	188	19.0	47.6	187	50.8	10.6	132	32.8	32.2	155	01.6	31.0
23	129	56.4	203	20.1	47.7	202	51.3	10.4	147	34.7	32.0	170	03.7	30.9
24	144	58.9	218	21.1	−16 47.8	217	51.8	−23 10.3	162	36.6	−8 31.8	185	05.9	−16 30.8
Dif	—			+11	−1		+5	+2		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 13^{d}.8		PHE	4^{h}: 55′.2									
	PMG: 12^{h} 14^{m}.1				SD: 15′.0			12^{h}: 55′.4									
					PMG: 23^{h} 48^{m}			20^{h}: 55′.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	176	28.4	−12	45.6	14	47.8	+23	09.7		**60 N**	16 51	17 35	18 24	14 42	91	8 15	9
1	191	28.4		44.7	29	17.6 108	+23	02.7	70	**58**	16 58	39	25	14 58	86	7 58	14
2	206	28.4		43.9	43	47.4 108	+22	55.5	72	**56**	17 04	42	26	15 12	82	44	18
3	221	28.4		43.0	58	17.2 108		48.2	73	**54**	09	46	27	24	79	32	21
4	236	28.5		42.2	72	47.1 109		40.7	75	**52**	14	49	28	34	76	21	23
5	251	28.5	−12	41.3	87	17.0 109	+22	33.2	75	**50**	17 18	17 52	18 29	15 44	73	7 11	26
6	266	28.5	−12	40.5	101	47.0 110	+22	25.5	77	**45**	17 28	17 58	18 32	16 03	69	6 51	30
7	281	28.6		39.6	116	17.0 110		17.7	78	**40**	36	18 03	35	19	65	34	33
8	296	28.6		38.7	130	47.0 110		09.9	78	**35**	43	08	38	32	62	20	36
9	311	28.6		37.9	145	17.1 111	+22	01.8	81	**30**	49	13	41	16 44	59	6 08	38
10	326	28.7		37.0	159	47.2 111	+21	53.7	81	**20**	17 59	22	48	17 03	56	5 47	42
11	341	28.7	−12	36.2	174	17.3 111	+21	45.5	82	**10 N**	18 09	18 30	18 55	17 20	52	5 28	46
12	356	28.7	−12	35.3	188	47.5 112	+21	37.2	83	**0**	18 17	18 39	19 03	17 36	48	5 11	49
13	11	28.8		34.4	203	17.7 112		28.7	85	**10 S**	26	48	13	17 52	45	4 53	52
14	26	28.8		33.6	217	48.0 113		20.2	85	**20**	36	18 59	26	18 09	41	35	55
15	41	28.8		32.7	232	18.3 113		11.5	87	**30**	47	19 12	42	29	36	13	59
16	56	28.9		31.9	246	48.6 113	+21	02.7	88	**35**	18 54	20	19 52	40	34	4 00	62
17	71	28.9	−12	31.0	261	19.0 114	+20	53.8	89	**40**	19 01	19 30	20 05	18 53	31	3 46	64
18	86	28.9	−12	30.1	275	49.4 114	+20	44.9	89	**45**	19 10	19 42	20 20	19 08	27	3 28	68
19	101	29.0		29.3	290	19.9 115		35.8	91	**50**	21	19 56	40	26	23	3 06	73
20	116	29.0		28.4	304	50.4 115		26.6	92	**52**	26	20 03	20 50	35	21	2 56	74
21	131	29.0		27.5	319	20.9 115		17.2	94	**54**	31	11	21 01	45	18	44	77
22	146	29.1		26.7	333	51.5 116	+20	07.8	94	**56**	37	19	14	19 56	15	30	81
23	161	29.1		25.8	348	22.1 116	+19	58.3	95	**58**	44	29	30	20 08	12	2 14	85
24	176	29.1	−12	24.9	2	52.8 117	+19	48.7	96	**60 S**	19 52	20 41	21 50	20 23	7	1 55	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.3			Mag: −2.0			Mag: +0.7		
	14^{h} 17^{m}.7		PMG: 9^{h} 26^{m}			PMG: 9^{h} 28^{m}			PMG: 13^{h} 08^{m}			PMG: 11^{h} 38^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	144	58.9	218	21.1	−16 47.8	217	51.8	−23 10.3	162	36.6	−8 31.8	185	05.9	−16 30.8
1	160	01.3	233	22.1	47.9	232	52.2	10.1	177	38.5	31.5	200	08.1	30.7
2	175	03.8	248	23.2	48.0	247	52.7	09.9	192	40.4	31.3	215	10.3	30.7
3	190	06.2	263	24.2	48.1	262	53.2	09.7	207	42.3	31.1	230	12.4	30.6
4	205	08.7	278	25.2	48.2	277	53.6	09.5	222	44.2	30.9	245	14.6	30.5
5	220	11.2	293	26.2	−16 48.3	292	54.1	−23 09.3	237	46.1	−8 30.6	260	16.8	−16 30.4
6	235	13.6	308	27.3	−16 48.3	307	54.6	−23 09.1	252	48.0	−8 30.4	275	18.9	−16 30.3
7	250	16.1	323	28.3	48.4	322	55.0	09.0	267	49.9	30.2	290	21.1	30.2
8	265	18.6	338	29.3	48.5	337	55.5	08.8	282	51.8	30.0	305	23.3	30.1
9	280	21.0	353	30.3	48.6	352	56.0	08.6	297	53.7	29.7	320	25.4	30.0
10	295	23.5	8	31.3	48.7	7	56.5	08.4	312	55.7	29.5	335	27.6	30.0
11	310	26.0	23	32.3	−16 48.8	22	56.9	−23 08.2	327	57.6	−8 29.3	350	29.8	−16 29.9
12	325	28.4	38	33.3	−16 48.8	37	57.4	−23 08.0	342	59.5	−8 29.1	5	31.9	−16 29.8
13	340	30.9	53	34.3	48.9	52	57.9	07.8	358	01.4	28.8	20	34.1	29.7
14	355	33.4	68	35.3	49.0	67	58.3	07.6	13	03.3	28.6	35	36.3	29.6
15	10	35.8	83	36.3	49.1	82	58.8	07.4	28	05.2	28.4	50	38.4	29.5
16	25	38.3	98	37.3	49.2	97	59.3	07.2	43	07.1	28.1	65	40.6	29.4
17	40	40.7	113	38.3	−16 49.3	112	59.7	−23 07.1	58	09.0	−8 27.9	80	42.8	−16 29.3
18	55	43.2	128	39.3	−16 49.3	128	00.2	−23 06.9	73	10.9	−8 27.7	95	44.9	−16 29.3
19	70	45.7	143	40.2	49.4	143	00.7	06.7	88	12.8	27.5	110	47.1	29.2
20	85	48.1	158	41.2	49.5	158	01.2	06.5	103	14.7	27.2	125	49.3	29.1
21	100	50.6	173	42.2	49.6	173	01.6	06.3	118	16.6	27.0	140	51.4	29.0
22	115	53.1	188	43.2	49.7	188	02.1	06.1	133	18.5	26.8	155	53.6	28.9
23	130	55.5	203	44.2	49.8	203	02.6	05.9	148	20.4	26.6	170	55.8	28.8
24	145	58.0	218	45.1	−16 49.8	218	03.0	−23 05.7	163	22.3	−8 26.3	185	57.9	−16 28.7
Dif	—			+10	−1		+5	+2		+19	+2		+22	+1

UT	SOL				☾ LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 14ᵈ.8		PHE	4ʰ: 55′.7								
	PMG: 12ʰ 14ᵐ.0				SD: 15′.1			12ʰ: 55′.9								
					PMG: **ʰ **ᵐ			20ʰ: 56′.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	176	29.1	−12	24.9	2	52.8	+19	48.7	**60 N**	6 03	6 52	7 36	16 13	91	8 24	6
1	191	29.2		24.1	17	23.5 117		39.0 97	**58**	02	48	29	24	87	12	10
2	206	29.2		23.2	31	54.2 117		29.2 98	**56**	01	44	23	34	83	8 02	13
3	221	29.2		22.3	46	25.0 118		19.3 99	**54**	6 00	41	18	43	80	7 53	15
4	236	29.3		21.5	60	55.9 119	+19	09.3 100	**52**	5 59	38	13	50	78	44	19
5	251	29.3	−12	20.6	75	26.7 118	+18	59.1 102	**50**	5 58	6 36	7 09	16 57	75	7 37	20
6	266	29.4	−12	19.7	89	57.6 119	+18	48.9 102	**45**	5 55	6 29	7 00	17 12	70	7 21	25
7	281	29.4		18.9	104	28.6 120		38.6 103	**40**	52	24	6 52	24	66	7 07	29
8	296	29.4		18.0	118	59.6 120		28.2 104	**35**	50	19	45	34	63	6 56	32
9	311	29.5		17.1	133	30.6 120		17.7 105	**30**	47	15	39	43	60	46	35
10	326	29.5		16.3	148	01.6 120	+18	07.1 106	**20**	40	6 06	29	17 59	54	29	39
11	341	29.6	−12	15.4	162	32.8 122	+17	56.4 107	**10 N**	5 33	5 58	6 19	18 12	50	6 14	43
12	356	29.6	−12	14.5	177	03.9 121	+17	45.7 107	**0**	5 25	5 49	6 11	18 24	47	6 00	47
13	11	29.6		13.7	191	35.1 122		34.8 109	**10 S**	15	40	6 02	37	42	5 45	51
14	26	29.7		12.8	206	06.3 122		23.8 110	**20**	5 03	29	5 52	18 50	38	30	55
15	41	29.7		11.9	220	37.6 123		12.8 110	**30**	4 47	16	41	19 05	34	12	60
16	56	29.8		11.1	235	08.9 123	+17	01.7 111	**35**	36	5 08	35	14	30	5 02	62
17	71	29.8	−12	10.2	249	40.2 123	+16	50.4 113	**40**	4 24	4 59	5 27	19 24	27	4 50	66
18	86	29.8	−12	09.3	264	11.6 124	+16	39.1 113	**45**	4 09	4 47	5 19	19 35	24	4 36	70
19	101	29.9		08.5	278	43.0 124		27.7 114	**50**	3 49	33	08	49	19	19	74
20	116	29.9		07.6	293	14.5 125		16.2 115	**52**	39	26	5 03	19 56	16	10	77
21	131	30.0		06.7	307	46.0 125	+16	04.7 115	**54**	28	18	4 58	20 03	14	4 01	80
22	146	30.0		05.8	322	17.5 125	+15	53.0 117	**56**	3 14	10	52	11	11	3 51	83
23	161	30.0		05.0	336	49.1 126		41.3 117	**58**	2 59	4 00	45	20	8	39	87
24	176	30.1	−12	04.1	351	20.7 126	+15	29.5 118	**60 S**	2 39	3 48	4 37	20 30	4	3 25	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.3			Mag: −2.0			Mag: +0.7		
	14ʰ 13ᵐ.8		PMG: 9ʰ 24ᵐ			PMG: 9ʰ 28ᵐ			PMG: 13ʰ 05ᵐ			PMG: 11ʰ 34ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	145	58.0	218	45.1	−16 49.8	218	03.0	−23 05.7	163	22.3	−8 26.3	185	57.9	−16 28.7
1	161	00.5	233	46.1	49.9	233	03.5	05.5	178	24.2	26.1	201	00.1	28.6
2	176	02.9	248	47.1	50.0	248	04.0	05.3	193	26.1	25.9	216	02.3	28.6
3	191	05.4	263	48.0	50.1	263	04.4	05.1	208	28.1	25.7	231	04.5	28.5
4	206	07.9	278	49.0	50.2	278	04.9	04.9	223	30.0	25.4	246	06.6	28.4
5	221	10.3	293	49.9	−16 50.2	293	05.4	−23 04.7	238	31.9	−8 25.2	261	08.8	−16 28.3
6	236	12.8	308	50.9	−16 50.3	308	05.9	−23 04.5	253	33.8	−8 25.0	276	11.0	−16 28.2
7	251	15.2	323	51.9	50.4	323	06.3	04.3	268	35.7	24.8	291	13.1	28.1
8	266	17.7	338	52.8	50.5	338	06.8	04.1	283	37.6	24.5	306	15.3	28.0
9	281	20.2	353	53.8	50.5	353	07.3	03.9	298	39.5	24.3	321	17.5	27.9
10	296	22.6	8	54.7	50.6	8	07.7	03.7	313	41.4	24.1	336	19.6	27.9
11	311	25.1	23	55.6	−16 50.7	23	08.2	−23 03.5	328	43.3	−8 23.9	351	21.8	−16 27.8
12	326	27.6	38	56.6	−16 50.8	38	08.7	−23 03.3	343	45.2	−8 23.6	6	24.0	−16 27.7
13	341	30.0	53	57.5	50.9	53	09.1	03.1	358	47.1	23.4	21	26.1	27.6
14	356	32.5	68	58.5	50.9	68	09.6	02.9	13	49.0	23.2	36	28.3	27.5
15	11	35.0	83	59.4	51.0	83	10.1	02.7	28	50.9	22.9	51	30.5	27.4
16	26	37.4	99	00.3	51.1	98	10.6	02.5	43	52.8	22.7	66	32.6	27.3
17	41	39.9	114	01.2	−16 51.2	113	11.0	−23 02.3	58	54.7	−8 22.5	81	34.8	−16 27.2
18	56	42.3	129	02.2	−16 51.2	128	11.5	−23 02.1	73	56.6	−8 22.3	96	37.0	−16 27.2
19	71	44.8	144	03.1	51.3	143	12.0	01.9	88	58.5	22.0	111	39.1	27.1
20	86	47.3	159	04.0	51.4	158	12.4	01.7	104	00.5	21.8	126	41.3	27.0
21	101	49.7	174	04.9	51.5	173	12.9	01.5	119	02.4	21.6	141	43.5	26.9
22	116	52.2	189	05.8	51.5	188	13.4	01.3	134	04.3	21.4	156	45.7	26.8
23	131	54.7	204	06.8	51.6	203	13.9	01.1	149	06.2	21.1	171	47.8	26.7
24	146	57.1	219	07.7	−16 51.7	218	14.3	−23 00.9	164	08.1	−8 20.9	186	50.0	−16 26.6
Dif	—			+9	−1		+5	+2		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 14m.0				☾ LUNA Edad: 15d.8 SD: 15′.3 PMG: 0h 36m PHE 4h: 56′.2; 12h: 56′.4; 20h: 56′.5 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	176	30.1	−12	04.1	351	20.7	+15	29.5	**60 N**	16 56	17 40	18 28	17 44	90	8 30	4
1	191	30.1		03.2	5	52.3 126		17.6 119	**58**	17 02	43	29	51	87	22	7
2	206	30.2		02.3	20	24.0 127	+15	05.6 120	**56**	08	47	30	17 57	84	15	10
3	221	30.2		01.5	34	55.7 127	+14	53.6 120	**54**	13	50	31	18 03	80	08	13
4	236	30.3	−12	00.6	49	27.5 128		41.4 122	**52**	18	52	32	08	78	8 03	15
5	251	30.3	−11	59.7	63	59.3 128	+14	29.2 122	**50**	17 22	17 55	18 33	18 12	76	7 57	18
6	266	30.4	−11	58.8	78	31.1 128	+14	17.0 122	**45**	17 31	18 01	18 35	18 22	70	7 46	22
7	281	30.4		58.0	93	03.0 129	+14	04.6 124	**40**	38	06	37	30	66	36	27
8	296	30.4		57.1	107	34.8 128	+13	52.2 124	**35**	44	10	40	37	63	28	30
9	311	30.5		56.2	122	06.8 130		39.7 125	**30**	17 50	15	43	43	60	21	32
10	326	30.5		55.3	136	38.7 129		27.1 126	**20**	18 00	23	48	18 53	55	7 08	38
11	341	30.6	−11	54.5	151	10.7 130	+13	14.4 127	**10 N**	18 09	18 30	18 55	19 02	50	6 57	42
12	356	30.6	−11	53.6	165	42.7 130	+13	01.7 127	**0**	18 17	18 38	19 03	19 11	45	6 47	46
13	11	30.7		52.7	180	14.8 131	+12	49.0 127	**10 S**	26	47	12	19	42	36	50
14	26	30.7		51.8	194	46.8 130		36.1 129	**20**	35	18 58	24	28	37	25	55
15	41	30.8		51.0	209	18.9 131		23.2 129	**30**	46	19 10	40	39	31	12	60
16	56	30.8		50.1	223	51.1 132	+12	10.2 130	**35**	52	18	19 50	44	29	6 04	63
17	71	30.9	−11	49.2	238	23.2 131	+11	57.2 130	**40**	18 59	19 27	20 01	19 51	25	5 56	66
18	86	30.9	−11	48.3	252	55.4 132	+11	44.0 132	**45**	19 07	19 38	20 16	19 59	21	5 46	70
19	101	31.0		47.4	267	27.6 132		30.9 131	**50**	17	52	35	20 08	17	33	75
20	116	31.0		46.6	281	59.9 133		17.6 133	**52**	22	19 58	45	12	15	27	78
21	131	31.1		45.7	296	32.2 133	+11	04.3 133	**54**	27	20 06	20 55	17	12	21	80
22	146	31.1		44.8	311	04.4 132	+10	51.0 133	**56**	32	14	21 08	22	9	14	83
23	161	31.2		43.9	325	36.8 134		37.6 134	**58**	39	23	23	28	6	5 06	86
24	176	31.2	−11	43.0	340	09.1 133	+10	24.1 135	**60 S**	19 46	20 34	21 41	20 34	3	4 56	91

UT	ARIES PMG 14h 09m.9		VENUS Mag: −4.8 PMG: 9h 23m			MARTE Mag: +1.3 PMG: 9h 27m			JÚPITER Mag: −2.0 PMG: 13h 02m			SATURNO Mag: +0.7 PMG: 11h 31m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	146	57.1	219	07.7	−16 51.7	218	14.3	−23 00.9	164	08.1	−8 20.9	186	50.0	−16 26.6
1	161	59.6	234	08.6	51.7	233	14.8	00.7	179	10.0	20.7	201	52.2	26.6
2	177	02.1	249	09.5	51.8	248	15.3	00.5	194	11.9	20.5	216	54.3	26.5
3	192	04.5	264	10.4	51.9	263	15.7	00.3	209	13.8	20.2	231	56.5	26.4
4	207	07.0	279	11.3	52.0	278	16.2	−23 00.1	224	15.7	20.0	246	58.7	26.3
5	222	09.5	294	12.2	−16 52.0	293	16.7	−22 59.9	239	17.6	−8 19.8	262	00.8	−16 26.2
6	237	11.9	309	13.1	−16 52.1	308	17.2	−22 59.7	254	19.5	−8 19.5	277	03.0	−16 26.1
7	252	14.4	324	14.0	52.2	323	17.6	59.5	269	21.4	19.3	292	05.2	26.0
8	267	16.8	339	14.9	52.2	338	18.1	59.3	284	23.3	19.1	307	07.3	25.9
9	282	19.3	354	15.8	52.3	353	18.6	59.0	299	25.2	18.9	322	09.5	25.9
10	297	21.8	9	16.6	52.4	8	19.0	58.8	314	27.1	18.6	337	11.7	25.8
11	312	24.2	24	17.5	−16 52.4	23	19.5	−22 58.6	329	29.0	−8 18.4	352	13.8	−16 25.7
12	327	26.7	39	18.4	−16 52.5	38	20.0	−22 58.4	344	30.9	−8 18.2	7	16.0	−16 25.6
13	342	29.2	54	19.3	52.6	53	20.5	58.2	359	32.8	18.0	22	18.2	25.5
14	357	31.6	69	20.2	52.7	68	20.9	58.0	14	34.7	17.7	37	20.4	25.4
15	12	34.1	84	21.0	52.7	83	21.4	57.8	29	36.7	17.5	52	22.5	25.3
16	27	36.6	99	21.9	52.8	98	21.9	57.6	44	38.6	17.3	67	24.7	25.2
17	42	39.0	114	22.8	−16 52.9	113	22.3	−22 57.4	59	40.5	−8 17.1	82	26.9	−16 25.2
18	57	41.5	129	23.6	−16 52.9	128	22.8	−22 57.1	74	42.4	−8 16.8	97	29.0	−16 25.1
19	72	43.9	144	24.5	53.0	143	23.3	56.9	89	44.3	16.6	112	31.2	25.0
20	87	46.4	159	25.4	53.1	158	23.8	56.7	104	46.2	16.4	127	33.4	24.9
21	102	48.9	174	26.2	53.1	173	24.2	56.5	119	48.1	16.1	142	35.5	24.8
22	117	51.3	189	27.1	53.2	188	24.7	56.3	134	50.0	15.9	157	37.7	24.7
23	132	53.8	204	27.9	53.2	203	25.2	56.1	149	51.9	15.7	172	39.9	24.6
24	147	56.3	219	28.8	−16 53.3	218	25.6	−22 55.9	164	53.8	−8 15.5	187	42.1	−16 24.5
Dif	—			+9	−1		+5	+2		+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.9				Edad: 16d.8 SD: 15′.4 PMG: 1h 22m		PHE	4h: 56′.7 12h: 56′.9 20h: 57′.0 Rº: 45m								
	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	31.2	−11	43.0	340	09.1	+10	24.1	**60 N**	5 58	6 47	7 30	19 14	91	8 34	2
1	191	31.3		42.2	354	41.5 134	+10	10.6 135	**58**	58	43	24	18	86	29	6
2	206	31.3		41.3	9	13.9 134	+9	57.0 136	**56**	57	40	18	21	83	25	9
3	221	31.4		40.4	23	46.3 134		43.3 137	**54**	56	37	14	23	81	21	12
4	236	31.4		39.5	38	18.7 134		29.6 137	**52**	55	35	09	26	78	18	14
5	251	31.5	−11	38.6	52	51.1 134	+9	15.9 137	**50**	5 54	6 32	7 05	19 28	76	8 15	16
6	266	31.5	−11	37.8	67	23.6 135	+9	02.1 138	**45**	5 52	6 26	6 56	19 32	71	8 08	21
7	281	31.6		36.9	81	56.1 135	+8	48.3 138	**40**	50	22	49	36	67	8 03	24
8	296	31.6		36.0	96	28.6 135		34.4 139	**35**	47	17	43	40	63	7 58	28
9	311	31.7		35.1	111	01.1 135		20.4 140	**30**	45	13	37	43	60	53	31
10	326	31.7		34.2	125	33.6 135	+8	06.4 140	**20**	39	6 05	27	48	54	46	36
11	341	31.8	−11	33.3	140	06.2 136	+7	52.4 140	**10 N**	5 33	5 57	6 19	19 52	50	7 39	41
12	356	31.9	−11	32.5	154	38.7 135	+7	38.3 141	**0**	5 25	5 49	6 10	19 56	46	7 33	45
13	11	31.9		31.6	169	11.3 136		24.2 141	**10 S**	16	41	6 02	20 01	40	26	50
14	26	32.0		30.7	183	43.9 136	+7	10.0 142	**20**	5 04	30	5 53	05	36	20	54
15	41	32.0		29.8	198	16.5 136	+6	55.8 142	**30**	4 48	18	43	10	31	12	59
16	56	32.1		28.9	212	49.1 136		41.5 143	**35**	39	10	37	13	28	07	63
17	71	32.1	−11	28.0	227	21.7 136	+6	27.2 143	**40**	4 27	5 01	5 30	20 16	25	7 02	66
18	86	32.2	−11	27.1	241	54.4 137	+6	12.9 143	**45**	4 12	4 50	5 21	20 20	20	6 56	70
19	101	32.2		26.3	256	27.0 136	+5	58.5 144	**50**	3 53	37	12	25	15	48	76
20	116	32.3		25.4	270	59.7 137		44.1 144	**52**	44	30	07	27	13	45	78
21	131	32.4		24.5	285	32.3 136		29.7 144	**54**	33	23	5 02	29	11	41	81
22	146	32.4		23.6	300	05.0 137		15.2 145	**56**	21	15	4 56	31	9	37	83
23	161	32.5		22.7	314	37.6 136	+5	00.7 145	**58**	3 06	4 05	50	34	6	32	87
24	176	32.5	−11	21.8	329	10.3 137	+4	46.2 145	**60 S**	2 48	3 55	4 43	20 37	3	6 27	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 14h 05m.9		Mag: −4.8 PMG: 9h 22m			Mag: +1.3 PMG: 9h 26m			Mag: −2.0 PMG: 12h 59m			Mag: +0.7 PMG: 11h 28m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	147	56.3	219	28.8	−16 53.3	218	25.6	−22 55.9	164	53.8	−8 15.5	187	42.1	−16 24.5
1	162	58.7	234	29.6	53.4	233	26.1	55.7	179	55.7	15.2	202	44.2	24.5
2	178	01.2	249	30.5	53.4	248	26.6	55.4	194	57.6	15.0	217	46.4	24.4
3	193	03.7	264	31.3	53.5	263	27.1	55.2	209	59.5	14.8	232	48.6	24.3
4	208	06.1	279	32.2	53.6	278	27.5	55.0	225	01.4	14.6	247	50.7	24.2
5	223	08.6	294	33.0	−16 53.6	293	28.0	−22 54.8	240	03.3	−8 14.3	262	52.9	−16 24.1
6	238	11.1	309	33.8	−16 53.7	308	28.5	−22 54.6	255	05.2	−8 14.1	277	55.1	−16 24.0
7	253	13.5	324	34.7	53.7	323	28.9	54.4	270	07.1	13.9	292	57.2	23.9
8	268	16.0	339	35.5	53.8	338	29.4	54.1	285	09.0	13.6	307	59.4	23.9
9	283	18.4	354	36.3	53.9	353	29.9	53.9	300	10.9	13.4	323	01.6	23.8
10	298	20.9	9	37.2	53.9	8	30.4	53.7	315	12.8	13.2	338	03.7	23.7
11	313	23.4	24	38.0	−16 54.0	23	30.8	−22 53.5	330	14.7	−8 13.0	353	05.9	−16 23.6
12	328	25.8	39	38.8	−16 54.0	38	31.3	−22 53.3	345	16.7	−8 12.7	8	08.1	−16 23.5
13	343	28.3	54	39.6	54.1	53	31.8	53.0	0	18.6	12.5	23	10.3	23.4
14	358	30.8	69	40.5	54.2	68	32.3	52.8	15	20.5	12.3	38	12.4	23.3
15	13	33.2	84	41.3	54.2	83	32.7	52.6	30	22.4	12.1	53	14.6	23.2
16	28	35.7	99	42.1	54.3	98	33.2	52.4	45	24.3	11.8	68	16.8	23.2
17	43	38.2	114	42.9	−16 54.3	113	33.7	−22 52.2	60	26.2	−8 11.6	83	18.9	−16 23.1
18	58	40.6	129	43.7	−16 54.4	128	34.1	−22 51.9	75	28.1	−8 11.4	98	21.1	−16 23.0
19	73	43.1	144	44.5	54.5	143	34.6	51.7	90	30.0	11.1	113	23.3	22.9
20	88	45.6	159	45.3	54.5	158	35.1	51.5	105	31.9	10.9	128	25.4	22.8
21	103	48.0	174	46.1	54.6	173	35.6	51.3	120	33.8	10.7	143	27.6	22.7
22	118	50.5	189	46.9	54.6	188	36.0	51.0	135	35.7	10.5	158	29.8	22.6
23	133	52.9	204	47.7	54.7	203	36.5	50.8	150	37.6	10.2	173	32.0	22.5
24	148	55.4	219	48.5	−16 54.7	218	37.0	−22 50.6	165	39.5	−8 10.0	188	34.1	−16 22.5
Dif	—			+8	−1		+5	+2		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.8				☽ LUNA Edad: 17d.8 SD: 15′.5 PMG: 2h 07m PHE { 4h: 57′.2; 12h: 57′.3; 20h: 57′.5 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	176	32.5	−11	21.8	329	10.3	+4	46.2	**60 N**	17 01	17 45	18 33	20 45	92	8 36	3
1	191	32.6		20.9	343	42.9 136		31.6 146	**58**	07	48	34	44	89	35	6
2	206	32.6		20.0	358	15.6 137		17.0 146	**56**	12	51	34	44	85	34	8
3	221	32.7		19.1	12	48.3 137	+4	02.4 146	**54**	17	53	35	44	82	33	11
4	236	32.8		18.3	27	20.9 136	+3	47.7 147	**52**	21	56	35	44	79	32	13
5	251	32.8	−11	17.4	41	53.6 137	+3	33.0 147	**50**	17 25	17 58	18 36	20 44	77	8 31	16
6	266	32.9	−11	16.5	56	26.3 137	+3	18.3 147	**45**	17 33	18 03	18 38	20 43	72	8 29	20
7	281	32.9		15.6	70	58.9 136	+3	03.6 147	**40**	40	08	40	43	68	27	24
8	296	33.0		14.7	85	31.6 137	+2	48.8 148	**35**	46	12	42	43	64	26	27
9	311	33.1		13.8	100	04.2 136		34.0 148	**30**	17 52	16	44	43	60	24	31
10	326	33.1		12.9	114	36.9 137		19.2 148	**20**	18 01	23	49	42	56	22	36
11	341	33.2	−11	12.0	129	09.5 136	+2	04.4 148	**10 N**	18 09	18 31	18 55	20 42	50	8 20	41
12	356	33.2	−11	11.1	143	42.1 136	+1	49.6 148	**0**	18 17	18 38	19 03	20 42	46	8 18	45
13	11	33.3		10.2	158	14.7 136		34.7 149	**10 S**	25	47	12	41	42	16	50
14	26	33.4		09.3	172	47.3 136		19.8 149	**20**	34	18 56	23	41	37	14	54
15	41	33.4		08.5	187	19.9 136	+1	04.9 149	**30**	44	19 08	38	41	31	11	61
16	56	33.5		07.6	201	52.5 136	+0	50.0 149	**35**	49	16	47	41	28	10	63
17	71	33.5	−11	06.7	216	25.1 136	+0	35.1 149	**40**	18 56	19 24	19 58	20 41	24	8 08	67
18	86	33.6	−11	05.8	230	57.6 135	+0	20.2 149	**45**	19 04	19 35	20 12	20 40	21	8 06	72
19	101	33.7		04.9	245	30.2 136	+0	05.3 149	**50**	13	48	31	40	16	04	76
20	116	33.7		04.0	260	02.7 135	−0	09.7 150	**52**	18	19 54	40	40	14	03	79
21	131	33.8		03.1	274	35.2 135		24.7 150	**54**	22	20 01	20 50	40	12	02	81
22	146	33.9		02.2	289	07.6 134		39.6 149	**56**	28	09	21 02	40	9	8 00	84
23	161	33.9		01.3	303	40.1 135	−0	54.6 150	**58**	34	17	15	40	6	7 59	87
24	176	34.0	−11	00.4	318	12.5 134	−1	09.6 150	**60 S**	19 40	20 28	21 32	20 40	3	7 57	91

UT	ARIES PMG 14h 02m.0		VENUS Mag: −4.8 PMG: 9h 20m			MARTE Mag: +1.3 PMG: 9h 25m			JÚPITER Mag: −2.0 PMG: 12h 56m			SATURNO Mag: +0.7 PMG: 11h 24m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	148	55.4	219	48.5	−16 54.7	218	37.0	−22 50.6	165	39.5	−8 10.0	188	34.1	−16 22.5
1	163	57.9	234	49.3	54.8	233	37.5	50.4	180	41.4	09.8	203	36.3	22.4
2	179	00.3	249	50.1	54.8	248	37.9	50.2	195	43.3	09.5	218	38.5	22.3
3	194	02.8	264	50.9	54.9	263	38.4	49.9	210	45.2	09.3	233	40.6	22.2
4	209	05.3	279	51.7	54.9	278	38.9	49.7	225	47.1	09.1	248	42.8	22.1
5	224	07.7	294	52.5	−16 55.0	293	39.3	−22 49.5	240	49.0	−8 08.9	263	45.0	−16 22.0
6	239	10.2	309	53.2	−16 55.0	308	39.8	−22 49.2	255	50.9	−8 08.6	278	47.1	−16 21.9
7	254	12.7	324	54.0	55.1	323	40.3	49.0	270	52.8	08.4	293	49.3	21.9
8	269	15.1	339	54.8	55.2	338	40.8	48.8	285	54.7	08.2	308	51.5	21.8
9	284	17.6	354	55.6	55.2	353	41.2	48.6	300	56.6	08.0	323	53.7	21.7
10	299	20.0	9	56.3	55.3	8	41.7	48.3	315	58.5	07.7	338	55.8	21.6
11	314	22.5	24	57.1	−16 55.3	23	42.2	−22 48.1	331	00.5	−8 07.5	353	58.0	−16 21.5
12	329	25.0	39	57.9	−16 55.4	38	42.7	−22 47.9	346	02.4	−8 07.3	9	00.2	−16 21.4
13	344	27.4	54	58.7	55.4	53	43.1	47.6	1	04.3	07.0	24	02.3	21.3
14	359	29.9	69	59.4	55.4	68	43.6	47.4	16	06.2	06.8	39	04.5	21.2
15	14	32.4	85	00.2	55.5	83	44.1	47.2	31	08.1	06.6	54	06.7	21.2
16	29	34.8	100	00.9	55.5	98	44.6	47.0	46	10.0	06.4	69	08.9	21.1
17	44	37.3	115	01.7	−16 55.6	113	45.0	−22 46.7	61	11.9	−8 06.1	84	11.0	−16 21.0
18	59	39.8	130	02.4	−16 55.6	128	45.5	−22 46.5	76	13.8	−8 05.9	99	13.2	−16 20.9
19	74	42.2	145	03.2	55.7	143	46.0	46.3	91	15.7	05.7	114	15.4	20.8
20	89	44.7	160	04.0	55.7	158	46.5	46.0	106	17.6	05.4	129	17.5	20.7
21	104	47.2	175	04.7	55.8	173	46.9	45.8	121	19.5	05.2	144	19.7	20.6
22	119	49.6	190	05.4	55.8	188	47.4	45.6	136	21.4	05.0	159	21.9	20.5
23	134	52.1	205	06.2	55.9	203	47.9	45.3	151	23.3	04.8	174	24.1	20.5
24	149	54.5	220	06.9	−16 55.9	218	48.3	−22 45.1	166	25.2	−8 04.5	189	26.2	−16 20.4
Dif	—			+8	0		+5	+2		+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.7				Edad: 18d.8 SD: 15′.7 PMG: 2h 52m		PHE	4h: 57′.6 12h: 57′.8 20h: 57′.9 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	176	34.0	−11	00.4	318	12.5	−1	09.6	**60 N**	5 53	6 41	7 24	22 17	95	8 39	3
1	191	34.1	−10	59.5	332	45.0 135		24.5 149	**58**	53	38	19	13	91	41	6
2	206	34.1		58.6	347	17.3 133		39.5 150	**56**	52	36	14	09	88	42	10
3	221	34.2		57.7	1	49.7 134	−1	54.5 150	**54**	52	33	09	06	85	44	12
4	236	34.3		56.8	16	22.1 134	−2	09.5 150	**52**	51	31	05	03	82	45	15
5	251	34.3	−10	55.9	30	54.4 133	−2	24.5 150	**50**	5 51	6 28	7 01	22 01	79	8 47	16
6	266	34.4	−10	55.0	45	26.7 133	−2	39.5 150	**45**	5 49	6 23	6 53	21 55	75	8 49	22
7	281	34.4		54.1	59	58.9 132	−2	54.4 149	**40**	47	19	46	51	70	51	26
8	296	34.5		53.2	74	31.1 132	−3	09.4 150	**35**	45	15	41	47	66	53	29
9	311	34.6		52.3	89	03.3 132		24.4 150	**30**	43	11	35	43	63	55	32
10	326	34.7		51.4	103	35.5 132		39.3 149	**20**	38	6 04	26	38	57	8 58	38
11	341	34.7	−10	50.5	118	07.6 131	−3	54.3 150	**10 N**	5 32	5 57	6 18	21 32	53	9 01	42
12	356	34.8	−10	49.6	132	39.7 131	−4	09.2 149	**0**	5 25	5 49	6 10	21 28	48	9 03	47
13	11	34.9		48.7	147	11.8 131		24.2 150	**10 S**	16	41	6 02	23	43	06	51
14	26	34.9		47.8	161	43.8 130		39.1 149	**20**	5 05	31	5 54	18	39	08	57
15	41	35.0		46.9	176	15.8 130	−4	54.0 149	**30**	4 50	19	44	12	34	12	61
16	56	35.1		46.0	190	47.7 129	−5	08.9 149	**35**	41	12	38	09	30	13	65
17	71	35.1	−10	45.1	205	19.6 129	−5	23.7 148	**40**	4 30	5 04	5 32	21 05	27	9 15	69
18	86	35.2	−10	44.2	219	51.5 129	−5	38.6 149	**45**	4 16	4 53	5 24	21 01	23	9 18	72
19	101	35.3		43.3	234	23.3 128	−5	53.4 148	**50**	3 58	40	15	20 56	18	20	78
20	116	35.3		42.4	248	55.1 128	−6	08.3 149	**52**	49	34	11	54	16	22	80
21	131	35.4		41.5	263	26.8 127		23.1 148	**54**	39	27	06	52	13	23	83
22	146	35.5		40.6	277	58.5 127		37.8 147	**56**	27	20	5 01	49	10	24	87
23	161	35.5		39.7	292	30.1 126	−6	52.6 148	**58**	3 13	11	4 55	46	7	26	90
24	176	35.6	−10	38.8	307	01.7 126	−7	07.3 147	**60 S**	2 56	4 01	4 48	20 43	3	9 28	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 13h 58m.1		Mag: −4.8 PMG: 9h 19m			Mag: +1.3 PMG: 9h 24m			Mag: −2.0 PMG: 12h 53m			Mag: +0.7 PMG: 11h 21m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	149	54.5	220	06.9	−16 55.9	218	48.3	−22 45.1	166	25.2	−8 04.5	189	26.2	−16 20.4
1	164	57.0	235	07.7	56.0	233	48.8	44.9	181	27.1	04.3	204	28.4	20.3
2	179	59.5	250	08.4	56.0	248	49.3	44.6	196	29.0	04.1	219	30.6	20.2
3	195	01.9	265	09.1	56.0	263	49.8	44.4	211	30.9	03.9	234	32.7	20.1
4	210	04.4	280	09.9	56.1	278	50.2	44.2	226	32.8	03.6	249	34.9	20.0
5	225	06.9	295	10.6	−16 56.1	293	50.7	−22 43.9	241	34.7	−8 03.4	264	37.1	−16 19.9
6	240	09.3	310	11.3	−16 56.2	308	51.2	−22 43.7	256	36.6	−8 03.2	279	39.2	−16 19.9
7	255	11.8	325	12.1	56.2	323	51.7	43.4	271	38.5	02.9	294	41.4	19.8
8	270	14.3	340	12.8	56.2	338	52.1	43.2	286	40.4	02.7	309	43.6	19.7
9	285	16.7	355	13.5	56.3	353	52.6	43.0	301	42.3	02.5	324	45.8	19.6
10	300	19.2	10	14.2	56.3	8	53.1	42.7	316	44.2	02.3	339	47.9	19.5
11	315	21.6	25	14.9	−16 56.4	23	53.6	−22 42.5	331	46.1	−8 02.0	354	50.1	−16 19.4
12	330	24.1	40	15.7	−16 56.4	38	54.0	−22 42.3	346	48.0	−8 01.8	9	52.3	−16 19.3
13	345	26.6	55	16.4	56.4	53	54.5	42.0	1	49.9	01.6	24	54.4	19.2
14	0	29.0	70	17.1	56.5	68	55.0	41.8	16	51.9	01.3	39	56.6	19.2
15	15	31.5	85	17.8	56.5	83	55.5	41.5	31	53.8	01.1	54	58.8	19.1
16	30	34.0	100	18.5	56.6	98	55.9	41.3	46	55.7	00.9	70	01.0	19.0
17	45	36.4	115	19.2	−16 56.6	113	56.4	−22 41.1	61	57.6	−8 00.7	85	03.1	−16 18.9
18	60	38.9	130	19.9	−16 56.6	128	56.9	−22 40.8	76	59.5	−8 00.4	100	05.3	−16 18.8
19	75	41.4	145	20.6	56.7	143	57.4	40.6	92	01.4	−8 00.2	115	07.5	18.7
20	90	43.8	160	21.3	56.7	158	57.8	40.3	107	03.3	−8 00.0	130	09.6	18.6
21	105	46.3	175	22.0	56.7	173	58.3	40.1	122	05.2	−7 59.7	145	11.8	18.5
22	120	48.8	190	22.7	56.8	188	58.8	39.8	137	07.1	59.5	160	14.0	18.5
23	135	51.2	205	23.4	56.8	203	59.3	39.6	152	09.0	59.3	175	16.2	18.4
24	150	53.7	220	24.1	−16 56.8	218	59.7	−22 39.4	167	10.9	−7 59.1	190	18.3	−16 18.3
Dif	—			+7	0		+5	+2		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.6				LUNA Edad: 19d.8 SD: 15′.8 PMG: 3h 39m PHE 4h: 58′.1; 12h: 58′.2; 20h: 58′.4 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	176	35.6	−10	38.8	307	01.7	−7	07.3	**60 N**	17 07	17 50	18 38	23 52	100	8 42	4
1	191	35.7		37.9	321	33.2 125		22.0 147	**58**	12	52	38	44	95	47	8
2	206	35.8		37.0	336	04.7 125		36.7 147	**56**	17	55	38	37	91	52	11
3	221	35.8		36.1	350	36.2 125	−7	51.3 146	**54**	21	57	38	31	88	8 56	14
4	236	35.9		35.2	5	07.5 123	−8	06.0 147	**52**	25	17 59	39	25	85	9 00	17
5	251	36.0	−10	34.3	19	38.9 124	−8	20.5 145	**50**	17 28	18 01	18 39	23 20	82	9 03	19
6	266	36.1	−10	33.4	34	10.2 123	−8	35.1 146	**45**	17 36	18 06	18 40	23 10	76	9 11	24
7	281	36.1		32.5	48	41.4 122	−8	49.6 145	**40**	43	10	42	23 01	72	17	28
8	296	36.2		31.6	63	12.5 121	−9	04.1 145	**35**	48	14	43	22 53	68	22	32
9	311	36.3		30.7	77	43.6 121		18.5 144	**30**	17 53	17	45	46	65	27	35
10	326	36.3		29.8	92	14.7 121		32.9 144	**20**	18 02	24	50	35	60	36	40
11	341	36.4	−10	28.9	106	45.7 120	−9	47.3 144	**10 N**	18 10	18 31	18 56	22 25	55	9 43	45
12	356	36.5	−10	28.0	121	16.6 119	−10	01.6 143	**0**	18 17	18 38	19 02	22 16	51	9 50	49
13	11	36.6		27.1	135	47.4 118		15.9 143	**10 S**	24	46	11	22 06	47	9 57	54
14	26	36.6		26.2	150	18.2 118		30.2 143	**20**	32	18 55	21	21 57	42	10 05	58
15	41	36.7		25.2	164	49.0 118		44.4 142	**30**	42	19 06	35	46	37	13	64
16	56	36.8		24.3	179	19.6 116	−10	58.5 141	**35**	47	13	44	39	35	18	67
17	71	36.9	−10	23.4	193	50.2 116	−11	12.6 141	**40**	18 53	19 21	19 55	21 32	31	10 24	71
18	86	36.9	−10	22.5	208	20.8 116	−11	26.7 141	**45**	19 01	19 31	20 09	21 24	27	10 30	76
19	101	37.0		21.6	222	51.2 114		40.7 140	**50**	09	44	26	14	22	38	81
20	116	37.1		20.7	237	21.6 114	−11	54.6 139	**52**	13	49	34	10	19	42	83
21	131	37.2		19.8	251	51.9 113	−12	08.5 139	**54**	18	19 56	44	21 05	16	46	86
22	146	37.3		18.9	266	22.2 113		22.4 139	**56**	23	20 03	20 55	20 59	13	51	89
23	161	37.3		18.0	280	52.3 111		36.2 138	**58**	28	12	21 08	53	10	10 56	93
24	176	37.4	−10	17.1	295	22.5 112	−12	49.9 137	**60 S**	19 34	20 21	21 24	20 46	6	11 01	98

UT	ARIES PMG 13h 54m.1		VENUS Mag: −4.8 PMG: 9h 18m			MARTE Mag: +1.3 PMG: 9h 24m			JÚPITER Mag: −2.0 PMG: 12h 50m			SATURNO Mag: +0.7 PMG: 11h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	150	53.7	220	24.1	−16 56.8	218	59.7	−22 39.4	167	10.9	−7 59.1	190	18.3	−16 18.3
1	165	56.1	235	24.8	56.9	234	00.2	39.1	182	12.8	58.8	205	20.5	18.2
2	180	58.6	250	25.5	56.9	249	00.7	38.9	197	14.7	58.6	220	22.7	18.1
3	196	01.1	265	26.1	56.9	264	01.2	38.6	212	16.6	58.4	235	24.9	18.0
4	211	03.5	280	26.8	57.0	279	01.6	38.4	227	18.5	58.1	250	27.0	17.9
5	226	06.0	295	27.5	−16 57.0	294	02.1	−22 38.1	242	20.4	−7 57.9	265	29.2	−16 17.9
6	241	08.5	310	28.2	−16 57.0	309	02.6	−22 37.9	257	22.3	−7 57.7	280	31.4	−16 17.8
7	256	10.9	325	28.9	57.0	324	03.1	37.6	272	24.2	57.5	295	33.5	17.7
8	271	13.4	340	29.5	57.1	339	03.5	37.4	287	26.1	57.2	310	35.7	17.6
9	286	15.9	355	30.2	57.1	354	04.0	37.1	302	28.0	57.0	325	37.9	17.5
10	301	18.3	10	30.9	57.1	9	04.5	36.9	317	29.9	56.8	340	40.1	17.4
11	316	20.8	25	31.5	−16 57.2	24	05.0	−22 36.7	332	31.8	−7 56.5	355	42.2	−16 17.3
12	331	23.2	40	32.2	−16 57.2	39	05.5	−22 36.4	347	33.7	−7 56.3	10	44.4	−16 17.2
13	346	25.7	55	32.9	57.2	54	05.9	36.2	2	35.6	56.1	25	46.6	17.2
14	1	28.2	70	33.5	57.2	69	06.4	35.9	17	37.5	55.9	40	48.7	17.1
15	16	30.6	85	34.2	57.3	84	06.9	35.7	32	39.4	55.6	55	50.9	17.0
16	31	33.1	100	34.8	57.3	99	07.4	35.4	47	41.3	55.4	70	53.1	16.9
17	46	35.6	115	35.5	−16 57.3	114	07.8	−22 35.2	62	43.2	−7 55.2	85	55.3	−16 16.8
18	61	38.0	130	36.1	−16 57.3	129	08.3	−22 34.9	77	45.1	−7 54.9	100	57.4	−16 16.7
19	76	40.5	145	36.8	57.4	144	08.8	34.7	92	47.0	54.7	115	59.6	16.6
20	91	43.0	160	37.4	57.4	159	09.3	34.4	107	48.9	54.5	131	01.8	16.6
21	106	45.4	175	38.1	57.4	174	09.7	34.1	122	50.9	54.2	146	04.0	16.5
22	121	47.9	190	38.7	57.4	189	10.2	33.9	137	52.8	54.0	161	06.1	16.4
23	136	50.4	205	39.4	57.4	204	10.7	33.6	152	54.7	53.8	176	08.3	16.3
24	151	52.8	220	40.0	−16 57.5	219	11.2	−22 33.4	167	56.6	−7 53.6	191	10.5	−16 16.2
Dif	—			+7	0		+5	+2		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 13m.4				◑ LUNA Edad: 20d.8 SD: 15′.9 PMG: 4h 27m PHE 4h: 58′.5; 12h: 58′.6; 20h: 58′.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	′	º	h m	h m	h m	h m	m	h m	m
0	176	37.4	−10	17.1	295	22.5	−12	49.9	**60 N**	5 48	6 36	7 19	** **	**	8 46	7
1	191	37.5		16.2	309	52.5 110	−13	03.6 137	**58**	48	33	14	** **	**	8 55	11
2	206	37.6		15.3	324	22.4 109		17.2 136	**56**	48	31	09	** **	**	9 03	15
3	221	37.6		14.3	338	52.3 109		30.7 135	**54**	48	29	05	** **	**	10	19
4	236	37.7		13.4	353	22.1 108		44.2 135	**52**	48	27	7 01	** **	**	17	21
5	251	37.8	−10	12.5	7	51.8 107	−13	57.6 134	**50**	5 47	6 25	6 58	** **	**	9 22	24
6	266	37.9	−10	11.6	22	21.4 106	−14	11.0 134	**45**	5 46	6 20	6 50	** **	**	9 35	29
7	281	38.0		10.7	36	51.0 106		24.3 133	**40**	45	16	44	** **	**	45	34
8	296	38.0		09.8	51	20.5 105		37.5 132	**35**	43	13	38	** **	**	9 54	37
9	311	38.1		08.9	65	49.9 104	−14	50.6 131	**30**	41	09	33	23 51	68	10 02	40
10	326	38.2		08.0	80	19.2 103	−15	03.7 131	**20**	37	6 03	25	35	62	16	45
11	341	38.3	−10	07.1	94	48.4 102	−15	16.7 130	**10 N**	5 31	5 56	6 17	23 20	59	10 28	49
12	356	38.4	−10	06.1	109	17.6 102	−15	29.6 129	**0**	5 25	5 49	6 10	23 07	55	10 39	53
13	11	38.4		05.2	123	46.6 100		42.5 129	**10 S**	16	41	6 03	22 53	52	10 51	57
14	26	38.5		04.3	138	15.6 100	−15	55.3 128	**20**	5 06	32	5 55	39	47	11 03	61
15	41	38.6		03.4	152	44.5 99	−16	07.9 126	**30**	4 52	21	46	23	43	17	66
16	56	38.7		02.5	167	13.3 98		20.5 126	**35**	43	14	40	14	39	25	70
17	71	38.8	−10	01.6	181	42.0 97	−16	33.1 126	**40**	4 32	5 06	5 34	22 03	37	11 35	72
18	86	38.8	−10	00.7	196	10.6 96	−16	45.5 124	**45**	4 19	4 56	5 27	21 51	32	11 46	77
19	101	38.9	−9	59.7	210	39.1 95	−16	57.9 124	**50**	4 02	44	19	36	27	11 59	82
20	116	39.0		58.8	225	07.5 94	−17	10.1 122	**52**	3 53	38	15	29	25	12 05	85
21	131	39.1		57.9	239	35.9 94		22.3 122	**54**	44	32	10	21	22	12	88
22	146	39.2		57.0	254	04.1 92		34.4 121	**56**	33	25	05	12	19	20	92
23	161	39.3		56.1	268	32.3 92		46.4 120	**58**	20	16	5 00	21 03	14	29	96
24	176	39.3	−9	55.2	283	00.4 91	−17	58.3 119	**60 S**	3 04	4 07	4 54	20 52	9	12 39	101

UT	ARIES PMG 13h 50m.2		VENUS Mag: −4.8 PMG: 9h 17m			MARTE Mag: +1.3 PMG: 9h 23m			JÚPITER Mag: −2.0 PMG: 12h 47m			SATURNO Mag: +0.8 PMG: 11h 14m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	151	52.8	220	40.0	−16 57.5	219	11.2	−22 33.4	167	56.6	−7 53.6	191	10.5	−16 16.2
1	166	55.3	235	40.7	57.5	234	11.6	33.1	182	58.5	53.3	206	12.6	16.1
2	181	57.7	250	41.3	57.5	249	12.1	32.9	198	00.4	53.1	221	14.8	16.0
3	197	00.2	265	41.9	57.5	264	12.6	32.6	213	02.3	52.9	236	17.0	15.9
4	212	02.7	280	42.6	57.5	279	13.1	32.4	228	04.2	52.6	251	19.2	15.9
5	227	05.1	295	43.2	−16 57.6	294	13.6	−22 32.1	243	06.1	−7 52.4	266	21.3	−16 15.8
6	242	07.6	310	43.8	−16 57.6	309	14.0	−22 31.9	258	08.0	−7 52.2	281	23.5	−16 15.7
7	257	10.1	325	44.4	57.6	324	14.5	31.6	273	09.9	52.0	296	25.7	15.6
8	272	12.5	340	45.1	57.6	339	15.0	31.3	288	11.8	51.7	311	27.9	15.5
9	287	15.0	355	45.7	57.6	354	15.5	31.1	303	13.7	51.5	326	30.0	15.4
10	302	17.5	10	46.3	57.6	9	15.9	30.8	318	15.6	51.3	341	32.2	15.3
11	317	19.9	25	46.9	−16 57.7	24	16.4	−22 30.6	333	17.5	−7 51.0	356	34.4	−16 15.3
12	332	22.4	40	47.5	−16 57.7	39	16.9	−22 30.3	348	19.4	−7 50.8	11	36.5	−16 15.2
13	347	24.9	55	48.2	57.7	54	17.4	30.1	3	21.3	50.6	26	38.7	15.1
14	2	27.3	70	48.8	57.7	69	17.9	29.8	18	23.2	50.4	41	40.9	15.0
15	17	29.8	85	49.4	57.7	84	18.3	29.5	33	25.1	50.1	56	43.1	14.9
16	32	32.2	100	50.0	57.7	99	18.8	29.3	48	27.0	49.9	71	45.2	14.8
17	47	34.7	115	50.6	−16 57.7	114	19.3	−22 29.0	63	28.9	−7 49.7	86	47.4	−16 14.7
18	62	37.2	130	51.2	−16 57.8	129	19.8	−22 28.8	78	30.8	−7 49.4	101	49.6	−16 14.6
19	77	39.6	145	51.8	57.8	144	20.2	28.5	93	32.7	49.2	116	51.8	14.6
20	92	42.1	160	52.4	57.8	159	20.7	28.2	108	34.6	49.0	131	53.9	14.5
21	107	44.6	175	53.0	57.8	174	21.2	28.0	123	36.5	48.7	146	56.1	14.4
22	122	47.0	190	53.6	57.8	189	21.7	27.7	138	38.4	48.5	161	58.3	14.3
23	137	49.5	205	54.2	57.8	204	22.2	27.5	153	40.3	48.3	177	00.4	14.2
24	152	52.0	220	54.8	−16 57.8	219	22.6	−22 27.2	168	42.2	−7 48.1	192	02.6	−16 14.1
Dif	—			+6	0		+5	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 21ᵈ.8		PHE	4ʰ: 58′.8									
	PMG: 12ʰ 13ᵐ.3				SD: 16′.0			12ʰ: 59′.0									
					PMG: 5ʰ 19ᵐ			20ʰ: 59′.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	176	39.3	−9	55.2	283	00.4	90	−17	58.3	**60 N**	17 12	17 54	18 43	1 32	104	8 53	12
1	191	39.4		54.3	297	28.4	90	−18	10.1	118 **58**	17	57	42	19	98	9 06	18
2	206	39.5		53.3	311	56.2	88		21.8	117 **56**	21	17 59	42	1 08	93	18	23
3	221	39.6		52.4	326	24.0	88		33.4	116 **54**	25	18 01	42	0 59	88	29	26
4	236	39.7		51.5	340	51.7	87		44.9	115 **52**	29	03	42	50	86	38	29
5	251	39.8	−9	50.6	355	19.3	86	−18	56.3	114 **50**	17 32	18 05	18 42	0 42	83	9 46	32
6	266	39.9	−9	49.7	9	46.8	85	−19	07.6	113 **45**	17 39	18 09	18 43	0 26	78	10 04	37
7	281	39.9		48.7	24	14.2	84		18.8	112 **40**	45	12	44	13	73	19	40
8	296	40.0		47.8	38	41.6	84		29.9	111 **35**	50	16	45	0 01	71	31	43
9	311	40.1		46.9	53	08.8	82		40.9	110 **30**	17 55	19	47	** **	**	10 42	46
10	326	40.2		46.0	67	35.9	81	−19	51.7	108 **20**	18 03	25	51	** **	**	11 01	50
11	341	40.3	−9	45.1	82	02.9	80	−20	02.5	108 **10 N**	18 10	18 31	18 56	** **	**	11 17	54
12	356	40.4	−9	44.2	96	29.9	80	−20	13.1	106 **0**	18 17	18 38	19 02	** **	**	11 32	57
13	11	40.5		43.2	110	56.7	78		23.7	106 **10 S**	24	45	10	23 45	56	11 48	60
14	26	40.5		42.3	125	23.4	77		34.1	104 **20**	31	18 53	20	26	54	12 04	64
15	41	40.6		41.4	139	50.1	77		44.4	103 **30**	40	19 04	33	23 06	49	23	68
16	56	40.7		40.5	154	16.6	75	−20	54.6	102 **35**	45	11	42	22 53	48	35	70
17	71	40.8	−9	39.6	168	43.1	75	−21	04.6	100 **40**	18 50	19 18	19 52	22 40	45	12 47	74
18	86	40.9	−9	38.6	183	09.4	73	−21	14.6	100 **45**	18 57	19 28	20 05	22 23	42	13 03	77
19	101	41.0		37.7	197	35.7	73		24.4	98 **50**	19 05	39	21	22 03	37	21	82
20	116	41.1		36.8	212	01.8	71		34.0	96 **52**	09	45	29	21 54	35	30	85
21	131	41.2		35.9	226	27.9	71		43.6	96 **54**	13	51	38	43	32	40	88
22	146	41.3		34.9	240	53.8	69	−21	53.0	94 **56**	18	19 58	20 49	31	29	13 52	91
23	161	41.3		34.0	255	19.7	69	−22	02.3	93 **58**	23	20 06	21 01	17	25	14 05	96
24	176	41.4	−9	33.1	269	45.5	68	−22	11.5	92 **60 S**	19 29	20 15	21 16	21 01	19	14 20	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.3			Mag: −2.0			Mag: +0.8		
	13ʰ 46ᵐ.3		PMG: 9ʰ 16ᵐ			PMG: 9ʰ 22ᵐ			PMG: 12ʰ 44ᵐ			PMG: 11ʰ 10ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	152	52.0	220	54.8	−16 57.8	219	22.6	−22 27.2	168	42.2	−7 48.1	192	02.6	−16 14.1
1	167	54.4	235	55.4	57.8	234	23.1	26.9	183	44.1	47.8	207	04.8	14.0
2	182	56.9	250	56.0	57.8	249	23.6	26.7	198	46.0	47.6	222	07.0	14.0
3	197	59.3	265	56.6	57.8	264	24.1	26.4	213	47.9	47.4	237	09.1	13.9
4	213	01.8	280	57.1	57.8	279	24.5	26.1	228	49.8	47.1	252	11.3	13.8
5	228	04.3	295	57.7	−16 57.8	294	25.0	−22 25.9	243	51.7	−7 46.9	267	13.5	−16 13.7
6	243	06.7	310	58.3	−16 57.8	309	25.5	−22 25.6	258	53.6	−7 46.7	282	15.7	−16 13.6
7	258	09.2	325	58.9	57.8	324	26.0	25.3	273	55.5	46.5	297	17.8	13.5
8	273	11.7	340	59.5	57.9	339	26.5	25.1	288	57.4	46.2	312	20.0	13.4
9	288	14.1	356	00.0	57.9	354	26.9	24.8	303	59.3	46.0	327	22.2	13.3
10	303	16.6	11	00.6	57.9	9	27.4	24.5	319	01.2	45.8	342	24.4	13.3
11	318	19.1	26	01.2	−16 57.9	24	27.9	−22 24.3	334	03.1	−7 45.5	357	26.5	−16 13.2
12	333	21.5	41	01.8	−16 57.9	39	28.4	−22 24.0	349	05.1	−7 45.3	12	28.7	−16 13.1
13	348	24.0	56	02.3	57.9	54	28.9	23.7	4	07.0	45.1	27	30.9	13.0
14	3	26.5	71	02.9	57.9	69	29.3	23.5	19	08.9	44.8	42	33.1	12.9
15	18	28.9	86	03.5	57.9	84	29.8	23.2	34	10.8	44.6	57	35.2	12.8
16	33	31.4	101	04.0	57.9	99	30.3	22.9	49	12.7	44.4	72	37.4	12.7
17	48	33.8	116	04.6	−16 57.9	114	30.8	−22 22.7	64	14.6	−7 44.2	87	39.6	−16 12.7
18	63	36.3	131	05.1	−16 57.9	129	31.3	−22 22.4	79	16.5	−7 43.9	102	41.8	−16 12.6
19	78	38.8	146	05.7	57.9	144	31.7	22.1	94	18.4	43.7	117	43.9	12.5
20	93	41.2	161	06.3	57.9	159	32.2	21.8	109	20.3	43.5	132	46.1	12.4
21	108	43.7	176	06.8	57.9	174	32.7	21.6	124	22.2	43.2	147	48.3	12.3
22	123	46.2	191	07.4	57.8	189	33.2	21.3	139	24.1	43.0	162	50.4	12.2
23	138	48.6	206	07.9	57.8	204	33.7	21.0	154	26.0	42.8	177	52.6	12.1
24	153	51.1	221	08.5	−16 57.8	219	34.1	−22 20.8	169	27.9	−7 42.5	192	54.8	−16 12.1
Dif	—			+6	0		+5	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22^{d}.8		PHE	4^{h}: 59′.2									
	PMG: 12^{h} 13^{m}.2				SD: 16′.1			12^{h}: 59′.3									
					PMG: 6^{h} 15^{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	176	41.4	−9	33.1	269	45.5	−22	11.5		**60 N**	5 43	6 31	7 13	3 16	100	9 05	25
1	191	41.5		32.2	284	11.2 67		20.5	90	**58**	43	28	08	2 57	93	24	32
2	206	41.6		31.3	298	36.7 65		29.4	89	**56**	43	26	04	41	88	41	35
3	221	41.7		30.3	313	02.2 65		38.2	88	**54**	44	24	7 00	27	85	9 55	39
4	236	41.8		29.4	327	27.6 64		46.8	86	**52**	44	23	6 57	16	82	10 07	41
5	251	41.9	−9	28.5	341	52.9 63	−22	55.3	85	**50**	5 43	6 21	6 54	2 05	80	10 18	43
6	266	42.0	−9	27.6	356	18.1 62	−23	03.6	83	**45**	5 43	6 17	6 47	1 44	75	10 41	47
7	281	42.1		26.6	10	43.2 61		11.8	82	**40**	42	14	41	26	73	10 59	50
8	296	42.2		25.7	25	08.3 61		19.9	81	**35**	41	10	36	1 12	70	11 14	52
9	311	42.3		24.8	39	33.2 59		27.8	79	**30**	39	07	31	0 59	68	28	53
10	326	42.3		23.9	53	58.1 59		35.6	78	**20**	36	6 01	23	37	65	11 51	56
11	341	42.4	−9	22.9	68	22.8 57	−23	43.2	76	**10 N**	5 31	5 55	6 16	0 19	62	12 11	58
12	356	42.5	−9	22.0	82	47.5 57	−23	50.7	75	**0**	5 25	5 49	6 10	0 02	59	12 29	61
13	11	42.6		21.1	97	12.1 56	−23	58.0	73	**10 S**	17	42	6 03	** **	**	12 48	63
14	26	42.7		20.2	111	36.6 55	−24	05.1	71	**20**	5 07	33	5 56	** **	**	13 08	65
15	41	42.8		19.2	126	01.0 54		12.1	70	**30**	4 54	23	47	23 55	58	31	68
16	56	42.9		18.3	140	25.3 53		19.0	69	**35**	45	16	42	41	56	13 45	69
17	71	43.0	−9	17.4	154	49.6 53	−24	25.7	67	**40**	4 35	5 09	5 37	23 25	55	14 01	70
18	86	43.1	−9	16.5	169	13.7 51	−24	32.2	65	**45**	4 22	4 59	5 30	23 05	53	14 20	73
19	101	43.2		15.5	183	37.8 51		38.6	64	**50**	4 06	48	22	22 40	51	43	76
20	116	43.3		14.6	198	01.8 50		44.8	62	**52**	3 58	42	18	29	49	14 55	77
21	131	43.4		13.7	212	25.8 50		50.9	61	**54**	49	36	14	15	48	15 08	79
22	146	43.5		12.8	226	49.6 48	−24	56.8	59	**56**	39	30	10	22 00	45	23	82
23	161	43.6		11.8	241	13.4 48	−25	02.5	57	**58**	26	22	5 05	21 42	42	15 41	85
24	176	43.7	−9	10.9	255	37.1 47	−25	08.1	56	**60 S**	3 12	4 13	4 59	21 20	36	16 02	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.3			Mag: −2.0			Mag: +0.8		
	13^{h} 42^{m}.3		PMG: 9^{h} 15^{m}			PMG: 9^{h} 21^{m}			PMG: 12^{h} 41^{m}			PMG: 11^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	153	51.1	221	08.5	−16 57.8	219	34.1	−22 20.8	169	27.9	−7 42.5	192	54.8	−16 12.1
1	168	53.6	236	09.0	57.8	234	34.6	20.5	184	29.8	42.3	207	57.0	12.0
2	183	56.0	251	09.5	57.8	249	35.1	20.2	199	31.7	42.1	222	59.1	11.9
3	198	58.5	266	10.1	57.8	264	35.6	19.9	214	33.6	41.9	238	01.3	11.8
4	214	01.0	281	10.6	57.8	279	36.1	19.7	229	35.5	41.6	253	03.5	11.7
5	229	03.4	296	11.2	−16 57.8	294	36.5	−22 19.4	244	37.4	−7 41.4	268	05.7	−16 11.6
6	244	05.9	311	11.7	−16 57.8	309	37.0	−22 19.1	259	39.3	−7 41.2	283	07.8	−16 11.5
7	259	08.3	326	12.2	57.8	324	37.5	18.8	274	41.2	40.9	298	10.0	11.4
8	274	10.8	341	12.8	57.8	339	38.0	18.6	289	43.1	40.7	313	12.2	11.4
9	289	13.3	356	13.3	57.8	354	38.5	18.3	304	45.0	40.5	328	14.4	11.3
10	304	15.7	11	13.8	57.8	9	38.9	18.0	319	46.9	40.2	343	16.5	11.2
11	319	18.2	26	14.4	−16 57.7	24	39.4	−22 17.7	334	48.8	−7 40.0	358	18.7	−16 11.1
12	334	20.7	41	14.9	−16 57.7	39	39.9	−22 17.5	349	50.7	−7 39.8	13	20.9	−16 11.0
13	349	23.1	56	15.4	57.7	54	40.4	17.2	4	52.6	39.6	28	23.1	10.9
14	4	25.6	71	15.9	57.7	69	40.9	16.9	19	54.5	39.3	43	25.2	10.8
15	19	28.1	86	16.5	57.7	84	41.3	16.6	34	56.4	39.1	58	27.4	10.8
16	34	30.5	101	17.0	57.7	99	41.8	16.3	49	58.3	38.9	73	29.6	10.7
17	49	33.0	116	17.5	−16 57.7	114	42.3	−22 16.1	65	00.2	−7 38.6	88	31.8	−16 10.6
18	64	35.5	131	18.0	−16 57.6	129	42.8	−22 15.8	80	02.1	−7 38.4	103	33.9	−16 10.5
19	79	37.9	146	18.5	57.6	144	43.3	15.5	95	04.0	38.2	118	36.1	10.4
20	94	40.4	161	19.0	57.6	159	43.8	15.2	110	05.9	37.9	133	38.3	10.3
21	109	42.8	176	19.5	57.6	174	44.2	14.9	125	07.8	37.7	148	40.5	10.2
22	124	45.3	191	20.0	57.6	189	44.7	14.7	140	09.7	37.5	163	42.6	10.2
23	139	47.8	206	20.6	57.6	204	45.2	14.4	155	11.6	37.3	178	44.8	10.1
24	154	50.2	221	21.1	−16 57.5	219	45.7	−22 14.1	170	13.5	−7 37.0	193	47.0	−16 10.0
Dif	—			+5	0		+5	+3		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 23ᵈ.8		PHE	4ʰ: 59′.4									
	PMG: 12ʰ 13ᵐ.0				SD: 16′.2			12ʰ: 59′.5									
					PMG: 7ʰ 15ᵐ			20ʰ: 59′.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	176	43.7	−9	10.9	255	37.1	−25	08.1		**60 N**	17 17	17 59	18 47	4 56	79	9 30	50
1	191	43.8		10.0	270	00.7 46		13.5	54	**58**	21	18 01	47	30	76	9 56	54
2	206	43.9		09.0	284	24.3 46		18.7	52	**56**	25	03	46	4 09	74	10 16	56
3	221	44.0		08.1	298	47.8 45		23.8	51	**54**	29	05	46	3 52	73	34	56
4	236	44.1		07.2	313	11.2 44		28.7	49	**52**	32	06	46	38	71	10 48	58
5	251	44.2	−9	06.3	327	34.6 44	−25	33.4	47	**50**	17 35	18 08	18 45	3 25	71	11 01	59
6	266	44.2	−9	05.3	341	57.9 43	−25	37.9	45	**45**	17 42	18 11	18 45	2 59	69	11 28	59
7	281	44.3		04.4	356	21.1 42		42.3	44	**40**	47	15	46	39	67	11 49	60
8	296	44.4		03.5	10	44.3 42		46.5	42	**35**	52	17	47	22	66	12 06	61
9	311	44.5		02.5	25	07.4 41		50.5	40	**30**	17 56	20	48	2 07	66	21	62
10	326	44.6		01.6	39	30.5 41		54.4	39	**20**	18 03	26	51	1 42	64	12 47	62
11	341	44.7	−9	00.7	53	53.5 40	−25	58.1	37	**10 N**	18 10	18 31	18 56	1 21	63	13 09	62
12	356	44.8	−8	59.7	68	16.4 39	−26	01.6	35	**0**	18 16	18 37	19 02	1 01	62	13 30	63
13	11	44.9		58.8	82	39.3 39		04.9	33	**10 S**	23	44	09	0 41	61	13 51	63
14	26	45.0		57.9	97	02.2 39		08.0	31	**20**	30	18 52	18	0 20	59	14 13	63
15	41	45.1		56.9	111	25.0 38		11.0	30	**30**	38	19 02	31	** **	**	39	63
16	56	45.2		56.0	125	47.8 38		13.8	28	**35**	42	08	39	** **	**	14 54	63
17	71	45.3	−8	55.1	140	10.5 37	−26	16.4	26	**40**	18 48	19 15	19 49	** **	**	15 11	64
18	86	45.4	−8	54.1	154	33.2 37	−26	18.8	24	**45**	18 54	19 24	20 01	23 58	66	15 33	63
19	101	45.5		53.2	168	55.9 37		21.0	22	**50**	19 01	35	16	31	66	15 59	64
20	116	45.6		52.3	183	18.5 36		23.1	21	**52**	05	40	24	18	66	16 12	64
21	131	45.7		51.3	197	41.1 36		24.9	18	**54**	09	46	33	23 03	66	27	64
22	146	45.8		50.4	212	03.6 35		26.6	17	**56**	13	19 52	43	22 45	67	16 45	64
23	161	45.9		49.5	226	26.1 35		28.1	15	**58**	17	20 00	20 54	22 24	67	17 06	64
24	176	46.0	−8	48.5	240	48.6 35	−26	29.4	13	**60 S**	19 23	20 08	21 08	21 56	68	17 33	64

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.8			Mag: +1.3			Mag: −2.0			Mag: +0.8		
	13ʰ 38ᵐ.4		PMG: 9ʰ 14ᵐ			PMG: 9ʰ 21ᵐ			PMG: 12ʰ 37ᵐ			PMG: 11ʰ 03ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	154	50.2	221	21.1	−16 57.5	219	45.7	−22 14.1	170	13.5	−7 37.0	193	47.0	−16 10.0
1	169	52.7	236	21.6	57.5	234	46.2	13.8	185	15.4	36.8	208	49.2	09.9
2	184	55.2	251	22.1	57.5	249	46.6	13.5	200	17.3	36.6	223	51.3	09.8
3	199	57.6	266	22.6	57.5	264	47.1	13.2	215	19.2	36.3	238	53.5	09.7
4	215	00.1	281	23.1	57.5	279	47.6	13.0	230	21.1	36.1	253	55.7	09.6
5	230	02.6	296	23.6	−16 57.4	294	48.1	−22 12.7	245	23.0	−7 35.9	268	57.9	−16 09.6
6	245	05.0	311	24.1	−16 57.4	309	48.6	−22 12.4	260	24.9	−7 35.6	284	00.0	−16 09.5
7	260	07.5	326	24.5	57.4	324	49.1	12.1	275	26.8	35.4	299	02.2	09.4
8	275	09.9	341	25.0	57.4	339	49.5	11.8	290	28.7	35.2	314	04.4	09.3
9	290	12.4	356	25.5	57.3	354	50.0	11.5	305	30.6	34.9	329	06.6	09.2
10	305	14.9	11	26.0	57.3	9	50.5	11.3	320	32.5	34.7	344	08.8	09.1
11	320	17.3	26	26.5	−16 57.3	24	51.0	−22 11.0	335	34.4	−7 34.5	359	10.9	−16 09.0
12	335	19.8	41	27.0	−16 57.3	39	51.5	−22 10.7	350	36.3	−7 34.3	14	13.1	−16 08.9
13	350	22.3	56	27.5	57.2	54	51.9	10.4	5	38.2	34.0	29	15.3	08.9
14	5	24.7	71	27.9	57.2	69	52.4	10.1	20	40.1	33.8	44	17.5	08.8
15	20	27.2	86	28.4	57.2	84	52.9	09.8	35	42.1	33.6	59	19.6	08.7
16	35	29.7	101	28.9	57.2	99	53.4	09.5	50	44.0	33.3	74	21.8	08.6
17	50	32.1	116	29.4	−16 57.1	114	53.9	−22 09.2	65	45.9	−7 33.1	89	24.0	−16 08.5
18	65	34.6	131	29.8	−16 57.1	129	54.4	−22 09.0	80	47.8	−7 32.9	104	26.2	−16 08.4
19	80	37.1	146	30.3	57.1	144	54.8	08.7	95	49.7	32.6	119	28.3	08.3
20	95	39.5	161	30.8	57.0	159	55.3	08.4	110	51.6	32.4	134	30.5	08.3
21	110	42.0	176	31.3	57.0	174	55.8	08.1	125	53.5	32.2	149	32.7	08.2
22	125	44.4	191	31.7	57.0	189	56.3	07.8	140	55.4	32.0	164	34.9	08.1
23	140	46.9	206	32.2	56.9	204	56.8	07.5	155	57.3	31.7	179	37.0	08.0
24	155	49.4	221	32.6	−16 56.9	219	57.3	−22 07.2	170	59.2	−7 31.5	194	39.2	−16 07.9
Dif	—			+5	0		+5	+3		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.8				LUNA Edad: 24d.8 SD: 16′.2 PMG: 8h 18m PHE 4h: 59′.6; 12h: 59′.6; 20h: 59′.6 Rº: 62m				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	46.0	−8	48.5	240	48.6	−26	29.4	**60 N**	5 37	6 25	7 07	6 15	47	10 20	85
1	191	46.1		47.6	255	11.1 35		30.5 11	**58**	38	23	7 03	5 46	50	10 50	80
2	206	46.2		46.7	269	33.6 35		31.5 10	**56**	39	22	6 59	23	53	11 12	77
3	221	46.3		45.7	283	56.0 34		32.2 7	**54**	39	20	56	5 05	54	30	76
4	236	46.5		44.8	298	18.4 34		32.8 6	**52**	39	18	53	4 49	56	11 46	74
5	251	46.6	−8	43.9	312	40.8 34	−26	33.2 4	**50**	5 40	6 17	6 50	4 36	56	12 00	72
6	266	46.7	−8	42.9	327	03.2 34	−26	33.4 2	**45**	5 40	6 14	6 43	4 08	58	12 27	71
7	281	46.8		42.0	341	25.6 34		33.4 0	**40**	39	11	38	3 46	59	12 49	69
8	296	46.9		41.1	355	48.0 34		33.2 2	**35**	39	08	33	28	60	13 07	68
9	311	47.0		40.1	10	10.3 33		32.8 4	**30**	37	05	29	3 13	60	23	66
10	326	47.1		39.2	24	32.7 34		32.3 5	**20**	34	6 00	22	2 46	62	13 49	65
11	341	47.2	−8	38.3	38	55.1 34	−26	31.5 8	**10 N**	5 30	5 54	6 16	2 24	62	14 11	64
12	356	47.3	−8	37.3	53	17.5 34	−26	30.6 9	**0**	5 24	5 49	6 10	2 03	62	14 33	62
13	11	47.4		36.4	67	39.8 33		29.5 11	**10 S**	17	42	6 03	1 42	63	14 54	60
14	26	47.5		35.5	82	02.2 34		28.2 13	**20**	5 08	34	5 56	1 19	64	15 16	59
15	41	47.6		34.5	96	24.6 34		26.7 15	**30**	4 55	24	49	0 53	64	42	57
16	56	47.7		33.6	110	47.0 34		25.0 17	**35**	47	18	44	37	65	15 57	56
17	71	47.8	−8	32.6	125	09.5 35	−26	23.2 18	**40**	4 38	5 11	5 39	0 20	65	16 15	54
18	86	47.9	−8	31.7	139	31.9 34	−26	21.1 21	**45**	4 26	5 02	5 33	** **	**	16 36	52
19	101	48.0		30.8	153	54.4 35		18.9 22	**50**	10	4 52	25	** **	**	17 03	49
20	116	48.1		29.8	168	16.9 35		16.5 24	**52**	4 03	46	22	** **	**	16	48
21	131	48.2		28.9	182	39.4 35		13.9 26	**54**	3 54	41	18	** **	**	31	46
22	146	48.3		27.9	197	01.9 35		11.1 28	**56**	44	34	14	23 52	85	17 49	43
23	161	48.4		27.0	211	24.5 36		08.1 30	**58**	33	27	09	31	89	18 10	39
24	176	48.6	−8	26.1	225	47.1 36	−26	04.9 32	**60 S**	3 19	4 19	5 04	23 04	95	18 37	33

UT	ARIES PMG 13h 34m.5		VENUS Mag: −4.8 PMG: 9h 14m			MARTE Mag: +1.3 PMG: 9h 20m			JÚPITER Mag: −2.0 PMG: 12h 34m			SATURNO Mag: +0.8 PMG: 11h 00m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	155	49.4	221	32.6	−16 56.9	219	57.3	−22 07.2	170	59.2	−7 31.5	194	39.2	−16 07.9
1	170	51.8	236	33.1	56.9	234	57.7	06.9	186	01.1	31.3	209	41.4	07.8
2	185	54.3	251	33.6	56.8	249	58.2	06.6	201	03.0	31.0	224	43.6	07.7
3	200	56.8	266	34.0	56.8	264	58.7	06.3	216	04.9	30.8	239	45.7	07.7
4	215	59.2	281	34.5	56.8	279	59.2	06.0	231	06.8	30.6	254	47.9	07.6
5	231	01.7	296	34.9	−16 56.7	294	59.7	−22 05.7	246	08.7	−7 30.3	269	50.1	−16 07.5
6	246	04.2	311	35.4	−16 56.7	310	00.2	−22 05.5	261	10.6	−7 30.1	284	52.3	−16 07.4
7	261	06.6	326	35.8	56.7	325	00.6	05.2	276	12.5	29.9	299	54.5	07.3
8	276	09.1	341	36.3	56.6	340	01.1	04.9	291	14.4	29.6	314	56.6	07.2
9	291	11.6	356	36.7	56.6	355	01.6	04.6	306	16.3	29.4	329	58.8	07.1
10	306	14.0	11	37.2	56.5	10	02.1	04.3	321	18.2	29.2	345	01.0	07.1
11	321	16.5	26	37.6	−16 56.5	25	02.6	−22 04.0	336	20.1	−7 29.0	0	03.2	−16 07.0
12	336	18.9	41	38.1	−16 56.5	40	03.1	−22 03.7	351	22.0	−7 28.7	15	05.3	−16 06.9
13	351	21.4	56	38.5	56.4	55	03.6	03.4	6	23.9	28.5	30	07.5	06.8
14	6	23.9	71	39.0	56.4	70	04.0	03.1	21	25.8	28.3	45	09.7	06.7
15	21	26.3	86	39.4	56.3	85	04.5	02.8	36	27.7	28.0	60	11.9	06.6
16	36	28.8	101	39.8	56.3	100	05.0	02.5	51	29.6	27.8	75	14.0	06.5
17	51	31.3	116	40.3	−16 56.2	115	05.5	−22 02.2	66	31.5	−7 27.6	90	16.2	−16 06.5
18	66	33.7	131	40.7	−16 56.2	130	06.0	−22 01.9	81	33.4	−7 27.3	105	18.4	−16 06.4
19	81	36.2	146	41.1	56.1	145	06.5	01.6	96	35.3	27.1	120	20.6	06.3
20	96	38.7	161	41.6	56.1	160	07.0	01.3	111	37.2	26.9	135	22.8	06.2
21	111	41.1	176	42.0	56.1	175	07.4	01.0	126	39.1	26.6	150	24.9	06.1
22	126	43.6	191	42.4	56.0	190	07.9	00.7	141	41.0	26.4	165	27.1	06.0
23	141	46.1	206	42.8	56.0	205	08.4	00.4	156	42.9	26.2	180	29.3	05.9
24	156	48.5	221	43.3	−16 55.9	220	08.9	−22 00.1	171	44.8	−7 26.0	195	31.5	−16 05.9
Dif	—			+4	0		+5	+3		+19	+2		+22	+1

UT	SOL SD: 16′.2 PMG: 12h 12m.7				LUNA Edad: 25d.8 SD: 16′.2 PMG: 9h 20m PHE 4h: 59′.6; 12h: 59′.6; 20h: 59′.6 Rº: 60m				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	48.6	−8	26.1	225	47.1 37	−26	04.9 33	**60 N**	17 22	18 04	18 52	7 02	22	11 45	102
1	191	48.7		25.1	240	09.8 36	−26	01.6 35	**58**	26	06	51	6 36	29	12 10	95
2	206	48.8		24.2	254	32.4 37	−25	58.1 37	**56**	30	07	50	6 16	34	29	91
3	221	48.9		23.2	268	55.1 38		54.4 39	**54**	33	09	50	5 59	37	12 46	87
4	236	49.0		22.3	283	17.9 38		50.5 41	**52**	36	10	49	45	40	13 00	85
5	251	49.1	−8	21.4	297	40.7 38	−25	46.4 42	**50**	17 39	18 11	18 49	5 32	42	13 12	83
6	266	49.2	−8	20.4	312	03.5 38	−25	42.2 44	**45**	17 44	18 14	18 48	5 06	46	13 38	77
7	281	49.3		19.5	326	26.4 39		37.8 46	**40**	49	17	48	4 45	49	13 58	74
8	296	49.4		18.5	340	49.4 40		33.2 48	**35**	54	19	49	28	51	14 15	71
9	311	49.5		17.6	355	12.4 40		28.4 50	**30**	17 58	22	49	4 13	53	29	70
10	326	49.6		16.7	9	35.4 40		23.4 51	**20**	18 04	26	52	3 48	56	14 54	65
11	341	49.7	−8	15.7	23	58.5 41	−25	18.3 53	**10 N**	18 10	18 31	18 56	3 26	58	15 15	62
12	356	49.9	−8	14.8	38	21.7 42	−25	13.0 55	**0**	18 16	18 37	19 01	3 05	61	15 35	59
13	11	50.0		13.8	52	44.9 42		07.5 56	**10 S**	22	43	08	2 45	63	15 54	57
14	26	50.1		12.9	67	08.2 43	−25	01.9 58	**20**	28	18 50	17	2 23	65	16 15	53
15	41	50.2		12.0	81	31.5 43	−24	56.1 60	**30**	35	19 00	28	1 57	69	39	49
16	56	50.3		11.0	95	54.9 44		50.1 62	**35**	40	06	36	42	70	16 53	47
17	71	50.4	−8	10.1	110	18.4 45	−24	43.9 63	**40**	18 45	19 12	19 45	1 25	72	17 09	44
18	86	50.5	−8	09.1	124	42.0 46	−24	37.6 65	**45**	18 50	19 21	19 57	1 04	74	17 28	41
19	101	50.6		08.2	139	05.6 46		31.1 66	**50**	18 57	31	20 12	0 37	78	17 52	36
20	116	50.7		07.2	153	29.3 47		24.5 69	**52**	19 00	36	19	24	80	18 04	33
21	131	50.9		06.3	167	53.0 47		17.6 69	**54**	04	41	27	0 10	82	17	30
22	146	51.0		05.3	182	16.9 49		10.7 69	**56**	08	47	36	** **	**	32	27
23	161	51.1		04.4	196	40.8 49	−24	03.5 72	**58**	12	19 54	20 47	** **	**	18 49	23
24	176	51.2	−8	03.5	211	04.8 50	−23	56.2 73	**60 S**	19 17	20 02	21 00	** **	**	19 10	17

UT	ARIES PMG 13h 30m.5		VENUS Mag: −4.8 PMG: 9h 13m			MARTE Mag: +1.3 PMG: 9h 19m			JÚPITER Mag: −2.0 PMG: 12h 31m			SATURNO Mag: +0.8 PMG: 10h 56m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	156	48.5	221	43.3	−16 55.9	220	08.9	−22 00.1	171	44.8	−7 26.0	195	31.5	−16 05.9
1	171	51.0	236	43.7	55.9	235	09.4	−21 59.8	186	46.7	25.7	210	33.6	05.8
2	186	53.4	251	44.1	55.8	250	09.9	59.5	201	48.6	25.5	225	35.8	05.7
3	201	55.9	266	44.5	55.8	265	10.4	59.2	216	50.5	25.3	240	38.0	05.6
4	216	58.4	281	45.0	55.7	280	10.8	58.9	231	52.4	25.0	255	40.2	05.5
5	232	00.8	296	45.4	−16 55.7	295	11.3	−21 58.6	246	54.3	−7 24.8	270	42.4	−16 05.4
6	247	03.3	311	45.8	−16 55.6	310	11.8	−21 58.3	261	56.2	−7 24.6	285	44.5	−16 05.3
7	262	05.8	326	46.2	55.6	325	12.3	58.0	276	58.1	24.3	300	46.7	05.3
8	277	08.2	341	46.6	55.5	340	12.8	57.7	292	00.0	24.1	315	48.9	05.2
9	292	10.7	356	47.0	55.4	355	13.3	57.4	307	01.9	23.9	330	51.1	05.1
10	307	13.2	11	47.4	55.4	10	13.8	57.1	322	03.8	23.6	345	53.2	05.0
11	322	15.6	26	47.8	−16 55.3	25	14.2	−21 56.8	337	05.7	−7 23.4	0	55.4	−16 04.9
12	337	18.1	41	48.2	−16 55.3	40	14.7	−21 56.5	352	07.6	−7 23.2	15	57.6	−16 04.8
13	352	20.6	56	48.6	55.2	55	15.2	56.1	7	09.5	22.9	30	59.8	04.7
14	7	23.0	71	49.0	55.2	70	15.7	55.8	22	11.4	22.7	46	02.0	04.7
15	22	25.5	86	49.4	55.1	85	16.2	55.5	37	13.3	22.5	61	04.1	04.6
16	37	27.9	101	49.8	55.0	100	16.7	55.2	52	15.2	22.3	76	06.3	04.5
17	52	30.4	116	50.2	−16 55.0	115	17.2	−21 54.9	67	17.1	−7 22.0	91	08.5	−16 04.4
18	67	32.9	131	50.6	−16 54.9	130	17.7	−21 54.6	82	19.0	−7 21.8	106	10.7	−16 04.3
19	82	35.3	146	51.0	54.9	145	18.1	54.3	97	20.9	21.6	121	12.8	04.2
20	97	37.8	161	51.4	54.8	160	18.6	54.0	112	22.8	21.3	136	15.0	04.1
21	112	40.3	176	51.8	54.7	175	19.1	53.7	127	24.7	21.1	151	17.2	04.1
22	127	42.7	191	52.2	54.7	190	19.6	53.4	142	26.6	20.9	166	19.4	04.0
23	142	45.2	206	52.6	54.6	205	20.1	53.1	157	28.5	20.6	181	21.6	03.9
24	157	47.7	221	53.0	−16 54.6	220	20.6	−21 52.8	172	30.4	−7 20.4	196	23.7	−16 03.8
Dif	—			+4	+1		+5	+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}.8		PHE	4^{h}: 59′.5									
	PMG: 12^{h} 12^{m}.5				SD: 16′.2			12^{h}: 59′.4									
					PMG: 10^{h} 20^{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	176	51.2	−8	03.5	211	04.8	51 −23	56.2	74	**60 N**	5 32	6 20	7 02	7 24	11	13 27	106
1	191	51.3		02.5	225	28.9	51	48.8	74	**58**	33	18	6 58	7 05	17	13 45	99
2	206	51.4		01.6	239	53.0	51	41.1	77	**56**	34	17	54	6 50	21	14 00	95
3	221	51.5	−8	00.6	254	17.3	53	33.4	77	**54**	35	15	51	36	25	13	91
4	236	51.6	−7	59.7	268	41.6	53	25.4	80	**52**	35	14	48	25	28	25	87
5	251	51.8	−7	58.7	283	06.0	54 −23	17.4	80	**50**	5 36	6 13	6 46	6 14	31	14 35	84
6	266	51.9	−7	57.8	297	30.5	55 −23	09.1	83	**45**	5 36	6 10	6 40	5 52	36	14 55	79
7	281	52.0		56.8	311	55.1	56 −23	00.7	84	**40**	37	08	35	34	40	15 12	75
8	296	52.1		55.9	326	19.7	56 −22	52.2	85	**35**	36	05	31	19	43	26	72
9	311	52.2		55.0	340	44.5	58	43.5	87	**30**	35	6 03	27	5 06	46	39	68
10	326	52.3		54.0	355	09.3	58	34.7	88	**20**	33	5 58	21	4 44	50	15 59	64
11	341	52.4	−7	53.1	9	34.3	60 −22	25.8	89	**10 N**	5 29	5 54	6 15	4 24	54	16 17	60
12	356	52.6	−7	52.1	23	59.3	60 −22	16.6	92	**0**	5 24	5 48	6 09	4 06	57	16 34	55
13	11	52.7		51.2	38	24.4	61 −22	07.4	92	**10 S**	18	42	6 03	3 48	61	16 51	51
14	26	52.8		50.2	52	49.6	62 −21	58.0	94	**20**	5 09	35	5 57	28	65	17 08	47
15	41	52.9		49.3	67	14.9	63	48.5	95	**30**	4 57	26	50	3 06	69	28	43
16	56	53.0		48.3	81	40.3	64	38.8	97	**35**	50	20	46	2 52	72	40	39
17	71	53.1	−7	47.4	96	05.8	65 −21	29.0	98	**40**	4 40	5 13	5 41	2 37	75	17 53	36
18	86	53.3	−7	46.4	110	31.4	66 −21	19.1	99	**45**	4 29	5 05	5 36	2 18	79	18 09	32
19	101	53.4		45.5	124	57.1	67 −21	09.1	100	**50**	14	4 55	29	1 55	84	28	27
20	116	53.5		44.5	139	22.9	68 −20	58.9	102	**52**	4 07	50	26	44	87	37	24
21	131	53.6		43.6	153	48.8	69	48.6	103	**54**	3 59	45	22	32	89	47	22
22	146	53.7		42.6	168	14.8	70	38.1	105	**56**	50	39	18	17	94	18 59	18
23	161	53.8		41.7	182	40.8	70	27.6	105	**58**	39	32	14	1 00	98	19 12	14
24	176	54.0	−7	40.7	197	07.0	72 −20	16.9	107	**60 S**	3 26	4 25	5 09	0 39	105	19 27	9

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.3			Mag: −2.0			Mag: +0.8		
	13^{h} 26^{m}.6		PMG: 9^{h} 12^{m}			PMG: 9^{h} 18^{m}			PMG: 12^{h} 28^{m}			PMG: 10^{h} 53^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	157	47.7	221	53.0	−16 54.6	220	20.6	−21 52.8	172	30.4	−7 20.4	196	23.7	−16 03.8
1	172	50.1	236	53.4	54.5	235	21.1	52.4	187	32.3	20.2	211	25.9	03.7
2	187	52.6	251	53.7	54.4	250	21.6	52.1	202	34.2	19.9	226	28.1	03.6
3	202	55.1	266	54.1	54.4	265	22.0	51.8	217	36.1	19.7	241	30.3	03.5
4	217	57.5	281	54.5	54.3	280	22.5	51.5	232	38.0	19.5	256	32.5	03.5
5	233	00.0	296	54.9	−16 54.2	295	23.0	−21 51.2	247	39.9	−7 19.2	271	34.6	−16 03.4
6	248	02.4	311	55.3	−16 54.2	310	23.5	−21 50.9	262	41.8	−7 19.0	286	36.8	−16 03.3
7	263	04.9	326	55.6	54.1	325	24.0	50.6	277	43.7	18.8	301	39.0	03.2
8	278	07.4	341	56.0	54.0	340	24.5	50.3	292	45.6	18.6	316	41.2	03.1
9	293	09.8	356	56.4	53.9	355	25.0	49.9	307	47.5	18.3	331	43.3	03.0
10	308	12.3	11	56.8	53.9	10	25.5	49.6	322	49.4	18.1	346	45.5	02.9
11	323	14.8	26	57.1	−16 53.8	25	25.9	−21 49.3	337	51.3	−7 17.9	1	47.7	−16 02.9
12	338	17.2	41	57.5	−16 53.7	40	26.4	−21 49.0	352	53.2	−7 17.6	16	49.9	−16 02.8
13	353	19.7	56	57.9	53.7	55	26.9	48.7	7	55.2	17.4	31	52.1	02.7
14	8	22.2	71	58.2	53.6	70	27.4	48.4	22	57.1	17.2	46	54.2	02.6
15	23	24.6	86	58.6	53.5	85	27.9	48.1	37	59.0	16.9	61	56.4	02.5
16	38	27.1	101	59.0	53.4	100	28.4	47.7	53	00.9	16.7	76	58.6	02.4
17	53	29.5	116	59.3	−16 53.4	115	28.9	−21 47.4	68	02.8	−7 16.5	92	00.8	−16 02.3
18	68	32.0	131	59.7	−16 53.3	130	29.4	−21 47.1	83	04.7	−7 16.2	107	03.0	−16 02.3
19	83	34.5	147	00.0	53.2	145	29.9	46.8	98	06.6	16.0	122	05.1	02.2
20	98	36.9	162	00.4	53.1	160	30.3	46.5	113	08.5	15.8	137	07.3	02.1
21	113	39.4	177	00.7	53.1	175	30.8	46.2	128	10.4	15.5	152	09.5	02.0
22	128	41.9	192	01.1	53.0	190	31.3	45.8	143	12.3	15.3	167	11.7	01.9
23	143	44.3	207	01.5	52.9	205	31.8	45.5	158	14.2	15.1	182	13.9	01.8
24	158	46.8	222	01.8	−16 52.8	220	32.3	−21 45.2	173	16.1	−7 14.8	197	16.0	−16 01.8
Dif	—			+4	+1		+5	+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: 27ᵈ.8		PHE	4ʰ: 59′.2								
	PMG: 12ʰ 12ᵐ.3				SD: 16′.1			12ʰ: 59′.1								
					PMG: 11ʰ 16ᵐ			20ʰ: 58′.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	176	54.0	−7	40.7	197	07.0 73	−20	16.9 108	**60 N**	17 27	18 09	18 57	7 35	6	15 13	100
1	191	54.1		39.8	211	33.3 74	−20	06.1 109	**58**	31	10	56	22	11	24	97
2	206	54.2		38.8	225	59.7 75	−19	55.2 111	**56**	34	11	54	11	15	35	92
3	221	54.3		37.9	240	26.2 75		44.1 111	**54**	37	12	53	7 01	18	44	88
4	236	54.4		36.9	254	52.7 77		33.0 111	**52**	40	13	53	6 53	20	52	85
5	251	54.6	−7	36.0	269	19.4 78	−19	21.7 113	**50**	17 42	18 14	18 52	6 45	23	15 59	83
6	266	54.7	−7	35.0	283	46.2 79	−19	10.3 114	**45**	17 47	18 17	18 51	6 28	28	16 14	78
7	281	54.8		34.1	298	13.1 79	−18	58.8 115	**40**	52	19	50	14	33	27	73
8	296	54.9		33.1	312	40.0 81		47.2 116	**35**	56	21	50	6 02	36	38	69
9	311	55.0		32.2	327	07.1 82		35.5 117	**30**	17 59	23	51	5 52	39	16 47	66
10	326	55.2		31.2	341	34.3 83		23.7 118	**20**	18 05	27	53	34	44	17 03	60
11	341	55.3	−7	30.3	356	01.6 83	−18	11.8 119	**10 N**	18 10	18 32	18 56	5 18	49	17 17	55
12	356	55.4	−7	29.3	10	28.9 83	−17	59.8 120	**0**	18 16	18 36	19 01	5 03	54	17 29	51
13	11	55.5		28.4	24	56.4 85		47.7 121	**10 S**	21	42	07	4 49	57	42	47
14	26	55.6		27.4	39	24.0 86		35.5 122	**20**	27	49	15	33	62	17 55	43
15	41	55.8		26.5	53	51.6 86		23.2 123	**30**	33	18 58	26	15	67	18 11	36
16	56	55.9		25.5	68	19.4 88	−17	10.8 124	**35**	37	19 03	33	4 04	70	19	34
17	71	56.0	−7	24.6	82	47.3 89	−16	58.3 125	**40**	18 42	19 09	19 42	3 52	73	18 29	31
18	86	56.1	−7	23.6	97	15.2 89	−16	45.8 125	**45**	18 47	19 17	19 53	3 37	78	18 41	26
19	101	56.3		22.7	111	43.3 91		33.1 127	**50**	53	26	20 07	19	84	18 55	21
20	116	56.4		21.7	126	11.5 92		20.4 127	**52**	56	31	14	11	86	19 01	19
21	131	56.5		20.8	140	39.7 92	−16	07.5 129	**54**	18 59	36	21	3 01	90	09	15
22	146	56.6		19.8	155	08.1 94	−15	54.6 129	**56**	19 03	42	30	2 51	93	17	12
23	161	56.7		18.9	169	36.5 94		41.6 130	**58**	07	48	40	38	98	26	9
24	176	56.9	−7	17.9	184	05.1 96	−15	28.6 130	**60 S**	19 11	19 55	20 52	2 24	103	19 36	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.3			Mag: −2.0			Mag: +0.8		
	13ʰ 22ᵐ.7		PMG: 9ʰ 12ᵐ			PMG: 9ʰ 18ᵐ			PMG: 12ʰ 25ᵐ			PMG: 10ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	158	46.8	222	01.8	−16 52.8	220	32.3	−21 45.2	173	16.1	−7 14.8	197	16.0	−16 01.8
1	173	49.3	237	02.2	52.7	235	32.8	44.9	188	18.0	14.6	212	18.2	01.7
2	188	51.7	252	02.5	52.7	250	33.3	44.6	203	19.9	14.4	227	20.4	01.6
3	203	54.2	267	02.8	52.6	265	33.8	44.2	218	21.8	14.2	242	22.6	01.5
4	218	56.7	282	03.2	52.5	280	34.3	43.9	233	23.7	13.9	257	24.8	01.4
5	233	59.1	297	03.5	−16 52.4	295	34.8	−21 43.6	248	25.6	−7 13.7	272	26.9	−16 01.3
6	249	01.6	312	03.9	−16 52.3	310	35.3	−21 43.3	263	27.5	−7 13.5	287	29.1	−16 01.2
7	264	04.0	327	04.2	52.2	325	35.7	42.9	278	29.4	13.2	302	31.3	01.2
8	279	06.5	342	04.6	52.1	340	36.2	42.6	293	31.3	13.0	317	33.5	01.1
9	294	09.0	357	04.9	52.1	355	36.7	42.3	308	33.2	12.8	332	35.7	01.0
10	309	11.4	12	05.2	52.0	10	37.2	42.0	323	35.1	12.5	347	37.8	00.9
11	324	13.9	27	05.6	−16 51.9	25	37.7	−21 41.7	338	37.0	−7 12.3	2	40.0	−16 00.8
12	339	16.4	42	05.9	−16 51.8	40	38.2	−21 41.3	353	38.9	−7 12.1	17	42.2	−16 00.7
13	354	18.8	57	06.2	51.7	55	38.7	41.0	8	40.8	11.8	32	44.4	00.6
14	9	21.3	72	06.6	51.6	70	39.2	40.7	23	42.7	11.6	47	46.6	00.6
15	24	23.8	87	06.9	51.5	85	39.7	40.4	38	44.6	11.4	62	48.7	00.5
16	39	26.2	102	07.2	51.4	100	40.2	40.0	53	46.5	11.1	77	50.9	00.4
17	54	28.7	117	07.6	−16 51.3	115	40.7	−21 39.7	68	48.4	−7 10.9	92	53.1	−16 00.3
18	69	31.2	132	07.9	−16 51.3	130	41.1	−21 39.4	83	50.3	−7 10.7	107	55.3	−16 00.2
19	84	33.6	147	08.2	51.2	145	41.6	39.1	98	52.2	10.4	122	57.5	−16 00.1
20	99	36.1	162	08.5	51.1	160	42.1	38.7	113	54.1	10.2	137	59.6	−16 00.0
21	114	38.5	177	08.8	51.0	175	42.6	38.4	128	56.0	10.0	153	01.8	−16 00.0
22	129	41.0	192	09.2	50.9	190	43.1	38.1	143	57.9	09.8	168	04.0	−15 59.9
23	144	43.5	207	09.5	50.8	205	43.6	37.7	158	59.8	09.5	183	06.2	59.8
24	159	45.9	222	09.8	−16 50.7	220	44.1	−21 37.4	174	01.7	−7 09.3	198	08.4	−15 59.7
Dif	—			+3	+1		+5	+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: 28ᵈ8		PHE	4ʰ: 58′.8									
	PMG: 12ʰ 12ᵐ1				SD: 16′.0			12ʰ: 58′.6									
					PMG: 12ʰ 09ᵐ			20ʰ: 58′.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	56.9	−7	17.9	184	05.1	−15	28.6		**60 N**	5 26	6 14	6 56	7 41	4	16 53	96
1	191	57.0		16.9	198	33.7 96		15.4	132	**58**	28	13	52	33	8	17 01	91
2	206	57.1		16.0	213	02.4 97	−15	02.2	132	**56**	29	12	49	26	11	07	88
3	221	57.2		15.0	227	31.2 98	−14	48.9	133	**54**	30	11	46	19	14	12	85
4	236	57.4		14.1	242	00.2 100		35.5	134	**52**	31	10	44	13	17	17	83
5	251	57.5	−7	13.1	256	29.2 100	−14	22.1	134	**50**	5 32	6 09	6 41	7 08	19	17 22	80
6	266	57.6	−7	12.2	270	58.3 101	−14	08.5	136	**45**	5 33	6 07	6 36	6 56	24	17 32	74
7	281	57.7		11.2	285	27.5 102	−13	55.0	135	**40**	34	05	32	47	28	40	70
8	296	57.9		10.3	299	56.7 102		41.3	137	**35**	34	03	28	38	32	47	66
9	311	58.0		09.3	314	26.1 104		27.6	137	**30**	33	6 01	25	31	35	17 53	63
10	326	58.1		08.3	328	55.6 105	−13	13.8	138	**20**	31	5 57	19	18	40	18 03	57
11	341	58.2	−7	07.4	343	25.1 105	−13	00.0	138	**10 N**	5 28	5 53	6 14	6 07	45	18 12	52
12	356	58.4	−7	06.4	357	54.8 107	−12	46.1	139	**0**	5 24	5 48	6 09	5 57	49	18 20	48
13	11	58.5		05.5	12	24.5 107		32.2	139	**10 S**	18	42	6 04	46	54	29	43
14	26	58.6		04.5	26	54.3 108		18.2	140	**20**	5 10	36	5 58	35	58	38	38
15	41	58.7		03.6	41	24.2 109	−12	04.1	141	**30**	4 59	27	52	22	64	47	34
16	56	58.9		02.6	55	54.1 109	−11	50.0	141	**35**	52	22	48	14	68	18 53	30
17	71	59.0	−7	01.7	70	24.2 111	−11	35.8	142	**40**	4 43	5 16	5 43	5 05	72	19 00	26
18	86	59.1	−7	00.7	84	54.3 111	−11	21.6	142	**45**	4 32	5 08	5 38	4 55	76	19 07	22
19	101	59.2	−6	59.7	99	24.6 113	−11	07.4	142	**50**	18	4 59	32	43	81	16	17
20	116	59.4		58.8	113	54.9 113	−10	53.1	143	**52**	11	54	29	37	84	20	15
21	131	59.5		57.8	128	25.2 113		38.8	143	**54**	4 04	49	26	31	86	24	13
22	146	59.6		56.9	142	55.7 115		24.4	144	**56**	3 55	44	23	24	90	29	10
23	161	59.8		55.9	157	26.2 115	−10	09.9	145	**58**	45	37	19	16	93	35	7
24	176	59.9	−6	55.0	171	56.8 116	−9	55.5	144	**60 S**	3 33	4 30	5 15	4 07	97	19 41	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	13ʰ 18ᵐ8		PMG: 9ʰ 11ᵐ			PMG: 9ʰ 17ᵐ			PMG: 12ʰ 22ᵐ			PMG: 10ʰ 46ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	159	45.9	222	09.8	−16 50.7	220	44.1	−21 37.4	174	01.7	−7 09.3	198	08.4	−15 59.7
1	174	48.4	237	10.1	50.6	235	44.6	37.1	189	03.6	09.1	213	10.6	59.6
2	189	50.9	252	10.4	50.5	250	45.1	36.8	204	05.5	08.8	228	12.7	59.5
3	204	53.3	267	10.7	50.4	265	45.6	36.4	219	07.4	08.6	243	14.9	59.5
4	219	55.8	282	11.1	50.3	280	46.1	36.1	234	09.3	08.4	258	17.1	59.4
5	234	58.3	297	11.4	−16 50.2	295	46.6	−21 35.8	249	11.2	−7 08.1	273	19.3	−15 59.3
6	250	00.7	312	11.7	−16 50.1	310	47.1	−21 35.4	264	13.1	−7 07.9	288	21.5	−15 59.2
7	265	03.2	327	12.0	50.0	325	47.5	35.1	279	15.0	07.7	303	23.6	59.1
8	280	05.6	342	12.3	49.9	340	48.0	34.8	294	16.9	07.4	318	25.8	59.0
9	295	08.1	357	12.6	49.8	355	48.5	34.4	309	18.8	07.2	333	28.0	58.9
10	310	10.6	12	12.9	49.7	10	49.0	34.1	324	20.7	07.0	348	30.2	58.9
11	325	13.0	27	13.2	−16 49.6	25	49.5	−21 33.8	339	22.6	−7 06.7	3	32.4	−15 58.8
12	340	15.5	42	13.5	−16 49.5	40	50.0	−21 33.4	354	24.5	−7 06.5	18	34.5	−15 58.7
13	355	18.0	57	13.8	49.4	55	50.5	33.1	9	26.4	06.3	33	36.7	58.6
14	10	20.4	72	14.1	49.3	70	51.0	32.8	24	28.3	06.0	48	38.9	58.5
15	25	22.9	87	14.4	49.2	85	51.5	32.4	39	30.2	05.8	63	41.1	58.4
16	40	25.4	102	14.7	49.0	100	52.0	32.1	54	32.1	05.6	78	43.3	58.4
17	55	27.8	117	15.0	−16 48.9	115	52.5	−21 31.8	69	34.0	−7 05.3	93	45.5	−15 58.3
18	70	30.3	132	15.3	−16 48.8	130	53.0	−21 31.4	84	35.9	−7 05.1	108	47.6	−15 58.2
19	85	32.8	147	15.6	48.7	145	53.5	31.1	99	37.8	04.9	123	49.8	58.1
20	100	35.2	162	15.9	48.6	160	54.0	30.8	114	39.7	04.7	138	52.0	58.0
21	115	37.7	177	16.1	48.5	175	54.5	30.4	129	41.6	04.4	153	54.2	57.9
22	130	40.1	192	16.4	48.4	190	55.0	30.1	144	43.5	04.2	168	56.4	57.8
23	145	42.6	207	16.7	48.3	205	55.5	29.7	159	45.4	04.0	183	58.6	57.8
24	160	45.1	222	17.0	−16 48.2	220	55.9	−21 29.4	174	47.3	−7 03.7	199	00.7	−15 57.7
Dif	—			+3	+1		+5	+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}.8		PHE	4^{h}: 58′.2								
	PMG: 12^{h} 11^{m}.9		SD: 15′.9			12^{h}: 58′.0								
			PMG: 12^{h} 57^{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	176 59.9	−6 55.0	171 56.8		−9 55.5		**60 N**	17 32	18 14	19 02	7 45	3	18 29	91
1	192 00.0	54.0	186 27.5	117	41.0	145	**58**	35	15	19 00	41	5	32	88
2	207 00.1	53.0	200 58.3	118	26.4	146	**56**	38	16	18 59	37	8	35	84
3	222 00.3	52.1	215 29.1	118	−9 11.9	145	**54**	41	16	57	33	11	37	82
4	237 00.4	51.1	230 00.0	119	−8 57.3	146	**52**	43	17	56	30	14	40	78
5	252 00.5	−6 50.2	244 31.0	120	−8 42.6	147	**50**	17 45	18 18	18 55	7 27	16	18 42	76
6	267 00.7	−6 49.2	259 02.1	121	−8 28.0	146	**45**	17 50	18 19	18 53	7 20	21	18 46	71
7	282 00.8	48.2	273 33.2	121	−8 13.3	147	**40**	54	21	52	15	25	50	67
8	297 00.9	47.3	288 04.4	122	−7 58.6	147	**35**	17 57	23	52	10	28	53	63
9	312 01.1	46.3	302 35.6	122	43.8	148	**30**	18 00	24	52	7 06	31	18 56	60
10	327 01.2	45.4	317 07.0	124	29.0	148	**20**	06	28	53	6 58	38	19 00	55
11	342 01.3	−6 44.4	331 38.3	123	−7 14.3	147	**10 N**	18 11	18 32	18 56	6 52	42	19 04	50
12	357 01.4	−6 43.4	346 09.8	125	−6 59.4	149	**0**	18 15	18 36	19 00	6 46	46	19 08	46
13	12 01.6	42.5	0 41.3	125	44.6	148	**10 S**	20	41	06	40	51	12	41
14	27 01.7	41.5	15 12.9	126	29.8	148	**20**	25	47	13	33	56	16	36
15	42 01.8	40.6	29 44.5	126	−6 14.9	149	**30**	31	18 55	24	26	61	21	30
16	57 02.0	39.6	44 16.2	127	−6 00.0	149	**35**	35	19 00	31	22	64	23	28
17	72 02.1	−6 38.6	58 48.0	128	−5 45.1	149	**40**	18 39	19 06	19 39	6 17	68	19 26	24
18	87 02.2	−6 37.7	73 19.8	128	−5 30.2	149	**45**	18 43	19 13	19 49	6 11	73	19 29	21
19	102 02.4	36.7	87 51.7	129	15.3	149	**50**	49	22	20 02	04	78	33	16
20	117 02.5	35.8	102 23.6	129	−5 00.4	149	**52**	52	26	09	6 01	80	35	14
21	132 02.6	34.8	116 55.6	130	−4 45.4	150	**54**	54	31	16	5 57	83	37	11
22	147 02.8	33.8	131 27.7	131	30.5	149	**56**	18 58	36	24	54	85	39	9
23	162 02.9	32.9	145 59.8	131	15.5	150	**58**	19 01	42	34	49	89	42	5
24	177 03.0	−6 31.9	160 31.9	131	−4 00.6	149	**60 S**	19 05	19 49	20 45	5 44	93	19 44	3

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.7		Mag: +1.2		Mag: −2.0		Mag: +0.8	
	13^{h} 14^{m}.8	PMG: 9^{h} 11^{m}		PMG: 9^{h} 16^{m}		PMG: 12^{h} 19^{m}		PMG: 10^{h} 42^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	160 45.1	222 17.0	−16 48.2	220 55.9	−21 29.4	174 47.3	−7 03.7	199 00.7	−15 57.7
1	175 47.5	237 17.3	48.0	235 56.4	29.1	189 49.2	03.5	214 02.9	57.6
2	190 50.0	252 17.6	47.9	250 56.9	28.7	204 51.1	03.3	229 05.1	57.5
3	205 52.5	267 17.9	47.8	265 57.4	28.4	219 53.0	03.0	244 07.3	57.4
4	220 54.9	282 18.1	47.7	280 57.9	28.1	234 54.9	02.8	259 09.5	57.3
5	235 57.4	297 18.4	−16 47.6	295 58.4	−21 27.7	249 56.8	−7 02.6	274 11.6	−15 57.3
6	250 59.9	312 18.7	−16 47.5	310 58.9	−21 27.4	264 58.7	−7 02.3	289 13.8	−15 57.2
7	266 02.3	327 19.0	47.3	325 59.4	27.0	280 00.6	02.1	304 16.0	57.1
8	281 04.8	342 19.2	47.2	340 59.9	26.7	295 02.5	01.9	319 18.2	57.0
9	296 07.2	357 19.5	47.1	356 00.4	26.4	310 04.4	01.6	334 20.4	56.9
10	311 09.7	12 19.8	47.0	11 00.9	26.0	325 06.3	01.4	349 22.6	56.8
11	326 12.2	27 20.1	−16 46.9	26 01.4	−21 25.7	340 08.2	−7 01.2	4 24.7	−15 56.7
12	341 14.6	42 20.3	−16 46.7	41 01.9	−21 25.3	355 10.1	−7 00.9	19 26.9	−15 56.7
13	356 17.1	57 20.6	46.6	56 02.4	25.0	10 12.0	00.7	34 29.1	56.6
14	11 19.6	72 20.9	46.5	71 02.9	24.6	25 13.9	00.5	49 31.3	56.5
15	26 22.0	87 21.1	46.4	86 03.4	24.3	40 15.8	−7 00.2	64 33.5	56.4
16	41 24.5	102 21.4	46.2	101 03.9	24.0	55 17.7	−7 00.0	79 35.7	56.3
17	56 27.0	117 21.7	−16 46.1	116 04.4	−21 23.6	70 19.6	−6 59.8	94 37.8	−15 56.2
18	71 29.4	132 21.9	−16 46.0	131 04.9	−21 23.3	85 21.5	−6 59.5	109 40.0	−15 56.2
19	86 31.9	147 22.2	45.9	146 05.4	22.9	100 23.4	59.3	124 42.2	56.1
20	101 34.4	162 22.4	45.7	161 05.9	22.6	115 25.3	59.1	139 44.4	56.0
21	116 36.8	177 22.7	45.6	176 06.4	22.2	130 27.2	58.9	154 46.6	55.9
22	131 39.3	192 23.0	45.5	191 06.9	21.9	145 29.1	58.6	169 48.8	55.8
23	146 41.7	207 23.2	45.4	206 07.4	21.5	160 31.0	58.4	184 50.9	55.7
24	161 44.2	222 23.5	−16 45.2	221 07.9	−21 21.2	175 32.9	−6 58.2	199 53.1	−15 55.6
Dif	—	+3	+1	+5	+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: 1ᵈ.3		PHE	4ʰ: 57′.5									
	PMG: 12ʰ 11ᵐ.7				SD: 15′.7			12ʰ: 57′.3									
					PMG: 13ʰ 43ᵐ			20ʰ: 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	177	03.0	−6	31.9	160	31.9	−4	00.6		**60 N**	5 20	6 08	6 50	7 48	2	20 00	89
1	192	03.2		31.0	175	04.1 132	−3	45.6	150	**58**	22	08	47	46	6	20 00	85
2	207	03.3		30.0	189	36.3 132		30.7	149	**56**	24	07	44	45	9	19 59	82
3	222	03.4		29.0	204	08.6 133		15.7	150	**54**	25	06	42	44	11	59	79
4	237	03.6		28.1	218	41.0 134	−3	00.7	150	**52**	27	06	39	44	13	58	77
5	252	03.7	−6	27.1	233	13.4 134	−2	45.8	149	**50**	5 28	6 05	6 37	7 43	15	19 58	74
6	267	03.8	−6	26.1	247	45.8 134	−2	30.8	150	**45**	5 30	6 03	6 33	7 41	20	19 57	70
7	282	04.0		25.2	262	18.3 135		15.9	149	**40**	31	02	29	40	24	57	65
8	297	04.1		24.2	276	50.8 135	−2	00.9	150	**35**	31	6 00	26	38	28	56	62
9	312	04.2		23.2	291	23.4 136	−1	46.0	149	**30**	31	5 59	23	37	31	56	58
10	327	04.4		22.3	305	56.0 136		31.1	149	**20**	30	55	18	36	35	55	53
11	342	04.5	−6	21.3	320	28.6 136	−1	16.1	150	**10 N**	5 27	5 52	6 13	7 34	40	19 54	49
12	357	04.6	−6	20.4	335	01.3 137	−1	01.2	149	**0**	5 23	5 48	6 08	7 32	45	19 54	44
13	12	04.8		19.4	349	34.0 137	−0	46.3	149	**10 S**	18	43	6 04	31	49	53	40
14	27	04.9		18.4	4	06.8 138		31.4	149	**20**	11	37	5 59	29	54	52	36
15	42	05.1		17.5	18	39.6 138		16.6	148	**30**	5 00	29	53	27	59	51	31
16	57	05.2		16.5	33	12.4 138	−0	01.7	149	**35**	4 54	24	50	26	63	51	27
17	72	05.3	−6	15.5	47	45.2 138	+0	13.1	148	**40**	4 45	5 18	5 46	7 25	66	19 50	24
18	87	05.5	−6	14.6	62	18.1 139	+0	28.0	149	**45**	4 35	5 11	5 41	7 24	70	19 50	20
19	102	05.6		13.6	76	51.1 140		42.8	148	**50**	22	5 02	36	22	75	49	15
20	117	05.7		12.6	91	24.0 139	+0	57.5	147	**52**	16	4 58	33	21	78	49	13
21	132	05.9		11.7	105	57.0 140	+1	12.3	148	**54**	09	54	30	20	80	48	11
22	147	06.0		10.7	120	30.0 140		27.1	148	**56**	4 00	48	27	19	83	48	8
23	162	06.1		09.7	135	03.1 141		41.8	147	**58**	3 51	43	24	18	86	47	6
24	177	06.3	−6	08.8	149	36.1 140	+1	56.5	147	**60 S**	3 40	4 36	5 20	7 17	90	19 47	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	13ʰ 10ᵐ.9		PMG: 9ʰ 10ᵐ			PMG: 9ʰ 15ᵐ			PMG: 12ʰ 16ᵐ			PMG: 10ʰ 39ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	161	44.2	222	23.5	−16 45.2	221	07.9	−21 21.2	175	32.9	−6 58.2	199	53.1	−15 55.6
1	176	46.7	237	23.7	45.1	236	08.4	20.8	190	34.9	57.9	214	55.3	55.6
2	191	49.1	252	24.0	45.0	251	08.9	20.5	205	36.8	57.7	229	57.5	55.5
3	206	51.6	267	24.2	44.8	266	09.3	20.1	220	38.7	57.5	244	59.7	55.4
4	221	54.1	282	24.5	44.7	281	09.8	19.8	235	40.6	57.2	260	01.9	55.3
5	236	56.5	297	24.7	−16 44.6	296	10.3	−21 19.5	250	42.5	−6 57.0	275	04.0	−15 55.2
6	251	59.0	312	25.0	−16 44.4	311	10.8	−21 19.1	265	44.4	−6 56.8	290	06.2	−15 55.1
7	267	01.5	327	25.2	44.3	326	11.3	18.8	280	46.3	56.5	305	08.4	55.1
8	282	03.9	342	25.5	44.2	341	11.8	18.4	295	48.2	56.3	320	10.6	55.0
9	297	06.4	357	25.7	44.0	356	12.3	18.1	310	50.1	56.1	335	12.8	54.9
10	312	08.8	12	25.9	43.9	11	12.8	17.7	325	52.0	55.8	350	15.0	54.8
11	327	11.3	27	26.2	−16 43.7	26	13.3	−21 17.3	340	53.9	−6 55.6	5	17.1	−15 54.7
12	342	13.8	42	26.4	−16 43.6	41	13.8	−21 17.0	355	55.8	−6 55.4	20	19.3	−15 54.6
13	357	16.2	57	26.7	43.5	56	14.3	16.6	10	57.7	55.1	35	21.5	54.6
14	12	18.7	72	26.9	43.3	71	14.8	16.3	25	59.6	54.9	50	23.7	54.5
15	27	21.2	87	27.1	43.2	86	15.3	15.9	41	01.5	54.7	65	25.9	54.4
16	42	23.6	102	27.4	43.0	101	15.8	15.6	56	03.4	54.4	80	28.1	54.3
17	57	26.1	117	27.6	−16 42.9	116	16.3	−21 15.2	71	05.3	−6 54.2	95	30.3	−15 54.2
18	72	28.6	132	27.8	−16 42.8	131	16.8	−21 14.9	86	07.2	−6 54.0	110	32.4	−15 54.1
19	87	31.0	147	28.1	42.6	146	17.3	14.5	101	09.1	53.7	125	34.6	54.0
20	102	33.5	162	28.3	42.5	161	17.8	14.2	116	11.0	53.5	140	36.8	54.0
21	117	36.0	177	28.5	42.3	176	18.3	13.8	131	12.9	53.3	155	39.0	53.9
22	132	38.4	192	28.7	42.2	191	18.8	13.5	146	14.8	53.0	170	41.2	53.8
23	147	40.9	207	29.0	42.0	206	19.3	13.1	161	16.7	52.8	185	43.4	53.7
24	162	43.3	222	29.2	−16 41.9	221	19.8	−21 12.8	176	18.6	−6 52.6	200	45.5	−15 53.6
Dif	—			+2	+1		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 2ᵈ.3		PHE	4ʰ: 56′.8									
	PMG: 12ʰ 11ᵐ.5				SD: 15′.5			12ʰ: 56′.6									
					PMG: 14ʰ 27ᵐ			20ʰ: 56′.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	06.3	−6	08.8	149	36.1	+1	56.5		**60 N**	17 37	18 19	19 07	7 50	2	21 29	87
1	192	06.4		07.8	164	09.2 141	+2	11.2	147	**58**	40	19	05	52	5	25	83
2	207	06.6		06.8	178	42.3 141		25.8	146	**56**	42	20	03	54	8	21	81
3	222	06.7		05.9	193	15.5 142		40.4	146	**54**	45	20	01	55	11	18	78
4	237	06.8		04.9	207	48.6 141	+2	55.0	146	**52**	47	20	19 00	57	13	15	75
5	252	07.0	−6	04.0	222	21.8 142	+3	09.6	146	**50**	17 49	18 21	18 58	7 58	16	21 12	73
6	267	07.1	−6	03.0	236	55.0 142	+3	24.1	145	**45**	17 53	18 22	18 56	8 01	20	21 07	68
7	282	07.3		02.0	251	28.2 142		38.6	145	**40**	56	23	55	04	23	21 02	64
8	297	07.4		01.1	266	01.5 143	+3	53.1	145	**35**	17 59	24	54	06	27	20 58	61
9	312	07.5	−6	00.1	280	34.7 142	+4	07.5	144	**30**	18 02	26	53	08	30	54	58
10	327	07.7	−5	59.1	295	08.0 143		21.9	144	**20**	06	29	54	11	35	48	53
11	342	07.8	−5	58.2	309	41.3 143	+4	36.3	144	**10 N**	18 11	18 32	18 56	8 14	40	20 43	48
12	357	08.0	−5	57.2	324	14.6 143	+4	50.6	143	**0**	18 15	18 36	19 00	8 17	44	20 38	44
13	12	08.1		56.2	338	47.9 143	+5	04.9	143	**10 S**	19	40	05	20	48	33	40
14	27	08.2		55.2	353	21.2 143		19.2	143	**20**	24	46	12	23	53	28	35
15	42	08.4		54.3	7	54.5 143		33.4	142	**30**	29	53	21	26	58	22	30
16	57	08.5		53.3	22	27.9 144	+5	47.6	142	**35**	32	18 58	28	29	61	18	28
17	72	08.7	−5	52.3	37	01.2 143	+6	01.7	141	**40**	18 36	19 03	19 35	8 31	64	20 14	25
18	87	08.8	−5	51.4	51	34.6 144	+6	15.8	141	**45**	18 40	19 10	19 45	8 34	68	20 10	20
19	102	08.9		50.4	66	07.9 143		29.9	141	**50**	45	18	19 58	37	73	04	16
20	117	09.1		49.4	80	41.3 144		43.9	140	**52**	47	22	20 04	39	75	20 02	14
21	132	09.2		48.5	95	14.7 144	+6	57.9	140	**54**	50	26	10	40	79	19 59	12
22	147	09.4		47.5	109	48.1 144	+7	11.8	139	**56**	52	31	18	42	81	56	9
23	162	09.5		46.5	124	21.4 143		25.7	139	**58**	56	36	27	44	84	53	6
24	177	09.7	−5	45.6	138	54.8 144	+7	39.5	138	**60 S**	18 59	19 42	20 37	8 47	87	19 49	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	13ʰ 07ᵐ.0		PMG: 9ʰ 10ᵐ			PMG: 9ʰ 14ᵐ			PMG: 12ʰ 13ᵐ			PMG: 10ʰ 35ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	162	43.3	222	29.2	−16 41.9	221	19.8	−21 12.8	176	18.6	−6 52.6	200	45.5	−15 53.6
1	177	45.8	237	29.4	41.7	236	20.3	12.4	191	20.5	52.4	215	47.7	53.5
2	192	48.3	252	29.6	41.6	251	20.8	12.0	206	22.4	52.1	230	49.9	53.5
3	207	50.7	267	29.9	41.4	266	21.3	11.7	221	24.3	51.9	245	52.1	53.4
4	222	53.2	282	30.1	41.3	281	21.8	11.3	236	26.2	51.7	260	54.3	53.3
5	237	55.7	297	30.3	−16 41.1	296	22.3	−21 11.0	251	28.1	−6 51.4	275	56.5	−15 53.2
6	252	58.1	312	30.5	−16 41.0	311	22.8	−21 10.6	266	30.0	−6 51.2	290	58.7	−15 53.1
7	268	00.6	327	30.7	40.8	326	23.3	10.3	281	31.9	51.0	306	00.8	53.0
8	283	03.1	342	31.0	40.7	341	23.8	09.9	296	33.8	50.7	321	03.0	53.0
9	298	05.5	357	31.2	40.5	356	24.3	09.5	311	35.7	50.5	336	05.2	52.9
10	313	08.0	12	31.4	40.4	11	24.8	09.2	326	37.6	50.3	351	07.4	52.8
11	328	10.5	27	31.6	−16 40.2	26	25.3	−21 08.8	341	39.5	−6 50.0	6	09.6	−15 52.7
12	343	12.9	42	31.8	−16 40.0	41	25.8	−21 08.5	356	41.4	−6 49.8	21	11.8	−15 52.6
13	358	15.4	57	32.0	39.9	56	26.3	08.1	11	43.3	49.6	36	14.0	52.5
14	13	17.8	72	32.2	39.7	71	26.8	07.7	26	45.2	49.3	51	16.1	52.4
15	28	20.3	87	32.4	39.6	86	27.3	07.4	41	47.1	49.1	66	18.3	52.4
16	43	22.8	102	32.6	39.4	101	27.8	07.0	56	49.0	48.9	81	20.5	52.3
17	58	25.2	117	32.9	−16 39.2	116	28.3	−21 06.6	71	50.9	−6 48.6	96	22.7	−15 52.2
18	73	27.7	132	33.1	−16 39.1	131	28.9	−21 06.3	86	52.8	−6 48.4	111	24.9	−15 52.1
19	88	30.2	147	33.3	38.9	146	29.4	05.9	101	54.7	48.2	126	27.1	52.0
20	103	32.6	162	33.5	38.8	161	29.9	05.6	116	56.6	47.9	141	29.3	51.9
21	118	35.1	177	33.7	38.6	176	30.4	05.2	131	58.5	47.7	156	31.4	51.9
22	133	37.6	192	33.9	38.4	191	30.9	04.8	147	00.4	47.5	171	33.6	51.8
23	148	40.0	207	34.1	38.3	206	31.4	04.5	162	02.3	47.2	186	35.8	51.7
24	163	42.5	222	34.3	−16 38.1	221	31.9	−21 04.1	177	04.2	−6 47.0	201	38.0	−15 51.6
Dif	—			+2	+2		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 3ᵈ.3		PHE	4ʰ: 56′.1									
	PMG: 12ʰ 11ᵐ.2				SD: 15′.3			12ʰ: 55′.9									
					PMG: 15ʰ 11ᵐ			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	177	09.7	−5	45.6	138	54.8	+7	39.5		**60 N**	5 14	6 03	6 44	7 52	4	22 56	88
1	192	09.8		44.6	153	28.2 144	+7	53.3	138	**58**	17	02	41	7 57	7	48	84
2	207	09.9		43.6	168	01.6 144	+8	07.0	137	**56**	19	02	39	8 02	10	42	80
3	222	10.1		42.7	182	35.0 144		20.7	137	**54**	21	02	37	06	13	36	76
4	237	10.2		41.7	197	08.4 144		34.3	136	**52**	22	01	35	10	15	30	74
5	252	10.4	−5	40.7	211	41.7 143	+8	47.9	136	**50**	5 24	6 01	6 33	8 14	16	22 25	72
6	267	10.5	−5	39.7	226	15.1 144	+9	01.5	136	**45**	5 26	6 00	6 29	8 21	22	22 15	67
7	282	10.7		38.8	240	48.5 144		14.9	134	**40**	28	5 59	26	27	26	22 06	63
8	297	10.8		37.8	255	21.9 144		28.4	135	**35**	29	58	23	33	28	21 59	60
9	312	10.9		36.8	269	55.2 143		41.7	133	**30**	29	57	21	38	31	52	57
10	327	11.1		35.9	284	28.6 144	+9	55.1	134	**20**	28	54	16	46	36	41	52
11	342	11.2	−5	34.9	299	01.9 143	+10	08.3	132	**10 N**	5 26	5 51	6 12	8 54	40	21 31	49
12	357	11.4	−5	33.9	313	35.3 144	+10	21.5	132	**0**	5 23	5 47	6 08	9 01	44	21 22	45
13	12	11.5		33.0	328	08.6 143		34.7	132	**10 S**	18	43	6 04	08	48	13	41
14	27	11.7		32.0	342	41.9 143	+10	47.8	131	**20**	11	37	5 59	16	52	21 03	37
15	42	11.8		31.0	357	15.2 143	+11	00.8	130	**30**	5 02	30	54	24	58	20 52	32
16	57	12.0		30.0	11	48.5 143		13.8	130	**35**	4 56	26	51	30	60	46	29
17	72	12.1	−5	29.1	26	21.8 143	+11	26.7	129	**40**	4 48	5 20	5 48	9 35	64	20 39	26
18	87	12.3	−5	28.1	40	55.1 143	+11	39.5	128	**45**	4 38	5 14	5 44	9 42	68	20 30	23
19	102	12.4		27.1	55	28.3 142	+11	52.3	128	**50**	26	06	39	50	73	20	18
20	117	12.5		26.2	70	01.6 143	+12	05.0	127	**52**	20	5 02	37	54	75	16	16
21	132	12.7		25.2	84	34.8 142		17.7	127	**54**	13	4 58	34	9 59	77	11	13
22	147	12.8		24.2	99	08.0 142		30.3	126	**56**	4 06	53	31	10 03	80	20 05	11
23	162	13.0		23.2	113	41.2 142		42.8	125	**58**	3 57	48	28	08	84	19 59	7
24	177	13.1	−5	22.3	128	14.4 142	+12	55.3	125	**60 S**	3 46	4 41	5 25	10 14	88	19 52	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	13ʰ 03ᵐ.0		PMG: 9ʰ 10ᵐ			PMG: 9ʰ 14ᵐ			PMG: 12ʰ 10ᵐ			PMG: 10ʰ 32ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	163	42.5	222	34.3	−16 38.1	221	31.9	−21 04.1	177	04.2	−6 47.0	201	38.0	−15 51.6
1	178	44.9	237	34.5	37.9	236	32.4	03.7	192	06.1	46.8	216	40.2	51.5
2	193	47.4	252	34.7	37.8	251	32.9	03.4	207	08.0	46.5	231	42.4	51.4
3	208	49.9	267	34.9	37.6	266	33.4	03.0	222	09.9	46.3	246	44.6	51.4
4	223	52.3	282	35.0	37.4	281	33.9	02.6	237	11.8	46.1	261	46.8	51.3
5	238	54.8	297	35.2	−16 37.3	296	34.4	−21 02.3	252	13.7	−6 45.8	276	48.9	−15 51.2
6	253	57.3	312	35.4	−16 37.1	311	34.9	−21 01.9	267	15.6	−6 45.6	291	51.1	−15 51.1
7	268	59.7	327	35.6	36.9	326	35.4	01.5	282	17.5	45.4	306	53.3	51.0
8	284	02.2	342	35.8	36.7	341	35.9	01.2	297	19.4	45.1	321	55.5	50.9
9	299	04.7	357	36.0	36.6	356	36.4	00.8	312	21.3	44.9	336	57.7	50.9
10	314	07.1	12	36.2	36.4	11	36.9	00.4	327	23.2	44.7	351	59.9	50.8
11	329	09.6	27	36.4	−16 36.2	26	37.4	−21 00.1	342	25.1	−6 44.5	7	02.1	−15 50.7
12	344	12.1	42	36.6	−16 36.1	41	37.9	−20 59.7	357	27.0	−6 44.2	22	04.2	−15 50.6
13	359	14.5	57	36.7	35.9	56	38.4	59.3	12	28.9	44.0	37	06.4	50.5
14	14	17.0	72	36.9	35.7	71	38.9	59.0	27	30.9	43.8	52	08.6	50.4
15	29	19.4	87	37.1	35.5	86	39.4	58.6	42	32.8	43.5	67	10.8	50.4
16	44	21.9	102	37.3	35.3	101	39.9	58.2	57	34.7	43.3	82	13.0	50.3
17	59	24.4	117	37.5	−16 35.2	116	40.4	−20 57.8	72	36.6	−6 43.1	97	15.2	−15 50.2
18	74	26.8	132	37.6	−16 35.0	131	40.9	−20 57.5	87	38.5	−6 42.8	112	17.4	−15 50.1
19	89	29.3	147	37.8	34.8	146	41.4	57.1	102	40.4	42.6	127	19.6	50.0
20	104	31.8	162	38.0	34.6	161	41.9	56.7	117	42.3	42.4	142	21.7	49.9
21	119	34.2	177	38.2	34.4	176	42.5	56.4	132	44.2	42.1	157	23.9	49.9
22	134	36.7	192	38.3	34.3	191	43.0	56.0	147	46.1	41.9	172	26.1	49.8
23	149	39.2	207	38.5	34.1	206	43.5	55.6	162	48.0	41.7	187	28.3	49.7
24	164	41.6	222	38.7	−16 33.9	221	44.0	−20 55.2	177	49.9	−6 41.4	202	30.5	−15 49.6
Dif	—			+2	+2		+5	+4		+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 11m.0				Edad: 4d.3 SD: 15′.1 PMG: 15h 56m		PHE	4h: 55′.4 12h: 55′.3 20h: 55′.1 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	177	13.1	−5	22.3	128	14.4	+12	55.3	**60 N**	17 42	18 24	19 12	7 56	5	** **	**
1	192	13.3		21.3	142	47.5 141	+13	07.7 124	**58**	45	24	09	8 04	9	** **	**
2	207	13.4		20.3	157	20.6 141		20.0 123	**56**	47	24	07	12	12	** **	**
3	222	13.6		19.4	171	53.8 142		32.3 123	**54**	49	24	05	19	15	23 52	76
4	237	13.7		18.4	186	26.8 140		44.5 122	**52**	50	24	03	25	17	44	73
5	252	13.9	−5	17.4	200	59.9 141	+13	56.6 121	**50**	17 52	18 24	19 02	8 30	20	23 37	71
6	267	14.0	−5	16.4	215	33.0 141	+14	08.7 121	**45**	17 55	18 25	18 59	8 43	24	23 22	66
7	282	14.2		15.5	230	06.0 140		20.6 119	**40**	17 58	25	57	8 53	28	23 09	63
8	297	14.3		14.5	244	39.0 140		32.6 120	**35**	18 01	26	55	9 01	31	22 59	59
9	312	14.5		13.5	259	11.9 139		44.4 118	**30**	03	27	55	09	33	49	57
10	327	14.6		12.5	273	44.9 140	+14	56.2 118	**20**	07	29	55	22	38	33	53
11	342	14.8	−5	11.6	288	17.8 139	+15	07.9 117	**10 N**	18 11	18 32	18 56	9 34	42	22 20	49
12	357	14.9	−5	10.6	302	50.7 139	+15	19.5 116	**0**	18 14	18 35	18 59	9 45	45	22 07	46
13	12	15.1		09.6	317	23.6 139		31.0 115	**10 S**	18	39	19 04	9 56	49	21 54	42
14	27	15.2		08.6	331	56.4 138		42.5 115	**20**	22	44	10	10 08	53	40	39
15	42	15.4		07.7	346	29.2 138	+15	53.9 114	**30**	27	51	19	22	57	24	35
16	57	15.5		06.7	1	02.0 138	+16	05.2 113	**35**	29	18 55	25	30	60	15	33
17	72	15.7	−5	05.7	15	34.8 138	+16	16.4 112	**40**	18 32	19 00	19 32	10 39	63	21 05	30
18	87	15.8	−5	04.8	30	07.5 137	+16	27.6 112	**45**	18 36	19 06	19 41	10 50	66	20 53	26
19	102	16.0		03.8	44	40.2 137		38.6 110	**50**	40	13	53	11 03	71	38	22
20	117	16.1		02.8	59	12.8 136	+16	49.6 110	**52**	42	17	19 58	09	74	32	19
21	132	16.3		01.8	73	45.5 137	+17	00.6 110	**54**	45	21	20 05	16	76	24	17
22	147	16.4	−5	00.9	88	18.1 136		11.4 108	**56**	47	25	12	23	80	16	14
23	162	16.6	−4	59.9	102	50.6 135		22.1 107	**58**	50	30	20	32	83	20 06	11
24	177	16.7	−4	58.9	117	23.1 135	+17	32.8 107	**60 S**	18 53	19 36	20 30	11 42	88	19 56	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 12h 59m.1		Mag: −4.7 PMG: 9h 09m			Mag: +1.2 PMG: 9h 13m			Mag: −2.0 PMG: 12h 07m			Mag: +0.8 PMG: 10h 28m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	164	41.6	222	38.7	−16 33.9	221	44.0	−20 55.2	177	49.9	−6 41.4	202	30.5	−15 49.6
1	179	44.1	237	38.9	33.7	236	44.5	54.9	192	51.8	41.2	217	32.7	49.5
2	194	46.5	252	39.0	33.5	251	45.0	54.5	207	53.7	41.0	232	34.9	49.4
3	209	49.0	267	39.2	33.3	266	45.5	54.1	222	55.6	40.7	247	37.1	49.4
4	224	51.5	282	39.4	33.2	281	46.0	53.7	237	57.5	40.5	262	39.3	49.3
5	239	53.9	297	39.5	−16 33.0	296	46.5	−20 53.4	252	59.4	−6 40.3	277	41.4	−15 49.2
6	254	56.4	312	39.7	−16 32.8	311	47.0	−20 53.0	268	01.3	−6 40.0	292	43.6	−15 49.1
7	269	58.9	327	39.9	32.6	326	47.5	52.6	283	03.2	39.8	307	45.8	49.0
8	285	01.3	342	40.0	32.4	341	48.0	52.2	298	05.1	39.6	322	48.0	48.9
9	300	03.8	357	40.2	32.2	356	48.5	51.9	313	07.0	39.3	337	50.2	48.9
10	315	06.3	12	40.3	32.0	11	49.0	51.5	328	08.9	39.1	352	52.4	48.8
11	330	08.7	27	40.5	−16 31.8	26	49.5	−20 51.1	343	10.8	−6 38.9	7	54.6	−15 48.7
12	345	11.2	42	40.7	−16 31.6	41	50.0	−20 50.7	358	12.7	−6 38.6	22	56.8	−15 48.6
13	0	13.7	57	40.8	31.4	56	50.6	50.3	13	14.6	38.4	37	58.9	48.5
14	15	16.1	72	41.0	31.2	71	51.1	50.0	28	16.5	38.2	53	01.1	48.4
15	30	18.6	87	41.1	31.0	86	51.6	49.6	43	18.4	37.9	68	03.3	48.4
16	45	21.0	102	41.3	30.9	101	52.1	49.2	58	20.3	37.7	83	05.5	48.3
17	60	23.5	117	41.4	−16 30.7	116	52.6	−20 48.8	73	22.2	−6 37.5	98	07.7	−15 48.2
18	75	26.0	132	41.6	−16 30.5	131	53.1	−20 48.4	88	24.1	−6 37.2	113	09.9	−15 48.1
19	90	28.4	147	41.7	30.3	146	53.6	48.1	103	26.0	37.0	128	12.1	48.0
20	105	30.9	162	41.9	30.1	161	54.1	47.7	118	27.9	36.8	143	14.3	47.9
21	120	33.4	177	42.0	29.9	176	54.6	47.3	133	29.8	36.5	158	16.5	47.9
22	135	35.8	192	42.2	29.7	191	55.1	46.9	148	31.7	36.3	173	18.6	47.8
23	150	38.3	207	42.3	29.5	206	55.6	46.5	163	33.6	36.1	188	20.8	47.7
24	165	40.8	222	42.5	−16 29.3	221	56.1	−20 46.2	178	35.5	−6 35.8	203	23.0	−15 47.6
Dif	—			+2	+2		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 5ᵈ.3		PHE	4ʰ: 54′.9								
	PMG: 12ʰ 10ᵐ.8				SD: 15′.0			12ʰ: 54′.8								
					PMG: 16ʰ 41ᵐ			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	177	16.7	−4	58.9	117	23.1	+17	32.8	**60 N**	5 08	5 57	6 38	8 01	8	0 24	87
1	192	16.9		57.9	131	55.6 135		43.4 106	**58**	11	57	36	13	13	12	82
2	207	17.0		57.0	146	28.1 135	+17	53.9 105	**56**	14	57	34	24	17	0 02	78
3	222	17.2		56.0	161	00.5 134	+18	04.3 104	**54**	16	57	32	34	19	** **	**
4	237	17.3		55.0	175	32.9 134		14.6 103	**52**	18	57	30	42	23	** **	**
5	252	17.5	−4	54.0	190	05.3 134	+18	24.9 103	**50**	5 19	5 57	6 29	8 50	25	** **	**
6	267	17.6	−4	53.1	204	37.6 133	+18	35.0 101	**45**	5 22	5 56	6 26	9 07	28	** **	**
7	282	17.8		52.1	219	09.9 133		45.1 101	**40**	25	56	23	21	31	** **	**
8	297	17.9		51.1	233	42.1 132	+18	55.1 100	**35**	26	55	20	32	35	23 58	59
9	312	18.1		50.1	248	14.3 132	+19	05.0 99	**30**	27	54	18	9 42	37	46	57
10	327	18.2		49.2	262	46.5 132		14.8 98	**20**	27	52	14	10 00	41	26	53
11	342	18.4	−4	48.2	277	18.6 131	+19	24.5 97	**10 N**	5 25	5 50	6 11	10 16	44	23 09	50
12	357	18.5	−4	47.2	291	50.7 131	+19	34.1 96	**0**	5 23	5 47	6 07	10 30	47	22 53	47
13	12	18.7		46.2	306	22.8 131		43.7 96	**10 S**	18	43	04	10 45	50	36	46
14	27	18.8		45.2	320	54.8 130	+19	53.1 94	**20**	12	38	6 00	11 01	53	22 19	43
15	42	19.0		44.3	335	26.7 129	+20	02.4 93	**30**	5 03	32	5 56	19	57	21 59	39
16	57	19.2		43.3	349	58.7 130		11.7 93	**35**	4 57	27	53	30	59	48	37
17	72	19.3	−4	42.3	4	30.6 129	+20	20.9 92	**40**	4 50	5 23	5 50	11 42	62	21 35	34
18	87	19.5	−4	41.3	19	02.4 128	+20	29.9 90	**45**	4 41	5 17	5 46	11 56	65	21 19	32
19	102	19.6		40.4	33	34.2 128		38.9 90	**50**	30	09	42	12 14	70	21 00	28
20	117	19.8		39.4	48	06.0 128		47.8 89	**52**	24	06	40	23	71	20 51	26
21	132	19.9		38.4	62	37.7 127	+20	56.5 87	**54**	18	5 02	38	32	75	41	23
22	147	20.1		37.4	77	09.4 127	+21	05.2 87	**56**	11	4 57	36	43	77	30	20
23	162	20.2		36.5	91	41.1 127		13.8 86	**58**	4 02	52	33	12 55	82	17	16
24	177	20.4	−4	35.5	106	12.7 126	+21	22.3 85	**60 S**	3 53	4 47	5 30	13 10	87	20 02	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.7			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 55ᵐ.2		PMG: 9ʰ 09ᵐ			PMG: 9ʰ 12ᵐ			PMG: 12ʰ 04ᵐ			PMG: 10ʰ 25ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	165	40.8	222	42.5	−16 29.3	221	56.1	−20 46.2	178	35.5	−6 35.8	203	23.0	−15 47.6
1	180	43.2	237	42.6	29.1	236	56.7	45.8	193	37.4	35.6	218	25.2	47.5
2	195	45.7	252	42.8	28.8	251	57.2	45.4	208	39.3	35.4	233	27.4	47.4
3	210	48.2	267	42.9	28.6	266	57.7	45.0	223	41.2	35.1	248	29.6	47.4
4	225	50.6	282	43.1	28.4	281	58.2	44.6	238	43.1	34.9	263	31.8	47.3
5	240	53.1	297	43.2	−16 28.2	296	58.7	−20 44.2	253	45.0	−6 34.7	278	34.0	−15 47.2
6	255	55.5	312	43.3	−16 28.0	311	59.2	−20 43.9	268	46.9	−6 34.4	293	36.2	−15 47.1
7	270	58.0	327	43.5	27.8	326	59.7	43.5	283	48.8	34.2	308	38.4	47.0
8	286	00.5	342	43.6	27.6	342	00.2	43.1	298	50.7	34.0	323	40.5	46.9
9	301	02.9	357	43.8	27.4	357	00.7	42.7	313	52.6	33.7	338	42.7	46.9
10	316	05.4	12	43.9	27.2	12	01.2	42.3	328	54.5	33.5	353	44.9	46.8
11	331	07.9	27	44.0	−16 27.0	27	01.7	−20 41.9	343	56.4	−6 33.3	8	47.1	−15 46.7
12	346	10.3	42	44.2	−16 26.8	42	02.3	−20 41.5	358	58.3	−6 33.0	23	49.3	−15 46.6
13	1	12.8	57	44.3	26.6	57	02.8	41.2	14	00.2	32.8	38	51.5	46.5
14	16	15.3	72	44.4	26.3	72	03.3	40.8	29	02.2	32.6	53	53.7	46.4
15	31	17.7	87	44.6	26.1	87	03.8	40.4	44	04.1	32.3	68	55.9	46.4
16	46	20.2	102	44.7	25.9	102	04.3	40.0	59	06.0	32.1	83	58.1	46.3
17	61	22.6	117	44.8	−16 25.7	117	04.8	−20 39.6	74	07.9	−6 31.9	99	00.3	−15 46.2
18	76	25.1	132	45.0	−16 25.5	132	05.3	−20 39.2	89	09.8	−6 31.6	114	02.4	−15 46.1
19	91	27.6	147	45.1	25.3	147	05.8	38.8	104	11.7	31.4	129	04.6	46.0
20	106	30.0	162	45.2	25.1	162	06.3	38.4	119	13.6	31.2	144	06.8	46.0
21	121	32.5	177	45.3	24.8	177	06.9	38.0	134	15.5	31.0	159	09.0	45.9
22	136	35.0	192	45.5	24.6	192	07.4	37.7	149	17.4	30.7	174	11.2	45.8
23	151	37.4	207	45.6	24.4	207	07.9	37.3	164	19.3	30.5	189	13.4	45.7
24	166	39.9	222	45.7	−16 24.2	222	08.4	−20 36.9	179	21.2	−6 30.3	204	15.6	−15 45.6
Dif	—			+1	+2		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 6ᵈ.3		PHE	4ʰ: 54′.5									
	PMG: 12ʰ 10ᵐ.5				SD: 14′.9			12ʰ: 54′.4									
					PMG: 17ʰ 29ᵐ			20ʰ: 54′.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	177	20.4	−4	35.5	106	12.7	+21	22.3		**60 N**	17 47	18 29	19 17	8 09	15	1 51	85
1	192	20.5		34.5	120	44.2 125		30.7	84	**58**	49	28	14	26	20	34	80
2	207	20.7		33.5	135	15.7 125		39.0	83	**56**	51	28	11	41	24	20	76
3	222	20.9		32.5	149	47.2 125		47.2	82	**54**	52	28	09	8 53	27	1 08	72
4	237	21.0		31.6	164	18.7 125	+21	55.2	80	**52**	54	27	07	9 05	29	0 57	70
5	252	21.2	−4	30.6	178	50.0 123	+22	03.2	80	**50**	17 55	18 27	19 05	9 15	31	0 48	68
6	267	21.3	−4	29.6	193	21.4 124	+22	11.1	79	**45**	17 58	18 27	19 01	9 35	35	0 28	64
7	282	21.5		28.6	207	52.7 123		18.9	78	**40**	18 00	27	18 59	9 52	38	0 12	61
8	297	21.6		27.7	222	24.0 123		26.6	77	**35**	02	28	57	10 07	39	** **	**
9	312	21.8		26.7	236	55.2 122		34.1	75	**30**	04	28	56	19	42	** **	**
10	327	21.9		25.7	251	26.4 122		41.6	75	**20**	08	30	55	10 41	44	** **	**
11	342	22.1	−4	24.7	265	57.5 121	+22	49.0	74	**10 N**	18 11	18 32	18 56	11 00	46	23 59	51
12	357	22.3	−4	23.7	280	28.6 121	+22	56.2	72	**0**	18 14	18 35	18 59	11 17	49	23 40	50
13	12	22.4		22.8	294	59.7 121	+23	03.4	72	**10 S**	17	38	19 02	35	51	22	47
14	27	22.6		21.8	309	30.7 120		10.4	70	**20**	20	42	08	11 54	53	23 02	45
15	42	22.7		20.8	324	01.6 119		17.4	70	**30**	24	48	16	12 16	56	22 38	44
16	57	22.9		19.8	338	32.6 120		24.2	68	**35**	27	52	22	29	57	25	42
17	72	23.0	−4	18.8	353	03.5 119	+23	31.0	68	**40**	18 29	18 57	19 29	12 44	59	22 09	41
18	87	23.2	−4	17.9	7	34.3 118	+23	37.6	66	**45**	18 32	19 02	19 37	13 01	63	21 51	38
19	102	23.4		16.9	22	05.1 118		44.1	65	**50**	36	09	48	24	65	28	35
20	117	23.5		15.9	36	35.9 118		50.5	64	**52**	38	12	53	34	68	17	33
21	132	23.7		14.9	51	06.6 117	+23	56.8	63	**54**	40	16	19 59	13 47	69	21 04	31
22	147	23.8		13.9	65	37.3 117	+24	02.9	61	**56**	42	20	20 06	14 00	73	20 50	29
23	162	24.0		13.0	80	07.9 116		09.0	61	**58**	44	24	14	17	76	33	25
24	177	24.2	−4	12.0	94	38.5 116	+24	15.0	60	**60 S**	18 47	19 30	20 23	14 37	82	20 13	19

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 51ᵐ.2		PMG: 9ʰ 09ᵐ			PMG: 9ʰ 11ᵐ			PMG: 12ʰ 01ᵐ			PMG: 10ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	166	39.9	222	45.7	−16 24.2	222	08.4	−20 36.9	179	21.2	−6 30.3	204	15.6	−15 45.6
1	181	42.4	237	45.8	24.0	237	08.9	36.5	194	23.1	30.0	219	17.8	45.5
2	196	44.8	252	46.0	23.7	252	09.4	36.1	209	25.0	29.8	234	20.0	45.5
3	211	47.3	267	46.1	23.5	267	09.9	35.7	224	26.9	29.6	249	22.2	45.4
4	226	49.8	282	46.2	23.3	282	10.4	35.3	239	28.8	29.3	264	24.4	45.3
5	241	52.2	297	46.3	−16 23.1	297	10.9	−20 34.9	254	30.7	−6 29.1	279	26.5	−15 45.2
6	256	54.7	312	46.4	−16 22.8	312	11.5	−20 34.5	269	32.6	−6 28.9	294	28.7	−15 45.1
7	271	57.1	327	46.5	22.6	327	12.0	34.1	284	34.5	28.6	309	30.9	45.0
8	286	59.6	342	46.7	22.4	342	12.5	33.7	299	36.4	28.4	324	33.1	45.0
9	302	02.1	357	46.8	22.2	357	13.0	33.3	314	38.3	28.2	339	35.3	44.9
10	317	04.5	12	46.9	21.9	12	13.5	32.9	329	40.2	27.9	354	37.5	44.8
11	332	07.0	27	47.0	−16 21.7	27	14.0	−20 32.6	344	42.1	−6 27.7	9	39.7	−15 44.7
12	347	09.5	42	47.1	−16 21.5	42	14.5	−20 32.2	359	44.0	−6 27.5	24	41.9	−15 44.6
13	2	11.9	57	47.2	21.2	57	15.1	31.8	14	45.9	27.2	39	44.1	44.5
14	17	14.4	72	47.3	21.0	72	15.6	31.4	29	47.8	27.0	54	46.3	44.5
15	32	16.9	87	47.4	20.8	87	16.1	31.0	44	49.7	26.8	69	48.5	44.4
16	47	19.3	102	47.6	20.5	102	16.6	30.6	59	51.6	26.5	84	50.7	44.3
17	62	21.8	117	47.7	−16 20.3	117	17.1	−20 30.2	74	53.5	−6 26.3	99	52.8	−15 44.2
18	77	24.3	132	47.8	−16 20.1	132	17.6	−20 29.8	89	55.4	−6 26.1	114	55.0	−15 44.1
19	92	26.7	147	47.9	19.8	147	18.1	29.4	104	57.3	25.8	129	57.2	44.1
20	107	29.2	162	48.0	19.6	162	18.6	29.0	119	59.2	25.6	144	59.4	44.0
21	122	31.6	177	48.1	19.4	177	19.2	28.6	135	01.1	25.4	160	01.6	43.9
22	137	34.1	192	48.2	19.1	192	19.7	28.2	150	03.0	25.1	175	03.8	43.8
23	152	36.6	207	48.3	18.9	207	20.2	27.8	165	04.9	24.9	190	06.0	43.7
24	167	39.0	222	48.4	−16 18.6	222	20.7	−20 27.4	180	06.8	−6 24.7	205	08.2	−15 43.6
Dif	—			+1	+2		+5	+4		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 10m.3				LUNA Edad: 7d.3 SD: 14′.8 PMG: 18h 18m PHE 4h: 54′.3; 12h: 54′.3; 20h: 54′.2 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	177	24.2	−4	12.0	94	38.5	+24	15.0	**60 N**	5 02	5 51	6 32	8 24	27	3 16	76
1	192	24.3		11.0	109	09.0 115		20.8 58	**58**	06	51	30	8 46	32	2 54	71
2	207	24.5		10.0	123	39.6 116		26.5 57	**56**	09	52	29	9 05	35	36	67
3	222	24.6		09.1	138	10.0 114		32.1 56	**54**	11	52	27	20	37	20	66
4	237	24.8		08.1	152	40.5 115		37.7 56	**52**	13	52	26	34	38	2 07	64
5	252	25.0	−4	07.1	167	10.9 114	+24	43.0 53	**50**	5 15	5 53	6 25	9 46	40	1 56	62
6	267	25.1	−4	06.1	181	41.2 113	+24	48.3 53	**45**	5 19	5 53	6 22	10 10	42	1 32	59
7	282	25.3		05.1	196	11.5 113		53.5 52	**40**	21	53	20	30	44	1 13	57
8	297	25.4		04.2	210	41.8 113	+24	58.5 50	**35**	23	53	18	10 46	45	0 57	56
9	312	25.6		03.2	225	12.1 113	+25	03.4 49	**30**	24	52	16	11 01	46	43	55
10	327	25.8		02.2	239	42.3 112		08.2 48	**20**	25	51	13	25	48	0 19	53
11	342	25.9	−4	01.2	254	12.4 111	+25	12.9 47	**10 N**	5 24	5 49	6 10	11 46	49	**	**
12	357	26.1	−4	00.2	268	42.6 112	+25	17.5 46	**0**	5 22	5 46	6 07	12 06	50	**	**
13	12	26.2	−3	59.2	283	12.6 110		22.0 45	**10 S**	18	43	04	26	51	**	**
14	27	26.4		58.3	297	42.7 111		26.3 43	**20**	13	39	6 01	12 47	52	23 47	50
15	42	26.6		57.3	312	12.7 110		30.5 42	**30**	5 05	33	5 57	13 12	53	22	49
16	57	26.7		56.3	326	42.7 110		34.6 41	**35**	4 59	29	55	26	55	23 07	48
17	72	26.9	−3	55.3	341	12.7 110	+25	38.6 40	**40**	4 53	5 25	5 52	13 43	56	22 50	47
18	87	27.0	−3	54.3	355	42.6 109	+25	42.5 39	**45**	4 44	5 19	5 49	14 04	57	22 29	46
19	102	27.2		53.4	10	12.5 109		46.2 37	**50**	33	13	45	29	59	22 03	45
20	117	27.4		52.4	24	42.3 108		49.8 36	**52**	28	10	44	42	59	21 50	44
21	132	27.5		51.4	39	12.2 109		53.3 35	**54**	22	06	42	14 56	61	35	44
22	147	27.7		50.4	53	41.9 107		56.7 34	**56**	16	5 02	40	15 13	62	21 19	41
23	162	27.9		49.4	68	11.7 108	+25	59.9 32	**58**	4 08	4 57	38	33	65	20 58	40
24	177	28.0	−3	48.5	82	41.4 107	+26	03.1 32	**60 S**	3 59	4 52	5 35	15 59	68	20 32	37

UT	ARIES PMG 12h 47m.3		VENUS Mag: −4.6 PMG: 9h 09m			MARTE Mag: +1.2 PMG: 9h 10m			JÚPITER Mag: −2.0 PMG: 11h 58m			SATURNO Mag: +0.8 PMG: 10h 18m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	167	39.0	222	48.4	−16 18.6	222	20.7	−20 27.4	180	06.8	−6 24.7	205	08.2	−15 43.6
1	182	41.5	237	48.5	18.4	237	21.2	27.0	195	08.7	24.4	220	10.4	43.6
2	197	44.0	252	48.6	18.2	252	21.7	26.6	210	10.6	24.2	235	12.6	43.5
3	212	46.4	267	48.7	17.9	267	22.3	26.2	225	12.6	24.0	250	14.8	43.4
4	227	48.9	282	48.8	17.7	282	22.8	25.8	240	14.5	23.7	265	17.0	43.3
5	242	51.4	297	48.9	−16 17.4	297	23.3	−20 25.4	255	16.4	−6 23.5	280	19.2	−15 43.2
6	257	53.8	312	49.0	−16 17.2	312	23.8	−20 25.0	270	18.3	−6 23.3	295	21.3	−15 43.2
7	272	56.3	327	49.1	16.9	327	24.3	24.6	285	20.2	23.0	310	23.5	43.1
8	287	58.7	342	49.2	16.7	342	24.8	24.2	300	22.1	22.8	325	25.7	43.0
9	303	01.2	357	49.3	16.5	357	25.3	23.8	315	24.0	22.6	340	27.9	42.9
10	318	03.7	12	49.3	16.2	12	25.9	23.4	330	25.9	22.3	355	30.1	42.8
11	333	06.1	27	49.4	−16 16.0	27	26.4	−20 23.0	345	27.8	−6 22.1	10	32.3	−15 42.7
12	348	08.6	42	49.5	−16 15.7	42	26.9	−20 22.6	0	29.7	−6 21.9	25	34.5	−15 42.7
13	3	11.1	57	49.6	15.5	57	27.4	22.2	15	31.6	21.6	40	36.7	42.6
14	18	13.5	72	49.7	15.2	72	27.9	21.8	30	33.5	21.4	55	38.9	42.5
15	33	16.0	87	49.8	15.0	87	28.4	21.3	45	35.4	21.2	70	41.1	42.4
16	48	18.5	102	49.9	14.7	102	29.0	20.9	60	37.3	20.9	85	43.3	42.3
17	63	20.9	117	50.0	−16 14.5	117	29.5	−20 20.5	75	39.2	−6 20.7	100	45.5	−15 42.2
18	78	23.4	132	50.1	−16 14.2	132	30.0	−20 20.1	90	41.1	−6 20.5	115	47.7	−15 42.2
19	93	25.9	147	50.1	13.9	147	30.5	19.7	105	43.0	20.2	130	49.9	42.1
20	108	28.3	162	50.2	13.7	162	31.0	19.3	120	44.9	20.0	145	52.1	42.0
21	123	30.8	177	50.3	13.4	177	31.5	18.9	135	46.8	19.8	160	54.3	41.9
22	138	33.2	192	50.4	13.2	192	32.1	18.5	150	48.7	19.5	175	56.4	41.8
23	153	35.7	207	50.5	12.9	207	32.6	18.1	165	50.6	19.3	190	58.6	41.8
24	168	38.2	222	50.5	−16 12.7	222	33.1	−20 17.7	180	52.5	−6 19.1	206	00.8	−15 41.7
Dif	—			+1	+2		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 8ᵈ.3		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 10ᵐ.0				SD: 14′.8			12ʰ: 54′.3									
					PMG: 19ʰ 08ᵐ			20ʰ: 54′.3									
	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	28.0	−3	48.5	82	41.4	+26	03.1		**60 N**	17 52	18 34	19 22	8 51	48	4 32	57
1	192	28.2		47.5	97	11.1 107		06.1	30	**58**	54	33	19	9 18	50	4 05	56
2	207	28.3		46.5	111	40.8 107		08.9	28	**56**	55	32	15	40	49	3 43	56
3	222	28.5		45.5	126	10.5 107		11.7	28	**54**	56	31	13	9 57	50	26	55
4	237	28.7		44.5	140	40.1 106		14.3	26	**52**	57	31	10	10 12	51	3 11	55
5	252	28.8	−3	43.5	155	09.7 106	+26	16.8	25	**50**	17 58	18 31	19 08	10 26	50	2 58	54
6	267	29.0	−3	42.6	169	39.2 105	+26	19.2	24	**45**	18 01	18 30	19 04	10 52	51	2 31	54
7	282	29.2		41.6	184	08.8 106		21.5	23	**40**	02	30	19 01	11 14	51	2 10	54
8	297	29.3		40.6	198	38.3 105		23.6	21	**35**	04	29	18 59	31	51	1 53	53
9	312	29.5		39.6	213	07.8 105		25.6	20	**30**	06	30	57	11 47	51	38	52
10	327	29.7		38.6	227	37.2 104		27.5	19	**20**	08	30	56	12 13	51	1 12	52
11	342	29.8	−3	37.7	242	06.7 105	+26	29.3	18	**10 N**	18 11	18 32	18 56	12 35	51	0 50	52
12	357	30.0	−3	36.7	256	36.1 104	+26	30.9	16	**0**	18 13	18 34	18 58	12 56	51	0 30	50
13	12	30.1		35.7	271	05.5 104		32.4	15	**10 S**	16	37	19 01	13 17	51	0 09	50
14	27	30.3		34.7	285	34.9 104		33.8	14	**20**	19	41	06	13 39	51	** **	**
15	42	30.5		33.7	300	04.2 103		35.0	12	**30**	22	46	14	14 05	51	** **	**
16	57	30.6		32.7	314	33.6 104		36.1	11	**35**	24	49	19	21	50	23 55	54
17	72	30.8	−3	31.8	329	02.9 103	+26	37.1	10	**40**	18 26	18 53	19 25	14 39	50	23 37	54
18	87	31.0	−3	30.8	343	32.2 103	+26	38.0	9	**45**	18 29	18 58	19 33	15 01	50	23 15	55
19	102	31.1		29.8	358	01.5 103		38.7	7	**50**	32	19 04	43	28	50	22 48	55
20	117	31.3		28.8	12	30.8 103		39.3	6	**52**	33	07	48	41	50	34	56
21	132	31.5		27.8	27	00.0 102		39.8	5	**54**	35	11	19 54	15 57	49	19	56
22	147	31.6		26.8	41	29.3 103		40.2	4	**56**	37	14	20 00	16 15	49	22 00	58
23	162	31.8		25.9	55	58.5 102		40.4	2	**58**	39	19	07	16 38	47	21 38	58
24	177	32.0	−3	24.9	70	27.7 102	+26	40.5	1	**60 S**	18 41	19 23	20 16	17 07	46	21 09	60

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 43ᵐ.4		PMG: 9ʰ 09ᵐ			PMG: 9ʰ 09ᵐ			PMG: 11ʰ 55ᵐ			PMG: 10ʰ 14ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	168	38.2	222	50.5	−16 12.7	222	33.1	−20 17.7	180	52.5	−6 19.1	206	00.8	−15 41.7
1	183	40.6	237	50.6	12.4	237	33.6	17.3	195	54.4	18.8	221	03.0	41.6
2	198	43.1	252	50.7	12.1	252	34.1	16.9	210	56.3	18.6	236	05.2	41.5
3	213	45.6	267	50.8	11.9	267	34.6	16.5	225	58.2	18.4	251	07.4	41.4
4	228	48.0	282	50.9	11.6	282	35.2	16.1	241	00.1	18.1	266	09.6	41.3
5	243	50.5	297	50.9	−16 11.4	297	35.7	−20 15.6	256	02.0	−6 17.9	281	11.8	−15 41.3
6	258	53.0	312	51.0	−16 11.1	312	36.2	−20 15.2	271	03.9	−6 17.7	296	14.0	−15 41.2
7	273	55.4	327	51.1	10.8	327	36.7	14.8	286	05.8	17.4	311	16.2	41.1
8	288	57.9	342	51.1	10.6	342	37.2	14.4	301	07.7	17.2	326	18.4	41.0
9	304	00.4	357	51.2	10.3	357	37.8	14.0	316	09.6	17.0	341	20.6	40.9
10	319	02.8	12	51.3	10.0	12	38.3	13.6	331	11.6	16.7	356	22.8	40.9
11	334	05.3	27	51.4	−16 09.8	27	38.8	−20 13.2	346	13.5	−6 16.5	11	25.0	−15 40.8
12	349	07.7	42	51.4	−16 09.5	42	39.3	−20 12.8	1	15.4	−6 16.3	26	27.2	−15 40.7
13	4	10.2	57	51.5	09.2	57	39.8	12.4	16	17.3	16.0	41	29.4	40.6
14	19	12.7	72	51.6	09.0	72	40.4	11.9	31	19.2	15.8	56	31.6	40.5
15	34	15.1	87	51.6	08.7	87	40.9	11.5	46	21.1	15.6	71	33.8	40.5
16	49	17.6	102	51.7	08.4	102	41.4	11.1	61	23.0	15.3	86	35.9	40.4
17	64	20.1	117	51.8	−16 08.2	117	41.9	−20 10.7	76	24.9	−6 15.1	101	38.1	−15 40.3
18	79	22.5	132	51.8	−16 07.9	132	42.4	−20 10.3	91	26.8	−6 14.9	116	40.3	−15 40.2
19	94	25.0	147	51.9	07.6	147	43.0	09.9	106	28.7	14.7	131	42.5	40.1
20	109	27.5	162	52.0	07.3	162	43.5	09.5	121	30.6	14.4	146	44.7	40.0
21	124	29.9	177	52.0	07.1	177	44.0	09.0	136	32.5	14.2	161	46.9	40.0
22	139	32.4	192	52.1	06.8	192	44.5	08.6	151	34.4	14.0	176	49.1	39.9
23	154	34.9	207	52.1	06.5	207	45.0	08.2	166	36.3	13.7	191	51.3	39.8
24	169	37.3	222	52.2	−16 06.2	222	45.6	−20 07.8	181	38.2	−6 13.5	206	53.5	−15 39.7
Dif	—			+1	+3		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 9ᵈ.3		PHE	4ʰ: 54′.4									
	PMG: 12ʰ 09ᵐ.7				SD: 14′.8			12ʰ: 54′.4									
					PMG: 19ʰ 59ᵐ			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	32.0	−3	24.9	70	27.7	+26	40.5		**60 N**	4 56	5 45	6 26	9 39	71	5 29	35
1	192	32.1		23.9	84	57.0 103		40.5	0	**58**	5 00	46	25	10 08	67	5 01	39
2	207	32.3		22.9	99	26.2 102		40.3	2	**56**	03	47	23	29	65	4 39	41
3	222	32.5		21.9	113	55.4 102		40.0	3	**54**	06	47	22	10 47	63	21	43
4	237	32.6		20.9	128	24.5 101		39.6	4	**52**	09	48	21	11 03	61	4 06	43
5	252	32.8	−3	20.0	142	53.7 102	+26	39.0	6	**50**	5 11	5 48	6 20	11 16	60	3 52	45
6	267	33.0	−3	19.0	157	22.9 102	+26	38.3	7	**45**	5 15	5 49	6 18	11 43	59	3 25	46
7	282	33.1		18.0	171	52.0 101		37.5	8	**40**	18	50	17	12 05	57	3 04	47
8	297	33.3		17.0	186	21.2 102		36.6	9	**35**	20	50	15	22	56	2 46	48
9	312	33.5		16.0	200	50.4 102		35.5	11	**30**	22	50	14	12 38	55	30	49
10	327	33.6		15.0	215	19.5 101		34.3	12	**20**	24	49	11	13 04	53	2 04	50
11	342	33.8	−3	14.1	229	48.7 102	+26	33.0	13	**10 N**	5 23	5 48	6 09	13 26	52	1 42	50
12	357	34.0	−3	13.1	244	17.8 101	+26	31.5	15	**0**	5 22	5 46	6 06	13 47	51	1 20	52
13	12	34.1		12.1	258	47.0 102		29.9	16	**10 S**	19	43	04	14 08	49	0 59	52
14	27	34.3		11.1	273	16.1 101		28.2	17	**20**	14	39	6 01	30	48	37	52
15	42	34.5		10.1	287	45.3 102		26.4	18	**30**	06	34	5 58	14 56	47	0 11	53
16	57	34.6		09.1	302	14.4 101		24.4	20	**35**	5 01	31	56	15 11	46	** **	**
17	72	34.8	−3	08.1	316	43.6 102	+26	22.3	21	**40**	4 55	5 27	5 54	15 29	44	** **	**
18	87	35.0	−3	07.2	331	12.7 101	+26	20.0	23	**45**	4 47	5 22	5 52	15 51	42	** **	**
19	102	35.1		06.2	345	41.9 102		17.7	23	**50**	37	16	49	16 18	39	23 43	65
20	117	35.3		05.2	0	11.1 102		15.2	25	**52**	32	13	47	31	38	30	67
21	132	35.5		04.2	14	40.2 101		12.5	27	**54**	27	10	46	16 46	36	23 15	69
22	147	35.6		03.2	29	09.4 102		09.8	27	**56**	21	06	44	17 04	34	22 58	70
23	162	35.8		02.2	43	38.6 102		06.9	29	**58**	13	5 02	42	25	31	36	75
24	177	36.0	−3	01.3	58	07.8 102	+26	03.9	30	**60 S**	4 05	4 58	5 40	17 53	26	22 09	80

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 39ᵐ.4		PMG: 9ʰ 08ᵐ			PMG: 9ʰ 09ᵐ			PMG: 11ʰ 52ᵐ			PMG: 10ʰ 11ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	169	37.3	222	52.2	−16 06.2	222	45.6	−20 07.8	181	38.2	−6 13.5	206	53.5	−15 39.7
1	184	39.8	237	52.3	05.9	237	46.1	07.4	196	40.1	13.3	221	55.7	39.6
2	199	42.2	252	52.3	05.7	252	46.6	07.0	211	42.0	13.0	236	57.9	39.6
3	214	44.7	267	52.4	05.4	267	47.1	06.5	226	43.9	12.8	252	00.1	39.5
4	229	47.2	282	52.4	05.1	282	47.6	06.1	241	45.8	12.6	267	02.3	39.4
5	244	49.6	297	52.5	−16 04.8	297	48.2	−20 05.7	256	47.7	−6 12.3	282	04.5	−15 39.3
6	259	52.1	312	52.5	−16 04.5	312	48.7	−20 05.3	271	49.6	−6 12.1	297	06.7	−15 39.2
7	274	54.6	327	52.6	04.3	327	49.2	04.9	286	51.5	11.9	312	08.9	39.1
8	289	57.0	342	52.7	04.0	342	49.7	04.4	301	53.4	11.6	327	11.1	39.1
9	304	59.5	357	52.7	03.7	357	50.3	04.0	316	55.3	11.4	342	13.3	39.0
10	320	02.0	12	52.8	03.4	12	50.8	03.6	331	57.2	11.2	357	15.5	38.9
11	335	04.4	27	52.8	−16 03.1	27	51.3	−20 03.2	346	59.1	−6 10.9	12	17.7	−15 38.8
12	350	06.9	42	52.9	−16 02.8	42	51.8	−20 02.8	2	01.1	−6 10.7	27	19.9	−15 38.7
13	5	09.3	57	52.9	02.5	57	52.3	02.3	17	03.0	10.5	42	22.1	38.7
14	20	11.8	72	53.0	02.3	72	52.9	01.9	32	04.9	10.2	57	24.3	38.6
15	35	14.3	87	53.0	02.0	87	53.4	01.5	47	06.8	10.0	72	26.5	38.5
16	50	16.7	102	53.0	01.7	102	53.9	01.1	62	08.7	09.8	87	28.7	38.4
17	65	19.2	117	53.1	−16 01.4	117	54.4	−20 00.7	77	10.6	−6 09.5	102	30.9	−15 38.3
18	80	21.7	132	53.1	−16 01.1	132	55.0	−20 00.2	92	12.5	−6 09.3	117	33.0	−15 38.3
19	95	24.1	147	53.2	00.8	147	55.5	−19 59.8	107	14.4	09.1	132	35.2	38.2
20	110	26.6	162	53.2	00.5	162	56.0	59.4	122	16.3	08.8	147	37.4	38.1
21	125	29.1	177	53.3	−16 00.2	177	56.5	59.0	137	18.2	08.6	162	39.6	38.0
22	140	31.5	192	53.3	−15 59.9	192	57.0	58.5	152	20.1	08.4	177	41.8	37.9
23	155	34.0	207	53.4	59.6	207	57.6	58.1	167	22.0	08.1	192	44.0	37.9
24	170	36.5	222	53.4	−15 59.3	222	58.1	−19 57.7	182	23.9	−6 07.9	207	46.2	−15 37.8
Dif	—		0		+3		+5	+4		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 09m.5				LUNA Edad: 10d.3 SD: 14′.9 PMG: 20h 50m PHE 4h: 54′.7; 12h: 54′.8; 20h: 54′.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	177	36.0	−3	01.3	58	07.8	+26	03.9	**60 N**	17 57	18 39	19 28	10 50	85	6 04	20
1	192	36.2	−3	00.3	72	37.0 102	+26	00.7 32	**58**	58	37	23	11 15	79	5 40	25
2	207	36.3	−2	59.3	87	06.2 102	+25	57.5 32	**56**	17 59	36	20	34	76	20	29
3	222	36.5		58.3	101	35.5 103		54.1 34	**54**	18 00	35	17	11 50	73	5 04	31
4	237	36.7		57.3	116	04.7 102		50.5 36	**52**	01	34	14	12 04	70	4 49	34
5	252	36.8	−2	56.3	130	33.9 102	+25	46.9 36	**50**	18 02	18 34	19 11	12 16	69	4 37	35
6	267	37.0	−2	55.3	145	03.2 103	+25	43.1 38	**45**	18 03	18 32	19 07	12 42	64	4 11	39
7	282	37.2		54.4	159	32.5 103		39.2 39	**40**	05	32	03	13 02	62	3 51	41
8	297	37.3		53.4	174	01.8 103		35.1 41	**35**	06	31	19 00	18	60	34	42
9	312	37.5		52.4	188	31.1 103		30.9 42	**30**	07	31	18 59	33	58	3 19	44
10	327	37.7		51.4	203	00.4 103		26.6 43	**20**	09	31	57	13 57	55	2 54	46
11	342	37.9	−2	50.4	217	29.8 104	+25	22.2 44	**10 N**	18 11	18 32	18 56	14 18	53	2 32	49
12	357	38.0	−2	49.4	231	59.2 104	+25	17.7 45	**0**	18 13	18 33	18 57	14 38	50	2 12	50
13	12	38.2		48.4	246	28.5 103		13.0 47	**10 S**	15	36	19 00	14 57	48	1 51	53
14	27	38.4		47.5	260	57.9 104		08.2 48	**20**	17	39	05	15 18	46	29	55
15	42	38.5		46.5	275	27.4 105	+25	03.2 50	**30**	20	43	11	43	42	1 04	56
16	57	38.7		45.5	289	56.8 104	+24	58.2 50	**35**	21	46	16	15 57	40	0 49	58
17	72	38.9	−2	44.5	304	26.3 105	+24	53.0 52	**40**	18 23	18 50	19 22	16 13	38	0 31	60
18	87	39.0	−2	43.5	318	55.8 105	+24	47.7 53	**45**	18 25	18 54	19 29	16 33	35	0 10	62
19	102	39.2		42.5	333	25.3 105		42.3 54	**50**	28	19 00	39	16 57	31	** **	**
20	117	39.4		41.5	347	54.8 105		36.7 56	**52**	29	03	43	17 09	29	** **	**
21	132	39.6		40.6	2	24.4 106		31.0 57	**54**	30	06	48	22	27	** **	**
22	147	39.7		39.6	16	54.0 106		25.2 58	**56**	32	09	19 54	38	23	** **	**
23	162	39.9		38.6	31	23.6 106		19.3 59	**58**	33	13	20 01	17 56	20	23 51	83
24	177	40.1	−2	37.6	45	53.2 106	+24	13.3 60	**60 S**	18 35	19 17	20 09	18 19	13	23 29	89

UT	ARIES PMG 12h 35m.5		VENUS Mag: −4.6 PMG: 9h 08m				MARTE Mag: +1.2 PMG: 9h 08m				JÚPITER Mag: −2.0 PMG: 11h 49m				SATURNO Mag: +0.8 PMG: 10h 07m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	170	36.5	222	53.4	−15	59.3	222	58.1	−19	57.7	182	23.9	−6	07.9	207	46.2	−15	37.8
1	185	38.9	237	53.4		59.0	237	58.6		57.3	197	25.8		07.7	222	48.4		37.7
2	200	41.4	252	53.5		58.7	252	59.1		56.8	212	27.7		07.4	237	50.6		37.6
3	215	43.8	267	53.5		58.4	267	59.7		56.4	227	29.6		07.2	252	52.8		37.5
4	230	46.3	282	53.6		58.1	283	00.2		56.0	242	31.5		07.0	267	55.0		37.4
5	245	48.8	297	53.6	−15	57.8	298	00.7	−19	55.6	257	33.4	−6	06.7	282	57.2	−15	37.4
6	260	51.2	312	53.6	−15	57.5	313	01.2	−19	55.1	272	35.3	−6	06.5	297	59.4	−15	37.3
7	275	53.7	327	53.7		57.2	328	01.8		54.7	287	37.2		06.3	313	01.6		37.2
8	290	56.2	342	53.7		56.9	343	02.3		54.3	302	39.1		06.0	328	03.8		37.1
9	305	58.6	357	53.7		56.6	358	02.8		53.9	317	41.0		05.8	343	06.0		37.0
10	321	01.1	12	53.8		56.3	13	03.3		53.4	332	42.9		05.6	358	08.2		37.0
11	336	03.6	27	53.8	−15	56.0	28	03.9	−19	53.0	347	44.9	−6	05.3	13	10.4	−15	36.9
12	351	06.0	42	53.8	−15	55.7	43	04.4	−19	52.6	2	46.8	−6	05.1	28	12.6	−15	36.8
13	6	08.5	57	53.9		55.4	58	04.9		52.1	17	48.7		04.9	43	14.8		36.7
14	21	11.0	72	53.9		55.1	73	05.4		51.7	32	50.6		04.6	58	17.0		36.6
15	36	13.4	87	53.9		54.8	88	06.0		51.3	47	52.5		04.4	73	19.2		36.6
16	51	15.9	102	53.9		54.5	103	06.5		50.8	62	54.4		04.2	88	21.4		36.5
17	66	18.3	117	54.0	−15	54.2	118	07.0	−19	50.4	77	56.3	−6	03.9	103	23.6	−15	36.4
18	81	20.8	132	54.0	−15	53.9	133	07.6	−19	50.0	92	58.2	−6	03.7	118	25.8	−15	36.3
19	96	23.3	147	54.0		53.5	148	08.1		49.6	108	00.1		03.5	133	28.0		36.2
20	111	25.7	162	54.1		53.2	163	08.6		49.1	123	02.0		03.2	148	30.2		36.2
21	126	28.2	177	54.1		52.9	178	09.1		48.7	138	03.9		03.0	163	32.4		36.1
22	141	30.7	192	54.1		52.6	193	09.7		48.3	153	05.8		02.8	178	34.6		36.0
23	156	33.1	207	54.1		52.3	208	10.2		47.8	168	07.7		02.5	193	36.8		35.9
24	171	35.6	222	54.1	−15	52.0	223	10.7	−19	47.4	183	09.6	−6	02.3	208	39.0	−15	35.8
Dif	—		0			+3		+5		+4		+19		+2		+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 11^{d}.3		PHE	4^{h}: 55′.1									
	PMG: 12^{h} 09^{m}.2				SD: 15′.0			12^{h}: 55′.2									
					PMG: 21^{h} 40^{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	177	40.1	−2	37.6	45	53.2	+24	13.3		**60 N**	4 50	5 39	6 20	12 15	91	6 24	10
1	192	40.3		36.6	60	22.9 ^{107}		07.1	62	**58**	54	40	19	34	85	6 05	15
2	207	40.4		35.6	74	52.6 ^{107}	+24	00.8	63	**56**	4 58	41	18	12 50	81	5 49	19
3	222	40.6		34.6	89	22.3 ^{107}	+23	54.4	64	**54**	5 01	42	17	13 03	78	35	23
4	237	40.8		33.7	103	52.0 ^{107}		47.8	66	**52**	04	43	17	14	76	23	25
5	252	40.9	−2	32.7	118	21.8 ^{108}	+23	41.2	66	**50**	5 06	5 44	6 16	13 25	73	5 12	28
6	267	41.1	−2	31.7	132	51.6 ^{108}	+23	34.4	68	**45**	5 11	5 45	6 15	13 46	69	4 50	32
7	282	41.3		30.7	147	21.4 ^{108}		27.5	69	**40**	15	46	13	14 04	64	32	35
8	297	41.5		29.7	161	51.3 ^{109}		20.5	70	**35**	18	47	12	18	62	16	38
9	312	41.6		28.7	176	21.2 ^{109}		13.4	71	**30**	20	47	11	31	59	4 03	40
10	327	41.8		27.7	190	51.1 ^{109}	+23	06.1	73	**20**	22	47	09	14 52	56	3 40	44
11	342	42.0	−2	26.8	205	21.1 ^{110}	+22	58.7	74	**10 N**	5 22	5 47	6 08	15 11	52	3 21	46
12	357	42.2	−2	25.8	219	51.1 ^{110}	+22	51.3	74	**0**	5 21	5 45	6 06	15 28	49	3 02	50
13	12	42.3		24.8	234	21.1 ^{110}		43.7	76	**10 S**	19	43	04	15 45	46	2 44	52
14	27	42.5		23.8	248	51.1 ^{110}		35.9	78	**20**	14	40	02	16 04	42	24	55
15	42	42.7		22.8	263	21.2 ^{111}		28.1	78	**30**	08	36	6 00	25	38	2 00	59
16	57	42.8		21.8	277	51.3 ^{111}		20.2	79	**35**	5 03	33	5 58	37	36	1 47	61
17	72	43.0	−2	20.8	292	21.5 ^{112}	+22	12.1	81	**40**	4 57	5 29	5 56	16 51	33	1 31	63
18	87	43.2	−2	19.8	306	51.6 ^{111}	+22	03.9	82	**45**	4 50	5 25	5 54	17 08	29	1 12	67
19	102	43.4		18.9	321	21.9 ^{113}	+21	55.6	83	**50**	41	19	52	28	25	0 48	71
20	117	43.5		17.9	335	52.1 ^{112}		47.2	84	**52**	36	17	51	38	22	37	73
21	132	43.7		16.9	350	22.4 ^{113}		38.7	85	**54**	31	14	50	17 49	20	24	76
22	147	43.9		15.9	4	52.7 ^{113}		30.1	86	**56**	25	11	48	18 01	17	0 09	79
23	162	44.1		14.9	19	23.0 ^{113}		21.3	88	**58**	19	07	47	16	12	** **	**
24	177	44.2	−2	13.9	33	53.4 ^{114}	+21	12.5	88	**60 S**	4 11	5 03	5 45	18 32	8	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12^{h} 31^{m}.6		PMG: 9^{h} 08^{m}			PMG: 9^{h} 07^{m}			PMG: 11^{h} 46^{m}			PMG: 10^{h} 04^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	171	35.6	222	54.1	−15 52.0	223	10.7	−19 47.4	183	09.6	−6 02.3	208	39.0	−15 35.8
1	186	38.1	237	54.2	51.7	238	11.2	47.0	198	11.5	02.1	223	41.2	35.8
2	201	40.5	252	54.2	51.3	253	11.8	46.5	213	13.4	01.8	238	43.4	35.7
3	216	43.0	267	54.2	51.0	268	12.3	46.1	228	15.3	01.6	253	45.6	35.6
4	231	45.5	282	54.2	50.7	283	12.8	45.7	243	17.2	01.4	268	47.8	35.5
5	246	47.9	297	54.3	−15 50.4	298	13.4	−19 45.2	258	19.1	−6 01.2	283	50.0	−15 35.4
6	261	50.4	312	54.3	−15 50.1	313	13.9	−19 44.8	273	21.0	−6 00.9	298	52.2	−15 35.4
7	276	52.8	327	54.3	49.7	328	14.4	44.4	288	23.0	00.7	313	54.4	35.3
8	291	55.3	342	54.3	49.4	343	14.9	43.9	303	24.9	00.5	328	56.6	35.2
9	306	57.8	357	54.3	49.1	358	15.5	43.5	318	26.8	−6 00.2	343	58.8	35.1
10	322	00.2	12	54.3	48.8	13	16.0	43.0	333	28.7	−6 00.0	359	01.0	35.0
11	337	02.7	27	54.4	−15 48.5	28	16.5	−19 42.6	348	30.6	−5 59.8	14	03.2	−15 35.0
12	352	05.2	42	54.4	−15 48.1	43	17.0	−19 42.2	3	32.5	−5 59.5	29	05.4	−15 34.9
13	7	07.6	57	54.4	47.8	58	17.6	41.7	18	34.4	59.3	44	07.6	34.8
14	22	10.1	72	54.4	47.5	73	18.1	41.3	33	36.3	59.1	59	09.8	34.7
15	37	12.6	87	54.4	47.1	88	18.6	40.9	48	38.2	58.8	74	12.0	34.6
16	52	15.0	102	54.4	46.8	103	19.2	40.4	63	40.1	58.6	89	14.2	34.6
17	67	17.5	117	54.4	−15 46.5	118	19.7	−19 40.0	78	42.0	−5 58.4	104	16.4	−15 34.5
18	82	19.9	132	54.4	−15 46.2	133	20.2	−19 39.5	93	43.9	−5 58.1	119	18.6	−15 34.4
19	97	22.4	147	54.4	45.8	148	20.8	39.1	108	45.8	57.9	134	20.8	34.3
20	112	24.9	162	54.5	45.5	163	21.3	38.7	123	47.7	57.7	149	23.0	34.2
21	127	27.3	177	54.5	45.2	178	21.8	38.2	138	49.6	57.4	164	25.2	34.2
22	142	29.8	192	54.5	44.8	193	22.3	37.8	153	51.5	57.2	179	27.4	34.1
23	157	32.3	207	54.5	44.5	208	22.9	37.3	168	53.4	57.0	194	29.6	34.0
24	172	34.7	222	54.5	−15 44.2	223	23.4	−19 36.9	183	55.3	−5 56.7	209	31.8	−15 33.9
Dif	—		0		+3		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 12^{d}.3		PHE	4^{h}: 55′.6								
	PMG: 12^{h} 08^{m}.9				SD: 15′.1			12^{h}: 55′.8								
					PMG: 22^{h} 28^{m}			20^{h}: 56′.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	44.2	−2	13.9	33	53.4	+21	12.5	**60 N**	18 02	18 44	19 33	13 46	92	6 34	7
1	192	44.4		12.9	48	23.8 114	+21	03.5 90	**58**	03	42	28	13 59	88	20	11
2	207	44.6		12.0	62	54.3 115	+20	54.5 90	**56**	03	40	24	14 11	84	6 08	14
3	222	44.8		11.0	77	24.8 115		45.3 92	**54**	04	39	21	21	81	5 58	17
4	237	44.9		10.0	91	55.3 115		36.0 93	**52**	04	38	17	30	78	48	20
5	252	45.1	−2	09.0	106	25.9 116	+20	26.6 94	**50**	18 05	18 37	19 15	14 38	75	5 40	22
6	267	45.3	−2	08.0	120	56.4 115	+20	17.1 95	**45**	18 06	18 35	19 09	14 55	70	5 22	26
7	282	45.5		07.0	135	27.1 117	+20	07.5 96	**40**	07	34	05	15 08	67	5 07	30
8	297	45.6		06.0	149	57.7 116	+19	57.8 97	**35**	07	33	02	20	63	4 54	34
9	312	45.8		05.0	164	28.4 117		48.0 98	**30**	08	32	19 00	30	60	43	36
10	327	46.0		04.1	178	59.1 117		38.1 99	**20**	10	32	18 57	15 48	55	24	41
11	342	46.2	−2	03.1	193	29.9 118	+19	28.1 100	**10 N**	18 11	18 32	18 56	16 03	51	4 07	45
12	357	46.3	−2	02.1	208	00.7 118	+19	18.0 101	**0**	18 12	18 33	18 57	16 17	47	3 52	48
13	12	46.5		01.1	222	31.5 118	+19	07.7 103	**10 S**	14	35	18 59	31	43	36	51
14	27	46.7	−2	00.1	237	02.4 119	+18	57.4 103	**20**	15	37	19 03	16 46	39	3 19	55
15	42	46.9	−1	59.1	251	33.3 119		47.0 104	**30**	17	41	09	17 03	34	2 59	60
16	57	47.1		58.1	266	04.3 120		36.5 105	**35**	18	44	13	13	31	48	62
17	72	47.2	−1	57.1	280	35.2 119	+18	25.9 106	**40**	18 20	18 47	19 19	17 24	28	2 34	66
18	87	47.4	−1	56.2	295	06.2 120	+18	15.1 108	**45**	18 21	18 51	19 25	17 37	25	2 19	69
19	102	47.6		55.2	309	37.3 121	+18	04.3 108	**50**	23	56	34	17 53	20	1 59	75
20	117	47.8		54.2	324	08.3 120	+17	53.4 109	**52**	24	18 58	38	18 00	18	50	77
21	132	47.9		53.2	338	39.4 121		42.4 110	**54**	25	19 01	43	09	15	40	79
22	147	48.1		52.2	353	10.6 122		31.3 111	**56**	26	04	48	18	12	28	83
23	162	48.3		51.2	7	41.8 122		20.1 112	**58**	27	07	19 55	28	9	1 14	87
24	177	48.5	−1	50.2	22	13.0 122	+17	08.9 112	**60 S**	18 29	19 11	20 02	18 40	5	0 58	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12^{h} 27^{m}.6		PMG: 9^{h} 08^{m}			PMG: 9^{h} 06^{m}			PMG: 11^{h} 43^{m}			PMG: 10^{h} 00^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	172	34.7	222	54.5	−15 44.2	223	23.4	−19 36.9	183	55.3	−5 56.7	209	31.8	−15 33.9
1	187	37.2	237	54.5	43.8	238	23.9	36.5	198	57.2	56.5	224	34.0	33.8
2	202	39.7	252	54.5	43.5	253	24.5	36.0	213	59.2	56.3	239	36.2	33.8
3	217	42.1	267	54.5	43.1	268	25.0	35.6	229	01.1	56.0	254	38.4	33.7
4	232	44.6	282	54.5	42.8	283	25.5	35.1	244	03.0	55.8	269	40.6	33.6
5	247	47.1	297	54.5	−15 42.5	298	26.1	−19 34.7	259	04.9	−5 55.6	284	42.8	−15 33.5
6	262	49.5	312	54.5	−15 42.1	313	26.6	−19 34.2	274	06.8	−5 55.3	299	45.0	−15 33.4
7	277	52.0	327	54.5	41.8	328	27.1	33.8	289	08.7	55.1	314	47.2	33.4
8	292	54.4	342	54.5	41.4	343	27.7	33.4	304	10.6	54.9	329	49.4	33.3
9	307	56.9	357	54.5	41.1	358	28.2	32.9	319	12.5	54.6	344	51.6	33.2
10	322	59.4	12	54.5	40.8	13	28.7	32.5	334	14.4	54.4	359	53.8	33.1
11	338	01.8	27	54.5	−15 40.4	28	29.2	−19 32.0	349	16.3	−5 54.2	14	56.0	−15 33.0
12	353	04.3	42	54.5	−15 40.1	43	29.8	−19 31.6	4	18.2	−5 53.9	29	58.2	−15 33.0
13	8	06.8	57	54.5	39.7	58	30.3	31.1	19	20.1	53.7	45	00.4	32.9
14	23	09.2	72	54.5	39.4	73	30.8	30.7	34	22.0	53.5	60	02.6	32.8
15	38	11.7	87	54.5	39.0	88	31.4	30.2	49	23.9	53.2	75	04.8	32.7
16	53	14.2	102	54.5	38.7	103	31.9	29.8	64	25.8	53.0	90	07.0	32.6
17	68	16.6	117	54.5	−15 38.3	118	32.4	−19 29.3	79	27.7	−5 52.8	105	09.2	−15 32.6
18	83	19.1	132	54.5	−15 38.0	133	33.0	−19 28.9	94	29.6	−5 52.5	120	11.4	−15 32.5
19	98	21.6	147	54.5	37.6	148	33.5	28.5	109	31.6	52.3	135	13.6	32.4
20	113	24.0	162	54.5	37.3	163	34.0	28.0	124	33.5	52.1	150	15.8	32.3
21	128	26.5	177	54.5	36.9	178	34.6	27.6	139	35.4	51.8	165	18.0	32.2
22	143	28.9	192	54.4	36.6	193	35.1	27.1	154	37.3	51.6	180	20.2	32.2
23	158	31.4	207	54.4	36.2	208	35.6	26.7	169	39.2	51.4	195	22.4	32.1
24	173	33.9	222	54.4	−15 35.9	223	36.2	−19 26.2	184	41.1	−5 51.1	210	24.6	−15 32.0
Dif	—			0	+3		+5	+4		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 13ᵈ.3		PHE	4ʰ: 56′.2								
	PMG: 12ʰ 08ᵐ.6				SD: 15′.3			12ʰ: 56′.4								
					PMG: 23ʰ 15ᵐ			20ʰ: 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	177	48.5	−1	50.2	22	13.0	+17	08.9	**60 N**	4 44	5 33	6 14	15 18	92	6 41	4
1	192	48.6		49.2	36	44.2 122	+16	57.5 114	**58**	48	35	14	27	88	31	8
2	207	48.8		48.3	51	15.5 123		46.0 115	**56**	52	36	13	35	84	22	11
3	222	49.0		47.3	65	46.8 123		34.5 115	**54**	56	37	13	42	81	15	13
4	237	49.2		46.3	80	18.1 123		22.8 117	**52**	4 59	39	12	48	78	08	16
5	252	49.4	−1	45.3	94	49.5 124	+16	11.1 117	**50**	5 02	5 40	6 12	15 53	77	6 02	18
6	267	49.5	−1	44.3	109	20.8 123	+15	59.3 118	**45**	5 08	5 42	6 11	16 05	71	5 48	24
7	282	49.7		43.3	123	52.3 125		47.4 119	**40**	12	43	10	15	67	37	27
8	297	49.9		42.3	138	23.7 124		35.4 120	**35**	15	44	09	23	64	28	30
9	312	50.1		41.3	152	55.2 125		23.3 121	**30**	17	45	09	30	61	19	34
10	327	50.2		40.4	167	26.7 125	+15	11.1 122	**20**	20	46	08	43	55	5 05	38
11	342	50.4	−1	39.4	181	58.3 126	+14	58.9 122	**10 N**	5 21	5 46	6 07	16 54	50	4 52	42
12	357	50.6	−1	38.4	196	29.8 125	+14	46.6 123	**0**	5 21	5 45	6 05	17 04	46	4 40	46
13	12	50.8		37.4	211	01.4 126		34.2 124	**10 S**	19	43	04	14	42	27	51
14	27	51.0		36.4	225	33.0 126		21.7 125	**20**	15	41	03	25	38	4 14	55
15	42	51.1		35.4	240	04.7 127	+14	09.1 126	**30**	09	37	01	37	33	3 59	60
16	57	51.3		34.4	254	36.4 127	+13	56.5 126	**35**	05	34	6 00	44	30	50	64
17	72	51.5	−1	33.4	269	08.1 127	+13	43.8 127	**40**	5 00	5 31	5 59	17 52	26	3 40	67
18	87	51.7	−1	32.4	283	39.8 127	+13	31.0 128	**45**	4 53	5 28	5 57	18 02	22	3 28	71
19	102	51.9		31.5	298	11.6 128		18.1 129	**50**	44	23	55	13	17	14	76
20	117	52.0		30.5	312	43.3 127	+13	05.1 130	**52**	40	20	54	18	15	3 07	78
21	132	52.2		29.5	327	15.1 128	+12	52.1 130	**54**	35	18	53	24	12	2 59	81
22	147	52.4		28.5	341	46.9 128		39.0 131	**56**	30	15	52	30	10	51	84
23	162	52.6		27.5	356	18.8 129		25.9 131	**58**	24	12	51	37	7	41	88
24	177	52.7	−1	26.5	10	50.7 129	+12	12.6 133	**60 S**	4 17	5 08	5 50	18 45	3	2 30	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.6			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 23ᵐ.7		PMG: 9ʰ 08ᵐ			PMG: 9ʰ 05ᵐ			PMG: 11ʰ 40ᵐ			PMG: 9ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	173	33.9	222	54.4	−15 35.9	223	36.2	−19 26.2	184	41.1	−5 51.1	210	24.6	−15 32.0
1	188	36.3	237	54.4	35.5	238	36.7	25.8	199	43.0	50.9	225	26.9	31.9
2	203	38.8	252	54.4	35.2	253	37.2	25.3	214	44.9	50.7	240	29.1	31.8
3	218	41.3	267	54.4	34.8	268	37.8	24.9	229	46.8	50.5	255	31.3	31.8
4	233	43.7	282	54.4	34.4	283	38.3	24.4	244	48.7	50.2	270	33.5	31.7
5	248	46.2	297	54.4	−15 34.1	298	38.8	−19 24.0	259	50.6	−5 50.0	285	35.7	−15 31.6
6	263	48.7	312	54.4	−15 33.7	313	39.4	−19 23.5	274	52.5	−5 49.8	300	37.9	−15 31.5
7	278	51.1	327	54.3	33.4	328	39.9	23.1	289	54.4	49.5	315	40.1	31.4
8	293	53.6	342	54.3	33.0	343	40.4	22.6	304	56.3	49.3	330	42.3	31.4
9	308	56.0	357	54.3	32.6	358	41.0	22.2	319	58.2	49.1	345	44.5	31.3
10	323	58.5	12	54.3	32.3	13	41.5	21.7	335	00.1	48.8	0	46.7	31.2
11	339	01.0	27	54.3	−15 31.9	28	42.1	−19 21.2	350	02.1	−5 48.6	15	48.9	−15 31.1
12	354	03.4	42	54.3	−15 31.6	43	42.6	−19 20.8	5	04.0	−5 48.4	30	51.1	−15 31.1
13	9	05.9	57	54.2	31.2	58	43.1	20.3	20	05.9	48.1	45	53.3	31.0
14	24	08.4	72	54.2	30.8	73	43.7	19.9	35	07.8	47.9	60	55.5	30.9
15	39	10.8	87	54.2	30.5	88	44.2	19.4	50	09.7	47.7	75	57.7	30.8
16	54	13.3	102	54.2	30.1	103	44.7	19.0	65	11.6	47.4	90	59.9	30.7
17	69	15.8	117	54.2	−15 29.7	118	45.3	−19 18.5	80	13.5	−5 47.2	106	02.1	−15 30.7
18	84	18.2	132	54.1	−15 29.4	133	45.8	−19 18.1	95	15.4	−5 47.0	121	04.3	−15 30.6
19	99	20.7	147	54.1	29.0	148	46.3	17.6	110	17.3	46.7	136	06.5	30.5
20	114	23.2	162	54.1	28.6	163	46.9	17.2	125	19.2	46.5	151	08.7	30.4
21	129	25.6	177	54.1	28.2	178	47.4	16.7	140	21.1	46.3	166	10.9	30.3
22	144	28.1	192	54.1	27.9	193	48.0	16.2	155	23.0	46.0	181	13.1	30.3
23	159	30.5	207	54.0	27.5	208	48.5	15.8	170	24.9	45.8	196	15.3	30.2
24	174	33.0	222	54.0	−15 27.1	223	49.0	−19 15.3	185	26.8	−5 45.6	211	17.5	−15 30.1
Dif	—			0	+4		+5	+5		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 08m.3		LUNA Edad: 14d.3 SD: 15′.5 PMG: **h **m		PHE: 4h: 56′.9; 12h: 57′.1; 20h: 57′.3 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	177 52.7	−1 26.5	10 50.7		+12 12.6		**60 N**	18 07	18 49	19 38	16 50	93	6 45	2
1	192 52.9	25.5	25 22.5	128	+11 59.3	133	**58**	07	46	33	55	89	39	6
2	207 53.1	24.5	39 54.5	130	45.9	134	**56**	07	45	28	16 59	86	33	9
3	222 53.3	23.6	54 26.4	129	32.5	134	**54**	08	43	25	17 03	82	28	12
4	237 53.5	22.6	68 58.3	129	19.0	135	**52**	08	41	21	06	80	24	14
5	252 53.6	−1 21.6	83 30.3	130	+11 05.4	136	**50**	18 08	18 40	19 18	17 10	77	6 20	17
6	267 53.8	−1 20.6	98 02.3	130	+10 51.8	136	**45**	18 08	18 38	19 12	17 16	72	6 12	21
7	282 54.0	19.6	112 34.3	130	38.1	137	**40**	09	36	07	22	68	6 04	26
8	297 54.2	18.6	127 06.3	130	24.3	138	**35**	09	34	04	27	64	5 58	29
9	312 54.4	17.6	141 38.3	130	+10 10.5	138	**30**	09	33	19 01	31	61	53	31
10	327 54.5	16.6	156 10.4	131	+9 56.6	139	**20**	10	32	18 58	38	55	43	37
11	342 54.7	−1 15.7	170 42.4	130	+9 42.6	140	**10 N**	18 11	18 32	18 56	17 44	51	5 34	42
12	357 54.9	−1 14.7	185 14.5	131	+9 28.6	140	**0**	18 12	18 32	18 56	17 50	46	5 26	46
13	12 55.1	13.7	199 46.6	131	14.6	140	**10 S**	12	33	18 58	17 56	42	18	51
14	27 55.3	12.7	214 18.7	131	+9 00.4	142	**20**	13	35	19 01	18 03	36	5 09	56
15	42 55.5	11.7	228 50.8	131	+8 46.3	141	**30**	15	39	07	10	31	4 59	61
16	57 55.6	10.7	243 22.9	131	32.0	143	**35**	16	41	10	14	28	54	63
17	72 55.8	−1 09.7	257 55.0	131	+8 17.8	142	**40**	18 16	18 43	19 15	18 18	25	4 47	67
18	87 56.0	−1 08.7	272 27.2	132	+8 03.4	144	**45**	18 18	18 47	19 21	18 24	21	4 39	72
19	102 56.2	07.7	286 59.3	131	+7 49.0	144	**50**	19	51	29	30	16	30	76
20	117 56.4	06.8	301 31.5	132	34.6	144	**52**	20	53	33	33	14	25	79
21	132 56.5	05.8	316 03.6	131	20.1	145	**54**	20	56	38	36	12	20	82
22	147 56.7	04.8	330 35.8	132	+7 05.6	145	**56**	21	18 58	43	40	9	15	85
23	162 56.9	03.8	345 08.0	132	+6 51.0	146	**58**	22	19 01	48	44	5	09	88
24	177 57.1	−1 02.8	359 40.1	131	+6 36.4	146	**60 S**	18 23	19 05	19 55	18 48	3	4 02	92

UT	ARIES PMG 12h 19m.8	VENUS Mag: −4.6 PMG: 9h 08m		MARTE Mag: +1.2 PMG: 9h 04m		JÚPITER Mag: −2.0 PMG: 11h 37m		SATURNO Mag: +0.8 PMG: 9h 53m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	174 33.0	222 54.0	−15 27.1	223 49.0	−19 15.3	185 26.8	−5 45.6	211 17.5	−15 30.1
1	189 35.5	237 54.0	26.7	238 49.6	14.9	200 28.7	45.3	226 19.7	30.0
2	204 37.9	252 54.0	26.4	253 50.1	14.4	215 30.7	45.1	241 21.9	29.9
3	219 40.4	267 53.9	26.0	268 50.6	14.0	230 32.6	44.9	256 24.2	29.9
4	234 42.9	282 53.9	25.6	283 51.2	13.5	245 34.5	44.6	271 26.4	29.8
5	249 45.3	297 53.9	−15 25.2	298 51.7	−19 13.0	260 36.4	−5 44.4	286 28.6	−15 29.7
6	264 47.8	312 53.8	−15 24.9	313 52.2	−19 12.6	275 38.3	−5 44.2	301 30.8	−15 29.6
7	279 50.3	327 53.8	24.5	328 52.8	12.1	290 40.2	43.9	316 33.0	29.6
8	294 52.7	342 53.8	24.1	343 53.3	11.7	305 42.1	43.7	331 35.2	29.5
9	309 55.2	357 53.8	23.7	358 53.9	11.2	320 44.0	43.5	346 37.4	29.4
10	324 57.6	12 53.7	23.3	13 54.4	10.7	335 45.9	43.2	1 39.6	29.3
11	340 00.1	27 53.7	−15 23.0	28 54.9	−19 10.3	350 47.8	−5 43.0	16 41.8	−15 29.2
12	355 02.6	42 53.7	−15 22.6	43 55.5	−19 09.8	5 49.7	−5 42.8	31 44.0	−15 29.2
13	10 05.0	57 53.6	22.2	58 56.0	09.4	20 51.6	42.6	46 46.2	29.1
14	25 07.5	72 53.6	21.8	73 56.6	08.9	35 53.5	42.3	61 48.4	29.0
15	40 10.0	87 53.6	21.4	88 57.1	08.4	50 55.4	42.1	76 50.6	28.9
16	55 12.4	102 53.5	21.0	103 57.6	08.0	65 57.4	41.9	91 52.8	28.8
17	70 14.9	117 53.5	−15 20.6	118 58.2	−19 07.5	80 59.3	−5 41.6	106 55.0	−15 28.8
18	85 17.4	132 53.5	−15 20.3	133 58.7	−19 07.0	96 01.2	−5 41.4	121 57.2	−15 28.7
19	100 19.8	147 53.4	19.9	148 59.3	06.6	111 03.1	41.2	136 59.4	28.6
20	115 22.3	162 53.4	19.5	163 59.8	06.1	126 05.0	40.9	152 01.7	28.5
21	130 24.8	177 53.3	19.1	179 00.3	05.7	141 06.9	40.7	167 03.9	28.5
22	145 27.2	192 53.3	18.7	194 00.9	05.2	156 08.8	40.5	182 06.1	28.4
23	160 29.7	207 53.3	18.3	209 01.4	04.7	171 10.7	40.2	197 08.3	28.3
24	175 32.1	222 53.2	−15 17.9	224 02.0	−19 04.3	186 12.6	−5 40.0	212 10.5	−15 28.2
Dif	—	0	+4	+5	+5	+19	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 15ᵈ.3		PHE	4ʰ: 57′.5									
	PMG: 12ʰ 08ᵐ.0				SD: 15′.6			12ʰ: 57′.7									
					PMG: 0ʰ 01ᵐ			20ʰ: 57′.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	177	57.1	−1	02.8	359	40.1	+6	36.4		**60 N**	4 37	5 27	6 08	18 23	93	6 47	3
1	192	57.3		01.8	14	12.3 132		21.7	147	**58**	42	29	08	24	90	45	5
2	207	57.4	−1	00.8	28	44.5 132	+6	07.0	147	**56**	47	31	08	25	86	42	9
3	222	57.6	−0	59.8	43	16.7 132	+5	52.3	147	**54**	51	32	08	25	84	40	11
4	237	57.8		58.8	57	48.8 131		37.5	148	**52**	54	34	08	26	81	38	14
5	252	58.0	−0	57.9	72	21.0 132	+5	22.6	149	**50**	4 57	5 35	6 07	18 27	79	6 37	15
6	267	58.2	−0	56.9	86	53.2 132	+5	07.8	148	**45**	5 04	5 38	6 07	18 28	74	6 33	20
7	282	58.4		55.9	101	25.4 132	+4	52.9	149	**40**	08	40	07	30	69	30	24
8	297	58.5		54.9	115	57.5 131		37.9	150	**35**	12	41	07	31	65	27	28
9	312	58.7		53.9	130	29.7 132		22.9	150	**30**	15	43	06	32	62	24	32
10	327	58.9		52.9	145	01.9 132	+4	07.9	150	**20**	18	44	06	33	57	20	37
11	342	59.1	−0	51.9	159	34.0 131	+3	52.9	150	**10 N**	5 20	5 44	6 05	18 35	51	6 16	42
12	357	59.3	−0	50.9	174	06.2 132	+3	37.8	151	**0**	5 20	5 44	6 05	18 36	47	6 12	46
13	12	59.4		50.0	188	38.3 131		22.7	151	**10 S**	19	43	04	38	42	09	50
14	27	59.6		49.0	203	10.4 131	+3	07.6	151	**20**	16	41	03	39	38	05	55
15	42	59.8		48.0	217	42.6 132	+2	52.4	152	**30**	10	38	02	41	32	6 00	61
16	58	00.0		47.0	232	14.7 131		37.2	152	**35**	07	36	01	42	29	5 57	65
17	73	00.2	−0	46.0	246	46.8 131	+2	22.0	152	**40**	5 02	5 34	6 01	18 43	25	5 54	69
18	88	00.4	−0	45.0	261	18.9 131	+2	06.8	152	**45**	4 56	5 30	6 00	18 45	20	5 51	72
19	103	00.5		44.0	275	50.9 130	+1	51.5	153	**50**	48	26	5 58	46	16	46	78
20	118	00.7		43.0	290	23.0 131		36.3	152	**52**	44	24	58	47	14	44	81
21	133	00.9		42.0	304	55.0 130		21.0	153	**54**	40	22	57	48	11	42	83
22	148	01.1		41.1	319	27.0 130	+1	05.6	154	**56**	35	19	57	49	8	40	86
23	163	01.3		40.1	333	59.0 130	+0	50.3	153	**58**	29	16	56	49	6	37	89
24	178	01.5	−0	39.1	348	31.0 130	+0	35.0	153	**60 S**	4 22	5 13	5 55	18 51	2	5 34	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.2			Mag: −2.0			Mag: +0.8		
	12ʰ 15ᵐ.8		PMG: 9ʰ 08ᵐ			PMG: 9ʰ 04ᵐ			PMG: 11ʰ 34ᵐ			PMG: 9ʰ 50ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	175	32.1	222	53.2	−15 17.9	224	02.0	−19 04.3	186	12.6	−5 40.0	212	10.5	−15 28.2
1	190	34.6	237	53.2	17.5	239	02.5	03.8	201	14.5	39.8	227	12.7	28.1
2	205	37.1	252	53.1	17.1	254	03.0	03.3	216	16.4	39.5	242	14.9	28.1
3	220	39.5	267	53.1	16.7	269	03.6	02.9	231	18.3	39.3	257	17.1	28.0
4	235	42.0	282	53.1	16.3	284	04.1	02.4	246	20.2	39.1	272	19.3	27.9
5	250	44.5	297	53.0	−15 15.9	299	04.7	−19 01.9	261	22.2	−5 38.8	287	21.5	−15 27.8
6	265	46.9	312	53.0	−15 15.5	314	05.2	−19 01.5	276	24.1	−5 38.6	302	23.7	−15 27.8
7	280	49.4	327	52.9	15.1	329	05.7	01.0	291	26.0	38.4	317	25.9	27.7
8	295	51.9	342	52.9	14.7	344	06.3	00.5	306	27.9	38.1	332	28.1	27.6
9	310	54.3	357	52.9	14.3	359	06.8	−19 00.1	321	29.8	37.9	347	30.3	27.5
10	325	56.8	12	52.8	13.9	14	07.4	−18 59.6	336	31.7	37.7	2	32.5	27.4
11	340	59.2	27	52.8	−15 13.5	29	07.9	−18 59.1	351	33.6	−5 37.4	17	34.8	−15 27.4
12	356	01.7	42	52.7	−15 13.1	44	08.4	−18 58.7	6	35.5	−5 37.2	32	37.0	−15 27.3
13	11	04.2	57	52.7	12.7	59	09.0	58.2	21	37.4	37.0	47	39.2	27.2
14	26	06.6	72	52.6	12.3	74	09.5	57.7	36	39.3	36.7	62	41.4	27.1
15	41	09.1	87	52.6	11.9	89	10.1	57.2	51	41.2	36.5	77	43.6	27.0
16	56	11.6	102	52.5	11.5	104	10.6	56.8	66	43.1	36.3	92	45.8	27.0
17	71	14.0	117	52.5	−15 11.1	119	11.2	−18 56.3	81	45.0	−5 36.0	107	48.0	−15 26.9
18	86	16.5	132	52.4	−15 10.7	134	11.7	−18 55.8	96	47.0	−5 35.8	122	50.2	−15 26.8
19	101	19.0	147	52.4	10.3	149	12.2	55.4	111	48.9	35.6	137	52.4	26.7
20	116	21.4	162	52.3	09.9	164	12.8	54.9	126	50.8	35.4	152	54.6	26.7
21	131	23.9	177	52.3	09.5	179	13.3	54.4	141	52.7	35.1	167	56.8	26.6
22	146	26.4	192	52.2	09.0	194	13.9	53.9	156	54.6	34.9	182	59.0	26.5
23	161	28.8	207	52.2	08.6	209	14.4	53.5	171	56.5	34.7	198	01.3	26.4
24	176	31.3	222	52.1	−15 08.2	224	15.0	−18 53.0	186	58.4	−5 34.4	213	03.5	−15 26.3
Dif	—			0	+4		+5	+5		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 07m.8		LUNA Edad: 16d.3 SD: 15′.8 PMG: 0h 47m PHE 4h: 58′.1; 12h: 58′.2; 20h: 58′.4 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 01.5	−0 39.1	348 31.0		+0 35.0		**60 N**	18 12	18 54	19 43	19 56	97	6 50	2
1	193 01.6	38.1	3 03.0	130	19.6	154	**58**	12	51	38	54	93	50	6
2	208 01.8	37.1	17 34.9	129	+0 04.2	154	**56**	12	49	33	51	90	51	9
3	223 02.0	36.1	32 06.9	130	−0 11.2	154	**54**	11	47	29	49	86	51	12
4	238 02.2	35.1	46 38.7	128	26.6	154	**52**	11	45	25	47	84	52	14
5	253 02.4	−0 34.1	61 10.6	129	−0 42.0	154	**50**	18 11	18 43	19 21	19 46	80	6 52	17
6	268 02.6	−0 33.2	75 42.5	129	−0 57.4	154	**45**	18 11	18 40	19 15	19 42	75	6 53	22
7	283 02.7	32.2	90 14.3	128	−1 12.8	154	**40**	11	38	09	39	71	54	26
8	298 02.9	31.2	104 46.1	128	28.2	154	**35**	11	36	06	36	67	55	29
9	313 03.1	30.2	119 17.9	128	43.7	155	**30**	11	35	19 02	34	64	56	32
10	328 03.3	29.2	133 49.6	127	−1 59.1	154	**20**	11	33	18 58	30	58	57	37
11	343 03.5	−0 28.2	148 21.3	127	−2 14.5	154	**10 N**	18 11	18 32	18 56	19 26	53	6 58	42
12	358 03.7	−0 27.2	162 53.0	127	−2 30.0	155	**0**	18 11	18 32	18 56	19 23	48	6 58	48
13	13 03.8	26.2	177 24.6	126	−2 45.4	154	**10 S**	11	32	57	20	44	6 59	52
14	28 04.0	25.2	191 56.2	126	−3 00.8	154	**20**	12	34	18 59	17	38	7 00	57
15	43 04.2	24.3	206 27.8	126	16.3	155	**30**	12	36	19 04	13	33	01	63
16	58 04.4	23.3	220 59.3	125	31.7	154	**35**	13	38	07	11	30	02	66
17	73 04.6	−0 22.3	235 30.8	125	−3 47.1	154	**40**	18 13	18 40	19 12	19 08	27	7 03	69
18	88 04.8	−0 21.3	250 02.3	125	−4 02.5	154	**45**	18 14	18 43	19 17	19 05	23	7 03	75
19	103 04.9	20.3	264 33.7	124	17.9	154	**50**	15	47	25	02	17	04	80
20	118 05.1	19.3	279 05.1	124	33.3	154	**52**	15	49	28	19 01	15	05	82
21	133 05.3	18.3	293 36.5	124	−4 48.7	154	**54**	15	51	32	18 59	12	05	85
22	148 05.5	17.3	308 07.8	123	−5 04.0	153	**56**	16	53	37	57	10	06	87
23	163 05.7	16.4	322 39.0	122	19.4	154	**58**	16	55	42	55	7	06	91
24	178 05.9	−0 15.4	337 10.3	123	−5 34.7	153	**60 S**	18 17	18 58	19 48	18 53	3	7 07	95

UT	ARIES PMG 12h 11m.9	VENUS Mag: −4.5 PMG: 9h 09m		MARTE Mag: +1.1 PMG: 9h 03m		JÚPITER Mag: −2.0 PMG: 11h 31m		SATURNO Mag: +0.8 PMG: 9h 46m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	176 31.3	222 52.1	−15 08.2	224 15.0	−18 53.0	186 58.4	−5 34.4	213 03.5	−15 26.3
1	191 33.7	237 52.1	07.8	239 15.5	52.5	202 00.3	34.2	228 05.7	26.3
2	206 36.2	252 52.0	07.4	254 16.0	52.1	217 02.2	34.0	243 07.9	26.2
3	221 38.7	267 52.0	07.0	269 16.6	51.6	232 04.1	33.7	258 10.1	26.1
4	236 41.1	282 51.9	06.6	284 17.1	51.1	247 06.0	33.5	273 12.3	26.0
5	251 43.6	297 51.9	−15 06.1	299 17.7	−18 50.6	262 08.0	−5 33.3	288 14.5	−15 26.0
6	266 46.1	312 51.8	−15 05.7	314 18.2	−18 50.2	277 09.9	−5 33.0	303 16.7	−15 25.9
7	281 48.5	327 51.7	05.3	329 18.8	49.7	292 11.8	32.8	318 18.9	25.8
8	296 51.0	342 51.7	04.9	344 19.3	49.2	307 13.7	32.6	333 21.1	25.7
9	311 53.5	357 51.6	04.5	359 19.9	48.7	322 15.6	32.3	348 23.3	25.6
10	326 55.9	12 51.6	04.0	14 20.4	48.3	337 17.5	32.1	3 25.6	25.6
11	341 58.4	27 51.5	−15 03.6	29 21.0	−18 47.8	352 19.4	−5 31.9	18 27.8	−15 25.5
12	357 00.8	42 51.5	−15 03.2	44 21.5	−18 47.3	7 21.3	−5 31.6	33 30.0	−15 25.4
13	12 03.3	57 51.4	02.8	59 22.0	46.8	22 23.2	31.4	48 32.2	25.3
14	27 05.8	72 51.3	02.4	74 22.6	46.3	37 25.1	31.2	63 34.4	25.3
15	42 08.2	87 51.3	01.9	89 23.1	45.9	52 27.0	30.9	78 36.6	25.2
16	57 10.7	102 51.2	01.5	104 23.7	45.4	67 28.9	30.7	93 38.8	25.1
17	72 13.2	117 51.2	−15 01.1	119 24.2	−18 44.9	82 30.9	−5 30.5	108 41.0	−15 25.0
18	87 15.6	132 51.1	−15 00.6	134 24.8	−18 44.4	97 32.8	−5 30.3	123 43.2	−15 25.0
19	102 18.1	147 51.0	−15 00.2	149 25.3	44.0	112 34.7	30.0	138 45.4	24.9
20	117 20.6	162 51.0	−14 59.8	164 25.9	43.5	127 36.6	29.8	153 47.6	24.8
21	132 23.0	177 50.9	59.4	179 26.4	43.0	142 38.5	29.6	168 49.9	24.7
22	147 25.5	192 50.8	58.9	194 27.0	42.5	157 40.4	29.3	183 52.1	24.6
23	162 28.0	207 50.8	58.5	209 27.5	42.0	172 42.3	29.1	198 54.3	24.6
24	177 30.4	222 50.7	−14 58.1	224 28.0	−18 41.6	187 44.2	−5 28.9	213 56.5	−15 24.5
Dif	—	−1	+4	+5	+5	+19	+2	+22	+1

UT	SOL SD: 16′.1 PMG: 12h 07m.5				LUNA Edad: 17d.3 SD: 15′.9 PMG: 1h 34m PHE: 4h: 58′.5; 12h: 58′.7; 20h: 58′.8 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	178	05.9	−0	15.4	337	10.3	−5	34.7	**60 N**	4 31	5 20	6 02	21 33	102	6 52	3
1	193	06.1		14.4	351	41.4 121	−5	50.0 153	**58**	36	23	02	27	96	6 56	7
2	208	06.2		13.4	6	12.6 122	−6	05.3 153	**56**	41	25	03	21	92	7 00	10
3	223	06.4		12.4	20	43.6 120		20.6 153	**54**	46	27	03	15	89	03	13
4	238	06.6		11.4	35	14.7 121		35.8 152	**52**	50	29	03	11	86	06	16
5	253	06.8	−0	10.4	49	45.7 120	−6	51.1 153	**50**	4 53	5 31	6 03	21 06	84	7 09	18
6	268	07.0	−0	09.4	64	16.6 119	−7	06.2 151	**45**	5 00	5 34	6 03	20 57	78	7 15	23
7	283	07.2		08.5	78	47.5 119		21.4 152	**40**	05	37	04	50	73	20	27
8	298	07.4		07.5	93	18.3 118		36.6 152	**35**	09	39	04	43	69	24	31
9	313	07.5		06.5	107	49.1 118	−7	51.7 151	**30**	12	40	04	38	65	28	34
10	328	07.7		05.5	122	19.8 117	−8	06.7 150	**20**	17	42	04	28	60	34	40
11	343	07.9	−0	04.5	136	50.5 117	−8	21.8 151	**10 N**	5 19	5 43	6 04	20 19	56	7 40	45
12	358	08.1	−0	03.5	151	21.1 116	−8	36.8 150	**0**	5 20	5 44	6 04	20 11	51	7 46	49
13	13	08.3		02.5	165	51.6 115	−8	51.8 150	**10 S**	19	43	04	20 04	46	51	54
14	28	08.5		01.5	180	22.1 115	−9	06.7 149	**20**	16	42	04	19 55	42	7 57	59
15	43	08.6	−0	00.5	194	52.5 114		21.6 149	**30**	12	39	03	46	36	8 04	65
16	58	08.8	+0	00.4	209	22.9 114		36.5 149	**35**	08	38	03	41	33	08	68
17	73	09.0	+0	01.4	223	53.2 113	−9	51.3 148	**40**	5 04	5 36	6 03	19 35	29	8 12	72
18	88	09.2	+0	02.4	238	23.5 113	−10	06.0 147	**45**	4 58	5 33	6 02	19 28	25	8 18	76
19	103	09.4		03.4	252	53.7 112		20.8 148	**50**	51	29	02	19	21	24	82
20	118	09.6		04.4	267	23.8 111		35.4 146	**52**	48	28	01	16	17	27	84
21	133	09.8		05.4	281	53.9 111	−10	50.1 147	**54**	44	26	01	11	15	30	87
22	148	09.9		06.4	296	23.9 110	−11	04.6 145	**56**	39	23	01	07	12	33	91
23	163	10.1		07.4	310	53.8 109		19.2 146	**58**	34	21	00	19 02	8	37	95
24	178	10.3	+0	08.3	325	23.6 108	−11	33.6 144	**60 S**	4 28	5 18	6 00	18 56	4	8 42	98

UT	ARIES PMG 12h 08m.0		VENUS Mag: −4.5 PMG: 9h 09m			MARTE Mag: +1.1 PMG: 9h 02m			JÚPITER Mag: −2.0 PMG: 11h 28m			SATURNO Mag: +0.8 PMG: 9h 43m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	177	30.4	222	50.7	−14 58.1	224	28.0	−18 41.6	187	44.2	−5 28.9	213	56.5	−15 24.5
1	192	32.9	237	50.7	57.6	239	28.6	41.1	202	46.1	28.6	228	58.7	24.4
2	207	35.3	252	50.6	57.2	254	29.1	40.6	217	48.0	28.4	244	00.9	24.3
3	222	37.8	267	50.5	56.8	269	29.7	40.1	232	49.9	28.2	259	03.1	24.3
4	237	40.3	282	50.5	56.3	284	30.2	39.6	247	51.9	27.9	274	05.3	24.2
5	252	42.7	297	50.4	−14 55.9	299	30.8	−18 39.1	262	53.8	−5 27.7	289	07.5	−15 24.1
6	267	45.2	312	50.3	−14 55.5	314	31.3	−18 38.7	277	55.7	−5 27.5	304	09.8	−15 24.0
7	282	47.7	327	50.3	55.0	329	31.9	38.2	292	57.6	27.2	319	12.0	23.9
8	297	50.1	342	50.2	54.6	344	32.4	37.7	307	59.5	27.0	334	14.2	23.9
9	312	52.6	357	50.1	54.1	359	33.0	37.2	323	01.4	26.8	349	16.4	23.8
10	327	55.1	12	50.0	53.7	14	33.5	36.7	338	03.3	26.5	4	18.6	23.7
11	342	57.5	27	50.0	−14 53.3	29	34.1	−18 36.2	353	05.2	−5 26.3	19	20.8	−15 23.6
12	358	00.0	42	49.9	−14 52.8	44	34.6	−18 35.8	8	07.1	−5 26.1	34	23.0	−15 23.6
13	13	02.5	57	49.8	52.4	59	35.2	35.3	23	09.0	25.8	49	25.2	23.5
14	28	04.9	72	49.8	51.9	74	35.7	34.8	38	11.0	25.6	64	27.4	23.4
15	43	07.4	87	49.7	51.5	89	36.3	34.3	53	12.9	25.4	79	29.7	23.3
16	58	09.8	102	49.6	51.0	104	36.8	33.8	68	14.8	25.2	94	31.9	23.3
17	73	12.3	117	49.5	−14 50.6	119	37.4	−18 33.3	83	16.7	−5 24.9	109	34.1	−15 23.2
18	88	14.8	132	49.5	−14 50.1	134	37.9	−18 32.9	98	18.6	−5 24.7	124	36.3	−15 23.1
19	103	17.2	147	49.4	49.7	149	38.5	32.4	113	20.5	24.5	139	38.5	23.0
20	118	19.7	162	49.3	49.2	164	39.0	31.9	128	22.4	24.2	154	40.7	22.9
21	133	22.2	177	49.2	48.8	179	39.6	31.4	143	24.3	24.0	169	42.9	22.9
22	148	24.6	192	49.2	48.3	194	40.1	30.9	158	26.2	23.8	184	45.1	22.8
23	163	27.1	207	49.1	47.9	209	40.7	30.4	173	28.1	23.5	199	47.4	22.7
24	178	29.6	222	49.0	−14 47.4	224	41.2	−18 29.9	188	30.0	−5 23.3	214	49.6	−15 22.6
Dif	—			−1	+4		+5	+5		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 18^{d}.3		PHE	4^{h}: 58′.9								
	PMG: 12^{h} 07^{m}.2				SD: 16′.0			12^{h}: 59′.0								
					PMG: 2^{h} 23^{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	178	10.3	+0	08.3	325	23.6	−11	33.6	**60 N**	18 17	18 59	19 49	23 15	105	6 55	5
1	193	10.5		09.3	339	53.4 108	−11	48.0 144	**58**	16	56	43	23 03	99	7 03	10
2	208	10.7		10.3	354	23.2 108	−12	02.4 144	**56**	16	53	37	22 53	95	10	14
3	223	10.9		11.3	8	52.8 106		16.7 143	**54**	15	51	33	44	91	16	17
4	238	11.1		12.3	23	22.4 106		31.0 143	**52**	15	49	29	37	87	22	20
5	253	11.2	+0	13.3	37	51.9 105	−12	45.1 141	**50**	18 14	18 47	19 25	22 30	84	7 27	22
6	268	11.4	+0	14.3	52	21.3 104	−12	59.3 142	**45**	18 14	18 43	19 17	22 15	79	7 38	28
7	283	11.6		15.3	66	50.7 104	−13	13.3 140	**40**	13	40	12	22 03	74	47	32
8	298	11.8		16.2	81	20.0 103		27.3 140	**35**	12	38	07	21 52	71	7 55	36
9	313	12.0		17.2	95	49.2 102		41.2 139	**30**	12	36	19 04	43	68	8 02	39
10	328	12.2		18.2	110	18.3 101	−13	55.1 139	**20**	11	33	18 59	28	63	14	44
11	343	12.4	+0	19.2	124	47.4 101	−14	08.8 137	**10 N**	18 11	18 32	18 56	21 15	58	8 25	49
12	358	12.6	+0	20.2	139	16.4 100	−14	22.5 137	**0**	18 10	18 31	18 55	21 02	55	8 35	53
13	13	12.7		21.2	153	45.3 99		36.2 137	**10 S**	10	31	56	20 50	51	45	57
14	28	12.9		22.2	168	14.1 98	−14	49.7 135	**20**	10	32	18 58	37	47	8 56	62
15	43	13.1		23.1	182	42.8 97	−15	03.2 135	**30**	10	34	19 02	22	42	9 09	67
16	58	13.3		24.1	197	11.5 97		16.6 134	**35**	10	35	05	14	38	16	70
17	73	13.5	+0	25.1	211	40.1 96	−15	29.9 133	**40**	18 10	18 37	19 08	20 04	35	9 24	74
18	88	13.7	+0	26.1	226	08.6 95	−15	43.2 133	**45**	18 10	18 39	19 14	19 53	31	9 34	78
19	103	13.9		27.1	240	37.0 94	−15	56.3 131	**50**	10	42	20	40	25	46	84
20	118	14.0		28.1	255	05.3 93	−16	09.4 131	**52**	10	44	24	33	23	51	87
21	133	14.2		29.1	269	33.6 93		22.4 130	**54**	10	46	27	26	20	9 57	90
22	148	14.4		30.1	284	01.8 92		35.2 128	**56**	10	47	31	19	16	10 04	94
23	163	14.6		31.0	298	29.9 91	−16	48.0 128	**58**	11	50	36	10	13	12	97
24	178	14.8	+0	32.0	312	57.9 90	−17	00.8 128	**60 S**	18 11	18 52	19 42	19 00	8	10 20	103

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.1			Mag: −2.0			Mag: +0.8		
	12^{h} 04^{m}.0		PMG: 9^{h} 09^{m}			PMG: 9^{h} 01^{m}			PMG: 11^{h} 25^{m}			PMG: 9^{h} 39^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	178	29.6	222	49.0	−14 47.4	224	41.2	−18 29.9	188	30.0	−5 23.3	214	49.6	−15 22.6
1	193	32.0	237	48.9	47.0	239	41.8	29.4	203	32.0	23.1	229	51.8	22.6
2	208	34.5	252	48.9	46.5	254	42.3	29.0	218	33.9	22.8	244	54.0	22.5
3	223	36.9	267	48.8	46.1	269	42.9	28.5	233	35.8	22.6	259	56.2	22.4
4	238	39.4	282	48.7	45.6	284	43.4	28.0	248	37.7	22.4	274	58.4	22.3
5	253	41.9	297	48.6	−14 45.2	299	44.0	−18 27.5	263	39.6	−5 22.1	290	00.6	−15 22.3
6	268	44.3	312	48.6	−14 44.7	314	44.5	−18 27.0	278	41.5	−5 21.9	305	02.8	−15 22.2
7	283	46.8	327	48.5	44.3	329	45.1	26.5	293	43.4	21.7	320	05.1	22.1
8	298	49.3	342	48.4	43.8	344	45.6	26.0	308	45.3	21.4	335	07.3	22.0
9	313	51.7	357	48.3	43.3	359	46.2	25.5	323	47.2	21.2	350	09.5	22.0
10	328	54.2	12	48.2	42.9	14	46.7	25.0	338	49.2	21.0	5	11.7	21.9
11	343	56.7	27	48.2	−14 42.4	29	47.3	−18 24.5	353	51.1	−5 20.8	20	13.9	−15 21.8
12	358	59.1	42	48.1	−14 42.0	44	47.8	−18 24.0	8	53.0	−5 20.5	35	16.1	−15 21.7
13	14	01.6	57	48.0	41.5	59	48.4	23.6	23	54.9	20.3	50	18.3	21.6
14	29	04.1	72	47.9	41.0	74	48.9	23.1	38	56.8	20.1	65	20.6	21.6
15	44	06.5	87	47.8	40.6	89	49.5	22.6	53	58.7	19.8	80	22.8	21.5
16	59	09.0	102	47.7	40.1	104	50.0	22.1	69	00.6	19.6	95	25.0	21.4
17	74	11.4	117	47.7	−14 39.6	119	50.6	−18 21.6	84	02.5	−5 19.4	110	27.2	−15 21.3
18	89	13.9	132	47.6	−14 39.2	134	51.1	−18 21.1	99	04.4	−5 19.1	125	29.4	−15 21.3
19	104	16.4	147	47.5	38.7	149	51.7	20.6	114	06.3	18.9	140	31.6	21.2
20	119	18.8	162	47.4	38.2	164	52.3	20.1	129	08.3	18.7	155	33.8	21.1
21	134	21.3	177	47.3	37.8	179	52.8	19.6	144	10.2	18.4	170	36.1	21.0
22	149	23.8	192	47.2	37.3	194	53.4	19.1	159	12.1	18.2	185	38.3	21.0
23	164	26.2	207	47.1	36.8	209	53.9	18.6	174	14.0	18.0	200	40.5	20.9
24	179	28.7	222	47.1	−14 36.4	224	54.5	−18 18.1	189	15.9	−5 17.7	215	42.7	−15 20.8
Dif	—			−1	+5		+6	+5		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 19ᵈ.3		PHE	4ʰ: 59′.1									
	PMG: 12ʰ 06ᵐ.9				SD: 16′.1			12ʰ: 59′.2									
					PMG: 3ʰ 15ᵐ			20ʰ: 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	178	14.8	+0	32.0	312	57.9	−17	00.8		**60 N**	4 24	5 14	5 56	** **	**	7 00	10
1	193	15.0		33.0	327	25.8 89		13.4	126	**58**	30	17	57	** **	**	13	15
2	208	15.2		34.0	341	53.6 88		25.9	125	**56**	36	20	57	** **	**	24	19
3	223	15.4		35.0	356	21.4 88		38.3	124	**54**	40	22	58	** **	**	33	23
4	238	15.5		36.0	10	49.0 86	−17	50.6	123	**52**	45	25	58	** **	**	42	26
5	253	15.7	+0	37.0	25	16.6 86	−18	02.8	122	**50**	4 48	5 26	5 59	23 54	82	7 49	29
6	268	15.9	+0	38.0	39	44.1 85	−18	15.0	122	**45**	4 56	5 30	6 00	23 34	77	8 06	34
7	283	16.1		38.9	54	11.5 84		27.0	120	**40**	5 02	33	00	17	74	19	38
8	298	16.3		39.9	68	38.8 83		38.9	119	**35**	06	36	01	23 03	71	31	41
9	313	16.5		40.9	83	06.0 82	−18	50.7	118	**30**	10	38	02	22 51	69	41	44
10	328	16.7		41.9	97	33.2 82	−19	02.4	117	**20**	15	40	02	31	65	8 58	49
11	343	16.8	+0	42.9	112	00.2 80	−19	14.0	116	**10 N**	5 18	5 42	6 03	22 13	62	9 14	52
12	358	17.0	+0	43.9	126	27.2 80	−19	25.4	114	**0**	5 19	5 43	6 04	21 57	58	9 28	56
13	13	17.2		44.9	140	54.1 79		36.8	114	**10 S**	19	43	04	41	55	42	60
14	28	17.4		45.8	155	20.8 77		48.0	112	**20**	17	42	04	24	51	9 58	64
15	43	17.6		46.8	169	47.5 77	−19	59.2	112	**30**	13	41	05	21 04	48	10 16	68
16	58	17.8		47.8	184	14.1 76	−20	10.2	110	**35**	10	39	05	20 52	46	26	71
17	73	18.0	+0	48.8	198	40.7 76	−20	21.1	109	**40**	5 06	5 38	6 05	20 39	43	10 38	75
18	88	18.2	+0	49.8	213	07.1 74	−20	31.8	107	**45**	5 01	5 35	6 05	20 24	39	10 52	79
19	103	18.3		50.8	227	33.5 74		42.5	107	**50**	4 55	33	05	20 05	34	11 10	83
20	118	18.5		51.8	241	59.7 72	−20	53.0	105	**52**	51	31	05	19 56	32	18	86
21	133	18.7		52.7	256	25.9 72	−21	03.4	104	**54**	48	29	05	46	29	27	90
22	148	18.9		53.7	270	52.0 71		13.6	102	**56**	44	28	05	35	25	38	93
23	163	19.1		54.7	285	18.0 70		23.8	102	**58**	39	25	05	23	20	11 49	99
24	178	19.3	+0	55.7	299	43.9 69	−21	33.8	100	**60 S**	4 33	5 23	6 05	19 08	14	12 03	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.1			Mag: −2.0			Mag: +0.8		
	12ʰ 00ᵐ.1		PMG: 9ʰ 09ᵐ			PMG: 9ʰ 00ᵐ			PMG: 11ʰ 21ᵐ			PMG: 9ʰ 36ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	179	28.7	222	47.1	−14 36.4	224	54.5	−18 18.1	189	15.9	−5 17.7	215	42.7	−15 20.8
1	194	31.2	237	47.0	35.9	239	55.0	17.6	204	17.8	17.5	230	44.9	20.7
2	209	33.6	252	46.9	35.4	254	55.6	17.1	219	19.7	17.3	245	47.1	20.7
3	224	36.1	267	46.8	34.9	269	56.1	16.6	234	21.6	17.0	260	49.3	20.6
4	239	38.5	282	46.7	34.5	284	56.7	16.1	249	23.5	16.8	275	51.6	20.5
5	254	41.0	297	46.6	−14 34.0	299	57.2	−18 15.6	264	25.5	−5 16.6	290	53.8	−15 20.4
6	269	43.5	312	46.5	−14 33.5	314	57.8	−18 15.1	279	27.4	−5 16.4	305	56.0	−15 20.4
7	284	45.9	327	46.4	33.0	329	58.3	14.6	294	29.3	16.1	320	58.2	20.3
8	299	48.4	342	46.3	32.6	344	58.9	14.1	309	31.2	15.9	336	00.4	20.2
9	314	50.9	357	46.3	32.1	359	59.5	13.6	324	33.1	15.7	351	02.6	20.1
10	329	53.3	12	46.2	31.6	15	00.0	13.1	339	35.0	15.4	6	04.8	20.0
11	344	55.8	27	46.1	−14 31.1	30	00.6	−18 12.6	354	36.9	−5 15.2	21	07.1	−15 20.0
12	359	58.3	42	46.0	−14 30.6	45	01.1	−18 12.1	9	38.8	−5 15.0	36	09.3	−15 19.9
13	15	00.7	57	45.9	30.2	60	01.7	11.6	24	40.7	14.7	51	11.5	19.8
14	30	03.2	72	45.8	29.7	75	02.2	11.1	39	42.7	14.5	66	13.7	19.7
15	45	05.7	87	45.7	29.2	90	02.8	10.6	54	44.6	14.3	81	15.9	19.7
16	60	08.1	102	45.6	28.7	105	03.3	10.1	69	46.5	14.0	96	18.1	19.6
17	75	10.6	117	45.5	−14 28.2	120	03.9	−18 09.6	84	48.4	−5 13.8	111	20.4	−15 19.5
18	90	13.0	132	45.4	−14 27.7	135	04.5	−18 09.1	99	50.3	−5 13.6	126	22.6	−15 19.4
19	105	15.5	147	45.3	27.3	150	05.0	08.6	114	52.2	13.3	141	24.8	19.4
20	120	18.0	162	45.2	26.8	165	05.6	08.1	129	54.1	13.1	156	27.0	19.3
21	135	20.4	177	45.1	26.3	180	06.1	07.6	144	56.0	12.9	171	29.2	19.2
22	150	22.9	192	45.0	25.8	195	06.7	07.1	159	57.9	12.7	186	31.4	19.1
23	165	25.4	207	44.9	25.3	210	07.2	06.6	174	59.9	12.4	201	33.7	19.1
24	180	27.8	222	44.8	−14 24.8	225	07.8	−18 06.1	190	01.8	−5 12.2	216	35.9	−15 19.0
Dif	—			−1	+5		+6	+5		+19	+2		+22	+1

UT	SOL SD: 16′.1 PMG: 12h 06m.6				LUNA Edad: 20d.3 SD: 16′.1 PMG: 4h 11m PHE 4h: 59′.3, 12h: 59′.3, 20h: 59′.3 Rº: 59m				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	19.3	+0	55.7	299	43.9		−21 33.8	**60 N**	18 22	19 04	19 54	1 00	103	7 10	19
1	193	19.5		56.7	314	09.7 68		43.7 99	**58**	21	19 00	48	0 42	97	28	26
2	208	19.7		57.7	328	35.4 67		−21 53.4 97	**56**	20	18 57	42	28	91	43	31
3	223	19.8		58.7	343	01.1 67		−22 03.0 96	**54**	19	54	37	15	88	7 56	35
4	238	20.0	+0	59.6	357	26.7 66		12.5 95	**52**	18	52	32	0 04	85	8 08	37
5	253	20.2	+1	00.6	11	52.2 65		−22 21.8 93	**50**	18 18	18 50	19 28	** **	**	8 18	40
6	268	20.4	+1	01.6	26	17.6 64		−22 31.0 92	**45**	18 16	18 46	19 20	** **	**	8 40	44
7	283	20.6		02.6	40	42.9 63		40.0 90	**40**	15	42	14	** **	**	8 57	47
8	298	20.8		03.6	55	08.1 62		48.9 89	**35**	14	39	09	** **	**	9 12	50
9	313	21.0		04.6	69	33.3 62		−22 57.7 88	**30**	13	37	19 05	** **	**	25	51
10	328	21.2		05.6	83	58.4 61		−23 06.3 86	**20**	12	34	18 59	23 36	64	9 47	55
11	343	21.3	+1	06.5	98	23.3 59		−23 14.8 85	**10 N**	18 11	18 32	18 56	23 15	62	10 06	58
12	358	21.5	+1	07.5	112	48.3 60		−23 23.1 83	**0**	18 10	18 30	18 54	22 55	61	10 24	60
13	13	21.7		08.5	127	13.1 58		31.3 82	**10 S**	09	30	54	36	59	10 42	63
14	28	21.9		09.5	141	37.9 58		39.3 80	**20**	08	30	56	22 15	58	11 02	65
15	43	22.1		10.5	156	02.5 56		47.1 78	**30**	08	31	18 59	21 52	55	24	68
16	58	22.3		11.5	170	27.2 57		−23 54.9 78	**35**	07	32	19 02	38	53	37	70
17	73	22.5	+1	12.5	184	51.7 55		−24 02.4 75	**40**	18 07	18 34	19 05	21 22	51	11 53	72
18	88	22.7	+1	13.4	199	16.2 55		−24 09.8 74	**45**	18 06	18 36	19 10	21 03	49	12 11	75
19	103	22.9		14.4	213	40.5 53		17.1 73	**50**	06	38	16	20 39	46	33	79
20	118	23.0		15.4	228	04.9 54		24.2 71	**52**	06	39	19	28	44	44	81
21	133	23.2		16.4	242	29.1 52		31.1 69	**54**	05	41	22	15	42	12 57	83
22	148	23.4		17.4	256	53.3 52		37.9 68	**56**	05	42	26	20 00	39	13 11	86
23	163	23.6		18.4	271	17.4 51		44.5 66	**58**	05	44	30	19 43	35	28	90
24	178	23.8	+1	19.4	285	41.5 51		−24 50.9 64	**60 S**	18 05	18 46	19 35	19 22	29	13 48	97

UT	ARIES PMG 11h 56m.2		VENUS Mag: −4.5 PMG: 9h 09m			MARTE Mag: +1.1 PMG: 8h 59m			JÚPITER Mag: −2.0 PMG: 11h 18m			SATURNO Mag: +0.8 PMG: 9h 32m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	180	27.8	222	44.8	−14 24.8	225	07.8	−18 06.1	190	01.8	−5 12.2	216	35.9	−15 19.0
1	195	30.3	237	44.8	24.3	240	08.4	05.6	205	03.7	12.0	231	38.1	18.9
2	210	32.8	252	44.7	23.8	255	08.9	05.1	220	05.6	11.7	246	40.3	18.8
3	225	35.2	267	44.6	23.3	270	09.5	04.6	235	07.5	11.5	261	42.5	18.8
4	240	37.7	282	44.5	22.8	285	10.0	04.1	250	09.4	11.3	276	44.7	18.7
5	255	40.2	297	44.4	−14 22.3	300	10.6	−18 03.6	265	11.3	−5 11.0	291	47.0	−15 18.6
6	270	42.6	312	44.3	−14 21.9	315	11.1	−18 03.1	280	13.2	−5 10.8	306	49.2	−15 18.5
7	285	45.1	327	44.2	21.4	330	11.7	02.6	295	15.2	10.6	321	51.4	18.5
8	300	47.5	342	44.1	20.9	345	12.3	02.1	310	17.1	10.3	336	53.6	18.4
9	315	50.0	357	44.0	20.4	0	12.8	01.6	325	19.0	10.1	351	55.8	18.3
10	330	52.5	12	43.9	19.9	15	13.4	01.1	340	20.9	09.9	6	58.0	18.2
11	345	54.9	27	43.8	−14 19.4	30	13.9	−18 00.6	355	22.8	−5 09.6	22	00.3	−15 18.2
12	0	57.4	42	43.7	−14 18.9	45	14.5	−18 00.1	10	24.7	−5 09.4	37	02.5	−15 18.1
13	15	59.9	57	43.6	18.4	60	15.1	−17 59.6	25	26.6	09.2	52	04.7	18.0
14	31	02.3	72	43.5	17.9	75	15.6	59.1	40	28.5	09.0	67	06.9	17.9
15	46	04.8	87	43.3	17.4	90	16.2	58.5	55	30.5	08.7	82	09.1	17.9
16	61	07.3	102	43.2	16.9	105	16.7	58.0	70	32.4	08.5	97	11.4	17.8
17	76	09.7	117	43.1	−14 16.4	120	17.3	−17 57.5	85	34.3	−5 08.3	112	13.6	−15 17.7
18	91	12.2	132	43.0	−14 15.8	135	17.9	−17 57.0	100	36.2	−5 08.0	127	15.8	−15 17.6
19	106	14.7	147	42.9	15.3	150	18.4	56.5	115	38.1	07.8	142	18.0	17.6
20	121	17.1	162	42.8	14.8	165	19.0	56.0	130	40.0	07.6	157	20.2	17.5
21	136	19.6	177	42.7	14.3	180	19.5	55.5	145	41.9	07.3	172	22.4	17.4
22	151	22.0	192	42.6	13.8	195	20.1	55.0	160	43.8	07.1	187	24.7	17.3
23	166	24.5	207	42.5	13.3	210	20.7	54.5	175	45.8	06.9	202	26.9	17.3
24	181	27.0	222	42.4	−14 12.8	225	21.2	−17 54.0	190	47.7	−5 06.6	217	29.1	−15 17.2
Dif	—			−1	+5		+6	+5		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 21^{d}.3		PHE	4^{h}: 59′.3								
	PMG: 12^{h} 06^{m}.3				SD: 16′.2			12^{h}: 59′.3								
					PMG: 5^{h} 10^{m}			20^{h}: 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	23.8	+1	19.4	285	41.5	−24	50.9	**60 N**	4 17	5 08	5 50	2 43	88	7 29	41
1	193	24.0		20.3	300	05.4 49	−24	57.2 63	**58**	24	12	51	2 19	82	7 54	46
2	208	24.2		21.3	314	29.4 50	−25	03.3 61	**56**	30	15	52	1 59	79	8 14	49
3	223	24.4		22.3	328	53.2 48		09.2 59	**54**	35	17	53	43	77	31	50
4	238	24.5		23.3	343	17.0 48		15.0 58	**52**	40	20	54	29	75	45	52
5	253	24.7	+1	24.3	357	40.8 48	−25	20.6 56	**50**	4 44	5 22	5 54	1 16	74	8 58	53
6	268	24.9	+1	25.3	12	04.4 46	−25	26.1 55	**45**	4 52	5 27	5 56	0 51	71	9 24	55
7	283	25.1		26.2	26	28.1 47		31.3 52	**40**	4 58	30	57	31	69	9 44	57
8	298	25.3		27.2	40	51.6 45		36.4 51	**35**	5 03	33	58	14	68	10 02	57
9	313	25.5		28.2	55	15.2 46		41.4 50	**30**	07	35	5 59	0 00	67	16	59
10	328	25.7		29.2	69	38.6 44		46.1 47	**20**	13	39	6 01	** **	**	10 42	60
11	343	25.9	+1	30.2	84	02.1 45	−25	50.7 46	**10 N**	5 17	5 41	6 02	** **	**	11 04	61
12	358	26.0	+1	31.2	98	25.5 44	−25	55.1 44	**0**	5 18	5 42	6 03	23 56	62	11 24	62
13	13	26.2		32.2	112	48.8 43	−25	59.4 43	**10 S**	19	43	04	35	62	11 45	62
14	28	26.4		33.1	127	12.1 43	−26	03.4 40	**20**	17	43	05	23 13	61	12 07	63
15	43	26.6		34.1	141	35.3 42		07.3 39	**30**	14	42	06	22 47	61	32	64
16	58	26.8		35.1	155	58.6 43		11.0 37	**35**	12	41	06	31	62	12 47	65
17	73	27.0	+1	36.1	170	21.7 41	−26	14.5 35	**40**	5 08	5 40	6 07	22 13	62	13 05	65
18	88	27.2	+1	37.1	184	44.9 42	−26	17.9 34	**45**	5 04	5 38	6 07	21 52	61	13 26	66
19	103	27.4		38.1	199	08.0 41		21.0 31	**50**	4 58	36	08	25	61	13 52	67
20	118	27.6		39.0	213	31.1 41		24.0 30	**52**	55	35	08	21 12	60	14 05	68
21	133	27.7		40.0	227	54.1 40		26.8 28	**54**	52	33	09	20 57	60	20	68
22	148	27.9		41.0	242	17.2 41		29.5 27	**56**	48	32	09	39	60	37	70
23	163	28.1		42.0	256	40.2 40		31.9 24	**58**	44	30	09	20 18	59	14 58	71
24	178	28.3	+1	43.0	271	03.1 39	−26	34.2 23	**60 S**	4 39	5 28	6 10	19 51	57	15 25	72

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.5			Mag: +1.1			Mag: −2.0			Mag: +0.9		
	11^{h} 52^{m}.3		PMG: 9^{h} 09^{m}			PMG: 8^{h} 58^{m}			PMG: 11^{h} 15^{m}			PMG: 9^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	181	27.0	222	42.4	−14 12.8	225	21.2	−17 54.0	190	47.7	−5 06.6	217	29.1	−15 17.2
1	196	29.4	237	42.3	12.3	240	21.8	53.5	205	49.6	06.4	232	31.3	17.1
2	211	31.9	252	42.2	11.8	255	22.3	52.9	220	51.5	06.2	247	33.5	17.0
3	226	34.4	267	42.1	11.3	270	22.9	52.4	235	53.4	06.0	262	35.8	17.0
4	241	36.8	282	42.0	10.8	285	23.5	51.9	250	55.3	05.7	277	38.0	16.9
5	256	39.3	297	41.9	−14 10.2	300	24.0	−17 51.4	265	57.2	−5 05.5	292	40.2	−15 16.8
6	271	41.8	312	41.8	−14 09.7	315	24.6	−17 50.9	280	59.1	−5 05.3	307	42.4	−15 16.7
7	286	44.2	327	41.7	09.2	330	25.1	50.4	296	01.1	05.0	322	44.6	16.7
8	301	46.7	342	41.5	08.7	345	25.7	49.9	311	03.0	04.8	337	46.9	16.6
9	316	49.1	357	41.4	08.2	0	26.3	49.4	326	04.9	04.6	352	49.1	16.5
10	331	51.6	12	41.3	07.7	15	26.8	48.8	341	06.8	04.3	7	51.3	16.4
11	346	54.1	27	41.2	−14 07.1	30	27.4	−17 48.3	356	08.7	−5 04.1	22	53.5	−15 16.4
12	1	56.5	42	41.1	−14 06.6	45	28.0	−17 47.8	11	10.6	−5 03.9	37	55.7	−15 16.3
13	16	59.0	57	41.0	06.1	60	28.5	47.3	26	12.5	03.6	52	58.0	16.2
14	32	01.5	72	40.9	05.6	75	29.1	46.8	41	14.4	03.4	68	00.2	16.1
15	47	03.9	87	40.8	05.1	90	29.6	46.3	56	16.4	03.2	83	02.4	16.1
16	62	06.4	102	40.7	04.5	105	30.2	45.8	71	18.3	03.0	98	04.6	16.0
17	77	08.9	117	40.5	−14 04.0	120	30.8	−17 45.2	86	20.2	−5 02.7	113	06.8	−15 15.9
18	92	11.3	132	40.4	−14 03.5	135	31.3	−17 44.7	101	22.1	−5 02.5	128	09.1	−15 15.8
19	107	13.8	147	40.3	03.0	150	31.9	44.2	116	24.0	02.3	143	11.3	15.8
20	122	16.3	162	40.2	02.4	165	32.5	43.7	131	25.9	02.0	158	13.5	15.7
21	137	18.7	177	40.1	01.9	180	33.0	43.2	146	27.8	01.8	173	15.7	15.6
22	152	21.2	192	40.0	01.4	195	33.6	42.7	161	29.8	01.6	188	17.9	15.5
23	167	23.6	207	39.9	00.9	210	34.2	42.1	176	31.7	01.3	203	20.2	15.5
24	182	26.1	222	39.8	−14 00.3	225	34.7	−17 41.6	191	33.6	−5 01.1	218	22.4	−15 15.4
Dif	—			−1	+5		+6	+5		+19	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 22ᵈ.3		PHE	4ʰ: 59′.2								
	PMG: 12ʰ 06ᵐ.0		SD: 16′.1			12ʰ: 59′.2								
			PMG: 6ʰ 11ᵐ			20ʰ: 59′.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	178 28.3	+1 43.0	271 03.1	40	−26 34.2	21	**60 N**	18 27	19 09	20 00	4 11	55	8 10	74
1	193 28.5	44.0	285 26.1	39	36.3	19	**58**	25	05	19 53	3 41	57	8 40	71
2	208 28.7	44.9	299 49.0	40	38.2	17	**56**	24	19 01	46	18	59	9 03	70
3	223 28.9	45.9	314 12.0	39	39.9	15	**54**	23	18 58	41	3 00	59	21	69
4	238 29.1	46.9	328 34.9	39	41.4	14	**52**	22	56	36	2 44	59	37	69
5	253 29.2	+1 47.9	342 57.8	39	−26 42.8	11	**50**	18 21	18 53	19 32	2 30	60	9 51	68
6	268 29.4	+1 48.9	357 20.7	39	−26 43.9	10	**45**	18 19	18 48	19 23	2 02	61	10 19	66
7	283 29.6	49.9	11 43.5	38	44.9	8	**40**	17	44	16	1 40	61	41	66
8	298 29.8	50.8	26 06.4	39	45.7	6	**35**	16	41	11	22	61	10 59	65
9	313 30.0	51.8	40 29.3	39	46.3	5	**30**	14	38	06	1 07	61	11 15	64
10	328 30.2	52.8	54 52.2	39	46.8	2	**20**	12	34	19 00	0 40	62	11 42	63
11	343 30.4	+1 53.8	69 15.1	39	−26 47.0	1	**10 N**	18 11	18 32	18 56	0 17	62	12 05	62
12	358 30.6	+1 54.8	83 37.9	38	−26 47.1	1	**0**	18 09	18 30	18 54	** **	**	12 26	61
13	13 30.8	55.7	98 00.8	39	47.0	3	**10 S**	08	29	53	** **	**	12 47	61
14	28 30.9	56.7	112 23.7	39	46.7	5	**20**	07	28	54	** **	**	13 10	59
15	43 31.1	57.7	126 46.7	40	46.2	6	**30**	05	29	57	23 48	66	36	58
16	58 31.3	58.7	141 09.6	39	45.6	9	**35**	04	30	18 59	33	67	13 52	57
17	73 31.5	+1 59.7	155 32.5	39	−26 44.7	10	**40**	18 03	18 30	19 02	23 15	69	14 10	56
18	88 31.7	+2 00.7	169 55.5	40	−26 43.7	12	**45**	18 03	18 32	19 06	22 53	71	14 32	54
19	103 31.9	01.6	184 18.5	40	42.5	14	**50**	01	34	11	26	73	14 59	53
20	118 32.1	02.6	198 41.5	40	41.1	16	**52**	01	35	14	22 12	75	15 13	51
21	133 32.3	03.6	213 04.5	40	39.5	17	**54**	00	36	17	21 57	77	28	50
22	148 32.5	04.6	227 27.5	40	37.8	20	**56**	18 00	37	20	39	79	15 47	47
23	163 32.6	05.6	241 50.6	41	35.8	21	**58**	17 59	38	24	21 17	82	16 09	45
24	178 32.8	+2 06.6	256 13.7	41	−26 33.7		**60 S**	17 59	18 40	19 29	20 48	87	16 37	40

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.5		Mag: +1.1		Mag: −2.0		Mag: +0.9	
	11ʰ 48ᵐ.3	PMG: 9ʰ 09ᵐ		PMG: 8ʰ 57ᵐ		PMG: 11ʰ 12ᵐ		PMG: 9ʰ 25ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	182 26.1	222 39.8	−14 00.3	225 34.7	−17 41.6	191 33.6	−5 01.1	218 22.4	−15 15.4
1	197 28.6	237 39.6	−13 59.8	240 35.3	41.1	206 35.5	00.9	233 24.6	15.3
2	212 31.0	252 39.5	59.3	255 35.8	40.6	221 37.4	00.6	248 26.8	15.3
3	227 33.5	267 39.4	58.7	270 36.4	40.1	236 39.3	00.4	263 29.0	15.2
4	242 36.0	282 39.3	58.2	285 37.0	39.5	251 41.2	−5 00.2	278 31.3	15.1
5	257 38.4	297 39.2	−13 57.7	300 37.5	−17 39.0	266 43.2	−5 00.0	293 33.5	−15 15.0
6	272 40.9	312 39.1	−13 57.1	315 38.1	−17 38.5	281 45.1	−4 59.7	308 35.7	−15 15.0
7	287 43.4	327 38.9	56.6	330 38.7	38.0	296 47.0	59.5	323 37.9	14.9
8	302 45.8	342 38.8	56.1	345 39.2	37.5	311 48.9	59.3	338 40.1	14.8
9	317 48.3	357 38.7	55.5	0 39.8	37.0	326 50.8	59.0	353 42.4	14.7
10	332 50.8	12 38.6	55.0	15 40.4	36.4	341 52.7	58.8	8 44.6	14.7
11	347 53.2	27 38.5	−13 54.5	30 40.9	−17 35.9	356 54.6	−4 58.6	23 46.8	−15 14.6
12	2 55.7	42 38.4	−13 53.9	45 41.5	−17 35.4	11 56.6	−4 58.3	38 49.0	−15 14.5
13	17 58.1	57 38.2	53.4	60 42.1	34.9	26 58.5	58.1	53 51.3	14.4
14	33 00.6	72 38.1	52.9	75 42.6	34.3	42 00.4	57.9	68 53.5	14.4
15	48 03.1	87 38.0	52.3	90 43.2	33.8	57 02.3	57.6	83 55.7	14.3
16	63 05.5	102 37.9	51.8	105 43.8	33.3	72 04.2	57.4	98 57.9	14.2
17	78 08.0	117 37.8	−13 51.2	120 44.3	−17 32.8	87 06.1	−4 57.2	114 00.1	−15 14.1
18	93 10.5	132 37.6	−13 50.7	135 44.9	−17 32.3	102 08.0	−4 57.0	129 02.4	−15 14.1
19	108 12.9	147 37.5	50.1	150 45.5	31.7	117 10.0	56.7	144 04.6	14.0
20	123 15.4	162 37.4	49.6	165 46.0	31.2	132 11.9	56.5	159 06.8	13.9
21	138 17.9	177 37.3	49.1	180 46.6	30.7	147 13.8	56.3	174 09.0	13.8
22	153 20.3	192 37.2	48.5	195 47.2	30.2	162 15.7	56.0	189 11.3	13.8
23	168 22.8	207 37.0	48.0	210 47.7	29.6	177 17.6	55.8	204 13.5	13.7
24	183 25.3	222 36.9	−13 47.4	225 48.3	−17 29.1	192 19.5	−4 55.6	219 15.7	−15 13.6
Dif	—	−1	+5	+6	+5	+19	+2	+22	+1

UT	SOL SD: 16′.0 PMG: 12h 05m.7				LUNA Edad: 23d.3 SD: 16′.1 PMG: 7h 13m PHE 4h: 59′.1; 12h: 59′.1; 20h: 59′.0 Rº: 59m				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	32.8	+2	06.6	256	13.7	−26	33.7	**60 N**	4 10	5 02	5 44	5 06	27	9 24	97
1	193	33.0		07.5	270	36.9 42		31.4 23	**58**	18	06	45	4 38	34	9 51	91
2	208	33.2		08.5	285	00.0 41		28.9 25	**56**	24	09	47	4 17	37	10 13	86
3	223	33.4		09.5	299	23.3 43		26.3 26	**54**	30	12	48	3 59	40	30	83
4	238	33.6		10.5	313	46.5 42		23.5 28	**52**	35	15	49	43	44	46	80
5	253	33.8	+2	11.5	328	09.8 43	−26	20.4 31	**50**	4 39	5 18	5 50	3 30	45	10 59	78
6	268	34.0	+2	12.4	342	33.1 43	−26	17.3 31	**45**	4 48	5 23	5 52	3 03	48	11 25	75
7	283	34.1		13.4	356	56.5 44		13.9 34	**40**	4 55	27	54	2 41	51	11 47	71
8	298	34.3		14.4	11	20.0 45		10.4 35	**35**	5 01	30	55	23	53	12 04	69
9	313	34.5		15.4	25	43.4 44		06.7 37	**30**	05	33	57	2 08	54	19	67
10	328	34.7		16.4	40	07.0 46	−26	02.8 39	**20**	11	37	5 59	1 42	56	12 45	64
11	343	34.9	+2	17.3	54	30.6 46	−25	58.7 41	**10 N**	5 15	5 40	6 01	1 19	59	13 07	61
12	358	35.1	+2	18.3	68	54.2 46	−25	54.5 42	**0**	5 18	5 42	6 02	0 58	60	13 27	59
13	13	35.3		19.3	83	17.9 47		50.1 44	**10 S**	19	43	04	37	62	13 48	56
14	28	35.5		20.3	97	41.6 47		45.5 46	**20**	18	43	05	0 14	64	14 09	54
15	43	35.7		21.3	112	05.4 48		40.8 47	**30**	15	43	07	** **	**	34	51
16	58	35.8		22.2	126	29.3 49		35.9 49	**35**	13	43	08	** **	**	14 49	49
17	73	36.0	+2	23.2	140	53.3 50	−25	30.8 51	**40**	5 10	5 42	6 09	** **	**	15 06	46
18	88	36.2	+2	24.2	155	17.3 50	−25	25.6 52	**45**	5 06	5 41	6 10	** **	**	15 26	43
19	103	36.4		25.2	169	41.3 50		20.1 55	**50**	5 01	39	11	23 39	81	15 52	38
20	118	36.6		26.2	184	05.5 52		14.6 55	**52**	4 59	38	12	27	84	16 04	37
21	133	36.8		27.1	198	29.7 52		08.8 58	**54**	56	37	12	23 14	86	18	34
22	148	37.0		28.1	212	53.9 52	−25	02.9 59	**56**	52	36	13	22 58	90	34	31
23	163	37.2		29.1	227	18.3 54	−24	56.9 60	**58**	48	34	14	39	94	16 54	25
24	178	37.3	+2	30.1	241	42.7 54	−24	50.7 62	**60 S**	4 44	5 33	6 14	22 15	102	17 17	20

UT	ARIES PMG 11h 44m.4		VENUS Mag: −4.5 PMG: 9h 10m			MARTE Mag: +1.1 PMG: 8h 56m			JÚPITER Mag: −2.0 PMG: 11h 09m			SATURNO Mag: +0.9 PMG: 9h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	183	25.3	222	36.9	−13 47.4	225	48.3	−17 29.1	192	19.5	−4 55.6	219	15.7	−15 13.6
1	198	27.7	237	36.8	46.9	240	48.9	28.6	207	21.4	55.3	234	17.9	13.6
2	213	30.2	252	36.7	46.3	255	49.4	28.1	222	23.4	55.1	249	20.2	13.5
3	228	32.6	267	36.5	45.8	270	50.0	27.5	237	25.3	54.9	264	22.4	13.4
4	243	35.1	282	36.4	45.2	285	50.6	27.0	252	27.2	54.7	279	24.6	13.3
5	258	37.6	297	36.3	−13 44.7	300	51.1	−17 26.5	267	29.1	−4 54.4	294	26.8	−15 13.3
6	273	40.0	312	36.2	−13 44.1	315	51.7	−17 26.0	282	31.0	−4 54.2	309	29.1	−15 13.2
7	288	42.5	327	36.0	43.6	330	52.3	25.4	297	32.9	54.0	324	31.3	13.1
8	303	45.0	342	35.9	43.0	345	52.8	24.9	312	34.8	53.7	339	33.5	13.0
9	318	47.4	357	35.8	42.5	0	53.4	24.4	327	36.8	53.5	354	35.7	13.0
10	333	49.9	12	35.7	41.9	15	54.0	23.8	342	38.7	53.3	9	37.9	12.9
11	348	52.4	27	35.5	−13 41.3	30	54.6	−17 23.3	357	40.6	−4 53.0	24	40.2	−15 12.8
12	3	54.8	42	35.4	−13 40.8	45	55.1	−17 22.8	12	42.5	−4 52.8	39	42.4	−15 12.7
13	18	57.3	57	35.3	40.2	60	55.7	22.3	27	44.4	52.6	54	44.6	12.7
14	33	59.8	72	35.2	39.7	75	56.3	21.7	42	46.3	52.4	69	46.8	12.6
15	49	02.2	87	35.0	39.1	90	56.8	21.2	57	48.3	52.1	84	49.1	12.5
16	64	04.7	102	34.9	38.5	105	57.4	20.7	72	50.2	51.9	99	51.3	12.5
17	79	07.1	117	34.8	−13 38.0	120	58.0	−17 20.1	87	52.1	−4 51.7	114	53.5	−15 12.4
18	94	09.6	132	34.7	−13 37.4	135	58.5	−17 19.6	102	54.0	−4 51.4	129	55.7	−15 12.3
19	109	12.1	147	34.5	36.9	150	59.1	19.1	117	55.9	51.2	144	58.0	12.2
20	124	14.5	162	34.4	36.3	165	59.7	18.6	132	57.8	51.0	160	00.2	12.2
21	139	17.0	177	34.3	35.7	181	00.3	18.0	147	59.7	50.7	175	02.4	12.1
22	154	19.5	192	34.1	35.2	196	00.8	17.5	163	01.7	50.5	190	04.6	12.0
23	169	21.9	207	34.0	34.6	211	01.4	17.0	178	03.6	50.3	205	06.9	11.9
24	184	24.4	222	33.9	−13 34.0	226	02.0	−17 16.4	193	05.5	−4 50.1	220	09.1	−15 11.9
Dif	—			−1	+6		+6	+5		+19	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 24ᵈ.3		PHE	4ʰ: 58′.9								
	PMG: 12ʰ 05ᵐ.4		SD: 16′.1			12ʰ: 58′.8								
			PMG: 8ʰ 12ᵐ			20ʰ: 58′.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 37.3	+2 30.1	241 42.7	55	−24 50.7	64	**60 N**	18 31	19 14	20 06	5 33	13	11 01	104
1	193 37.5	31.1	256 07.2	56	44.3	65	**58**	30	09	19 58	5 12	19	22	97
2	208 37.7	32.0	270 31.8	56	37.8	67	**56**	28	06	51	4 54	24	39	92
3	223 37.9	33.0	284 56.4	57	31.1	69	**54**	26	19 02	45	39	28	11 53	88
4	238 38.1	34.0	299 21.1	58	24.2	70	**52**	25	18 59	40	27	30	12 06	85
5	253 38.3	+2 35.0	313 45.9	59	−24 17.2	71	**50**	18 24	18 56	19 35	4 15	33	12 17	82
6	268 38.5	+2 36.0	328 10.8	60	−24 10.1	73	**45**	18 21	18 51	19 26	3 51	38	12 40	77
7	283 38.7	36.9	342 35.8	60	−24 02.8	75	**40**	19	46	18	32	41	12 58	73
8	298 38.9	37.9	357 00.8	62	−23 55.3	76	**35**	17	43	12	16	44	13 13	70
9	313 39.0	38.9	11 26.0	62	47.7	77	**30**	16	40	08	3 02	47	26	68
10	328 39.2	39.9	25 51.2	63	40.0	79	**20**	13	35	19 01	2 38	51	13 49	62
11	343 39.4	+2 40.9	40 16.5	64	−23 32.1	81	**10 N**	18 11	18 32	18 56	2 18	54	14 08	59
12	358 39.6	+2 41.8	54 41.9	65	−23 24.0	81	**0**	18 09	18 29	18 53	1 58	58	14 26	55
13	13 39.8	42.8	69 07.4	65	15.9	84	**10 S**	07	28	52	39	60	14 44	52
14	28 40.0	43.8	83 32.9	67	−23 07.5	84	**20**	05	27	52	1 18	64	15 03	48
15	43 40.2	44.8	97 58.6	67	−22 59.1	86	**30**	03	27	54	0 54	68	25	43
16	58 40.4	45.8	112 24.3	69	50.5	88	**35**	02	27	56	40	70	38	40
17	73 40.5	+2 46.7	126 50.2	69	−22 41.7	89	**40**	18 00	18 27	18 59	0 24	72	15 52	37
18	88 40.7	+2 47.7	141 16.1	69	−22 32.8	90	**45**	17 59	18 28	19 02	0 04	76	16 09	34
19	103 40.9	48.7	155 42.1	70	23.8	91	**50**	57	29	07	** **	**	30	29
20	118 41.1	49.7	170 08.2	71	14.7	93	**52**	56	30	09	** **	**	41	25
21	133 41.3	50.6	184 34.4	72	−22 05.4	94	**54**	56	31	12	** **	**	16 52	23
22	148 41.5	51.6	199 00.7	73	−21 56.0	95	**56**	55	32	15	** **	**	17 05	19
23	163 41.7	52.6	213 27.1	74	46.5	97	**58**	54	33	18	** **	**	19	16
24	178 41.9	+2 53.6	227 53.5	74	−21 36.8		**60 S**	17 53	18 34	19 23	23 57	101	17 37	10

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.4		Mag: +1.1		Mag: −2.1		Mag: +0.9	
	11ʰ 40ᵐ.5	PMG: 9ʰ 10ᵐ		PMG: 8ʰ 56ᵐ		PMG: 11ʰ 06ᵐ		PMG: 9ʰ 18ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	184 24.4	222 33.9	−13 34.0	226 02.0	−17 16.4	193 05.5	−4 50.1	220 09.1	−15 11.9
1	199 26.9	237 33.8	33.5	241 02.5	15.9	208 07.4	49.8	235 11.3	11.8
2	214 29.3	252 33.6	32.9	256 03.1	15.4	223 09.3	49.6	250 13.5	11.7
3	229 31.8	267 33.5	32.3	271 03.7	14.8	238 11.2	49.4	265 15.8	11.7
4	244 34.2	282 33.4	31.8	286 04.3	14.3	253 13.2	49.1	280 18.0	11.6
5	259 36.7	297 33.2	−13 31.2	301 04.8	−17 13.8	268 15.1	−4 48.9	295 20.2	−15 11.5
6	274 39.2	312 33.1	−13 30.6	316 05.4	−17 13.2	283 17.0	−4 48.7	310 22.4	−15 11.4
7	289 41.6	327 33.0	30.1	331 06.0	12.7	298 18.9	48.4	325 24.7	11.4
8	304 44.1	342 32.8	29.5	346 06.5	12.2	313 20.8	48.2	340 26.9	11.3
9	319 46.6	357 32.7	28.9	1 07.1	11.6	328 22.7	48.0	355 29.1	11.2
10	334 49.0	12 32.6	28.3	16 07.7	11.1	343 24.7	47.8	10 31.4	11.1
11	349 51.5	27 32.4	−13 27.8	31 08.3	−17 10.6	358 26.6	−4 47.5	25 33.6	−15 11.1
12	4 54.0	42 32.3	−13 27.2	46 08.8	−17 10.0	13 28.5	−4 47.3	40 35.8	−15 11.0
13	19 56.4	57 32.2	26.6	61 09.4	09.5	28 30.4	47.1	55 38.0	10.9
14	34 58.9	72 32.0	26.0	76 10.0	09.0	43 32.3	46.8	70 40.3	10.9
15	50 01.4	87 31.9	25.5	91 10.6	08.4	58 34.2	46.6	85 42.5	10.8
16	65 03.8	102 31.8	24.9	106 11.1	07.9	73 36.2	46.4	100 44.7	10.7
17	80 06.3	117 31.6	−13 24.3	121 11.7	−17 07.3	88 38.1	−4 46.1	115 46.9	−15 10.6
18	95 08.7	132 31.5	−13 23.7	136 12.3	−17 06.8	103 40.0	−4 45.9	130 49.2	−15 10.6
19	110 11.2	147 31.4	23.1	151 12.8	06.3	118 41.9	45.7	145 51.4	10.5
20	125 13.7	162 31.2	22.6	166 13.4	05.7	133 43.8	45.5	160 53.6	10.4
21	140 16.1	177 31.1	22.0	181 14.0	05.2	148 45.7	45.2	175 55.9	10.3
22	155 18.6	192 31.0	21.4	196 14.6	04.7	163 47.7	45.0	190 58.1	10.3
23	170 21.1	207 30.8	20.8	211 15.1	04.1	178 49.6	44.8	206 00.3	10.2
24	185 23.5	222 30.7	−13 20.2	226 15.7	−17 03.6	193 51.5	−4 44.5	221 02.5	−15 10.1
Dif	—	−1	+6	+6	+5	+19	+2	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 25ᵈ3		PHE	4ʰ: 58′.6									
	PMG: 12ʰ 05ᵐ1				SD: 16′.0			12ʰ: 58′.5									
					PMG: 9ʰ 09ᵐ			20ʰ: 58′.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	178	41.9	+2	53.6	227	53.5	−21	36.8		**60 N**	4 04	4 55	5 38	5 46	6	12 45	100
1	193	42.0		54.6	242	20.1 76		27.0	98	**58**	12	5 00	40	31	11	12 59	95
2	208	42.2		55.5	256	46.8 77		17.1	99	**56**	18	04	41	18	16	13 11	91
3	223	42.4		56.5	271	13.5 77	−21	07.1	100	**54**	24	07	43	5 07	19	21	88
4	238	42.6		57.5	285	40.4 79	−20	56.9	102	**52**	30	10	44	4 57	22	31	84
5	253	42.8	+2	58.5	300	07.3 79	−20	46.7	102	**50**	4 34	5 13	5 46	4 48	24	13 39	82
6	268	43.0	+2	59.4	314	34.4 81	−20	36.3	104	**45**	4 44	5 19	5 48	4 29	30	13 57	76
7	283	43.2	+3	00.4	329	01.5 81		25.8	105	**40**	52	24	51	13	34	14 11	72
8	298	43.4		01.4	343	28.7 82		15.2	106	**35**	4 58	27	53	4 00	38	23	68
9	313	43.6		02.4	357	56.0 83	−20	04.4	108	**30**	5 02	30	54	3 49	40	34	65
10	328	43.7		03.3	12	23.4 84	−19	53.6	108	**20**	09	35	5 57	29	45	14 51	60
11	343	43.9	+3	04.3	26	51.0 86	−19	42.6	110	**10 N**	5 14	5 39	6 00	3 12	49	15 07	55
12	358	44.1	+3	05.3	41	18.6 86	−19	31.6	110	**0**	5 17	5 41	6 02	2 56	53	15 21	52
13	13	44.3		06.3	55	46.3 87		20.4	112	**10 S**	18	43	04	39	57	36	47
14	28	44.5		07.3	70	14.0 87	−19	09.1	113	**20**	18	44	06	22	61	15 51	43
15	43	44.7		08.2	84	41.9 89	−18	57.7	114	**30**	17	44	08	2 02	66	16 08	38
16	58	44.9		09.2	99	09.9 90		46.3	114	**35**	15	44	09	1 50	69	18	35
17	73	45.1	+3	10.2	113	38.0 91	−18	34.7	116	**40**	5 12	5 44	6 11	1 36	73	16 29	32
18	88	45.2	+3	11.2	128	06.1 91	−18	23.0	117	**45**	5 09	5 43	6 12	1 20	77	16 43	27
19	103	45.4		12.1	142	34.4 93	−18	11.2	118	**50**	04	42	14	1 00	82	16 59	22
20	118	45.6		13.1	157	02.7 93	−17	59.3	119	**52**	5 02	41	15	0 51	85	17 06	20
21	133	45.8		14.1	171	31.2 95		47.4	119	**54**	4 59	41	16	40	88	15	16
22	148	46.0		15.1	185	59.7 95		35.3	121	**56**	56	40	17	28	91	24	13
23	163	46.2		16.0	200	28.3 96		23.2	121	**58**	53	39	18	0 13	97	35	9
24	178	46.4	+3	17.0	214	57.0 97	−17	10.9	123	**60 S**	4 49	5 38	6 19	** **	**	17 47	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 36ᵐ5		PMG: 9ʰ 10ᵐ			PMG: 8ʰ 55ᵐ			PMG: 11ʰ 03ᵐ			PMG: 9ʰ 14ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	185	23.5	222	30.7	−13 20.2	226	15.7	−17 03.6	193	51.5	−4 44.5	221	02.5	−15 10.1
1	200	26.0	237	30.6	19.6	241	16.3	03.0	208	53.4	44.3	236	04.8	10.1
2	215	28.5	252	30.4	19.1	256	16.9	02.5	223	55.3	44.1	251	07.0	10.0
3	230	30.9	267	30.3	18.5	271	17.4	02.0	238	57.2	43.9	266	09.2	09.9
4	245	33.4	282	30.2	17.9	286	18.0	01.4	253	59.2	43.6	281	11.4	09.8
5	260	35.9	297	30.0	−13 17.3	301	18.6	−17 00.9	269	01.1	−4 43.4	296	13.7	−15 09.8
6	275	38.3	312	29.9	−13 16.7	316	19.2	−17 00.3	284	03.0	−4 43.2	311	15.9	−15 09.7
7	290	40.8	327	29.7	16.1	331	19.8	−16 59.8	299	04.9	42.9	326	18.1	09.6
8	305	43.2	342	29.6	15.5	346	20.3	59.3	314	06.8	42.7	341	20.4	09.6
9	320	45.7	357	29.5	14.9	1	20.9	58.7	329	08.7	42.5	356	22.6	09.5
10	335	48.2	12	29.3	14.3	16	21.5	58.2	344	10.7	42.2	11	24.8	09.4
11	350	50.6	27	29.2	−13 13.7	31	22.1	−16 57.6	359	12.6	−4 42.0	26	27.0	−15 09.3
12	5	53.1	42	29.1	−13 13.2	46	22.6	−16 57.1	14	14.5	−4 41.8	41	29.3	−15 09.3
13	20	55.6	57	28.9	12.6	61	23.2	56.6	29	16.4	41.6	56	31.5	09.2
14	35	58.0	72	28.8	12.0	76	23.8	56.0	44	18.3	41.3	71	33.7	09.1
15	51	00.5	87	28.6	11.4	91	24.4	55.5	59	20.3	41.1	86	36.0	09.1
16	66	03.0	102	28.5	10.8	106	24.9	54.9	74	22.2	40.9	101	38.2	09.0
17	81	05.4	117	28.4	−13 10.2	121	25.5	−16 54.4	89	24.1	−4 40.6	116	40.4	−15 08.9
18	96	07.9	132	28.2	−13 09.6	136	26.1	−16 53.8	104	26.0	−4 40.4	131	42.6	−15 08.8
19	111	10.3	147	28.1	09.0	151	26.7	53.3	119	27.9	40.2	146	44.9	08.8
20	126	12.8	162	27.9	08.4	166	27.3	52.8	134	29.8	40.0	161	47.1	08.7
21	141	15.3	177	27.8	07.8	181	27.8	52.2	149	31.8	39.7	176	49.3	08.6
22	156	17.7	192	27.7	07.2	196	28.4	51.7	164	33.7	39.5	191	51.6	08.6
23	171	20.2	207	27.5	06.6	211	29.0	51.1	179	35.6	39.3	206	53.8	08.5
24	186	22.7	222	27.4	−13 06.0	226	29.6	−16 50.6	194	37.5	−4 39.0	221	56.0	−15 08.4
Dif	—			−1	+6		+6	+5		+19	+2		+22	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 26ᵈ.3		PHE	4ʰ: 58′.3								
	PMG: 12ʰ 04ᵐ.8				SD: 15′.9			12ʰ: 58′.1								
					PMG: 10ʰ 01ᵐ			20ʰ: 58′.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	46.4	+3	17.0	214	57.0 99	−17	10.9	**60 N**	18 36	19 19	20 12	5 52	4	14 25	96
1	193	46.6		18.0	229	25.9 98	−16	58.6 123	**58**	34	14	20 03	42	8	34	92
2	208	46.7		19.0	243	54.7 100		46.2 124	**56**	32	10	19 56	34	11	42	88
3	223	46.9		19.9	258	23.7 101		33.7 125	**54**	30	06	49	26	14	49	85
4	238	47.1		20.9	272	52.8 102		21.1 126	**52**	29	03	44	19	17	14 55	82
5	253	47.3	+3	21.9	287	22.0 102	−16	08.4 127	**50**	18 27	19 00	19 39	5 12	20	15 01	79
6	268	47.5	+3	22.9	301	51.2 102	−15	55.7 127	**45**	18 24	18 53	19 28	4 59	24	15 13	74
7	283	47.7		23.8	316	20.5 103		42.9 128	**40**	21	48	20	47	29	23	70
8	298	47.9		24.8	330	49.9 104		30.0 129	**35**	19	44	14	38	32	31	66
9	313	48.1		25.8	345	19.4 105		17.0 130	**30**	17	41	09	29	35	39	62
10	328	48.2		26.8	359	49.0 106	−15	03.9 131	**20**	13	36	19 01	14	41	15 51	58
11	343	48.4	+3	27.7	14	18.7 107	−14	50.8 131	**10 N**	18 11	18 32	18 56	4 01	45	16 02	53
12	358	48.6	+3	28.7	28	48.5 108	−14	37.6 132	**0**	18 08	18 29	18 53	3 49	49	16 13	48
13	13	48.8		29.7	43	18.3 108		24.4 132	**10 S**	06	27	51	36	54	23	43
14	28	49.0		30.7	57	48.2 109	−14	11.0 134	**20**	03	25	51	23	59	34	38
15	43	49.2		31.6	72	18.2 110	−13	57.6 134	**30**	18 00	24	52	3 08	64	46	33
16	58	49.4		32.6	86	48.3 111		44.2 134	**35**	17 59	24	53	2 59	67	16 53	30
17	73	49.5	+3	33.6	101	18.5 112	−13	30.7 135	**40**	17 57	18 24	18 55	2 49	71	17 01	26
18	88	49.7	+3	34.5	115	48.7 112	−13	17.1 136	**45**	17 55	18 24	18 58	2 37	75	17 10	22
19	103	49.9		35.5	130	19.0 113	−13	03.4 137	**50**	53	25	19 02	22	81	21	17
20	118	50.1		36.5	144	49.4 114	−12	49.7 137	**52**	52	25	04	16	83	26	15
21	133	50.3		37.5	159	19.9 115		36.0 137	**54**	51	26	07	2 08	86	31	13
22	148	50.5		38.4	173	50.4 115		22.1 139	**56**	49	26	10	1 59	90	37	11
23	163	50.7		39.4	188	21.0 116	−12	08.3 138	**58**	48	27	13	50	93	44	7
24	178	50.9	+3	40.4	202	51.7 117	−11	54.3 140	**60 S**	17 47	18 28	19 16	1 38	98	17 52	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 32ᵐ.6		PMG: 9ʰ 10ᵐ			PMG: 8ʰ 54ᵐ			PMG: 11ʰ 00ᵐ			PMG: 9ʰ 11ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	186	22.7	222	27.4	−13 06.0	226	29.6	−16 50.6	194	37.5	−4 39.0	221	56.0	−15 08.4
1	201	25.1	237	27.2	05.4	241	30.1	50.0	209	39.4	38.8	236	58.3	08.3
2	216	27.6	252	27.1	04.8	256	30.7	49.5	224	41.3	38.6	252	00.5	08.3
3	231	30.1	267	26.9	04.2	271	31.3	48.9	239	43.3	38.4	267	02.7	08.2
4	246	32.5	282	26.8	03.6	286	31.9	48.4	254	45.2	38.1	282	05.0	08.1
5	261	35.0	297	26.7	−13 03.0	301	32.5	−16 47.8	269	47.1	−4 37.9	297	07.2	−15 08.1
6	276	37.5	312	26.5	−13 02.3	316	33.0	−16 47.3	284	49.0	−4 37.7	312	09.4	−15 08.0
7	291	39.9	327	26.4	01.7	331	33.6	46.8	299	50.9	37.4	327	11.6	07.9
8	306	42.4	342	26.2	01.1	346	34.2	46.2	314	52.9	37.2	342	13.9	07.8
9	321	44.8	357	26.1	−13 00.5	1	34.8	45.7	329	54.8	37.0	357	16.1	07.8
10	336	47.3	12	25.9	−12 59.9	16	35.4	45.1	344	56.7	36.7	12	18.3	07.7
11	351	49.8	27	25.8	−12 59.3	31	35.9	−16 44.6	359	58.6	−4 36.5	27	20.6	−15 07.6
12	6	52.2	42	25.7	−12 58.7	46	36.5	−16 44.0	15	00.5	−4 36.3	42	22.8	−15 07.6
13	21	54.7	57	25.5	58.1	61	37.1	43.5	30	02.5	36.1	57	25.0	07.5
14	36	57.2	72	25.4	57.5	76	37.7	42.9	45	04.4	35.8	72	27.3	07.4
15	51	59.6	87	25.2	56.8	91	38.3	42.4	60	06.3	35.6	87	29.5	07.3
16	67	02.1	102	25.1	56.2	106	38.8	41.8	75	08.2	35.4	102	31.7	07.3
17	82	04.6	117	24.9	−12 55.6	121	39.4	−16 41.3	90	10.1	−4 35.1	117	34.0	−15 07.2
18	97	07.0	132	24.8	−12 55.0	136	40.0	−16 40.7	105	12.0	−4 34.9	132	36.2	−15 07.1
19	112	09.5	147	24.6	54.4	151	40.6	40.2	120	14.0	34.7	147	38.4	07.1
20	127	12.0	162	24.5	53.8	166	41.2	39.6	135	15.9	34.5	162	40.7	07.0
21	142	14.4	177	24.4	53.1	181	41.8	39.1	150	17.8	34.2	177	42.9	06.9
22	157	16.9	192	24.2	52.5	196	42.3	38.5	165	19.7	34.0	192	45.1	06.8
23	172	19.3	207	24.1	51.9	211	42.9	38.0	180	21.6	33.8	207	47.3	06.8
24	187	21.8	222	23.9	−12 51.3	226	43.5	−16 37.4	195	23.6	−4 33.5	222	49.6	−15 06.7
Dif	—			−1	+6		+6	+5		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 27ᵈ.3		PHE	4ʰ: 57′.9									
	PMG: 12ʰ 04ᵐ.5				SD: 15′.8			12ʰ: 57′.7									
					PMG: 10ʰ 49ᵐ			20ʰ: 57′.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	50.9	+3	40.4	202	51.7	−11	54.3		**60 N**	3 57	4 49	5 32	5 56	3	16 01	92
1	193	51.0		41.4	217	22.5 118		40.4	139	**58**	4 05	54	34	50	6	06	88
2	208	51.2		42.3	231	53.3 118		26.3	141	**56**	13	4 58	36	45	9	10	85
3	223	51.4		43.3	246	24.3 120	−11	12.3	140	**54**	19	5 02	38	40	12	14	82
4	238	51.6		44.3	260	55.2 119	−10	58.2	141	**52**	25	06	40	36	14	17	79
5	253	51.8	+3	45.2	275	26.3 121	−10	44.0	142	**50**	4 30	5 09	5 41	5 32	16	16 20	77
6	268	52.0	+3	46.2	289	57.4 121	−10	29.8	142	**45**	4 40	5 15	5 45	5 23	21	16 27	72
7	283	52.2		47.2	304	28.6 122		15.5	143	**40**	48	20	47	16	25	33	67
8	298	52.3		48.2	318	59.8 122	−10	01.2	143	**35**	4 55	24	50	10	28	37	64
9	313	52.5		49.1	333	31.1 123	−9	46.9	143	**30**	5 00	28	52	5 04	32	41	61
10	328	52.7		50.1	348	02.5 124		32.5	144	**20**	08	33	55	4 55	37	49	54
11	343	52.9	+3	51.1	2	34.0 125	−9	18.1	144	**10 N**	5 13	5 37	5 58	4 46	42	16 55	50
12	358	53.1	+3	52.0	17	05.5 125	−9	03.7	144	**0**	5 16	5 40	6 01	4 38	47	17 01	45
13	13	53.3		53.0	31	37.0 125	−8	49.2	145	**10 S**	18	43	04	30	51	06	41
14	28	53.5		54.0	46	08.7 127		34.7	145	**20**	19	44	06	22	55	12	37
15	43	53.7		55.0	60	40.4 127		20.1	146	**30**	18	46	09	12	61	19	31
16	58	53.8		55.9	75	12.1 127	−8	05.5	146	**35**	16	46	11	06	65	23	28
17	73	54.0	+3	56.9	89	43.9 128	−7	50.9	146	**40**	5 14	5 46	6 13	4 00	68	17 27	25
18	88	54.2	+3	57.9	104	15.8 129	−7	36.3	146	**45**	5 12	5 46	6 15	3 52	73	17 32	21
19	103	54.4		58.8	118	47.7 129		21.7	146	**50**	08	45	17	43	78	38	16
20	118	54.6	+3	59.8	133	19.6 129	−7	07.0	147	**52**	06	45	18	39	80	41	14
21	133	54.8	+4	00.8	147	51.7 131	−6	52.3	147	**54**	03	44	20	34	83	44	11
22	148	55.0		01.7	162	23.7 130		37.5	148	**56**	5 01	44	21	29	86	48	8
23	163	55.1		02.7	176	55.9 132		22.8	147	**58**	4 58	43	22	23	89	51	6
24	178	55.3	+4	03.7	191	28.0 131	−6	08.0	148	**60 S**	4 54	5 43	6 24	3 16	94	17 55	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 28ᵐ.7		PMG: 9ʰ 10ᵐ			PMG: 8ʰ 53ᵐ			PMG: 10ʰ 57ᵐ			PMG: 9ʰ 07ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	187	21.8	222	23.9	−12 51.3	226	43.5	−16 37.4	195	23.6	−4 33.5	222	49.6	−15 06.7
1	202	24.3	237	23.8	50.7	241	44.1	36.9	210	25.5	33.3	237	51.8	06.6
2	217	26.7	252	23.6	50.0	256	44.7	36.3	225	27.4	33.1	252	54.0	06.6
3	232	29.2	267	23.5	49.4	271	45.2	35.8	240	29.3	32.9	267	56.3	06.5
4	247	31.7	282	23.3	48.8	286	45.8	35.2	255	31.2	32.6	282	58.5	06.4
5	262	34.1	297	23.2	−12 48.2	301	46.4	−16 34.6	270	33.2	−4 32.4	298	00.7	−15 06.4
6	277	36.6	312	23.0	−12 47.6	316	47.0	−16 34.1	285	35.1	−4 32.2	313	03.0	−15 06.3
7	292	39.1	327	22.9	46.9	331	47.6	33.5	300	37.0	31.9	328	05.2	06.2
8	307	41.5	342	22.7	46.3	346	48.2	33.0	315	38.9	31.7	343	07.4	06.1
9	322	44.0	357	22.6	45.7	1	48.7	32.4	330	40.8	31.5	358	09.7	06.1
10	337	46.4	12	22.4	45.0	16	49.3	31.9	345	42.8	31.3	13	11.9	06.0
11	352	48.9	27	22.3	−12 44.4	31	49.9	−16 31.3	0	44.7	−4 31.0	28	14.1	−15 05.9
12	7	51.4	42	22.1	−12 43.8	46	50.5	−16 30.8	15	46.6	−4 30.8	43	16.4	−15 05.9
13	22	53.8	57	22.0	43.2	61	51.1	30.2	30	48.5	30.6	58	18.6	05.8
14	37	56.3	72	21.8	42.5	76	51.7	29.7	45	50.4	30.3	73	20.8	05.7
15	52	58.8	87	21.7	41.9	91	52.3	29.1	60	52.4	30.1	88	23.1	05.7
16	68	01.2	102	21.5	41.3	106	52.8	28.5	75	54.3	29.9	103	25.3	05.6
17	83	03.7	117	21.4	−12 40.6	121	53.4	−16 28.0	90	56.2	−4 29.7	118	27.5	−15 05.5
18	98	06.2	132	21.2	−12 40.0	136	54.0	−16 27.4	105	58.1	−4 29.4	133	29.8	−15 05.4
19	113	08.6	147	21.1	39.4	151	54.6	26.9	121	00.0	29.2	148	32.0	05.4
20	128	11.1	162	20.9	38.7	166	55.2	26.3	136	02.0	29.0	163	34.3	05.3
21	143	13.6	177	20.8	38.1	181	55.8	25.8	151	03.9	28.7	178	36.5	05.2
22	158	16.0	192	20.6	37.5	196	56.3	25.2	166	05.8	28.5	193	38.7	05.2
23	173	18.5	207	20.5	36.8	211	56.9	24.6	181	07.7	28.3	208	41.0	05.1
24	188	20.9	222	20.3	−12 36.2	226	57.5	−16 24.1	196	09.6	−4 28.1	223	43.2	−15 05.0
Dif	—			−1	+6		+6	+6		+19	+2		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 28ᵈ.3		PHE	4ʰ: 57′.4								
	PMG: 12ʰ 04ᵐ.2		SD: 15′.6			12ʰ: 57′.2								
			PMG: 11ʰ 35ᵐ			20ʰ: 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 55.3	+4 03.7	191 28.0		−6 08.0		**60 N**	18 41	19 24	20 18	5 59	2	17 33	89
1	193 55.5	04.7	206 00.3	133	−5 53.2	148	**58**	38	19	08	56	5	34	86
2	208 55.7	05.6	220 32.5	132	38.4	148	**56**	36	14	20 01	54	8	35	82
3	223 55.9	06.6	235 04.9	134	23.6	148	**54**	34	10	19 54	52	10	36	79
4	238 56.1	07.6	249 37.2	133	−5 08.8	148	**52**	32	06	48	50	13	36	78
5	253 56.3	+4 08.5	264 09.6	134	−4 53.9	149	**50**	18 30	19 03	19 42	5 48	15	17 37	75
6	268 56.4	+4 09.5	278 42.1	135	−4 39.1	148	**45**	18 26	18 56	19 31	5 44	20	17 39	69
7	283 56.6	10.5	293 14.6	135	24.2	149	**40**	23	50	23	41	24	40	65
8	298 56.8	11.4	307 47.1	135	−4 09.3	149	**35**	20	46	16	38	28	41	62
9	313 57.0	12.4	322 19.7	136	−3 54.4	149	**30**	18	42	10	36	30	42	59
10	328 57.2	13.4	336 52.3	136	39.5	149	**20**	14	36	19 02	32	35	43	54
11	343 57.4	+4 14.3	351 25.0	137	−3 24.6	149	**10 N**	18 11	18 32	18 56	5 28	40	17 45	49
12	358 57.6	+4 15.3	5 57.7	137	−3 09.7	149	**0**	18 07	18 28	18 52	5 25	44	17 46	44
13	13 57.7	16.3	20 30.4	137	−2 54.8	149	**10 S**	04	25	50	21	49	47	40
14	28 57.9	17.2	35 03.2	138	39.9	149	**20**	18 01	23	49	17	54	49	35
15	43 58.1	18.2	49 36.0	138	25.0	149	**30**	17 58	22	49	13	60	50	30
16	58 58.3	19.2	64 08.8	138	−2 10.1	149	**35**	56	21	50	11	62	51	27
17	73 58.5	+4 20.1	78 41.7	139	−1 55.2	149	**40**	17 54	18 21	18 52	5 08	66	17 52	23
18	88 58.7	+4 21.1	93 14.6	139	−1 40.3	149	**45**	17 51	18 21	18 55	5 05	70	17 53	19
19	103 58.9	22.1	107 47.6	140	25.4	149	**50**	49	21	18 58	5 01	75	54	15
20	118 59.0	23.0	122 20.5	139	−1 10.5	149	**52**	47	21	19 00	4 59	78	55	12
21	133 59.2	24.0	136 53.5	140	−0 55.6	149	**54**	46	21	02	57	80	55	11
22	148 59.4	25.0	151 26.5	140	40.7	149	**56**	44	21	04	55	83	56	8
23	163 59.6	25.9	165 59.6	141	25.8	149	**58**	42	21	07	52	87	57	5
24	178 59.8	+4 26.9	180 32.6	140	−0 11.0	148	**60 S**	17 41	18 22	19 10	4 50	90	17 58	2

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.4		Mag: +1.1		Mag: −2.1		Mag: +0.9	
	11ʰ 24ᵐ.7	PMG: 9ʰ 11ᵐ		PMG: 8ʰ 52ᵐ		PMG: 10ʰ 54ᵐ		PMG: 9ʰ 04ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	188 20.9	222 20.3	−12 36.2	226 57.5	−16 24.1	196 09.6	−4 28.1	223 43.2	−15 05.0
1	203 23.4	237 20.2	35.5	241 58.1	23.5	211 11.6	27.8	238 45.4	05.0
2	218 25.9	252 20.0	34.9	256 58.7	23.0	226 13.5	27.6	253 47.7	04.9
3	233 28.3	267 19.9	34.3	271 59.3	22.4	241 15.4	27.4	268 49.9	04.8
4	248 30.8	282 19.7	33.6	286 59.9	21.8	256 17.3	27.2	283 52.1	04.7
5	263 33.3	297 19.6	−12 33.0	302 00.5	−16 21.3	271 19.3	−4 26.9	298 54.4	−15 04.7
6	278 35.7	312 19.4	−12 32.3	317 01.0	−16 20.7	286 21.2	−4 26.7	313 56.6	−15 04.6
7	293 38.2	327 19.3	31.7	332 01.6	20.2	301 23.1	26.5	328 58.8	04.5
8	308 40.7	342 19.1	31.0	347 02.2	19.6	316 25.0	26.2	344 01.1	04.5
9	323 43.1	357 19.0	30.4	2 02.8	19.0	331 26.9	26.0	359 03.3	04.4
10	338 45.6	12 18.8	29.8	17 03.4	18.5	346 28.9	25.8	14 05.5	04.3
11	353 48.0	27 18.7	−12 29.1	32 04.0	−16 17.9	1 30.8	−4 25.6	29 07.8	−15 04.3
12	8 50.5	42 18.5	−12 28.5	47 04.6	−16 17.4	16 32.7	−4 25.3	44 10.0	−15 04.2
13	23 53.0	57 18.4	27.8	62 05.2	16.8	31 34.6	25.1	59 12.3	04.1
14	38 55.4	72 18.2	27.2	77 05.7	16.2	46 36.5	24.9	74 14.5	04.0
15	53 57.9	87 18.0	26.5	92 06.3	15.7	61 38.5	24.6	89 16.7	04.0
16	69 00.4	102 17.9	25.9	107 06.9	15.1	76 40.4	24.4	104 19.0	03.9
17	84 02.8	117 17.7	−12 25.2	122 07.5	−16 14.6	91 42.3	−4 24.2	119 21.2	−15 03.8
18	99 05.3	132 17.6	−12 24.6	137 08.1	−16 14.0	106 44.2	−4 24.0	134 23.4	−15 03.8
19	114 07.8	147 17.4	23.9	152 08.7	13.4	121 46.2	23.7	149 25.7	03.7
20	129 10.2	162 17.3	23.3	167 09.3	12.9	136 48.1	23.5	164 27.9	03.6
21	144 12.7	177 17.1	22.6	182 09.9	12.3	151 50.0	23.3	179 30.2	03.6
22	159 15.2	192 17.0	22.0	197 10.5	11.7	166 51.9	23.0	194 32.4	03.5
23	174 17.6	207 16.8	21.3	212 11.0	11.2	181 53.8	22.8	209 34.6	03.4
24	189 20.1	222 16.7	−12 20.6	227 11.6	−16 10.6	196 55.8	−4 22.6	224 36.9	−15 03.4
Dif	—	−2	+6	+6	+6	+19	+2	+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 29ᵈ.3		PHE	4ʰ: 56′.8								
	PMG: 12ʰ 03ᵐ.9				SD: 15′.5			12ʰ: 56′.6								
					PMG: 12ʰ 20ᵐ			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	59.8	+4	26.9	180	32.6	−0	11.0	**60 N**	3 49	4 43	5 26	6 01	1	19 02	88
1	194	00.0		27.9	195	05.7 141	+0	03.9 149	**58**	3 59	48	28	01	5	19 00	84
2	209	00.1		28.8	209	38.9 142		18.7 148	**56**	4 07	53	31	02	8	18 57	82
3	224	00.3		29.8	224	12.0 141		33.5 148	**54**	13	4 57	33	02	11	55	79
4	239	00.5		30.8	238	45.2 142	+0	48.4 149	**52**	20	5 01	35	03	13	54	76
5	254	00.7	+4	31.7	253	18.3 141	+1	03.2 148	**50**	4 25	5 04	5 37	6 03	15	18 52	74
6	269	00.9	+4	32.7	267	51.5 142	+1	17.9 147	**45**	4 36	5 11	5 41	6 04	20	18 48	69
7	284	01.1		33.7	282	24.8 143		32.7 148	**40**	45	17	44	05	23	45	65
8	299	01.3		34.6	296	58.0 142	+1	47.5 148	**35**	52	22	47	06	26	43	61
9	314	01.4		35.6	311	31.3 143	+2	02.2 147	**30**	4 57	26	50	06	30	41	58
10	329	01.6		36.6	326	04.5 142		16.9 147	**20**	5 06	32	54	07	35	37	53
11	344	01.8	+4	37.5	340	37.8 143	+2	31.6 147	**10 N**	5 12	5 36	5 57	6 08	40	18 34	48
12	359	02.0	+4	38.5	355	11.1 143	+2	46.2 146	**0**	5 16	5 40	6 01	6 09	44	18 30	44
13	14	02.2		39.5	9	44.4 143	+3	00.9 147	**10 S**	18	43	04	10	49	27	40
14	29	02.4		40.4	24	17.8 144		15.5 146	**20**	19	45	07	11	53	24	35
15	44	02.5		41.4	38	51.1 143		30.1 146	**30**	19	47	11	13	58	20	30
16	59	02.7		42.4	53	24.4 143		44.6 145	**35**	18	47	13	13	62	18	27
17	74	02.9	+4	43.3	67	57.8 144	+3	59.2 146	**40**	5 16	5 48	6 15	6 14	65	18 15	24
18	89	03.1	+4	44.3	82	31.1 143	+4	13.7 145	**45**	5 14	5 48	6 17	6 15	69	18 12	20
19	104	03.3		45.2	97	04.5 144		28.1 144	**50**	11	48	20	16	74	09	15
20	119	03.5		46.2	111	37.9 144		42.6 145	**52**	09	48	22	17	76	07	14
21	134	03.6		47.2	126	11.3 144	+4	57.0 144	**54**	07	48	23	17	79	06	11
22	149	03.8		48.1	140	44.6 143	+5	11.4 144	**56**	05	48	25	18	82	04	8
23	164	04.0		49.1	155	18.0 144		25.7 143	**58**	5 02	48	27	19	85	02	5
24	179	04.2	+4	50.1	169	51.4 144	+5	40.0 143	**60 S**	4 59	5 47	6 29	6 20	88	18 00	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 20ᵐ.8		PMG: 9ʰ 11ᵐ			PMG: 8ʰ 51ᵐ			PMG: 10ʰ 51ᵐ			PMG: 9ʰ 00ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	189	20.1	222	16.7	−12 20.6	227	11.6	−16 10.6	196	55.8	−4 22.6	224	36.9	−15 03.4
1	204	22.5	237	16.5	20.0	242	12.2	10.0	211	57.7	22.4	239	39.1	03.3
2	219	25.0	252	16.3	19.3	257	12.8	09.5	226	59.6	22.1	254	41.3	03.2
3	234	27.5	267	16.2	18.7	272	13.4	08.9	242	01.5	21.9	269	43.6	03.1
4	249	29.9	282	16.0	18.0	287	14.0	08.3	257	03.5	21.7	284	45.8	03.1
5	264	32.4	297	15.9	−12 17.4	302	14.6	−16 07.8	272	05.4	−4 21.5	299	48.1	−15 03.0
6	279	34.9	312	15.7	−12 16.7	317	15.2	−16 07.2	287	07.3	−4 21.2	314	50.3	−15 02.9
7	294	37.3	327	15.6	16.0	332	15.8	06.6	302	09.2	21.0	329	52.5	02.9
8	309	39.8	342	15.4	15.4	347	16.4	06.1	317	11.1	20.8	344	54.8	02.8
9	324	42.3	357	15.2	14.7	2	16.9	05.5	332	13.1	20.5	359	57.0	02.7
10	339	44.7	12	15.1	14.0	17	17.5	04.9	347	15.0	20.3	14	59.2	02.7
11	354	47.2	27	14.9	−12 13.4	32	18.1	−16 04.4	2	16.9	−4 20.1	30	01.5	−15 02.6
12	9	49.6	42	14.8	−12 12.7	47	18.7	−16 03.8	17	18.8	−4 19.9	45	03.7	−15 02.5
13	24	52.1	57	14.6	12.1	62	19.3	03.2	32	20.8	19.6	60	06.0	02.5
14	39	54.6	72	14.5	11.4	77	19.9	02.7	47	22.7	19.4	75	08.2	02.4
15	54	57.0	87	14.3	10.7	92	20.5	02.1	62	24.6	19.2	90	10.4	02.3
16	69	59.5	102	14.1	10.1	107	21.1	01.5	77	26.5	19.0	105	12.7	02.3
17	85	02.0	117	14.0	−12 09.4	122	21.7	−16 01.0	92	28.4	−4 18.7	120	14.9	−15 02.2
18	100	04.4	132	13.8	−12 08.7	137	22.3	−16 00.4	107	30.4	−4 18.5	135	17.2	−15 02.1
19	115	06.9	147	13.7	08.0	152	22.9	−15 59.8	122	32.3	18.3	150	19.4	02.0
20	130	09.4	162	13.5	07.4	167	23.5	59.3	137	34.2	18.0	165	21.6	02.0
21	145	11.8	177	13.4	06.7	182	24.1	58.7	152	36.1	17.8	180	23.9	01.9
22	160	14.3	192	13.2	06.0	197	24.6	58.1	167	38.1	17.6	195	26.1	01.8
23	175	16.8	207	13.0	05.4	212	25.2	57.5	182	40.0	17.4	210	28.4	01.8
24	190	19.2	222	12.9	−12 04.7	227	25.8	−15 57.0	197	41.9	−4 17.1	225	30.6	−15 01.7
Dif	—		−2		+7	+6		+6	+19		+2	+22		+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 30ᵈ.3		PHE	4ʰ: 56′.3								
	PMG: 12ʰ 03ᵐ.6				SD: 15′.3			12ʰ: 56′.1								
					PMG: 13ʰ 04ᵐ			20ʰ: 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	179	04.2	+4	50.1	169	51.4	+5	40.0	**60 N**	18 46	19 29	20 24	6 02	3	20 30	89
1	194	04.4		51.0	184	24.8 144	+5	54.3 143	**58**	43	24	14	06	6	24	85
2	209	04.6		52.0	198	58.2 144	+6	08.5 142	**56**	40	18	20 05	10	8	19	81
3	224	04.7		53.0	213	31.6 144		22.7 142	**54**	38	14	19 58	13	11	14	78
4	239	04.9		53.9	228	05.0 144		36.9 142	**52**	35	10	52	16	13	10	75
5	254	05.1	+4	54.9	242	38.4 144	+6	51.0 141	**50**	18 33	19 06	19 46	6 18	16	20 06	73
6	269	05.3	+4	55.8	257	11.7 143	+7	05.1 141	**45**	18 29	18 59	19 34	6 24	20	19 57	68
7	284	05.5		56.8	271	45.1 144		19.1 140	**40**	25	53	25	28	25	50	64
8	299	05.7		57.8	286	18.5 144		33.1 140	**35**	22	48	18	32	28	44	61
9	314	05.9		58.7	300	51.9 144	+7	47.0 139	**30**	19	43	12	36	31	39	58
10	329	06.0	+4	59.7	315	25.2 143	+8	00.9 139	**20**	15	37	19 03	42	36	30	53
11	344	06.2	+5	00.6	329	58.6 144	+8	14.8 139	**10 N**	18 11	18 32	18 56	6 48	40	19 22	48
12	359	06.4	+5	01.6	344	31.9 143	+8	28.6 138	**0**	18 07	18 28	18 52	6 53	44	19 14	45
13	14	06.6		02.6	359	05.2 143		42.3 137	**10 S**	03	24	49	6 59	48	19 07	40
14	29	06.8		03.5	13	38.6 144	+8	56.0 137	**20**	18 00	22	47	7 04	53	18 59	36
15	44	06.9		04.5	28	11.9 143	+9	09.7 137	**30**	17 56	19	47	11	58	50	32
16	59	07.1		05.4	42	45.2 143		23.3 136	**35**	53	18	48	15	61	45	29
17	74	07.3	+5	06.4	57	18.5 143	+9	36.9 136	**40**	17 51	18 18	18 49	7 19	64	18 39	26
18	89	07.5	+5	07.4	71	51.8 143	+9	50.4 135	**45**	17 48	18 17	18 51	7 24	69	18 32	22
19	104	07.7		08.3	86	25.0 142	+10	03.8 134	**50**	44	16	54	30	74	24	17
20	119	07.9		09.3	100	58.3 143		17.2 134	**52**	43	16	55	33	76	21	14
21	134	08.0		10.2	115	31.5 142		30.6 134	**54**	41	16	57	36	79	17	12
22	149	08.2		11.2	130	04.7 142		43.9 133	**56**	39	16	18 59	40	81	12	10
23	164	08.4		12.2	144	37.9 142	+10	57.1 132	**58**	37	16	19 01	44	84	07	7
24	179	08.6	+5	13.1	159	11.1 142	+11	10.3 132	**60 S**	17 35	18 16	19 04	7 48	88	18 02	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 16ᵐ.9		PMG: 9ʰ 11ᵐ			PMG: 8ʰ 50ᵐ			PMG: 10ʰ 48ᵐ			PMG: 8ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	190	19.2	222	12.9	−12 04.7	227	25.8	−15 57.0	197	41.9	−4 17.1	225	30.6	−15 01.7
1	205	21.7	237	12.7	04.0	242	26.4	56.4	212	43.8	16.9	240	32.8	01.6
2	220	24.1	252	12.6	03.3	257	27.0	55.8	227	45.8	16.7	255	35.1	01.6
3	235	26.6	267	12.4	02.7	272	27.6	55.3	242	47.7	16.5	270	37.3	01.5
4	250	29.1	282	12.2	02.0	287	28.2	54.7	257	49.6	16.2	285	39.6	01.4
5	265	31.5	297	12.1	−12 01.3	302	28.8	−15 54.1	272	51.5	−4 16.0	300	41.8	−15 01.4
6	280	34.0	312	11.9	−12 00.6	317	29.4	−15 53.5	287	53.5	−4 15.8	315	44.0	−15 01.3
7	295	36.5	327	11.8	−12 00.0	332	30.0	53.0	302	55.4	15.5	330	46.3	01.2
8	310	38.9	342	11.6	−11 59.3	347	30.6	52.4	317	57.3	15.3	345	48.5	01.2
9	325	41.4	357	11.4	58.6	2	31.2	51.8	332	59.2	15.1	0	50.8	01.1
10	340	43.9	12	11.3	57.9	17	31.8	51.3	348	01.1	14.9	15	53.0	01.0
11	355	46.3	27	11.1	−11 57.2	32	32.4	−15 50.7	3	03.1	−4 14.6	30	55.2	−15 01.0
12	10	48.8	42	11.0	−11 56.6	47	33.0	−15 50.1	18	05.0	−4 14.4	45	57.5	−15 00.9
13	25	51.3	57	10.8	55.9	62	33.6	49.5	33	06.9	14.2	60	59.7	00.8
14	40	53.7	72	10.6	55.2	77	34.2	49.0	48	08.8	14.0	76	02.0	00.7
15	55	56.2	87	10.5	54.5	92	34.8	48.4	63	10.8	13.7	91	04.2	00.7
16	70	58.6	102	10.3	53.8	107	35.4	47.8	78	12.7	13.5	106	06.4	00.6
17	86	01.1	117	10.2	−11 53.1	122	35.9	−15 47.2	93	14.6	−4 13.3	121	08.7	−15 00.5
18	101	03.6	132	10.0	−11 52.5	137	36.5	−15 46.7	108	16.5	−4 13.1	136	10.9	−15 00.5
19	116	06.0	147	09.8	51.8	152	37.1	46.1	123	18.5	12.8	151	13.2	00.4
20	131	08.5	162	09.7	51.1	167	37.7	45.5	138	20.4	12.6	166	15.4	00.3
21	146	11.0	177	09.5	50.4	182	38.3	44.9	153	22.3	12.4	181	17.7	00.3
22	161	13.4	192	09.3	49.7	197	38.9	44.3	168	24.2	12.1	196	19.9	00.2
23	176	15.9	207	09.2	49.0	212	39.5	43.8	183	26.2	11.9	211	22.1	00.1
24	191	18.4	222	09.0	−11 48.3	227	40.1	−15 43.2	198	28.1	−4 11.7	226	24.4	−15 00.1
Dif	—			−2	+7		+6	+6		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 1ᵈ.7		PHE	4ʰ: 55′.7									
	PMG: 12ʰ 03ᵐ.3				SD: 15′.2			12ʰ: 55′.5									
					PMG: 13ʰ 48ᵐ			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	179	08.6	+5	13.1	159	11.1	+11	10.3		**60 N**	3 42	4 36	5 20	6 05	4	21 59	89
1	194	08.8		14.1	173	44.3 142		23.4	131	**58**	3 52	42	23	12	8	49	84
2	209	09.0		15.0	188	17.4 141		36.4	130	**56**	4 01	47	26	18	11	40	80
3	224	09.1		16.0	202	50.5 141	+11	49.4	130	**54**	08	52	28	24	14	32	77
4	239	09.3		17.0	217	23.6 141	+12	02.4	130	**52**	14	4 56	31	29	16	25	75
5	254	09.5	+5	17.9	231	56.7 141	+12	15.2	128	**50**	4 20	5 00	5 33	6 34	18	21 19	72
6	269	09.7	+5	18.9	246	29.8 141	+12	28.0	128	**45**	4 32	5 08	5 37	6 44	23	21 05	68
7	284	09.9		19.8	261	02.8 140		40.8	128	**40**	41	14	41	6 53	26	20 54	64
8	299	10.0		20.8	275	35.8 140	+12	53.5	127	**35**	49	19	44	7 00	30	45	60
9	314	10.2		21.8	290	08.8 140	+13	06.1	126	**30**	4 55	23	47	07	32	37	58
10	329	10.4		22.7	304	41.8 140		18.6	125	**20**	5 04	30	52	18	37	23	53
11	344	10.6	+5	23.7	319	14.7 139	+13	31.1	125	**10 N**	5 11	5 35	5 56	7 28	41	20 10	50
12	359	10.8	+5	24.6	333	47.7 140	+13	43.5	124	**0**	5 15	5 39	6 00	7 37	45	19 59	46
13	14	11.0		25.6	348	20.6 139	+13	55.9	124	**10 S**	18	43	04	47	49	47	43
14	29	11.1		26.5	2	53.4 138	+14	08.1	122	**20**	20	45	08	7 57	53	35	39
15	44	11.3		27.5	17	26.3 139		20.3	122	**30**	20	48	12	8 09	58	22	33
16	59	11.5		28.4	31	59.1 138		32.5	122	**35**	20	49	14	16	60	14	31
17	74	11.7	+5	29.4	46	31.8 137	+14	44.5	120	**40**	5 18	5 50	6 17	8 23	64	19 05	28
18	89	11.9	+5	30.4	61	04.6 138	+14	56.5	120	**45**	5 17	5 51	6 20	8 33	67	18 54	25
19	104	12.0		31.3	75	37.3 137	+15	08.4	119	**50**	14	51	24	44	73	41	20
20	119	12.2		32.3	90	10.0 137		20.3	119	**52**	12	52	25	49	75	35	18
21	134	12.4		33.2	104	42.6 136		32.0	117	**54**	11	52	27	8 55	78	29	15
22	149	12.6		34.2	119	15.3 137		43.7	117	**56**	09	52	29	9 01	81	22	12
23	164	12.8		35.1	133	47.9 136	+15	55.3	116	**58**	07	52	31	08	85	14	8
24	179	13.0	+5	36.1	148	20.4 135	+16	06.8	115	**60 S**	5 04	5 52	6 34	9 16	89	18 05	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.1			Mag: −2.1			Mag: +0.9		
	11ʰ 12ᵐ.9		PMG: 9ʰ 11ᵐ			PMG: 8ʰ 49ᵐ			PMG: 10ʰ 45ᵐ			PMG: 8ʰ 53ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	191	18.4	222	09.0	−11 48.3	227	40.1	−15 43.2	198	28.1	−4 11.7	226	24.4	−15 00.1
1	206	20.8	237	08.9	47.6	242	40.7	42.6	213	30.0	11.5	241	26.6	−15 00.0
2	221	23.3	252	08.7	47.0	257	41.3	42.0	228	31.9	11.2	256	28.9	−14 59.9
3	236	25.7	267	08.5	46.3	272	41.9	41.5	243	33.9	11.0	271	31.1	59.9
4	251	28.2	282	08.4	45.6	287	42.5	40.9	258	35.8	10.8	286	33.4	59.8
5	266	30.7	297	08.2	−11 44.9	302	43.1	−15 40.3	273	37.7	−4 10.6	301	35.6	−14 59.7
6	281	33.1	312	08.0	−11 44.2	317	43.7	−15 39.7	288	39.6	−4 10.3	316	37.8	−14 59.7
7	296	35.6	327	07.9	43.5	332	44.3	39.1	303	41.6	10.1	331	40.1	59.6
8	311	38.1	342	07.7	42.8	347	44.9	38.6	318	43.5	09.9	346	42.3	59.5
9	326	40.5	357	07.6	42.1	2	45.5	38.0	333	45.4	09.7	1	44.6	59.5
10	341	43.0	12	07.4	41.4	17	46.1	37.4	348	47.3	09.4	16	46.8	59.4
11	356	45.5	27	07.2	−11 40.7	32	46.7	−15 36.8	3	49.3	−4 09.2	31	49.1	−14 59.3
12	11	47.9	42	07.1	−11 40.0	47	47.3	−15 36.2	18	51.2	−4 09.0	46	51.3	−14 59.3
13	26	50.4	57	06.9	39.3	62	47.9	35.7	33	53.1	08.7	61	53.5	59.2
14	41	52.9	72	06.7	38.6	77	48.5	35.1	48	55.0	08.5	76	55.8	59.1
15	56	55.3	87	06.6	37.9	92	49.1	34.5	63	57.0	08.3	91	58.0	59.1
16	71	57.8	102	06.4	37.2	107	49.7	33.9	78	58.9	08.1	107	00.3	59.0
17	87	00.2	117	06.2	−11 36.5	122	50.3	−15 33.3	94	00.8	−4 07.8	122	02.5	−14 58.9
18	102	02.7	132	06.1	−11 35.8	137	50.9	−15 32.8	109	02.7	−4 07.6	137	04.8	−14 58.9
19	117	05.2	147	05.9	35.1	152	51.5	32.2	124	04.7	07.4	152	07.0	58.8
20	132	07.6	162	05.8	34.4	167	52.1	31.6	139	06.6	07.2	167	09.3	58.7
21	147	10.1	177	05.6	33.7	182	52.7	31.0	154	08.5	06.9	182	11.5	58.7
22	162	12.6	192	05.4	33.0	197	53.3	30.4	169	10.5	06.7	197	13.7	58.6
23	177	15.0	207	05.3	32.3	212	53.9	29.9	184	12.4	06.5	212	16.0	58.5
24	192	17.5	222	05.1	−11 31.6	227	54.5	−15 29.3	199	14.3	−4 06.3	227	18.2	−14 58.5
Dif	—		−2		+7	+6		+6	+19		+2	+22		+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 2ᵈ.7		PHE	4ʰ: 55′.2								
	PMG: 12ʰ 03ᵐ.0				SD: 15′.1			12ʰ: 55′.0								
					PMG: 14ʰ 34ᵐ			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	179	13.0	+5	36.1	148	20.4	+16	06.8	**60 N**	18 51	19 35	20 30	6 09	6	23 28	88
1	194	13.1		37.1	162	52.9 135		18.3 115	**58**	47	28	19	20	10	13	82
2	209	13.3		38.0	177	25.4 135		29.7 114	**56**	44	23	10	29	15	23 00	79
3	224	13.5		39.0	191	57.9 135		41.0 113	**54**	41	18	20 02	38	17	22 49	75
4	239	13.7		39.9	206	30.3 134	+16	52.2 112	**52**	39	13	19 56	45	20	40	72
5	254	13.9	+5	40.9	221	02.7 134	+17	03.3 111	**50**	18 36	19 10	19 50	6 52	22	22 31	70
6	269	14.0	+5	41.8	235	35.1 134	+17	14.3 110	**45**	18 31	19 01	19 37	7 07	27	22 13	65
7	284	14.2		42.8	250	07.4 133		25.3 110	**40**	27	18 55	27	19	31	21 58	62
8	299	14.4		43.7	264	39.7 133		36.2 109	**35**	24	49	19	30	33	45	60
9	314	14.6		44.7	279	11.9 132		47.0 108	**30**	20	45	13	39	36	35	57
10	329	14.8		45.6	293	44.1 132	+17	57.7 107	**20**	15	37	19 03	7 55	40	16	54
11	344	14.9	+5	46.6	308	16.3 132	+18	08.3 106	**10 N**	18 10	18 32	18 56	8 09	44	21 00	50
12	359	15.1	+5	47.5	322	48.4 131	+18	18.8 105	**0**	18 06	18 27	18 51	8 22	47	20 45	47
13	14	15.3		48.5	337	20.5 131		29.3 105	**10 S**	18 02	23	48	36	50	30	44
14	29	15.5		49.4	351	52.6 131		39.7 104	**20**	17 58	20	46	8 50	54	20 14	41
15	44	15.7		50.4	6	24.6 130	+18	49.9 102	**30**	53	17	45	9 07	57	19 55	38
16	59	15.8		51.4	20	56.6 130	+19	00.1 102	**35**	50	16	45	16	61	45	35
17	74	16.0	+5	52.3	35	28.5 129	+19	10.2 101	**40**	17 47	18 15	18 46	9 27	64	19 33	32
18	89	16.2	+5	53.3	50	00.4 129	+19	20.2 100	**45**	17 44	18 13	18 47	9 40	67	19 19	29
19	104	16.4		54.2	64	32.3 129		30.1 99	**50**	40	12	50	9 57	71	19 01	25
20	119	16.6		55.2	79	04.1 128		39.9 98	**52**	38	12	51	10 04	74	18 53	23
21	134	16.7		56.1	93	35.9 128		49.6 97	**54**	36	11	52	13	76	44	20
22	149	16.9		57.1	108	07.6 127	+19	59.3 97	**56**	34	11	54	22	80	34	17
23	164	17.1		58.0	122	39.3 127	+20	08.8 95	**58**	31	11	56	33	84	22	13
24	179	17.3	+5	59.0	137	11.0 127	+20	18.2 94	**60 S**	17 29	18 10	18 58	10 45	89	18 09	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	11ʰ 09ᵐ.0		PMG: 9ʰ 12ᵐ			PMG: 8ʰ 48ᵐ			PMG: 10ʰ 42ᵐ			PMG: 8ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	192	17.5	222	05.1	−11 31.6	227	54.5	−15 29.3	199	14.3	−4 06.3	227	18.2	−14 58.5
1	207	20.0	237	04.9	30.9	242	55.1	28.7	214	16.2	06.0	242	20.5	58.4
2	222	22.4	252	04.8	30.2	257	55.7	28.1	229	18.2	05.8	257	22.7	58.3
3	237	24.9	267	04.6	29.5	272	56.3	27.5	244	20.1	05.6	272	25.0	58.3
4	252	27.3	282	04.4	28.7	287	56.9	26.9	259	22.0	05.4	287	27.2	58.2
5	267	29.8	297	04.3	−11 28.0	302	57.5	−15 26.3	274	23.9	−4 05.1	302	29.5	−14 58.1
6	282	32.3	312	04.1	−11 27.3	317	58.1	−15 25.8	289	25.9	−4 04.9	317	31.7	−14 58.1
7	297	34.7	327	03.9	26.6	332	58.7	25.2	304	27.8	04.7	332	34.0	58.0
8	312	37.2	342	03.8	25.9	347	59.3	24.6	319	29.7	04.5	347	36.2	57.9
9	327	39.7	357	03.6	25.2	2	59.9	24.0	334	31.6	04.2	2	38.4	57.9
10	342	42.1	12	03.4	24.5	18	00.5	23.4	349	33.6	04.0	17	40.7	57.8
11	357	44.6	27	03.3	−11 23.8	33	01.1	−15 22.8	4	35.5	−4 03.8	32	42.9	−14 57.7
12	12	47.1	42	03.1	−11 23.0	48	01.7	−15 22.3	19	37.4	−4 03.5	47	45.2	−14 57.7
13	27	49.5	57	02.9	22.3	63	02.3	21.7	34	39.4	03.3	62	47.4	57.6
14	42	52.0	72	02.8	21.6	78	02.9	21.1	49	41.3	03.1	77	49.7	57.5
15	57	54.5	87	02.6	20.9	93	03.6	20.5	64	43.2	02.9	92	51.9	57.5
16	72	56.9	102	02.4	20.2	108	04.2	19.9	79	45.1	02.6	107	54.2	57.4
17	87	59.4	117	02.3	−11 19.5	123	04.8	−15 19.3	94	47.1	−4 02.4	122	56.4	−14 57.3
18	103	01.8	132	02.1	−11 18.7	138	05.4	−15 18.7	109	49.0	−4 02.2	137	58.7	−14 57.3
19	118	04.3	147	01.9	18.0	153	06.0	18.1	124	50.9	02.0	153	00.9	57.2
20	133	06.8	162	01.8	17.3	168	06.6	17.6	139	52.8	01.7	168	03.2	57.1
21	148	09.2	177	01.6	16.6	183	07.2	17.0	154	54.8	01.5	183	05.4	57.1
22	163	11.7	192	01.4	15.9	198	07.8	16.4	169	56.7	01.3	198	07.7	57.0
23	178	14.2	207	01.3	15.1	213	08.4	15.8	184	58.6	01.1	213	09.9	56.9
24	193	16.6	222	01.1	−11 14.4	228	09.0	−15 15.2	200	00.6	−4 00.8	228	12.2	−14 56.9
Dif	—		−2		+7	+6		+6	+19		+2	+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 3ᵈ.7		PHE	4ʰ: 54′.8									
	PMG: 12ʰ 02ᵐ.7				SD: 14′.9			12ʰ: 54′.6									
					PMG: 15ʰ 21ᵐ			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	179	17.3	+5	59.0	137	11.0	+20	18.2		**60 N**	3 35	4 30	5 14	6 15	11	** **	**
1	194	17.5	+5	59.9	151	42.6 126		27.6	94	**58**	45	36	17	30	17	** **	**
2	209	17.6	+6	00.9	166	14.2 126		36.8	92	**56**	3 55	42	20	44	20	** **	**
3	224	17.8		01.8	180	45.7 125		45.9	91	**54**	4 02	47	23	6 55	23	** **	**
4	239	18.0		02.8	195	17.2 125	+20	55.0	91	**52**	09	51	26	7 05	26	23 52	67
5	254	18.2	+6	03.7	209	48.7 125	+21	03.9	89	**50**	4 15	4 55	5 28	7 14	28	23 41	66
6	269	18.3	+6	04.7	224	20.1 124	+21	12.8	89	**45**	4 28	5 04	5 34	7 34	32	23 18	63
7	284	18.5		05.6	238	51.5 124		21.5	87	**40**	38	10	38	7 50	35	23 00	60
8	299	18.7		06.6	253	22.8 123		30.2	87	**35**	46	16	42	8 03	38	22 45	58
9	314	18.9		07.5	267	54.1 123		38.7	85	**30**	4 52	21	45	15	39	32	56
10	329	19.1		08.5	282	25.4 123		47.2	85	**20**	5 02	28	50	35	43	22 10	53
11	344	19.2	+6	09.4	296	56.6 122	+21	55.5	83	**10 N**	5 09	5 34	5 55	8 53	45	21 50	51
12	359	19.4	+6	10.4	311	27.7 121	+22	03.7	82	**0**	5 15	5 39	5 59	9 09	48	21 32	49
13	14	19.6		11.3	325	58.9 122		11.9	82	**10 S**	18	43	6 04	26	51	21 14	47
14	29	19.8		12.3	340	29.9 120		19.9	80	**20**	20	46	08	9 44	53	20 55	45
15	44	20.0		13.2	355	01.0 121		27.8	79	**30**	21	49	13	10 04	57	33	42
16	59	20.1		14.2	9	32.0 120		35.6	78	**35**	21	50	16	17	58	20	40
17	74	20.3	+6	15.1	24	03.0 120	+22	43.3	77	**40**	5 20	5 52	6 19	10 31	61	20 05	38
18	89	20.5	+6	16.1	38	33.9 119	+22	50.9	76	**45**	5 19	5 53	6 22	10 47	65	19 48	35
19	104	20.7		17.0	53	04.8 119	+22	58.4	75	**50**	17	54	27	11 08	68	26	32
20	119	20.8		17.9	67	35.6 118	+23	05.8	74	**52**	16	55	29	18	70	16	29
21	134	21.0		18.9	82	06.4 118		13.1	73	**54**	14	55	31	29	73	19 04	27
22	149	21.2		19.8	96	37.2 118		20.3	72	**56**	13	56	33	42	76	18 51	24
23	164	21.4		20.8	111	07.9 117		27.3	70	**58**	11	56	36	11 57	80	35	21
24	179	21.6	+6	21.7	125	38.6 117	+23	34.3	70	**60 S**	5 09	5 57	6 39	12 14	87	18 17	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.4			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	11ʰ 05ᵐ.1		PMG: 9ʰ 12ᵐ			PMG: 8ʰ 47ᵐ			PMG: 10ʰ 39ᵐ			PMG: 8ʰ 46ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	193	16.6	222	01.1	−11 14.4	228	09.0	−15 15.2	200	00.6	−4 00.8	228	12.2	−14 56.9
1	208	19.1	237	00.9	13.7	243	09.6	14.6	215	02.5	00.6	243	14.4	56.8
2	223	21.6	252	00.8	13.0	258	10.2	14.0	230	04.4	00.4	258	16.6	56.7
3	238	24.0	267	00.6	12.3	273	10.8	13.4	245	06.3	−4 00.2	273	18.9	56.7
4	253	26.5	282	00.4	11.5	288	11.4	12.8	260	08.3	−3 59.9	288	21.1	56.6
5	268	29.0	297	00.3	−11 10.8	303	12.0	−15 12.2	275	10.2	−3 59.7	303	23.4	−14 56.5
6	283	31.4	312	00.1	−11 10.1	318	12.6	−15 11.7	290	12.1	−3 59.5	318	25.6	−14 56.5
7	298	33.9	326	59.9	09.3	333	13.2	11.1	305	14.1	59.3	333	27.9	56.4
8	313	36.3	341	59.8	08.6	348	13.8	10.5	320	16.0	59.0	348	30.1	56.3
9	328	38.8	356	59.6	07.9	3	14.4	09.9	335	17.9	58.8	3	32.4	56.3
10	343	41.3	11	59.4	07.2	18	15.0	09.3	350	19.8	58.6	18	34.6	56.2
11	358	43.7	26	59.2	−11 06.4	33	15.7	−15 08.7	5	21.8	−3 58.4	33	36.9	−14 56.1
12	13	46.2	41	59.1	−11 05.7	48	16.3	−15 08.1	20	23.7	−3 58.1	48	39.1	−14 56.1
13	28	48.7	56	58.9	05.0	63	16.9	07.5	35	25.6	57.9	63	41.4	56.0
14	43	51.1	71	58.7	04.2	78	17.5	06.9	50	27.6	57.7	78	43.6	55.9
15	58	53.6	86	58.6	03.5	93	18.1	06.3	65	29.5	57.5	93	45.9	55.9
16	73	56.1	101	58.4	02.8	108	18.7	05.7	80	31.4	57.2	108	48.1	55.8
17	88	58.5	116	58.2	−11 02.0	123	19.3	−15 05.1	95	33.3	−3 57.0	123	50.4	−14 55.8
18	104	01.0	131	58.1	−11 01.3	138	19.9	−15 04.6	110	35.3	−3 56.8	138	52.6	−14 55.7
19	119	03.4	146	57.9	−11 00.6	153	20.5	04.0	125	37.2	56.6	153	54.9	55.6
20	134	05.9	161	57.7	−10 59.8	168	21.1	03.4	140	39.1	56.3	168	57.1	55.6
21	149	08.4	176	57.6	59.1	183	21.7	02.8	155	41.1	56.1	183	59.4	55.5
22	164	10.8	191	57.4	58.4	198	22.3	02.2	170	43.0	55.9	199	01.6	55.4
23	179	13.3	206	57.2	57.6	213	22.9	01.6	185	44.9	55.7	214	03.9	55.4
24	194	15.8	221	57.1	−10 56.9	228	23.6	−15 01.0	200	46.9	−3 55.4	229	06.1	−14 55.3
Dif	—			−2	+7		+6	+6		+19	+2		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 4ᵈ.7		PHE	4ʰ: 54′.4									
	PMG: 12ʰ 02ᵐ.4				SD: 14′.8			12ʰ: 54′.4									
					PMG: 16ʰ 09ᵐ			20ʰ: 54′.3									
	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	21.6	+6	21.7	125	38.6	+23	34.3		**60 N**	18 56	19 40	20 36	6 26	21	0 56	82
1	194	21.7		22.7	140	09.2 116		41.1	68	**58**	52	33	25	6 47	26	35	77
2	209	21.9		23.6	154	39.8 116		47.8	67	**56**	48	27	15	7 04	30	19	72
3	224	22.1		24.6	169	10.4 116	+23	54.4	66	**54**	45	22	07	18	33	0 04	70
4	239	22.3		25.5	183	40.9 115	+24	00.9	65	**52**	42	17	20 00	31	35	** **	**
5	254	22.4	+6	26.5	198	11.4 115	+24	07.3	64	**50**	18 40	19 13	19 53	7 42	37	** **	**
6	269	22.6	+6	27.4	212	41.8 114	+24	13.6	63	**45**	18 34	19 04	19 40	8 06	39	** **	**
7	284	22.8		28.4	227	12.2 114		19.8	62	**40**	29	18 57	30	25	41	** **	**
8	299	23.0		29.3	241	42.6 114		25.8	60	**35**	25	51	21	41	42	23 43	54
9	314	23.1		30.2	256	13.0 114		31.7	59	**30**	22	46	14	8 54	45	28	54
10	329	23.3		31.2	270	43.3 113		37.5	58	**20**	16	38	19 04	9 18	46	23 03	53
11	344	23.5	+6	32.1	285	13.5 112	+24	43.2	57	**10 N**	18 10	18 32	18 56	9 38	49	22 41	52
12	359	23.7	+6	33.1	299	43.8 113	+24	48.8	56	**0**	18 06	18 27	18 51	9 57	50	22 21	51
13	14	23.9		34.0	314	13.9 111		54.3	55	**10 S**	18 01	22	47	10 17	51	22 01	50
14	29	24.0		35.0	328	44.1 112	+24	59.6	53	**20**	17 56	18	44	10 37	53	21 40	48
15	44	24.2		35.9	343	14.2 111	+25	04.8	52	**30**	51	15	43	11 01	55	15	47
16	59	24.4		36.9	357	44.3 111		09.9	51	**35**	48	13	42	15	57	21 00	46
17	74	24.6	+6	37.8	12	14.4 111	+25	14.9	50	**40**	17 44	18 11	18 43	11 32	58	20 43	45
18	89	24.7	+6	38.7	26	44.4 110	+25	19.8	49	**45**	17 40	18 10	18 44	11 52	59	20 23	43
19	104	24.9		39.7	41	14.4 110		24.5	47	**50**	36	08	45	12 16	63	19 58	41
20	119	25.1		40.6	55	44.4 110		29.2	47	**52**	34	07	46	28	64	45	40
21	134	25.3		41.6	70	14.3 109		33.7	45	**54**	31	07	47	42	65	31	39
22	149	25.4		42.5	84	44.2 109		38.1	44	**56**	29	06	49	12 58	68	19 15	36
23	164	25.6		43.4	99	14.1 109		42.3	42	**58**	26	05	50	13 17	71	18 56	33
24	179	25.8	+6	44.4	113	43.9 108	+25	46.5	42	**60 S**	17 23	18 04	18 52	13 41	76	18 32	28

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	11ʰ 01ᵐ.1		PMG: 9ʰ 12ᵐ			PMG: 8ʰ 46ᵐ			PMG: 10ʰ 36ᵐ			PMG: 8ʰ 42ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	194	15.8	221	57.1	−10 56.9	228	23.6	−15 01.0	200	46.9	−3 55.4	229	06.1	−14 55.3
1	209	18.2	236	56.9	56.1	243	24.2	−15 00.4	215	48.8	55.2	244	08.4	55.2
2	224	20.7	251	56.7	55.4	258	24.8	−14 59.8	230	50.7	55.0	259	10.6	55.2
3	239	23.2	266	56.5	54.7	273	25.4	59.2	245	52.6	54.8	274	12.9	55.1
4	254	25.6	281	56.4	53.9	288	26.0	58.6	260	54.6	54.5	289	15.1	55.0
5	269	28.1	296	56.2	−10 53.2	303	26.6	−14 58.0	275	56.5	−3 54.3	304	17.4	−14 55.0
6	284	30.6	311	56.0	−10 52.4	318	27.2	−14 57.4	290	58.4	−3 54.1	319	19.6	−14 54.9
7	299	33.0	326	55.9	51.7	333	27.8	56.8	306	00.4	53.9	334	21.9	54.8
8	314	35.5	341	55.7	51.0	348	28.4	56.2	321	02.3	53.6	349	24.1	54.8
9	329	37.9	356	55.5	50.2	3	29.0	55.6	336	04.2	53.4	4	26.4	54.7
10	344	40.4	11	55.3	49.5	18	29.7	55.0	351	06.2	53.2	19	28.6	54.6
11	359	42.9	26	55.2	−10 48.7	33	30.3	−14 54.4	6	08.1	−3 53.0	34	30.9	−14 54.6
12	14	45.3	41	55.0	−10 48.0	48	30.9	−14 53.8	21	10.0	−3 52.7	49	33.1	−14 54.5
13	29	47.8	56	54.8	47.2	63	31.5	53.2	36	11.9	52.5	64	35.4	54.5
14	44	50.3	71	54.7	46.5	78	32.1	52.6	51	13.9	52.3	79	37.6	54.4
15	59	52.7	86	54.5	45.7	93	32.7	52.0	66	15.8	52.1	94	39.9	54.3
16	74	55.2	101	54.3	45.0	108	33.3	51.4	81	17.7	51.8	109	42.2	54.3
17	89	57.7	116	54.2	−10 44.2	123	33.9	−14 50.8	96	19.7	−3 51.6	124	44.4	−14 54.2
18	105	00.1	131	54.0	−10 43.5	138	34.5	−14 50.2	111	21.6	−3 51.4	139	46.7	−14 54.1
19	120	02.6	146	53.8	42.7	153	35.2	49.6	126	23.5	51.2	154	48.9	54.1
20	135	05.1	161	53.6	42.0	168	35.8	49.0	141	25.5	50.9	169	51.2	54.0
21	150	07.5	176	53.5	41.2	183	36.4	48.4	156	27.4	50.7	184	53.4	53.9
22	165	10.0	191	53.3	40.5	198	37.0	47.8	171	29.3	50.5	199	55.7	53.9
23	180	12.4	206	53.1	39.7	213	37.6	47.2	186	31.3	50.3	214	57.9	53.8
24	195	14.9	221	53.0	−10 39.0	228	38.2	−14 46.6	201	33.2	−3 50.1	230	00.2	−14 53.7
Dif	—			−2	+7		+6	+6		+19	+2		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 5ᵈ.7		PHE	4ʰ: 54′.3									
	PMG: 12ʰ 02ᵐ.1				SD: 14′.8			12ʰ: 54′.2									
					PMG: 16ʰ 59ᵐ			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	179	25.8	+6	44.4	113	43.9	+25	46.5		**60 N**	3 27	4 24	5 08	6 47	38	2 18	66
1	194	26.0		45.3	128	13.7 108		50.5	40	**58**	39	30	12	7 13	41	1 52	63
2	209	26.1		46.3	142	43.5 108		54.4	39	**56**	48	37	15	34	43	31	61
3	224	26.3		47.2	157	13.3 108	+25	58.2	38	**54**	3 57	42	18	7 51	44	1 14	60
4	239	26.5		48.2	171	43.0 107	+26	01.8	36	**52**	4 04	47	21	8 06	45	0 59	59
5	254	26.7	+6	49.1	186	12.7 107	+26	05.3	35	**50**	4 11	4 51	5 24	8 19	46	0 47	58
6	269	26.8	+6	50.0	200	42.4 107	+26	08.7	34	**45**	4 24	5 00	5 30	8 45	47	0 21	56
7	284	27.0		51.0	215	12.0 106		12.0	33	**40**	34	07	35	9 06	48	0 00	56
8	299	27.2		51.9	229	41.7 107		15.2	32	**35**	43	13	39	23	49	** **	**
9	314	27.4		52.9	244	11.3 106		18.2	30	**30**	4 50	18	42	9 39	49	** **	**
10	329	27.5		53.8	258	40.9 106		21.1	29	**20**	5 00	26	49	10 04	50	23 56	50
11	344	27.7	+6	54.7	273	10.4 105	+26	23.9	28	**10 N**	5 08	5 33	5 54	10 27	50	23 33	51
12	359	27.9	+6	55.7	287	40.0 106	+26	26.5	26	**0**	5 14	5 38	5 59	10 47	51	23 12	51
13	14	28.1		56.6	302	09.5 105		29.1	26	**10 S**	18	43	6 04	11 08	51	22 51	51
14	29	28.2		57.6	316	39.0 105		31.4	23	**20**	21	47	09	30	52	28	51
15	44	28.4		58.5	331	08.5 105		33.7	23	**30**	22	50	14	11 56	53	22 02	51
16	59	28.6	+6	59.4	345	38.0 105		35.9	22	**35**	23	52	17	12 12	52	21 46	51
17	74	28.8	+7	00.4	0	07.4 104	+26	37.9	20	**40**	5 22	5 54	6 21	12 30	52	21 28	51
18	89	28.9	+7	01.3	14	36.8 104	+26	39.8	19	**45**	5 22	5 56	6 25	12 51	53	21 06	51
19	104	29.1		02.2	29	06.3 105		41.5	17	**50**	20	57	30	13 19	53	20 39	51
20	119	29.3		03.2	43	35.7 104		43.2	17	**52**	19	58	32	32	54	25	51
21	134	29.4		04.1	58	05.0 103		44.7	15	**54**	18	5 59	34	13 47	54	20 10	51
22	149	29.6		05.1	72	34.4 104		46.1	14	**56**	17	6 00	37	14 06	54	19 51	51
23	164	29.8		06.0	87	03.8 104		47.3	12	**58**	15	01	40	28	55	29	50
24	179	30.0	+7	06.9	101	33.1 103	+26	48.5	12	**60 S**	5 13	6 02	6 43	14 57	55	19 00	50

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 57ᵐ.2		PMG: 9ʰ 13ᵐ			PMG: 8ʰ 45ᵐ			PMG: 10ʰ 32ᵐ			PMG: 8ʰ 39ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	195	14.9	221	53.0	−10 39.0	228	38.2	−14 46.6	201	33.2	−3 50.1	230	00.2	−14 53.7
1	210	17.4	236	52.8	38.2	243	38.8	46.0	216	35.1	49.8	245	02.4	53.7
2	225	19.8	251	52.6	37.5	258	39.4	45.4	231	37.0	49.6	260	04.7	53.6
3	240	22.3	266	52.4	36.7	273	40.1	44.8	246	39.0	49.4	275	06.9	53.6
4	255	24.8	281	52.3	35.9	288	40.7	44.2	261	40.9	49.2	290	09.2	53.5
5	270	27.2	296	52.1	−10 35.2	303	41.3	−14 43.6	276	42.8	−3 48.9	305	11.4	−14 53.4
6	285	29.7	311	51.9	−10 34.4	318	41.9	−14 43.0	291	44.8	−3 48.7	320	13.7	−14 53.4
7	300	32.2	326	51.7	33.7	333	42.5	42.4	306	46.7	48.5	335	16.0	53.3
8	315	34.6	341	51.6	32.9	348	43.1	41.8	321	48.6	48.3	350	18.2	53.2
9	330	37.1	356	51.4	32.2	3	43.7	41.2	336	50.6	48.0	5	20.5	53.2
10	345	39.6	11	51.2	31.4	18	44.3	40.6	351	52.5	47.8	20	22.7	53.1
11	0	42.0	26	51.1	−10 30.6	33	45.0	−14 40.0	6	54.4	−3 47.6	35	25.0	−14 53.0
12	15	44.5	41	50.9	−10 29.9	48	45.6	−14 39.4	21	56.4	−3 47.4	50	27.2	−14 53.0
13	30	46.9	56	50.7	29.1	63	46.2	38.8	36	58.3	47.1	65	29.5	52.9
14	45	49.4	71	50.5	28.3	78	46.8	38.2	52	00.2	46.9	80	31.7	52.9
15	60	51.9	86	50.4	27.6	93	47.4	37.6	67	02.2	46.7	95	34.0	52.8
16	75	54.3	101	50.2	26.8	108	48.0	37.0	82	04.1	46.5	110	36.2	52.7
17	90	56.8	116	50.0	−10 26.1	123	48.7	−14 36.4	97	06.0	−3 46.2	125	38.5	−14 52.7
18	105	59.3	131	49.9	−10 25.3	138	49.3	−14 35.8	112	08.0	−3 46.0	140	40.8	−14 52.6
19	121	01.7	146	49.7	24.5	153	49.9	35.2	127	09.9	45.8	155	43.0	52.5
20	136	04.2	161	49.5	23.8	168	50.5	34.6	142	11.8	45.6	170	45.3	52.5
21	151	06.7	176	49.3	23.0	183	51.1	34.0	157	13.8	45.4	185	47.5	52.4
22	166	09.1	191	49.2	22.2	198	51.7	33.4	172	15.7	45.1	200	49.8	52.3
23	181	11.6	206	49.0	21.4	213	52.3	32.8	187	17.6	44.9	215	52.0	52.3
24	196	14.0	221	48.8	−10 20.7	228	53.0	−14 32.2	202	19.6	−3 44.7	230	54.3	−14 52.2
Dif	—			−2	+8		+6	+6		+19	+2		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 6ᵈ.7		PHE	4ʰ: 54′.2								
	PMG: 12ʰ 01ᵐ.9		SD: 14′.8			12ʰ: 54′.3								
			PMG: 17ʰ 50ᵐ			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	179 30.0	+7 06.9	101 33.1	104	+26 48.5	10	**60 N**	19 01	19 45	20 43	7 25	62	3 24	44
1	194 30.1	07.9	116 02.5	103	49.5	8	**58**	18 56	38	31	7 54	60	2 55	46
2	209 30.3	08.8	130 31.8	103	50.3	8	**56**	52	32	20	8 17	58	32	47
3	224 30.5	09.7	145 01.1	103	51.1	8	**54**	49	26	11	35	58	2 14	47
4	239 30.7	10.7	159 30.4	103	51.7	6	**52**	46	21	20 04	8 51	57	1 58	48
5	254 30.8	+7 11.6	173 59.8	104	+26 52.2	5	**50**	18 43	19 16	19 57	9 05	56	1 45	48
6	269 31.0	+7 12.5	188 29.1	103	+26 52.5	3	**45**	18 36	19 07	19 43	9 32	55	1 17	49
7	284 31.2	13.5	202 58.3	102	52.7	2	**40**	31	18 59	32	9 54	54	0 56	49
8	299 31.4	14.4	217 27.6	103	52.8	1	**35**	27	53	23	10 12	54	37	50
9	314 31.5	15.3	231 56.9	103	52.8	0	**30**	23	47	16	28	53	0 22	50
10	329 31.7	16.3	246 26.2	103	52.6	2	**20**	16	38	19 05	10 54	52	** **	**
11	344 31.9	+7 17.2	260 55.5	103	+26 52.3	3	**10 N**	18 10	18 32	18 56	11 17	51	** **	**
12	359 32.0	+7 18.2	275 24.8	103	+26 51.9	4	**0**	18 05	18 26	18 50	11 38	51	** **	**
13	14 32.2	19.1	289 54.0	102	51.4	5	**10 S**	18 00	21	46	11 59	50	23 42	51
14	29 32.4	20.0	304 23.3	103	50.7	7	**20**	17 55	17	42	12 22	49	23 19	53
15	44 32.6	21.0	318 52.6	103	49.9	8	**30**	49	13	40	12 49	47	22 53	55
16	59 32.7	21.9	333 21.9	103	48.9	10	**35**	45	10	40	13 04	47	37	56
17	74 32.9	+7 22.8	347 51.2	103	+26 47.9	10	**40**	17 41	18 08	18 40	13 22	47	22 19	57
18	89 33.1	+7 23.8	2 20.5	103	+26 46.7	12	**45**	17 37	18 06	18 40	13 44	45	21 57	59
19	104 33.2	24.7	16 49.8	103	45.4	13	**50**	32	04	41	14 12	43	30	61
20	119 33.4	25.6	31 19.0	102	43.9	15	**52**	29	03	42	26	42	16	62
21	134 33.6	26.5	45 48.4	104	42.3	16	**54**	26	02	43	14 41	41	21 01	63
22	149 33.8	27.5	60 17.7	103	40.6	17	**56**	24	01	44	15 00	39	20 42	65
23	164 33.9	28.4	74 47.0	103	38.8	18	**58**	20	18 00	45	23	36	20 19	69
24	179 34.1	+7 29.3	89 16.3	103	+26 36.8	20	**60 S**	17 17	17 59	18 47	15 52	33	19 50	72

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.3		Mag: +1.0		Mag: −2.1		Mag: +0.9	
	10ʰ 53ᵐ.3	PMG: 9ʰ 13ᵐ		PMG: 8ʰ 44ᵐ		PMG: 10ʰ 29ᵐ		PMG: 8ʰ 35ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	196 14.0	221 48.8	−10 20.7	228 53.0	−14 32.2	202 19.6	−3 44.7	230 54.3	−14 52.2
1	211 16.5	236 48.6	19.9	243 53.6	31.6	217 21.5	44.5	245 56.5	52.2
2	226 19.0	251 48.5	19.1	258 54.2	30.9	232 23.4	44.2	260 58.8	52.1
3	241 21.4	266 48.3	18.4	273 54.8	30.3	247 25.4	44.0	276 01.1	52.0
4	256 23.9	281 48.1	17.6	288 55.4	29.7	262 27.3	43.8	291 03.3	52.0
5	271 26.4	296 47.9	−10 16.8	303 56.0	−14 29.1	277 29.2	−3 43.6	306 05.6	−14 51.9
6	286 28.8	311 47.8	−10 16.1	318 56.7	−14 28.5	292 31.2	−3 43.3	321 07.8	−14 51.8
7	301 31.3	326 47.6	15.3	333 57.3	27.9	307 33.1	43.1	336 10.1	51.8
8	316 33.8	341 47.4	14.5	348 57.9	27.3	322 35.0	42.9	351 12.3	51.7
9	331 36.2	356 47.3	13.7	3 58.5	26.7	337 37.0	42.7	6 14.6	51.6
10	346 38.7	11 47.1	13.0	18 59.1	26.1	352 38.9	42.4	21 16.9	51.6
11	1 41.2	26 46.9	−10 12.2	33 59.8	−14 25.5	7 40.8	−3 42.2	36 19.1	−14 51.5
12	16 43.6	41 46.7	−10 11.4	49 00.4	−14 24.9	22 42.8	−3 42.0	51 21.4	−14 51.5
13	31 46.1	56 46.6	10.6	64 01.0	24.3	37 44.7	41.8	66 23.6	51.4
14	46 48.5	71 46.4	09.8	79 01.6	23.7	52 46.6	41.6	81 25.9	51.3
15	61 51.0	86 46.2	09.1	94 02.2	23.0	67 48.6	41.3	96 28.1	51.3
16	76 53.5	101 46.0	08.3	109 02.8	22.4	82 50.5	41.1	111 30.4	51.2
17	91 55.9	116 45.9	−10 07.5	124 03.5	−14 21.8	97 52.4	−3 40.9	126 32.7	−14 51.1
18	106 58.4	131 45.7	−10 06.7	139 04.1	−14 21.2	112 54.4	−3 40.7	141 34.9	−14 51.1
19	122 00.9	146 45.5	05.9	154 04.7	20.6	127 56.3	40.4	156 37.2	51.0
20	137 03.3	161 45.3	05.2	169 05.3	20.0	142 58.2	40.2	171 39.4	51.0
21	152 05.8	176 45.2	04.4	184 05.9	19.4	158 00.2	40.0	186 41.7	50.9
22	167 08.3	191 45.0	03.6	199 06.6	18.8	173 02.1	39.8	201 43.9	50.8
23	182 10.7	206 44.8	02.8	214 07.2	18.2	188 04.0	39.5	216 46.2	50.8
24	197 13.2	221 44.6	−10 02.0	229 07.8	−14 17.5	203 06.0	−3 39.3	231 48.5	−14 50.7
Dif	—	−2	+8	+6	+6	+19	+2	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 7ᵈ.7		PHE	4ʰ: 54′.4									
	PMG: 12ʰ 01ᵐ.6				SD: 14′.8			12ʰ: 54′.5									
					PMG: 18ʰ 41ᵐ			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	179	34.1	+7	29.3	89	16.3	+26	36.8		**60 N**	3 20	4 17	5 02	8 27	80	4 08	24
1	194	34.3		30.3	103	45.7 104		34.7	21	**58**	32	25	06	8 54	75	3 41	29
2	209	34.4		31.2	118	15.0 103		32.5	22	**56**	42	31	10	9 15	72	19	33
3	224	34.6		32.1	132	44.4 104		30.1	24	**54**	51	37	14	33	68	3 01	36
4	239	34.8		33.1	147	13.7 103		27.6	25	**52**	3 59	42	17	9 48	66	2 46	37
5	254	35.0	+7	34.0	161	43.1 104	+26	25.0	26	**50**	4 06	4 46	5 20	10 01	65	2 33	39
6	269	35.1	+7	34.9	176	12.5 104	+26	22.3	27	**45**	4 20	4 56	5 26	10 27	62	2 06	42
7	284	35.3		35.9	190	41.9 104		19.4	29	**40**	31	5 04	32	10 48	60	1 45	43
8	299	35.5		36.8	205	11.3 104		16.4	30	**35**	40	10	36	11 06	58	27	45
9	314	35.6		37.7	219	40.8 105		13.3	31	**30**	47	16	40	21	56	1 12	46
10	329	35.8		38.6	234	10.2 104		10.1	32	**20**	4 59	25	47	11 46	54	0 46	48
11	344	36.0	+7	39.6	248	39.7 105	+26	06.7	34	**10 N**	5 07	5 32	5 53	12 08	52	0 24	49
12	359	36.1	+7	40.5	263	09.2 105	+26	03.2	35	**0**	5 13	5 37	5 58	12 29	50	0 03	50
13	14	36.3		41.4	277	38.7 105	+25	59.6	36	**10 S**	18	42	6 04	12 49	48	** **	**
14	29	36.5		42.4	292	08.2 105		55.8	38	**20**	21	47	09	13 11	46	** **	**
15	44	36.6		43.3	306	37.8 106		51.9	39	**30**	24	51	15	36	44	23 48	57
16	59	36.8		44.2	321	07.4 106		47.9	40	**35**	24	54	19	13 51	42	33	59
17	74	37.0	+7	45.1	335	36.9 105	+25	43.8	41	**40**	5 24	5 56	6 23	14 09	39	23 16	62
18	89	37.2	+7	46.1	350	06.6 107	+25	39.5	43	**45**	5 24	5 58	6 27	14 29	38	22 56	64
19	104	37.3		47.0	4	36.2 106		35.2	43	**50**	23	6 00	33	14 55	34	31	68
20	119	37.5		47.9	19	05.9 107		30.7	45	**52**	22	01	35	15 08	32	18	70
21	134	37.7		48.9	33	35.5 106		26.0	47	**54**	22	03	38	22	30	22 04	73
22	149	37.8		49.8	48	05.2 107		21.3	47	**56**	21	04	41	39	27	21 47	76
23	164	38.0		50.7	62	35.0 108		16.4	49	**58**	19	05	44	15 59	23	28	79
24	179	38.2	+7	51.6	77	04.7 107	+25	11.4	50	**60 S**	5 18	6 06	6 48	16 25	17	21 02	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 49ᵐ.3		PMG: 9ʰ 13ᵐ			PMG: 8ʰ 43ᵐ			PMG: 10ʰ 26ᵐ			PMG: 8ʰ 31ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	197	13.2	221	44.6	−10 02.0	229	07.8	−14 17.5	203	06.0	−3 39.3	231	48.5	−14 50.7
1	212	15.7	236	44.5	01.2	244	08.4	16.9	218	07.9	39.1	246	50.7	50.6
2	227	18.1	251	44.3	−10 00.5	259	09.0	16.3	233	09.8	38.9	261	53.0	50.6
3	242	20.6	266	44.1	−9 59.7	274	09.7	15.7	248	11.8	38.7	276	55.2	50.5
4	257	23.0	281	43.9	58.9	289	10.3	15.1	263	13.7	38.4	291	57.5	50.5
5	272	25.5	296	43.8	−9 58.1	304	10.9	−14 14.5	278	15.6	−3 38.2	306	59.8	−14 50.4
6	287	28.0	311	43.6	−9 57.3	319	11.5	−14 13.9	293	17.6	−3 38.0	322	02.0	−14 50.3
7	302	30.4	326	43.4	56.5	334	12.1	13.3	308	19.5	37.8	337	04.3	50.3
8	317	32.9	341	43.2	55.7	349	12.8	12.7	323	21.4	37.5	352	06.5	50.2
9	332	35.4	356	43.1	54.9	4	13.4	12.0	338	23.4	37.3	7	08.8	50.1
10	347	37.8	11	42.9	54.2	19	14.0	11.4	353	25.3	37.1	22	11.1	50.1
11	2	40.3	26	42.7	−9 53.4	34	14.6	−14 10.8	8	27.3	−3 36.9	37	13.3	−14 50.0
12	17	42.8	41	42.5	−9 52.6	49	15.2	−14 10.2	23	29.2	−3 36.7	52	15.6	−14 50.0
13	32	45.2	56	42.4	51.8	64	15.9	09.6	38	31.1	36.4	67	17.8	49.9
14	47	47.7	71	42.2	51.0	79	16.5	09.0	53	33.1	36.2	82	20.1	49.8
15	62	50.2	86	42.0	50.2	94	17.1	08.4	68	35.0	36.0	97	22.4	49.8
16	77	52.6	101	41.8	49.4	109	17.7	07.7	83	36.9	35.8	112	24.6	49.7
17	92	55.1	116	41.7	−9 48.6	124	18.4	−14 07.1	98	38.9	−3 35.5	127	26.9	−14 49.7
18	107	57.5	131	41.5	−9 47.8	139	19.0	−14 06.5	113	40.8	−3 35.3	142	29.1	−14 49.6
19	123	00.0	146	41.3	47.0	154	19.6	05.9	128	42.7	35.1	157	31.4	49.5
20	138	02.5	161	41.1	46.2	169	20.2	05.3	143	44.7	34.9	172	33.7	49.5
21	153	04.9	176	41.0	45.4	184	20.9	04.7	158	46.6	34.7	187	35.9	49.4
22	168	07.4	191	40.8	44.6	199	21.5	04.0	173	48.5	34.4	202	38.2	49.3
23	183	09.9	206	40.6	43.8	214	22.1	03.4	188	50.5	34.2	217	40.4	49.3
24	198	12.3	221	40.4	−9 43.0	229	22.7	−14 02.8	203	52.4	−3 34.0	232	42.7	−14 49.2
Dif	—			−2	+8		+6	+6		+19	+2		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 8ᵈ.7		PHE	4ʰ: 54′.7								
	PMG: 12ʰ 01ᵐ.3		SD: 14′.9			12ʰ: 54′.8								
			PMG: 19ʰ 31ᵐ			20ʰ: 55′.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	179 38.2	+7 51.6	77 04.7		+25 11.4		**60 N**	19 06	19 51	20 49	9 47	89	4 32	13
1	194 38.3	52.6	91 34.5	108	06.3	51	**58**	19 01	43	36	10 09	83	4 10	18
2	209 38.5	53.5	106 04.3	108	+25 01.0	53	**56**	18 56	36	25	27	78	3 52	22
3	224 38.7	54.4	120 34.1	108	+24 55.7	53	**54**	53	30	16	41	76	37	25
4	239 38.8	55.3	135 04.0	109	50.2	55	**52**	49	24	08	10 54	73	23	28
5	254 39.0	+7 56.3	149 33.9	109	+24 44.6	56	**50**	18 46	19 20	20 01	11 06	70	3 12	30
6	269 39.2	+7 57.2	164 03.8	109	+24 38.9	57	**45**	18 39	19 09	19 46	11 29	67	2 48	33
7	284 39.3	58.1	178 33.7	109	33.0	59	**40**	33	19 01	34	11 48	63	28	37
8	299 39.5	+7 59.0	193 03.7	110	27.0	60	**35**	28	18 54	25	12 04	60	2 12	39
9	314 39.7	+8 00.0	207 33.7	110	20.9	61	**30**	24	48	17	17	59	1 58	41
10	329 39.8	+8 00.9	222 03.7	110	14.7	62	**20**	17	39	19 05	12 40	55	34	44
11	344 40.0	+8 01.8	236 33.8	111	+24 08.4	63	**10 N**	18 10	18 32	18 56	13 00	52	1 13	47
12	359 40.2	+8 02.7	251 03.9	111	+24 02.0	64	**0**	18 05	18 25	18 50	13 19	49	0 53	49
13	14 40.3	03.6	265 34.0	111	+23 55.4	66	**10 S**	17 59	20	45	37	46	33	52
14	29 40.5	04.6	280 04.2	112	48.7	67	**20**	53	15	41	13 57	43	0 12	55
15	44 40.7	05.5	294 34.4	112	41.9	68	**30**	46	10	38	14 20	39	** **	**
16	59 40.8	06.4	309 04.6	112	35.0	69	**35**	42	08	37	33	37	** **	**
17	74 41.0	+8 07.3	323 34.8	112	+23 27.9	71	**40**	17 38	18 05	18 37	14 48	35	** **	**
18	89 41.2	+8 08.3	338 05.1	113	+23 20.8	71	**45**	17 33	18 03	18 37	15 07	31	** **	**
19	104 41.3	09.2	352 35.4	113	13.5	73	**50**	27	18 00	37	29	27	23 39	72
20	119 41.5	10.1	7 05.8	114	+23 06.2	73	**52**	25	17 59	38	40	24	28	75
21	134 41.7	11.0	21 36.1	113	+22 58.7	75	**54**	22	57	38	15 52	22	17	77
22	149 41.8	11.9	36 06.5	114	51.0	77	**56**	19	56	39	16 06	19	23 03	81
23	164 42.0	12.9	50 37.0	115	43.3	77	**58**	15	54	40	22	15	22 47	86
24	179 42.2	+8 13.8	65 07.5	115	+22 35.5	78	**60 S**	17 11	17 53	18 41	16 42	9	22 28	91

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.3		Mag: +1.0		Mag: −2.1		Mag: +0.9	
	10ʰ 45ᵐ.4	PMG: 9ʰ 13ᵐ		PMG: 8ʰ 42ᵐ		PMG: 10ʰ 23ᵐ		PMG: 8ʰ 28ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	198 12.3	221 40.4	−9 43.0	229 22.7	−14 02.8	203 52.4	−3 34.0	232 42.7	−14 49.2
1	213 14.8	236 40.3	42.2	244 23.3	02.2	218 54.4	33.8	247 45.0	49.2
2	228 17.3	251 40.1	41.4	259 24.0	01.6	233 56.3	33.5	262 47.2	49.1
3	243 19.7	266 39.9	40.6	274 24.6	01.0	248 58.2	33.3	277 49.5	49.0
4	258 22.2	281 39.7	39.8	289 25.2	−14 00.3	264 00.2	33.1	292 51.8	49.0
5	273 24.6	296 39.5	−9 39.0	304 25.8	−13 59.7	279 02.1	−3 32.9	307 54.0	−14 48.9
6	288 27.1	311 39.4	−9 38.2	319 26.5	−13 59.1	294 04.0	−3 32.7	322 56.3	−14 48.9
7	303 29.6	326 39.2	37.4	334 27.1	58.5	309 06.0	32.4	337 58.5	48.8
8	318 32.0	341 39.0	36.6	349 27.7	57.9	324 07.9	32.2	353 00.8	48.7
9	333 34.5	356 38.8	35.8	4 28.3	57.2	339 09.9	32.0	8 03.1	48.7
10	348 37.0	11 38.7	35.0	19 29.0	56.6	354 11.8	31.8	23 05.3	48.6
11	3 39.4	26 38.5	−9 34.2	34 29.6	−13 56.0	9 13.7	−3 31.5	38 07.6	−14 48.5
12	18 41.9	41 38.3	−9 33.4	49 30.2	−13 55.4	24 15.7	−3 31.3	53 09.9	−14 48.5
13	33 44.4	56 38.1	32.6	64 30.8	54.8	39 17.6	31.1	68 12.1	48.4
14	48 46.8	71 38.0	31.8	79 31.5	54.2	54 19.5	30.9	83 14.4	48.4
15	63 49.3	86 37.8	31.0	94 32.1	53.5	69 21.5	30.7	98 16.6	48.3
16	78 51.8	101 37.6	30.2	109 32.7	52.9	84 23.4	30.4	113 18.9	48.2
17	93 54.2	116 37.4	−9 29.4	124 33.3	−13 52.3	99 25.4	−3 30.2	128 21.2	−14 48.2
18	108 56.7	131 37.3	−9 28.5	139 34.0	−13 51.7	114 27.3	−3 30.0	143 23.4	−14 48.1
19	123 59.1	146 37.1	27.7	154 34.6	51.1	129 29.2	29.8	158 25.7	48.1
20	139 01.6	161 36.9	26.9	169 35.2	50.4	144 31.2	29.6	173 28.0	48.0
21	154 04.1	176 36.7	26.1	184 35.9	49.8	159 33.1	29.3	188 30.2	47.9
22	169 06.5	191 36.5	25.3	199 36.5	49.2	174 35.0	29.1	203 32.5	47.9
23	184 09.0	206 36.4	24.5	214 37.1	48.6	189 37.0	28.9	218 34.8	47.8
24	199 11.5	221 36.2	−9 23.7	229 37.7	−13 47.9	204 38.9	−3 28.7	233 37.0	−14 47.8
Dif	—	−2	+8	+6	+6	+19	+2	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 9ᵈ.7		PHE	4ʰ: 55′.2									
	PMG: 12ʰ 01ᵐ.1				SD: 15′.0			12ʰ: 55′.4									
					PMG: 20ʰ 19ᵐ			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	179	42.2	+8	13.8	65	07.5	+22	35.5		**60 N**	3 12	4 11	4 56	11 16	91	4 45	7
1	194	42.3		14.7	79	38.0 115		27.5	80	**58**	25	19	5 01	32	86	28	12
2	209	42.5		15.6	94	08.5 115		19.5	80	**56**	36	26	05	45	83	14	16
3	224	42.7		16.5	108	39.1 116		11.3	82	**54**	45	32	09	11 57	79	4 02	19
4	239	42.8		17.5	123	09.7 116	+22	03.0	83	**52**	3 54	37	12	12 07	77	3 51	22
5	254	43.0	+8	18.4	137	40.4 117	+21	54.6	84	**50**	4 01	4 42	5 16	12 16	74	3 42	23
6	269	43.2	+8	19.3	152	11.0 116	+21	46.1	85	**45**	4 16	4 52	5 23	12 36	68	3 21	29
7	284	43.3		20.2	166	41.8 118		37.5	86	**40**	28	5 01	29	12 51	65	3 05	32
8	299	43.5		21.1	181	12.5 117		28.8	87	**35**	37	08	33	13 04	62	2 51	35
9	314	43.7		22.1	195	43.3 118		20.0	88	**30**	45	14	38	16	59	39	37
10	329	43.8		23.0	210	14.1 118		11.1	89	**20**	4 57	23	45	35	55	18	41
11	344	44.0	+8	23.9	224	45.0 119	+21	02.0	91	**10 N**	5 06	5 31	5 52	13 52	51	2 00	44
12	359	44.2	+8	24.8	239	15.8 118	+20	52.9	91	**0**	5 13	5 37	5 58	14 08	47	1 42	48
13	14	44.3		25.7	253	46.8 120		43.6	93	**10 S**	18	42	6 04	23	44	25	51
14	29	44.5		26.6	268	17.7 119		34.3	93	**20**	22	48	10	40	40	1 07	54
15	44	44.6		27.6	282	48.7 120		24.8	95	**30**	25	53	17	14 59	35	0 45	59
16	59	44.8		28.5	297	19.7 120		15.2	96	**35**	26	55	21	15 10	33	33	61
17	74	45.0	+8	29.4	311	50.8 121	+20	05.6	96	**40**	5 26	5 58	6 25	15 23	29	0 18	64
18	89	45.1	+8	30.3	326	21.8 120	+19	55.8	98	**45**	5 26	6 00	6 30	15 38	26	0 00	68
19	104	45.3		31.2	340	53.0 122		45.9	99	**50**	26	03	36	15 56	21	** **	**
20	119	45.5		32.1	355	24.1 121		35.9	100	**52**	26	05	39	16 04	19	** **	**
21	134	45.6		33.1	9	55.3 122		25.9	100	**54**	25	06	42	14	16	** **	**
22	149	45.8		34.0	24	26.5 122		15.7	102	**56**	25	08	45	25	13	** **	**
23	164	46.0		34.9	38	57.7 122	+19	05.4	103	**58**	24	09	49	37	9	** **	**
24	179	46.1	+8	35.8	53	29.0 123	+18	55.0	104	**60 S**	5 23	6 11	6 53	16 51	5	23 59	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 41ᵐ.5		PMG: 9ʰ 14ᵐ			PMG: 8ʰ 41ᵐ			PMG: 10ʰ 20ᵐ			PMG: 8ʰ 24ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	199	11.5	221	36.2	−9 23.7	229	37.7	−13 47.9	204	38.9	−3 28.7	233	37.0	−14 47.8
1	214	13.9	236	36.0	22.9	244	38.4	47.3	219	40.9	28.4	248	39.3	47.7
2	229	16.4	251	35.8	22.0	259	39.0	46.7	234	42.8	28.2	263	41.5	47.6
3	244	18.9	266	35.7	21.2	274	39.6	46.1	249	44.7	28.0	278	43.8	47.6
4	259	21.3	281	35.5	20.4	289	40.2	45.5	264	46.7	27.8	293	46.1	47.5
5	274	23.8	296	35.3	−9 19.6	304	40.9	−13 44.8	279	48.6	−3 27.6	308	48.3	−14 47.5
6	289	26.3	311	35.1	−9 18.8	319	41.5	−13 44.2	294	50.5	−3 27.3	323	50.6	−14 47.4
7	304	28.7	326	35.0	18.0	334	42.1	43.6	309	52.5	27.1	338	52.9	47.3
8	319	31.2	341	34.8	17.1	349	42.8	43.0	324	54.4	26.9	353	55.1	47.3
9	334	33.6	356	34.6	16.3	4	43.4	42.3	339	56.4	26.7	8	57.4	47.2
10	349	36.1	11	34.4	15.5	19	44.0	41.7	354	58.3	26.5	23	59.7	47.2
11	4	38.6	26	34.2	−9 14.7	34	44.6	−13 41.1	10	00.2	−3 26.2	39	01.9	−14 47.1
12	19	41.0	41	34.1	−9 13.9	49	45.3	−13 40.5	25	02.2	−3 26.0	54	04.2	−14 47.0
13	34	43.5	56	33.9	13.0	64	45.9	39.8	40	04.1	25.8	69	06.5	47.0
14	49	46.0	71	33.7	12.2	79	46.5	39.2	55	06.1	25.6	84	08.7	46.9
15	64	48.4	86	33.5	11.4	94	47.2	38.6	70	08.0	25.4	99	11.0	46.9
16	79	50.9	101	33.4	10.6	109	47.8	38.0	85	09.9	25.1	114	13.3	46.8
17	94	53.4	116	33.2	−9 09.8	124	48.4	−13 37.3	100	11.9	−3 24.9	129	15.5	−14 46.7
18	109	55.8	131	33.0	−9 08.9	139	49.1	−13 36.7	115	13.8	−3 24.7	144	17.8	−14 46.7
19	124	58.3	146	32.8	08.1	154	49.7	36.1	130	15.8	24.5	159	20.1	46.6
20	140	00.7	161	32.6	07.3	169	50.3	35.5	145	17.7	24.3	174	22.3	46.6
21	155	03.2	176	32.5	06.5	184	50.9	34.8	160	19.6	24.0	189	24.6	46.5
22	170	05.7	191	32.3	05.6	199	51.6	34.2	175	21.6	23.8	204	26.9	46.4
23	185	08.1	206	32.1	04.8	214	52.2	33.6	190	23.5	23.6	219	29.1	46.4
24	200	10.6	221	31.9	−9 04.0	229	52.8	−13 33.0	205	25.5	−3 23.4	234	31.4	−14 46.3
Dif	—			−2	+8		+6	+6		+19	+2		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 10ᵈ.7		PHE	4ʰ: 55′.8								
	PMG: 12ʰ 00ᵐ.8				SD: 15′.2			12ʰ: 56′.0								
					PMG: 21ʰ 06ᵐ			20ʰ: 56′.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	m	h m	m
0	179	46.1	+8	35.8	53	29.0	+18	55.0	**60 N**	19 11	19 56	20 56	12 47	92	4 52	4
1	194	46.3		36.7	68	00.3 123		44.6 104	**58**	05	48	42	12 58	88	40	8
2	209	46.4		37.6	82	31.7 124		34.0 106	**56**	19 01	40	31	13 08	84	30	11
3	224	46.6		38.5	97	03.0 123		23.3 107	**54**	18 56	34	21	16	81	21	14
4	239	46.8		39.5	111	34.4 124		12.6 107	**52**	52	28	12	24	78	13	17
5	254	46.9	+8	40.4	126	05.9 125	+18	01.7 109	**50**	18 49	19 23	20 04	13 30	76	4 05	20
6	269	47.1	+8	41.3	140	37.3 124	+17	50.8 109	**45**	18 42	19 12	19 49	13 44	71	3 50	24
7	284	47.3		42.2	155	08.8 125		39.7 111	**40**	35	19 03	37	13 56	67	37	28
8	299	47.4		43.1	169	40.3 125		28.6 111	**35**	30	18 56	27	14 06	63	26	31
9	314	47.6		44.0	184	11.9 126		17.4 112	**30**	25	50	19	15	60	3 16	34
10	329	47.7		44.9	198	43.5 126	+17	06.0 114	**20**	17	40	19 06	30	55	2 59	39
11	344	47.9	+8	45.8	213	15.1 126	+16	54.6 114	**10 N**	18 10	18 32	18 57	14 43	50	2 44	43
12	359	48.1	+8	46.8	227	46.7 126	+16	43.1 115	**0**	18 04	18 25	18 49	14 55	46	2 30	47
13	14	48.2		47.7	242	18.4 127		31.5 116	**10 S**	17 58	19	44	15 07	42	16	51
14	29	48.4		48.6	256	50.0 126		19.9 116	**20**	51	14	39	20	38	2 01	55
15	44	48.5		49.5	271	21.7 127	+16	08.1 118	**30**	44	08	36	34	33	1 44	60
16	59	48.7		50.4	285	53.5 128	+15	56.2 119	**35**	40	05	35	43	30	34	62
17	74	48.9	+8	51.3	300	25.2 127	+15	44.3 119	**40**	17 35	18 02	18 34	15 52	27	1 22	66
18	89	49.0	+8	52.2	314	57.0 128	+15	32.3 120	**45**	17 30	17 59	18 33	16 04	22	1 08	70
19	104	49.2		53.1	329	28.8 128		20.1 122	**50**	23	56	33	17	18	0 51	75
20	119	49.3		54.0	344	00.7 129	+15	07.9 122	**52**	20	54	33	23	16	43	78
21	134	49.5		54.9	358	32.5 128	+14	55.7 122	**54**	17	53	34	30	13	34	80
22	149	49.7		55.8	13	04.4 129		43.3 124	**56**	13	51	34	38	10	24	84
23	164	49.8		56.8	27	36.3 129		30.9 124	**58**	10	49	35	46	8	0 13	87
24	179	50.0	+8	57.7	42	08.2 129	+14	18.3 126	**60 S**	17 05	17 47	18 35	16 56	4	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 37ᵐ.5		PMG: 9ʰ 14ᵐ			PMG: 8ʰ 40ᵐ			PMG: 10ʰ 17ᵐ			PMG: 8ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	200	10.6	221	31.9	−9 04.0	229	52.8	−13 33.0	205	25.5	−3 23.4	234	31.4	−14 46.3
1	215	13.1	236	31.8	03.2	244	53.5	32.3	220	27.4	23.1	249	33.7	46.3
2	230	15.5	251	31.6	02.3	259	54.1	31.7	235	29.3	22.9	264	35.9	46.2
3	245	18.0	266	31.4	01.5	274	54.7	31.1	250	31.3	22.7	279	38.2	46.1
4	260	20.5	281	31.2	−9 00.7	289	55.4	30.4	265	33.2	22.5	294	40.5	46.1
5	275	22.9	296	31.0	−8 59.8	304	56.0	−13 29.8	280	35.2	−3 22.3	309	42.7	−14 46.0
6	290	25.4	311	30.9	−8 59.0	319	56.6	−13 29.2	295	37.1	−3 22.0	324	45.0	−14 46.0
7	305	27.9	326	30.7	58.2	334	57.3	28.6	310	39.0	21.8	339	47.3	45.9
8	320	30.3	341	30.5	57.3	349	57.9	27.9	325	41.0	21.6	354	49.5	45.8
9	335	32.8	356	30.3	56.5	4	58.5	27.3	340	42.9	21.4	9	51.8	45.8
10	350	35.2	11	30.2	55.7	19	59.2	26.7	355	44.9	21.2	24	54.1	45.7
11	5	37.7	26	30.0	−8 54.8	34	59.8	−13 26.0	10	46.8	−3 20.9	39	56.3	−14 45.7
12	20	40.2	41	29.8	−8 54.0	50	00.4	−13 25.4	25	48.7	−3 20.7	54	58.6	−14 45.6
13	35	42.6	56	29.6	53.2	65	01.1	24.8	40	50.7	20.5	70	00.9	45.5
14	50	45.1	71	29.4	52.3	80	01.7	24.2	55	52.6	20.3	85	03.1	45.5
15	65	47.6	86	29.3	51.5	95	02.3	23.5	70	54.6	20.1	100	05.4	45.4
16	80	50.0	101	29.1	50.7	110	03.0	22.9	85	56.5	19.8	115	07.7	45.4
17	95	52.5	116	28.9	−8 49.8	125	03.6	−13 22.3	100	58.5	−3 19.6	130	10.0	−14 45.3
18	110	55.0	131	28.7	−8 49.0	140	04.2	−13 21.6	116	00.4	−3 19.4	145	12.2	−14 45.3
19	125	57.4	146	28.5	48.2	155	04.9	21.0	131	02.3	19.2	160	14.5	45.2
20	140	59.9	161	28.4	47.3	170	05.5	20.4	146	04.3	19.0	175	16.8	45.1
21	156	02.4	176	28.2	46.5	185	06.1	19.7	161	06.2	18.7	190	19.0	45.1
22	171	04.8	191	28.0	45.6	200	06.8	19.1	176	08.2	18.5	205	21.3	45.0
23	186	07.3	206	27.8	44.8	215	07.4	18.5	191	10.1	18.3	220	23.6	45.0
24	201	09.7	221	27.7	−8 44.0	230	08.0	−13 17.8	206	12.0	−3 18.1	235	25.8	−14 44.9
Dif	—		−2		+8	+6		+6	+19		+2	+23		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 11.ᵈ7		PHE	4ʰ: 56′.5									
	PMG: 12ʰ 00.ᵐ5				SD: 15′.4			12ʰ: 56′.8									
					PMG: 21ʰ 52ᵐ			20ʰ: 57′.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	50.0	+8	57.7	42	08.2	+14	18.3		**60 N**	3 04	4 04	4 50	14 19	92	4 56	3
1	194	50.1		58.6	56	40.1 129	+14	05.7	126	**58**	18	13	4 55	26	88	48	6
2	209	50.3	+8	59.5	71	12.1 130	+13	53.0	127	**56**	30	20	5 00	32	85	41	10
3	224	50.5	+9	00.4	85	44.1 130		40.3	127	**54**	40	27	04	37	82	35	12
4	239	50.6		01.3	100	16.1 130		27.4	129	**52**	49	32	08	42	79	30	14
5	254	50.8	+9	02.2	114	48.1 130	+13	14.5	129	**50**	3 56	4 38	5 12	14 46	77	4 25	17
6	269	50.9	+9	03.1	129	20.1 130	+13	01.5	130	**45**	4 12	4 49	5 19	14 55	72	4 14	21
7	284	51.1		04.0	143	52.2 131	+12	48.4	131	**40**	24	4 58	25	15 03	67	4 05	25
8	299	51.3		04.9	158	24.2 130		35.3	131	**35**	34	5 05	31	09	64	3 57	29
9	314	51.4		05.8	172	56.3 131		22.1	132	**30**	42	11	36	15	60	50	32
10	329	51.6		06.7	187	28.4 131	+12	08.8	133	**20**	4 55	21	44	25	55	38	37
11	344	51.7	+9	07.6	202	00.5 131	+11	55.4	134	**10 N**	5 05	5 29	5 51	15 33	51	3 27	42
12	359	51.9	+9	08.5	216	32.6 131	+11	42.0	134	**0**	5 12	5 36	5 57	15 41	46	3 17	46
13	14	52.0		09.4	231	04.7 131		28.5	135	**10 S**	18	42	6 04	49	42	3 07	50
14	29	52.2		10.4	245	36.9 132		14.9	136	**20**	22	48	10	15 58	37	2 56	55
15	44	52.4		11.3	260	09.0 131	+11	01.3	136	**30**	26	54	18	16 07	32	44	60
16	59	52.5		12.2	274	41.2 132	+10	47.6	137	**35**	27	5 57	22	13	28	36	63
17	74	52.7	+9	13.1	289	13.4 132	+10	33.8	138	**40**	5 28	6 00	6 27	16 19	25	2 28	67
18	89	52.8	+9	14.0	303	45.5 131	+10	19.9	139	**45**	5 29	6 03	6 32	16 26	21	2 18	71
19	104	53.0		14.9	318	17.7 132	+10	06.0	139	**50**	29	06	39	35	16	06	76
20	119	53.1		15.8	332	49.9 132	+9	52.1	139	**52**	29	08	42	39	14	2 01	78
21	134	53.3		16.7	347	22.1 132		38.0	141	**54**	29	10	45	43	12	1 54	82
22	149	53.5		17.6	1	54.3 132		23.9	141	**56**	28	11	49	48	9	48	84
23	164	53.6		18.5	16	26.5 132	+9	09.8	141	**58**	28	13	53	16 54	5	40	88
24	179	53.8	+9	19.4	30	58.7 132	+8	55.6	142	**60 S**	5 27	6 15	6 58	17 00	2	1 31	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 33.ᵐ6		PMG: 9ʰ 14ᵐ			PMG: 8ʰ 39ᵐ			PMG: 10ʰ 14ᵐ			PMG: 8ʰ 17ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	201	09.7	221	27.7	−8 44.0	230	08.0	−13 17.8	206	12.0	−3 18.1	235	25.8	−14 44.9
1	216	12.2	236	27.5	43.1	245	08.7	17.2	221	14.0	17.9	250	28.1	44.8
2	231	14.7	251	27.3	42.3	260	09.3	16.6	236	15.9	17.6	265	30.4	44.8
3	246	17.1	266	27.1	41.4	275	09.9	15.9	251	17.9	17.4	280	32.7	44.7
4	261	19.6	281	26.9	40.6	290	10.6	15.3	266	19.8	17.2	295	34.9	44.7
5	276	22.1	296	26.8	−8 39.7	305	11.2	−13 14.7	281	21.8	−3 17.0	310	37.2	−14 44.6
6	291	24.5	311	26.6	−8 38.9	320	11.8	−13 14.1	296	23.7	−3 16.8	325	39.5	−14 44.5
7	306	27.0	326	26.4	38.1	335	12.5	13.4	311	25.6	16.6	340	41.7	44.5
8	321	29.5	341	26.2	37.2	350	13.1	12.8	326	27.6	16.3	355	44.0	44.4
9	336	31.9	356	26.0	36.4	5	13.7	12.2	341	29.5	16.1	10	46.3	44.4
10	351	34.4	11	25.9	35.5	20	14.4	11.5	356	31.5	15.9	25	48.6	44.3
11	6	36.8	26	25.7	−8 34.7	35	15.0	−13 10.9	11	33.4	−3 15.7	40	50.8	−14 44.3
12	21	39.3	41	25.5	−8 33.8	50	15.6	−13 10.2	26	35.4	−3 15.5	55	53.1	−14 44.2
13	36	41.8	56	25.3	33.0	65	16.3	09.6	41	37.3	15.2	70	55.4	44.1
14	51	44.2	71	25.1	32.1	80	16.9	09.0	56	39.2	15.0	85	57.6	44.1
15	66	46.7	86	25.0	31.3	95	17.6	08.3	71	41.2	14.8	100	59.9	44.0
16	81	49.2	101	24.8	30.4	110	18.2	07.7	86	43.1	14.6	116	02.2	44.0
17	96	51.6	116	24.6	−8 29.6	125	18.8	−13 07.1	101	45.1	−3 14.4	131	04.5	−14 43.9
18	111	54.1	131	24.4	−8 28.7	140	19.5	−13 06.4	116	47.0	−3 14.1	146	06.7	−14 43.8
19	126	56.6	146	24.3	27.9	155	20.1	05.8	131	49.0	13.9	161	09.0	43.8
20	141	59.0	161	24.1	27.0	170	20.7	05.2	146	50.9	13.7	176	11.3	43.7
21	157	01.5	176	23.9	26.2	185	21.4	04.5	161	52.8	13.5	191	13.5	43.7
22	172	04.0	191	23.7	25.3	200	22.0	03.9	176	54.8	13.3	206	15.8	43.6
23	187	06.4	206	23.5	24.5	215	22.7	03.3	191	56.7	13.0	221	18.1	43.6
24	202	08.9	221	23.4	−8 23.6	230	23.3	−13 02.6	206	58.7	−3 12.8	236	20.4	−14 43.5
Dif	—			−2	+8		+6	+6		+19	+2		+23	+1

UT	SOL SD: 15′.9 PMG: 12h 00m.3				☾ LUNA Edad: 12d.7 SD: 15′.6 PMG: 22h 38m PHE 4h: 57′.3; 12h: 57′.6; 20h: 57′.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	179	53.8	+9	19.4	30	58.7	+8	55.6	**60 N**	19 16	20 02	21 03	15 51	94	4 59	2
1	194	53.9		20.3	45	30.9 132		41.3 143	**58**	10	19 53	20 48	54	90	54	6
2	209	54.1		21.2	60	03.1 132		27.0 143	**56**	05	45	36	57	86	51	8
3	224	54.2		22.1	74	35.3 132	+8	12.6 144	**54**	19 00	38	25	15 59	84	47	11
4	239	54.4		23.0	89	07.6 133	+7	58.2 144	**52**	18 56	32	16	16 01	81	44	14
5	254	54.6	+9	23.9	103	39.8 132	+7	43.7 145	**50**	18 52	19 26	20 08	16 03	78	4 42	15
6	269	54.7	+9	24.8	118	12.0 132	+7	29.1 146	**45**	18 44	19 15	19 52	16 07	73	4 35	21
7	284	54.9		25.7	132	44.2 132	+7	14.5 146	**40**	37	19 05	39	10	69	30	25
8	299	55.0		26.6	147	16.4 132	+6	59.9 146	**35**	32	18 58	29	13	65	26	28
9	314	55.2		27.5	161	48.6 132		45.2 147	**30**	27	51	20	15	62	22	31
10	329	55.3		28.4	176	20.7 131		30.4 148	**20**	18	40	19 07	20	56	15	37
11	344	55.5	+9	29.3	190	52.9 132	+6	15.6 148	**10 N**	18 10	18 32	18 57	16 24	51	4 09	41
12	359	55.6	+9	30.2	205	25.1 132	+6	00.8 148	**0**	18 04	18 25	18 49	16 27	47	4 03	46
13	14	55.8		31.1	219	57.3 132	+5	45.9 149	**10 S**	17 57	18	43	31	42	3 57	51
14	29	55.9		32.0	234	29.4 131		30.9 150	**20**	50	12	38	35	37	51	55
15	44	56.1		32.9	249	01.5 131		15.9 150	**30**	42	06	34	39	31	44	61
16	59	56.3		33.8	263	33.7 132	+5	00.9 150	**35**	37	18 03	32	41	29	39	65
17	74	56.4	+9	34.7	278	05.8 131	+4	45.8 151	**40**	17 32	17 59	18 31	16 44	25	3 35	68
18	89	56.6	+9	35.6	292	37.9 131	+4	30.7 151	**45**	17 26	17 56	18 30	16 47	21	3 29	73
19	104	56.7		36.5	307	10.0 131		15.6 151	**50**	19	52	29	51	16	22	78
20	119	56.9		37.4	321	42.0 130	+4	00.4 152	**52**	16	50	29	53	13	19	80
21	134	57.0		38.3	336	14.1 131	+3	45.2 152	**54**	12	48	29	55	11	16	83
22	149	57.2		39.1	350	46.1 130		29.9 153	**56**	08	46	29	57	8	12	86
23	164	57.3		40.0	5	18.1 130	+3	14.6 153	**58**	17 04	44	29	16 59	6	08	89
24	179	57.5	+9	40.9	19	50.1 130	+2	59.3 153	**60 S**	16 59	17 42	18 30	17 02	2	3 03	93

UT	ARIES PMG 10h 29m.7		VENUS Mag: −4.3 PMG: 9h 15m			MARTE Mag: +1.0 PMG: 8h 38m			JÚPITER Mag: −2.1 PMG: 10h 11m			SATURNO Mag: +0.9 PMG: 8h 13m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	202	08.9	221	23.4	−8 23.6	230	23.3	−13 02.6	206	58.7	−3 12.8	236	20.4	−14 43.5
1	217	11.3	236	23.2	22.8	245	23.9	02.0	222	00.6	12.6	251	22.6	43.4
2	232	13.8	251	23.0	21.9	260	24.6	01.3	237	02.6	12.4	266	24.9	43.4
3	247	16.3	266	22.8	21.1	275	25.2	00.7	252	04.5	12.2	281	27.2	43.3
4	262	18.7	281	22.6	20.2	290	25.8	−13 00.1	267	06.5	12.0	296	29.5	43.3
5	277	21.2	296	22.5	−8 19.3	305	26.5	−12 59.4	282	08.4	−3 11.7	311	31.7	−14 43.2
6	292	23.7	311	22.3	−8 18.5	320	27.1	−12 58.8	297	10.3	−3 11.5	326	34.0	−14 43.2
7	307	26.1	326	22.1	17.6	335	27.8	58.2	312	12.3	11.3	341	36.3	43.1
8	322	28.6	341	21.9	16.8	350	28.4	57.5	327	14.2	11.1	356	38.6	43.0
9	337	31.1	356	21.7	15.9	5	29.0	56.9	342	16.2	10.9	11	40.8	43.0
10	352	33.5	11	21.6	15.0	20	29.7	56.2	357	18.1	10.6	26	43.1	42.9
11	7	36.0	26	21.4	−8 14.2	35	30.3	−12 55.6	12	20.1	−3 10.4	41	45.4	−14 42.9
12	22	38.4	41	21.2	−8 13.3	50	31.0	−12 55.0	27	22.0	−3 10.2	56	47.6	−14 42.8
13	37	40.9	56	21.0	12.5	65	31.6	54.3	42	24.0	10.0	71	49.9	42.8
14	52	43.4	71	20.8	11.6	80	32.2	53.7	57	25.9	09.8	86	52.2	42.7
15	67	45.8	86	20.7	10.7	95	32.9	53.0	72	27.8	09.5	101	54.5	42.6
16	82	48.3	101	20.5	09.9	110	33.5	52.4	87	29.8	09.3	116	56.7	42.6
17	97	50.8	116	20.3	−8 09.0	125	34.2	−12 51.8	102	31.7	−3 09.1	131	59.0	−14 42.5
18	112	53.2	131	20.1	−8 08.2	140	34.8	−12 51.1	117	33.7	−3 08.9	147	01.3	−14 42.5
19	127	55.7	146	19.9	07.3	155	35.4	50.5	132	35.6	08.7	162	03.6	42.4
20	142	58.2	161	19.8	06.4	170	36.1	49.8	147	37.6	08.5	177	05.8	42.4
21	158	00.6	176	19.6	05.6	185	36.7	49.2	162	39.5	08.2	192	08.1	42.3
22	173	03.1	191	19.4	04.7	200	37.4	48.6	177	41.5	08.0	207	10.4	42.2
23	188	05.6	206	19.2	03.8	215	38.0	47.9	192	43.4	07.8	222	12.7	42.2
24	203	08.0	221	19.0	−8 03.0	230	38.7	−12 47.3	207	45.4	−3 07.6	237	15.0	−14 42.1
Dif	—			−2	+9		+6	+6		+19	+2		+23	+1

UT	SOL				☾ LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 13^{d}.7 SD: 15′.8		PHE	4^{h}: 58′.1 12^{h}: 58′.4 20^{h}: 58′.6									
	PMG: 12^{h} 00^{m}.0				PMG: 23^{h} 25^{m}			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	179	57.5	+9	40.9	19	50.1	+2	59.3		**60 N**	2 56	3 58	4 44	17 25	98	5 01	2
1	194	57.6		41.8	34	22.1 130		44.0 153		**58**	3 11	4 07	50	24	94	5 00	5
2	209	57.8		42.7	48	54.1 130		28.6 154		**56**	23	15	55	23	90	4 59	9
3	224	57.9		43.6	63	26.0 129	+2	13.1 155		**54**	34	22	4 59	23	86	58	12
4	239	58.1		44.5	77	57.9 129	+1	57.7 154		**52**	43	28	5 04	22	84	58	13
5	254	58.2	+9	45.4	92	29.8 129	+1	42.2 155		**50**	3 51	4 33	5 07	17 21	82	4 57	16
6	269	58.4	+9	46.3	107	01.6 128	+1	26.7 155		**45**	4 08	4 45	5 16	17 20	76	4 56	21
7	284	58.6		47.2	121	33.4 128	+1	11.2 155		**40**	21	4 54	22	19	71	55	25
8	299	58.7		48.1	136	05.2 128	+0	55.6 156		**35**	31	5 02	28	18	68	54	29
9	314	58.9		49.0	150	37.0 128		40.1 155		**30**	40	09	33	17	64	53	32
10	329	59.0		49.9	165	08.7 127		24.5 156		**20**	4 53	20	42	16	58	52	37
11	344	59.2	+9	50.8	179	40.4 127	+0	08.9 156		**10 N**	5 03	5 28	5 50	17 15	53	4 50	43
12	359	59.3	+9	51.7	194	12.1 127	−0	06.8 157		**0**	5 11	5 36	5 57	17 14	48	4 49	47
13	14	59.5		52.6	208	43.7 126		22.4 156		**10 S**	18	42	6 04	13	43	48	52
14	29	59.6		53.4	223	15.3 126		38.1 157		**20**	23	49	11	12	38	46	57
15	44	59.8		54.3	237	46.9 126	−0	53.7 156		**30**	27	55	19	10	33	45	63
16	59	59.9		55.2	252	18.4 125	−1	09.4 157		**35**	29	5 58	24	10	29	44	66
17	75	00.1	+9	56.1	266	49.9 125	−1	25.1 157		**40**	5 30	6 01	6 29	17 09	26	4 43	70
18	90	00.2	+9	57.0	281	21.4 125	−1	40.8 157		**45**	5 31	6 05	6 35	17 08	22	4 42	74
19	105	00.4		57.9	295	52.8 124	−1	56.5 157		**50**	32	09	42	07	16	40	80
20	120	00.5		58.8	310	24.1 123	−2	12.3 158		**52**	32	11	45	06	15	39	83
21	135	00.7	+9	59.7	324	55.5 124		28.0 157		**54**	32	13	49	06	12	39	85
22	150	00.8	+10	00.6	339	26.7 122		43.7 157		**56**	32	15	53	05	9	38	88
23	165	01.0		01.4	353	58.0 123	−2	59.5 158		**58**	32	17	6 58	05	6	37	91
24	180	01.1	+10	02.3	8	29.1 121	−3	15.2 157		**60 S**	5 32	6 20	7 03	17 04	2	4 36	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.3			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10^{h} 25^{m}.8		PMG: 9^{h} 15^{m}			PMG: 8^{h} 37^{m}			PMG: 10^{h} 08^{m}			PMG: 8^{h} 10^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	203	08.0	221	19.0	−8 03.0	230	38.7	−12 47.3	207	45.4	−3 07.6	237	15.0	−14 42.1
1	218	10.5	236	18.9	02.1	245	39.3	46.6	222	47.3	07.4	252	17.2	42.1
2	233	12.9	251	18.7	01.2	260	39.9	46.0	237	49.2	07.2	267	19.5	42.0
3	248	15.4	266	18.5	−8 00.4	275	40.6	45.4	252	51.2	06.9	282	21.8	42.0
4	263	17.9	281	18.3	−7 59.5	290	41.2	44.7	267	53.1	06.7	297	24.1	41.9
5	278	20.3	296	18.1	−7 58.6	305	41.9	−12 44.1	282	55.1	−3 06.5	312	26.3	−14 41.8
6	293	22.8	311	18.0	−7 57.7	320	42.5	−12 43.4	297	57.0	−3 06.3	327	28.6	−14 41.8
7	308	25.3	326	17.8	56.9	335	43.1	42.8	312	59.0	06.1	342	30.9	41.7
8	323	27.7	341	17.6	56.0	350	43.8	42.1	328	00.9	05.8	357	33.2	41.7
9	338	30.2	356	17.4	55.1	5	44.4	41.5	343	02.9	05.6	12	35.4	41.6
10	353	32.7	11	17.2	54.3	20	45.1	40.9	358	04.8	05.4	27	37.7	41.6
11	8	35.1	26	17.1	−7 53.4	35	45.7	−12 40.2	13	06.8	−3 05.2	42	40.0	−14 41.5
12	23	37.6	41	16.9	−7 52.5	50	46.4	−12 39.6	28	08.7	−3 05.0	57	42.3	−14 41.5
13	38	40.1	56	16.7	51.6	65	47.0	38.9	43	10.7	04.8	72	44.6	41.4
14	53	42.5	71	16.5	50.8	80	47.6	38.3	58	12.6	04.5	87	46.8	41.3
15	68	45.0	86	16.3	49.9	95	48.3	37.6	73	14.6	04.3	102	49.1	41.3
16	83	47.4	101	16.2	49.0	110	48.9	37.0	88	16.5	04.1	117	51.4	41.2
17	98	49.9	116	16.0	−7 48.1	125	49.6	−12 36.3	103	18.4	−3 03.9	132	53.7	−14 41.2
18	113	52.4	131	15.8	−7 47.3	140	50.2	−12 35.7	118	20.4	−3 03.7	147	55.9	−14 41.1
19	128	54.8	146	15.6	46.4	155	50.9	35.1	133	22.3	03.5	162	58.2	41.1
20	143	57.3	161	15.4	45.5	170	51.5	34.4	148	24.3	03.2	178	00.5	41.0
21	158	59.8	176	15.3	44.6	185	52.2	33.8	163	26.2	03.0	193	02.8	41.0
22	174	02.2	191	15.1	43.8	200	52.8	33.1	178	28.2	02.8	208	05.1	40.9
23	189	04.7	206	14.9	42.9	215	53.4	32.5	193	30.1	02.6	223	07.3	40.8
24	204	07.2	221	14.7	−7 42.0	230	54.1	−12 31.8	208	32.1	−3 02.4	238	09.6	−14 40.8
Dif	—			−2	+9		+6	+6		+19	+2		+23	+1

UT	SOL SD: 15′.9 PMG: 11h 59m.8				☾ LUNA Edad: 14d.7 SD: 16′.0 PMG: **h **m PHE { 4h: 58′.8; 12h: 59′.1; 20h: 59′.2 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	180	01.1	+10	02.3	8	29.1	−3	15.2	**60 N**	19 20	20 07	21 10	19 03	102	5 03	2
1	195	01.3		03.2	23	00.3 122		30.9 157	**58**	14	19 58	20 55	18 58	97	05	6
2	210	01.4		04.1	37	31.4 121	−3	46.7 158	**56**	09	49	41	53	94	08	9
3	225	01.6		05.0	52	02.4 120	−4	02.4 157	**54**	19 04	42	30	49	91	10	12
4	240	01.7		05.9	66	33.4 120		18.1 157	**52**	18 59	36	21	46	87	11	15
5	255	01.9	+10	06.8	81	04.3 119	−4	33.9 158	**50**	18 55	19 30	20 12	18 43	85	5 13	18
6	270	02.0	+10	07.7	95	35.2 119	−4	49.6 157	**45**	18 47	19 17	19 55	18 36	79	5 17	22
7	285	02.2		08.5	110	06.1 119	−5	05.3 157	**40**	39	19 08	41	30	75	20	27
8	300	02.3		09.4	124	36.8 117		21.0 157	**35**	33	18 59	30	26	70	23	30
9	315	02.4		10.3	139	07.6 118		36.6 156	**30**	28	52	21	21	67	25	34
10	330	02.6		11.2	153	38.2 116	−5	52.3 157	**20**	19	41	19 07	14	61	29	40
11	345	02.7	+10	12.1	168	08.8 116	−6	08.0 157	**10 N**	18 11	18 32	18 57	18 08	56	5 33	45
12	0	02.9	+10	13.0	182	39.4 116	−6	23.6 156	**0**	18 03	18 24	18 49	18 02	51	5 36	50
13	15	03.0		13.9	197	09.9 115		39.2 156	**10 S**	17 56	17	42	17 56	46	40	54
14	30	03.2		14.7	211	40.3 114	−6	54.8 156	**20**	48	10	36	50	41	43	60
15	45	03.3		15.6	226	10.6 113	−7	10.4 156	**30**	40	04	32	43	36	48	65
16	60	03.5		16.5	240	40.9 113		25.9 155	**35**	35	18 00	30	39	33	50	69
17	75	03.6	+10	17.4	255	11.2 113	−7	41.4 155	**40**	17 29	17 57	18 28	17 35	28	5 53	72
18	90	03.8	+10	18.3	269	41.3 111	−7	56.9 155	**45**	17 23	17 53	18 27	17 30	24	5 56	77
19	105	03.9		19.2	284	11.4 111	−8	12.4 155	**50**	15	48	25	23	19	6 00	83
20	120	04.1		20.0	298	41.5 111		27.8 154	**52**	12	46	25	21	16	02	85
21	135	04.2		20.9	313	11.4 109		43.2 154	**54**	08	44	25	18	13	04	88
22	150	04.4		21.8	327	41.3 109	−8	58.6 154	**56**	17 04	42	25	14	11	06	91
23	165	04.5		22.7	342	11.1 108	−9	13.9 153	**58**	16 59	39	24	11	7	08	95
24	180	04.6	+10	23.6	356	40.9 108	−9	29.2 153	**60 S**	16 54	17 36	18 24	17 06	4	6 11	99

UT	ARIES PMG 10h 21m.8		VENUS Mag: −4.2 PMG: 9h 15m			MARTE Mag: +1.0 PMG: 8h 36m			JÚPITER Mag: −2.1 PMG: 10h 05m			SATURNO Mag: +0.9 PMG: 8h 06m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	204	07.2	221	14.7	−7 42.0	230	54.1	−12 31.8	208	32.1	−3 02.4	238	09.6	−14 40.8
1	219	09.6	236	14.5	41.1	245	54.7	31.2	223	34.0	02.2	253	11.9	40.7
2	234	12.1	251	14.3	40.2	260	55.4	30.5	238	36.0	01.9	268	14.2	40.7
3	249	14.5	266	14.2	39.4	275	56.0	29.9	253	37.9	01.7	283	16.5	40.6
4	264	17.0	281	14.0	38.5	290	56.7	29.2	268	39.9	01.5	298	18.7	40.6
5	279	19.5	296	13.8	−7 37.6	305	57.3	−12 28.6	283	41.8	−3 01.3	313	21.0	−14 40.5
6	294	21.9	311	13.6	−7 36.7	320	58.0	−12 27.9	298	43.8	−3 01.1	328	23.3	−14 40.5
7	309	24.4	326	13.4	35.8	335	58.6	27.3	313	45.7	00.8	343	25.6	40.4
8	324	26.9	341	13.3	34.9	350	59.3	26.7	328	47.7	00.6	358	27.9	40.3
9	339	29.3	356	13.1	34.1	5	59.9	26.0	343	49.6	00.4	13	30.1	40.3
10	354	31.8	11	12.9	33.2	21	00.5	25.4	358	51.6	−3 00.2	28	32.4	40.2
11	9	34.3	26	12.7	−7 32.3	36	01.2	−12 24.7	13	53.5	−3 00.0	43	34.7	−14 40.2
12	24	36.7	41	12.5	−7 31.4	51	01.8	−12 24.1	28	55.5	−2 59.8	58	37.0	−14 40.1
13	39	39.2	56	12.4	30.5	66	02.5	23.4	43	57.4	59.5	73	39.3	40.1
14	54	41.7	71	12.2	29.6	81	03.1	22.8	58	59.4	59.3	88	41.5	40.0
15	69	44.1	86	12.0	28.7	96	03.8	22.1	74	01.3	59.1	103	43.8	40.0
16	84	46.6	101	11.8	27.9	111	04.4	21.5	89	03.3	58.9	118	46.1	39.9
17	99	49.0	116	11.6	−7 27.0	126	05.1	−12 20.8	104	05.2	−2 58.7	133	48.4	−14 39.8
18	114	51.5	131	11.5	−7 26.1	141	05.7	−12 20.2	119	07.2	−2 58.5	148	50.7	−14 39.8
19	129	54.0	146	11.3	25.2	156	06.4	19.5	134	09.1	58.2	163	52.9	39.7
20	144	56.4	161	11.1	24.3	171	07.0	18.9	149	11.1	58.0	178	55.2	39.7
21	159	58.9	176	10.9	23.4	186	07.7	18.2	164	13.0	57.8	193	57.5	39.6
22	175	01.4	191	10.7	22.5	201	08.3	17.6	179	15.0	57.6	208	59.8	39.6
23	190	03.8	206	10.5	21.6	216	09.0	16.9	194	16.9	57.4	224	02.1	39.5
24	205	06.3	221	10.4	−7 20.7	231	09.6	−12 16.3	209	18.9	−2 57.2	239	04.3	−14 39.5
Dif	—			−2	+9		+6	+6		+19	+2		+23	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 15^{d}.7		PHE	4^{h}: 59′.4								
	PMG: 11^{h} 59^{m}.6				SD: 16′.2			12^{h}: 59′.6								
					PMG: 0^{h} 14^{m}			20^{h}: 59′.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	04.6	+10	23.6	356	40.9		−9 29.2	**60 N**	2 48	3 51	4 38	20 45	108	5 05	4
1	195	04.8		24.4	11	10.6 107		44.5 153	**58**	3 04	4 01	44	35	102	11	9
2	210	04.9		25.3	25	40.2 106		−9 59.7 152	**56**	17	09	50	27	98	17	12
3	225	05.1		26.2	40	09.7 105		−10 14.9 152	**54**	28	17	55	20	93	22	15
4	240	05.2		27.1	54	39.2 105		30.0 151	**52**	38	23	4 59	13	91	26	19
5	255	05.4	+10	28.0	69	08.5 103		−10 45.1 151	**50**	3 47	4 29	5 03	20 08	87	5 31	20
6	270	05.5	+10	28.8	83	37.8 103		−11 00.1 150	**45**	4 04	4 41	5 12	19 55	81	5 39	27
7	285	05.7		29.7	98	07.1 103		15.1 150	**40**	18	4 51	19	45	76	47	30
8	300	05.8		30.6	112	36.2 101		30.0 149	**35**	28	5 00	26	36	73	53	35
9	315	05.9		31.5	127	05.3 101		44.9 149	**30**	38	07	31	28	70	5 59	38
10	330	06.1		32.4	141	34.2 99		−11 59.7 148	**20**	4 52	18	41	15	64	6 09	43
11	345	06.2	+10	33.2	156	03.1 99		−12 14.5 148	**10 N**	5 02	5 27	5 49	19 04	59	6 18	48
12	0	06.4	+10	34.1	170	32.0 99		−12 29.2 147	**0**	5 11	5 35	5 56	18 53	55	6 26	52
13	15	06.5		35.0	185	00.7 97		43.9 147	**10 S**	18	42	6 04	42	51	34	57
14	30	06.7		35.9	199	29.3 96		−12 58.4 145	**20**	23	49	11	31	46	43	62
15	45	06.8		36.8	213	57.9 96		−13 13.0 146	**30**	28	5 56	20	19	40	53	68
16	60	07.0		37.6	228	26.4 95		27.4 144	**35**	30	6 00	25	12	37	6 59	71
17	75	07.1	+10	38.5	242	54.8 94		−13 41.8 144	**40**	5 32	6 03	6 31	18 03	34	7 05	76
18	90	07.2	+10	39.4	257	23.1 93		−13 56.1 143	**45**	5 33	6 08	6 37	17 54	29	7 13	80
19	105	07.4		40.3	271	51.3 92		−14 10.4 143	**50**	35	12	45	42	24	23	86
20	120	07.5		41.1	286	19.4 91		24.5 141	**52**	35	14	49	37	21	27	89
21	135	07.7		42.0	300	47.4 90		38.6 141	**54**	35	17	53	31	18	32	92
22	150	07.8		42.9	315	15.4 90		−14 52.6 140	**56**	36	19	6 57	25	15	37	96
23	165	07.9		43.8	329	43.2 88		−15 06.6 140	**58**	36	22	7 02	18	11	43	100
24	180	08.1	+10	44.6	344	11.0 88		−15 20.4 138	**60 S**	5 36	6 24	7 07	17 10	6	7 50	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10^{h} 17^{m}.9		PMG: 9^{h} 15^{m}			PMG: 8^{h} 35^{m}			PMG: 10^{h} 01^{m}			PMG: 8^{h} 02^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	205	06.3	221	10.4	−7 20.7	231	09.6	−12 16.3	209	18.9	−2 57.2	239	04.3	−14 39.5
1	220	08.8	236	10.2	19.9	246	10.3	15.6	224	20.8	57.0	254	06.6	39.4
2	235	11.2	251	10.0	19.0	261	10.9	15.0	239	22.8	56.7	269	08.9	39.3
3	250	13.7	266	09.8	18.1	276	11.6	14.3	254	24.7	56.5	284	11.2	39.3
4	265	16.1	281	09.6	17.2	291	12.2	13.7	269	26.7	56.3	299	13.5	39.2
5	280	18.6	296	09.5	−7 16.3	306	12.9	−12 13.0	284	28.6	−2 56.1	314	15.8	−14 39.2
6	295	21.1	311	09.3	−7 15.4	321	13.5	−12 12.4	299	30.6	−2 55.9	329	18.0	−14 39.1
7	310	23.5	326	09.1	14.5	336	14.2	11.7	314	32.5	55.7	344	20.3	39.1
8	325	26.0	341	08.9	13.6	351	14.8	11.1	329	34.5	55.4	359	22.6	39.0
9	340	28.5	356	08.7	12.7	6	15.4	10.4	344	36.4	55.2	14	24.9	39.0
10	355	30.9	11	08.6	11.8	21	16.1	09.7	359	38.4	55.0	29	27.2	38.9
11	10	33.4	26	08.4	−7 10.9	36	16.7	−12 09.1	14	40.3	−2 54.8	44	29.5	−14 38.9
12	25	35.9	41	08.2	−7 10.0	51	17.4	−12 08.4	29	42.3	−2 54.6	59	31.7	−14 38.8
13	40	38.3	56	08.0	09.1	66	18.0	07.8	44	44.2	54.4	74	34.0	38.8
14	55	40.8	71	07.8	08.2	81	18.7	07.1	59	46.2	54.1	89	36.3	38.7
15	70	43.3	86	07.6	07.3	96	19.3	06.5	74	48.1	53.9	104	38.6	38.6
16	85	45.7	101	07.5	06.4	111	20.0	05.8	89	50.1	53.7	119	40.9	38.6
17	100	48.2	116	07.3	−7 05.5	126	20.7	−12 05.2	104	52.0	−2 53.5	134	43.2	−14 38.5
18	115	50.6	131	07.1	−7 04.6	141	21.3	−12 04.5	119	54.0	−2 53.3	149	45.4	−14 38.5
19	130	53.1	146	06.9	03.7	156	22.0	03.9	134	55.9	53.1	164	47.7	38.4
20	145	55.6	161	06.7	02.8	171	22.6	03.2	149	57.9	52.9	179	50.0	38.4
21	160	58.0	176	06.6	01.9	186	23.3	02.6	164	59.8	52.6	194	52.3	38.3
22	176	00.5	191	06.4	01.0	201	23.9	01.9	180	01.8	52.4	209	54.6	38.3
23	191	03.0	206	06.2	−7 00.1	216	24.6	01.3	195	03.7	52.2	224	56.9	38.2
24	206	05.4	221	06.0	−6 59.2	231	25.2	−12 00.6	210	05.7	−2 52.0	239	59.2	−14 38.2
Dif	—			−2	+9		+6	+7		+20	+2		+23	+1

UT	SOL				☾ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 16ᵈ.7		PHE	4ʰ: 59′.8								
	PMG: 11ʰ 59ᵐ.3				SD: 16′.3			12ʰ: 59′.9								
					PMG: 1ʰ 06ᵐ			20ʰ: 60′.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	08.1	+10	44.6	344	11.0	−15	20.4	**60 N**	19 25	20 13	21 18	22 33	109	5 09	8
1	195	08.2		45.5	358	38.7 87		34.2 138	**58**	19	20 03	21 01	17	103	20	13
2	210	08.4		46.4	13	06.3 86	−15	47.9 137	**56**	13	19 54	20 47	22 05	97	29	17
3	225	08.5		47.2	27	33.7 84	−16	01.5 136	**54**	08	46	35	21 53	93	37	21
4	240	08.7		48.1	42	01.1 84		15.0 135	**52**	19 03	39	25	44	89	45	24
5	255	08.8	+10	49.0	56	28.4 83	−16	28.4 134	**50**	18 58	19 33	20 16	21 35	86	5 51	27
6	270	08.9	+10	49.9	70	55.7 83	−16	41.7 133	**45**	18 49	19 20	19 58	21 16	81	6 06	32
7	285	09.1		50.7	85	22.8 81	−16	55.0 133	**40**	41	10	44	21 01	77	17	37
8	300	09.2		51.6	99	49.8 80	−17	08.1 131	**35**	35	19 01	32	20 49	73	28	40
9	315	09.4		52.5	114	16.7 79		21.1 130	**30**	29	18 54	23	38	71	37	43
10	330	09.5		53.4	128	43.5 78		34.1 130	**20**	19	42	19 08	19	66	6 52	48
11	345	09.6	+10	54.2	143	10.3 78	−17	46.9 128	**10 N**	18 11	18 32	18 57	20 03	62	7 06	52
12	0	09.8	+10	55.1	157	36.9 76	−17	59.6 127	**0**	18 03	18 24	18 48	19 48	59	7 18	57
13	15	09.9		56.0	172	03.5 76	−18	12.2 126	**10 S**	17 55	16	41	33	55	31	61
14	30	10.0		56.8	186	29.9 74		24.7 125	**20**	47	09	35	19 17	51	7 45	65
15	45	10.2		57.7	200	56.3 74		37.1 124	**30**	37	18 02	30	18 59	47	8 01	70
16	60	10.3		58.6	215	22.5 72	−18	49.4 123	**35**	32	17 58	27	49	43	10	74
17	75	10.5	+10	59.4	229	48.7 72	−19	01.6 122	**40**	17 26	17 54	18 25	18 37	40	8 21	77
18	90	10.6	+11	00.3	244	14.7 70	−19	13.7 121	**45**	17 19	17 49	18 23	18 23	36	8 33	82
19	105	10.7		01.2	258	40.7 70		25.6 119	**50**	11	44	22	18 06	31	49	87
20	120	10.9		02.0	273	06.6 69		37.4 118	**52**	07	42	21	17 58	29	8 56	90
21	135	11.0		02.9	287	32.3 67	−19	49.1 117	**54**	17 03	39	21	49	26	9 04	93
22	150	11.2		03.8	301	58.0 67	−20	00.7 116	**56**	16 59	37	20	40	21	13	97
23	165	11.3		04.6	316	23.6 66		12.2 115	**58**	54	34	20	29	16	23	102
24	180	11.4	+11	05.5	330	49.1 65	−20	23.5 113	**60 S**	16 48	17 31	18 19	17 16	11	9 35	108

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +1.0			Mag: −2.1			Mag: +0.9		
	10ʰ 14ᵐ.0		PMG: 9ʰ 16ᵐ			PMG: 8ʰ 34ᵐ			PMG: 9ʰ 58ᵐ			PMG: 7ʰ 59ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	206	05.4	221	06.0	−6 59.2	231	25.2	−12 00.6	210	05.7	−2 52.0	239	59.2	−14 38.2
1	221	07.9	236	05.8	58.3	246	25.9	−11 59.9	225	07.6	51.8	255	01.4	38.1
2	236	10.4	251	05.6	57.4	261	26.5	59.3	240	09.6	51.6	270	03.7	38.1
3	251	12.8	266	05.5	56.5	276	27.2	58.6	255	11.5	51.3	285	06.0	38.0
4	266	15.3	281	05.3	55.6	291	27.8	58.0	270	13.5	51.1	300	08.3	37.9
5	281	17.8	296	05.1	−6 54.7	306	28.5	−11 57.3	285	15.4	−2 50.9	315	10.6	−14 37.9
6	296	20.2	311	04.9	−6 53.8	321	29.1	−11 56.7	300	17.4	−2 50.7	330	12.9	−14 37.8
7	311	22.7	326	04.7	52.9	336	29.8	56.0	315	19.4	50.5	345	15.2	37.8
8	326	25.1	341	04.6	52.0	351	30.4	55.3	330	21.3	50.3	0	17.4	37.7
9	341	27.6	356	04.4	51.0	6	31.1	54.7	345	23.3	50.1	15	19.7	37.7
10	356	30.1	11	04.2	50.1	21	31.7	54.0	0	25.2	49.8	30	22.0	37.6
11	11	32.5	26	04.0	−6 49.2	36	32.4	−11 53.4	15	27.2	−2 49.6	45	24.3	−14 37.6
12	26	35.0	41	03.8	−6 48.3	51	33.0	−11 52.7	30	29.1	−2 49.4	60	26.6	−14 37.5
13	41	37.5	56	03.6	47.4	66	33.7	52.1	45	31.1	49.2	75	28.9	37.5
14	56	39.9	71	03.5	46.5	81	34.3	51.4	60	33.0	49.0	90	31.2	37.4
15	71	42.4	86	03.3	45.6	96	35.0	50.7	75	35.0	48.8	105	33.4	37.4
16	86	44.9	101	03.1	44.7	111	35.7	50.1	90	36.9	48.6	120	35.7	37.3
17	101	47.3	116	02.9	−6 43.8	126	36.3	−11 49.4	105	38.9	−2 48.3	135	38.0	−14 37.3
18	116	49.8	131	02.7	−6 42.9	141	37.0	−11 48.8	120	40.8	−2 48.1	150	40.3	−14 37.2
19	131	52.2	146	02.5	41.9	156	37.6	48.1	135	42.8	47.9	165	42.6	37.1
20	146	54.7	161	02.4	41.0	171	38.3	47.5	150	44.7	47.7	180	44.9	37.1
21	161	57.2	176	02.2	40.1	186	38.9	46.8	165	46.7	47.5	195	47.2	37.0
22	176	59.6	191	02.0	39.2	201	39.6	46.1	180	48.7	47.3	210	49.5	37.0
23	192	02.1	206	01.8	38.3	216	40.2	45.5	195	50.6	47.0	225	51.7	36.9
24	207	04.6	221	01.6	−6 37.4	231	40.9	−11 44.8	210	52.6	−2 46.8	240	54.0	−14 36.9
Dif	—			−2	+9		+7	+7		+20	+2		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 17^{d}.7 SD: 16′.3		PHE	4^{h}: 60′.0 12^{h}: 60′.1 20^{h}: 60′.0									
	PMG: 11^{h} 59^{m}.1				PMG: 2^{h} 01^{m}			Rº: 60^{m}									
	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	11.4	+11	05.5	330	49.1	−20	23.5		**60 N**	2 40	3 45	4 32	** **	**	5 17	14
1	195	11.6		06.4	345	14.5 64		34.7	112	**58**	2 57	3 55	39	** **	**	33	21
2	210	11.7		07.2	359	39.8 63		45.8	111	**56**	3 11	4 04	45	23 42	87	46	27
3	225	11.8		08.1	14	05.0 62	−20	56.7	109	**54**	23	12	50	26	84	5 58	30
4	240	12.0		09.0	28	30.1 61	−21	07.5	108	**52**	33	18	55	13	82	6 09	33
5	255	12.1	+11	09.8	42	55.1 60	−21	18.2	107	**50**	3 42	4 25	4 59	23 01	80	6 18	36
6	270	12.2	+11	10.7	57	20.1 60	−21	28.7	105	**45**	4 00	4 38	5 09	22 37	77	6 38	41
7	285	12.4		11.6	71	44.9 58		39.1	104	**40**	14	48	17	18	74	6 54	45
8	300	12.5		12.4	86	09.7 58		49.3	102	**35**	26	4 57	23	22 02	72	7 08	48
9	315	12.7		13.3	100	34.3 56	−21	59.4	101	**30**	35	5 04	29	21 49	69	20	50
10	330	12.8		14.2	114	58.9 56	−22	09.4	100	**20**	4 50	16	39	25	67	40	55
11	345	12.9	+11	15.0	129	23.4 55	−22	19.2	98	**10 N**	5 01	5 26	5 48	21 05	65	7 58	58
12	0	13.1	+11	15.9	143	47.8 54	−22	28.9	97	**0**	5 10	5 35	5 56	20 47	62	8 15	61
13	15	13.2		16.7	158	12.1 53		38.4	95	**10 S**	18	42	6 04	28	60	32	64
14	30	13.3		17.6	172	36.3 52		47.8	94	**20**	24	50	12	20 08	57	8 50	67
15	45	13.5		18.5	187	00.4 51	−22	57.0	92	**30**	29	5 57	21	19 46	54	9 11	71
16	60	13.6		19.3	201	24.5 51	−23	06.0	90	**35**	32	6 01	27	32	53	24	73
17	75	13.7	+11	20.2	215	48.4 49	−23	14.9	89	**40**	5 34	6 05	6 33	19 17	50	9 38	76
18	90	13.9	+11	21.1	230	12.3 49	−23	23.7	88	**45**	5 36	6 10	6 40	18 59	47	9 55	79
19	105	14.0		21.9	244	36.1 48		32.3	86	**50**	38	15	48	37	43	10 16	84
20	120	14.1		22.8	258	59.8 47		40.7	84	**52**	38	18	52	27	40	26	86
21	135	14.3		23.6	273	23.5 47		48.9	82	**54**	39	20	6 56	15	37	37	90
22	150	14.4		24.5	287	47.1 46	−23	57.1	82	**56**	39	23	7 01	18 01	34	10 50	93
23	165	14.5		25.4	302	10.6 45	−24	05.0	79	**58**	40	26	06	17 45	30	11 05	98
24	180	14.7	+11	26.2	316	34.0 44	−24	12.8	78	**60 S**	5 40	6 29	7 12	17 27	22	11 23	106

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 10^{h} 10^{m}.0		Mag: −4.2 PMG: 9^{h} 16^{m}			Mag: +1.0 PMG: 8^{h} 33^{m}			Mag: −2.1 PMG: 9^{h} 55^{m}			Mag: +0.9 PMG: 7^{h} 55^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	207	04.6	221	01.6	−6 37.4	231	40.9	−11 44.8	210	52.6	−2 46.8	240	54.0	−14 36.9
1	222	07.0	236	01.5	36.5	246	41.5	44.2	225	54.5	46.6	255	56.3	36.8
2	237	09.5	251	01.3	35.5	261	42.2	43.5	240	56.5	46.4	270	58.6	36.8
3	252	12.0	266	01.1	34.6	276	42.9	42.8	255	58.4	46.2	286	00.9	36.7
4	267	14.4	281	00.9	33.7	291	43.5	42.2	271	00.4	46.0	301	03.2	36.7
5	282	16.9	296	00.7	−6 32.8	306	44.2	−11 41.5	286	02.3	−2 45.8	316	05.5	−14 36.6
6	297	19.4	311	00.5	−6 31.9	321	44.8	−11 40.9	301	04.3	−2 45.5	331	07.8	−14 36.6
7	312	21.8	326	00.4	31.0	336	45.5	40.2	316	06.2	45.3	346	10.1	36.5
8	327	24.3	341	00.2	30.0	351	46.1	39.5	331	08.2	45.1	1	12.3	36.5
9	342	26.7	356	00.0	29.1	6	46.8	38.9	346	10.2	44.9	16	14.6	36.4
10	357	29.2	10	59.8	28.2	21	47.4	38.2	1	12.1	44.7	31	16.9	36.4
11	12	31.7	25	59.6	−6 27.3	36	48.1	−11 37.6	16	14.1	−2 44.5	46	19.2	−14 36.3
12	27	34.1	40	59.4	−6 26.4	51	48.8	−11 36.9	31	16.0	−2 44.3	61	21.5	−14 36.3
13	42	36.6	55	59.3	25.4	66	49.4	36.2	46	18.0	44.1	76	23.8	36.2
14	57	39.1	70	59.1	24.5	81	50.1	35.6	61	19.9	43.8	91	26.1	36.1
15	72	41.5	85	58.9	23.6	96	50.7	34.9	76	21.9	43.6	106	28.4	36.1
16	87	44.0	100	58.7	22.7	111	51.4	34.2	91	23.8	43.4	121	30.7	36.0
17	102	46.5	115	58.5	−6 21.7	126	52.0	−11 33.6	106	25.8	−2 43.2	136	33.0	−14 36.0
18	117	48.9	130	58.3	−6 20.8	141	52.7	−11 32.9	121	27.8	−2 43.0	151	35.2	−14 35.9
19	132	51.4	145	58.2	19.9	156	53.4	32.3	136	29.7	42.8	166	37.5	35.9
20	147	53.9	160	58.0	19.0	171	54.0	31.6	151	31.7	42.6	181	39.8	35.8
21	162	56.3	175	57.8	18.1	186	54.7	30.9	166	33.6	42.3	196	42.1	35.8
22	177	58.8	190	57.6	17.1	201	55.3	30.3	181	35.6	42.1	211	44.4	35.7
23	193	01.2	205	57.4	16.2	216	56.0	29.6	196	37.5	41.9	226	46.7	35.7
24	208	03.7	220	57.2	−6 15.3	231	56.6	−11 28.9	211	39.5	−2 41.7	241	49.0	−14 35.6
Dif	—		−2		+9	+7		+7	+20		+2	+23		+1

UT	SOL SD: 15′.9 PMG: 11h 58m.9				LUNA Edad: 18d.7 SD: 16′.4 PMG: 3h 01m PHE 4h: 60′.0; 12h: 60′.0; 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	14.7	+11	26.2	316	34.0	−24	12.8	**60 N**	19 30	20 19	21 26	0 22	99	5 31	32
1	195	14.8		27.1	330	57.3 43		20.4 76	**58**	23	20 08	21 07	0 00	92	5 54	39
2	210	14.9		27.9	345	20.6 43		27.8 74	**56**	17	19 58	20 53	** **	**	6 13	43
3	225	15.1		28.8	359	43.8 42		35.1 73	**54**	11	50	40	** **	**	28	46
4	240	15.2		29.6	14	07.0 42		42.2 71	**52**	06	43	29	** **	**	42	48
5	255	15.3	+11	30.5	28	30.1 41	−24	49.1 69	**50**	19 02	19 36	20 20	** **	**	6 54	50
6	270	15.5	+11	31.4	42	53.1 40	−24	55.8 67	**45**	18 52	19 23	20 01	23 54	65	7 19	53
7	285	15.6		32.2	57	16.0 39	−25	02.4 66	**40**	43	12	19 46	32	65	39	55
8	300	15.7		33.1	71	38.9 39		08.8 64	**35**	36	19 03	34	23 14	65	7 56	56
9	315	15.9		33.9	86	01.8 39		15.0 62	**30**	30	18 55	24	22 58	65	8 10	58
10	330	16.0		34.8	100	24.6 38		21.1 61	**20**	20	42	19 09	32	64	35	59
11	345	16.1	+11	35.6	114	47.3 37	−25	26.9 58	**10 N**	18 11	18 32	18 57	22 10	63	8 56	61
12	0	16.2	+11	36.5	129	10.0 37	−25	32.6 57	**0**	18 02	18 23	18 48	21 49	63	9 16	63
13	15	16.4		37.3	143	32.6 36		38.1 55	**10 S**	17 54	15	40	28	62	36	64
14	30	16.5		38.2	157	55.2 36		43.4 53	**20**	45	08	34	21 05	62	9 57	66
15	45	16.6		39.1	172	17.7 35		48.6 52	**30**	35	18 00	28	20 40	61	10 22	68
16	60	16.8		39.9	186	40.2 35		53.5 49	**35**	30	17 56	25	25	60	37	68
17	75	16.9	+11	40.8	201	02.6 34	−25	58.3 48	**40**	17 23	17 51	18 23	20 07	60	10 54	70
18	90	17.0	+11	41.6	215	25.0 34	−26	02.9 46	**45**	17 16	17 46	18 20	19 46	59	11 14	72
19	105	17.2		42.5	229	47.4 34		07.3 44	**50**	07	40	18	20	57	40	73
20	120	17.3		43.3	244	09.7 33		11.5 42	**52**	17 03	38	17	19 07	56	11 52	75
21	135	17.4		44.2	258	32.0 33		15.5 40	**54**	16 59	35	16	18 52	56	12 07	76
22	150	17.5		45.0	272	54.3 33		19.3 38	**56**	54	32	16	35	54	23	78
23	165	17.7		45.9	287	16.5 32		23.0 37	**58**	48	29	15	18 15	51	12 43	81
24	180	17.8	+11	46.7	301	38.8 33	−26	26.5 35	**60 S**	16 42	17 26	18 14	17 49	48	13 09	85

UT	ARIES PMG 10h 06m.1		VENUS Mag: −4.2 PMG: 9h 16m			MARTE Mag: +0.9 PMG: 8h 32m			JÚPITER Mag: −2.1 PMG: 9h 52m			SATURNO Mag: +0.9 PMG: 7h 52m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	208	03.7	220	57.2	−6 15.3	231	56.6	−11 28.9	211	39.5	−2 41.7	241	49.0	−14 35.6
1	223	06.2	235	57.1	14.3	246	57.3	28.3	226	41.4	41.5	256	51.3	35.6
2	238	08.6	250	56.9	13.4	261	58.0	27.6	241	43.4	41.3	271	53.6	35.5
3	253	11.1	265	56.7	12.5	276	58.6	27.0	256	45.4	41.1	286	55.9	35.5
4	268	13.6	280	56.5	11.6	291	59.3	26.3	271	47.3	40.8	301	58.2	35.4
5	283	16.0	295	56.3	−6 10.6	306	59.9	−11 25.6	286	49.3	−2 40.6	317	00.4	−14 35.4
6	298	18.5	310	56.1	−6 09.7	322	00.6	−11 25.0	301	51.2	−2 40.4	332	02.7	−14 35.3
7	313	21.0	325	56.0	08.8	337	01.3	24.3	316	53.2	40.2	347	05.0	35.3
8	328	23.4	340	55.8	07.9	352	01.9	23.6	331	55.1	40.0	2	07.3	35.2
9	343	25.9	355	55.6	06.9	7	02.6	23.0	346	57.1	39.8	17	09.6	35.2
10	358	28.4	10	55.4	06.0	22	03.2	22.3	1	59.1	39.6	32	11.9	35.1
11	13	30.8	25	55.2	−6 05.1	37	03.9	−11 21.6	17	01.0	−2 39.4	47	14.2	−14 35.1
12	28	33.3	40	55.0	−6 04.1	52	04.6	−11 21.0	32	03.0	−2 39.1	62	16.5	−14 35.0
13	43	35.7	55	54.9	03.2	67	05.2	20.3	47	04.9	38.9	77	18.8	35.0
14	58	38.2	70	54.7	02.3	82	05.9	19.6	62	06.9	38.7	92	21.1	34.9
15	73	40.7	85	54.5	01.3	97	06.5	19.0	77	08.8	38.5	107	23.4	34.9
16	88	43.1	100	54.3	−6 00.4	112	07.2	18.3	92	10.8	38.3	122	25.7	34.8
17	103	45.6	115	54.1	−5 59.5	127	07.9	−11 17.6	107	12.8	−2 38.1	137	28.0	−14 34.8
18	118	48.1	130	53.9	−5 58.5	142	08.5	−11 17.0	122	14.7	−2 37.9	152	30.3	−14 34.7
19	133	50.5	145	53.8	57.6	157	09.2	16.3	137	16.7	37.7	167	32.5	34.7
20	148	53.0	160	53.6	56.7	172	09.8	15.6	152	18.6	37.4	182	34.8	34.6
21	163	55.5	175	53.4	55.7	187	10.5	15.0	167	20.6	37.2	197	37.1	34.6
22	178	57.9	190	53.2	54.8	202	11.2	14.3	182	22.6	37.0	212	39.4	34.5
23	194	00.4	205	53.0	53.9	217	11.8	13.6	197	24.5	36.8	227	41.7	34.5
24	209	02.8	220	52.8	−5 52.9	232	12.5	−11 13.0	212	26.5	−2 36.6	242	44.0	−14 34.4
Dif	—			−2	+9		+7	+7		+20	+2		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 19^{d}.7		PHE	4^{h}: 59′.8									
	PMG: 11^{h} 58^{m}.7				SD: 16′.3			12^{h}: 59′.7									
					PMG: 4^{h} 04^{m}			20^{h}: 59′.6									
	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	17.8	+11	46.7	301	38.8	−26	26.5		**60 N**	2 31	3 38	4 26	2 01	68	6 03	64
1	195	17.9		47.6	316	01.0 32		29.7	32	**58**	2 49	49	33	1 32	67	33	64
2	210	18.1		48.4	330	23.1 31		32.8	31	**56**	3 04	3 58	40	1 09	67	6 56	64
3	225	18.2		49.3	344	45.3 32		35.7	29	**54**	17	4 07	46	0 50	67	7 14	65
4	240	18.3		50.1	359	07.4 31		38.4	27	**52**	28	14	51	35	66	30	65
5	255	18.4	+11	51.0	13	29.5 31	−26	40.9	25	**50**	3 37	4 20	4 55	0 21	66	7 44	64
6	270	18.6	+11	51.8	27	51.7 32	−26	43.2	23	**45**	3 56	4 34	5 05	** **	**	8 12	64
7	285	18.7		52.7	42	13.8 31		45.4	22	**40**	4 11	45	14	** **	**	34	64
8	300	18.8		53.5	56	35.9 31		47.3	19	**35**	23	4 54	21	** **	**	8 52	64
9	315	18.9		54.4	70	58.0 31		49.0	17	**30**	33	5 02	27	** **	**	9 08	64
10	330	19.1		55.2	85	20.1 31		50.6	16	**20**	4 48	15	38	23 36	59	34	64
11	345	19.2	+11	56.1	99	42.2 31	−26	52.0	14	**10 N**	5 00	5 25	5 47	23 13	61	9 57	64
12	0	19.3	+11	56.9	114	04.3 31	−26	53.1	11	**0**	5 10	5 34	5 55	22 52	62	10 19	63
13	15	19.4		57.8	128	26.4 31		54.1	10	**10 S**	18	42	6 04	30	63	10 40	63
14	30	19.6		58.6	142	48.5 31		54.9	8	**20**	24	50	13	22 07	65	11 03	62
15	45	19.7	+11	59.5	157	10.6 31		55.5	6	**30**	30	5 58	23	21 41	66	30	61
16	60	19.8	+12	00.3	171	32.8 32		55.9	4	**35**	33	6 03	28	25	67	11 45	61
17	75	19.9	+12	01.1	185	54.9 31	−26	56.1	2	**40**	5 36	6 07	6 35	21 07	68	12 04	60
18	90	20.1	+12	02.0	200	17.1 32	−26	56.1	0	**45**	5 38	6 12	6 42	20 45	69	12 26	59
19	105	20.2		02.8	214	39.3 32		56.0	1	**50**	40	18	51	17	71	12 53	58
20	120	20.3		03.7	229	01.5 32		55.6	4	**52**	41	21	6 55	20 03	72	13 07	57
21	135	20.4		04.5	243	23.8 33		55.1	5	**54**	42	23	7 00	19 48	73	23	56
22	150	20.6		05.4	257	46.1 33		54.3	8	**56**	43	26	05	29	75	13 41	55
23	165	20.7		06.2	272	08.4 33		53.4	9	**58**	44	30	11	19 06	77	14 04	53
24	180	20.8	+12	07.1	286	30.7 33	−26	52.3	11	**60 S**	5 45	6 33	7 17	18 37	80	14 34	49

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	10^{h} 02^{m}.2		PMG: 9^{h} 17^{m}			PMG: 8^{h} 31^{m}			PMG: 9^{h} 49^{m}			PMG: 7^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	209	02.8	220	52.8	−5 52.9	232	12.5	−11 13.0	212	26.5	−2 36.6	242	44.0	−14 34.4
1	224	05.3	235	52.7	52.0	247	13.1	12.3	227	28.4	36.4	257	46.3	34.4
2	239	07.8	250	52.5	51.0	262	13.8	11.6	242	30.4	36.2	272	48.6	34.3
3	254	10.2	265	52.3	50.1	277	14.5	11.0	257	32.3	36.0	287	50.9	34.3
4	269	12.7	280	52.1	49.2	292	15.1	10.3	272	34.3	35.7	302	53.2	34.2
5	284	15.2	295	51.9	−5 48.2	307	15.8	−11 09.6	287	36.3	−2 35.5	317	55.5	−14 34.2
6	299	17.6	310	51.7	−5 47.3	322	16.4	−11 09.0	302	38.2	−2 35.3	332	57.8	−14 34.1
7	314	20.1	325	51.6	46.4	337	17.1	08.3	317	40.2	35.1	348	00.1	34.1
8	329	22.6	340	51.4	45.4	352	17.8	07.6	332	42.1	34.9	3	02.4	34.0
9	344	25.0	355	51.2	44.5	7	18.4	07.0	347	44.1	34.7	18	04.7	33.9
10	359	27.5	10	51.0	43.5	22	19.1	06.3	2	46.1	34.5	33	07.0	33.9
11	14	30.0	25	50.8	−5 42.6	37	19.8	−11 05.6	17	48.0	−2 34.3	48	09.3	−14 33.8
12	29	32.4	40	50.6	−5 41.6	52	20.4	−11 05.0	32	50.0	−2 34.0	63	11.6	−14 33.8
13	44	34.9	55	50.5	40.7	67	21.1	04.3	47	51.9	33.8	78	13.9	33.7
14	59	37.3	70	50.3	39.8	82	21.7	03.6	62	53.9	33.6	93	16.2	33.7
15	74	39.8	85	50.1	38.8	97	22.4	02.9	77	55.9	33.4	108	18.5	33.6
16	89	42.3	100	49.9	37.9	112	23.1	02.3	92	57.8	33.2	123	20.7	33.6
17	104	44.7	115	49.7	−5 36.9	127	23.7	−11 01.6	107	59.8	−2 33.0	138	23.0	−14 33.5
18	119	47.2	130	49.5	−5 36.0	142	24.4	−11 00.9	123	01.7	−2 32.8	153	25.3	−14 33.5
19	134	49.7	145	49.4	35.0	157	25.1	−11 00.3	138	03.7	32.6	168	27.6	33.5
20	149	52.1	160	49.2	34.1	172	25.7	−10 59.6	153	05.7	32.3	183	29.9	33.4
21	164	54.6	175	49.0	33.2	187	26.4	58.9	168	07.6	32.1	198	32.2	33.4
22	179	57.1	190	48.8	32.2	202	27.1	58.2	183	09.6	31.9	213	34.5	33.3
23	194	59.5	205	48.6	31.3	217	27.7	57.6	198	11.5	31.7	228	36.8	33.3
24	210	02.0	220	48.4	−5 30.3	232	28.4	−10 56.9	213	13.5	−2 31.5	243	39.1	−14 33.2
Dif	—			−2	+9		+7	+7		+20	+2		+23	+1

UT	SOL SD: 15′.9 PMG: 11h 58m.5				LUNA Edad: 20d.7 SD: 16′.2 PMG: 5h 07m PHE 4h: 59′.5; 12h: 59′.4; 20h: 59′.2 Rº: 61m				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	20.8	+12	07.1	286	30.7 34	−26	52.3 13	**60 N**	19 35	20 24	21 34	3 09	33	7 07	95
1	195	20.9		07.9	300	53.1 35		51.0 15	**58**	28	13	21 14	2 39	39	7 37	88
2	210	21.1		08.7	315	15.6 34		49.5 17	**56**	21	20 03	20 58	2 16	43	8 00	84
3	225	21.2		09.6	329	38.0 35		47.8 18	**54**	15	19 54	45	1 57	46	19	80
4	240	21.3		10.4	344	00.5 36		46.0 21	**52**	10	47	34	41	48	35	78
5	255	21.4	+12	11.3	358	23.1 36	−26	43.9 22	**50**	19 05	19 40	20 24	1 27	50	8 48	77
6	270	21.5	+12	12.1	12	45.7 37	−26	41.7 24	**45**	18 54	19 26	20 04	0 59	53	9 16	73
7	285	21.7		12.9	27	08.4 37		39.3 26	**40**	45	14	19 49	37	55	38	71
8	300	21.8		13.8	41	31.1 37		36.7 28	**35**	38	19 05	36	19	56	9 56	69
9	315	21.9		14.6	55	53.8 37		33.9 30	**30**	32	18 56	26	0 03	57	10 12	67
10	330	22.0		15.5	70	16.7 39		30.9 31	**20**	20	43	19 10	** **	**	10 38	64
11	345	22.2	+12	16.3	84	39.5 38	−26	27.8 33	**10 N**	18 11	18 32	18 58	** **	**	11 01	62
12	0	22.3	+12	17.1	99	02.5 40	−26	24.5 33	**0**	18 02	18 23	18 48	23 54	58	11 22	60
13	15	22.4		18.0	113	25.5 40		21.0 35	**10 S**	17 53	15	39	33	61	11 43	58
14	30	22.5		18.8	127	48.5 40		17.3 37	**20**	44	18 06	32	23 12	64	12 05	56
15	45	22.6		19.7	142	11.7 42		13.5 38	**30**	33	17 58	26	22 47	67	31	53
16	60	22.8		20.5	156	34.9 42		09.4 41	**35**	27	53	23	32	69	12 46	51
17	75	22.9	+12	21.3	170	58.2 43	−26	05.2 42	**40**	17 21	17 48	18 20	22 15	72	13 04	49
18	90	23.0	+12	22.2	185	21.5 43	−26	00.8 44	**45**	17 13	17 43	18 17	21 54	75	13 25	46
19	105	23.1		23.0	199	44.9 44	−25	56.3 45	**50**	17 03	37	14	28	80	13 51	43
20	120	23.2		23.8	214	08.4 45		51.6 47	**52**	16 59	34	13	15	82	14 04	41
21	135	23.4		24.7	228	32.0 46		46.7 49	**54**	54	31	12	21 01	84	19	38
22	150	23.5		25.5	242	55.7 47		41.6 51	**56**	49	28	11	20 44	88	36	35
23	165	23.6		26.3	257	19.4 47		36.4 52	**58**	43	24	10	20 23	93	14 57	30
24	180	23.7	+12	27.2	271	43.2 48	−25	31.0 54	**60 S**	16 37	17 20	18 09	19 57	100	15 23	24

UT	ARIES PMG 9h 58m.2		VENUS Mag: −4.2 PMG: 9h 17m			MARTE Mag: +0.9 PMG: 8h 30m			JÚPITER Mag: −2.1 PMG: 9h 46m			SATURNO Mag: +0.9 PMG: 7h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	210	02.0	220	48.4	−5 30.3	232	28.4	−10 56.9	213	13.5	−2 31.5	243	39.1	−14 33.2
1	225	04.5	235	48.2	29.4	247	29.1	56.2	228	15.5	31.3	258	41.4	33.2
2	240	06.9	250	48.1	28.4	262	29.7	55.6	243	17.4	31.1	273	43.7	33.1
3	255	09.4	265	47.9	27.5	277	30.4	54.9	258	19.4	30.9	288	46.0	33.1
4	270	11.8	280	47.7	26.5	292	31.0	54.2	273	21.4	30.7	303	48.3	33.0
5	285	14.3	295	47.5	−5 25.6	307	31.7	−10 53.5	288	23.3	−2 30.4	318	50.6	−14 33.0
6	300	16.8	310	47.3	−5 24.6	322	32.4	−10 52.9	303	25.3	−2 30.2	333	52.9	−14 32.9
7	315	19.2	325	47.1	23.7	337	33.0	52.2	318	27.2	30.0	348	55.2	32.9
8	330	21.7	340	47.0	22.7	352	33.7	51.5	333	29.2	29.8	3	57.5	32.8
9	345	24.2	355	46.8	21.8	7	34.4	50.9	348	31.2	29.6	18	59.8	32.8
10	0	26.6	10	46.6	20.8	22	35.0	50.2	3	33.1	29.4	34	02.1	32.7
11	15	29.1	25	46.4	−5 19.9	37	35.7	−10 49.5	18	35.1	−2 29.2	49	04.4	−14 32.7
12	30	31.6	40	46.2	−5 18.9	52	36.4	−10 48.8	33	37.0	−2 29.0	64	06.7	−14 32.6
13	45	34.0	55	46.0	18.0	67	37.0	48.2	48	39.0	28.8	79	09.0	32.6
14	60	36.5	70	45.9	17.0	82	37.7	47.5	63	41.0	28.5	94	11.3	32.5
15	75	39.0	85	45.7	16.1	97	38.4	46.8	78	42.9	28.3	109	13.6	32.5
16	90	41.4	100	45.5	15.1	112	39.0	46.1	93	44.9	28.1	124	15.9	32.4
17	105	43.9	115	45.3	−5 14.2	127	39.7	−10 45.5	108	46.9	−2 27.9	139	18.2	−14 32.4
18	120	46.3	130	45.1	−5 13.2	142	40.4	−10 44.8	123	48.8	−2 27.7	154	20.5	−14 32.3
19	135	48.8	145	44.9	12.3	157	41.0	44.1	138	50.8	27.5	169	22.8	32.3
20	150	51.3	160	44.7	11.3	172	41.7	43.4	153	52.7	27.3	184	25.1	32.2
21	165	53.7	175	44.6	10.3	187	42.4	42.8	168	54.7	27.1	199	27.4	32.2
22	180	56.2	190	44.4	09.4	202	43.0	42.1	183	56.7	26.9	214	29.7	32.1
23	195	58.7	205	44.2	08.4	217	43.7	41.4	198	58.6	26.7	229	32.0	32.1
24	211	01.1	220	44.0	−5 07.5	232	44.4	−10 40.7	214	00.6	−2 26.4	244	34.3	−14 32.0
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 58m.3				LUNA Edad: 21d.7 SD: 16′.1 PMG: 6h 08m PHE 4h: 59′.1; 12h: 58′.9; 20h: 58′.8 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	180	23.7	+12	27.2	271	43.2	−25	31.0	**60 N**	2 22	3 31	4 21	3 42	15	8 42	103
1	195	23.8		28.0	286	07.1 49		25.5 55	**58**	42	43	28	3 18	22	9 05	96
2	210	23.9		28.8	300	31.1 50		19.7 58	**56**	2 58	3 53	35	2 59	27	24	91
3	225	24.1		29.7	314	55.2 51		13.8 59	**54**	3 11	4 02	41	43	31	39	88
4	240	24.2		30.5	329	19.3 51		07.8 60	**52**	22	09	47	29	34	9 53	84
5	255	24.3	+12	31.3	343	43.6 53	−25	01.6 62	**50**	3 32	4 16	4 51	2 17	36	10 05	81
6	270	24.4	+12	32.2	358	07.9 53	−24	55.2 64	**45**	3 52	4 31	5 02	1 52	40	10 29	77
7	285	24.5		33.0	12	32.3 54		48.7 65	**40**	4 08	42	11	32	43	10 49	72
8	300	24.7		33.8	26	56.9 56		42.0 67	**35**	20	4 52	18	15	46	11 05	69
9	315	24.8		34.7	41	21.5 56		35.2 68	**30**	31	5 00	25	1 00	49	19	67
10	330	24.9		35.5	55	46.2 57		28.2 70	**20**	47	13	36	0 35	53	11 42	63
11	345	25.0	+12	36.3	70	11.0 58	−24	21.1 71	**10 N**	4 59	5 24	5 46	0 14	55	12 03	59
12	0	25.1	+12	37.2	84	35.9 59	−24	13.8 73	**0**	5 09	5 34	5 55	** **	**	12 22	56
13	15	25.2		38.0	99	00.9 60	−24	06.4 74	**10 S**	18	42	6 04	** **	**	12 41	52
14	30	25.3		38.8	113	26.0 61	−23	58.8 76	**20**	25	51	13	** **	**	13 01	49
15	45	25.5		39.7	127	51.2 62		51.1 77	**30**	31	5 59	24	23 54	66	24	45
16	60	25.6		40.5	142	16.5 63		43.2 79	**35**	34	6 04	30	41	69	37	43
17	75	25.7	+12	41.3	156	41.9 64	−23	35.2 80	**40**	5 37	6 09	6 37	23 27	72	13 53	39
18	90	25.8	+12	42.1	171	07.4 65	−23	27.1 81	**45**	5 40	6 15	6 45	23 09	77	14 11	36
19	105	25.9		43.0	185	33.0 66		18.8 83	**50**	43	21	54	22 48	81	34	31
20	120	26.0		43.8	199	58.7 67		10.3 85	**52**	44	24	6 59	37	85	45	28
21	135	26.2		44.6	214	24.5 68	−23	01.8 85	**54**	45	27	7 04	25	88	14 57	25
22	150	26.3		45.4	228	50.4 69	−22	53.1 87	**56**	47	30	09	22 12	91	15 11	22
23	165	26.4		46.3	243	16.5 71		44.3 88	**58**	48	34	15	21 56	96	27	18
24	180	26.5	+12	47.1	257	42.6 71	−22	35.3 90	**60 S**	5 49	6 38	7 22	21 37	102	15 47	11

UT	ARIES PMG 9h 54m.3		VENUS Mag: −4.2 PMG: 9h 17m			MARTE Mag: +0.9 PMG: 8h 29m			JÚPITER Mag: −2.1 PMG: 9h 43m			SATURNO Mag: +0.9 PMG: 7h 41m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	211	01.1	220	44.0	−5 07.5	232	44.4	−10 40.7	214	00.6	−2 26.4	244	34.3	−14 32.0
1	226	03.6	235	43.8	06.5	247	45.0	40.1	229	02.6	26.2	259	36.6	32.0
2	241	06.1	250	43.6	05.6	262	45.7	39.4	244	04.5	26.0	274	38.9	31.9
3	256	08.5	265	43.4	04.6	277	46.4	38.7	259	06.5	25.8	289	41.2	31.9
4	271	11.0	280	43.3	03.6	292	47.0	38.0	274	08.5	25.6	304	43.5	31.8
5	286	13.5	295	43.1	−5 02.7	307	47.7	−10 37.4	289	10.4	−2 25.4	319	45.8	−14 31.8
6	301	15.9	310	42.9	−5 01.7	322	48.4	−10 36.7	304	12.4	−2 25.2	334	48.1	−14 31.7
7	316	18.4	325	42.7	−5 00.8	337	49.1	36.0	319	14.3	25.0	349	50.4	31.7
8	331	20.8	340	42.5	−4 59.8	352	49.7	35.3	334	16.3	24.8	4	52.7	31.6
9	346	23.3	355	42.3	58.8	7	50.4	34.7	349	18.3	24.5	19	55.0	31.6
10	1	25.8	10	42.2	57.9	22	51.1	34.0	4	20.2	24.3	34	57.3	31.5
11	16	28.2	25	42.0	−4 56.9	37	51.7	−10 33.3	19	22.2	−2 24.1	49	59.6	−14 31.5
12	31	30.7	40	41.8	−4 56.0	52	52.4	−10 32.6	34	24.2	−2 23.9	65	01.9	−14 31.5
13	46	33.2	55	41.6	55.0	67	53.1	32.0	49	26.1	23.7	80	04.2	31.4
14	61	35.6	70	41.4	54.0	82	53.7	31.3	64	28.1	23.5	95	06.5	31.4
15	76	38.1	85	41.2	53.1	97	54.4	30.6	79	30.1	23.3	110	08.8	31.3
16	91	40.6	100	41.0	52.1	112	55.1	29.9	94	32.0	23.1	125	11.1	31.3
17	106	43.0	115	40.9	−4 51.2	127	55.7	−10 29.2	109	34.0	−2 22.9	140	13.4	−14 31.2
18	121	45.5	130	40.7	−4 50.2	142	56.4	−10 28.6	124	36.0	−2 22.7	155	15.7	−14 31.2
19	136	48.0	145	40.5	49.2	157	57.1	27.9	139	37.9	22.5	170	18.1	31.1
20	151	50.4	160	40.3	48.3	172	57.8	27.2	154	39.9	22.2	185	20.4	31.1
21	166	52.9	175	40.1	47.3	187	58.4	26.5	169	41.8	22.0	200	22.7	31.0
22	181	55.3	190	39.9	46.3	202	59.1	25.9	184	43.8	21.8	215	25.0	31.0
23	196	57.8	205	39.7	45.4	217	59.8	25.2	199	45.8	21.6	230	27.3	30.9
24	212	00.3	220	39.6	−4 44.4	233	00.4	−10 24.5	214	47.7	−2 21.4	245	29.6	−14 30.9
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 58m.1				LUNA Edad: 22d.7 SD: 16′.0 PMG: 7h 05m PHE 4h: 58′.6; 12h: 58′.4; 20h: 58′.3 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	180	26.5	+12	47.1	257	42.6 72	−22	35.3 91	**60 N**	19 40	20 30	21 42	3 57	8	10 25	101
1	195	26.6		47.9	272	08.8 73		26.2 92	**58**	32	18	21	40	13	41	96
2	210	26.7		48.8	286	35.1 75		17.0 92	**56**	25	20 08	21 04	26	17	10 55	91
3	225	26.8		49.6	301	01.6 75	−22	07.6 94	**54**	19	19 59	20 50	14	20	11 07	87
4	240	26.9		50.4	315	28.1 75	−21	58.2 94	**52**	13	51	38	3 03	23	17	84
5	255	27.1	+12	51.2	329	54.7 76	−21	48.6 96	**50**	19 08	19 43	20 28	2 53	26	11 26	82
6	270	27.2	+12	52.0	344	21.5 78	−21	38.9 97	**45**	18 57	19 28	20 07	2 32	31	11 46	76
7	285	27.3		52.9	358	48.3 78		29.0 99	**40**	47	16	19 51	15	36	12 01	72
8	300	27.4		53.7	13	15.3 80		19.1 99	**35**	40	19 06	38	2 01	39	14	69
9	315	27.5		54.5	27	42.3 80	−21	09.0 101	**30**	33	18 58	27	1 49	41	26	65
10	330	27.6		55.3	42	09.5 82	−20	58.8 102	**20**	21	44	19 11	28	46	12 45	60
11	345	27.7	+12	56.2	56	36.8 83	−20	48.5 103	**10 N**	18 11	18 33	18 58	1 09	50	13 02	56
12	0	27.8	+12	57.0	71	04.2 84	−20	38.1 104	**0**	18 02	18 23	18 47	0 52	54	13 18	52
13	15	27.9		57.8	85	31.6 84		27.6 105	**10 S**	17 52	14	39	34	58	33	48
14	30	28.1		58.6	99	59.2 86		16.9 107	**20**	42	18 05	31	0 16	61	13 50	43
15	45	28.2	+12	59.4	114	26.9 87	−20	06.2 107	**30**	31	17 56	24	** **	**	14 09	38
16	60	28.3	+13	00.3	128	54.7 88	−19	55.4 108	**35**	25	51	21	** **	**	20	35
17	75	28.4	+13	01.1	143	22.6 89	−19	44.4 110	**40**	17 18	17 46	18 17	** **	**	14 32	32
18	90	28.5	+13	01.9	157	50.6 90	−19	33.4 110	**45**	17 10	17 40	18 14	** **	**	14 47	28
19	105	28.6		02.7	172	18.7 91		22.2 112	**50**	17 00	33	11	** **	**	15 05	23
20	120	28.7		03.5	186	46.9 92	−19	11.0 112	**52**	16 55	30	10	** **	**	13	21
21	135	28.8		04.4	201	15.2 93	−18	59.6 114	**54**	50	27	08	23 53	86	22	18
22	150	28.9		05.2	215	43.6 94		48.2 114	**56**	44	23	07	43	89	33	14
23	165	29.0		06.0	230	12.1 95		36.6 116	**58**	38	19	06	32	93	45	10
24	180	29.2	+13	06.8	244	40.7 96	−18	25.0 116	**60 S**	16 31	17 15	18 04	23 19	98	15 58	6

UT	ARIES PMG 9h 50m.4		VENUS Mag: −4.2 PMG: 9h 17m			MARTE Mag: +0.9 PMG: 8h 28m			JÚPITER Mag: −2.1 PMG: 9h 40m			SATURNO Mag: +0.9 PMG: 7h 37m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	212	00.3	220	39.6	−4 44.4	233	00.4	−10 24.5	214	47.7	−2 21.4	245	29.6	−14 30.9
1	227	02.7	235	39.4	43.4	248	01.1	23.8	229	49.7	21.2	260	31.9	30.8
2	242	05.2	250	39.2	42.5	263	01.8	23.1	244	51.7	21.0	275	34.2	30.8
3	257	07.7	265	39.0	41.5	278	02.4	22.5	259	53.6	20.8	290	36.5	30.7
4	272	10.1	280	38.8	40.5	293	03.1	21.8	274	55.6	20.6	305	38.8	30.7
5	287	12.6	295	38.6	−4 39.6	308	03.8	−10 21.1	289	57.6	−2 20.4	320	41.1	−14 30.6
6	302	15.1	310	38.4	−4 38.6	323	04.5	−10 20.4	304	59.5	−2 20.1	335	43.4	−14 30.6
7	317	17.5	325	38.3	37.6	338	05.1	19.7	320	01.5	19.9	350	45.7	30.6
8	332	20.0	340	38.1	36.7	353	05.8	19.1	335	03.5	19.7	5	48.0	30.5
9	347	22.4	355	37.9	35.7	8	06.5	18.4	350	05.4	19.5	20	50.3	30.5
10	2	24.9	10	37.7	34.7	23	07.2	17.7	5	07.4	19.3	35	52.6	30.4
11	17	27.4	25	37.5	−4 33.7	38	07.8	−10 17.0	20	09.4	−2 19.1	50	54.9	−14 30.4
12	32	29.8	40	37.3	−4 32.8	53	08.5	−10 16.3	35	11.3	−2 18.9	65	57.2	−14 30.3
13	47	32.3	55	37.1	31.8	68	09.2	15.7	50	13.3	18.7	80	59.5	30.3
14	62	34.8	70	37.0	30.8	83	09.8	15.0	65	15.3	18.5	96	01.8	30.2
15	77	37.2	85	36.8	29.9	98	10.5	14.3	80	17.2	18.3	111	04.1	30.2
16	92	39.7	100	36.6	28.9	113	11.2	13.6	95	19.2	18.1	126	06.5	30.1
17	107	42.2	115	36.4	−4 27.9	128	11.9	−10 12.9	110	21.2	−2 17.9	141	08.8	−14 30.1
18	122	44.6	130	36.2	−4 26.9	143	12.5	−10 12.3	125	23.1	−2 17.6	156	11.1	−14 30.0
19	137	47.1	145	36.0	26.0	158	13.2	11.6	140	25.1	17.4	171	13.4	30.0
20	152	49.6	160	35.8	25.0	173	13.9	10.9	155	27.1	17.2	186	15.7	29.9
21	167	52.0	175	35.7	24.0	188	14.6	10.2	170	29.0	17.0	201	18.0	29.9
22	182	54.5	190	35.5	23.1	203	15.2	09.5	185	31.0	16.8	216	20.3	29.9
23	197	56.9	205	35.3	22.1	218	15.9	08.8	200	33.0	16.6	231	22.6	29.8
24	212	59.4	220	35.1	−4 21.1	233	16.6	−10 08.2	215	34.9	−2 16.4	246	24.9	−14 29.8
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 58m.0				LUNA Edad: 23d.7 SD: 15′.8 PMG: 7h 58m PHE 4h: 58′.1; 12h: 57′.9; 20h: 57′.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	180	29.2	+13	06.8	244	40.7 97	−18	25.0 117	**60 N**	2 13	3 25	4 15	4 05	4	12 06	96
1	195	29.3		07.6	259	09.4 98		13.3 119	**58**	34	37	23	3 53	8	17	91
2	210	29.4		08.4	273	38.2 99	−18	01.4 119	**56**	2 51	48	30	43	12	26	87
3	225	29.5		09.3	288	07.1 101	−17	49.5 120	**54**	3 05	3 57	37	34	15	34	84
4	240	29.6		10.1	302	36.2 101		37.5 120	**52**	17	4 05	42	26	18	41	82
5	255	29.7	+13	10.9	317	05.3 101	−17	25.5 122	**50**	3 27	4 12	4 48	3 19	20	12 48	79
6	270	29.8	+13	11.7	331	34.4 101	−17	13.3 122	**45**	3 48	4 27	4 59	3 03	26	13 02	73
7	285	29.9		12.5	346	03.7 103	−17	01.1 122	**40**	4 05	39	5 08	2 51	29	13	69
8	300	30.0		13.3	0	33.1 104	−16	48.7 124	**35**	18	49	16	40	33	23	65
9	315	30.1		14.2	15	02.6 105		36.3 124	**30**	28	4 58	23	30	36	31	62
10	330	30.2		15.0	29	32.2 106		23.9 124	**20**	45	5 12	35	2 14	41	45	57
11	345	30.3	+13	15.8	44	01.9 107	−16	11.3 126	**10 N**	4 58	5 23	5 45	1 59	46	13 58	52
12	0	30.4	+13	16.6	58	31.6 107	−15	58.7 126	**0**	5 09	5 33	5 55	1 46	49	14 10	48
13	15	30.5		17.4	73	01.5 109		46.0 127	**10 S**	18	42	6 04	32	54	21	44
14	30	30.6		18.2	87	31.4 109		33.2 128	**20**	25	5 51	14	17	59	33	40
15	45	30.8		19.0	102	01.5 111		20.3 129	**30**	32	6 01	25	1 00	64	47	34
16	60	30.9		19.8	116	31.6 111	−15	07.4 129	**35**	36	06	32	0 50	67	14 55	31
17	75	31.0	+13	20.6	131	01.8 112	−14	54.4 130	**40**	5 39	6 11	6 39	0 39	70	15 04	28
18	90	31.1	+13	21.5	145	32.1 113	−14	41.4 130	**45**	5 43	6 17	6 47	0 26	74	15 15	23
19	105	31.2		22.3	160	02.5 114		28.2 132	**50**	46	24	6 57	09	80	28	18
20	120	31.3		23.1	174	32.9 114		15.1 131	**52**	47	27	7 02	0 02	82	34	16
21	135	31.4		23.9	189	03.5 116	−14	01.8 133	**54**	49	30	07	** **	**	40	13
22	150	31.5		24.7	203	34.1 116	−13	48.5 133	**56**	50	34	13	** **	**	47	11
23	165	31.6		25.5	218	04.8 117		35.2 133	**58**	52	38	19	** **	**	15 55	7
24	180	31.7	+13	26.3	232	35.6 118	−13	21.7 135	**60 S**	5 53	6 42	7 27	** **	**	16 04	4

UT	ARIES PMG 9h 46m.4		VENUS Mag: −4.2 PMG: 9h 18m			MARTE Mag: +0.9 PMG: 8h 27m			JÚPITER Mag: −2.1 PMG: 9h 36m			SATURNO Mag: +0.9 PMG: 7h 33m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	212	59.4	220	35.1	−4 21.1	233	16.6	−10 08.2	215	34.9	−2 16.4	246	24.9	−14 29.8
1	228	01.9	235	34.9	20.1	248	17.2	07.5	230	36.9	16.2	261	27.2	29.7
2	243	04.3	250	34.7	19.2	263	17.9	06.8	245	38.9	16.0	276	29.5	29.7
3	258	06.8	265	34.5	18.2	278	18.6	06.1	260	40.9	15.8	291	31.8	29.6
4	273	09.3	280	34.4	17.2	293	19.3	05.4	275	42.8	15.6	306	34.1	29.6
5	288	11.7	295	34.2	−4 16.2	308	19.9	−10 04.7	290	44.8	−2 15.4	321	36.4	−14 29.5
6	303	14.2	310	34.0	−4 15.2	323	20.6	−10 04.1	305	46.8	−2 15.1	336	38.8	−14 29.5
7	318	16.7	325	33.8	14.3	338	21.3	03.4	320	48.7	14.9	351	41.1	29.4
8	333	19.1	340	33.6	13.3	353	22.0	02.7	335	50.7	14.7	6	43.4	29.4
9	348	21.6	355	33.4	12.3	8	22.6	02.0	350	52.7	14.5	21	45.7	29.3
10	3	24.1	10	33.2	11.3	23	23.3	01.3	5	54.6	14.3	36	48.0	29.3
11	18	26.5	25	33.1	−4 10.4	38	24.0	−10 00.6	20	56.6	−2 14.1	51	50.3	−14 29.3
12	33	29.0	40	32.9	−4 09.4	53	24.7	−10 00.0	35	58.6	−2 13.9	66	52.6	−14 29.2
13	48	31.4	55	32.7	08.4	68	25.3	−9 59.3	51	00.5	13.7	81	54.9	29.2
14	63	33.9	70	32.5	07.4	83	26.0	58.6	66	02.5	13.5	96	57.2	29.1
15	78	36.4	85	32.3	06.4	98	26.7	57.9	81	04.5	13.3	111	59.5	29.1
16	93	38.8	100	32.1	05.5	113	27.4	57.2	96	06.4	13.1	127	01.8	29.0
17	108	41.3	115	31.9	−4 04.5	128	28.1	−9 56.5	111	08.4	−2 12.9	142	04.2	−14 29.0
18	123	43.8	130	31.7	−4 03.5	143	28.7	−9 55.9	126	10.4	−2 12.7	157	06.5	−14 28.9
19	138	46.2	145	31.6	02.5	158	29.4	55.2	141	12.4	12.4	172	08.8	28.9
20	153	48.7	160	31.4	01.5	173	30.1	54.5	156	14.3	12.2	187	11.1	28.8
21	168	51.2	175	31.2	−4 00.6	188	30.8	53.8	171	16.3	12.0	202	13.4	28.8
22	183	53.6	190	31.0	−3 59.6	203	31.4	53.1	186	18.3	11.8	217	15.7	28.8
23	198	56.1	205	30.8	58.6	218	32.1	52.4	201	20.2	11.6	232	18.0	28.7
24	213	58.5	220	30.6	−3 57.6	233	32.8	−9 51.7	216	22.2	−2 11.4	247	20.3	−14 28.7
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 24ᵈ.7		PHE	4ʰ: 57′.6								
	PMG: 11ʰ 57ᵐ.8				SD: 15′.7			12ʰ: 57′.4								
					PMG: 8ʰ 46ᵐ			20ʰ: 57′.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	31.7	+13	26.3	232	35.6	−13	21.7	**60 N**	19 45	20 36	21 51	4 09	2	13 42	91
1	195	31.8		27.1	247	06.5 119	−13	08.3 134	**58**	37	23	28	4 01	6	48	88
2	210	31.9		27.9	261	37.5 120	−12	54.7 136	**56**	29	12	21 10	3 55	9	53	85
3	225	32.0		28.7	276	08.5 120		41.1 136	**54**	22	20 03	20 55	49	12	13 58	82
4	240	32.1		29.5	290	39.6 121		27.5 136	**52**	16	19 54	43	44	14	14 03	78
5	255	32.2	+13	30.4	305	10.8 122	−12	13.8 137	**50**	19 11	19 47	20 32	3 39	17	14 07	76
6	270	32.3	+13	31.2	319	42.1 123	−12	00.1 137	**45**	18 59	19 31	20 10	3 29	21	14 15	71
7	285	32.4		32.0	334	13.4 123	−11	46.3 138	**40**	50	18	19 54	20	26	22	67
8	300	32.5		32.8	348	44.8 124		32.5 138	**35**	41	19 08	40	13	29	28	63
9	315	32.6		33.6	3	16.3 125		18.6 139	**30**	34	18 59	29	3 06	32	33	60
10	330	32.7		34.4	17	47.9 126	−11	04.7 139	**20**	22	45	19 12	2 55	37	42	55
11	345	32.8	+13	35.2	32	19.5 126	−10	50.7 140	**10 N**	18 11	18 33	18 58	2 45	42	14 50	50
12	0	32.9	+13	36.0	46	51.2 127	−10	36.7 140	**0**	18 01	18 22	18 47	2 35	47	14 58	45
13	15	33.0		36.8	61	22.9 127		22.6 141	**10 S**	17 51	13	38	26	50	15 05	41
14	30	33.1		37.6	75	54.8 129	−10	08.5 141	**20**	41	18 04	30	16	55	13	36
15	45	33.2		38.4	90	26.6 128	−9	54.4 141	**30**	29	17 54	22	2 04	61	21	31
16	60	33.3		39.2	104	58.6 130		40.3 141	**35**	23	49	19	1 57	64	26	28
17	75	33.4	+13	40.0	119	30.6 130	−9	26.1 142	**40**	17 15	17 43	18 15	1 49	68	15 32	24
18	90	33.5	+13	40.8	134	02.7 131	−9	11.8 143	**45**	17 06	17 37	18 11	1 40	72	15 38	21
19	105	33.6		41.6	148	34.9 132	−8	57.6 142	**50**	16 56	30	08	29	78	46	16
20	120	33.7		42.4	163	07.1 132		43.3 143	**52**	51	26	06	24	80	50	13
21	135	33.8		43.2	177	39.3 132		28.9 144	**54**	46	23	04	19	82	53	11
22	150	33.9		44.0	192	11.6 133		14.6 143	**56**	40	19	03	12	86	15 58	8
23	165	34.0		44.8	206	44.0 134	−8	00.2 144	**58**	33	15	18 01	1 05	89	16 02	6
24	180	34.1	+13	45.6	221	16.4 134	−7	45.8 144	**60 S**	16 26	17 10	17 59	0 57	93	16 08	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	9ʰ 42ᵐ.5		PMG: 9ʰ 18ᵐ			PMG: 8ʰ 25ᵐ			PMG: 9ʰ 33ᵐ			PMG: 7ʰ 29ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	213	58.5	220	30.6	−3 57.6	233	32.8	−9 51.7	216	22.2	−2 11.4	247	20.3	−14 28.7
1	229	01.0	235	30.4	56.6	248	33.5	51.1	231	24.2	11.2	262	22.6	28.6
2	244	03.5	250	30.3	55.6	263	34.1	50.4	246	26.2	11.0	277	25.0	28.6
3	259	05.9	265	30.1	54.7	278	34.8	49.7	261	28.1	10.8	292	27.3	28.5
4	274	08.4	280	29.9	53.7	293	35.5	49.0	276	30.1	10.6	307	29.6	28.5
5	289	10.9	295	29.7	−3 52.7	308	36.2	−9 48.3	291	32.1	−2 10.4	322	31.9	−14 28.4
6	304	13.3	310	29.5	−3 51.7	323	36.9	−9 47.6	306	34.0	−2 10.2	337	34.2	−14 28.4
7	319	15.8	325	29.3	50.7	338	37.5	46.9	321	36.0	10.0	352	36.5	28.4
8	334	18.3	340	29.1	49.7	353	38.2	46.3	336	38.0	09.8	7	38.8	28.3
9	349	20.7	355	28.9	48.7	8	38.9	45.6	351	39.9	09.5	22	41.1	28.3
10	4	23.2	10	28.8	47.8	23	39.6	44.9	6	41.9	09.3	37	43.4	28.2
11	19	25.7	25	28.6	−3 46.8	38	40.2	−9 44.2	21	43.9	−2 09.1	52	45.8	−14 28.2
12	34	28.1	40	28.4	−3 45.8	53	40.9	−9 43.5	36	45.9	−2 08.9	67	48.1	−14 28.1
13	49	30.6	55	28.2	44.8	68	41.6	42.8	51	47.8	08.7	82	50.4	28.1
14	64	33.0	70	28.0	43.8	83	42.3	42.1	66	49.8	08.5	97	52.7	28.0
15	79	35.5	85	27.8	42.8	98	43.0	41.4	81	51.8	08.3	112	55.0	28.0
16	94	38.0	100	27.6	41.8	113	43.6	40.8	96	53.8	08.1	127	57.3	28.0
17	109	40.4	115	27.4	−3 40.8	128	44.3	−9 40.1	111	55.7	−2 07.9	142	59.6	−14 27.9
18	124	42.9	130	27.3	−3 39.8	143	45.0	−9 39.4	126	57.7	−2 07.7	158	01.9	−14 27.9
19	139	45.4	145	27.1	38.9	158	45.7	38.7	141	59.7	07.5	173	04.3	27.8
20	154	47.8	160	26.9	37.9	173	46.4	38.0	157	01.6	07.3	188	06.6	27.8
21	169	50.3	175	26.7	36.9	188	47.0	37.3	172	03.6	07.1	203	08.9	27.7
22	184	52.8	190	26.5	35.9	203	47.7	36.6	187	05.6	06.9	218	11.2	27.7
23	199	55.2	205	26.3	34.9	218	48.4	35.9	202	07.6	06.7	233	13.5	27.6
24	214	57.7	220	26.1	−3 33.9	233	49.1	−9 35.3	217	09.5	−2 06.5	248	15.8	−14 27.6
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 25^{d}.7		PHE	4^{h}: 57′.1									
	PMG: 11^{h} 57^{m}.7				SD: 15′.6			12^{h}: 56′.9									
					PMG: 9^{h} 32^{m}			20^{h}: 56′.7									
	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	34.1	+13	45.6	221	16.4	−7	45.8		**60 N**	2 03	3 18	4 09	4 11	2	15 13	88
1	195	34.2		46.4	235	48.9 135		31.4	144	**58**	26	31	18	07	5	16	84
2	210	34.3		47.2	250	21.5 136		16.9	145	**56**	44	42	26	04	8	18	81
3	225	34.4		48.0	264	54.1 136	−7	02.4	145	**54**	2 59	3 52	32	4 01	10	20	78
4	240	34.5		48.8	279	26.7 136	−6	47.9	145	**52**	3 12	4 00	38	3 58	13	21	77
5	255	34.6	+13	49.6	293	59.4 137	−6	33.4	145	**50**	3 23	4 08	4 44	3 56	14	15 23	74
6	270	34.7	+13	50.4	308	32.1 137	−6	18.8	146	**45**	3 45	4 24	4 56	3 50	20	15 26	69
7	285	34.8		51.2	323	04.9 138	−6	04.3	145	**40**	4 01	36	5 05	46	23	29	65
8	300	34.9		52.0	337	37.8 139	−5	49.7	146	**35**	15	47	14	42	27	31	62
9	315	35.0		52.8	352	10.6 138		35.1	146	**30**	26	4 56	21	38	30	33	59
10	330	35.1		53.6	6	43.6 140		20.5	146	**20**	44	5 11	33	32	35	37	53
11	345	35.2	+13	54.4	21	16.5 139	−5	05.9	146	**10 N**	4 57	5 23	5 44	3 27	39	15 40	48
12	0	35.2	+13	55.2	35	49.5 140	−4	51.2	147	**0**	5 08	5 33	5 54	3 22	44	15 43	44
13	15	35.3		55.9	50	22.6 141		36.6	146	**10 S**	18	43	6 04	16	49	46	39
14	30	35.4		56.7	64	55.7 141		21.9	147	**20**	26	5 52	15	11	53	49	34
15	45	35.5		57.5	79	28.8 141	−4	07.2	147	**30**	34	6 02	26	05	59	52	30
16	60	35.6		58.3	94	02.0 142	−3	52.6	146	**35**	37	07	33	3 01	62	54	26
17	75	35.7	+13	59.1	108	35.2 142	−3	37.9	147	**40**	5 41	6 13	6 41	2 57	66	15 56	23
18	90	35.8	+13	59.9	123	08.4 142	−3	23.2	147	**45**	5 45	6 19	6 50	2 52	70	15 59	19
19	105	35.9	+14	00.7	137	41.7 143	−3	08.5	147	**50**	49	27	7 00	47	75	16 02	14
20	120	36.0		01.5	152	15.0 143	−2	53.8	147	**52**	50	30	05	44	77	03	12
21	135	36.1		02.3	166	48.3 143		39.1	147	**54**	52	34	11	41	80	04	11
22	150	36.2		03.1	181	21.7 144		24.4	147	**56**	54	38	17	38	82	06	8
23	165	36.3		03.9	195	55.1 144	−2	09.7	147	**58**	55	42	24	34	86	08	5
24	180	36.4	+14	04.7	210	28.5 144	−1	55.0	147	**60 S**	5 57	6 47	7 31	2 30	90	16 10	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.2			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	9^{h} 38^{m}.6		PMG: 9^{h} 18^{m}			PMG: 8^{h} 24^{m}			PMG: 9^{h} 30^{m}			PMG: 7^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	214	57.7	220	26.1	−3 33.9	233	49.1	−9 35.3	217	09.5	−2 06.5	248	15.8	−14 27.6
1	230	00.1	235	25.9	32.9	248	49.8	34.6	232	11.5	06.2	263	18.1	27.6
2	245	02.6	250	25.8	31.9	263	50.4	33.9	247	13.5	06.0	278	20.5	27.5
3	260	05.1	265	25.6	30.9	278	51.1	33.2	262	15.5	05.8	293	22.8	27.5
4	275	07.5	280	25.4	29.9	293	51.8	32.5	277	17.4	05.6	308	25.1	27.4
5	290	10.0	295	25.2	−3 28.9	308	52.5	−9 31.8	292	19.4	−2 05.4	323	27.4	−14 27.4
6	305	12.5	310	25.0	−3 27.9	323	53.2	−9 31.1	307	21.4	−2 05.2	338	29.7	−14 27.3
7	320	14.9	325	24.8	27.0	338	53.8	30.4	322	23.3	05.0	353	32.0	27.3
8	335	17.4	340	24.6	26.0	353	54.5	29.7	337	25.3	04.8	8	34.3	27.3
9	350	19.9	355	24.4	25.0	8	55.2	29.0	352	27.3	04.6	23	36.7	27.2
10	5	22.3	10	24.3	24.0	23	55.9	28.4	7	29.3	04.4	38	39.0	27.2
11	20	24.8	25	24.1	−3 23.0	38	56.6	−9 27.7	22	31.2	−2 04.2	53	41.3	−14 27.1
12	35	27.3	40	23.9	−3 22.0	53	57.2	−9 27.0	37	33.2	−2 04.0	68	43.6	−14 27.1
13	50	29.7	55	23.7	21.0	68	57.9	26.3	52	35.2	03.8	83	45.9	27.0
14	65	32.2	70	23.5	20.0	83	58.6	25.6	67	37.2	03.6	98	48.2	27.0
15	80	34.6	85	23.3	19.0	98	59.3	24.9	82	39.1	03.4	113	50.6	26.9
16	95	37.1	100	23.1	18.0	114	00.0	24.2	97	41.1	03.2	128	52.9	26.9
17	110	39.6	115	22.9	−3 17.0	129	00.7	−9 23.5	112	43.1	−2 03.0	143	55.2	−14 26.9
18	125	42.0	130	22.7	−3 16.0	144	01.3	−9 22.8	127	45.1	−2 02.8	158	57.5	−14 26.8
19	140	44.5	145	22.6	15.0	159	02.0	22.1	142	47.0	02.5	173	59.8	26.8
20	155	47.0	160	22.4	14.0	174	02.7	21.4	157	49.0	02.3	189	02.1	26.7
21	170	49.4	175	22.2	13.0	189	03.4	20.8	172	51.0	02.1	204	04.5	26.7
22	185	51.9	190	22.0	12.0	204	04.1	20.1	187	53.0	01.9	219	06.8	26.6
23	200	54.4	205	21.8	11.0	219	04.8	19.4	202	54.9	01.7	234	09.1	26.6
24	215	56.8	220	21.6	−3 10.0	234	05.4	−9 18.7	217	56.9	−2 01.5	249	11.4	−14 26.6
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 57m.5				LUNA Edad: 26d.7 SD: 15′.4 PMG: 10h 16m PHE 4h: 56′.6; 12h: 56′.4; 20h: 56′.2 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	180	36.4	+14	04.7	210	28.5	−1	55.0	**60 N**	19 50	20 42	22 01	4 13	1	16 41	88
1	195	36.5		05.4	225	02.0 145		40.3 147	**58**	41	29	21 36	12	5	40	84
2	210	36.6		06.2	239	35.5 145		25.6 147	**56**	33	17	16	12	7	39	81
3	225	36.6		07.0	254	09.0 145	−1	10.9 147	**54**	26	20 07	21 01	11	10	38	78
4	240	36.7		07.8	268	42.5 145	−0	56.2 147	**52**	20	19 58	20 48	11	12	38	75
5	255	36.8	+14	08.6	283	16.1 146	−0	41.5 147	**50**	19 14	19 50	20 36	4 10	15	16 37	73
6	270	36.9	+14	09.4	297	49.6 145	−0	26.8 147	**45**	19 02	19 34	20 13	4 10	19	16 35	68
7	285	37.0		10.2	312	23.2 146	−0	12.1 147	**40**	18 52	21	19 56	09	23	34	64
8	300	37.1		11.0	326	56.8 146	+0	02.5 146	**35**	43	10	42	09	26	33	60
9	315	37.2		11.7	341	30.5 147		17.2 147	**30**	35	19 01	31	08	29	32	57
10	330	37.3		12.5	356	04.1 146		31.8 146	**20**	22	18 45	19 12	07	35	30	52
11	345	37.4	+14	13.3	10	37.8 147	+0	46.5 147	**10 N**	18 11	18 33	18 58	4 06	39	16 28	48
12	0	37.5	+14	14.1	25	11.5 147	+1	01.1 146	**0**	18 01	18 22	18 47	4 06	43	16 27	43
13	15	37.6		14.9	39	45.2 147		15.7 146	**10 S**	17 51	12	37	05	48	25	39
14	30	37.6		15.7	54	18.9 147		30.3 146	**20**	40	18 02	29	04	53	23	35
15	45	37.7		16.4	68	52.6 147		44.9 146	**30**	28	17 52	21	04	57	22	29
16	60	37.8		17.2	83	26.4 148	+1	59.4 145	**35**	21	47	17	03	61	20	27
17	75	37.9	+14	18.0	98	00.1 147	+2	14.0 146	**40**	17 13	17 41	18 13	4 03	64	16 19	23
18	90	38.0	+14	18.8	112	33.9 148	+2	28.5 145	**45**	17 03	17 34	18 09	4 02	69	16 18	19
19	105	38.1		19.6	127	07.7 148		43.0 145	**50**	16 52	26	04	02	73	16	15
20	120	38.2		20.4	141	41.4 147	+2	57.5 145	**52**	47	23	02	01	76	15	13
21	135	38.3		21.1	156	15.2 148	+3	11.9 144	**54**	42	19	18 01	01	78	15	10
22	150	38.3		21.9	170	49.0 148		26.3 144	**56**	35	15	17 59	00	81	14	7
23	165	38.4		22.7	185	22.8 148		40.8 145	**58**	28	10	57	00	84	13	5
24	180	38.5	+14	23.5	199	56.6 148	+3	55.1 143	**60 S**	16 20	17 05	17 55	4 00	87	16 12	1

UT	ARIES PMG 9h 34m.6		VENUS Mag: −4.1 PMG: 9h 19m			MARTE Mag: +0.9 PMG: 8h 23m			JÚPITER Mag: −2.1 PMG: 9h 27m			SATURNO Mag: +0.9 PMG: 7h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	215	56.8	220	21.6	−3 10.0	234	05.4	−9 18.7	217	56.9	−2 01.5	249	11.4	−14 26.6
1	230	59.3	235	21.4	09.0	249	06.1	18.0	232	58.9	01.3	264	13.7	26.5
2	246	01.8	250	21.2	08.0	264	06.8	17.3	248	00.9	01.1	279	16.0	26.5
3	261	04.2	265	21.1	07.0	279	07.5	16.6	263	02.8	00.9	294	18.4	26.4
4	276	06.7	280	20.9	06.0	294	08.2	15.9	278	04.8	00.7	309	20.7	26.4
5	291	09.1	295	20.7	−3 05.0	309	08.9	−9 15.2	293	06.8	−2 00.5	324	23.0	−14 26.3
6	306	11.6	310	20.5	−3 04.0	324	09.5	−9 14.5	308	08.8	−2 00.3	339	25.3	−14 26.3
7	321	14.1	325	20.3	03.0	339	10.2	13.8	323	10.8	−2 00.1	354	27.6	26.3
8	336	16.5	340	20.1	02.0	354	10.9	13.1	338	12.7	−1 59.9	9	30.0	26.2
9	351	19.0	355	19.9	−3 01.0	9	11.6	12.4	353	14.7	59.7	24	32.3	26.2
10	6	21.5	10	19.7	−3 00.0	24	12.3	11.8	8	16.7	59.5	39	34.6	26.1
11	21	23.9	25	19.5	−2 59.0	39	13.0	−9 11.1	23	18.7	−1 59.3	54	36.9	−14 26.1
12	36	26.4	40	19.4	−2 58.0	54	13.6	−9 10.4	38	20.6	−1 59.1	69	39.2	−14 26.1
13	51	28.9	55	19.2	57.0	69	14.3	09.7	53	22.6	58.9	84	41.6	26.0
14	66	31.3	70	19.0	56.0	84	15.0	09.0	68	24.6	58.7	99	43.9	26.0
15	81	33.8	85	18.8	55.0	99	15.7	08.3	83	26.6	58.5	114	46.2	25.9
16	96	36.2	100	18.6	54.0	114	16.4	07.6	98	28.5	58.3	129	48.5	25.9
17	111	38.7	115	18.4	−2 53.0	129	17.1	−9 06.9	113	30.5	−1 58.1	144	50.8	−14 25.8
18	126	41.2	130	18.2	−2 52.0	144	17.8	−9 06.2	128	32.5	−1 57.8	159	53.2	−14 25.8
19	141	43.6	145	18.0	51.0	159	18.4	05.5	143	34.5	57.6	174	55.5	25.8
20	156	46.1	160	17.8	50.0	174	19.1	04.8	158	36.5	57.4	189	57.8	25.7
21	171	48.6	175	17.6	49.0	189	19.8	04.1	173	38.4	57.2	205	00.1	25.7
22	186	51.0	190	17.5	48.0	204	20.5	03.4	188	40.4	57.0	220	02.4	25.6
23	201	53.5	205	17.3	47.0	219	21.2	02.7	203	42.4	56.8	235	04.8	25.6
24	216	56.0	220	17.1	−2 46.0	234	21.9	−9 02.0	218	44.4	−1 56.6	250	07.1	−14 25.6
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 27^{d}.7		PHE	4^{h}: 56′.1									
	PMG: 11^{h} 57^{m}.4				SD: 15′.3			12^{h}: 55′.9									
					PMG: 10^{h} 59^{m}			20^{h}: 55′.8									
	hG ☉		Dec		hG ☾	Dif	Dec	R^{o}: 44^{m}	Dif		Náutico	Civil		Hora	R^{o}	Hora	R^{o}
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	180	38.5	+14	23.5	199	56.6	+3	55.1		**60 N**	1 53	3 12	4 04	4 14	2	18 09	87
1	195	38.6		24.3	214	30.4 148	+4	09.5 144		**58**	2 18	25	13	17	5	04	84
2	210	38.7		25.0	229	04.2 148		23.8 143		**56**	38	37	21	19	8	18 00	80
3	225	38.8		25.8	243	38.0 148		38.1 143		**54**	2 53	47	28	21	11	17 56	78
4	240	38.9		26.6	258	11.8 148	+4	52.4 143		**52**	3 07	3 56	34	23	13	53	75
5	255	39.0	+14	27.4	272	45.6 148	+5	06.7 143		**50**	3 18	4 04	4 40	4 25	15	17 50	73
6	270	39.0	+14	28.1	287	19.4 148	+5	20.9 142		**45**	3 41	4 21	4 53	4 29	19	17 43	68
7	285	39.1		28.9	301	53.2 148		35.1 142		**40**	3 58	34	5 03	32	23	38	64
8	300	39.2		29.7	316	27.0 148	+5	49.2 141		**35**	4 12	45	12	35	26	33	60
9	315	39.3		30.5	331	00.8 148	+6	03.4 142		**30**	24	4 54	19	37	30	29	57
10	330	39.4		31.2	345	34.5 147		17.4 140		**20**	42	5 09	32	42	34	22	52
11	345	39.5	+14	32.0	0	08.3 148	+6	31.5 141		**10 N**	4 56	5 22	5 43	4 45	40	17 16	47
12	0	39.5	+14	32.8	14	42.1 148	+6	45.5 140		**0**	5 08	5 33	5 54	4 49	43	17 10	44
13	15	39.6		33.6	29	15.8 147	+6	59.5 140		**10 S**	18	43	6 04	53	47	17 04	40
14	30	39.7		34.3	43	49.6 148	+7	13.4 139		**20**	26	5 53	15	4 57	52	16 58	35
15	45	39.8		35.1	58	23.3 147		27.3 139		**30**	35	6 03	28	5 01	58	51	30
16	60	39.9		35.9	72	57.0 147		41.2 139		**35**	39	09	35	04	60	47	27
17	75	40.0	+14	36.7	87	30.8 148	+7	55.0 138		**40**	5 43	6 15	6 43	5 07	64	16 42	25
18	90	40.0	+14	37.4	102	04.5 147	+8	08.8 138		**45**	5 47	6 22	6 52	5 11	67	16 37	20
19	105	40.1		38.2	116	38.1 146		22.5 137		**50**	51	30	7 03	15	73	31	16
20	120	40.2		39.0	131	11.8 147		36.2 137		**52**	53	33	09	17	75	28	14
21	135	40.3		39.8	145	45.5 147	+8	49.9 137		**54**	55	37	14	19	78	25	11
22	150	40.4		40.5	160	19.1 146	+9	03.5 136		**56**	57	41	21	21	81	21	9
23	165	40.5		41.3	174	52.7 146		17.0 135		**58**	5 59	46	28	24	84	18	5
24	180	40.5	+14	42.1	189	26.3 146	+9	30.5 135		**60 S**	6 01	6 51	7 36	5 27	87	16 13	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	9^{h} 30^{m}.7		PMG: 9^{h} 19^{m}			PMG: 8^{h} 22^{m}			PMG: 9^{h} 24^{m}			PMG: 7^{h} 18^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	216	56.0	220	17.1	−2 46.0	234	21.9	−9 02.0	218	44.4	−1 56.6	250	07.1	−14 25.6
1	231	58.4	235	16.9	44.9	249	22.6	01.3	233	46.3	56.4	265	09.4	25.5
2	247	00.9	250	16.7	43.9	264	23.2	−9 00.6	248	48.3	56.2	280	11.7	25.5
3	262	03.4	265	16.5	42.9	279	23.9	−9 00.0	263	50.3	56.0	295	14.0	25.4
4	277	05.8	280	16.3	41.9	294	24.6	−8 59.3	278	52.3	55.8	310	16.4	25.4
5	292	08.3	295	16.1	−2 40.9	309	25.3	−8 58.6	293	54.3	−1 55.6	325	18.7	−14 25.3
6	307	10.7	310	15.9	−2 39.9	324	26.0	−8 57.9	308	56.2	−1 55.4	340	21.0	−14 25.3
7	322	13.2	325	15.8	38.9	339	26.7	57.2	323	58.2	55.2	355	23.3	25.3
8	337	15.7	340	15.6	37.9	354	27.4	56.5	339	00.2	55.0	10	25.6	25.2
9	352	18.1	355	15.4	36.9	9	28.1	55.8	354	02.2	54.8	25	28.0	25.2
10	7	20.6	10	15.2	35.9	24	28.7	55.1	9	04.2	54.6	40	30.3	25.1
11	22	23.1	25	15.0	−2 34.9	39	29.4	−8 54.4	24	06.1	−1 54.4	55	32.6	−14 25.1
12	37	25.5	40	14.8	−2 33.9	54	30.1	−8 53.7	39	08.1	−1 54.2	70	34.9	−14 25.1
13	52	28.0	55	14.6	32.8	69	30.8	53.0	54	10.1	54.0	85	37.3	25.0
14	67	30.5	70	14.4	31.8	84	31.5	52.3	69	12.1	53.8	100	39.6	25.0
15	82	32.9	85	14.2	30.8	99	32.2	51.6	84	14.1	53.6	115	41.9	24.9
16	97	35.4	100	14.0	29.8	114	32.9	50.9	99	16.0	53.4	130	44.2	24.9
17	112	37.8	115	13.9	−2 28.8	129	33.6	−8 50.2	114	18.0	−1 53.2	145	46.6	−14 24.9
18	127	40.3	130	13.7	−2 27.8	144	34.2	−8 49.5	129	20.0	−1 53.0	160	48.9	−14 24.8
19	142	42.8	145	13.5	26.8	159	34.9	48.8	144	22.0	52.8	175	51.2	24.8
20	157	45.2	160	13.3	25.8	174	35.6	48.1	159	24.0	52.6	190	53.5	24.7
21	172	47.7	175	13.1	24.8	189	36.3	47.4	174	25.9	52.4	205	55.8	24.7
22	187	50.2	190	12.9	23.7	204	37.0	46.7	189	27.9	52.2	220	58.2	24.6
23	202	52.6	205	12.7	22.7	219	37.7	46.0	204	29.9	52.0	236	00.5	24.6
24	217	55.1	220	12.5	−2 21.7	234	38.4	−8 45.3	219	31.9	−1 51.8	251	02.8	−14 24.6
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 28ᵈ.7		PHE	4ʰ: 55′.6								
	PMG: 11ʰ 57ᵐ.2				SD: 15′.2			12ʰ: 55′.5								
					PMG: 11ʰ 43ᵐ			20ʰ: 55′.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	40.5	+14	42.1	189	26.3	+9	30.5	**60 N**	19 55	20 48	22 11	4 16	3	19 36	89
1	195	40.6		42.8	203	59.9 146		44.0 135	**58**	46	34	21 43	22	6	28	84
2	210	40.7		43.6	218	33.5 146	+9	57.4 134	**56**	37	22	23	27	10	20	81
3	225	40.8		44.4	233	07.0 145	+10	10.7 133	**54**	30	11	21 06	32	12	14	77
4	240	40.9		45.1	247	40.6 146		24.1 134	**52**	23	20 02	20 52	36	15	08	75
5	255	40.9	+14	45.9	262	14.1 145	+10	37.3 132	**50**	19 17	19 54	20 40	4 40	17	19 03	72
6	270	41.0	+14	46.7	276	47.5 144	+10	50.5 132	**45**	19 04	19 37	20 17	4 48	22	18 51	68
7	285	41.1		47.4	291	21.0 145	+11	03.7 132	**40**	18 54	23	19 59	4 55	26	42	63
8	300	41.2		48.2	305	54.4 144		16.8 131	**35**	45	12	44	5 01	29	33	61
9	315	41.3		49.0	320	27.8 144		29.8 130	**30**	37	19 02	32	07	31	26	58
10	330	41.3		49.7	335	01.2 144		42.8 130	**20**	23	18 46	19 13	16	36	14	53
11	345	41.4	+14	50.5	349	34.6 144	+11	55.7 129	**10 N**	18 11	18 33	18 59	5 25	40	18 03	49
12	0	41.5	+14	51.3	4	07.9 143	+12	08.6 129	**0**	18 01	18 22	18 47	5 32	45	17 54	45
13	15	41.6		52.0	18	41.2 143		21.4 128	**10 S**	17 50	12	37	40	49	44	41
14	30	41.7		52.8	33	14.5 143		34.1 127	**20**	39	18 01	28	49	52	33	37
15	45	41.7		53.6	47	47.7 142		46.8 127	**30**	26	17 51	19	5 59	57	21	33
16	60	41.8		54.3	62	20.9 142	+12	59.4 126	**35**	18	45	15	6 04	61	14	30
17	75	41.9	+14	55.1	76	54.1 142	+13	12.0 126	**40**	17 10	17 38	18 10	6 11	64	17 07	26
18	90	42.0	+14	55.8	91	27.3 142	+13	24.5 125	**45**	17 00	17 31	18 06	6 18	68	16 57	23
19	105	42.0		56.6	106	00.4 141		36.9 124	**50**	16 49	23	18 01	28	72	47	18
20	120	42.1		57.4	120	33.5 141	+13	49.3 124	**52**	43	19	17 59	32	75	42	16
21	135	42.2		58.1	135	06.5 140	+14	01.6 123	**54**	37	15	57	37	77	36	14
22	150	42.3		58.9	149	39.6 141		13.8 122	**56**	31	11	55	42	81	30	11
23	165	42.3	+14	59.6	164	12.6 140		26.0 122	**58**	23	06	52	48	84	23	8
24	180	42.4	+15	00.4	178	45.5 139	+14	38.1 121	**60 S**	16 15	17 00	17 50	6 54	89	16 15	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	9ʰ 26ᵐ.8		PMG: 9ʰ 19ᵐ			PMG: 8ʰ 21ᵐ			PMG: 9ʰ 21ᵐ			PMG: 7ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	217	55.1	220	12.5	−2 21.7	234	38.4	−8 45.3	219	31.9	−1 51.8	251	02.8	−14 24.6
1	232	57.6	235	12.3	20.7	249	39.1	44.6	234	33.9	51.6	266	05.1	24.5
2	248	00.0	250	12.1	19.7	264	39.8	43.9	249	35.8	51.3	281	07.5	24.5
3	263	02.5	265	12.0	18.7	279	40.5	43.2	264	37.8	51.1	296	09.8	24.4
4	278	05.0	280	11.8	17.7	294	41.1	42.5	279	39.8	50.9	311	12.1	24.4
5	293	07.4	295	11.6	−2 16.7	309	41.8	−8 41.8	294	41.8	−1 50.7	326	14.4	−14 24.4
6	308	09.9	310	11.4	−2 15.6	324	42.5	−8 41.1	309	43.8	−1 50.5	341	16.8	−14 24.3
7	323	12.3	325	11.2	14.6	339	43.2	40.4	324	45.7	50.3	356	19.1	24.3
8	338	14.8	340	11.0	13.6	354	43.9	39.7	339	47.7	50.1	11	21.4	24.2
9	353	17.3	355	10.8	12.6	9	44.6	39.0	354	49.7	49.9	26	23.7	24.2
10	8	19.7	10	10.6	11.6	24	45.3	38.3	9	51.7	49.7	41	26.1	24.2
11	23	22.2	25	10.4	−2 10.6	39	46.0	−8 37.6	24	53.7	−1 49.5	56	28.4	−14 24.1
12	38	24.7	40	10.2	−2 09.5	54	46.7	−8 36.9	39	55.7	−1 49.3	71	30.7	−14 24.1
13	53	27.1	55	10.0	08.5	69	47.4	36.2	54	57.6	49.1	86	33.1	24.0
14	68	29.6	70	09.9	07.5	84	48.0	35.5	69	59.6	48.9	101	35.4	24.0
15	83	32.1	85	09.7	06.5	99	48.7	34.8	85	01.6	48.7	116	37.7	24.0
16	98	34.5	100	09.5	05.5	114	49.4	34.1	100	03.6	48.5	131	40.0	23.9
17	113	37.0	115	09.3	−2 04.5	129	50.1	−8 33.4	115	05.6	−1 48.3	146	42.4	−14 23.9
18	128	39.5	130	09.1	−2 03.4	144	50.8	−8 32.7	130	07.6	−1 48.1	161	44.7	−14 23.8
19	143	41.9	145	08.9	02.4	159	51.5	32.0	145	09.5	47.9	176	47.0	23.8
20	158	44.4	160	08.7	01.4	174	52.2	31.3	160	11.5	47.7	191	49.3	23.8
21	173	46.8	175	08.5	−2 00.4	189	52.9	30.6	175	13.5	47.5	206	51.7	23.7
22	188	49.3	190	08.3	−1 59.4	204	53.6	29.9	190	15.5	47.3	221	54.0	23.7
23	203	51.8	205	08.1	58.4	219	54.3	29.2	205	17.5	47.1	236	56.3	23.7
24	218	54.2	220	07.9	−1 57.3	234	55.0	−8 28.5	220	19.5	−1 46.9	251	58.7	−14 23.6
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 0ᵈ.1		PHE	4ʰ: 55′.2								
	PMG: 11ʰ 57ᵐ.1				SD: 15′.0			12ʰ: 55′.0								
					PMG: 12ʰ 28ᵐ			20ʰ: 54′.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	180	42.4	+15	00.4	178	45.5	+14	38.1	**60 N**	1 43	3 05	3 58	4 19	5	21 05	89
1	195	42.5		01.2	193	18.4 139	+14	50.1 120	**58**	2 10	20	4 08	28	9	20 52	84
2	210	42.6		01.9	207	51.3 139	+15	02.1 120	**56**	31	32	16	37	12	41	80
3	225	42.7		02.7	222	24.2 139		14.0 119	**54**	2 48	42	24	44	16	31	77
4	240	42.7		03.4	236	57.0 138		25.8 118	**52**	3 01	3 52	31	51	18	23	74
5	255	42.8	+15	04.2	251	29.7 137	+15	37.5 117	**50**	3 13	4 00	4 37	4 57	20	20 15	71
6	270	42.9	+15	05.0	266	02.5 138	+15	49.2 117	**45**	3 37	4 17	4 50	5 10	25	19 59	66
7	285	42.9		05.7	280	35.2 137	+16	00.8 116	**40**	3 55	31	5 00	21	28	45	63
8	300	43.0		06.5	295	07.8 136		12.3 115	**35**	4 10	42	09	30	32	34	60
9	315	43.1		07.2	309	40.5 137		23.8 115	**30**	22	4 52	17	38	34	24	58
10	330	43.2		08.0	324	13.0 135		35.1 113	**20**	41	5 08	31	5 52	39	19 07	54
11	345	43.2	+15	08.7	338	45.6 136	+16	46.4 113	**10 N**	4 55	5 21	5 43	6 05	42	18 52	50
12	0	43.3	+15	09.5	353	18.1 135	+16	57.6 112	**0**	5 07	5 32	5 54	6 17	46	18 39	46
13	15	43.4		10.2	7	50.5 134	+17	08.8 112	**10 S**	18	43	6 05	29	49	25	44
14	30	43.5		11.0	22	23.0 135		19.8 110	**20**	27	5 53	16	41	54	18 10	40
15	45	43.5		11.7	36	55.3 133		30.8 110	**30**	36	6 04	29	6 56	58	17 54	36
16	60	43.6		12.5	51	27.7 134		41.6 108	**35**	40	10	36	7 05	60	44	34
17	75	43.7	+15	13.3	66	00.0 133	+17	52.4 108	**40**	5 45	6 17	6 45	7 15	63	17 33	31
18	90	43.8	+15	14.0	80	32.2 132	+18	03.2 108	**45**	5 49	6 24	6 55	7 26	67	17 20	28
19	105	43.8		14.8	95	04.4 132		13.8 106	**50**	54	32	7 06	40	72	17 05	22
20	120	43.9		15.5	109	36.6 132		24.3 105	**52**	56	36	12	47	75	16 58	20
21	135	44.0		16.3	124	08.7 131		34.8 105	**54**	5 58	40	18	7 54	78	50	17
22	150	44.0		17.0	138	40.8 131		45.2 104	**56**	6 00	45	25	8 03	80	41	14
23	165	44.1		17.8	153	12.8 130	+18	55.4 102	**58**	03	50	32	12	84	31	10
24	180	44.2	+15	18.5	167	44.8 130	+19	05.6 102	**60 S**	6 05	6 55	7 41	8 23	89	16 19	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.9			Mag: −2.1			Mag: +0.9		
	9ʰ 22ᵐ.8		PMG: 9ʰ 20ᵐ			PMG: 8ʰ 20ᵐ			PMG: 9ʰ 17ᵐ			PMG: 7ʰ 11ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	218	54.2	220	07.9	−1 57.3	234	55.0	−8 28.5	220	19.5	−1 46.9	251	58.7	−14 23.6
1	233	56.7	235	07.7	56.3	249	55.7	27.8	235	21.4	46.7	267	01.0	23.6
2	248	59.2	250	07.6	55.3	264	56.4	27.1	250	23.4	46.5	282	03.3	23.5
3	264	01.6	265	07.4	54.3	279	57.0	26.4	265	25.4	46.3	297	05.6	23.5
4	279	04.1	280	07.2	53.3	294	57.7	25.7	280	27.4	46.1	312	08.0	23.5
5	294	06.6	295	07.0	−1 52.2	309	58.4	−8 25.0	295	29.4	−1 45.9	327	10.3	−14 23.4
6	309	09.0	310	06.8	−1 51.2	324	59.1	−8 24.3	310	31.4	−1 45.7	342	12.6	−14 23.4
7	324	11.5	325	06.6	50.2	339	59.8	23.6	325	33.3	45.5	357	15.0	23.3
8	339	13.9	340	06.4	49.2	355	00.5	22.9	340	35.3	45.3	12	17.3	23.3
9	354	16.4	355	06.2	48.2	10	01.2	22.2	355	37.3	45.1	27	19.6	23.3
10	9	18.9	10	06.0	47.1	25	01.9	21.5	10	39.3	44.9	42	21.9	23.2
11	24	21.3	25	05.8	−1 46.1	40	02.6	−8 20.8	25	41.3	−1 44.7	57	24.3	−14 23.2
12	39	23.8	40	05.6	−1 45.1	55	03.3	−8 20.1	40	43.3	−1 44.5	72	26.6	−14 23.1
13	54	26.3	55	05.4	44.1	70	04.0	19.4	55	45.3	44.3	87	28.9	23.1
14	69	28.7	70	05.2	43.0	85	04.7	18.7	70	47.2	44.1	102	31.3	23.1
15	84	31.2	85	05.1	42.0	100	05.4	18.0	85	49.2	43.9	117	33.6	23.0
16	99	33.7	100	04.9	41.0	115	06.1	17.3	100	51.2	43.7	132	35.9	23.0
17	114	36.1	115	04.7	−1 40.0	130	06.8	−8 16.6	115	53.2	−1 43.5	147	38.2	−14 23.0
18	129	38.6	130	04.5	−1 39.0	145	07.4	−8 15.9	130	55.2	−1 43.3	162	40.6	−14 22.9
19	144	41.1	145	04.3	37.9	160	08.1	15.2	145	57.2	43.1	177	42.9	22.9
20	159	43.5	160	04.1	36.9	175	08.8	14.5	160	59.2	42.9	192	45.2	22.8
21	174	46.0	175	03.9	35.9	190	09.5	13.8	176	01.1	42.7	207	47.6	22.8
22	189	48.4	190	03.7	34.9	205	10.2	13.1	191	03.1	42.5	222	49.9	22.8
23	204	50.9	205	03.5	33.8	220	10.9	12.4	206	05.1	42.3	237	52.2	22.7
24	219	53.4	220	03.3	−1 32.8	235	11.6	−8 11.7	221	07.1	−1 42.1	252	54.6	−14 22.7
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 1^{d}.1		PHE	4^{h}: 54′.8								
	PMG: 11^{h} 57^{m}.0				SD: 14′.9			12^{h}: 54′.7								
					PMG: 13^{h} 14^{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	44.2	+15	18.5	167	44.8	+19	05.6	**60 N**	20 00	20 55	22 22	4 24	8	22 34	86
1	195	44.2		19.3	182	16.8 130		15.7 101	**58**	19 50	39	21 51	37	14	16	80
2	210	44.3		20.0	196	48.7 129		25.8 101	**56**	41	26	29	4 49	18	22 01	76
3	225	44.4		20.7	211	20.6 129		35.7 99	**54**	33	15	21 12	5 00	20	21 48	73
4	240	44.5		21.5	225	52.4 128		45.5 98	**52**	26	20 06	20 57	09	23	37	70
5	255	44.5	+15	22.2	240	24.1 127	+19	55.3 98	**50**	19 20	19 57	20 45	5 17	25	21 26	69
6	270	44.6	+15	23.0	254	55.9 128	+20	04.9 96	**45**	19 07	19 39	20 20	5 35	29	21 05	65
7	285	44.7		23.7	269	27.5 126		14.4 95	**40**	18 56	25	20 01	5 49	33	20 48	62
8	300	44.7		24.5	283	59.2 127		23.9 95	**35**	46	13	19 46	6 02	35	34	59
9	315	44.8		25.2	298	30.8 126		33.3 94	**30**	38	19 03	34	12	38	22	57
10	330	44.9		26.0	313	02.3 125		42.5 92	**20**	24	18 47	19 14	31	42	20 01	54
11	345	44.9	+15	26.7	327	33.8 125	+20	51.7 92	**10 N**	18 12	18 34	18 59	6 47	45	19 42	52
12	0	45.0	+15	27.5	342	05.3 125	+21	00.8 91	**0**	18 00	18 22	18 47	7 03	47	19 25	49
13	15	45.1		28.2	356	36.7 124		09.7 89	**10 S**	17 49	11	36	18	51	19 09	46
14	30	45.1		28.9	11	08.0 123		18.6 89	**20**	37	18 00	26	35	54	18 50	44
15	45	45.2		29.7	25	39.4 124		27.4 88	**30**	24	17 49	17	7 54	57	30	40
16	60	45.3		30.4	40	10.6 122		36.0 86	**35**	16	43	13	8 05	60	18	38
17	75	45.3	+15	31.2	54	41.9 123	+21	44.6 86	**40**	17 08	17 36	18 08	8 18	63	18 04	36
18	90	45.4	+15	31.9	69	13.1 122	+21	53.1 85	**45**	16 58	17 28	18 03	8 33	66	17 48	32
19	105	45.5		32.6	83	44.2 121	+22	01.4 83	**50**	45	20	17 58	8 52	71	27	29
20	120	45.5		33.4	98	15.3 121		09.7 83	**52**	40	16	56	9 02	72	18	26
21	135	45.6		34.1	112	46.4 121		17.8 81	**54**	33	11	53	12	75	17 07	24
22	150	45.7		34.9	127	17.4 120		25.9 81	**56**	27	07	51	23	79	16 55	21
23	165	45.7		35.6	141	48.3 119		33.8 79	**58**	19	17 02	48	36	83	41	17
24	180	45.8	+15	36.3	156	19.2 119	+22	41.7 79	**60 S**	16 10	16 56	17 46	9 52	89	16 25	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.9			Mag: −2.2			Mag: +0.9		
	9^{h} 18^{m}.9		PMG: 9^{h} 20^{m}			PMG: 8^{h} 19^{m}			PMG: 9^{h} 14^{m}			PMG: 7^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	219	53.4	220	03.3	−1 32.8	235	11.6	−8 11.7	221	07.1	−1 42.1	252	54.6	−14 22.7
1	234	55.8	235	03.1	31.8	250	12.3	11.0	236	09.1	41.9	267	56.9	22.7
2	249	58.3	250	02.9	30.8	265	13.0	10.3	251	11.1	41.7	282	59.2	22.6
3	265	00.8	265	02.7	29.7	280	13.7	09.6	266	13.1	41.5	298	01.6	22.6
4	280	03.2	280	02.5	28.7	295	14.4	08.9	281	15.1	41.3	313	03.9	22.5
5	295	05.7	295	02.4	−1 27.7	310	15.1	−8 08.2	296	17.0	−1 41.1	328	06.2	−14 22.5
6	310	08.2	310	02.2	−1 26.7	325	15.8	−8 07.5	311	19.0	−1 40.9	343	08.6	−14 22.5
7	325	10.6	325	02.0	25.6	340	16.5	06.8	326	21.0	40.7	358	10.9	22.4
8	340	13.1	340	01.8	24.6	355	17.2	06.1	341	23.0	40.5	13	13.2	22.4
9	355	15.6	355	01.6	23.6	10	17.9	05.4	356	25.0	40.3	28	15.6	22.3
10	10	18.0	10	01.4	22.5	25	18.6	04.7	11	27.0	40.1	43	17.9	22.3
11	25	20.5	25	01.2	−1 21.5	40	19.3	−8 04.0	26	29.0	−1 39.9	58	20.2	−14 22.3
12	40	22.9	40	01.0	−1 20.5	55	20.0	−8 03.3	41	31.0	−1 39.7	73	22.6	−14 22.2
13	55	25.4	55	00.8	19.5	70	20.7	02.6	56	32.9	39.5	88	24.9	22.2
14	70	27.9	70	00.6	18.4	85	21.4	01.9	71	34.9	39.3	103	27.2	22.2
15	85	30.3	85	00.4	17.4	100	22.1	01.1	86	36.9	39.1	118	29.6	22.1
16	100	32.8	100	00.2	16.4	115	22.8	−8 00.4	101	38.9	38.9	133	31.9	22.1
17	115	35.3	115	00.0	−1 15.3	130	23.5	−7 59.7	116	40.9	−1 38.7	148	34.2	−14 22.1
18	130	37.7	129	59.8	−1 14.3	145	24.2	−7 59.0	131	42.9	−1 38.5	163	36.6	−14 22.0
19	145	40.2	144	59.6	13.3	160	24.9	58.3	146	44.9	38.3	178	38.9	22.0
20	160	42.7	159	59.4	12.3	175	25.6	57.6	161	46.9	38.1	193	41.2	21.9
21	175	45.1	174	59.3	11.2	190	26.3	56.9	176	48.8	37.9	208	43.6	21.9
22	190	47.6	189	59.1	10.2	205	26.9	56.2	191	50.8	37.7	223	45.9	21.9
23	205	50.0	204	58.9	09.2	220	27.6	55.5	206	52.8	37.5	238	48.2	21.8
24	220	52.5	219	58.7	−1 08.1	235	28.3	−7 54.8	221	54.8	−1 37.3	253	50.6	−14 21.8
Dif	—		−2		+10	+7		+7	+20		+2	+23		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 2ᵈ.1		PHE	4ʰ: 54′.5									
	PMG: 11ʰ 56ᵐ.9				SD: 14′.8			12ʰ: 54′.4									
					PMG: 14ʰ 02ᵐ			20ʰ: 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	180	45.8	+15	36.3	156	19.2	+22	41.7		**60 N**	1 31	2 59	3 53	4 32	16	** **	**
1	195	45.9		37.1	170	50.1 119		49.4	77	**58**	2 02	3 14	4 03	4 51	21	23 36	70
2	210	45.9		37.8	185	21.0 119	+22	57.0	76	**56**	24	27	12	5 07	25	17	66
3	225	46.0		38.6	199	51.7 117	+23	04.5	75	**54**	42	38	20	20	28	23 01	64
4	240	46.0		39.3	214	22.5 118		11.9	74	**52**	2 56	48	27	32	31	22 47	63
5	255	46.1	+15	40.0	228	53.2 117	+23	19.2	73	**50**	3 09	3 56	4 33	5 42	33	22 35	61
6	270	46.2	+15	40.8	243	23.9 117	+23	26.4	72	**45**	3 34	4 14	4 47	6 04	37	22 10	59
7	285	46.2		41.5	257	54.5 116		33.5	71	**40**	3 52	28	4 58	22	39	21 50	57
8	300	46.3		42.2	272	25.1 116		40.5	70	**35**	4 07	40	5 07	37	41	33	56
9	315	46.4		43.0	286	55.6 115		47.3	68	**30**	20	4 50	16	6 50	43	21 19	55
10	330	46.4		43.7	301	26.1 115	+23	54.0	67	**20**	39	5 07	30	7 13	45	20 55	53
11	345	46.5	+15	44.4	315	56.6 115	+24	00.7	67	**10 N**	4 55	5 20	5 42	7 32	48	20 34	51
12	0	46.6	+15	45.2	330	27.0 114	+24	07.2	65	**0**	5 07	5 32	5 53	7 50	50	20 14	50
13	15	46.6		45.9	344	57.4 114		13.6	64	**10 S**	18	43	6 05	8 09	51	19 55	48
14	30	46.7		46.6	359	27.7 113		19.8	62	**20**	28	5 54	17	29	53	34	47
15	45	46.7		47.4	13	58.0 113		26.0	62	**30**	37	6 05	30	8 51	57	19 10	45
16	60	46.8		48.1	28	28.3 113		32.1	61	**35**	42	12	38	9 05	58	18 56	43
17	75	46.9	+15	48.8	42	58.5 112	+24	38.0	59	**40**	5 46	6 18	6 47	9 21	59	18 40	42
18	90	46.9	+15	49.6	57	28.7 112	+24	43.8	58	**45**	5 51	6 26	6 57	9 39	62	18 20	40
19	105	47.0		50.3	71	58.8 111		49.5	57	**50**	57	35	7 09	10 03	65	17 56	37
20	120	47.0		51.0	86	29.0 112	+24	55.1	56	**52**	5 59	39	15	14	67	44	36
21	135	47.1		51.7	100	59.0 110	+25	00.5	54	**54**	6 01	44	22	27	69	31	34
22	150	47.2		52.5	115	29.1 111		05.9	54	**56**	04	48	29	42	72	17 16	31
23	165	47.2		53.2	129	59.1 110		11.1	52	**58**	06	54	37	10 59	76	16 58	27
24	180	47.3	+15	53.9	144	29.1 110	+25	16.2	51	**60 S**	6 09	6 59	7 46	11 21	82	16 36	21

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.9			Mag: −2.2			Mag: +0.9		
	9ʰ 15ᵐ.0		PMG: 9ʰ 20ᵐ			PMG: 8ʰ 18ᵐ			PMG: 9ʰ 11ᵐ			PMG: 7ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	220	52.5	219	58.7	−1 08.1	235	28.3	−7 54.8	221	54.8	−1 37.3	253	50.6	−14 21.8
1	235	55.0	234	58.5	07.1	250	29.0	54.1	236	56.8	37.1	268	52.9	21.8
2	250	57.4	249	58.3	06.1	265	29.7	53.4	251	58.8	36.9	283	55.2	21.7
3	265	59.9	264	58.1	05.0	280	30.4	52.7	267	00.8	36.7	298	57.6	21.7
4	281	02.4	279	57.9	04.0	295	31.1	52.0	282	02.8	36.5	313	59.9	21.6
5	296	04.8	294	57.7	−1 03.0	310	31.8	−7 51.3	297	04.8	−1 36.3	329	02.2	−14 21.6
6	311	07.3	309	57.5	−1 02.0	325	32.5	−7 50.6	312	06.8	−1 36.1	344	04.6	−14 21.6
7	326	09.8	324	57.3	−1 00.9	340	33.2	49.9	327	08.7	35.9	359	06.9	21.5
8	341	12.2	339	57.1	−0 59.9	355	33.9	49.2	342	10.7	35.7	14	09.2	21.5
9	356	14.7	354	56.9	58.9	10	34.6	48.5	357	12.7	35.5	29	11.6	21.5
10	11	17.2	9	56.7	57.8	25	35.3	47.7	12	14.7	35.3	44	13.9	21.4
11	26	19.6	24	56.5	−0 56.8	40	36.0	−7 47.0	27	16.7	−1 35.1	59	16.3	−14 21.4
12	41	22.1	39	56.3	−0 55.8	55	36.7	−7 46.3	42	18.7	−1 34.9	74	18.6	−14 21.4
13	56	24.5	54	56.1	54.7	70	37.4	45.6	57	20.7	34.7	89	20.9	21.3
14	71	27.0	69	55.9	53.7	85	38.1	44.9	72	22.7	34.6	104	23.3	21.3
15	86	29.5	84	55.7	52.7	100	38.8	44.2	87	24.7	34.4	119	25.6	21.2
16	101	31.9	99	55.5	51.6	115	39.5	43.5	102	26.7	34.2	134	27.9	21.2
17	116	34.4	114	55.3	−0 50.6	130	40.2	−7 42.8	117	28.7	−1 34.0	149	30.3	−14 21.2
18	131	36.9	129	55.2	−0 49.6	145	40.9	−7 42.1	132	30.6	−1 33.8	164	32.6	−14 21.1
19	146	39.3	144	55.0	48.5	160	41.6	41.4	147	32.6	33.6	179	35.0	21.1
20	161	41.8	159	54.8	47.5	175	42.3	40.7	162	34.6	33.4	194	37.3	21.1
21	176	44.3	174	54.6	46.5	190	43.0	40.0	177	36.6	33.2	209	39.6	21.0
22	191	46.7	189	54.4	45.4	205	43.7	39.3	192	38.6	33.0	224	42.0	21.0
23	206	49.2	204	54.2	44.4	220	44.4	38.6	207	40.6	32.8	239	44.3	21.0
24	221	51.7	219	54.0	−0 43.4	235	45.1	−7 37.8	222	42.6	−1 32.6	254	46.6	−14 20.9
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 56m.8				LUNA Edad: 3d.1 SD: 14′.8 PMG: 14h 52m PHE 4h: 54′.2; 12h: 54′.2; 20h: 54′.1 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	180	47.3	+15	53.9	144	29.1	+25	16.2	**60 N**	20 05	21 01	22 34	4 48	30	0 00	75
1	195	47.3		54.7	158	59.0 109		21.2 50	**58**	19 55	20 45	22 00	5 12	35	** **	**
2	210	47.4		55.4	173	28.9 109		26.1 49	**56**	45	31	21 36	32	38	** **	**
3	225	47.5		56.1	187	58.8 109		30.8 47	**54**	37	20	17	5 48	40	** **	**
4	240	47.5		56.8	202	28.7 109		35.4 46	**52**	30	09	21 02	6 03	40	23 50	52
5	255	47.6	+15	57.6	216	58.5 108	+25	39.9 45	**50**	19 23	20 01	20 49	6 15	42	23 36	53
6	270	47.6	+15	58.3	231	28.3 108	+25	44.3 44	**45**	19 09	19 42	20 23	6 41	44	23 09	52
7	285	47.7		59.0	245	58.1 108		48.5 42	**40**	18 58	27	20 04	7 01	45	22 47	52
8	300	47.7	+15	59.7	260	27.8 107		52.7 42	**35**	48	15	19 48	18	46	29	52
9	315	47.8	+16	00.5	274	57.5 107	+25	56.7 40	**30**	39	19 05	35	33	47	22 14	52
10	330	47.9		01.2	289	27.2 107	+26	00.5 38	**20**	25	18 48	15	7 58	48	21 48	51
11	345	47.9	+16	01.9	303	56.9 107	+26	04.3 38	**10 N**	18 12	18 34	19 00	8 20	49	21 25	51
12	0	48.0	+16	02.6	318	26.5 106	+26	07.9 36	**0**	18 00	18 22	18 47	8 40	50	21 04	51
13	15	48.0		03.3	332	56.1 106		11.4 35	**10 S**	17 49	18 10	36	9 00	52	20 43	51
14	30	48.1		04.1	347	25.7 106		14.8 34	**20**	36	17 59	26	22	53	20 21	50
15	45	48.1		04.8	1	55.3 106		18.1 33	**30**	22	47	16	9 48	53	19 55	49
16	60	48.2		05.5	16	24.8 105		21.2 31	**35**	14	41	11	10 03	54	39	50
17	75	48.2	+16	06.2	30	54.3 105	+26	24.2 30	**40**	17 05	17 34	18 06	10 20	55	19 22	48
18	90	48.3	+16	06.9	45	23.9 106	+26	27.1 29	**45**	16 55	17 26	18 01	10 41	56	19 00	48
19	105	48.4		07.7	59	53.3 104		29.8 27	**50**	42	16	17 55	11 08	57	18 33	47
20	120	48.4		08.4	74	22.8 105		32.4 26	**52**	36	12	53	21	58	20	46
21	135	48.5		09.1	88	52.3 105		34.9 25	**54**	30	08	50	36	59	18 05	45
22	150	48.5		09.8	103	21.7 104		37.3 24	**56**	22	17 03	47	11 54	60	17 47	45
23	165	48.6		10.5	117	51.1 104		39.5 22	**58**	14	16 57	44	12 15	62	17 25	43
24	180	48.6	+16	11.2	132	20.5 104	+26	41.7 22	**60 S**	16 05	16 51	17 41	12 43	65	16 57	41

UT	ARIES PMG 9h 11m.0		VENUS Mag: −4.1 PMG: 9h 21m			MARTE Mag: +0.9 PMG: 8h 17m			JÚPITER Mag: −2.2 PMG: 9h 08m			SATURNO Mag: +0.8 PMG: 7h 00m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	221	51.7	219	54.0	−0 43.4	235	45.1	−7 37.8	222	42.6	−1 32.6	254	46.6	−14 20.9
1	236	54.1	234	53.8	42.3	250	45.8	37.1	237	44.6	32.4	269	49.0	20.9
2	251	56.6	249	53.6	41.3	265	46.5	36.4	252	46.6	32.2	284	51.3	20.9
3	266	59.0	264	53.4	40.2	280	47.2	35.7	267	48.6	32.0	299	53.7	20.8
4	282	01.5	279	53.2	39.2	295	47.9	35.0	282	50.6	31.8	314	56.0	20.8
5	297	04.0	294	53.0	−0 38.2	310	48.6	−7 34.3	297	52.6	−1 31.6	329	58.3	−14 20.7
6	312	06.4	309	52.8	−0 37.1	325	49.3	−7 33.6	312	54.6	−1 31.4	345	00.7	−14 20.7
7	327	08.9	324	52.6	36.1	340	50.1	32.9	327	56.6	31.2	0	03.0	20.7
8	342	11.4	339	52.4	35.1	355	50.8	32.2	342	58.5	31.0	15	05.4	20.6
9	357	13.8	354	52.2	34.0	10	51.5	31.5	358	00.5	30.8	30	07.7	20.6
10	12	16.3	9	52.0	33.0	25	52.2	30.8	13	02.5	30.6	45	10.0	20.6
11	27	18.8	24	51.8	−0 32.0	40	52.9	−7 30.1	28	04.5	−1 30.4	60	12.4	−14 20.5
12	42	21.2	39	51.6	−0 30.9	55	53.6	−7 29.3	43	06.5	−1 30.2	75	14.7	−14 20.5
13	57	23.7	54	51.4	29.9	70	54.3	28.6	58	08.5	30.0	90	17.1	20.5
14	72	26.2	69	51.2	28.8	85	55.0	27.9	73	10.5	29.8	105	19.4	20.4
15	87	28.6	84	51.0	27.8	100	55.7	27.2	88	12.5	29.6	120	21.7	20.4
16	102	31.1	99	50.8	26.8	115	56.4	26.5	103	14.5	29.4	135	24.1	20.4
17	117	33.5	114	50.6	−0 25.7	130	57.1	−7 25.8	118	16.5	−1 29.2	150	26.4	−14 20.3
18	132	36.0	129	50.4	−0 24.7	145	57.8	−7 25.1	133	18.5	−1 29.0	165	28.8	−14 20.3
19	147	38.5	144	50.2	23.6	160	58.5	24.4	148	20.5	28.8	180	31.1	20.3
20	162	40.9	159	50.0	22.6	175	59.2	23.7	163	22.5	28.6	195	33.5	20.2
21	177	43.4	174	49.8	21.6	190	59.9	23.0	178	24.5	28.4	210	35.8	20.2
22	192	45.9	189	49.6	20.5	206	00.6	22.3	193	26.5	28.3	225	38.1	20.2
23	207	48.3	204	49.4	19.5	221	01.3	21.5	208	28.5	28.1	240	40.5	20.1
24	222	50.8	219	49.2	−0 18.5	236	02.0	−7 20.8	223	30.5	−1 27.9	255	42.8	−14 20.1
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL SD: 15′.9 PMG: 11h 56m.7				LUNA Edad: 4d.1 SD: 14′.7 PMG: 15h 43m PHE 4h: 54′.1; 12h: 54′.1; 20h: 54′.1 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	180	48.6	+16	11.2	132	20.5	+26	41.7	**60 N**	1 19	2 52	3 47	5 18	53	1 15	52
1	195	48.7		12.0	146	49.9 104		43.6 19	**58**	1 53	3 08	3 58	5 47	53	0 46	52
2	210	48.7		12.7	161	19.3 104		45.5 19	**56**	2 17	22	4 07	6 10	52	23	53
3	225	48.8		13.4	175	48.7 104		47.2 17	**54**	36	33	16	28	52	0 05	53
4	240	48.8		14.1	190	18.1 104		48.8 16	**52**	2 51	43	23	43	53	** **	**
5	255	48.9	+16	14.8	204	47.4 103	+26	50.3 15	**50**	3 04	3 52	4 30	6 57	52	** **	**
6	270	48.9	+16	15.5	219	16.7 103	+26	51.6 13	**45**	3 30	4 11	4 44	7 25	52	** **	**
7	285	49.0		16.2	233	46.1 104		52.8 12	**40**	3 50	26	4 55	7 46	52	23 39	46
8	300	49.0		17.0	248	15.4 103		53.9 11	**35**	4 05	38	5 05	8 04	52	21	46
9	315	49.1		17.7	262	44.7 103		54.9 10	**30**	18	4 48	14	20	52	23 06	47
10	330	49.1		18.4	277	14.1 104		55.7 8	**20**	38	5 05	29	8 46	52	22 39	49
11	345	49.2	+16	19.1	291	43.4 103	+26	56.4 7	**10 N**	4 54	5 19	5 41	9 09	51	22 16	50
12	0	49.2	+16	19.8	306	12.7 103	+26	57.0 6	**0**	5 07	5 32	5 53	9 30	51	21 55	51
13	15	49.3		20.5	320	42.0 103		57.4 4	**10 S**	18	43	6 05	9 52	50	34	51
14	30	49.3		21.2	335	11.3 103		57.7 3	**20**	28	5 55	17	10 15	50	21 11	52
15	45	49.4		21.9	349	40.6 103		57.9 2	**30**	38	6 07	31	41	50	20 44	54
16	60	49.4		22.6	4	09.9 103		58.0 1	**35**	43	13	40	10 57	49	29	54
17	75	49.5	+16	23.4	18	39.2 103	+26	57.9 1	**40**	5 48	6 20	6 49	11 15	49	20 10	55
18	90	49.5	+16	24.1	33	08.6 104	+26	57.7 2	**45**	5 53	6 28	6 59	11 37	48	19 48	56
19	105	49.6		24.8	47	37.9 103		57.3 4	**50**	5 59	38	7 12	12 05	47	20	57
20	120	49.6		25.5	62	07.2 103		56.9 4	**52**	6 02	42	18	19	47	19 06	58
21	135	49.7		26.2	76	36.5 103		56.3 6	**54**	04	47	25	35	46	18 50	59
22	150	49.7		26.9	91	05.9 104		55.5 8	**56**	07	52	32	12 54	45	32	60
23	165	49.8		27.6	105	35.2 103		54.7 8	**58**	10	6 57	41	13 17	43	18 08	62
24	180	49.8	+16	28.3	120	04.6 104	+26	53.7 10	**60 S**	6 13	7 04	7 50	13 48	40	17 38	64

UT	ARIES PMG 9h 07m.1		VENUS Mag: −4.1 PMG: 9h 21m			MARTE Mag: +0.8 PMG: 8h 15m			JÚPITER Mag: −2.2 PMG: 9h 05m			SATURNO Mag: +0.8 PMG: 6h 56m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	222	50.8	219	49.2	−0 18.5	236	02.0	−7 20.8	223	30.5	−1 27.9	255	42.8	−14 20.1
1	237	53.3	234	49.0	17.4	251	02.7	20.1	238	32.5	27.7	270	45.2	20.1
2	252	55.7	249	48.8	16.4	266	03.4	19.4	253	34.4	27.5	285	47.5	20.0
3	267	58.2	264	48.6	15.3	281	04.1	18.7	268	36.4	27.3	300	49.8	20.0
4	283	00.6	279	48.5	14.3	296	04.8	18.0	283	38.4	27.1	315	52.2	20.0
5	298	03.1	294	48.3	−0 13.3	311	05.5	−7 17.3	298	40.4	−1 26.9	330	54.5	−14 19.9
6	313	05.6	309	48.1	−0 12.2	326	06.2	−7 16.6	313	42.4	−1 26.7	345	56.9	−14 19.9
7	328	08.0	324	47.9	11.2	341	06.9	15.9	328	44.4	26.5	0	59.2	19.8
8	343	10.5	339	47.7	10.1	356	07.6	15.2	343	46.4	26.3	16	01.6	19.8
9	358	13.0	354	47.5	09.1	11	08.3	14.4	358	48.4	26.1	31	03.9	19.8
10	13	15.4	9	47.3	08.0	26	09.0	13.7	13	50.4	25.9	46	06.2	19.7
11	28	17.9	24	47.1	−0 07.0	41	09.8	−7 13.0	28	52.4	−1 25.7	61	08.6	−14 19.7
12	43	20.4	39	46.9	−0 06.0	56	10.5	−7 12.3	43	54.4	−1 25.5	76	10.9	−14 19.7
13	58	22.8	54	46.7	04.9	71	11.2	11.6	58	56.4	25.3	91	13.3	19.6
14	73	25.3	69	46.5	03.9	86	11.9	10.9	73	58.4	25.1	106	15.6	19.6
15	88	27.8	84	46.3	02.8	101	12.6	10.2	89	00.4	24.9	121	18.0	19.6
16	103	30.2	99	46.1	01.8	116	13.3	09.5	104	02.4	24.7	136	20.3	19.5
17	118	32.7	114	45.9	−0 00.8	131	14.0	−7 08.8	119	04.4	−1 24.5	151	22.7	−14 19.5
18	133	35.1	129	45.7	+0 00.3	146	14.7	−7 08.0	134	06.4	−1 24.3	166	25.0	−14 19.5
19	148	37.6	144	45.5	01.3	161	15.4	07.3	149	08.4	24.2	181	27.3	19.4
20	163	40.1	159	45.3	02.4	176	16.1	06.6	164	10.4	24.0	196	29.7	19.4
21	178	42.5	174	45.1	03.4	191	16.8	05.9	179	12.4	23.8	211	32.0	19.4
22	193	45.0	189	44.9	04.5	206	17.5	05.2	194	14.4	23.6	226	34.4	19.3
23	208	47.5	204	44.7	05.5	221	18.2	04.5	209	16.4	23.4	241	36.7	19.3
24	223	49.9	219	44.5	+0 06.5	236	18.9	−7 03.8	224	18.4	−1 23.2	256	39.1	−14 19.3
Dif	—			−2	+10		+7	+7		+20	+2		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 5^{d}.1		PHE	4^{h}: 54′.1								
	PMG: 11^{h} 56^{m}.6		SD: 14′.7			12^{h}: 54′.2								
			PMG: 16^{h} 33^{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	180 49.8	+16 28.3	120 04.6		+26 53.7		**60 N**	20 10	21 07	22 48	6 11	74	2 07	31
1	195 49.9	29.0	134 33.9	103	52.6	11	**58**	19 59	20 50	22 08	6 40	69	1 38	35
2	210 49.9	29.7	149 03.3	104	51.4	12	**56**	49	36	21 43	7 02	66	1 16	38
3	225 50.0	30.4	163 32.7	104	50.0	14	**54**	41	24	23	20	65	0 58	39
4	240 50.0	31.1	178 02.1	104	48.5	15	**52**	33	13	21 07	36	62	42	41
5	255 50.1	+16 31.8	192 31.5	104	+26 46.9	16	**50**	19 26	20 04	20 53	7 49	62	0 29	42
6	270 50.1	+16 32.5	207 00.9	104	+26 45.1	18	**45**	19 12	19 45	20 26	8 17	59	0 01	44
7	285 50.2	33.2	221 30.3	104	43.2	19	**40**	19 00	29	20 06	38	58	** **	**
8	300 50.2	33.9	235 59.8	105	41.2	20	**35**	18 49	17	19 50	8 56	56	** **	**
9	315 50.2	34.6	250 29.3	105	39.1	21	**30**	41	19 06	37	9 12	54	23 53	42
10	330 50.3	35.3	264 58.7	104	36.8	23	**20**	25	18 49	16	9 38	53	28	45
11	345 50.3	+16 36.0	279 28.2	105	+26 34.5	23	**10 N**	18 12	18 34	19 00	10 00	52	23 06	47
12	0 50.4	+16 36.7	293 57.8	106	+26 31.9	26	**0**	18 00	18 22	18 47	10 21	50	22 46	49
13	15 50.4	37.4	308 27.3	105	29.3	26	**10 S**	17 48	18 10	35	10 42	49	25	51
14	30 50.5	38.1	322 56.9	106	26.5	28	**20**	35	17 58	25	11 05	47	22 03	54
15	45 50.5	38.8	337 26.5	106	23.6	29	**30**	21	46	14	31	45	21 38	56
16	60 50.6	39.5	351 56.1	106	20.6	30	**35**	13	39	09	11 46	44	23	57
17	75 50.6	+16 40.2	6 25.7	106	+26 17.5	31	**40**	17 03	17 32	18 04	12 04	42	21 05	59
18	90 50.6	+16 40.9	20 55.3	106	+26 14.2	33	**45**	16 52	17 23	17 58	12 25	40	20 44	62
19	105 50.7	41.6	35 25.0	107	10.8	34	**50**	39	13	52	12 52	38	17	65
20	120 50.7	42.3	49 54.7	107	07.3	35	**52**	33	09	50	13 06	35	20 04	67
21	135 50.8	43.0	64 24.4	107	+26 03.7	36	**54**	26	17 04	47	21	33	19 49	69
22	150 50.8	43.7	78 54.2	108	+25 59.9	38	**56**	18	16 59	44	13 39	31	32	71
23	165 50.9	44.4	93 24.0	108	56.0	39	**58**	10	53	41	14 00	28	19 10	76
24	180 50.9	+16 45.1	107 53.8	108	+25 52.0	40	**60 S**	16 00	16 47	17 37	14 28	22	18 42	82

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.1		Mag: +0.8		Mag: −2.2		Mag: +0.8	
	9^{h} 03^{m}.2	PMG: 9^{h} 21^{m}		PMG: 8^{h} 14^{m}		PMG: 9^{h} 02^{m}		PMG: 6^{h} 52^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	223 49.9	219 44.5	+0 06.5	236 18.9	−7 03.8	224 18.4	−1 23.2	256 39.1	−14 19.3
1	238 52.4	234 44.3	07.6	251 19.6	03.1	239 20.4	23.0	271 41.4	19.2
2	253 54.9	249 44.1	08.6	266 20.3	02.4	254 22.4	22.8	286 43.8	19.2
3	268 57.3	264 43.9	09.7	281 21.1	01.6	269 24.4	22.6	301 46.1	19.2
4	283 59.8	279 43.7	10.7	296 21.8	00.9	284 26.4	22.4	316 48.5	19.1
5	299 02.3	294 43.5	+0 11.8	311 22.5	−7 00.2	299 28.4	−1 22.2	331 50.8	−14 19.1
6	314 04.7	309 43.3	+0 12.8	326 23.2	−6 59.5	314 30.4	−1 22.0	346 53.2	−14 19.1
7	329 07.2	324 43.1	13.9	341 23.9	58.8	329 32.4	21.8	1 55.5	19.1
8	344 09.6	339 42.9	14.9	356 24.6	58.1	344 34.4	21.6	16 57.8	19.0
9	359 12.1	354 42.7	15.9	11 25.3	57.4	359 36.4	21.4	32 00.2	19.0
10	14 14.6	9 42.5	17.0	26 26.0	56.7	14 38.4	21.2	47 02.5	19.0
11	29 17.0	24 42.3	+0 18.0	41 26.7	−6 55.9	29 40.4	−1 21.0	62 04.9	−14 18.9
12	44 19.5	39 42.1	+0 19.1	56 27.4	−6 55.2	44 42.4	−1 20.9	77 07.2	−14 18.9
13	59 22.0	54 41.9	20.1	71 28.1	54.5	59 44.4	20.7	92 09.6	18.9
14	74 24.4	69 41.6	21.2	86 28.8	53.8	74 46.4	20.5	107 11.9	18.8
15	89 26.9	84 41.4	22.2	101 29.6	53.1	89 48.4	20.3	122 14.3	18.8
16	104 29.4	99 41.2	23.3	116 30.3	52.4	104 50.4	20.1	137 16.6	18.8
17	119 31.8	114 41.0	+0 24.3	131 31.0	−6 51.7	119 52.4	−1 19.9	152 19.0	−14 18.7
18	134 34.3	129 40.8	+0 25.4	146 31.7	−6 50.9	134 54.4	−1 19.7	167 21.3	−14 18.7
19	149 36.8	144 40.6	26.4	161 32.4	50.2	149 56.4	19.5	182 23.7	18.7
20	164 39.2	159 40.4	27.5	176 33.1	49.5	164 58.4	19.3	197 26.0	18.6
21	179 41.7	174 40.2	28.5	191 33.8	48.8	180 00.4	19.1	212 28.4	18.6
22	194 44.1	189 40.0	29.5	206 34.5	48.1	195 02.4	18.9	227 30.7	18.6
23	209 46.6	204 39.8	30.6	221 35.2	47.4	210 04.4	18.7	242 33.1	18.5
24	224 49.1	219 39.6	+0 31.6	236 35.9	−6 46.7	225 06.4	−1 18.5	257 35.4	−14 18.5
Dif	—	−2	+10	+7	+7	+20	+2	+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 6.ᵈ1		PHE	4ʰ: 54′.3									
	PMG: 11ʰ 56.ᵐ6				SD: 14′.8			12ʰ: 54′.4									
					PMG: 17ʰ 23ᵐ			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	180	50.9	+16	45.1	107	53.8	+25	52.0		**60 N**	1 05	2 45	3 42	7 25	85	2 38	16
1	195	50.9		45.8	122	23.6 108		47.9	41	**58**	1 44	3 02	3 53	7 49	80	2 13	22
2	210	51.0		46.5	136	53.5 109		43.6	43	**56**	2 10	17	4 03	8 08	76	1 54	25
3	225	51.0		47.1	151	23.4 109		39.2	44	**54**	30	29	12	25	72	37	29
4	240	51.1		47.8	165	53.3 109		34.7	45	**52**	2 46	39	19	38	70	23	31
5	255	51.1	+16	48.5	180	23.3 110	+25	30.1	46	**50**	3 00	3 49	4 26	8 51	67	1 11	32
6	270	51.1	+16	49.2	194	53.2 109	+25	25.3	48	**45**	3 27	4 08	4 41	9 16	64	0 45	36
7	285	51.2		49.9	209	23.3 111		20.5	48	**40**	3 47	23	4 53	36	61	25	38
8	300	51.2		50.6	223	53.3 110		15.5	50	**35**	4 03	36	5 03	9 52	59	0 07	41
9	315	51.3		51.3	238	23.4 111		10.4	51	**30**	16	4 47	12	10 06	57	** **	**
10	330	51.3		52.0	252	53.5 111	+25	05.2	52	**20**	37	5 04	28	31	53	** **	**
11	345	51.3	+16	52.7	267	23.7 112	+24	59.8	54	**10 N**	4 53	5 19	5 41	10 52	51	23 53	45
12	0	51.4	+16	53.4	281	53.8 111	+24	54.4	54	**0**	5 06	5 32	5 53	11 11	49	23 35	48
13	15	51.4		54.0	296	24.1 113		48.8	56	**10 S**	18	43	6 05	31	46	23 16	51
14	30	51.5		54.7	310	54.3 112		43.1	57	**20**	29	5 55	18	11 52	43	22 57	53
15	45	51.5		55.4	325	24.6 113		37.3	58	**30**	39	6 08	33	12 16	40	34	57
16	60	51.5		56.1	339	54.9 113		31.3	60	**35**	44	15	41	30	38	20	60
17	75	51.6	+16	56.8	354	25.3 114	+24	25.3	60	**40**	5 50	6 22	6 51	12 46	36	22 04	63
18	90	51.6	+16	57.5	8	55.7 114	+24	19.1	62	**45**	5 55	6 31	7 02	13 05	33	21 46	65
19	105	51.7		58.2	23	26.1 114		12.9	62	**50**	6 02	41	15	30	28	22	70
20	120	51.7		58.8	37	56.6 115	+24	06.5	64	**52**	04	45	22	41	27	21 11	72
21	135	51.7	+16	59.5	52	27.1 115	+24	00.0	65	**54**	07	50	29	13 54	25	20 58	75
22	150	51.8	+17	00.2	66	57.6 115	+23	53.3	67	**56**	10	6 55	36	14 10	21	43	78
23	165	51.8		00.9	81	28.2 116		46.6	67	**58**	14	7 01	45	28	17	26	82
24	180	51.8	+17	01.6	95	58.8 116	+23	39.8	68	**60 S**	6 17	7 08	7 55	14 50	11	20 04	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8ʰ 59.ᵐ3		PMG: 9ʰ 21ᵐ			PMG: 8ʰ 13ᵐ			PMG: 8ʰ 58ᵐ			PMG: 6ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	224	49.1	219	39.6	+0 31.6	236	35.9	−6 46.7	225	06.4	−1 18.5	257	35.4	−14 18.5
1	239	51.5	234	39.4	32.7	251	36.6	46.0	240	08.4	18.3	272	37.8	18.5
2	254	54.0	249	39.2	33.7	266	37.4	45.2	255	10.4	18.1	287	40.1	18.4
3	269	56.5	264	39.0	34.8	281	38.1	44.5	270	12.4	18.0	302	42.5	18.4
4	284	58.9	279	38.8	35.8	296	38.8	43.8	285	14.4	17.8	317	44.8	18.4
5	300	01.4	294	38.6	+0 36.9	311	39.5	−6 43.1	300	16.4	−1 17.6	332	47.2	−14 18.3
6	315	03.9	309	38.4	+0 37.9	326	40.2	−6 42.4	315	18.4	−1 17.4	347	49.5	−14 18.3
7	330	06.3	324	38.2	39.0	341	40.9	41.7	330	20.4	17.2	2	51.9	18.3
8	345	08.8	339	38.0	40.0	356	41.6	41.0	345	22.4	17.0	17	54.2	18.3
9	0	11.3	354	37.8	41.1	11	42.3	40.2	0	24.4	16.8	32	56.6	18.2
10	15	13.7	9	37.6	42.1	26	43.0	39.5	15	26.4	16.6	47	58.9	18.2
11	30	16.2	24	37.4	+0 43.2	41	43.7	−6 38.8	30	28.4	−1 16.4	63	01.3	−14 18.2
12	45	18.6	39	37.2	+0 44.2	56	44.5	−6 38.1	45	30.4	−1 16.2	78	03.6	−14 18.1
13	60	21.1	54	37.0	45.3	71	45.2	37.4	60	32.4	16.0	93	06.0	18.1
14	75	23.6	69	36.8	46.3	86	45.9	36.7	75	34.4	15.8	108	08.3	18.1
15	90	26.0	84	36.6	47.4	101	46.6	36.0	90	36.4	15.6	123	10.7	18.0
16	105	28.5	99	36.4	48.4	116	47.3	35.2	105	38.4	15.5	138	13.0	18.0
17	120	31.0	114	36.2	+0 49.5	131	48.0	−6 34.5	120	40.4	−1 15.3	153	15.4	−14 18.0
18	135	33.4	129	36.0	+0 50.5	146	48.7	−6 33.8	135	42.4	−1 15.1	168	17.7	−14 17.9
19	150	35.9	144	35.8	51.6	161	49.4	33.1	150	44.4	14.9	183	20.1	17.9
20	165	38.4	159	35.6	52.6	176	50.1	32.4	165	46.4	14.7	198	22.4	17.9
21	180	40.8	174	35.4	53.7	191	50.9	31.7	180	48.4	14.5	213	24.8	17.8
22	195	43.3	189	35.1	54.7	206	51.6	30.9	195	50.5	14.3	228	27.1	17.8
23	210	45.7	204	34.9	55.8	221	52.3	30.2	210	52.5	14.1	243	29.5	17.8
24	225	48.2	219	34.7	+0 56.8	236	53.0	−6 29.5	225	54.5	−1 13.9	258	31.9	−14 17.8
Dif	—			−2	+10		+7	+7		+20	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.5		LUNA Edad: 7d.1 SD: 14′.9 PMG: 18h 11m PHE { 4h: 54′.6; 12h: 54′.8; 20h: 55′.0 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	180 51.8	+17 01.6	95 58.8		+23 39.8		**60 N**	20 15	21 13	23 05	8 50	90	2 54	8
1	195 51.9	02.2	110 29.5	117	32.8	70	**58**	20 03	20 55	22 18	9 09	84	35	14
2	210 51.9	02.9	125 00.2	117	25.7	71	**56**	19 53	41	21 49	24	80	19	18
3	225 51.9	03.6	139 30.9	117	18.5	72	**54**	44	28	28	37	76	2 06	20
4	240 52.0	04.3	154 01.7	118	11.3	72	**52**	36	17	21 11	48	74	1 54	23
5	255 52.0	+17 05.0	168 32.5	118	+23 03.9	74	**50**	19 29	20 07	20 57	9 58	72	1 43	26
6	270 52.0	+17 05.6	183 03.3	118	+22 56.3	76	**45**	19 14	19 47	20 29	10 20	66	1 21	30
7	285 52.1	06.3	197 34.2	119	48.7	76	**40**	19 02	32	20 09	37	63	1 03	33
8	300 52.1	07.0	212 05.1	119	41.0	77	**35**	18 51	19	19 52	10 51	60	0 48	36
9	315 52.2	07.7	226 36.1	120	33.2	78	**30**	42	19 08	39	11 03	58	35	38
10	330 52.2	08.4	241 07.1	120	25.2	80	**20**	26	18 50	17	24	54	0 13	41
11	345 52.2	+17 09.0	255 38.2	121	+22 17.2	80	**10 N**	18 13	18 35	19 01	11 43	50	** **	**
12	0 52.3	+17 09.7	270 09.2	120	+22 09.0	82	**0**	18 00	18 22	18 47	12 00	47	** **	**
13	15 52.3	10.4	284 40.4	122	+22 00.7	83	**10 S**	17 48	18 09	35	17	44	** **	**
14	30 52.3	11.1	299 11.5	121	+21 52.4	83	**20**	34	17 57	24	35	40	23 50	54
15	45 52.3	11.7	313 42.7	122	43.9	85	**30**	19	44	13	12 56	36	31	58
16	60 52.4	12.4	328 14.0	123	35.3	86	**35**	11	37	08	13 08	33	20	61
17	75 52.4	+17 13.1	342 45.2	122	+21 26.6	87	**40**	17 01	17 30	18 02	13 22	30	23 07	64
18	90 52.4	+17 13.7	357 16.5	123	+21 17.9	87	**45**	16 49	17 21	17 56	13 38	27	22 51	68
19	105 52.5	14.4	11 47.9	124	+21 09.0	89	**50**	36	11	49	13 58	23	32	73
20	120 52.5	15.1	26 19.3	124	+21 00.0	90	**52**	29	06	47	14 08	20	23	75
21	135 52.5	15.8	40 50.7	124	+20 50.9	91	**54**	22	17 01	44	19	17	13	78
22	150 52.6	16.4	55 22.2	125	41.7	92	**56**	14	16 55	40	31	14	22 01	81
23	165 52.6	17.1	69 53.7	125	32.4	93	**58**	16 05	49	37	14 45	10	21 48	85
24	180 52.6	+17 17.8	84 25.2	125	+20 23.0	94	**60 S**	15 55	16 42	17 33	15 01	6	21 32	90

UT	ARIES PMG 8h 55m.3	VENUS Mag: −4.1 PMG: 9h 22m		MARTE Mag: +0.8 PMG: 8h 12m		JÚPITER Mag: −2.2 PMG: 8h 55m		SATURNO Mag: +0.8 PMG: 6h 45m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	225 48.2	219 34.7	+0 56.8	236 53.0	−6 29.5	225 54.5	−1 13.9	258 31.9	−14 17.8
1	240 50.7	234 34.5	57.9	251 53.7	28.8	240 56.5	13.7	273 34.2	17.7
2	255 53.1	249 34.3	+0 58.9	266 54.4	28.1	255 58.5	13.5	288 36.6	17.7
3	270 55.6	264 34.1	+1 00.0	281 55.1	27.4	271 00.5	13.3	303 38.9	17.7
4	285 58.1	279 33.9	+1 01.0	296 55.8	26.7	286 02.5	13.2	318 41.3	17.6
5	301 00.5	294 33.7	+1 02.1	311 56.6	−6 25.9	301 04.5	−1 13.0	333 43.6	−14 17.6
6	316 03.0	309 33.5	+1 03.1	326 57.3	−6 25.2	316 06.5	−1 12.8	348 46.0	−14 17.6
7	331 05.5	324 33.3	04.2	341 58.0	24.5	331 08.5	12.6	3 48.3	17.5
8	346 07.9	339 33.1	05.2	356 58.7	23.8	346 10.5	12.4	18 50.7	17.5
9	1 10.4	354 32.9	06.3	11 59.4	23.1	1 12.5	12.2	33 53.0	17.5
10	16 12.9	9 32.7	07.3	27 00.1	22.4	16 14.5	12.0	48 55.4	17.5
11	31 15.3	24 32.5	+1 08.4	42 00.8	−6 21.6	31 16.5	−1 11.8	63 57.7	−14 17.4
12	46 17.8	39 32.3	+1 09.4	57 01.5	−6 20.9	46 18.5	−1 11.6	79 00.1	−14 17.4
13	61 20.2	54 32.1	10.5	72 02.3	20.2	61 20.5	11.4	94 02.5	17.4
14	76 22.7	69 31.9	11.5	87 03.0	19.5	76 22.5	11.2	109 04.8	17.3
15	91 25.2	84 31.6	12.6	102 03.7	18.8	91 24.5	11.1	124 07.2	17.3
16	106 27.6	99 31.4	13.6	117 04.4	18.1	106 26.6	10.9	139 09.5	17.3
17	121 30.1	114 31.2	+1 14.7	132 05.1	−6 17.3	121 28.6	−1 10.7	154 11.9	−14 17.2
18	136 32.6	129 31.0	+1 15.7	147 05.8	−6 16.6	136 30.6	−1 10.5	169 14.2	−14 17.2
19	151 35.0	144 30.8	16.8	162 06.5	15.9	151 32.6	10.3	184 16.6	17.2
20	166 37.5	159 30.6	17.8	177 07.3	15.2	166 34.6	10.1	199 18.9	17.2
21	181 40.0	174 30.4	18.9	192 08.0	14.5	181 36.6	09.9	214 21.3	17.1
22	196 42.4	189 30.2	20.0	207 08.7	13.8	196 38.6	09.7	229 23.7	17.1
23	211 44.9	204 30.0	21.0	222 09.4	13.0	211 40.6	09.5	244 26.0	17.1
24	226 47.4	219 29.8	+1 22.1	237 10.1	−6 12.3	226 42.6	−1 09.3	259 28.4	−14 17.0
Dif	—	−2	+11	+7	+7	+20	+2	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 8.d1	PHE	4h: 55′.1										
	PMG: 11h 56.m5				SD: 15′.0		12h: 55′.3										
					PMG: 18h 58m		20h: 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	180	52.6	+17	17.8	84	25.2	+20	23.0		**60 N**	0 48	2 39	3 37	10 20	89	3 02	5
1	195	52.7		18.4	98	56.8 126		13.5	95	**58**	1 35	2 57	49	33	85	2 49	9
2	210	52.7		19.1	113	28.4 126	+20	04.0	95	**56**	2 03	3 12	3 59	44	81	37	12
3	225	52.7		19.8	128	00.1 127	+19	54.3	97	**54**	24	24	4 08	10 53	79	26	16
4	240	52.8		20.4	142	31.8 127		44.5	98	**52**	41	35	16	11 02	76	17	18
5	255	52.8	+17	21.1	157	03.5 127	+19	34.6	99	**50**	2 55	3 45	4 23	11 10	73	2 09	20
6	270	52.8	+17	21.8	171	35.2 127	+19	24.7	99	**45**	3 23	4 05	4 38	11 26	69	1 51	25
7	285	52.8		22.4	186	07.0 128		14.6	101	**40**	3 44	21	4 51	40	64	36	29
8	300	52.9		23.1	200	38.9 129	+19	04.4	102	**35**	4 01	34	5 02	11 51	61	24	32
9	315	52.9		23.8	215	10.7 128	+18	54.2	102	**30**	14	4 45	11	12 01	59	1 13	35
10	330	52.9		24.4	229	42.6 129		43.8	104	**20**	36	5 03	27	18	54	0 54	39
11	345	53.0	+17	25.1	244	14.6 130	+18	33.4	104	**10 N**	4 52	5 18	5 40	12 33	50	0 38	43
12	0	53.0	+17	25.8	258	46.5 129	+18	22.9	105	**0**	5 06	5 31	5 53	12 47	45	0 23	46
13	15	53.0		26.4	273	18.5 130		12.2	107	**10 S**	18	44	6 06	13 01	41	0 07	50
14	30	53.0		27.1	287	50.6 131	+18	01.5	107	**20**	29	5 56	19	15	38	** **	**
15	45	53.1		27.8	302	22.6 130	+17	50.7	108	**30**	40	6 09	34	32	33	** **	**
16	60	53.1		28.4	316	54.7 131		39.8	109	**35**	46	16	43	41	31	** **	**
17	75	53.1	+17	29.1	331	26.8 131	+17	28.9	109	**40**	5 51	6 24	6 53	13 52	28	** **	**
18	90	53.1	+17	29.7	345	59.0 132	+17	17.8	111	**45**	5 58	6 33	7 04	14 05	24	23 59	69
19	105	53.2		30.4	0	31.2 132	+17	06.6	112	**50**	6 04	43	18	21	19	45	74
20	120	53.2		31.1	15	03.4 132	+16	55.4	112	**52**	07	48	25	28	17	38	77
21	135	53.2		31.7	29	35.6 132		44.1	113	**54**	10	53	32	36	14	31	79
22	150	53.2		32.4	44	07.9 133		32.7	114	**56**	13	6 59	40	45	11	22	83
23	165	53.3		33.0	58	40.2 133		21.2	115	**58**	17	7 05	7 49	14 55	8	13	86
24	180	53.3	+17	33.7	73	12.5 133	+16	09.6	116	**60 S**	6 21	7 12	8 00	15 07	4	23 02	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8h 51.m4		PMG: 9h 22m			PMG: 8h 11m			PMG: 8h 52m			PMG: 6h 41m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	226	47.4	219	29.8	+1 22.1	237	10.1	−6 12.3	226	42.6	−1 09.3	259	28.4	−14 17.0
1	241	49.8	234	29.6	23.1	252	10.8	11.6	241	44.6	09.2	274	30.7	17.0
2	256	52.3	249	29.4	24.2	267	11.5	10.9	256	46.6	09.0	289	33.1	17.0
3	271	54.7	264	29.2	25.2	282	12.3	10.2	271	48.6	08.8	304	35.4	17.0
4	286	57.2	279	28.9	26.3	297	13.0	09.5	286	50.6	08.6	319	37.8	16.9
5	301	59.7	294	28.7	+1 27.3	312	13.7	−6 08.7	301	52.7	−1 08.4	334	40.2	−14 16.9
6	317	02.1	309	28.5	+1 28.4	327	14.4	−6 08.0	316	54.7	−1 08.2	349	42.5	−14 16.9
7	332	04.6	324	28.3	29.4	342	15.1	07.3	331	56.7	08.0	4	44.9	16.8
8	347	07.1	339	28.1	30.5	357	15.8	06.6	346	58.7	07.8	19	47.2	16.8
9	2	09.5	354	27.9	31.5	12	16.6	05.9	2	00.7	07.6	34	49.6	16.8
10	17	12.0	9	27.7	32.6	27	17.3	05.1	17	02.7	07.4	49	51.9	16.8
11	32	14.5	24	27.5	+1 33.6	42	18.0	−6 04.4	32	04.7	−1 07.3	64	54.3	−14 16.7
12	47	16.9	39	27.3	+1 34.7	57	18.7	−6 03.7	47	06.7	−1 07.1	79	56.7	−14 16.7
13	62	19.4	54	27.1	35.8	72	19.4	03.0	62	08.7	06.9	94	59.0	16.7
14	77	21.8	69	26.9	36.8	87	20.1	02.3	77	10.7	06.7	110	01.4	16.6
15	92	24.3	84	26.6	37.9	102	20.9	01.6	92	12.7	06.5	125	03.7	16.6
16	107	26.8	99	26.4	38.9	117	21.6	00.8	107	14.8	06.3	140	06.1	16.6
17	122	29.2	114	26.2	+1 40.0	132	22.3	−6 00.1	122	16.8	−1 06.1	155	08.5	−14 16.6
18	137	31.7	129	26.0	+1 41.0	147	23.0	−5 59.4	137	18.8	−1 05.9	170	10.8	−14 16.5
19	152	34.2	144	25.8	42.1	162	23.7	58.7	152	20.8	05.7	185	13.2	16.5
20	167	36.6	159	25.6	43.1	177	24.4	58.0	167	22.8	05.6	200	15.5	16.5
21	182	39.1	174	25.4	44.2	192	25.2	57.2	182	24.8	05.4	215	17.9	16.4
22	197	41.6	189	25.2	45.3	207	25.9	56.5	197	26.8	05.2	230	20.3	16.4
23	212	44.0	204	25.0	46.3	222	26.6	55.8	212	28.8	05.0	245	22.6	16.4
24	227	46.5	219	24.8	+1 47.4	237	27.3	−5 55.1	227	30.8	−1 04.8	260	25.0	−14 16.4
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 9^{d}.1		PHE	4^{h}: 55′.8								
	PMG: 11^{h} 56^{m}.4		SD: 15′.2			12^{h}: 56′.1								
			PMG: 19^{h} 43^{m}			20^{h}: 56′.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 53.3	+17 33.7	73 12.5		+16 09.6		**60 N**	20 20	21 20	23 30	11 49	90	3 07	3
1	195 53.3	34.3	87 44.9	134	+15 57.9	117	**58**	20 08	21 01	22 28	11 58	86	2 58	6
2	210 53.3	35.0	102 17.2	133	46.2	117	**56**	19 57	20 45	21 57	12 05	83	49	10
3	225 53.4	35.7	116 49.6	134	34.3	119	**54**	48	32	34	12	80	42	12
4	240 53.4	36.3	131 22.1	135	22.4	119	**52**	40	21	16	18	77	35	15
5	255 53.4	+17 37.0	145 54.5	134	+15 10.4	120	**50**	19 32	20 11	21 01	12 23	75	2 29	17
6	270 53.4	+17 37.6	160 27.0	135	+14 58.4	120	**45**	19 16	19 50	20 32	12 35	70	2 16	22
7	285 53.5	38.3	174 59.5	135	46.2	122	**40**	19 04	34	20 11	44	66	2 05	26
8	300 53.5	38.9	189 32.0	135	34.0	122	**35**	18 53	20	19 54	12 52	63	1 56	29
9	315 53.5	39.6	204 04.5	135	21.7	123	**30**	43	19 09	40	13 00	59	48	32
10	330 53.5	40.2	218 37.1	136	+14 09.3	124	**20**	27	18 50	18	12	54	33	37
11	345 53.5	+17 40.9	233 09.7	136	+13 56.8	125	**10 N**	18 13	18 35	19 01	13 23	49	1 21	41
12	0 53.6	+17 41.5	247 42.3	136	+13 44.3	125	**0**	18 00	18 22	18 47	13 32	45	1 09	45
13	15 53.6	42.2	262 14.9	136	31.7	126	**10 S**	17 47	18 09	34	42	41	0 57	49
14	30 53.6	42.8	276 47.5	136	19.0	127	**20**	33	17 56	23	13 53	36	44	54
15	45 53.6	43.5	291 20.1	136	+13 06.3	127	**30**	18	43	12	14 05	31	29	59
16	60 53.7	44.1	305 52.8	137	+12 53.4	129	**35**	17 09	36	06	12	28	21	61
17	75 53.7	+17 44.8	320 25.5	137	+12 40.5	129	**40**	16 59	17 28	18 00	14 20	25	0 11	65
18	90 53.7	+17 45.4	334 58.2	137	+12 27.6	129	**45**	16 47	17 18	17 54	14 29	21	** **	**
19	105 53.7	46.1	349 30.9	137	14.5	131	**50**	33	08	47	40	16	** **	**
20	120 53.7	46.7	4 03.6	137	+12 01.4	131	**52**	26	17 03	44	45	14	** **	**
21	135 53.8	47.4	18 36.3	137	+11 48.2	132	**54**	19	16 58	41	50	12	** **	**
22	150 53.8	48.0	33 09.0	137	35.0	132	**56**	10	52	37	14 56	9	** **	**
23	165 53.8	48.7	47 41.8	138	21.7	133	**58**	16 01	45	33	15 03	6	** **	**
24	180 53.8	+17 49.3	62 14.5	137	+11 08.3	134	**60 S**	15 50	16 38	17 29	15 11	2	** **	**

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.1		Mag: +0.8		Mag: −2.2		Mag: +0.8	
	8^{h} 47^{m}.5	PMG: 9^{h} 22^{m}		PMG: 8^{h} 10^{m}		PMG: 8^{h} 49^{m}		PMG: 6^{h} 37^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	227 46.5	219 24.8	+1 47.4	237 27.3	−5 55.1	227 30.8	−1 04.8	260 25.0	−14 16.4
1	242 49.0	234 24.5	48.4	252 28.0	54.4	242 32.9	04.6	275 27.3	16.3
2	257 51.4	249 24.3	49.5	267 28.7	53.7	257 34.9	04.4	290 29.7	16.3
3	272 53.9	264 24.1	50.5	282 29.5	52.9	272 36.9	04.2	305 32.1	16.3
4	287 56.3	279 23.9	51.6	297 30.2	52.2	287 38.9	04.0	320 34.4	16.2
5	302 58.8	294 23.7	+1 52.6	312 30.9	−5 51.5	302 40.9	−1 03.9	335 36.8	−14 16.2
6	318 01.3	309 23.5	+1 53.7	327 31.6	−5 50.8	317 42.9	−1 03.7	350 39.1	−14 16.2
7	333 03.7	324 23.3	54.8	342 32.3	50.1	332 44.9	03.5	5 41.5	16.2
8	348 06.2	339 23.1	55.8	357 33.0	49.3	347 46.9	03.3	20 43.9	16.1
9	3 08.7	354 22.8	56.9	12 33.8	48.6	2 48.9	03.1	35 46.2	16.1
10	18 11.1	9 22.6	57.9	27 34.5	47.9	17 51.0	02.9	50 48.6	16.1
11	33 13.6	24 22.4	+1 59.0	42 35.2	−5 47.2	32 53.0	−1 02.7	65 51.0	−14 16.1
12	48 16.1	39 22.2	+2 00.0	57 35.9	−5 46.5	47 55.0	−1 02.5	80 53.3	−14 16.0
13	63 18.5	54 22.0	+2 01.1	72 36.6	45.7	62 57.0	02.4	95 55.7	16.0
14	78 21.0	69 21.8	02.1	87 37.4	45.0	77 59.0	02.2	110 58.0	16.0
15	93 23.5	84 21.6	03.2	102 38.1	44.3	93 01.0	02.0	126 00.4	15.9
16	108 25.9	99 21.4	04.3	117 38.8	43.6	108 03.0	01.8	141 02.8	15.9
17	123 28.4	114 21.1	+2 05.3	132 39.5	−5 42.9	123 05.1	−1 01.6	156 05.1	−14 15.9
18	138 30.8	129 20.9	+2 06.4	147 40.2	−5 42.1	138 07.1	−1 01.4	171 07.5	−14 15.9
19	153 33.3	144 20.7	07.4	162 41.0	41.4	153 09.1	01.2	186 09.9	15.8
20	168 35.8	159 20.5	08.5	177 41.7	40.7	168 11.1	01.0	201 12.2	15.8
21	183 38.2	174 20.3	09.5	192 42.4	40.0	183 13.1	00.9	216 14.6	15.8
22	198 40.7	189 20.1	10.6	207 43.1	39.3	198 15.1	00.7	231 16.9	15.8
23	213 43.2	204 19.9	11.7	222 43.8	38.5	213 17.1	00.5	246 19.3	15.7
24	228 45.6	219 19.7	+2 12.7	237 44.6	−5 37.8	228 19.2	−1 00.3	261 21.7	−14 15.7
Dif	—	−2	+11	+7	+7	+20	+2	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 10ᵈ.1		PHE	4ʰ: 56′.6									
	PMG: 11ʰ 56ᵐ.4				SD: 15′.4			12ʰ: 56′.9									
					PMG: 20ʰ 28ᵐ			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	180	53.8	+17	49.3	62	14.5	+11	08.3		**60 N**	0 22	2 32	3 32	13 19	92	3 10	2
1	195	53.8		49.9	76	47.3 138	+10	54.8	135	**58**	1 24	2 51	44	24	88	3 04	6
2	210	53.8		50.6	91	20.1 138		41.3	135	**56**	1 56	3 07	3 55	28	84	2 59	8
3	225	53.9		51.2	105	52.8 137		27.7	136	**54**	2 18	20	4 04	32	81	54	11
4	240	53.9		51.9	120	25.6 138		14.1	136	**52**	36	32	13	35	79	50	14
5	255	53.9	+17	52.5	134	58.4 138	+10	00.4	137	**50**	2 51	3 42	4 20	13 38	76	2 46	16
6	270	53.9	+17	53.2	149	31.2 138	+9	46.6	138	**45**	3 20	4 02	4 36	13 45	71	2 38	20
7	285	53.9		53.8	164	04.0 138		32.8	138	**40**	41	19	4 49	50	67	31	24
8	300	54.0		54.4	178	36.7 137		18.9	139	**35**	3 58	32	5 00	55	63	25	28
9	315	54.0		55.1	193	09.5 138	+9	04.9	140	**30**	4 12	4 43	09	13 59	60	20	30
10	330	54.0		55.7	207	42.3 138	+8	50.9	140	**20**	35	5 02	26	14 06	54	10	36
11	345	54.0	+17	56.4	222	15.1 138	+8	36.9	140	**10 N**	4 52	5 18	5 40	14 12	50	2 02	40
12	0	54.0	+17	57.0	236	47.9 138	+8	22.8	141	**0**	5 06	5 31	5 53	14 17	46	1 54	45
13	15	54.0		57.6	251	20.7 138	+8	08.6	142	**10 S**	18	44	6 06	23	41	46	49
14	30	54.0		58.3	265	53.4 137	+7	54.3	143	**20**	30	5 57	20	29	36	38	54
15	45	54.1		58.9	280	26.2 138		40.1	142	**30**	41	6 10	35	36	31	28	59
16	60	54.1	+17	59.6	294	59.0 138		25.7	144	**35**	47	18	44	40	28	22	63
17	75	54.1	+18	00.2	309	31.7 137	+7	11.3	144	**40**	5 53	6 26	6 55	14 45	24	1 16	66
18	90	54.1	+18	00.8	324	04.5 138	+6	56.9	144	**45**	6 00	6 35	7 07	14 50	20	1 08	70
19	105	54.1		01.5	338	37.2 137		42.4	145	**50**	07	46	21	56	15	0 59	75
20	120	54.1		02.1	353	09.9 137		27.9	145	**52**	10	51	28	14 59	13	55	77
21	135	54.2		02.7	7	42.6 137	+6	13.3	146	**54**	13	6 56	35	15 02	11	50	80
22	150	54.2		03.4	22	15.3 137	+5	58.6	147	**56**	17	7 02	44	05	8	45	83
23	165	54.2		04.0	36	48.0 137		43.9	147	**58**	20	09	7 53	09	5	39	86
24	180	54.2	+18	04.6	51	20.7 137	+5	29.2	147	**60 S**	6 24	7 16	8 04	15 13	2	0 32	91

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8ʰ 43ᵐ.5		PMG: 9ʰ 23ᵐ			PMG: 8ʰ 09ᵐ			PMG: 8ʰ 46ᵐ			PMG: 6ʰ 34ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	228	45.6	219	19.7	+2 12.7	237	44.6	−5 37.8	228	19.2	−1 00.3	261	21.7	−14 15.7
1	243	48.1	234	19.4	13.8	252	45.3	37.1	243	21.2	−1 00.1	276	24.0	15.7
2	258	50.6	249	19.2	14.8	267	46.0	36.4	258	23.2	−0 59.9	291	26.4	15.7
3	273	53.0	264	19.0	15.9	282	46.7	35.7	273	25.2	59.7	306	28.8	15.6
4	288	55.5	279	18.8	16.9	297	47.4	34.9	288	27.2	59.6	321	31.1	15.6
5	303	57.9	294	18.6	+2 18.0	312	48.2	−5 34.2	303	29.2	−0 59.4	336	33.5	−14 15.6
6	319	00.4	309	18.4	+2 19.1	327	48.9	−5 33.5	318	31.2	−0 59.2	351	35.9	−14 15.5
7	334	02.9	324	18.1	20.1	342	49.6	32.8	333	33.3	59.0	6	38.2	15.5
8	349	05.3	339	17.9	21.2	357	50.3	32.1	348	35.3	58.8	21	40.6	15.5
9	4	07.8	354	17.7	22.2	12	51.0	31.3	3	37.3	58.6	36	43.0	15.5
10	19	10.3	9	17.5	23.3	27	51.8	30.6	18	39.3	58.4	51	45.3	15.4
11	34	12.7	24	17.3	+2 24.3	42	52.5	−5 29.9	33	41.3	−0 58.2	66	47.7	−14 15.4
12	49	15.2	39	17.1	+2 25.4	57	53.2	−5 29.2	48	43.3	−0 58.1	81	50.1	−14 15.4
13	64	17.7	54	16.9	26.5	72	53.9	28.5	63	45.4	57.9	96	52.4	15.4
14	79	20.1	69	16.6	27.5	87	54.6	27.7	78	47.4	57.7	111	54.8	15.3
15	94	22.6	84	16.4	28.6	102	55.4	27.0	93	49.4	57.5	126	57.2	15.3
16	109	25.1	99	16.2	29.6	117	56.1	26.3	108	51.4	57.3	141	59.5	15.3
17	124	27.5	114	16.0	+2 30.7	132	56.8	−5 25.6	123	53.4	−0 57.1	157	01.9	−14 15.3
18	139	30.0	129	15.8	+2 31.8	147	57.5	−5 24.9	138	55.4	−0 56.9	172	04.3	−14 15.2
19	154	32.4	144	15.6	32.8	162	58.3	24.1	153	57.5	56.8	187	06.6	15.2
20	169	34.9	159	15.3	33.9	177	59.0	23.4	168	59.5	56.6	202	09.0	15.2
21	184	37.4	174	15.1	34.9	192	59.7	22.7	184	01.5	56.4	217	11.4	15.2
22	199	39.8	189	14.9	36.0	208	00.4	22.0	199	03.5	56.2	232	13.7	15.1
23	214	42.3	204	14.7	37.0	223	01.1	21.2	214	05.5	56.0	247	16.1	15.1
24	229	44.8	219	14.5	+2 38.1	238	01.9	−5 20.5	229	07.5	−0 55.8	262	18.5	−14 15.1
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL				☾ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 11^{d}.1		PHE	4^{h}: 57′.5								
	PMG: 11^{h} 56^{m}.4				SD: 15′.6			12^{h}: 57′.8								
					PMG: 21^{h} 14^{m}			20^{h}: 58′.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	54.2	+18	04.6	51	20.7	+5	29.2	**60 N**	20 25	21 26	** **	14 51	94	3 12	2
1	195	54.2		05.3	65	53.3^{136}	+5	14.4^{148}	**58**	12	21 06	22 39	52	90	10	5
2	210	54.2		05.9	80	25.9^{136}	+4	59.6^{148}	**56**	20 01	20 50	22 04	52	88	07	8
3	225	54.2		06.5	94	58.6^{137}		44.7^{149}	**54**	19 51	36	21 40	53	85	05	11
4	240	54.2		07.1	109	31.1^{135}		29.8^{149}	**52**	43	24	21	54	82	04	13
5	255	54.3	+18	07.8	124	03.7^{136}	+4	14.9^{149}	**50**	19 35	20 14	21 06	14 54	80	3 02	15
6	270	54.3	+18	08.4	138	36.3^{136}	+3	59.9^{150}	**45**	19 19	19 53	20 36	14 56	74	2 58	20
7	285	54.3		09.0	153	08.8^{135}		44.9^{150}	**40**	19 06	36	20 13	57	69	55	24
8	300	54.3		09.7	167	41.3^{135}		29.8^{151}	**35**	18 54	22	19 56	58	66	53	27
9	315	54.3		10.3	182	13.8^{135}	+3	14.7^{151}	**30**	44	19 10	42	14 59	62	50	31
10	330	54.3		10.9	196	46.2^{134}	+2	59.5^{152}	**20**	28	18 51	19	15 00	57	46	36
11	345	54.3	+18	11.5	211	18.6^{134}	+2	44.4^{151}	**10 N**	18 13	18 36	19 02	15 02	51	2 42	42
12	0	54.3	+18	12.2	225	51.0^{134}	+2	29.2^{152}	**0**	18 00	18 22	18 47	15 03	47	2 39	46
13	15	54.3		12.8	240	23.4^{134}	+2	13.9^{153}	**10 S**	17 47	18 09	34	04	42	35	51
14	30	54.3		13.4	254	55.7^{133}	+1	58.6^{153}	**20**	33	17 56	22	05	37	32	55
15	45	54.4		14.0	269	28.0^{133}		43.3^{153}	**30**	17	42	11	07	31	27	61
16	60	54.4		14.7	284	00.3^{133}		28.0^{153}	**35**	17 07	34	18 05	08	28	25	64
17	75	54.4	+18	15.3	298	32.5^{132}	+1	12.7^{153}	**40**	16 57	17 26	17 58	15 09	25	2 22	68
18	90	54.4	+18	15.9	313	04.7^{132}	+0	57.3^{154}	**45**	16 45	17 16	17 52	15 10	21	2 18	73
19	105	54.4		16.5	327	36.8^{131}		41.9^{154}	**50**	30	05	44	11	16	14	78
20	120	54.4		17.2	342	08.9^{131}		26.4^{155}	**52**	23	17 00	41	12	13	12	80
21	135	54.4		17.8	356	41.0^{131}	+0	11.0^{154}	**54**	15	16 55	38	13	11	10	83
22	150	54.4		18.4	11	13.0^{130}	−0	04.5^{155}	**56**	16 06	48	34	13	9	08	86
23	165	54.4		19.0	25	45.0^{130}		20.0^{155}	**58**	15 57	42	30	14	6	05	89
24	180	54.4	+18	19.6	40	17.0^{130}	−0	35.6^{156}	**60 S**	15 46	16 34	17 26	15 15	2	2 03	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.1			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8^{h} 39^{m}.6		PMG: 9^{h} 23^{m}			PMG: 8^{h} 07^{m}			PMG: 8^{h} 42^{m}			PMG: 6^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	229	44.8	219	14.5	+2 38.1	238	01.9	−5 20.5	229	07.5	−0 55.8	262	18.5	−14 15.1
1	244	47.2	234	14.2	39.2	253	02.6	19.8	244	09.6	55.6	277	20.8	15.1
2	259	49.7	249	14.0	40.2	268	03.3	19.1	259	11.6	55.5	292	23.2	15.0
3	274	52.2	264	13.8	41.3	283	04.0	18.4	274	13.6	55.3	307	25.6	15.0
4	289	54.6	279	13.6	42.3	298	04.8	17.6	289	15.6	55.1	322	27.9	15.0
5	304	57.1	294	13.4	+2 43.4	313	05.5	−5 16.9	304	17.6	−0 54.9	337	30.3	−14 15.0
6	319	59.6	309	13.2	+2 44.5	328	06.2	−5 16.2	319	19.6	−0 54.7	352	32.7	−14 14.9
7	335	02.0	324	12.9	45.5	343	06.9	15.5	334	21.7	54.5	7	35.0	14.9
8	350	04.5	339	12.7	46.6	358	07.6	14.8	349	23.7	54.3	22	37.4	14.9
9	5	06.9	354	12.5	47.6	13	08.4	14.0	4	25.7	54.2	37	39.8	14.9
10	20	09.4	9	12.3	48.7	28	09.1	13.3	19	27.7	54.0	52	42.2	14.8
11	35	11.9	24	12.1	+2 49.8	43	09.8	−5 12.6	34	29.7	−0 53.8	67	44.5	−14 14.8
12	50	14.3	39	11.8	+2 50.8	58	10.5	−5 11.9	49	31.8	−0 53.6	82	46.9	−14 14.8
13	65	16.8	54	11.6	51.9	73	11.3	11.1	64	33.8	53.4	97	49.3	14.8
14	80	19.3	69	11.4	52.9	88	12.0	10.4	79	35.8	53.2	112	51.6	14.7
15	95	21.7	84	11.2	54.0	103	12.7	09.7	94	37.8	53.1	127	54.0	14.7
16	110	24.2	99	11.0	55.0	118	13.4	09.0	109	39.8	52.9	142	56.4	14.7
17	125	26.7	114	10.7	+2 56.1	133	14.2	−5 08.3	124	41.9	−0 52.7	157	58.7	−14 14.7
18	140	29.1	129	10.5	+2 57.2	148	14.9	−5 07.5	139	43.9	−0 52.5	173	01.1	−14 14.6
19	155	31.6	144	10.3	58.2	163	15.6	06.8	154	45.9	52.3	188	03.5	14.6
20	170	34.0	159	10.1	+2 59.3	178	16.3	06.1	169	47.9	52.1	203	05.9	14.6
21	185	36.5	174	09.9	+3 00.3	193	17.0	05.4	184	49.9	52.0	218	08.2	14.6
22	200	39.0	189	09.6	01.4	208	17.8	04.6	199	52.0	51.8	233	10.6	14.5
23	215	41.4	204	09.4	02.5	223	18.5	03.9	214	54.0	51.6	248	13.0	14.5
24	230	43.9	219	09.2	+3 03.5	238	19.2	−5 03.2	229	56.0	−0 51.4	263	15.3	−14 14.5
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 12^{d}.1		PHE	4^{h}: 58′.4									
	PMG: 11^{h} 56^{m}.4				SD: 15′.9			12^{h}: 58′.7									
					PMG: 22^{h} 01^{m}			20^{h}: 59′.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	180	54.4	+18	19.6	40	17.0	−0	35.6		**60 N**	** **	2 26	3 27	16 25	100	3 14	2
1	195	54.4		20.3	54	48.9 129	−0	51.1 155		**58**	1 14	2 46	40	22	96	15	5
2	210	54.4		20.9	69	20.7 128	−1	06.7 156		**56**	1 48	3 02	3 51	20	92	15	9
3	225	54.5		21.5	83	52.5 128		22.2 155		**54**	2 12	16	4 01	18	88	16	11
4	240	54.5		22.1	98	24.3 128		37.8 156		**52**	31	28	09	16	85	17	14
5	255	54.5	+18	22.7	112	56.0 127	−1	53.4 156		**50**	2 47	3 38	4 17	16 14	83	3 17	16
6	270	54.5	+18	23.3	127	27.6 126	−2	09.1 157		**45**	3 17	4 00	4 33	16 10	77	3 18	22
7	285	54.5		24.0	141	59.2 126		24.7 156		**40**	39	16	47	06	73	19	26
8	300	54.5		24.6	156	30.8 126		40.3 156		**35**	3 56	30	4 58	04	68	20	30
9	315	54.5		25.2	171	02.3 125	−2	56.0 157		**30**	4 11	4 42	5 08	16 01	65	21	33
10	330	54.5		25.8	185	33.7 124	−3	11.6 156		**20**	33	5 01	25	15 57	59	22	39
11	345	54.5	+18	26.4	200	05.1 124	−3	27.3 157		**10 N**	4 51	5 17	5 39	15 53	54	3 24	43
12	0	54.5	+18	27.0	214	36.4 123	−3	42.9 156		**0**	5 06	5 31	5 53	15 50	49	3 25	48
13	15	54.5		27.6	229	07.7 123	−3	58.6 157		**10 S**	19	44	6 06	46	45	26	52
14	30	54.5		28.3	243	38.9 122	−4	14.3 157		**20**	31	5 57	20	42	40	27	58
15	45	54.5		28.9	258	10.0 121		29.9 156		**30**	42	6 11	37	38	34	28	64
16	60	54.5		29.5	272	41.1 121	−4	45.6 157		**35**	48	19	46	36	31	29	67
17	75	54.5	+18	30.1	287	12.1 120	−5	01.3 157		**40**	5 55	6 27	6 56	15 34	27	3 30	71
18	90	54.5	+18	30.7	301	43.0 119	−5	16.9 156		**45**	6 02	6 37	7 09	15 31	22	3 31	75
19	105	54.5		31.3	316	13.9 119		32.6 157		**50**	09	48	24	27	18	32	81
20	120	54.5		31.9	330	44.7 118	−5	48.2 156		**52**	12	54	31	25	16	32	84
21	135	54.5		32.5	345	15.5 118	−6	03.9 157		**54**	16	6 59	39	24	12	33	86
22	150	54.5		33.1	359	46.1 116		19.5 156		**56**	20	7 05	47	22	9	34	89
23	165	54.5		33.7	14	16.7 116		35.1 156		**58**	24	12	7 57	20	6	34	93
24	180	54.5	+18	34.3	28	47.2 115	−6	50.7 156		**60 S**	6 28	7 20	8 09	15 17	3	3 35	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8^{h} 35^{m}.7		PMG: 9^{h} 24^{m}			PMG: 8^{h} 06^{m}			PMG: 8^{h} 39^{m}			PMG: 6^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	230	43.9	219	09.2	+3 03.5	238	19.2	−5 03.2	229	56.0	−0 51.4	263	15.3	−14 14.5
1	245	46.4	234	09.0	04.6	253	19.9	02.5	244	58.0	51.2	278	17.7	14.5
2	260	48.8	249	08.7	05.6	268	20.7	01.8	260	00.0	51.0	293	20.1	14.4
3	275	51.3	264	08.5	06.7	283	21.4	01.0	275	02.1	50.8	308	22.5	14.4
4	290	53.8	279	08.3	07.8	298	22.1	−5 00.3	290	04.1	50.7	323	24.8	14.4
5	305	56.2	294	08.1	+3 08.8	313	22.8	−4 59.6	305	06.1	−0 50.5	338	27.2	−14 14.4
6	320	58.7	309	07.9	+3 09.9	328	23.6	−4 58.9	320	08.1	−0 50.3	353	29.6	−14 14.4
7	336	01.2	324	07.6	10.9	343	24.3	58.1	335	10.2	50.1	8	31.9	14.3
8	351	03.6	339	07.4	12.0	358	25.0	57.4	350	12.2	49.9	23	34.3	14.3
9	6	06.1	354	07.2	13.1	13	25.7	56.7	5	14.2	49.7	38	36.7	14.3
10	21	08.5	9	07.0	14.1	28	26.5	56.0	20	16.2	49.6	53	39.1	14.3
11	36	11.0	24	06.7	+3 15.2	43	27.2	−4 55.2	35	18.2	−0 49.4	68	41.4	−14 14.2
12	51	13.5	39	06.5	+3 16.2	58	27.9	−4 54.5	50	20.3	−0 49.2	83	43.8	−14 14.2
13	66	15.9	54	06.3	17.3	73	28.7	53.8	65	22.3	49.0	98	46.2	14.2
14	81	18.4	69	06.1	18.4	88	29.4	53.1	80	24.3	48.8	113	48.6	14.2
15	96	20.9	84	05.8	19.4	103	30.1	52.4	95	26.3	48.7	128	50.9	14.1
16	111	23.3	99	05.6	20.5	118	30.8	51.6	110	28.4	48.5	143	53.3	14.1
17	126	25.8	114	05.4	+3 21.5	133	31.6	−4 50.9	125	30.4	−0 48.3	158	55.7	−14 14.1
18	141	28.3	129	05.2	+3 22.6	148	32.3	−4 50.2	140	32.4	−0 48.1	173	58.1	−14 14.1
19	156	30.7	144	04.9	23.7	163	33.0	49.5	155	34.4	47.9	189	00.4	14.0
20	171	33.2	159	04.7	24.7	178	33.7	48.7	170	36.5	47.7	204	02.8	14.0
21	186	35.6	174	04.5	25.8	193	34.5	48.0	185	38.5	47.6	219	05.2	14.0
22	201	38.1	189	04.3	26.8	208	35.2	47.3	200	40.5	47.4	234	07.6	14.0
23	216	40.6	204	04.0	27.9	223	35.9	46.6	215	42.5	47.2	249	09.9	14.0
24	231	43.0	219	03.8	+3 29.0	238	36.6	−4 45.8	230	44.6	−0 47.0	264	12.3	−14 13.9
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 13^{d}.1		PHE	4^{h}: 59′.3								
	PMG: 11^{h} 56^{m}.4		SD: 16′.1			12^{h}: 59′.5								
			PMG: 22^{h} 51^{m}			20^{h}: 59′.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	180 54.5	+18 34.3	28 47.2		−6 50.7		**60 N**	20 30	21 33	** **	18 05	107	3 16	3
1	195 54.5	34.9	43 17.7	115	−7 06.3	156	**58**	16	21 12	22 51	17 58	101	20	7
2	210 54.5	35.5	57 48.0	113	21.8	155	**56**	20 05	20 55	22 12	52	97	24	11
3	225 54.5	36.2	72 18.3	113	37.4	156	**54**	19 55	40	21 46	46	94	27	14
4	240 54.5	36.8	86 48.6	113	−7 52.9	155	**52**	46	28	26	41	90	31	16
5	255 54.5	+18 37.4	101 18.7	111	−8 08.4	155	**50**	19 38	20 17	21 10	17 37	87	3 33	19
6	270 54.5	+18 38.0	115 48.7	110	−8 23.9	155	**45**	19 21	19 55	20 39	17 27	81	3 40	24
7	285 54.5	38.6	130 18.7	110	39.3	154	**40**	19 07	38	20 16	19	77	45	29
8	300 54.5	39.2	144 48.6	109	−8 54.7	154	**35**	18 56	24	19 58	12	73	50	32
9	315 54.5	39.8	159 18.4	108	−9 10.1	154	**30**	46	19 12	43	17 06	69	3 54	35
10	330 54.5	40.4	173 48.1	107	25.5	154	**20**	29	18 52	20	16 56	63	4 01	41
11	345 54.5	+18 41.0	188 17.7	106	−9 40.8	153	**10 N**	18 14	18 36	19 02	16 47	58	4 07	46
12	0 54.5	+18 41.6	202 47.3	106	−9 56.1	153	**0**	18 00	18 22	18 47	16 39	53	4 13	51
13	15 54.5	42.2	217 16.7	104	−10 11.4	153	**10 S**	17 46	18 08	34	31	49	18	56
14	30 54.5	42.8	231 46.1	104	26.6	152	**20**	32	17 55	22	22	44	25	61
15	45 54.5	43.4	246 15.4	103	41.8	152	**30**	15	41	10	12	39	32	67
16	60 54.5	44.0	260 44.6	102	−10 56.9	151	**35**	17 06	33	18 03	07	35	36	70
17	75 54.5	+18 44.6	275 13.7	101	−11 12.0	151	**40**	16 55	17 24	17 57	16 01	31	4 41	74
18	90 54.5	+18 45.2	289 42.6	99	−11 27.1	151	**45**	16 42	17 14	17 50	15 53	27	4 46	79
19	105 54.5	45.8	304 11.5	99	42.1	150	**50**	27	17 03	42	45	21	53	85
20	120 54.5	46.4	318 40.3	98	−11 57.0	149	**52**	20	16 57	39	41	18	56	87
21	135 54.5	46.9	333 09.1	98	−12 11.9	149	**54**	12	52	35	36	16	4 59	91
22	150 54.5	47.5	347 37.7	96	26.8	149	**56**	16 03	45	31	31	13	5 03	94
23	165 54.5	48.1	2 06.2	95	41.6	148	**58**	15 53	38	27	26	9	07	98
24	180 54.5	+18 48.7	16 34.6	94	−12 56.3	147	**60 S**	15 41	16 30	17 22	15 20	4	5 12	102

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: +0.8		Mag: −2.2		Mag: +0.8	
	8^{h} 31^{m}.7	PMG: 9^{h} 24^{m}		PMG: 8^{h} 05^{m}		PMG: 8^{h} 36^{m}		PMG: 6^{h} 22^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	231 43.0	219 03.8	+3 29.0	238 36.6	−4 45.8	230 44.6	−0 47.0	264 12.3	−14 13.9
1	246 45.5	234 03.6	30.0	253 37.4	45.1	245 46.6	46.8	279 14.7	13.9
2	261 48.0	249 03.4	31.1	268 38.1	44.4	260 48.6	46.6	294 17.1	13.9
3	276 50.4	264 03.1	32.1	283 38.8	43.7	275 50.6	46.5	309 19.4	13.9
4	291 52.9	279 02.9	33.2	298 39.5	42.9	290 52.7	46.3	324 21.8	13.8
5	306 55.4	294 02.7	+3 34.3	313 40.3	−4 42.2	305 54.7	−0 46.1	339 24.2	−14 13.8
6	321 57.8	309 02.5	+3 35.3	328 41.0	−4 41.5	320 56.7	−0 45.9	354 26.6	−14 13.8
7	337 00.3	324 02.2	36.4	343 41.7	40.8	335 58.7	45.7	9 28.9	13.8
8	352 02.8	339 02.0	37.4	358 42.5	40.1	351 00.8	45.6	24 31.3	13.8
9	7 05.2	354 01.8	38.5	13 43.2	39.3	6 02.8	45.4	39 33.7	13.7
10	22 07.7	9 01.6	39.6	28 43.9	38.6	21 04.8	45.2	54 36.1	13.7
11	37 10.1	24 01.3	+3 40.6	43 44.6	−4 37.9	36 06.8	−0 45.0	69 38.4	−14 13.7
12	52 12.6	39 01.1	+3 41.7	58 45.4	−4 37.2	51 08.9	−0 44.8	84 40.8	−14 13.7
13	67 15.1	54 00.9	42.7	73 46.1	36.4	66 10.9	44.6	99 43.2	13.6
14	82 17.5	69 00.6	43.8	88 46.8	35.7	81 12.9	44.5	114 45.6	13.6
15	97 20.0	84 00.4	44.9	103 47.6	35.0	96 14.9	44.3	129 48.0	13.6
16	112 22.5	99 00.2	45.9	118 48.3	34.3	111 17.0	44.1	144 50.3	13.6
17	127 24.9	114 00.0	+3 47.0	133 49.0	−4 33.5	126 19.0	−0 43.9	159 52.7	−14 13.6
18	142 27.4	128 59.7	+3 48.0	148 49.7	−4 32.8	141 21.0	−0 43.7	174 55.1	−14 13.5
19	157 29.9	143 59.5	49.1	163 50.5	32.1	156 23.0	43.6	189 57.5	13.5
20	172 32.3	158 59.3	50.2	178 51.2	31.4	171 25.1	43.4	204 59.8	13.5
21	187 34.8	173 59.0	51.2	193 51.9	30.6	186 27.1	43.2	220 02.2	13.5
22	202 37.3	188 58.8	52.3	208 52.7	29.9	201 29.1	43.0	235 04.6	13.4
23	217 39.7	203 58.6	53.3	223 53.4	29.2	216 31.2	42.8	250 07.0	13.4
24	232 42.2	218 58.3	+3 54.4	238 54.1	−4 28.5	231 33.2	−0 42.7	265 09.4	−14 13.4
Dif	—	−2	+11	+7	+7	+20	+2	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 14^{d}.1		PHE	4^{h}: 60′.0									
	PMG: 11^{h} 56^{m}.4				SD: 16′.3			12^{h}: 60′.2									
					PMG: 23^{h} 46^{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	180	54.5	+18	48.7	16	34.6	93	−12	56.3	**60 N**	** **	2 19	3 23	19 52	112	3 19	5
1	195	54.5		49.3	31	02.9	93	−13	11.0	147 **58**	1 01	40	36	39	106	27	10
2	210	54.5		49.9	45	31.1	92		25.6	146 **56**	1 41	2 58	47	29	100	35	14
3	225	54.5		50.5	59	59.2	91		40.1	145 **54**	2 06	3 12	3 57	20	96	41	18
4	240	54.5		51.1	74	27.2	90	−13	54.6	145 **52**	26	24	4 06	11	93	47	21
5	255	54.5	+18	51.7	88	55.1	89	−14	09.1	145 **50**	2 43	3 35	4 14	19 04	90	3 52	24
6	270	54.5	+18	52.3	103	22.9	88	−14	23.4	143 **45**	3 14	3 57	4 31	18 48	84	4 04	29
7	285	54.5		52.9	117	50.5	86		37.7	143 **40**	36	4 14	45	36	79	14	33
8	300	54.5		53.5	132	18.1	86	−14	51.9	142 **35**	3 54	29	4 57	25	75	22	38
9	315	54.4		54.0	146	45.6	85	−15	06.0	141 **30**	4 09	4 41	5 07	18 15	73	29	41
10	330	54.4		54.6	161	13.0	84		20.1	141 **20**	32	5 00	24	17 59	67	42	46
11	345	54.4	+18	55.2	175	40.2	82	−15	34.0	139 **10 N**	4 51	5 17	5 39	17 45	63	4 53	51
12	0	54.4	+18	55.8	190	07.3	81	−15	47.9	139 **0**	5 06	5 31	5 53	17 32	59	5 04	55
13	15	54.4		56.4	204	34.4	81	−16	01.7	138 **10 S**	19	44	6 07	20	54	14	61
14	30	54.4		57.0	219	01.3	79		15.5	138 **20**	31	5 58	21	17 06	50	26	65
15	45	54.4		57.6	233	28.1	78		29.1	136 **30**	43	6 12	38	16 51	44	39	70
16	60	54.4		58.1	247	54.8	77		42.6	135 **35**	50	20	47	42	41	46	74
17	75	54.4	+18	58.7	262	21.4	76	−16	56.1	135 **40**	5 56	6 29	6 58	16 32	37	5 55	78
18	90	54.4	+18	59.3	276	47.9	75	−17	09.4	133 **45**	6 03	6 39	7 11	16 20	33	6 05	83
19	105	54.4	+18	59.9	291	14.2	73		22.7	133 **50**	11	51	27	16 06	27	18	88
20	120	54.4	+19	00.5	305	40.5	73		35.9	132 **52**	15	6 56	34	15 59	25	23	92
21	135	54.4		01.1	320	06.6	71	−17	48.9	130 **54**	19	7 02	42	52	22	30	95
22	150	54.3		01.6	334	32.6	70	−18	01.9	130 **56**	23	08	7 51	44	18	37	99
23	165	54.3		02.2	348	58.6	70		14.7	128 **58**	27	16	8 01	35	13	45	103
24	180	54.3	+19	02.8	3	24.3	67	−18	27.5	128 **60 S**	6 32	7 24	8 13	15 24	9	6 54	109

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8^{h} 27^{m}.8		PMG: 9^{h} 24^{m}			PMG: 8^{h} 04^{m}			PMG: 8^{h} 33^{m}			PMG: 6^{h} 18^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	232	42.2	218	58.3	+3 54.4	238	54.1	−4 28.5	231	33.2	−0 42.7	265	09.4	−14 13.4
1	247	44.6	233	58.1	55.5	253	54.8	27.7	246	35.2	42.5	280	11.7	13.4
2	262	47.1	248	57.9	56.5	268	55.6	27.0	261	37.2	42.3	295	14.1	13.4
3	277	49.6	263	57.7	57.6	283	56.3	26.3	276	39.3	42.1	310	16.5	13.3
4	292	52.0	278	57.4	58.6	298	57.0	25.6	291	41.3	41.9	325	18.9	13.3
5	307	54.5	293	57.2	+3 59.7	313	57.8	−4 24.8	306	43.3	−0 41.8	340	21.3	−14 13.3
6	322	57.0	308	57.0	+4 00.8	328	58.5	−4 24.1	321	45.4	−0 41.6	355	23.6	−14 13.3
7	337	59.4	323	56.7	01.8	343	59.2	23.4	336	47.4	41.4	10	26.0	13.3
8	353	01.9	338	56.5	02.9	358	59.9	22.7	351	49.4	41.2	25	28.4	13.2
9	8	04.4	353	56.3	03.9	14	00.7	21.9	6	51.4	41.0	40	30.8	13.2
10	23	06.8	8	56.0	05.0	29	01.4	21.2	21	53.5	40.9	55	33.2	13.2
11	38	09.3	23	55.8	+4 06.1	44	02.1	−4 20.5	36	55.5	−0 40.7	70	35.5	−14 13.2
12	53	11.7	38	55.6	+4 07.1	59	02.9	−4 19.8	51	57.5	−0 40.5	85	37.9	−14 13.2
13	68	14.2	53	55.3	08.2	74	03.6	19.0	66	59.6	40.3	100	40.3	13.1
14	83	16.7	68	55.1	09.2	89	04.3	18.3	82	01.6	40.1	115	42.7	13.1
15	98	19.1	83	54.9	10.3	104	05.1	17.6	97	03.6	40.0	130	45.1	13.1
16	113	21.6	98	54.6	11.4	119	05.8	16.9	112	05.7	39.8	145	47.5	13.1
17	128	24.1	113	54.4	+4 12.4	134	06.5	−4 16.1	127	07.7	−0 39.6	160	49.8	−14 13.1
18	143	26.5	128	54.2	+4 13.5	149	07.2	−4 15.4	142	09.7	−0 39.4	175	52.2	−14 13.0
19	158	29.0	143	53.9	14.5	164	08.0	14.7	157	11.7	39.2	190	54.6	13.0
20	173	31.5	158	53.7	15.6	179	08.7	14.0	172	13.8	39.1	205	57.0	13.0
21	188	33.9	173	53.5	16.7	194	09.4	13.2	187	15.8	38.9	220	59.4	13.0
22	203	36.4	188	53.2	17.7	209	10.2	12.5	202	17.8	38.7	236	01.7	12.9
23	218	38.9	203	53.0	18.8	224	10.9	11.8	217	19.9	38.5	251	04.1	12.9
24	233	41.3	218	52.8	+4 19.8	239	11.6	−4 11.1	232	21.9	−0 38.3	266	06.5	−14 12.9
Dif	—		−2		+11	+7		+7	+20		+2	+24		0

UT	SOL				☾ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 15ᵈ.1		PHE	4ʰ: 60′.5								
	PMG: 11ʰ 56ᵐ.4				SD: 16′.5			12ʰ: 60′.7								
					PMG: **ʰ **ᵐ			20ʰ: 60′.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	54.3	+19	02.8	3	24.3	−18	27.5	**60 N**	20 34	21 39	** **	21 44	110	3 24	11
1	195	54.3		03.4	17	50.0 67		40.1 126	**58**	20	21 17	23 05	25	102	37	17
2	210	54.3		04.0	32	15.6 66	−18	52.6 125	**56**	20 08	20 59	22 19	21 09	97	49	22
3	225	54.3		04.5	46	41.0 64	−19	05.0 124	**54**	19 58	44	21 52	20 56	92	3 59	26
4	240	54.3		05.1	61	06.4 64		17.3 123	**52**	49	32	31	44	89	4 08	29
5	255	54.3	+19	05.7	75	31.6 62	−19	29.5 122	**50**	19 41	20 21	21 14	20 34	86	4 16	32
6	270	54.3	+19	06.3	89	56.7 61	−19	41.5 120	**45**	19 23	19 58	20 42	20 12	82	4 33	38
7	285	54.2		06.8	104	21.7 60	−19	53.5 120	**40**	19 09	40	18	19 55	78	4 47	42
8	300	54.2		07.4	118	46.6 59	−20	05.3 118	**35**	18 57	26	20 00	40	75	5 00	45
9	315	54.2		08.0	133	11.4 58		17.0 117	**30**	47	19 13	19 45	28	73	10	48
10	330	54.2		08.6	147	36.0 56		28.5 115	**20**	29	18 53	21	19 06	69	28	53
11	345	54.2	+19	09.1	162	00.6 56	−20	39.9 114	**10 N**	18 14	18 36	19 03	18 48	66	5 44	57
12	0	54.2	+19	09.7	176	25.0 54	−20	51.2 113	**0**	18 00	18 22	18 47	18 31	62	5 59	61
13	15	54.2		10.3	190	49.3 53	−21	02.4 112	**10 S**	17 46	18 08	34	18 14	59	6 15	64
14	30	54.2		10.9	205	13.5 52		13.4 110	**20**	31	17 54	21	17 56	56	31	68
15	45	54.1		11.4	219	37.6 51		24.2 108	**30**	14	40	09	35	52	6 49	73
16	60	54.1		12.0	234	01.6 50		35.0 108	**35**	17 04	31	18 02	23	50	7 00	76
17	75	54.1	+19	12.6	248	25.5 49	−21	45.5 105	**40**	16 53	17 22	17 55	17 09	47	7 13	79
18	90	54.1	+19	13.1	262	49.3 48	−21	56.0 105	**45**	16 40	17 12	17 48	16 53	43	7 28	83
19	105	54.1		13.7	277	13.0 47	−22	06.3 103	**50**	24	17 00	40	33	38	46	89
20	120	54.1		14.3	291	36.5 45		16.4 101	**52**	17	16 55	36	24	35	7 55	91
21	135	54.1		14.8	306	00.0 45		26.4 100	**54**	16 09	49	32	14	32	8 05	95
22	150	54.0		15.4	320	23.3 43		36.2 98	**56**	15 59	42	28	16 02	28	16	99
23	165	54.0		16.0	334	46.6 43		45.9 97	**58**	49	35	24	15 48	24	28	105
24	180	54.0	+19	16.5	349	09.7 41	−22	55.5 96	**60 S**	15 37	16 27	17 19	15 33	16	8 43	112

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8ʰ 23ᵐ.9		PMG: 9ʰ 25ᵐ			PMG: 8ʰ 03ᵐ			PMG: 8ʰ 29ᵐ			PMG: 6ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	233	41.3	218	52.8	+4 19.8	239	11.6	−4 11.1	232	21.9	−0 38.3	266	06.5	−14 12.9
1	248	43.8	233	52.5	20.9	254	12.4	10.3	247	23.9	38.2	281	08.9	12.9
2	263	46.2	248	52.3	22.0	269	13.1	09.6	262	26.0	38.0	296	11.3	12.9
3	278	48.7	263	52.1	23.0	284	13.8	08.9	277	28.0	37.8	311	13.7	12.8
4	293	51.2	278	51.8	24.1	299	14.6	08.2	292	30.0	37.6	326	16.0	12.8
5	308	53.6	293	51.6	+4 25.1	314	15.3	−4 07.4	307	32.1	−0 37.4	341	18.4	−14 12.8
6	323	56.1	308	51.3	+4 26.2	329	16.0	−4 06.7	322	34.1	−0 37.3	356	20.8	−14 12.8
7	338	58.6	323	51.1	27.3	344	16.8	06.0	337	36.1	37.1	11	23.2	12.8
8	354	01.0	338	50.9	28.3	359	17.5	05.3	352	38.2	36.9	26	25.6	12.7
9	9	03.5	353	50.6	29.4	14	18.2	04.5	7	40.2	36.7	41	28.0	12.7
10	24	06.0	8	50.4	30.4	29	18.9	03.8	22	42.2	36.6	56	30.3	12.7
11	39	08.4	23	50.2	+4 31.5	44	19.7	−4 03.1	37	44.3	−0 36.4	71	32.7	−14 12.7
12	54	10.9	38	49.9	+4 32.6	59	20.4	−4 02.3	52	46.3	−0 36.2	86	35.1	−14 12.7
13	69	13.4	53	49.7	33.6	74	21.1	01.6	67	48.3	36.0	101	37.5	12.7
14	84	15.8	68	49.4	34.7	89	21.9	00.9	82	50.4	35.8	116	39.9	12.6
15	99	18.3	83	49.2	35.7	104	22.6	−4 00.2	97	52.4	35.7	131	42.3	12.6
16	114	20.7	98	49.0	36.8	119	23.3	−3 59.4	112	54.4	35.5	146	44.7	12.6
17	129	23.2	113	48.7	+4 37.9	134	24.1	−3 58.7	127	56.5	−0 35.3	161	47.0	−14 12.6
18	144	25.7	128	48.5	+4 38.9	149	24.8	−3 58.0	142	58.5	−0 35.1	176	49.4	−14 12.6
19	159	28.1	143	48.3	40.0	164	25.5	57.3	158	00.5	35.0	191	51.8	12.5
20	174	30.6	158	48.0	41.0	179	26.3	56.5	173	02.6	34.8	206	54.2	12.5
21	189	33.1	173	47.8	42.1	194	27.0	55.8	188	04.6	34.6	221	56.6	12.5
22	204	35.5	188	47.5	43.1	209	27.7	55.1	203	06.6	34.4	236	59.0	12.5
23	219	38.0	203	47.3	44.2	224	28.5	54.4	218	08.7	34.2	252	01.4	12.5
24	234	40.5	218	47.1	+4 45.3	239	29.2	−3 53.6	233	10.7	−0 34.1	267	03.7	−14 12.4
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.4				☾ LUNA Edad: 16d.1 SD: 16′.6 PMG: 0h 45m PHE: 4h: 60′.8; 12h: 60′.9; 20h: 60′.9 Rº: 64m				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	54.0	+19	16.5	349	09.7 41	−22	55.5 93	**60 N**	** **	2 13	3 18	23 34	86	3 35	23
1	195	54.0		17.1	3	32.8 39	−23	04.8 92	**58**	0 47	35		23 07	81	3 54	31
2	210	54.0		17.7	17	55.7 39		14.0 91	**56**	1 33	2 53	44	22 46	79	4 11	36
3	225	54.0		18.2	32	18.6 37		23.1 88	**54**	2 01	3 08	3 54	28	78	25	39
4	240	53.9		18.8	46	41.3 37		31.9 87	**52**	22	21	4 03	13	76	37	42
5	255	53.9	+19	19.4	61	04.0 36	−23	40.6 86	**50**	2 39	3 32	4 12	22 00	75	4 48	45
6	270	53.9	+19	19.9	75	26.6 34	−23	49.2 83	**45**	3 11	3 55	4 29	21 34	73	5 11	49
7	285	53.9		20.5	89	49.0 34	−23	57.5 82	**40**	34	4 12	43	21 13	72	29	52
8	300	53.9		21.1	104	11.4 33	−24	05.7 81	**35**	3 53	27	4 55	20 55	71	45	54
9	315	53.8		21.6	118	33.7 32		13.8 78	**30**	4 08	4 39	5 06	41	69	5 58	57
10	330	53.8		22.2	132	55.9 32		21.6 77	**20**	32	5 00	23	20 15	68	6 21	60
11	345	53.8	+19	22.7	147	18.1 30	−24	29.3 75	**10 N**	4 50	5 16	5 39	19 54	66	6 41	62
12	0	53.8	+19	23.3	161	40.1 30	−24	36.8 73	**0**	5 05	5 31	5 53	19 33	66	7 00	64
13	15	53.8		23.9	176	02.1 29		44.1 71	**10 S**	19	45	6 07	19 13	64	19	66
14	30	53.8		24.4	190	24.0 28		51.2 69	**20**	32	5 59	22	18 52	62	7 39	69
15	45	53.7		25.0	204	45.8 27	−24	58.1 68	**30**	45	6 14	39	27	61	8 02	72
16	60	53.7		25.5	219	07.5 27	−25	04.9 66	**35**	51	22	6 49	18 13	59	16	74
17	75	53.7	+19	26.1	233	29.2 27	−25	11.5 64	**40**	5 58	6 31	7 00	17 56	58	8 32	76
18	90	53.7	+19	26.6	247	50.8 26	−25	17.9 62	**45**	6 05	6 41	7 13	17 36	56	8 51	78
19	105	53.7		27.2	262	12.3 25		24.1 60	**50**	14	53	29	17 11	53	9 15	82
20	120	53.6		27.8	276	33.8 25		30.1 58	**52**	17	6 59	37	16 59	52	26	84
21	135	53.6		28.3	290	55.2 24		35.9 56	**54**	21	7 05	45	46	49	40	86
22	150	53.6		28.9	305	16.5 23		41.5 54	**56**	25	12	7 55	30	47	9 55	89
23	165	53.6		29.4	319	37.8 23		46.9 53	**58**	30	19	8 05	16 12	42	10 13	93
24	180	53.5	+19	30.0	333	59.0 22	−25	52.2	**60 S**	6 35	7 27	8 18	15 49	36	10 35	100

UT	ARIES PMG 8h 19m.9		VENUS Mag: −4.0 PMG: 9h 25m			MARTE Mag: +0.8 PMG: 8h 02m			JÚPITER Mag: −2.2 PMG: 8h 26m			SATURNO Mag: +0.8 PMG: 6h 11m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	234	40.5	218	47.1	+4 45.3	239	29.2	−3 53.6	233	10.7	−0 34.1	267	03.7	−14 12.4
1	249	42.9	233	46.8	46.3	254	29.9	52.9	248	12.7	33.9	282	06.1	12.4
2	264	45.4	248	46.6	47.4	269	30.7	52.2	263	14.8	33.7	297	08.5	12.4
3	279	47.9	263	46.3	48.4	284	31.4	51.5	278	16.8	33.5	312	10.9	12.4
4	294	50.3	278	46.1	49.5	299	32.1	50.7	293	18.8	33.4	327	13.3	12.4
5	309	52.8	293	45.9	+4 50.6	314	32.9	−3 50.0	308	20.9	−0 33.2	342	15.7	−14 12.3
6	324	55.2	308	45.6	+4 51.6	329	33.6	−3 49.3	323	22.9	−0 33.0	357	18.1	−14 12.3
7	339	57.7	323	45.4	52.7	344	34.3	48.6	338	25.0	32.8	12	20.5	12.3
8	355	00.2	338	45.1	53.7	359	35.1	47.8	353	27.0	32.6	27	22.8	12.3
9	10	02.6	353	44.9	54.8	14	35.8	47.1	8	29.0	32.5	42	25.2	12.3
10	25	05.1	8	44.6	55.9	29	36.5	46.4	23	31.1	32.3	57	27.6	12.3
11	40	07.6	23	44.4	+4 56.9	44	37.3	−3 45.6	38	33.1	−0 32.1	72	30.0	−14 12.2
12	55	10.0	38	44.2	+4 58.0	59	38.0	−3 44.9	53	35.1	−0 31.9	87	32.4	−14 12.2
13	70	12.5	53	43.9	+4 59.0	74	38.7	44.2	68	37.2	31.8	102	34.8	12.2
14	85	15.0	68	43.7	+5 00.1	89	39.5	43.5	83	39.2	31.6	117	37.2	12.2
15	100	17.4	83	43.4	01.1	104	40.2	42.7	98	41.2	31.4	132	39.6	12.2
16	115	19.9	98	43.2	02.2	119	40.9	42.0	113	43.3	31.2	147	42.0	12.1
17	130	22.4	113	42.9	+5 03.3	134	41.7	−3 41.3	128	45.3	−0 31.1	162	44.3	−14 12.1
18	145	24.8	128	42.7	+5 04.3	149	42.4	−3 40.6	143	47.4	−0 30.9	177	46.7	−14 12.1
19	160	27.3	143	42.5	05.4	164	43.1	39.8	158	49.4	30.7	192	49.1	12.1
20	175	29.7	158	42.2	06.4	179	43.9	39.1	173	51.4	30.5	207	51.5	12.1
21	190	32.2	173	42.0	07.5	194	44.6	38.4	188	53.5	30.4	222	53.9	12.1
22	205	34.7	188	41.7	08.6	209	45.4	37.6	203	55.5	30.2	237	56.3	12.0
23	220	37.1	203	41.5	09.6	224	46.1	36.9	218	57.6	30.0	252	58.7	12.0
24	235	39.6	218	41.2	+5 10.7	239	46.8	−3 36.2	233	59.6	−0 29.8	268	01.1	−14 12.0
Dif	—			−2	+11		+7	+7		+20	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.4				LUNA Edad: 17d.1 SD: 16′.6 PMG: 1h 49m PHE 4h: 60′.8; 12h: 60′.8; 20h: 60′.7 Rº: 65m				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	53.5	+19	30.0	333 59.0		−25 52.2		**60 N**	20 39	21 46	** **	** **	**	3 58	51
1	195	53.5		30.5	348 20.2	22	−25 57.2	50	**58**	24	22	23 24	** **	**	4 25	56
2	210	53.5		31.1	2 41.3	21	−26 02.1	49	**56**	12	21 04	22 28	** **	**	4 47	57
3	225	53.5		31.6	17 02.4	21	06.7	46	**54**	20 01	20 48	21 58	23 46	55	5 04	59
4	240	53.5		32.2	31 23.4	20	11.2	45	**52**	19 52	35	36	29	57	19	60
5	255	53.4	+19	32.7	45 44.4	20	−26 15.4	42	**50**	19 44	20 24	21 18	23 15	58	5 33	60
6	270	53.4	+19	33.3	60 05.4	20	−26 19.5	41	**45**	19 26	20 00	20 45	22 47	60	6 00	62
7	285	53.4		33.8	74 26.3	19	23.3	38	**40**	19 11	19 42	21	25	61	21	63
8	300	53.4		34.4	88 47.2	19	27.0	37	**35**	18 59	27	20 02	22 06	62	39	64
9	315	53.3		34.9	103 08.1	19	30.4	34	**30**	48	19 15	19 46	21 50	63	6 55	63
10	330	53.3		35.5	117 28.9	18	33.6	32	**20**	30	18 54	22	23	64	7 21	64
11	345	53.3	+19	36.0	131 49.7	18	−26 36.7	31	**10 N**	18 15	18 37	19 03	21 00	64	7 43	65
12	0	53.3	+19	36.6	146 10.5	18	−26 39.5	28	**0**	18 00	18 22	18 47	20 39	65	8 04	66
13	15	53.2		37.1	160 31.3	18	42.2	27	**10 S**	17 46	18 08	34	20 17	66	25	66
14	30	53.2		37.6	174 52.0	17	44.6	24	**20**	30	17 54	21	19 54	66	8 48	66
15	45	53.2		38.2	189 12.8	18	46.8	22	**30**	13	39	08	28	66	9 14	67
16	60	53.2		38.7	203 33.5	17	48.8	20	**35**	17 03	30	18 01	19 12	67	30	66
17	75	53.1	+19	39.3	217 54.3	18	−26 50.7	19	**40**	16 52	17 21	17 54	18 54	67	9 48	66
18	90	53.1	+19	39.8	232 15.0	17	−26 52.3	16	**45**	16 38	17 10	17 46	18 32	68	10 09	67
19	105	53.1		40.4	246 35.7	17	53.7	14	**50**	22	16 58	38	18 04	69	37	67
20	120	53.1		40.9	260 56.5	18	54.9	12	**52**	14	52	34	17 51	68	10 50	67
21	135	53.0		41.4	275 17.2	17	55.9	10	**54**	16 06	46	30	35	69	11 06	67
22	150	53.0		42.0	289 38.0	18	56.7	8	**56**	15 56	39	25	17 17	69	24	67
23	165	53.0		42.5	303 58.7	17	57.3	6	**58**	45	32	21	16 54	70	11 46	67
24	180	52.9	+19	43.1	318 19.5	18	−26 57.6	3	**60 S**	15 33	16 23	17 16	16 25	71	12 15	66

UT	ARIES PMG 8h 16m.0		VENUS Mag: −4.0 PMG: 9h 25m			MARTE Mag: +0.8 PMG: 8h 00m			JÚPITER Mag: −2.2 PMG: 8h 23m			SATURNO Mag: +0.8 PMG: 6h 07m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	235	39.6	218	41.2	+5 10.7	239	46.8	−3 36.2	233	59.6	−0 29.8	268	01.1	−14 12.0
1	250	42.1	233	41.0	11.7	254	47.6	35.5	249	01.6	29.7	283	03.5	12.0
2	265	44.5	248	40.7	12.8	269	48.3	34.7	264	03.7	29.5	298	05.9	12.0
3	280	47.0	263	40.5	13.8	284	49.0	34.0	279	05.7	29.3	313	08.3	12.0
4	295	49.5	278	40.2	14.9	299	49.8	33.3	294	07.7	29.1	328	10.6	11.9
5	310	51.9	293	40.0	+5 16.0	314	50.5	−3 32.6	309	09.8	−0 29.0	343	13.0	−14 11.9
6	325	54.4	308	39.8	+5 17.0	329	51.2	−3 31.8	324	11.8	−0 28.8	358	15.4	−14 11.9
7	340	56.9	323	39.5	18.1	344	52.0	31.1	339	13.9	28.6	13	17.8	11.9
8	355	59.3	338	39.3	19.1	359	52.7	30.4	354	15.9	28.4	28	20.2	11.9
9	11	01.8	353	39.0	20.2	14	53.4	29.7	9	17.9	28.2	43	22.6	11.9
10	26	04.2	8	38.8	21.2	29	54.2	28.9	24	20.0	28.1	58	25.0	11.8
11	41	06.7	23	38.5	+5 22.3	44	54.9	−3 28.2	39	22.0	−0 27.9	73	27.4	−14 11.8
12	56	09.2	38	38.3	+5 23.4	59	55.7	−3 27.5	54	24.1	−0 27.7	88	29.8	−14 11.8
13	71	11.6	53	38.0	24.4	74	56.4	26.7	69	26.1	27.6	103	32.2	11.8
14	86	14.1	68	37.8	25.5	89	57.1	26.0	84	28.1	27.4	118	34.6	11.8
15	101	16.6	83	37.5	26.5	104	57.9	25.3	99	30.2	27.2	133	37.0	11.8
16	116	19.0	98	37.3	27.6	119	58.6	24.6	114	32.2	27.0	148	39.4	11.7
17	131	21.5	113	37.0	+5 28.6	134	59.3	−3 23.8	129	34.3	−0 26.9	163	41.7	−14 11.7
18	146	24.0	128	36.8	+5 29.7	150	00.1	−3 23.1	144	36.3	−0 26.7	178	44.1	−14 11.7
19	161	26.4	143	36.5	30.8	165	00.8	22.4	159	38.4	26.5	193	46.5	11.7
20	176	28.9	158	36.3	31.8	180	01.5	21.7	174	40.4	26.3	208	48.9	11.7
21	191	31.3	173	36.0	32.9	195	02.3	20.9	189	42.4	26.2	223	51.3	11.7
22	206	33.8	188	35.8	33.9	210	03.0	20.2	204	44.5	26.0	238	53.7	11.6
23	221	36.3	203	35.5	35.0	225	03.8	19.5	219	46.5	25.8	253	56.1	11.6
24	236	38.7	218	35.3	+5 36.0	240	04.5	−3 18.7	234	48.6	−0 25.6	268	58.5	−14 11.6
Dif	—		−2		+11	+7		+7	+20		+2	+24		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 18^{d}.1		PHE	4^{h}: 60′.5									
	PMG: 11^{h} 56^{m}.5				SD: 16′.5			12^{h}: 60′.4									
					PMG: 2^{h} 54^{m}			20^{h}: 60′.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	180	52.9	+19	43.1	318	19.5	−26	57.6		**60 N**	** **	2 06	3 14	1 00	46	4 49	89
1	195	52.9		43.6	332	40.3 18		57.8	2	**58**	0 28	30	28	0 28	52	5 21	83
2	210	52.9		44.1	347	01.1 18		57.8	0	**56**	1 25	2 49	40	0 05	54	5 44	80
3	225	52.9		44.7	1	22.0 19		57.6	2	**54**	1 55	3 04	3 51	** **	**	6 03	78
4	240	52.8		45.2	15	42.9 19		57.1	5	**52**	2 17	17	4 00	** **	**	19	77
5	255	52.8	+19	45.7	30	03.8 19	−26	56.5	6	**50**	2 35	3 29	4 09	** **	**	6 33	76
6	270	52.8	+19	46.3	44	24.7 19	−26	55.7	8	**45**	3 08	3 52	4 27	23 47	46	7 02	73
7	285	52.7		46.8	58	45.7 20		54.6	11	**40**	32	4 10	41	26	48	24	71
8	300	52.7		47.4	73	06.8 21		53.4	12	**35**	3 51	25	4 54	23 08	51	43	69
9	315	52.7		47.9	87	27.8 20		51.9	15	**30**	4 06	38	5 04	22 53	53	7 58	69
10	330	52.7		48.4	101	48.9 21		50.3	16	**20**	31	4 59	23	27	56	8 25	67
11	345	52.6	+19	49.0	116	10.1 22	−26	48.5	18	**10 N**	4 50	5 16	5 38	22 04	60	8 48	66
12	0	52.6	+19	49.5	130	31.3 22	−26	46.4	21	**0**	5 05	5 31	5 53	21 44	61	9 10	63
13	15	52.6		50.0	144	52.6 23		44.2	22	**10 S**	19	45	6 07	23	64	31	62
14	30	52.5		50.5	159	13.9 23		41.8	24	**20**	33	5 59	23	21 00	67	9 54	60
15	45	52.5		51.1	173	35.3 24		39.1	27	**30**	46	6 15	40	20 34	70	10 21	58
16	60	52.5		51.6	187	56.8 25		36.3	28	**35**	5 52	23	6 50	19	71	36	57
17	75	52.4	+19	52.1	202	18.3 25	−26	33.3	30	**40**	6 00	6 33	7 02	20 01	73	10 54	55
18	90	52.4	+19	52.7	216	39.9 26	−26	30.1	32	**45**	6 07	6 43	7 15	19 40	76	11 16	53
19	105	52.4		53.2	231	01.6 27		26.7	34	**50**	16	6 56	32	19 13	79	44	49
20	120	52.3		53.7	245	23.3 27		23.1	36	**52**	20	7 01	40	18 59	82	11 57	48
21	135	52.3		54.2	259	45.1 28		19.3	38	**54**	24	08	48	44	84	12 13	45
22	150	52.3		54.8	274	07.0 29		15.4	39	**56**	28	15	7 58	26	87	31	43
23	165	52.2		55.3	288	28.9 29		11.2	42	**58**	33	22	8 09	18 04	92	12 53	39
24	180	52.2	+19	55.8	302	51.0 31	−26	06.9	43	**60 S**	6 38	7 31	8 22	17 36	98	13 21	33

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.8			Mag: −2.2			Mag: +0.8		
	8^{h} 12^{m}.1		PMG: 9^{h} 26^{m}			PMG: 7^{h} 59^{m}			PMG: 8^{h} 20^{m}			PMG: 6^{h} 03^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	236	38.7	218	35.3	+5 36.0	240	04.5	−3 18.7	234	48.6	−0 25.6	268	58.5	−14 11.6
1	251	41.2	233	35.0	37.1	255	05.2	18.0	249	50.6	25.5	284	00.9	11.6
2	266	43.7	248	34.8	38.2	270	06.0	17.3	264	52.7	25.3	299	03.3	11.6
3	281	46.1	263	34.5	39.2	285	06.7	16.6	279	54.7	25.1	314	05.7	11.6
4	296	48.6	278	34.3	40.3	300	07.4	15.8	294	56.7	24.9	329	08.1	11.5
5	311	51.1	293	34.0	+5 41.3	315	08.2	−3 15.1	309	58.8	−0 24.8	344	10.5	−14 11.5
6	326	53.5	308	33.8	+5 42.4	330	08.9	−3 14.4	325	00.8	−0 24.6	359	12.9	−14 11.5
7	341	56.0	323	33.5	43.4	345	09.6	13.6	340	02.9	24.4	14	15.3	11.5
8	356	58.5	338	33.3	44.5	0	10.4	12.9	355	04.9	24.2	29	17.7	11.5
9	12	00.9	353	33.0	45.5	15	11.1	12.2	10	07.0	24.1	44	20.1	11.5
10	27	03.4	8	32.7	46.6	30	11.9	11.5	25	09.0	23.9	59	22.5	11.4
11	42	05.8	23	32.5	+5 47.7	45	12.6	−3 10.7	40	11.0	−0 23.7	74	24.9	−14 11.4
12	57	08.3	38	32.2	+5 48.7	60	13.3	−3 10.0	55	13.1	−0 23.5	89	27.2	−14 11.4
13	72	10.8	53	32.0	49.8	75	14.1	09.3	70	15.1	23.4	104	29.6	11.4
14	87	13.2	68	31.7	50.8	90	14.8	08.6	85	17.2	23.2	119	32.0	11.4
15	102	15.7	83	31.5	51.9	105	15.6	07.8	100	19.2	23.0	134	34.4	11.4
16	117	18.2	98	31.2	52.9	120	16.3	07.1	115	21.3	22.9	149	36.8	11.4
17	132	20.6	113	31.0	+5 54.0	135	17.0	−3 06.4	130	23.3	−0 22.7	164	39.2	−14 11.3
18	147	23.1	128	30.7	+5 55.0	150	17.8	−3 05.6	145	25.4	−0 22.5	179	41.6	−14 11.3
19	162	25.6	143	30.5	56.1	165	18.5	04.9	160	27.4	22.3	194	44.0	11.3
20	177	28.0	158	30.2	57.1	180	19.2	04.2	175	29.4	22.2	209	46.4	11.3
21	192	30.5	173	29.9	58.2	195	20.0	03.5	190	31.5	22.0	224	48.8	11.3
22	207	33.0	188	29.7	+5 59.3	210	20.7	02.7	205	33.5	21.8	239	51.2	11.3
23	222	35.4	203	29.4	+6 00.3	225	21.5	02.0	220	35.6	21.6	254	53.6	11.3
24	237	37.9	218	29.2	+6 01.4	240	22.2	−3 01.3	235	37.6	−0 21.5	269	56.0	−14 11.2
Dif	—			−3	+11		+7	+7		+20	+2		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 19^{d}.1		PHE	4^{h}: 60′.1								
	PMG: 11^{h} 56^{m}.5				SD: 16′.4			12^{h}: 59′.9								
					PMG: 3^{h} 59^{m}			20^{h}: 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	180	52.2	+19	55.8	302	51.0	−26	06.9	**60 N**	20 43	21 53	** **	1	46 20	6	18 105
1	195	52.2		56.3	317	13.1 31	−26	02.4 45	**58**	28	28	** **	1	20 27	6	44 97
2	210	52.1		56.9	331	35.3 32	−25	57.7 47	**56**	16	21 08	22 36	0	59 32	7	04 93
3	225	52.1		57.4	345	57.7 34		52.8 49	**54**	20 05	20 52	22 04		41 37		21 89
4	240	52.1		57.9	0	20.1 34		47.7 51	**52**	19 55	39	21 40		26 40		36 85
5	255	52.0	+19	58.4	14	42.5 34	−25	42.5 52	**50**	19 46	20 27	21 22	0	13 42	7	49 83
6	270	52.0	+19	59.0	29	05.1 36	−25	37.1 54	**45**	19 28	20 03	20 48	**	** **	8	15 78
7	285	52.0	+19	59.5	43	27.8 37		31.5 56	**40**	13	19 44	23	**	** **		35 75
8	300	51.9	+20	00.0	57	50.6 38		25.7 58	**35**	19 00	29	20 04	23	59 42	8	52 72
9	315	51.9	+20	00.5	72	13.5 39		19.8 59	**30**	18 50	19 16	19 48		46 45	9	07 70
10	330	51.9		01.0	86	36.5 40		13.7 61	**20**	31	18 55	23		23 49		32 66
11	345	51.8	+20	01.6	100	59.5 40	−25	07.4 63	**10 N**	18 15	18 37	19 04	23	04 53	9	54 62
12	0	51.8	+20	02.1	115	22.7 42	−25	00.9 65	**0**	18 00	18 22	18 48	22	45 57	10	13 60
13	15	51.7		02.6	129	46.0 43	−24	54.3 66	**10 S**	17 45	18 08	33		27 60		33 56
14	30	51.7		03.1	144	09.4 44		47.6 67	**20**	30	17 53	20	22	07 64	10	54 53
15	45	51.7		03.6	158	32.9 45		40.6 70	**30**	12	38	07	21	44 68	11	19 49
16	60	51.6		04.1	172	56.5 46		33.5 71	**35**	17 02	29	18 00		30 71		33 46
17	75	51.6	+20	04.7	187	20.3 48	−24	26.3 72	**40**	16 50	17 19	17 52	21	14 75	11	49 44
18	90	51.6	+20	05.2	201	44.1 48	−24	18.9 74	**45**	16 36	17 09	17 45	20	56 78	12	09 40
19	105	51.5		05.7	216	08.1 50		11.3 76	**50**	19	16 56	36		32 84		33 35
20	120	51.5		06.2	230	32.1 50	−24	03.6 77	**52**	12	50	32		21 86		45 33
21	135	51.4		06.7	244	56.3 52	−23	55.7 79	**54**	16 03	43	27	20	08 90	12	58 30
22	150	51.4		07.2	259	20.6 53		47.7 80	**56**	15 53	36	23	19	53 94	13	14 26
23	165	51.4		07.7	273	45.1 55		39.5 82	**58**	42	29	18		36 98		32 21
24	180	51.3	+20	08.2	288	09.6 55	−23	31.2 83	**60 S**	15 29	16 20	17 13	19	14 105	13	54 14

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.2			Mag: +0.8		
	8^{h} 08^{m}.1		PMG: 9^{h} 26^{m}			PMG: 7^{h} 58^{m}			PMG: 8^{h} 16^{m}			PMG: 5^{h} 59^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	237	37.9	218	29.2	+6 01.4	240	22.2	−3 01.3	235	37.6	−0 21.5	269	56.0	−14 11.2
1	252	40.3	233	28.9	02.4	255	22.9	−3 00.5	250	39.7	21.3	284	58.4	11.2
2	267	42.8	248	28.7	03.5	270	23.7	−2 59.8	265	41.7	21.1	300	00.8	11.2
3	282	45.3	263	28.4	04.5	285	24.4	59.1	280	43.8	21.0	315	03.2	11.2
4	297	47.7	278	28.1	05.6	300	25.2	58.4	295	45.8	20.8	330	05.6	11.2
5	312	50.2	293	27.9	+6 06.6	315	25.9	−2 57.6	310	47.9	−0 20.6	345	08.0	−14 11.2
6	327	52.7	308	27.6	+6 07.7	330	26.6	−2 56.9	325	49.9	−0 20.4	0	10.4	−14 11.2
7	342	55.1	323	27.4	08.7	345	27.4	56.2	340	52.0	20.3	15	12.8	11.1
8	357	57.6	338	27.1	09.8	0	28.1	55.5	355	54.0	20.1	30	15.2	11.1
9	13	00.1	353	26.8	10.8	15	28.9	54.7	10	56.1	19.9	45	17.6	11.1
10	28	02.5	8	26.6	11.9	30	29.6	54.0	25	58.1	19.8	60	20.0	11.1
11	43	05.0	23	26.3	+6 12.9	45	30.3	−2 53.3	41	00.1	−0 19.6	75	22.4	−14 11.1
12	58	07.5	38	26.1	+6 14.0	60	31.1	−2 52.5	56	02.2	−0 19.4	90	24.8	−14 11.1
13	73	09.9	53	25.8	15.1	75	31.8	51.8	71	04.2	19.2	105	27.2	11.1
14	88	12.4	68	25.5	16.1	90	32.6	51.1	86	06.3	19.1	120	29.6	11.0
15	103	14.8	83	25.3	17.2	105	33.3	50.4	101	08.3	18.9	135	32.0	11.0
16	118	17.3	98	25.0	18.2	120	34.0	49.6	116	10.4	18.7	150	34.4	11.0
17	133	19.8	113	24.8	+6 19.3	135	34.8	−2 48.9	131	12.4	−0 18.6	165	36.8	−14 11.0
18	148	22.2	128	24.5	+6 20.3	150	35.5	−2 48.2	146	14.5	−0 18.4	180	39.2	−14 11.0
19	163	24.7	143	24.2	21.4	165	36.3	47.4	161	16.5	18.2	195	41.6	11.0
20	178	27.2	158	24.0	22.4	180	37.0	46.7	176	18.6	18.0	210	44.0	11.0
21	193	29.6	173	23.7	23.5	195	37.7	46.0	191	20.6	17.9	225	46.4	10.9
22	208	32.1	188	23.5	24.5	210	38.5	45.3	206	22.7	17.7	240	48.8	10.9
23	223	34.6	203	23.2	25.6	225	39.2	44.5	221	24.7	17.5	255	51.2	10.9
24	238	37.0	218	22.9	+6 26.6	240	40.0	−2 43.8	236	26.8	−0 17.4	270	53.6	−14 10.9
Dif	—			−3	+11		+7	+7		+20	+2		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 20^{d}.1		PHE	4^{h}: 59′.4									
	PMG: 11^{h} 56^{m}.6				SD: 16′.2			12^{h}: 59′.2									
					PMG: 4^{h} 59^{m}			20^{h}: 58′.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	180	51.3	+20	08.2	288	09.6	−23	31.2		**60 N**	** **	2 00	3 09	2 06	10	8 03	105
1	195	51.3		08.7	302	34.2	56	22.7	85	**58**	** **	25	24	1 47	16	21	99
2	210	51.2		09.3	316	59.0	58	14.1	86	**56**	1 16	2 44	37	31	20	37	93
3	225	51.2		09.8	331	23.9	59	−23 05.4	87	**54**	1 49	3 01	48	18	23	8 50	90
4	240	51.2		10.3	345	48.9	60	−22 56.5	89	**52**	2 12	14	3 58	1 06	26	9 01	87
5	255	51.1	+20	10.8	0	14.1	62	−22 47.5	90	**50**	2 31	3 26	4 07	0 55	29	9 12	83
6	270	51.1	+20	11.3	14	39.3	62	−22 38.3	92	**45**	3 05	3 50	4 25	0 32	35	9 33	78
7	285	51.0		11.8	29	04.7	64	29.1	92	**40**	30	4 09	40	0 14	39	9 50	74
8	300	51.0		12.3	43	30.2	65	19.6	95	**35**	3 49	24	4 52	** **	**	10 04	70
9	315	51.0		12.8	57	55.8	66	10.1	95	**30**	4 05	37	5 03	** **	**	17	67
10	330	50.9		13.3	72	21.5	67	−22 00.4	97	**20**	30	4 58	22	** **	**	38	62
11	345	50.9	+20	13.8	86	47.4	69	−21 50.6	98	**10 N**	4 49	5 16	5 38	23 57	47	10 56	58
12	0	50.8	+20	14.3	101	13.4	70	−21 40.7	99	**0**	5 05	5 31	5 53	23 42	51	11 13	54
13	15	50.8		14.8	115	39.5	71	30.6	101	**10 S**	20	5 46	6 08	27	55	29	51
14	30	50.8		15.3	130	05.7	72	20.5	101	**20**	33	6 00	24	23 11	60	11 47	46
15	45	50.7		15.8	144	32.1	74	−21 10.2	103	**30**	47	16	41	22 52	65	12 08	41
16	60	50.7		16.3	158	58.5	74	−20 59.8	104	**35**	5 54	25	6 52	41	69	19	39
17	75	50.6	+20	16.8	173	25.1	76	−20 49.3	105	**40**	6 01	6 34	7 04	22 29	72	12 33	35
18	90	50.6	+20	17.3	187	51.8	77	−20 38.6	107	**45**	6 09	6 45	7 18	22 14	76	12 49	31
19	105	50.5		17.8	202	18.7	79	27.9	107	**50**	18	6 58	35	21 56	82	13 08	26
20	120	50.5		18.3	216	45.6	79	17.1	108	**52**	22	7 04	43	47	85	18	23
21	135	50.4		18.8	231	12.7	81	−20 06.1	110	**54**	26	10	7 51	38	87	28	20
22	150	50.4		19.3	245	39.9	82	−19 55.0	111	**56**	31	18	8 01	27	91	40	16
23	165	50.4		19.8	260	07.2	83	43.9	111	**58**	36	26	13	21 14	96	13 53	12
24	180	50.3	+20	20.3	274	34.7	85	−19 32.6	113	**60 S**	6 41	7 35	8 26	20 59	101	14 08	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.2			Mag: +0.8		
	8^{h} 04^{m}.2		PMG: 9^{h} 27^{m}			PMG: 7^{h} 57^{m}			PMG: 8^{h} 13^{m}			PMG: 5^{h} 55^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	238	37.0	218	22.9	+6 26.6	240	40.0	−2 43.8	236	26.8	−0 17.4	270	53.6	−14 10.9
1	253	39.5	233	22.7	27.7	255	40.7	43.1	251	28.8	17.2	285	56.0	10.9
2	268	42.0	248	22.4	28.7	270	41.4	42.3	266	30.9	17.0	300	58.4	10.9
3	283	44.4	263	22.1	29.8	285	42.2	41.6	281	32.9	16.9	316	00.8	10.9
4	298	46.9	278	21.9	30.8	300	42.9	40.9	296	35.0	16.7	331	03.2	10.8
5	313	49.3	293	21.6	+6 31.9	315	43.7	−2 40.2	311	37.0	−0 16.5	346	05.6	−14 10.8
6	328	51.8	308	21.3	+6 32.9	330	44.4	−2 39.4	326	39.1	−0 16.3	1	08.0	−14 10.8
7	343	54.3	323	21.1	34.0	345	45.1	38.7	341	41.1	16.2	16	10.4	10.8
8	358	56.7	338	20.8	35.0	0	45.9	38.0	356	43.2	16.0	31	12.8	10.8
9	13	59.2	353	20.5	36.1	15	46.6	37.3	11	45.2	15.8	46	15.3	10.8
10	29	01.7	8	20.3	37.1	30	47.4	36.5	26	47.3	15.7	61	17.7	10.8
11	44	04.1	23	20.0	+6 38.2	45	48.1	−2 35.8	41	49.3	−0 15.5	76	20.1	−14 10.8
12	59	06.6	38	19.8	+6 39.2	60	48.9	−2 35.1	56	51.4	−0 15.3	91	22.5	−14 10.7
13	74	09.1	53	19.5	40.3	75	49.6	34.3	71	53.4	15.2	106	24.9	10.7
14	89	11.5	68	19.2	41.3	90	50.3	33.6	86	55.5	15.0	121	27.3	10.7
15	104	14.0	83	19.0	42.4	105	51.1	32.9	101	57.6	14.8	136	29.7	10.7
16	119	16.5	98	18.7	43.4	120	51.8	32.2	116	59.6	14.6	151	32.1	10.7
17	134	18.9	113	18.4	+6 44.5	135	52.6	−2 31.4	132	01.7	−0 14.5	166	34.5	−14 10.7
18	149	21.4	128	18.1	+6 45.5	150	53.3	−2 30.7	147	03.7	−0 14.3	181	36.9	−14 10.7
19	164	23.8	143	17.9	46.6	165	54.0	30.0	162	05.8	14.1	196	39.3	10.7
20	179	26.3	158	17.6	47.6	180	54.8	29.2	177	07.8	14.0	211	41.7	10.6
21	194	28.8	173	17.3	48.7	195	55.5	28.5	192	09.9	13.8	226	44.1	10.6
22	209	31.2	188	17.1	49.7	210	56.3	27.8	207	11.9	13.6	241	46.5	10.6
23	224	33.7	203	16.8	50.8	225	57.0	27.1	222	14.0	13.5	256	48.9	10.6
24	239	36.2	218	16.5	+6 51.8	240	57.8	−2 26.3	237	16.0	−0 13.3	271	51.3	−14 10.6
Dif	—			−3	+10		+7	+7		+21	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.7		LUNA Edad: 21d.1 SD: 16′.0 PMG: 5h 54m PHE 4h: 58′.7; 12h: 58′.5; 20h: 58′.2 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	180 50.3	+20 20.3	274 34.7	85	−19 32.6	114	**60 N**	20 48	21 59	** **	2 16	4	9 48	98
1	195 50.3	20.8	289 02.2	87	21.2	114	**58**	32	33	** **	2 03	9	10 00	94
2	210 50.2	21.3	303 29.9	88	−19 09.8	116	**56**	19	21 13	22 45	1 51	13	10	90
3	225 50.2	21.8	317 57.7	89	−18 58.2	117	**54**	20 08	20 56	22 10	41	17	20	86
4	240 50.1	22.3	332 25.6	90	46.5	117	**52**	19 58	42	21 45	32	20	28	83
5	255 50.1	+20 22.8	346 53.6		−18 34.8	117	**50**	19 49	20 30	21 26	1 24	22	10 35	81
6	270 50.0	+20 23.3	1 21.8	92	−18 23.0	118	**45**	19 30	20 05	20 51	1 07	27	10 51	75
7	285 50.0	23.8	15 50.0	92	−18 11.0	120	**40**	15	19 46	25	0 53	31	11 04	70
8	300 49.9	24.3	30 18.4	94	−17 59.0	120	**35**	19 02	31	20 05	41	35	14	67
9	315 49.9	24.8	44 46.9	95	46.9	121	**30**	18 51	19 17	19 49	31	37	24	64
10	330 49.8	25.2	59 15.5	96	34.7	122	**20**	32	18 56	24	0 12	43	40	58
11	345 49.8	+20 25.7	73 44.2	97	−17 22.4	123	**10 N**	18 15	18 38	19 04	** **	**	11 54	54
12	0 49.8	+20 26.2	88 13.0	98	−17 10.1	123	**0**	18 00	18 22	18 48	** **	**	12 07	49
13	15 49.7	26.7	102 41.9	99	−16 57.7	124	**10 S**	17 45	18 08	33	** **	**	20	45
14	30 49.7	27.2	117 11.0	101	45.1	126	**20**	29	17 53	20	** **	**	33	41
15	45 49.6	27.7	131 40.1	101	32.6	125	**30**	11	37	18 06	23 57	62	49	35
16	60 49.6	28.2	146 09.4	103	19.9	127	**35**	17 01	28	17 59	50	65	12 58	32
17	75 49.5	+20 28.7	160 38.8	104	−16 07.2	127	**40**	16 49	17 18	17 51	23 41	69	13 08	29
18	90 49.5	+20 29.1	175 08.2	104	−15 54.4	128	**45**	16 34	17 07	17 43	23 30	74	13 20	24
19	105 49.4	29.6	189 37.8	106	41.5	129	**50**	17	16 54	34	18	78	34	20
20	120 49.4	30.1	204 07.5	107	28.5	130	**52**	09	48	30	12	81	41	17
21	135 49.3	30.6	218 37.3	108	15.5	130	**54**	16 00	41	25	23 05	84	48	14
22	150 49.3	31.1	233 07.2	109	−15 02.5	130	**56**	15 50	34	21	22 58	87	13 56	12
23	165 49.2	31.6	247 37.1	109	−14 49.3	132	**58**	38	26	15	50	91	14 05	8
24	180 49.2	+20 32.0	262 07.2	111	−14 36.1	132	**60 S**	15 25	16 16	17 10	22 40	95	14 16	4

UT	ARIES PMG 8h 00m.3	VENUS Mag: −4.0 PMG: 9h 27m		MARTE Mag: +0.7 PMG: 7h 56m		JÚPITER Mag: −2.2 PMG: 8h 10m		SATURNO Mag: +0.8 PMG: 5h 52m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	239 36.2	218 16.5	+6 51.8	240 57.8	−2 26.3	237 16.0	−0 13.3	271 51.3	−14 10.6
1	254 38.6	233 16.3	52.9	255 58.5	25.6	252 18.1	13.1	286 53.7	10.6
2	269 41.1	248 16.0	53.9	270 59.2	24.9	267 20.1	13.0	301 56.1	10.6
3	284 43.6	263 15.7	55.0	286 00.0	24.1	282 22.2	12.8	316 58.5	10.6
4	299 46.0	278 15.5	56.0	301 00.7	23.4	297 24.2	12.6	332 01.0	10.6
5	314 48.5	293 15.2	+6 57.1	316 01.5	−2 22.7	312 26.3	−0 12.5	347 03.4	−14 10.5
6	329 50.9	308 14.9	+6 58.1	331 02.2	−2 22.0	327 28.4	−0 12.3	2 05.8	−14 10.5
7	344 53.4	323 14.6	+6 59.2	346 03.0	21.2	342 30.4	12.1	17 08.2	10.5
8	359 55.9	338 14.4	+7 00.2	1 03.7	20.5	357 32.5	11.9	32 10.6	10.5
9	14 58.3	353 14.1	01.3	16 04.4	19.8	12 34.5	11.8	47 13.0	10.5
10	30 00.8	8 13.8	02.3	31 05.2	19.0	27 36.6	11.6	62 15.4	10.5
11	45 03.3	23 13.6	+7 03.3	46 05.9	−2 18.3	42 38.6	−0 11.4	77 17.8	−14 10.5
12	60 05.7	38 13.3	+7 04.4	61 06.7	−2 17.6	57 40.7	−0 11.3	92 20.2	−14 10.5
13	75 08.2	53 13.0	05.4	76 07.4	16.9	72 42.7	11.1	107 22.6	10.4
14	90 10.7	68 12.7	06.5	91 08.2	16.1	87 44.8	10.9	122 25.0	10.4
15	105 13.1	83 12.5	07.5	106 08.9	15.4	102 46.9	10.8	137 27.4	10.4
16	120 15.6	98 12.2	08.6	121 09.6	14.7	117 48.9	10.6	152 29.8	10.4
17	135 18.1	113 11.9	+7 09.6	136 10.4	−2 13.9	132 51.0	−0 10.4	167 32.3	−14 10.4
18	150 20.5	128 11.6	+7 10.7	151 11.1	−2 13.2	147 53.0	−0 10.3	182 34.7	−14 10.4
19	165 23.0	143 11.4	11.7	166 11.9	12.5	162 55.1	10.1	197 37.1	10.4
20	180 25.4	158 11.1	12.8	181 12.6	11.8	177 57.1	09.9	212 39.5	10.4
21	195 27.9	173 10.8	13.8	196 13.4	11.0	192 59.2	09.8	227 41.9	10.4
22	210 30.4	188 10.5	14.9	211 14.1	10.3	208 01.3	09.6	242 44.3	10.4
23	225 32.8	203 10.3	15.9	226 14.9	09.6	223 03.3	09.4	257 46.7	10.3
24	240 35.3	218 10.0	+7 16.9	241 15.6	−2 08.9	238 05.4	−0 09.3	272 49.1	−14 10.3
Dif	—	−3	+10	+7	+7	+21	+2	+24	0

UT	SOL SD: 15′.8 PMG: 11h 56m.8				LUNA Edad: 22d.1 SD: 15′.8 PMG: 6h 45m PHE: 4h: 58′.0; 12h: 57′.7; 20h: 57′.5 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	180	49.2	+20	32.0	262	07.2	−14	36.1	**60 N**	** **	1 54	3 05	2 20	3	11 26	93
1	195	49.1		32.5	276	37.4 112		22.9 132	**58**	** **	2 20	21	12	6	34	88
2	210	49.1		33.0	291	07.7 113	−14	09.5 134	**56**	1 08	40	34	2 04	10	40	85
3	225	49.0		33.5	305	38.1 114	−13	56.2 133	**54**	1 43	2 57	45	1 58	12	46	82
4	240	49.0		34.0	320	08.6 115		42.7 135	**52**	2 08	3 11	3 55	52	15	51	79
5	255	48.9	+20	34.4	334	39.1 115	−13	29.3 134	**50**	2 27	3 23	4 04	1 46	18	11 56	77
6	270	48.8	+20	34.9	349	09.8 117	−13	15.7 136	**45**	3 03	3 48	4 23	1 34	23	12 06	72
7	285	48.8		35.4	3	40.5 117	−13	02.1 136	**40**	28	4 07	38	24	27	14	68
8	300	48.7		35.9	18	11.4 119	−12	48.5 136	**35**	3 48	23	4 51	16	30	21	64
9	315	48.7		36.4	32	42.3 119		34.8 137	**30**	4 04	36	5 02	1 08	34	28	60
10	330	48.6		36.8	47	13.3 120		21.1 137	**20**	29	4 58	21	0 55	39	38	55
11	345	48.6	+20	37.3	61	44.4 121	−12	07.3 138	**10 N**	4 49	5 15	5 38	0 44	43	12 48	50
12	0	48.5	+20	37.8	76	15.6 122	−11	53.4 139	**0**	5 05	5 31	5 53	0 33	48	12 56	46
13	15	48.5		38.3	90	46.9 123		39.6 138	**10 S**	20	5 46	6 08	22	52	13 05	41
14	30	48.4		38.7	105	18.3 124		25.7 139	**20**	34	6 01	24	0 11	56	14	37
15	45	48.4		39.2	119	49.7 124	−11	11.7 140	**30**	48	17	43	** **	**	24	32
16	60	48.3		39.7	134	21.2 125	−10	57.7 140	**35**	5 55	26	6 53	** **	**	30	29
17	75	48.3	+20	40.1	148	52.8 126	−10	43.7 140	**40**	6 03	6 36	7 05	** **	**	13 37	25
18	90	48.2	+20	40.6	163	24.5 127	−10	29.6 141	**45**	6 11	6 47	7 20	** **	**	13 44	21
19	105	48.1		41.1	177	56.3 128		15.5 141	**50**	20	7 00	37	** **	**	54	16
20	120	48.1		41.6	192	28.1 128	−10	01.4 141	**52**	24	06	45	** **	**	13 58	14
21	135	48.0		42.0	207	00.0 129	−9	47.2 142	**54**	29	13	7 54	** **	**	14 02	12
22	150	48.0		42.5	221	32.0 130		33.0 142	**56**	34	21	8 05	** **	**	08	8
23	165	47.9		43.0	236	04.1 131		18.8 142	**58**	39	29	16	** **	**	13	6
24	180	47.9	+20	43.4	250	36.2 131	−9	04.5 143	**60 S**	6 44	7 38	8 30	** **	**	14 20	2

UT	ARIES PMG 7h 56m.3		VENUS Mag: −4.0 PMG: 9h 28m			MARTE Mag: +0.7 PMG: 7h 55m			JÚPITER Mag: −2.3 PMG: 8h 07m			SATURNO Mag: +0.8 PMG: 5h 48m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	240	35.3	218	10.0	+7 16.9	241	15.6	−2 08.9	238	05.4	−0 09.3	272	49.1	−14 10.3
1	255	37.8	233	09.7	18.0	256	16.3	08.1	253	07.4	09.1	287	51.5	10.3
2	270	40.2	248	09.4	19.0	271	17.1	07.4	268	09.5	08.9	302	53.9	10.3
3	285	42.7	263	09.2	20.1	286	17.8	06.7	283	11.5	08.8	317	56.4	10.3
4	300	45.2	278	08.9	21.1	301	18.6	05.9	298	13.6	08.6	332	58.8	10.3
5	315	47.6	293	08.6	+7 22.2	316	19.3	−2 05.2	313	15.7	−0 08.4	348	01.2	−14 10.3
6	330	50.1	308	08.3	+7 23.2	331	20.1	−2 04.5	328	17.7	−0 08.3	3	03.6	−14 10.3
7	345	52.6	323	08.0	24.2	346	20.8	03.8	343	19.8	08.1	18	06.0	10.3
8	0	55.0	338	07.8	25.3	1	21.6	03.0	358	21.8	07.9	33	08.4	10.2
9	15	57.5	353	07.5	26.3	16	22.3	02.3	13	23.9	07.8	48	10.8	10.2
10	30	59.9	8	07.2	27.4	31	23.0	01.6	28	26.0	07.6	63	13.2	10.2
11	46	02.4	23	06.9	+7 28.4	46	23.8	−2 00.8	43	28.0	−0 07.4	78	15.6	−14 10.2
12	61	04.9	38	06.6	+7 29.5	61	24.5	−2 00.1	58	30.1	−0 07.3	93	18.1	−14 10.2
13	76	07.3	53	06.4	30.5	76	25.3	−1 59.4	73	32.1	07.1	108	20.5	10.2
14	91	09.8	68	06.1	31.6	91	26.0	58.7	88	34.2	06.9	123	22.9	10.2
15	106	12.3	83	05.8	32.6	106	26.8	57.9	103	36.3	06.8	138	25.3	10.2
16	121	14.7	98	05.5	33.6	121	27.5	57.2	118	38.3	06.6	153	27.7	10.2
17	136	17.2	113	05.2	+7 34.7	136	28.3	−1 56.5	133	40.4	−0 06.4	168	30.1	−14 10.2
18	151	19.7	128	05.0	+7 35.7	151	29.0	−1 55.7	148	42.4	−0 06.3	183	32.5	−14 10.1
19	166	22.1	143	04.7	36.8	166	29.8	55.0	163	44.5	06.1	198	34.9	10.1
20	181	24.6	158	04.4	37.8	181	30.5	54.3	178	46.6	06.0	213	37.4	10.1
21	196	27.0	173	04.1	38.8	196	31.2	53.6	193	48.6	05.8	228	39.8	10.1
22	211	29.5	188	03.8	39.9	211	32.0	52.8	208	50.7	05.6	243	42.2	10.1
23	226	32.0	203	03.5	40.9	226	32.7	52.1	223	52.7	05.5	258	44.6	10.1
24	241	34.4	218	03.3	+7 42.0	241	33.5	−1 51.4	238	54.8	−0 05.3	273	47.0	−14 10.1
Dif	—			−3	+10		+7	+7		+21	+2		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 23^{d}.1		PHE	4^{h}: 57′.3								
	PMG: 11^{h} 56^{m}.9				SD: 15′.6			12^{h}: 57′.0								
					PMG: 7^{h} 31^{m}			20^{h}: 56′.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	47.9	+20	43.4	250	36.2	−9	04.5	**60 N**	20 52	22 06	** **	2 23	2	12 59	88
1	195	47.8		43.9	265	08.4 132	−8	50.3 142	**58**	36	21 38	** **	18	5	13 02	85
2	210	47.8		44.4	279	40.7 133		35.9 144	**56**	22	17	22 55	14	8	05	82
3	225	47.7		44.8	294	13.0 133		21.6 143	**54**	11	21 00	22 16	10	11	08	79
4	240	47.6		45.3	308	45.4 134	−8	07.2 144	**52**	20 00	20 45	21 50	07	13	10	77
5	255	47.6	+20	45.8	323	17.9 135	−7	52.9 143	**50**	19 51	20 33	21 30	2 04	15	13 13	74
6	270	47.5	+20	46.2	337	50.4 135	−7	38.5 144	**45**	19 32	20 08	20 53	1 57	20	13 18	69
7	285	47.5		46.7	352	23.0 136		24.0 145	**40**	16	19 48	27	51	24	22	64
8	300	47.4		47.1	6	55.6 136	−7	09.6 144	**35**	19 03	32	20 07	46	27	25	61
9	315	47.4		47.6	21	28.3 137	−6	55.1 145	**30**	18 52	19 19	19 51	42	30	28	58
10	330	47.3		48.1	36	01.1 138		40.6 145	**20**	33	18 57	25	34	35	33	53
11	345	47.2	+20	48.5	50	33.9 138	−6	26.1 145	**10 N**	18 16	18 39	19 05	1 27	40	13 38	48
12	0	47.2	+20	49.0	65	06.8 139	−6	11.6 145	**0**	18 00	18 23	18 48	1 21	44	13 42	44
13	15	47.1		49.4	79	39.8 140	−5	57.1 145	**10 S**	17 45	18 08	33	14	49	46	40
14	30	47.1		49.9	94	12.7 139		42.6 145	**20**	29	17 52	19	1 07	54	51	34
15	45	47.0		50.4	108	45.8 141		28.0 146	**30**	10	36	18 05	0 59	60	56	29
16	60	46.9		50.8	123	18.9 141	−5	13.5 145	**35**	17 00	27	17 58	55	62	13 59	26
17	75	46.9	+20	51.3	137	52.0 141	−4	58.9 146	**40**	16 47	17 17	17 50	0 50	66	14 02	23
18	90	46.8	+20	51.7	152	25.2 142	−4	44.3 146	**45**	16 33	17 05	17 42	0 44	70	14 05	20
19	105	46.8		52.2	166	58.4 142		29.7 146	**50**	15	16 52	32	36	76	10	14
20	120	46.7		52.6	181	31.7 143		15.1 146	**52**	16 07	46	28	33	78	12	12
21	135	46.6		53.1	196	05.0 143	−4	00.5 146	**54**	15 57	39	23	29	80	14	10
22	150	46.6		53.5	210	38.4 144	−3	45.9 146	**56**	47	31	18	25	83	16	8
23	165	46.5		54.0	225	11.8 144		31.3 146	**58**	35	23	13	21	86	19	5
24	180	46.4	+20	54.4	239	45.3 145	−3	16.7 146	**60 S**	15 21	16 13	17 07	0 15	90	14 22	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.3			Mag: +0.8		
	7^{h} 52^{m}.4		PMG: 9^{h} 28^{m}			PMG: 7^{h} 53^{m}			PMG: 8^{h} 03^{m}			PMG: 5^{h} 44^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	241	34.4	218	03.3	+7 42.0	241	33.5	−1 51.4	238	54.8	−0 05.3	273	47.0	−14 10.1
1	256	36.9	233	03.0	43.0	256	34.2	50.6	253	56.9	05.1	288	49.4	10.1
2	271	39.4	248	02.7	44.0	271	35.0	49.9	268	58.9	05.0	303	51.8	10.1
3	286	41.8	263	02.4	45.1	286	35.7	49.2	284	01.0	04.8	318	54.3	10.1
4	301	44.3	278	02.1	46.1	301	36.5	48.5	299	03.1	04.6	333	56.7	10.1
5	316	46.8	293	01.8	+7 47.2	316	37.2	−1 47.7	314	05.1	−0 04.5	348	59.1	−14 10.0
6	331	49.2	308	01.6	+7 48.2	331	38.0	−1 47.0	329	07.2	−0 04.3	4	01.5	−14 10.0
7	346	51.7	323	01.3	49.2	346	38.7	46.3	344	09.2	04.1	19	03.9	10.0
8	1	54.2	338	01.0	50.3	1	39.5	45.6	359	11.3	04.0	34	06.3	10.0
9	16	56.6	353	00.7	51.3	16	40.2	44.8	14	13.4	03.8	49	08.7	10.0
10	31	59.1	8	00.4	52.4	31	41.0	44.1	29	15.4	03.6	64	11.2	10.0
11	47	01.5	23	00.1	+7 53.4	46	41.7	−1 43.4	44	17.5	−0 03.5	79	13.6	−14 10.0
12	62	04.0	37	59.8	+7 54.4	61	42.4	−1 42.6	59	19.6	−0 03.3	94	16.0	−14 10.0
13	77	06.5	52	59.6	55.5	76	43.2	41.9	74	21.6	03.2	109	18.4	10.0
14	92	08.9	67	59.3	56.5	91	43.9	41.2	89	23.7	03.0	124	20.8	10.0
15	107	11.4	82	59.0	57.6	106	44.7	40.5	104	25.8	02.8	139	23.2	10.0
16	122	13.9	97	58.7	58.6	121	45.4	39.7	119	27.8	02.7	154	25.7	10.0
17	137	16.3	112	58.4	+7 59.6	136	46.2	−1 39.0	134	29.9	−0 02.5	169	28.1	−14 09.9
18	152	18.8	127	58.1	+8 00.7	151	46.9	−1 38.3	149	31.9	−0 02.3	184	30.5	−14 09.9
19	167	21.3	142	57.8	01.7	166	47.7	37.5	164	34.0	02.2	199	32.9	09.9
20	182	23.7	157	57.5	02.7	181	48.4	36.8	179	36.1	02.0	214	35.3	09.9
21	197	26.2	172	57.3	03.8	196	49.2	36.1	194	38.1	01.8	229	37.7	09.9
22	212	28.7	187	57.0	04.8	211	49.9	35.4	209	40.2	01.7	244	40.2	09.9
23	227	31.1	202	56.7	05.9	226	50.7	34.6	224	42.3	01.5	259	42.6	09.9
24	242	33.6	217	56.4	+8 06.9	241	51.4	−1 33.9	239	44.3	−0 01.4	274	45.0	−14 09.9
Dif	—			−3	+10		+7	+7		+21	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 57m.0				LUNA Edad: 24d.1 SD: 15′.4 PMG: 8h 16m PHE 4h: 56′.6; 12h: 56′.4; 20h: 56′.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	180	46.4	+20	54.4	239	45.3	−3	16.7	**60 N**	** **	1 47	3 01	2 25	1	14 27	86
1	195	46.4		54.9	254	18.7 144	−3	02.1 146	**58**	** **	2 15	17	23	5	27	83
2	210	46.3		55.4	268	52.3 146	−2	47.5 146	**56**	0 58	37	31	22	7	27	80
3	225	46.3		55.8	283	25.8 145		32.9 146	**54**	1 38	2 54	43	21	10	27	77
4	240	46.2		56.3	297	59.4 146		18.3 146	**52**	2 04	3 08	3 53	20	12	27	74
5	255	46.1	+20	56.7	312	33.1 147	−2	03.7 146	**50**	2 24	3 21	4 02	2 19	14	14 27	72
6	270	46.1	+20	57.1	327	06.7 146	−1	49.1 146	**45**	3 00	3 46	4 21	2 17	18	14 27	67
7	285	46.0		57.6	341	40.4 147		34.5 146	**40**	26	4 06	37	15	22	26	64
8	300	45.9		58.0	356	14.2 148		19.9 146	**35**	3 46	21	4 50	13	26	26	60
9	315	45.9		58.5	10	47.9 147	−1	05.3 146	**30**	4 03	35	5 02	12	29	26	57
10	330	45.8		58.9	25	21.7 148	−0	50.7 146	**20**	29	4 57	21	09	34	26	52
11	345	45.8	+20	59.4	39	55.5 148	−0	36.2 145	**10 N**	4 49	5 15	5 38	2 07	39	14 26	47
12	0	45.7	+20	59.8	54	29.4 149	−0	21.6 146	**0**	5 05	5 31	5 53	2 05	43	14 26	43
13	15	45.6	+21	00.3	69	03.2 148	−0	07.1 145	**10 S**	20	5 46	6 09	03	47	26	38
14	30	45.6		00.7	83	37.1 149	+0	07.5 146	**20**	35	6 02	25	2 01	52	25	34
15	45	45.5		01.2	98	11.0 149		22.0 145	**30**	49	18	44	1 59	57	25	29
16	60	45.4		01.6	112	45.0 150		36.5 145	**35**	5 56	27	6 55	57	61	25	26
17	75	45.4	+21	02.0	127	18.9 149	+0	51.0 145	**40**	6 04	6 37	7 07	1 56	64	14 25	22
18	90	45.3	+21	02.5	141	52.9 150	+1	05.5 145	**45**	6 13	6 49	7 22	1 54	68	14 25	18
19	105	45.2		02.9	156	26.9 150		20.0 145	**50**	22	7 03	39	52	72	24	15
20	120	45.2		03.4	171	00.9 150		34.4 144	**52**	26	09	48	51	75	24	13
21	135	45.1		03.8	185	34.9 150	+1	48.8 144	**54**	31	16	7 57	49	78	24	10
22	150	45.0		04.2	200	08.9 150	+2	03.2 144	**56**	36	23	8 08	48	81	24	7
23	165	45.0		04.7	214	43.0 151		17.6 144	**58**	41	32	20	47	83	24	5
24	180	44.9	+21	05.1	229	17.1 151	+2	32.0 144	**60 S**	6 47	7 41	8 34	1 45	87	14 24	1

UT	ARIES PMG 7h 48m.5		VENUS Mag: −4.0 PMG: 9h 28m			MARTE Mag: +0.7 PMG: 7h 52m			JÚPITER Mag: −2.3 PMG: 8h 00m			SATURNO Mag: +0.8 PMG: 5h 40m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	242	33.6	217	56.4	+8 06.9	241	51.4	−1 33.9	239	44.3	−0 01.4	274	45.0	−14 09.9
1	257	36.0	232	56.1	07.9	256	52.2	33.2	254	46.4	01.2	289	47.4	09.9
2	272	38.5	247	55.8	09.0	271	52.9	32.5	269	48.5	01.0	304	49.8	09.9
3	287	41.0	262	55.5	10.0	286	53.7	31.7	284	50.5	00.9	319	52.2	09.9
4	302	43.4	277	55.2	11.0	301	54.4	31.0	299	52.6	00.7	334	54.7	09.9
5	317	45.9	292	54.9	+8 12.1	316	55.2	−1 30.3	314	54.7	−0 00.5	349	57.1	−14 09.9
6	332	48.4	307	54.6	+8 13.1	331	55.9	−1 29.5	329	56.7	−0 00.4	4	59.5	−14 09.8
7	347	50.8	322	54.3	14.1	346	56.7	28.8	344	58.8	00.2	20	01.9	09.8
8	2	53.3	337	54.0	15.2	1	57.4	28.1	0	00.9	−0 00.1	35	04.3	09.8
9	17	55.8	352	53.8	16.2	16	58.1	27.4	15	02.9	+0 00.1	50	06.8	09.8
10	32	58.2	7	53.5	17.2	31	58.9	26.6	30	05.0	00.3	65	09.2	09.8
11	48	00.7	22	53.2	+8 18.3	46	59.6	−1 25.9	45	07.1	+0 00.4	80	11.6	−14 09.8
12	63	03.1	37	52.9	+8 19.3	62	00.4	−1 25.2	60	09.1	+0 00.6	95	14.0	−14 09.8
13	78	05.6	52	52.6	20.3	77	01.1	24.4	75	11.2	00.8	110	16.4	09.8
14	93	08.1	67	52.3	21.4	92	01.9	23.7	90	13.3	00.9	125	18.9	09.8
15	108	10.5	82	52.0	22.4	107	02.6	23.0	105	15.3	01.1	140	21.3	09.8
16	123	13.0	97	51.7	23.4	122	03.4	22.3	120	17.4	01.2	155	23.7	09.8
17	138	15.5	112	51.4	+8 24.5	137	04.1	−1 21.5	135	19.5	+0 01.4	170	26.1	−14 09.8
18	153	17.9	127	51.1	+8 25.5	152	04.9	−1 20.8	150	21.6	+0 01.6	185	28.5	−14 09.8
19	168	20.4	142	50.8	26.5	167	05.6	20.1	165	23.6	01.7	200	31.0	09.8
20	183	22.9	157	50.5	27.6	182	06.4	19.4	180	25.7	01.9	215	33.4	09.7
21	198	25.3	172	50.2	28.6	197	07.1	18.6	195	27.8	02.1	230	35.8	09.7
22	213	27.8	187	49.9	29.6	212	07.9	17.9	210	29.8	02.2	245	38.2	09.7
23	228	30.3	202	49.6	30.7	227	08.6	17.2	225	31.9	02.4	260	40.7	09.7
24	243	32.7	217	49.3	+8 31.7	242	09.4	−1 16.4	240	34.0	+0 02.5	275	43.1	−14 09.7
Dif	—			−3	+10		+7	+7		+21	+2		+24	0

UT	SOL SD: 15′.8 PMG: 11h 57m.1				LUNA Edad: 25d.1 SD: 15′.3 PMG: 8h 58m PHE 4h: 56′.0; 12h: 55′.8; 20h: 55′.7 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	180	44.9	+21	05.1	229	17.1	+2	32.0	**60 N**	20 56	22 13	** **	2 26	2	15 53	87
1	195	44.8		05.5	243	51.1 150	+2	46.4 144	**58**	40	21 43	** **	28	5	50	82
2	210	44.8		06.0	258	25.2 151	+3	00.7 143	**56**	26	21	23 06	29	8	47	79
3	225	44.7		06.4	272	59.3 151		15.0 143	**54**	14	21 03	22 22	31	10	44	77
4	240	44.6		06.9	287	33.4 151		29.3 143	**52**	20 03	20 48	21 54	32	12	41	74
5	255	44.6	+21	07.3	302	07.5 151	+3	43.5 142	**50**	19 54	20 36	21 34	2 33	14	15 39	72
6	270	44.5	+21	07.7	316	41.6 151	+3	57.8 143	**45**	19 34	20 10	20 56	2 35	19	15 34	67
7	285	44.4		08.2	331	15.7 151	+4	12.0 142	**40**	18	19 50	30	37	23	30	63
8	300	44.4		08.6	345	49.9 152		26.1 141	**35**	19 05	34	20 09	39	26	26	60
9	315	44.3		09.0	0	24.0 151		40.3 142	**30**	18 53	19 20	19 52	41	29	23	57
10	330	44.2		09.4	14	58.1 151	+4	54.4 141	**20**	33	18 58	26	43	34	18	51
11	345	44.1	+21	09.9	29	32.2 151	+5	08.5 141	**10 N**	18 16	18 39	19 06	2 46	38	15 13	47
12	0	44.1	+21	10.3	44	06.4 152	+5	22.6 141	**0**	18 01	18 23	18 49	2 48	43	15 09	42
13	15	44.0		10.7	58	40.5 151		36.6 140	**10 S**	17 45	18 08	33	50	47	15 04	39
14	30	43.9		11.2	73	14.6 151	+5	50.6 140	**20**	28	17 52	19	53	51	14 59	35
15	45	43.9		11.6	87	48.7 151	+6	04.5 139	**30**	17 10	35	18 05	56	57	54	30
16	60	43.8		12.0	102	22.8 151		18.5 140	**35**	16 59	26	17 57	2 58	59	51	27
17	75	43.7	+21	12.4	116	56.9 151	+6	32.4 139	**40**	16 46	17 16	17 49	3 00	63	14 47	24
18	90	43.7	+21	12.9	131	31.0 151	+6	46.2 138	**45**	16 31	17 04	17 40	3 02	67	14 43	20
19	105	43.6		13.3	146	05.1 151	+7	00.0 138	**50**	13	16 50	31	04	72	39	15
20	120	43.5		13.7	160	39.2 151	+7	13.8 138	**52**	16 05	44	26	06	74	37	12
21	135	43.4		14.1	175	13.3 151		27.5 137	**54**	15 55	37	21	07	77	34	11
22	150	43.4		14.6	189	47.3 150		41.2 137	**56**	44	29	16	09	79	31	9
23	165	43.3		15.0	204	21.4 151	+7	54.9 137	**58**	32	20	11	10	83	29	5
24	180	43.2	+21	15.4	218	55.4 150	+8	08.5 136	**60 S**	15 18	16 11	17 05	3 12	86	14 25	2

UT	ARIES PMG 7h 44m.5		VENUS Mag: −4.0 PMG: 9h 29m			MARTE Mag: +0.7 PMG: 7h 51m			JÚPITER Mag: −2.3 PMG: 7h 57m			SATURNO Mag: +0.8 PMG: 5h 36m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	243	32.7	217	49.3	+8 31.7	242	09.4	−1 16.4	240	34.0	+0 02.5	275	43.1	−14 09.7
1	258	35.2	232	49.0	32.7	257	10.1	15.7	255	36.0	02.7	290	45.5	09.7
2	273	37.6	247	48.7	33.8	272	10.9	15.0	270	38.1	02.9	305	47.9	09.7
3	288	40.1	262	48.4	34.8	287	11.6	14.3	285	40.2	03.0	320	50.3	09.7
4	303	42.6	277	48.1	35.8	302	12.4	13.5	300	42.2	03.2	335	52.8	09.7
5	318	45.0	292	47.8	+8 36.8	317	13.1	−1 12.8	315	44.3	+0 03.3	350	55.2	−14 09.7
6	333	47.5	307	47.5	+8 37.9	332	13.9	−1 12.1	330	46.4	+0 03.5	5	57.6	−14 09.7
7	348	50.0	322	47.2	38.9	347	14.6	11.4	345	48.5	03.7	21	00.0	09.7
8	3	52.4	337	46.9	39.9	2	15.4	10.6	0	50.5	03.8	36	02.5	09.7
9	18	54.9	352	46.6	41.0	17	16.1	09.9	15	52.6	04.0	51	04.9	09.7
10	33	57.4	7	46.3	42.0	32	16.9	09.2	30	54.7	04.1	66	07.3	09.7
11	48	59.8	22	46.0	+8 43.0	47	17.6	−1 08.4	45	56.7	+0 04.3	81	09.7	−14 09.7
12	64	02.3	37	45.7	+8 44.1	62	18.4	−1 07.7	60	58.8	+0 04.5	96	12.1	−14 09.6
13	79	04.7	52	45.4	45.1	77	19.1	07.0	76	00.9	04.6	111	14.6	09.6
14	94	07.2	67	45.1	46.1	92	19.9	06.3	91	03.0	04.8	126	17.0	09.6
15	109	09.7	82	44.8	47.1	107	20.6	05.5	106	05.0	04.9	141	19.4	09.6
16	124	12.1	97	44.5	48.2	122	21.4	04.8	121	07.1	05.1	156	21.8	09.6
17	139	14.6	112	44.2	+8 49.2	137	22.1	−1 04.1	136	09.2	+0 05.3	171	24.3	−14 09.6
18	154	17.1	127	43.9	+8 50.2	152	22.9	−1 03.4	151	11.3	+0 05.4	186	26.7	−14 09.6
19	169	19.5	142	43.6	51.2	167	23.6	02.6	166	13.3	05.6	201	29.1	09.6
20	184	22.0	157	43.3	52.3	182	24.4	01.9	181	15.4	05.7	216	31.5	09.6
21	199	24.5	172	43.0	53.3	197	25.1	01.2	196	17.5	05.9	231	34.0	09.6
22	214	26.9	187	42.7	54.3	212	25.9	−1 00.4	211	19.5	06.1	246	36.4	09.6
23	229	29.4	202	42.4	55.4	227	26.6	−0 59.7	226	21.6	06.2	261	38.8	09.6
24	244	31.9	217	42.1	+8 56.4	242	27.4	−0 59.0	241	23.7	+0 06.4	276	41.2	−14 09.6
Dif	—			−3	+10		+8	+7		+21	+2		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 26^{d}.1		PHE	4^{h}: 55′.5									
	PMG: 11^{h} 57^{m}.2				SD: 15′.1			12^{h}: 55′.3									
					PMG: 9^{h} 41^{m}			20^{h}: 55′.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	180	43.2	+21	15.4	218	55.4	+8	08.5		**60 N**	** **	1 41	2 58	2 28	2	17 20	87
1	195	43.2		15.8	233	29.4 150		22.1	136	**58**	** **	2 11	3 14	33	6	12	84
2	210	43.1		16.3	248	03.4 150		35.6	135	**56**	0 48	33	28	37	9	06	80
3	225	43.0		16.7	262	37.4 150	+8	49.1	135	**54**	1 32	2 51	40	41	11	17 01	76
4	240	42.9		17.1	277	11.4 150	+9	02.6	135	**52**	2 00	3 06	3 51	44	14	16 55	75
5	255	42.9	+21	17.5	291	45.4 150	+9	16.0	134	**50**	2 20	3 18	4 00	2 47	16	16 51	72
6	270	42.8	+21	17.9	306	19.3 149	+9	29.3	133	**45**	2 58	3 44	4 20	2 54	21	16 41	67
7	285	42.7		18.3	320	53.2 149		42.7	134	**40**	3 24	4 04	36	3 00	24	33	63
8	300	42.6		18.8	335	27.1 149	+9	55.9	132	**35**	3 45	20	4 49	05	28	26	60
9	315	42.6		19.2	350	01.0 149	+10	09.1	132	**30**	4 02	34	5 01	10	30	20	57
10	330	42.5		19.6	4	34.9 149		22.3	132	**20**	28	4 57	21	17	36	09	52
11	345	42.4	+21	20.0	19	08.7 148	+10	35.4	131	**10 N**	4 48	5 15	5 38	3 24	40	16 00	48
12	0	42.3	+21	20.4	33	42.5 148	+10	48.5	131	**0**	5 06	5 31	5 54	3 31	43	15 51	45
13	15	42.3		20.8	48	16.3 148	+11	01.5	130	**10 S**	21	5 47	6 09	37	48	43	40
14	30	42.2		21.3	62	50.1 148		14.4	129	**20**	35	6 02	26	44	52	34	36
15	45	42.1		21.7	77	23.8 147		27.3	129	**30**	50	19	45	53	56	24	31
16	60	42.0		22.1	91	57.5 147		40.2	129	**35**	5 57	28	6 56	3 57	60	18	28
17	75	42.0	+21	22.5	106	31.2 147	+11	53.0	128	**40**	6 05	6 39	7 09	4 03	63	15 11	25
18	90	41.9	+21	22.9	121	04.9 147	+12	05.7	127	**45**	6 14	6 51	7 24	4 09	67	15 03	22
19	105	41.8		23.3	135	38.5 146		18.4	127	**50**	24	7 05	42	16	72	14 54	17
20	120	41.7		23.7	150	12.1 146		31.0	126	**52**	29	11	7 50	20	74	49	15
21	135	41.7		24.1	164	45.7 146		43.6	126	**54**	33	18	8 00	24	76	45	12
22	150	41.6		24.5	179	19.2 145	+12	56.1	125	**56**	38	26	11	28	80	40	9
23	165	41.5		24.9	193	52.7 145	+13	08.5	124	**58**	44	35	23	33	83	34	6
24	180	41.4	+21	25.3	208	26.2 145	+13	20.9	124	**60 S**	6 50	7 44	8 38	4 38	87	14 27	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.3			Mag: +0.8		
	7^{h} 40^{m}.6		PMG: 9^{h} 29^{m}			PMG: 7^{h} 50^{m}			PMG: 7^{h} 53^{m}			PMG: 5^{h} 32^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	244	31.9	217	42.1	+8 56.4	242	27.4	−0 59.0	241	23.7	+0 06.4	276	41.2	−14 09.6
1	259	34.3	232	41.8	57.4	257	28.2	58.3	256	25.8	06.5	291	43.7	09.6
2	274	36.8	247	41.5	58.4	272	28.9	57.5	271	27.8	06.7	306	46.1	09.6
3	289	39.2	262	41.2	+8 59.5	287	29.7	56.8	286	29.9	06.9	321	48.5	09.6
4	304	41.7	277	40.9	+9 00.5	302	30.4	56.1	301	32.0	07.0	336	51.0	09.6
5	319	44.2	292	40.5	+9 01.5	317	31.2	−0 55.4	316	34.1	+0 07.2	351	53.4	−14 09.6
6	334	46.6	307	40.2	+9 02.5	332	31.9	−0 54.6	331	36.1	+0 07.3	6	55.8	−14 09.6
7	349	49.1	322	39.9	03.5	347	32.7	53.9	346	38.2	07.5	21	58.2	09.5
8	4	51.6	337	39.6	04.6	2	33.4	53.2	1	40.3	07.7	37	00.7	09.5
9	19	54.0	352	39.3	05.6	17	34.2	52.5	16	42.4	07.8	52	03.1	09.5
10	34	56.5	7	39.0	06.6	32	34.9	51.7	31	44.4	08.0	67	05.5	09.5
11	49	59.0	22	38.7	+9 07.6	47	35.7	−0 51.0	46	46.5	+0 08.1	82	07.9	−14 09.5
12	65	01.4	37	38.4	+9 08.7	62	36.4	−0 50.3	61	48.6	+0 08.3	97	10.4	−14 09.5
13	80	03.9	52	38.1	09.7	77	37.2	49.5	76	50.7	08.4	112	12.8	09.5
14	95	06.4	67	37.8	10.7	92	37.9	48.8	91	52.8	08.6	127	15.2	09.5
15	110	08.8	82	37.5	11.7	107	38.7	48.1	106	54.8	08.8	142	17.7	09.5
16	125	11.3	97	37.1	12.8	122	39.4	47.4	121	56.9	08.9	157	20.1	09.5
17	140	13.7	112	36.8	+9 13.8	137	40.2	−0 46.6	136	59.0	+0 09.1	172	22.5	−14 09.5
18	155	16.2	127	36.5	+9 14.8	152	40.9	−0 45.9	152	01.1	+0 09.2	187	24.9	−14 09.5
19	170	18.7	142	36.2	15.8	167	41.7	45.2	167	03.1	09.4	202	27.4	09.5
20	185	21.1	157	35.9	16.8	182	42.4	44.5	182	05.2	09.5	217	29.8	09.5
21	200	23.6	172	35.6	17.9	197	43.2	43.7	197	07.3	09.7	232	32.2	09.5
22	215	26.1	187	35.3	18.9	212	43.9	43.0	212	09.4	09.9	247	34.7	09.5
23	230	28.5	202	35.0	19.9	227	44.7	42.3	227	11.5	10.0	262	37.1	09.5
24	245	31.0	217	34.7	+9 20.9	242	45.5	−0 41.6	242	13.5	+0 10.2	277	39.5	−14 09.5
Dif	—			−3	+10		+8	+7		+21	+2		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 27^{d}.1		PHE	4^{h}: 55′.0								
	PMG: 11^{h} 57^{m}.3				SD: 15′.0			12^{h}: 54′.9								
					PMG: 10^{h} 25^{m}			20^{h}: 54′.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	41.4	+21	25.3	208	26.2	+13	20.9	**60 N**	21 00	22 19	** **	2 30	4	18 47	88
1	195	41.4		25.8	222	59.6 144		33.2 123	**58**	20 43	21 48	** **	39	7	36	83
2	210	41.3		26.2	237	33.0 144		45.5 123	**56**	29	25	23 19	46	11	26	80
3	225	41.2		26.6	252	06.4 144	+13	57.7 122	**54**	16	21 07	22 28	52	14	17	77
4	240	41.1		27.0	266	39.7 143	+14	09.8 121	**52**	20 06	20 51	21 59	2 58	17	10	73
5	255	41.0	+21	27.4	281	13.0 143	+14	21.9 121	**50**	19 56	20 38	21 37	3 03	19	18 03	71
6	270	41.0	+21	27.8	295	46.3 143	+14	33.9 120	**45**	19 36	20 12	20 59	3 15	23	17 48	67
7	285	40.9		28.2	310	19.5 142		45.8 119	**40**	20	19 52	32	24	27	36	63
8	300	40.8		28.6	324	52.7 142	+14	57.7 119	**35**	19 06	35	20 11	33	30	26	60
9	315	40.7		29.0	339	25.9 142	+15	09.5 118	**30**	18 54	19 21	19 54	40	33	17	57
10	330	40.6		29.4	353	59.0 141		21.2 117	**20**	34	18 58	27	3 53	37	17 01	53
11	345	40.6	+21	29.8	8	32.0 140	+15	32.8 116	**10 N**	18 17	18 40	19 06	4 04	41	16 48	49
12	0	40.5	+21	30.2	23	05.1 141	+15	44.4 116	**0**	18 01	18 23	18 49	4 14	45	16 36	45
13	15	40.4		30.6	37	38.1 140	+15	55.9 115	**10 S**	17 45	18 08	34	25	48	23	43
14	30	40.3		31.0	52	11.0 139	+16	07.4 115	**20**	28	17 52	19	36	53	16 10	39
15	45	40.3		31.4	66	43.9 139		18.7 113	**30**	17 09	35	18 04	49	57	15 55	34
16	60	40.2		31.8	81	16.8 139		30.0 113	**35**	16 58	25	17 57	4 57	60	46	32
17	75	40.1	+21	32.2	95	49.6 138	+16	41.2 112	**40**	16 45	17 15	17 48	5 06	63	15 36	29
18	90	40.0	+21	32.6	110	22.4 138	+16	52.4 112	**45**	16 30	17 03	17 39	5 16	67	15 25	25
19	105	39.9		32.9	124	55.1 137	+17	03.4 110	**50**	11	16 49	29	28	72	11	21
20	120	39.8		33.3	139	27.8 137		14.4 110	**52**	16 03	42	25	34	74	15 04	19
21	135	39.8		33.7	154	00.5 137		25.3 109	**54**	15 53	35	20	40	77	14 57	16
22	150	39.7		34.1	168	33.1 136		36.1 108	**56**	42	27	15	48	80	49	13
23	165	39.6		34.5	183	05.7 136		46.9 108	**58**	29	18	09	5 56	84	40	10
24	180	39.5	+21	34.9	197	38.2 135	+17	57.6 107	**60 S**	15 15	16 08	17 03	6 05	88	14 30	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.3			Mag: +0.8		
	7^{h} 36^{m}.7		PMG: 9^{h} 30^{m}			PMG: 7^{h} 49^{m}			PMG: 7^{h} 50^{m}			PMG: 5^{h} 28^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	245	31.0	217	34.7	+9 20.9	242	45.5	−0 41.6	242	13.5	+0 10.2	277	39.5	−14 09.5
1	260	33.5	232	34.3	21.9	257	46.2	40.8	257	15.6	10.3	292	41.9	09.5
2	275	35.9	247	34.0	23.0	272	47.0	40.1	272	17.7	10.5	307	44.4	09.5
3	290	38.4	262	33.7	24.0	287	47.7	39.4	287	19.8	10.6	322	46.8	09.5
4	305	40.8	277	33.4	25.0	302	48.5	38.7	302	21.8	10.8	337	49.2	09.5
5	320	43.3	292	33.1	+9 26.0	317	49.2	−0 37.9	317	23.9	+0 11.0	352	51.7	−14 09.5
6	335	45.8	307	32.8	+9 27.0	332	50.0	−0 37.2	332	26.0	+0 11.1	7	54.1	−14 09.5
7	350	48.2	322	32.5	28.1	347	50.7	36.5	347	28.1	11.3	22	56.5	09.5
8	5	50.7	337	32.1	29.1	2	51.5	35.8	2	30.2	11.4	37	59.0	09.4
9	20	53.2	352	31.8	30.1	17	52.2	35.0	17	32.2	11.6	53	01.4	09.4
10	35	55.6	7	31.5	31.1	32	53.0	34.3	32	34.3	11.7	68	03.8	09.4
11	50	58.1	22	31.2	+9 32.1	47	53.7	−0 33.6	47	36.4	+0 11.9	83	06.3	−14 09.4
12	66	00.6	37	30.9	+9 33.1	62	54.5	−0 32.8	62	38.5	+0 12.1	98	08.7	−14 09.4
13	81	03.0	52	30.5	34.2	77	55.3	32.1	77	40.6	12.2	113	11.1	09.4
14	96	05.5	67	30.2	35.2	92	56.0	31.4	92	42.6	12.4	128	13.6	09.4
15	111	08.0	82	29.9	36.2	107	56.8	30.7	107	44.7	12.5	143	16.0	09.4
16	126	10.4	97	29.6	37.2	122	57.5	29.9	122	46.8	12.7	158	18.4	09.4
17	141	12.9	112	29.3	+9 38.2	137	58.3	−0 29.2	137	48.9	+0 12.8	173	20.8	−14 09.4
18	156	15.3	127	29.0	+9 39.2	152	59.0	−0 28.5	152	51.0	+0 13.0	188	23.3	−14 09.4
19	171	17.8	142	28.6	40.2	167	59.8	27.8	167	53.1	13.2	203	25.7	09.4
20	186	20.3	157	28.3	41.3	183	00.5	27.0	182	55.1	13.3	218	28.1	09.4
21	201	22.7	172	28.0	42.3	198	01.3	26.3	197	57.2	13.5	233	30.6	09.4
22	216	25.2	187	27.7	43.3	213	02.0	25.6	212	59.3	13.6	248	33.0	09.4
23	231	27.7	202	27.4	44.3	228	02.8	24.9	228	01.4	13.8	263	35.4	09.4
24	246	30.1	217	27.0	+9 45.3	243	03.6	−0 24.1	243	03.5	+0 13.9	278	37.9	−14 09.4
Dif	—			−3	+10		+8	+7		+21	+2		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 28^{d}.1		PHE	4^{h}: 54′.7									
	PMG: 11^{h} 57^{m}.4				SD: 14′.9			12^{h}: 54′.6									
					PMG: 11^{h} 10^{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	180	39.5	+21	34.9	197	38.2	+17	57.6		**60 N**	** **	1 35	2 54	2 34	7	20 15	88
1	195	39.4		35.3	212	10.6 134	+18	08.1	105	**58**	** **	2 06	3 11	46	12	19 59	82
2	210	39.4		35.7	226	43.1 135		18.6	105	**56**	0 35	29	26	2 57	15	46	77
3	225	39.3		36.1	241	15.5 134		29.1	105	**54**	1 27	2 48	38	3 06	19	34	74
4	240	39.2		36.5	255	47.8 133		39.4	103	**52**	1 56	3 03	49	15	21	23	72
5	255	39.1	+21	36.9	270	20.1 133	+18	49.6	102	**50**	2 17	3 16	3 58	3 22	23	19 14	69
6	270	39.0	+21	37.2	284	52.3 132	+18	59.8	102	**45**	2 56	3 43	4 18	3 38	28	18 55	65
7	285	38.9		37.6	299	24.5 132	+19	09.9	101	**40**	3 23	4 03	35	3 51	31	39	62
8	300	38.9		38.0	313	56.6 131		19.9	100	**35**	3 44	19	4 48	4 03	34	26	59
9	315	38.8		38.4	328	28.7 131		29.8	99	**30**	4 01	33	5 00	13	36	18 14	57
10	330	38.7		38.8	343	00.8 131		39.6	98	**20**	28	4 56	20	30	40	17 54	54
11	345	38.6	+21	39.2	357	32.8 130	+19	49.3	97	**10 N**	4 48	5 15	5 38	4 45	44	17 37	51
12	0	38.5	+21	39.5	12	04.7 129	+19	58.9	96	**0**	5 06	5 32	5 54	4 59	47	17 21	48
13	15	38.4		39.9	26	36.6 129	+20	08.4	95	**10 S**	21	5 47	6 10	5 13	50	17 06	45
14	30	38.4		40.3	41	08.5 129		17.9	95	**20**	36	6 03	27	29	53	16 49	42
15	45	38.3		40.7	55	40.3 128		27.2	93	**30**	51	20	46	46	58	29	39
16	60	38.2		41.1	70	12.1 128		36.5	93	**35**	5 58	30	6 57	5 57	59	18	36
17	75	38.1	+21	41.5	84	43.8 127	+20	45.7	92	**40**	6 07	6 40	7 10	6 09	62	16 05	34
18	90	38.0	+21	41.8	99	15.4 126	+20	54.7	90	**45**	6 16	6 52	7 25	6 23	66	15 50	30
19	105	37.9		42.2	113	47.0 126	+21	03.7	90	**50**	26	7 07	44	40	71	32	26
20	120	37.8		42.6	128	18.6 126		12.6	89	**52**	31	13	7 53	48	73	23	24
21	135	37.8		43.0	142	50.1 125		21.4	88	**54**	35	20	8 03	6 57	76	13	21
22	150	37.7		43.3	157	21.6 125		30.0	86	**56**	41	28	14	7 08	79	15 02	18
23	165	37.6		43.7	171	53.0 124		38.6	86	**58**	46	37	26	20	83	14 50	14
24	180	37.5	+21	44.1	186	24.4 124	+21	47.1	85	**60 S**	6 53	7 47	8 41	7 33	89	14 35	9

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: +0.7			Mag: −2.3			Mag: +0.8		
	7^{h} 32^{m}.8		PMG: 9^{h} 30^{m}			PMG: 7^{h} 47^{m}			PMG: 7^{h} 47^{m}			PMG: 5^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	246	30.1	217	27.0	+9 45.3	243	03.6	−0 24.1	243	03.5	+0 13.9	278	37.9	−14 09.4
1	261	32.6	232	26.7	46.3	258	04.3	23.4	258	05.5	14.1	293	40.3	09.4
2	276	35.1	247	26.4	47.3	273	05.1	22.7	273	07.6	14.2	308	42.7	09.4
3	291	37.5	262	26.1	48.4	288	05.8	22.0	288	09.7	14.4	323	45.2	09.4
4	306	40.0	277	25.7	49.4	303	06.6	21.2	303	11.8	14.5	338	47.6	09.4
5	321	42.5	292	25.4	+9 50.4	318	07.3	−0 20.5	318	13.9	+0 14.7	353	50.1	−14 09.4
6	336	44.9	307	25.1	+9 51.4	333	08.1	−0 19.8	333	16.0	+0 14.9	8	52.5	−14 09.4
7	351	47.4	322	24.8	52.4	348	08.8	19.1	348	18.0	15.0	23	54.9	09.4
8	6	49.8	337	24.4	53.4	3	09.6	18.3	3	20.1	15.2	38	57.4	09.4
9	21	52.3	352	24.1	54.4	18	10.3	17.6	18	22.2	15.3	53	59.8	09.4
10	36	54.8	7	23.8	55.4	33	11.1	16.9	33	24.3	15.5	69	02.2	09.4
11	51	57.2	22	23.5	+9 56.4	48	11.9	−0 16.2	48	26.4	+0 15.6	84	04.7	−14 09.4
12	66	59.7	37	23.1	+9 57.5	63	12.6	−0 15.4	63	28.5	+0 15.8	99	07.1	−14 09.4
13	82	02.2	52	22.8	58.5	78	13.4	14.7	78	30.6	15.9	114	09.5	09.4
14	97	04.6	67	22.5	+9 59.5	93	14.1	14.0	93	32.6	16.1	129	12.0	09.4
15	112	07.1	82	22.2	+10 00.5	108	14.9	13.3	108	34.7	16.2	144	14.4	09.4
16	127	09.6	97	21.8	01.5	123	15.6	12.5	123	36.8	16.4	159	16.8	09.4
17	142	12.0	112	21.5	+10 02.5	138	16.4	−0 11.8	138	38.9	+0 16.6	174	19.3	−14 09.4
18	157	14.5	127	21.2	+10 03.5	153	17.1	−0 11.1	153	41.0	+0 16.7	189	21.7	−14 09.4
19	172	17.0	142	20.9	04.5	168	17.9	10.4	168	43.1	16.9	204	24.2	09.4
20	187	19.4	157	20.5	05.5	183	18.7	09.6	183	45.2	17.0	219	26.6	09.4
21	202	21.9	172	20.2	06.5	198	19.4	08.9	198	47.2	17.2	234	29.0	09.4
22	217	24.3	187	19.9	07.5	213	20.2	08.2	213	49.3	17.3	249	31.5	09.4
23	232	26.8	202	19.5	08.5	228	20.9	07.5	228	51.4	17.5	264	33.9	09.4
24	247	29.3	217	19.2	+10 09.5	243	21.7	−0 06.7	243	53.5	+0 17.6	279	36.3	−14 09.4
Dif	—			−3	+10		+8	+7		+21	+2		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 29^{d}.1		PHE	4^{h}: 54′.4								
	PMG: 11^{h} 57^{m}.6		SD: 14′.8			12^{h}: 54′.3								
			PMG: 11^{h} 57^{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	180 37.5	+21 44.1	186 24.4		+21 47.1		**60 N**	21 04	22 26	** **	2 41	13	21 43	79
1	195 37.4	44.5	200 55.7	123	+21 55.5	84	**58**	20 46	21 53	** **	2 58	18	21	74
2	210 37.3	44.8	215 26.9	122	+22 03.8	83	**56**	32	29	23 37	3 12	22	21 03	70
3	225 37.2	45.2	229 58.2	123	11.9	81	**54**	19	21 10	22 34	25	25	20 48	68
4	240 37.1	45.6	244 29.3	121	20.0	81	**52**	20 08	20 54	22 03	36	27	35	66
5	255 37.1	+21 46.0	259 00.5	122	+22 28.0	80	**50**	19 58	20 41	21 41	3 45	30	20 23	65
6	270 37.0	+21 46.3	273 31.5	120	+22 35.8	78	**45**	19 38	20 14	21 01	4 06	33	20 00	61
7	285 36.9	46.7	288 02.6	121	43.6	78	**40**	21	19 53	20 34	22	37	19 41	59
8	300 36.8	47.1	302 33.6	120	51.3	77	**35**	19 07	37	20 12	37	38	25	57
9	315 36.7	47.4	317 04.5	119	+22 58.8	75	**30**	18 55	19 22	19 55	4 49	41	19 11	56
10	330 36.6	47.8	331 35.4	119	+23 06.2	74	**20**	35	18 59	28	5 10	44	18 48	53
11	345 36.5	+21 48.2	346 06.2	118	+23 13.6	74	**10 N**	18 17	18 40	19 07	5 29	46	18 28	51
12	0 36.4	+21 48.5	0 37.0	118	+23 20.8	72	**0**	18 01	18 23	18 49	5 46	49	18 09	50
13	15 36.4	48.9	15 07.8	118	27.9	71	**10 S**	17 45	18 08	34	6 03	51	17 51	47
14	30 36.3	49.3	29 38.5	117	34.9	70	**20**	28	17 52	19	22	54	31	45
15	45 36.2	49.6	44 09.1	116	41.8	69	**30**	17 08	34	18 04	44	56	17 08	43
16	60 36.1	50.0	58 39.8	117	48.6	68	**35**	16 57	25	17 56	6 56	59	16 54	42
17	75 36.0	+21 50.4	73 10.3	115	+23 55.3	67	**40**	16 44	17 14	17 48	7 11	61	16 39	39
18	90 35.9	+21 50.7	87 40.9	116	+24 01.9	66	**45**	16 29	17 02	17 38	7 29	63	16 20	38
19	105 35.8	51.1	102 11.3	114	08.3	64	**50**	10	16 47	28	7 51	67	15 58	33
20	120 35.7	51.5	116 41.8	115	14.6	63	**52**	16 01	41	23	8 01	69	47	32
21	135 35.6	51.8	131 12.2	114	20.9	63	**54**	15 51	33	18	13	72	34	30
22	150 35.5	52.2	145 42.5	113	27.0	61	**56**	40	25	13	27	74	20	27
23	165 35.5	52.5	160 12.9	114	33.0	60	**58**	27	16	07	8 43	79	15 04	23
24	180 35.4	+21 52.9	174 43.1	112	+24 38.8	58	**60 S**	15 12	16 06	17 01	9 02	85	14 44	17

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: +0.7		Mag: −2.3		Mag: +0.8	
	7^{h} 28^{m}.8	PMG: 9^{h} 31^{m}		PMG: 7^{h} 46^{m}		PMG: 7^{h} 43^{m}		PMG: 5^{h} 21^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	247 29.3	217 19.2	+10 09.5	243 21.7	−0 06.7	243 53.5	+0 17.6	279 36.3	−14 09.4
1	262 31.7	232 18.9	10.6	258 22.4	06.0	258 55.6	17.8	294 38.8	09.4
2	277 34.2	247 18.6	11.6	273 23.2	05.3	273 57.7	17.9	309 41.2	09.4
3	292 36.7	262 18.2	12.6	288 24.0	04.6	288 59.8	18.1	324 43.7	09.4
4	307 39.1	277 17.9	13.6	303 24.7	03.8	304 01.9	18.2	339 46.1	09.4
5	322 41.6	292 17.6	+10 14.6	318 25.5	−0 03.1	319 03.9	+0 18.4	354 48.5	−14 09.4
6	337 44.1	307 17.2	+10 15.6	333 26.2	−0 02.4	334 06.0	+0 18.5	9 51.0	−14 09.4
7	352 46.5	322 16.9	16.6	348 27.0	01.7	349 08.1	18.7	24 53.4	09.4
8	7 49.0	337 16.6	17.6	3 27.7	01.0	4 10.2	18.9	39 55.9	09.4
9	22 51.4	352 16.2	18.6	18 28.5	−0 00.2	19 12.3	19.0	54 58.3	09.4
10	37 53.9	7 15.9	19.6	33 29.3	+0 00.5	34 14.4	19.2	70 00.7	09.4
11	52 56.4	22 15.6	+10 20.6	48 30.0	+0 01.2	49 16.5	+0 19.3	85 03.2	−14 09.4
12	67 58.8	37 15.2	+10 21.6	63 30.8	+0 01.9	64 18.6	+0 19.5	100 05.6	−14 09.4
13	83 01.3	52 14.9	22.6	78 31.5	02.7	79 20.7	19.6	115 08.0	09.4
14	98 03.8	67 14.6	23.6	93 32.3	03.4	94 22.7	19.8	130 10.5	09.4
15	113 06.2	82 14.2	24.6	108 33.0	04.1	109 24.8	19.9	145 12.9	09.4
16	128 08.7	97 13.9	25.6	123 33.8	04.8	124 26.9	20.1	160 15.4	09.4
17	143 11.2	112 13.6	+10 26.6	138 34.6	+0 05.6	139 29.0	+0 20.2	175 17.8	−14 09.4
18	158 13.6	127 13.2	+10 27.6	153 35.3	+0 06.3	154 31.1	+0 20.4	190 20.3	−14 09.4
19	173 16.1	142 12.9	28.6	168 36.1	07.0	169 33.2	20.5	205 22.7	09.4
20	188 18.6	157 12.5	29.6	183 36.8	07.7	184 35.3	20.7	220 25.1	09.4
21	203 21.0	172 12.2	30.6	198 37.6	08.5	199 37.4	20.8	235 27.6	09.4
22	218 23.5	187 11.9	31.6	213 38.3	09.2	214 39.5	21.0	250 30.0	09.4
23	233 25.9	202 11.5	32.6	228 39.1	09.9	229 41.6	21.1	265 32.5	09.4
24	248 28.4	217 11.2	+10 33.6	243 39.9	+0 10.6	244 43.6	+0 21.3	280 34.9	−14 09.4
Dif	—	−3	+10	+8	+7	+21	+2	+24	0

UT	SOL SD: 15′.8 PMG: 11h 57m.7				LUNA Edad: 0d.5 SD: 14′.8 PMG: 12h 47m PHE: 4h: 54′.2; 12h: 54′.1; 20h: 54′.1 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	180	35.4	+21	52.9	174	43.1	+24	38.8		**60 N**	** **	1 29	2 51	2 54	24	23 02	62
1	195	35.3		53.3	189	13.4 113		44.6	58	**58**	** **	2 02	3 08	3 16	30	22 35	59
2	210	35.2		53.6	203	43.6 112		50.2	56	**56**	0 18	26	23	34	33	22 13	58
3	225	35.1		54.0	218	13.7 111	+24	55.8	56	**54**	1 21	2 45	36	3 50	35	21 56	57
4	240	35.0		54.3	232	43.9 112	+25	01.2	54	**52**	1 52	3 01	47	4 03	37	41	56
5	255	34.9	+21	54.7	247	13.9 110	+25	06.5	53	**50**	2 14	3 14	3 57	4 15	38	21 28	55
6	270	34.8	+21	55.0	261	44.0 111	+25	11.6	51	**45**	2 54	3 41	4 17	4 39	42	21 01	55
7	285	34.7		55.4	276	14.0 110		16.7	51	**40**	3 22	4 02	34	4 59	43	20 40	54
8	300	34.6		55.8	290	44.0 110		21.6	49	**35**	3 43	19	4 48	5 15	45	22	54
9	315	34.5		56.1	305	13.9 109		26.4	48	**30**	4 00	33	5 00	30	45	20 07	53
10	330	34.4		56.5	319	43.8 109		31.1	47	**20**	27	4 56	20	5 54	47	19 41	53
11	345	34.3	+21	56.8	334	13.7 109	+25	35.7	46	**10 N**	4 48	5 15	5 38	6 15	49	19 19	52
12	0	34.3	+21	57.2	348	43.6 109	+25	40.1	44	**0**	5 06	5 32	5 54	6 35	50	18 59	50
13	15	34.2		57.5	3	13.4 108		44.4	43	**10 S**	22	5 48	6 10	6 54	52	38	50
14	30	34.1		57.9	17	43.2 108		48.6	42	**20**	37	6 04	28	7 16	53	18 16	49
15	45	34.0		58.2	32	12.9 107		52.7	41	**30**	5 52	21	47	40	55	17 51	48
16	60	33.9		58.6	46	42.6 107	+25	56.7	40	**35**	6 00	31	6 59	7 55	56	36	47
17	75	33.8	+21	58.9	61	12.3 107	+26	00.5	38	**40**	6 08	6 42	7 12	8 12	57	17 18	47
18	90	33.7	+21	59.3	75	42.0 107	+26	04.2	37	**45**	6 17	6 54	7 27	8 32	59	16 58	45
19	105	33.6	+21	59.6	90	11.6 106		07.8	36	**50**	28	7 09	46	8 58	60	31	44
20	120	33.5	+22	00.0	104	41.3 107		11.3	35	**52**	32	15	7 55	9 10	62	19	42
21	135	33.4	+22	00.3	119	10.9 106		14.6	33	**54**	37	23	8 05	25	63	16 04	41
22	150	33.3		00.6	133	40.4 105		17.8	32	**56**	43	31	16	9 41	65	15 47	40
23	165	33.2		01.0	148	10.0 106		20.9	31	**58**	49	40	29	10 02	67	27	37
24	180	33.1	+22	01.3	162	39.5 105	+26	23.8	29	**60 S**	6 55	7 50	8 45	10 27	72	15 01	33

UT	ARIES PMG 7h 24m.9		VENUS Mag: −4.0 PMG: 9h 31m			MARTE Mag: +0.7 PMG: 7h 45m			JÚPITER Mag: −2.3 PMG: 7h 40m			SATURNO Mag: +0.8 PMG: 5h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	248	28.4	217	11.2	+10 33.6	243	39.9	+0 10.6	244	43.6	+0 21.3	280	34.9	−14 09.4
1	263	30.9	232	10.9	34.6	258	40.6	11.3	259	45.7	21.4	295	37.3	09.4
2	278	33.3	247	10.5	35.6	273	41.4	12.1	274	47.8	21.6	310	39.8	09.4
3	293	35.8	262	10.2	36.6	288	42.1	12.8	289	49.9	21.7	325	42.2	09.4
4	308	38.3	277	09.8	37.6	303	42.9	13.5	304	52.0	21.9	340	44.7	09.4
5	323	40.7	292	09.5	+10 38.6	318	43.7	+0 14.2	319	54.1	+0 22.0	355	47.1	−14 09.4
6	338	43.2	307	09.2	+10 39.6	333	44.4	+0 15.0	334	56.2	+0 22.2	10	49.6	−14 09.4
7	353	45.7	322	08.8	40.6	348	45.2	15.7	349	58.3	22.3	25	52.0	09.4
8	8	48.1	337	08.5	41.6	3	45.9	16.4	5	00.4	22.5	40	54.4	09.4
9	23	50.6	352	08.1	42.6	18	46.7	17.1	20	02.5	22.6	55	56.9	09.4
10	38	53.1	7	07.8	43.6	33	47.4	17.9	35	04.6	22.8	70	59.3	09.4
11	53	55.5	22	07.4	+10 44.6	48	48.2	+0 18.6	50	06.7	+0 22.9	86	01.8	−14 09.4
12	68	58.0	37	07.1	+10 45.6	63	49.0	+0 19.3	65	08.8	+0 23.1	101	04.2	−14 09.4
13	84	00.4	52	06.8	46.6	78	49.7	20.0	80	10.9	23.2	116	06.7	09.4
14	99	02.9	67	06.4	47.6	93	50.5	20.7	95	13.0	23.4	131	09.1	09.4
15	114	05.4	82	06.1	48.6	108	51.2	21.5	110	15.0	23.5	146	11.5	09.4
16	129	07.8	97	05.7	49.5	123	52.0	22.2	125	17.1	23.7	161	14.0	09.4
17	144	10.3	112	05.4	+10 50.5	138	52.8	+0 22.9	140	19.2	+0 23.8	176	16.4	−14 09.4
18	159	12.8	127	05.0	+10 51.5	153	53.5	+0 23.6	155	21.3	+0 24.0	191	18.9	−14 09.4
19	174	15.2	142	04.7	52.5	168	54.3	24.4	170	23.4	24.1	206	21.3	09.4
20	189	17.7	157	04.4	53.5	183	55.0	25.1	185	25.5	24.3	221	23.8	09.4
21	204	20.2	172	04.0	54.5	198	55.8	25.8	200	27.6	24.4	236	26.2	09.4
22	219	22.6	187	03.7	55.5	213	56.6	26.5	215	29.7	24.6	251	28.7	09.4
23	234	25.1	202	03.3	56.5	228	57.3	27.2	230	31.8	24.7	266	31.1	09.4
24	249	27.6	217	03.0	+10 57.5	243	58.1	+0 28.0	245	33.9	+0 24.9	281	33.6	−14 09.4
Dif	—			−3	+10		+8	+7		+21	+2		+24	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 1ᵈ.5		PHE	4ʰ: 54′.0									
	PMG: 11ʰ 57ᵐ.9				SD: 14′.7			12ʰ: 54′.0									
					PMG: 13ʰ 37ᵐ			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	33.1	+22	01.3	162	39.5	+26	23.8		**60 N**	21 08	22 32	** **	3 18	44	** **	**
1	195	33.0		01.7	177	09.0 105		26.7	29	**58**	20 50	21 57	** **	3 46	46	23 34	41
2	210	32.9		02.0	191	38.5 105		29.4	27	**56**	34	32	** **	4 07	47	23 11	43
3	225	32.8		02.4	206	08.0 105		31.9	25	**54**	22	21 13	22 40	25	48	22 53	44
4	240	32.7		02.7	220	37.4 104		34.4	25	**52**	10	20 57	22 07	40	49	37	45
5	255	32.6	+22	03.0	235	06.8 104	+26	36.7	23	**50**	20 00	20 43	21 44	4 53	49	22 23	46
6	270	32.6	+22	03.4	249	36.3 105	+26	38.9	22	**45**	19 40	20 16	21 04	5 21	49	21 56	47
7	285	32.5		03.7	264	05.7 104		40.9	20	**40**	23	19 55	20 35	5 42	50	34	47
8	300	32.4		04.1	278	35.0 103		42.9	20	**35**	19 09	38	20 14	6 00	50	16	48
9	315	32.3		04.4	293	04.4 104		44.7	18	**30**	18 57	24	19 56	15	50	21 00	49
10	330	32.2		04.7	307	33.8 104		46.4	17	**20**	36	19 00	29	6 41	51	20 34	49
11	345	32.1	+22	05.1	322	03.1 103	+26	47.9	15	**10 N**	18 18	18 41	19 08	7 04	50	20 11	50
12	0	32.0	+22	05.4	336	32.5 104	+26	49.3	14	**0**	18 02	18 24	18 50	7 25	51	19 49	51
13	15	31.9		05.7	351	01.8 103		50.6	13	**10 S**	17 45	18 08	34	7 46	51	28	51
14	30	31.8		06.1	5	31.2 104		51.8	12	**20**	28	17 52	19	8 09	51	19 05	52
15	45	31.7		06.4	20	00.5 103		52.8	10	**30**	17 08	34	18 04	35	51	18 39	52
16	60	31.6		06.7	34	29.8 103		53.7	9	**35**	16 56	24	17 55	8 51	51	23	52
17	75	31.5	+22	07.1	48	59.1 103	+26	54.5	8	**40**	16 43	17 13	17 47	9 09	51	18 05	53
18	90	31.4	+22	07.4	63	28.4 103	+26	55.2	7	**45**	16 28	17 01	17 37	9 31	50	17 43	53
19	105	31.3		07.7	77	57.7 103		55.7	5	**50**	16 08	16 46	27	9 58	51	15	54
20	120	31.2		08.1	92	27.1 104		56.1	4	**52**	15 59	39	22	10 12	51	17 01	54
21	135	31.1		08.4	106	56.4 103		56.3	2	**54**	49	32	17	28	50	16 45	55
22	150	31.0		08.7	121	25.7 103		56.4	1	**56**	38	23	11	10 46	51	27	54
23	165	30.9		09.1	135	55.0 103		56.4	0	**58**	24	14	17 05	11 09	50	16 04	55
24	180	30.8	+22	09.4	150	24.3 103	+26	56.3	1	**60 S**	15 09	16 04	16 59	11 39	49	15 34	56

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.3			Mag: +0.8		
	7ʰ 21ᵐ.0		PMG: 9ʰ 32ᵐ			PMG: 7ʰ 44ᵐ			PMG: 7ʰ 37ᵐ			PMG: 5ʰ 13ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	249	27.6	217	03.0	+10 57.5	243	58.1	+0 28.0	245	33.9	+0 24.9	281	33.6	−14 09.4
1	264	30.0	232	02.6	58.5	258	58.8	28.7	260	36.0	25.0	296	36.0	09.4
2	279	32.5	247	02.3	+10 59.5	273	59.6	29.4	275	38.1	25.2	311	38.4	09.4
3	294	34.9	262	01.9	+11 00.5	289	00.4	30.1	290	40.2	25.3	326	40.9	09.4
4	309	37.4	277	01.6	01.4	304	01.1	30.9	305	42.3	25.5	341	43.3	09.4
5	324	39.9	292	01.2	+11 02.4	319	01.9	+0 31.6	320	44.4	+0 25.6	356	45.8	−14 09.4
6	339	42.3	307	00.9	+11 03.4	334	02.6	+0 32.3	335	46.5	+0 25.8	11	48.2	−14 09.4
7	354	44.8	322	00.5	04.4	349	03.4	33.0	350	48.6	25.9	26	50.7	09.4
8	9	47.3	337	00.2	05.4	4	04.2	33.7	5	50.7	26.1	41	53.1	09.4
9	24	49.7	351	59.8	06.4	19	04.9	34.5	20	52.8	26.2	56	55.6	09.4
10	39	52.2	6	59.5	07.4	34	05.7	35.2	35	54.9	26.4	71	58.0	09.4
11	54	54.7	21	59.1	+11 08.4	49	06.4	+0 35.9	50	57.0	+0 26.5	87	00.5	−14 09.4
12	69	57.1	36	58.8	+11 09.3	64	07.2	+0 36.6	65	59.1	+0 26.7	102	02.9	−14 09.4
13	84	59.6	51	58.4	10.3	79	08.0	37.4	81	01.2	26.8	117	05.4	09.4
14	100	02.1	66	58.1	11.3	94	08.7	38.1	96	03.3	27.0	132	07.8	09.4
15	115	04.5	81	57.7	12.3	109	09.5	38.8	111	05.4	27.1	147	10.3	09.4
16	130	07.0	96	57.4	13.3	124	10.2	39.5	126	07.5	27.3	162	12.7	09.4
17	145	09.4	111	57.0	+11 14.3	139	11.0	+0 40.2	141	09.6	+0 27.4	177	15.2	−14 09.4
18	160	11.9	126	56.7	+11 15.3	154	11.8	+0 41.0	156	11.7	+0 27.6	192	17.6	−14 09.4
19	175	14.4	141	56.3	16.2	169	12.5	41.7	171	13.8	27.7	207	20.1	09.4
20	190	16.8	156	55.9	17.2	184	13.3	42.4	186	15.9	27.8	222	22.5	09.4
21	205	19.3	171	55.6	18.2	199	14.0	43.1	201	18.0	28.0	237	25.0	09.4
22	220	21.8	186	55.2	19.2	214	14.8	43.8	216	20.1	28.1	252	27.4	09.4
23	235	24.2	201	54.9	20.2	229	15.6	44.6	231	22.2	28.3	267	29.9	09.4
24	250	26.7	216	54.5	+11 21.2	244	16.3	+0 45.3	246	24.3	+0 28.4	282	32.3	−14 09.4
Dif	—			−4	+10		+8	+7		+21	+1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 2ᵈ.5		PHE	4ʰ: 54′.0									
	PMG: 11ʰ 58ᵐ.0				SD: 14′.7			12ʰ: 54′.0									
					PMG: 14ʰ 28ᵐ			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	180	30.8	+22	09.4	150	24.3	+26	56.3		**60 N**	** **	1 23	2 48	4 02	67	0 04	37
1	195	30.7		09.7	164	53.6	103	56.1	2	**58**	** **	1 58	3 06	32	64	** **	**
2	210	30.6		10.0	179	23.0	104	55.7	4	**56**	** **	2 23	21	4 54	62	23 54	29
3	225	30.5		10.4	193	52.3	103	55.2	5	**54**	1 16	43	34	5 13	60	37	32
4	240	30.4		10.7	208	21.6	103	54.5	7	**52**	1 48	2 59	45	29	59	22	34
5	255	30.3	+22	11.0	222	51.0	104	+26 53.7	8	**50**	2 12	3 12	3 55	5 42	58	23 09	36
6	270	30.2	+22	11.3	237	20.3	103	+26 52.8	9	**45**	2 52	3 40	4 16	6 10	56	22 43	38
7	285	30.1		11.7	251	49.7	104	51.8	10	**40**	3 20	4 01	33	32	55	21	41
8	300	30.0		12.0	266	19.1	104	50.6	12	**35**	42	18	47	6 50	54	22 04	43
9	315	29.9		12.3	280	48.5	104	49.4	12	**30**	3 59	32	4 59	7 05	54	21 49	44
10	330	29.8		12.6	295	17.9	104	47.9	15	**20**	4 27	4 56	5 20	32	52	23	46
11	345	29.7	+22	12.9	309	47.3	104	+26 46.4	15	**10 N**	4 48	5 15	5 38	7 54	52	21 01	48
12	0	29.6	+22	13.3	324	16.8	105	+26 44.7	17	**0**	5 06	5 32	5 54	8 16	50	20 40	50
13	15	29.5		13.6	338	46.2	104	42.9	18	**10 S**	22	5 48	6 11	8 37	49	20 19	52
14	30	29.4		13.9	353	15.7	105	41.0	19	**20**	37	6 04	28	9 00	48	19 57	53
15	45	29.3		14.2	7	45.2	105	38.9	21	**30**	5 53	22	6 48	26	46	31	55
16	60	29.2		14.5	22	14.7	105	36.8	21	**35**	6 01	32	7 00	9 42	45	19 15	57
17	75	29.1	+22	14.8	36	44.2	105	+26 34.4	24	**40**	6 09	6 43	7 13	10 00	44	18 58	57
18	90	29.0	+22	15.2	51	13.8	106	+26 32.0	24	**45**	6 19	6 56	7 29	10 21	43	18 36	60
19	105	28.9		15.5	65	43.4	106	29.5	25	**50**	29	7 10	48	10 49	41	18 09	62
20	120	28.8		15.8	80	13.0	106	26.8	27	**52**	34	17	7 57	11 03	39	17 55	64
21	135	28.7		16.1	94	42.6	106	24.0	28	**54**	39	25	8 07	18	38	40	65
22	150	28.6		16.4	109	12.3	107	21.0	30	**56**	45	33	19	37	35	17 21	68
23	165	28.5		16.7	123	41.9	106	18.0	30	**58**	51	42	32	11 59	32	16 59	71
24	180	28.4	+22	17.0	138	11.6	107	+26 14.8	32	**60 S**	6 58	7 53	8 48	12 28	28	16 30	76

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.3			Mag: +0.7		
	7ʰ 17ᵐ.0		PMG: 9ʰ 33ᵐ			PMG: 7ʰ 43ᵐ			PMG: 7ʰ 33ᵐ			PMG: 5ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	250	26.7	216	54.5	+11 21.2	244	16.3	+0 45.3	246	24.3	+0 28.4	282	32.3	−14 09.4
1	265	29.2	231	54.2	22.1	259	17.1	46.0	261	26.4	28.6	297	34.8	09.5
2	280	31.6	246	53.8	23.1	274	17.9	46.7	276	28.5	28.7	312	37.2	09.5
3	295	34.1	261	53.5	24.1	289	18.6	47.4	291	30.6	28.9	327	39.7	09.5
4	310	36.6	276	53.1	25.1	304	19.4	48.2	306	32.7	29.0	342	42.1	09.5
5	325	39.0	291	52.7	+11 26.1	319	20.1	+0 48.9	321	34.8	+0 29.2	357	44.6	−14 09.5
6	340	41.5	306	52.4	+11 27.1	334	20.9	+0 49.6	336	36.9	+0 29.3	12	47.0	−14 09.5
7	355	43.9	321	52.0	28.0	349	21.7	50.3	351	39.0	29.5	27	49.5	09.5
8	10	46.4	336	51.7	29.0	4	22.4	51.1	6	41.1	29.6	42	51.9	09.5
9	25	48.9	351	51.3	30.0	19	23.2	51.8	21	43.2	29.8	57	54.4	09.5
10	40	51.3	6	50.9	31.0	34	23.9	52.5	36	45.3	29.9	72	56.8	09.5
11	55	53.8	21	50.6	+11 31.9	49	24.7	+0 53.2	51	47.4	+0 30.0	87	59.3	−14 09.5
12	70	56.3	36	50.2	+11 32.9	64	25.5	+0 53.9	66	49.5	+0 30.2	103	01.7	−14 09.5
13	85	58.7	51	49.9	33.9	79	26.2	54.7	81	51.6	30.3	118	04.2	09.5
14	101	01.2	66	49.5	34.9	94	27.0	55.4	96	53.7	30.5	133	06.6	09.5
15	116	03.7	81	49.1	35.9	109	27.8	56.1	111	55.8	30.6	148	09.1	09.5
16	131	06.1	96	48.8	36.8	124	28.5	56.8	126	57.9	30.8	163	11.5	09.5
17	146	08.6	111	48.4	+11 37.8	139	29.3	+0 57.5	142	00.0	+0 30.9	178	14.0	−14 09.5
18	161	11.0	126	48.0	+11 38.8	154	30.0	+0 58.3	157	02.1	+0 31.1	193	16.4	−14 09.5
19	176	13.5	141	47.7	39.8	169	30.8	59.0	172	04.2	31.2	208	18.9	09.5
20	191	16.0	156	47.3	40.7	184	31.6	+0 59.7	187	06.3	31.4	223	21.3	09.5
21	206	18.4	171	47.0	41.7	199	32.3	+1 00.4	202	08.4	31.5	238	23.8	09.5
22	221	20.9	186	46.6	42.7	214	33.1	01.1	217	10.5	31.6	253	26.2	09.5
23	236	23.4	201	46.2	43.7	229	33.9	01.8	232	12.6	31.8	268	28.7	09.5
24	251	25.8	216	45.9	+11 44.6	244	34.6	+1 02.6	247	14.7	+0 31.9	283	31.1	−14 09.5
Dif	—			−4	+10		+8	+7		+21	+1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 3ᵈ.5		PHE	4ʰ: 54′.1									
	PMG: 11ʰ 58ᵐ.2				SD: 14′.7			12ʰ: 54′.1									
					PMG: 15ʰ 18ᵐ			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	180	28.4	+22	17.0	138	11.6	+26	14.8		**60 N**	21 11	22 38	** **	5 09	83	0 41	20
1	195	28.3		17.3	152	41.4 108		11.5	33	**58**	20 52	22 01	** **	36	76	0 15	25
2	210	28.2		17.7	167	11.1 107		08.0	35	**56**	37	21 36	** **	5 56	73	** **	**
3	225	28.0		18.0	181	40.9 108		04.5	35	**54**	24	21 16	22 45	6 13	70	** **	**
4	240	27.9		18.3	196	10.7 108	+26	00.8	37	**52**	12	20 59	22 11	28	67	23 56	25
5	255	27.8	+22	18.6	210	40.6 109	+25	57.0	38	**50**	20 02	20 46	21 47	6 40	66	23 45	27
6	270	27.7	+22	18.9	225	10.5 109	+25	53.1	39	**45**	19 41	20 18	21 06	7 06	63	23 21	32
7	285	27.6		19.2	239	40.4 109		49.0	41	**40**	24	19 56	20 37	27	60	23 02	35
8	300	27.5		19.5	254	10.3 109		44.9	41	**35**	19 10	39	20 15	44	58	22 47	37
9	315	27.4		19.8	268	40.3 110		40.6	43	**30**	18 58	25	19 58	7 59	56	33	39
10	330	27.3		20.1	283	10.3 110		36.2	44	**20**	37	19 01	30	8 24	53	22 09	43
11	345	27.2	+22	20.4	297	40.4 111	+25	31.6	46	**10 N**	18 19	18 41	19 08	8 46	51	21 49	45
12	0	27.1	+22	20.7	312	10.5 111	+25	27.0	46	**0**	18 02	18 24	18 50	9 06	49	21 30	48
13	15	27.0		21.0	326	40.6 111		22.2	48	**10 S**	17 45	18 08	34	26	47	21 11	50
14	30	26.9		21.3	341	10.7 111		17.3	49	**20**	28	17 51	19	9 48	44	20 50	53
15	45	26.8		21.6	355	40.9 112		12.3	50	**30**	17 08	34	18 03	10 12	42	26	56
16	60	26.7		21.9	10	11.2 113		07.2	51	**35**	16 56	24	17 55	27	40	20 12	58
17	75	26.6	+22	22.2	24	41.5 113	+25	01.9	53	**40**	16 42	17 13	17 46	10 44	38	19 55	61
18	90	26.5	+22	22.5	39	11.8 113	+24	56.6	53	**45**	16 27	17 00	17 37	11 04	35	19 36	64
19	105	26.4		22.8	53	42.1 113		51.1	55	**50**	16 07	16 45	26	30	31	19 11	68
20	120	26.3		23.1	68	12.5 114		45.5	56	**52**	15 58	38	21	42	29	18 59	70
21	135	26.2		23.4	82	42.9 114		39.8	57	**54**	48	30	16	11 56	27	45	73
22	150	26.1		23.7	97	13.4 115		34.0	58	**56**	36	22	10	12 12	24	29	76
23	165	25.9		24.0	111	43.9 115		28.1	59	**58**	22	12	17 04	31	20	18 10	80
24	180	25.8	+22	24.3	126	14.5 116	+24	22.0	61	**60 S**	15 07	16 02	16 57	12 56	14	17 46	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.7			Mag: −2.3			Mag: +0.7		
	7ʰ 13ᵐ.1		PMG: 9ʰ 33ᵐ			PMG: 7ʰ 41ᵐ			PMG: 7ʰ 30ᵐ			PMG: 5ʰ 05ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	251	25.8	216	45.9	+11 44.6	244	34.6	+1 02.6	247	14.7	+0 31.9	283	31.1	−14 09.5
1	266	28.3	231	45.5	45.6	259	35.4	03.3	262	16.8	32.1	298	33.6	09.5
2	281	30.8	246	45.1	46.6	274	36.1	04.0	277	19.0	32.2	313	36.1	09.6
3	296	33.2	261	44.8	47.6	289	36.9	04.7	292	21.1	32.4	328	38.5	09.6
4	311	35.7	276	44.4	48.5	304	37.7	05.4	307	23.2	32.5	343	41.0	09.6
5	326	38.2	291	44.0	+11 49.5	319	38.4	+1 06.2	322	25.3	+0 32.7	358	43.4	−14 09.6
6	341	40.6	306	43.7	+11 50.5	334	39.2	+1 06.9	337	27.4	+0 32.8	13	45.9	−14 09.6
7	356	43.1	321	43.3	51.4	349	40.0	07.6	352	29.5	33.0	28	48.3	09.6
8	11	45.5	336	42.9	52.4	4	40.7	08.3	7	31.6	33.1	43	50.8	09.6
9	26	48.0	351	42.6	53.4	19	41.5	09.0	22	33.7	33.2	58	53.2	09.6
10	41	50.5	6	42.2	54.4	34	42.3	09.8	37	35.8	33.4	73	55.7	09.6
11	56	52.9	21	41.8	+11 55.3	49	43.0	+1 10.5	52	37.9	+0 33.5	88	58.1	−14 09.6
12	71	55.4	36	41.4	+11 56.3	64	43.8	+1 11.2	67	40.0	+0 33.7	104	00.6	−14 09.6
13	86	57.9	51	41.1	57.3	79	44.5	11.9	82	42.1	33.8	119	03.1	09.6
14	102	00.3	66	40.7	58.2	94	45.3	12.6	97	44.2	34.0	134	05.5	09.6
15	117	02.8	81	40.3	+11 59.2	109	46.1	13.4	112	46.3	34.1	149	08.0	09.6
16	132	05.3	96	40.0	+12 00.2	124	46.8	14.1	127	48.5	34.2	164	10.4	09.6
17	147	07.7	111	39.6	+12 01.1	139	47.6	+1 14.8	142	50.6	+0 34.4	179	12.9	−14 09.6
18	162	10.2	126	39.2	+12 02.1	154	48.4	+1 15.5	157	52.7	+0 34.5	194	15.3	−14 09.6
19	177	12.7	141	38.8	03.1	169	49.1	16.2	172	54.8	34.7	209	17.8	09.6
20	192	15.1	156	38.5	04.0	184	49.9	16.9	187	56.9	34.8	224	20.3	09.6
21	207	17.6	171	38.1	05.0	199	50.7	17.7	202	59.0	35.0	239	22.7	09.7
22	222	20.0	186	37.7	06.0	214	51.4	18.4	218	01.1	35.1	254	25.2	09.7
23	237	22.5	201	37.3	06.9	229	52.2	19.1	233	03.2	35.2	269	27.6	09.7
24	252	25.0	216	37.0	+12 07.9	244	52.9	+1 19.8	248	05.3	+0 35.4	284	30.1	−14 09.7
Dif	—			−4	+10		+8	+7		+21	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 4.ᵈ5		PHE	4ʰ: 54′.3									
	PMG: 11ʰ 58.ᵐ4				SD: 14′.8			12ʰ: 54′.3									
					PMG: 16ʰ 06ᵐ			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	180	25.8	+22	24.3	126	14.5	+24	22.0		**60 N**	** **	1 18	2 45	6 32	87	1 01	11
1	195	25.7		24.6	140	45.1	116	15.9	61	**58**	** **	1 55	3 04	6 52	82	0 40	16
2	210	25.6		24.9	155	15.7	116	09.6	63	**56**	** **	2 20	19	7 09	77	23	20
3	225	25.5		25.2	169	46.4	117	+24 03.2	64	**54**	1 11	40	32	23	74	0 09	22
4	240	25.4		25.5	184	17.1	117	+23 56.7	65	**52**	1 45	2 57	44	35	72	** **	**
5	255	25.3	+22	25.8	198	47.9	118	+23 50.1	66	**50**	2 09	3 11	3 54	7 46	70	** **	**
6	270	25.2	+22	26.1	213	18.7	118	+23 43.4	67	**45**	2 51	3 39	4 15	8 09	65	23 53	26
7	285	25.1		26.4	227	49.6	119	36.6	68	**40**	3 19	4 00	32	27	62	37	30
8	300	25.0		26.6	242	20.5	119	29.6	70	**35**	41	17	47	42	59	24	32
9	315	24.9		26.9	256	51.4	119	22.6	70	**30**	3 59	32	4 59	8 55	57	23 12	35
10	330	24.8		27.2	271	22.4	120	15.4	72	**20**	4 27	4 56	5 20	9 17	54	22 52	39
11	345	24.7	+22	27.5	285	53.5	121	+23 08.2	72	**10 N**	4 48	5 15	5 38	9 37	50	22 34	43
12	0	24.6	+22	27.8	300	24.5	120	+23 00.8	74	**0**	5 06	5 32	5 55	9 55	47	22 18	46
13	15	24.4		28.1	314	55.7	122	+22 53.3	75	**10 S**	23	5 49	6 11	10 13	44	22 01	49
14	30	24.3		28.4	329	26.8	121	45.8	75	**20**	38	6 05	29	32	41	21 43	53
15	45	24.2		28.6	343	58.1	123	38.1	77	**30**	5 53	23	6 49	10 54	37	22	58
16	60	24.1		28.9	358	29.3	122	30.3	78	**35**	6 02	33	7 01	11 07	34	21 10	60
17	75	24.0	+22	29.2	13	00.6	123	+22 22.4	79	**40**	6 10	6 44	7 14	11 22	32	20 56	63
18	90	23.9	+22	29.5	27	32.0	124	+22 14.4	80	**45**	6 20	6 57	7 30	11 39	29	20 40	66
19	105	23.8		29.8	42	03.4	124	+22 06.3	81	**50**	31	7 12	50	12 01	24	19	71
20	120	23.7		30.1	56	34.8	124	+21 58.1	82	**52**	36	19	7 59	11	22	20 09	73
21	135	23.6		30.3	71	06.3	125	49.8	83	**54**	41	27	8 10	23	19	19 58	76
22	150	23.5		30.6	85	37.9	126	41.4	84	**56**	47	35	21	36	16	45	79
23	165	23.3		30.9	100	09.4	125	32.9	85	**58**	6 53	45	35	12 51	13	30	83
24	180	23.2	+22	31.2	114	41.1	127	+21 24.4	85	**60 S**	7 00	7 56	8 51	13 10	7	19 13	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.3			Mag: +0.7		
	7ʰ 09.ᵐ2		PMG: 9ʰ 34ᵐ			PMG: 7ʰ 40ᵐ			PMG: 7ʰ 27ᵐ			PMG: 5ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	252	25.0	216	37.0	+12 07.9	244	52.9	+1 19.8	248	05.3	+0 35.4	284	30.1	−14 09.7
1	267	27.4	231	36.6	08.9	259	53.7	20.5	263	07.4	35.5	299	32.5	09.7
2	282	29.9	246	36.2	09.8	274	54.5	21.2	278	09.5	35.7	314	35.0	09.7
3	297	32.4	261	35.8	10.8	289	55.2	22.0	293	11.7	35.8	329	37.5	09.7
4	312	34.8	276	35.5	11.7	304	56.0	22.7	308	13.8	36.0	344	39.9	09.7
5	327	37.3	291	35.1	+12 12.7	319	56.8	+1 23.4	323	15.9	+0 36.1	359	42.4	−14 09.7
6	342	39.8	306	34.7	+12 13.7	334	57.5	+1 24.1	338	18.0	+0 36.2	14	44.8	−14 09.7
7	357	42.2	321	34.3	14.6	349	58.3	24.8	353	20.1	36.4	29	47.3	09.7
8	12	44.7	336	34.0	15.6	4	59.1	25.6	8	22.2	36.5	44	49.8	09.7
9	27	47.2	351	33.6	16.6	19	59.8	26.3	23	24.3	36.7	59	52.2	09.7
10	42	49.6	6	33.2	17.5	35	00.6	27.0	38	26.4	36.8	74	54.7	09.7
11	57	52.1	21	32.8	+12 18.5	50	01.4	+1 27.7	53	28.6	+0 37.0	89	57.1	−14 09.7
12	72	54.5	36	32.4	+12 19.4	65	02.1	+1 28.4	68	30.7	+0 37.1	104	59.6	−14 09.8
13	87	57.0	51	32.1	20.4	80	02.9	29.1	83	32.8	37.2	120	02.1	09.8
14	102	59.5	66	31.7	21.3	95	03.7	29.9	98	34.9	37.4	135	04.5	09.8
15	118	01.9	81	31.3	22.3	110	04.4	30.6	113	37.0	37.5	150	07.0	09.8
16	133	04.4	96	30.9	23.3	125	05.2	31.3	128	39.1	37.7	165	09.4	09.8
17	148	06.9	111	30.5	+12 24.2	140	06.0	+1 32.0	143	41.2	+0 37.8	180	11.9	−14 09.8
18	163	09.3	126	30.2	+12 25.2	155	06.7	+1 32.7	158	43.3	+0 37.9	195	14.4	−14 09.8
19	178	11.8	141	29.8	26.1	170	07.5	33.4	173	45.5	38.1	210	16.8	09.8
20	193	14.3	156	29.4	27.1	185	08.2	34.2	188	47.6	38.2	225	19.3	09.8
21	208	16.7	171	29.0	28.0	200	09.0	34.9	203	49.7	38.4	240	21.7	09.8
22	223	19.2	186	28.6	29.0	215	09.8	35.6	218	51.8	38.5	255	24.2	09.8
23	238	21.6	201	28.2	30.0	230	10.5	36.3	233	53.9	38.6	270	26.7	09.8
24	253	24.1	216	27.8	+12 30.9	245	11.3	+1 37.0	248	56.0	+0 38.8	285	29.1	−14 09.8
Dif	—			−4	+10		+8	+7		+21	+1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 5^{d}.5		PHE	4^{h}: 54′.6									
	PMG: 11^{h} 58^{m}.5				SD: 14′.8			12^{h}: 54′.7									
					PMG: 16^{h} 53^{m}			20^{h}: 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	180	23.2	+22	31.2	114	41.1	+21	24.4		**60 N**	21 14	22 45	** **	7 59	88	1 12	5
1	195	23.1		31.5	129	12.7 126		15.7	87	**58**	20 55	22 05	** **	8 14	83	0 56	11
2	210	23.0		31.7	143	44.4 127	+21	06.9	88	**56**	39	21 39	** **	26	80	43	14
3	225	22.9		32.0	158	16.2 128	+20	58.0	89	**54**	26	19	22 51	37	77	31	17
4	240	22.8		32.3	172	48.0 128		49.0	90	**52**	14	21 02	22 15	47	74	21	20
5	255	22.7	+22	32.6	187	19.8 128	+20	39.9	91	**50**	20 04	20 48	21 50	8 56	71	0 12	22
6	270	22.6	+22	32.8	201	51.7 129	+20	30.7	92	**45**	19 43	20 19	21 08	9 14	66	** **	**
7	285	22.5		33.1	216	23.7 130		21.5	92	**40**	25	19 58	20 39	29	63	** **	**
8	300	22.4		33.4	230	55.7 130		12.1	94	**35**	19 11	40	20 17	41	60	23 56	30
9	315	22.2		33.7	245	27.7 130	+20	02.6	95	**30**	18 59	26	19 59	9 52	57	47	32
10	330	22.1		33.9	259	59.7 130	+19	53.1	95	**20**	37	19 02	31	10 11	52	31	37
11	345	22.0	+22	34.2	274	31.8 131	+19	43.5	96	**10 N**	18 19	18 42	19 09	10 27	49	23 17	41
12	0	21.9	+22	34.5	289	04.0 132	+19	33.7	98	**0**	18 02	18 25	18 51	10 42	45	23 04	44
13	15	21.8		34.7	303	36.2 132		23.9	98	**10 S**	17 45	18 08	34	10 57	41	22 50	49
14	30	21.7		35.0	318	08.4 132		14.0	99	**20**	28	17 51	19	11 13	38	36	52
15	45	21.6		35.3	332	40.7 133	+19	04.0	100	**30**	17 07	33	18 03	31	33	20	57
16	60	21.5		35.5	347	13.0 133	+18	53.9	101	**35**	16 55	23	17 55	41	31	22 10	60
17	75	21.3	+22	35.8	1	45.4 134	+18	43.7	102	**40**	16 42	17 12	17 46	11 54	27	21 59	63
18	90	21.2	+22	36.1	16	17.8 134	+18	33.4	103	**45**	16 26	16 59	17 36	12 08	24	21 46	67
19	105	21.1		36.3	30	50.2 134		23.1	103	**50**	16 06	44	25	25	20	30	72
20	120	21.0		36.6	45	22.7 135		12.7	104	**52**	15 57	37	20	33	17	22	74
21	135	20.9		36.9	59	55.2 135	+18	02.1	106	**54**	46	29	15	42	15	14	77
22	150	20.8		37.1	74	27.7 135	+17	51.5	106	**56**	34	21	09	12 52	12	21 04	80
23	165	20.7		37.4	89	00.3 136		40.8	107	**58**	21	11	17 03	13 04	8	20 53	84
24	180	20.6	+22	37.7	103	32.9 136	+17	30.1	107	**60 S**	15 04	16 00	16 56	13 17	4	20 41	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.3			Mag: +0.7		
	7^{h} 05^{m}.2		PMG: 9^{h} 34^{m}			PMG: 7^{h} 39^{m}			PMG: 7^{h} 23^{m}			PMG: 4^{h} 57^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	253	24.1	216	27.8	+12 30.9	245	11.3	+1 37.0	248	56.0	+0 38.8	285	29.1	−14 09.8
1	268	26.6	231	27.5	31.9	260	12.1	37.7	263	58.1	38.9	300	31.6	09.8
2	283	29.0	246	27.1	32.8	275	12.8	38.5	279	00.3	39.1	315	34.0	09.9
3	298	31.5	261	26.7	33.8	290	13.6	39.2	294	02.4	39.2	330	36.5	09.9
4	313	34.0	276	26.3	34.7	305	14.4	39.9	309	04.5	39.3	345	39.0	09.9
5	328	36.4	291	25.9	+12 35.7	320	15.1	+1 40.6	324	06.6	+0 39.5	0	41.4	−14 09.9
6	343	38.9	306	25.5	+12 36.6	335	15.9	+1 41.3	339	08.7	+0 39.6	15	43.9	−14 09.9
7	358	41.4	321	25.1	37.6	350	16.7	42.0	354	10.8	39.8	30	46.4	09.9
8	13	43.8	336	24.8	38.5	5	17.4	42.7	9	13.0	39.9	45	48.8	09.9
9	28	46.3	351	24.4	39.5	20	18.2	43.5	24	15.1	40.0	60	51.3	09.9
10	43	48.8	6	24.0	40.4	35	19.0	44.2	39	17.2	40.2	75	53.7	09.9
11	58	51.2	21	23.6	+12 41.4	50	19.7	+1 44.9	54	19.3	+0 40.3	90	56.2	−14 09.9
12	73	53.7	36	23.2	+12 42.3	65	20.5	+1 45.6	69	21.4	+0 40.5	105	58.7	−14 09.9
13	88	56.1	51	22.8	43.3	80	21.3	46.3	84	23.5	40.6	121	01.1	09.9
14	103	58.6	66	22.4	44.2	95	22.0	47.0	99	25.7	40.7	136	03.6	09.9
15	119	01.1	81	22.0	45.2	110	22.8	47.8	114	27.8	40.9	151	06.1	10.0
16	134	03.5	96	21.6	46.1	125	23.6	48.5	129	29.9	41.0	166	08.5	10.0
17	149	06.0	111	21.2	+12 47.1	140	24.3	+1 49.2	144	32.0	+0 41.2	181	11.0	−14 10.0
18	164	08.5	126	20.9	+12 48.0	155	25.1	+1 49.9	159	34.1	+0 41.3	196	13.5	−14 10.0
19	179	10.9	141	20.5	49.0	170	25.9	50.6	174	36.2	41.4	211	15.9	10.0
20	194	13.4	156	20.1	49.9	185	26.6	51.3	189	38.4	41.6	226	18.4	10.0
21	209	15.9	171	19.7	50.9	200	27.4	52.0	204	40.5	41.7	241	20.9	10.0
22	224	18.3	186	19.3	51.8	215	28.2	52.8	219	42.6	41.9	256	23.3	10.0
23	239	20.8	201	18.9	52.7	230	28.9	53.5	234	44.7	42.0	271	25.8	10.0
24	254	23.3	216	18.5	+12 53.7	245	29.7	+1 54.2	249	46.8	+0 42.1	286	28.3	−14 10.0
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 11h 58m.7				Edad: 6d.5 SD: 15′.0 PMG: 17h 38m		PHE	4h: 55′.1 12h: 55′.3 20h: 55′.5 Rº: 43m								
	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	20.6	+22	37.7	103	32.9	+17	30.1	**60 N**	** **	1 12	2 43	9 27	88	1 17	4
1	195	20.4		37.9	118	05.6 137		19.2 109	**58**	** **	1 52	3 02	37	84	1 07	7
2	210	20.3		38.2	132	38.3 137	+17	08.3 109	**56**	** **	2 18	18	46	80	0 57	10
3	225	20.2		38.4	147	11.0 137	+16	57.2 111	**54**	1 06	38	31	9 54	77	48	14
4	240	20.1		38.7	161	43.8 138		46.1 111	**52**	1 42	2 55	43	10 01	74	41	15
5	255	20.0	+22	39.0	176	16.6 138	+16	35.0 111	**50**	2 07	3 09	3 53	10 07	72	0 34	18
6	270	19.9	+22	39.2	190	49.4 138	+16	23.7 113	**45**	2 49	3 38	4 14	10 20	68	0 19	22
7	285	19.8		39.5	205	22.3 139		12.4 113	**40**	3 18	3 59	32	32	63	0 07	26
8	300	19.6		39.7	219	55.2 139	+16	00.9 115	**35**	40	4 17	46	41	60	** **	**
9	315	19.5		40.0	234	28.1 139	+15	49.5 114	**30**	3 58	31	4 59	10 49	57	** **	**
10	330	19.4		40.2	249	01.1 140		37.9 116	**20**	4 26	4 55	5 20	11 03	53	** **	**
11	345	19.3	+22	40.5	263	34.1 140	+15	26.2 117	**10 N**	4 48	5 15	5 38	11 16	48	23 58	39
12	0	19.2	+22	40.8	278	07.1 140	+15	14.5 117	**0**	5 07	5 33	5 55	11 27	44	23 48	44
13	15	19.1		41.0	292	40.2 141	+15	02.7 118	**10 S**	23	5 49	6 12	38	40	39	47
14	30	19.0		41.3	307	13.3 141	+14	50.9 118	**20**	39	6 06	30	11 51	35	28	53
15	45	18.8		41.5	321	46.4 141		38.9 120	**30**	5 54	24	6 50	12 04	31	17	57
16	60	18.7		41.8	336	19.5 141		26.9 120	**35**	6 03	34	7 02	12	29	10	60
17	75	18.6	+22	42.0	350	52.7 142	+14	14.8 121	**40**	6 12	6 45	7 16	12 21	25	23 02	64
18	90	18.5	+22	42.3	5	25.8 141	+14	02.7 121	**45**	6 21	6 58	7 32	12 32	21	22 53	68
19	105	18.4		42.5	19	59.1 143	+13	50.4 123	**50**	32	7 14	7 52	45	16	42	72
20	120	18.3		42.8	34	32.3 142		38.1 123	**52**	37	21	8 01	50	15	36	76
21	135	18.2		43.0	49	05.5 142		25.8 123	**54**	43	28	12	12 57	12	31	77
22	150	18.0		43.3	63	38.8 143		13.3 125	**56**	49	37	24	13 04	9	24	81
23	165	17.9		43.5	78	12.1 143	+13	00.8 125	**58**	6 55	47	37	12	6	17	84
24	180	17.8	+22	43.7	92	45.4 143	+12	48.3 125	**60 S**	7 02	7 58	8 54	13 21	3	22 09	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 7h 01m.3		Mag: −3.9 PMG: 9h 35m			Mag: +0.6 PMG: 7h 38m			Mag: −2.3 PMG: 7h 20m			Mag: +0.7 PMG: 4h 53m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	254	23.3	216	18.5	+12 53.7	245	29.7	+1 54.2	249	46.8	+0 42.1	286	28.3	−14 10.0
1	269	25.7	231	18.1	54.6	260	30.5	54.9	264	49.0	42.3	301	30.7	10.0
2	284	28.2	246	17.7	55.6	275	31.2	55.6	279	51.1	42.4	316	33.2	10.0
3	299	30.6	261	17.3	56.5	290	32.0	56.3	294	53.2	42.5	331	35.7	10.1
4	314	33.1	276	16.9	57.5	305	32.8	57.0	309	55.3	42.7	346	38.1	10.1
5	329	35.6	291	16.5	+12 58.4	320	33.5	+1 57.8	324	57.4	+0 42.8	1	40.6	−14 10.1
6	344	38.0	306	16.1	+12 59.3	335	34.3	+1 58.5	339	59.6	+0 43.0	16	43.0	−14 10.1
7	359	40.5	321	15.7	+13 00.3	350	35.1	59.2	355	01.7	43.1	31	45.5	10.1
8	14	43.0	336	15.3	01.2	5	35.8	+1 59.9	10	03.8	43.2	46	48.0	10.1
9	29	45.4	351	14.9	02.2	20	36.6	+2 00.6	25	05.9	43.4	61	50.5	10.1
10	44	47.9	6	14.5	03.1	35	37.4	01.3	40	08.1	43.5	76	52.9	10.1
11	59	50.4	21	14.1	+13 04.0	50	38.2	+2 02.0	55	10.2	+0 43.6	91	55.4	−14 10.1
12	74	52.8	36	13.7	+13 05.0	65	38.9	+2 02.8	70	12.3	+0 43.8	106	57.9	−14 10.1
13	89	55.3	51	13.3	05.9	80	39.7	03.5	85	14.4	43.9	122	00.3	10.2
14	104	57.8	66	12.9	06.9	95	40.5	04.2	100	16.5	44.1	137	02.8	10.2
15	120	00.2	81	12.5	07.8	110	41.2	04.9	115	18.7	44.2	152	05.3	10.2
16	135	02.7	96	12.1	08.7	125	42.0	05.6	130	20.8	44.3	167	07.7	10.2
17	150	05.1	111	11.7	+13 09.7	140	42.8	+2 06.3	145	22.9	+0 44.5	182	10.2	−14 10.2
18	165	07.6	126	11.3	+13 10.6	155	43.5	+2 07.0	160	25.0	+0 44.6	197	12.7	−14 10.2
19	180	10.1	141	10.9	11.5	170	44.3	07.7	175	27.2	44.7	212	15.1	10.2
20	195	12.5	156	10.5	12.5	185	45.1	08.5	190	29.3	44.9	227	17.6	10.2
21	210	15.0	171	10.1	13.4	200	45.8	09.2	205	31.4	45.0	242	20.1	10.2
22	225	17.5	186	09.7	14.3	215	46.6	09.9	220	33.5	45.1	257	22.5	10.2
23	240	19.9	201	09.3	15.3	230	47.4	10.6	235	35.7	45.3	272	25.0	10.3
24	255	22.4	216	08.9	+13 16.2	245	48.1	+2 11.3	250	37.8	+0 45.4	287	27.5	−14 10.3
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 7ᵈ.5		PHE	4ʰ: 55′.7								
	PMG: 11ʰ 58ᵐ.9				SD: 15′.1			12ʰ: 55′.9								
					PMG: 18ʰ 21ᵐ			20ʰ: 56′.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	17.8	+22	43.7	92	45.4	+12	48.3	**60 N**	21 17	22 50	** **	10 55	88	1 21	2
1	195	17.7		44.0	107	18.8 144		35.6 127	**58**	20 58	22 09	** **	11 01	84	14	5
2	210	17.6		44.2	121	52.1 143		22.9 127	**56**	42	21 42	** **	06	81	07	9
3	225	17.5		44.5	136	25.5 144	+12	10.2 127	**54**	28	21	22 56	11	78	1 02	11
4	240	17.3		44.7	150	58.9 144	+11	57.4 128	**52**	16	21 04	22 18	15	76	0 56	14
5	255	17.2	+22	45.0	165	32.3 144	+11	44.5 129	**50**	20 06	20 50	21 53	11 19	74	0 52	15
6	270	17.1	+22	45.2	180	05.7 144	+11	31.5 130	**45**	19 44	20 21	21 10	11 28	68	0 41	21
7	285	17.0		45.4	194	39.2 145		18.5 130	**40**	27	19 59	20 40	35	64	33	24
8	300	16.9		45.7	209	12.6 144	+11	05.4 131	**35**	19 12	42	18	41	61	26	27
9	315	16.8		45.9	223	46.1 145	+10	52.3 131	**30**	18 59	27	20 00	46	58	19	30
10	330	16.6		46.2	238	19.5 144		39.1 132	**20**	38	19 03	19 32	11 56	52	0 08	35
11	345	16.5	+22	46.4	252	53.0 145	+10	25.8 133	**10 N**	18 20	18 43	19 10	12 04	48	** **	**
12	0	16.4	+22	46.6	267	26.5 145	+10	12.5 133	**0**	18 03	18 25	18 51	12 11	44	** **	**
13	15	16.3		46.9	282	00.0 145	+9	59.2 133	**10 S**	17 46	18 08	35	18	40	** **	**
14	30	16.2		47.1	296	33.5 145		45.7 135	**20**	28	17 52	19	26	35	** **	**
15	45	16.1		47.3	311	07.0 145		32.2 135	**30**	17 07	33	18 03	35	30	** **	**
16	60	15.9		47.6	325	40.5 145		18.7 135	**35**	16 55	23	17 55	41	26	** **	**
17	75	15.8	+22	47.8	340	14.1 146	+9	05.1 136	**40**	16 41	17 12	17 46	12 46	24	** **	**
18	90	15.7	+22	48.0	354	47.6 145	+8	51.5 136	**45**	16 25	16 59	17 36	12 53	20	** **	**
19	105	15.6		48.3	9	21.1 145		37.8 137	**50**	16 05	43	24	13 01	15	23 54	75
20	120	15.5		48.5	23	54.6 145		24.0 138	**52**	15 56	36	19	05	13	52	76
21	135	15.3		48.7	38	28.2 146	+8	10.2 138	**54**	45	28	14	09	11	48	79
22	150	15.2		49.0	53	01.7 145	+7	56.4 138	**56**	33	20	08	13	9	45	82
23	165	15.1		49.2	67	35.2 145		42.5 139	**58**	19	16 10	17 02	18	6	41	85
24	180	15.0	+22	49.4	82	08.7 145	+7	28.5 140	**60 S**	15 02	15 59	16 55	13 24	2	23 37	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.3			Mag: +0.7		
	6ʰ 57ᵐ.4		PMG: 9ʰ 36ᵐ			PMG: 7ʰ 36ᵐ			PMG: 7ʰ 16ᵐ			PMG: 4ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	255	22.4	216	08.9	+13 16.2	245	48.1	+2 11.3	250	37.8	+0 45.4	287	27.5	−14 10.3
1	270	24.9	231	08.5	17.2	260	48.9	12.0	265	39.9	45.6	302	29.9	10.3
2	285	27.3	246	08.1	18.1	275	49.7	12.7	280	42.0	45.7	317	32.4	10.3
3	300	29.8	261	07.7	19.0	290	50.4	13.4	295	44.2	45.8	332	34.9	10.3
4	315	32.2	276	07.3	19.9	305	51.2	14.2	310	46.3	46.0	347	37.4	10.3
5	330	34.7	291	06.9	+13 20.9	320	52.0	+2 14.9	325	48.4	+0 46.1	2	39.8	−14 10.3
6	345	37.2	306	06.5	+13 21.8	335	52.8	+2 15.6	340	50.5	+0 46.2	17	42.3	−14 10.3
7	0	39.6	321	06.1	22.7	350	53.5	16.3	355	52.7	46.4	32	44.8	10.3
8	15	42.1	336	05.6	23.7	5	54.3	17.0	10	54.8	46.5	47	47.2	10.3
9	30	44.6	351	05.2	24.6	20	55.1	17.7	25	56.9	46.6	62	49.7	10.4
10	45	47.0	6	04.8	25.5	35	55.8	18.4	40	59.0	46.8	77	52.2	10.4
11	60	49.5	21	04.4	+13 26.5	50	56.6	+2 19.1	56	01.2	+0 46.9	92	54.7	−14 10.4
12	75	52.0	36	04.0	+13 27.4	65	57.4	+2 19.9	71	03.3	+0 47.0	107	57.1	−14 10.4
13	90	54.4	51	03.6	28.3	80	58.1	20.6	86	05.4	47.2	122	59.6	10.4
14	105	56.9	66	03.2	29.2	95	58.9	21.3	101	07.5	47.3	138	02.1	10.4
15	120	59.4	81	02.8	30.2	110	59.7	22.0	116	09.7	47.4	153	04.5	10.4
16	136	01.8	96	02.4	31.1	126	00.4	22.7	131	11.8	47.6	168	07.0	10.4
17	151	04.3	111	02.0	+13 32.0	141	01.2	+2 23.4	146	13.9	+0 47.7	183	09.5	−14 10.4
18	166	06.7	126	01.5	+13 32.9	156	02.0	+2 24.1	161	16.1	+0 47.8	198	12.0	−14 10.5
19	181	09.2	141	01.1	33.9	171	02.8	24.8	176	18.2	48.0	213	14.4	10.5
20	196	11.7	156	00.7	34.8	186	03.5	25.5	191	20.3	48.1	228	16.9	10.5
21	211	14.1	171	00.3	35.7	201	04.3	26.3	206	22.4	48.3	243	19.4	10.5
22	226	16.6	185	59.9	36.6	216	05.1	27.0	221	24.6	48.4	258	21.9	10.5
23	241	19.1	200	59.5	37.6	231	05.8	27.7	236	26.7	48.5	273	24.3	10.5
24	256	21.5	215	59.1	+13 38.5	246	06.6	+2 28.4	251	28.8	+0 48.7	288	26.8	−14 10.5
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 8ᵈ.5		PHE	4ʰ: 56′.5								
	PMG: 11ʰ 59ᵐ.1				SD: 15′.3			12ʰ: 56′.8								
					PMG: 19ʰ 05ᵐ			20ʰ: 57′.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	15.0	+22	49.4	82	08.7	+7	28.5	**60 N**	** **	1 07	2 41	12 23	90	1 23	2
1	195	14.9		49.7	96	42.2 145		14.5 140	**58**	** **	1 49	3 00	25	87	19	5
2	210	14.7		49.9	111	15.8 146	+7	00.5 140	**56**	** **	2 16	16	27	84	16	8
3	225	14.6		50.1	125	49.3 145	+6	46.4 141	**54**	1 01	37	30	29	81	13	10
4	240	14.5		50.3	140	22.7 144		32.2 142	**52**	1 40	2 54	42	31	78	10	13
5	255	14.4	+22	50.6	154	56.2 145	+6	18.0 142	**50**	2 05	3 08	3 52	12 33	75	1 07	15
6	270	14.3	+22	50.8	169	29.7 145	+6	03.8 142	**45**	2 48	3 37	4 14	12 36	71	1 02	19
7	285	14.2		51.0	184	03.2 145	+5	49.5 143	**40**	3 18	3 59	31	39	67	0 57	23
8	300	14.0		51.2	198	36.6 144		35.2 143	**35**	40	4 16	46	42	63	53	27
9	315	13.9		51.4	213	10.1 145		20.8 144	**30**	3 58	31	4 58	44	60	49	30
10	330	13.8		51.7	227	43.5 144	+5	06.4 144	**20**	4 26	4 55	5 20	48	54	43	35
11	345	13.7	+22	51.9	242	16.9 144	+4	52.0 144	**10 N**	4 48	5 15	5 38	12 52	49	0 37	40
12	0	13.6	+22	52.1	256	50.3 144	+4	37.5 145	**0**	5 07	5 33	5 55	12 55	44	0 32	44
13	15	13.4		52.3	271	23.7 144		23.0 145	**10 S**	23	5 50	6 12	12 58	40	26	49
14	30	13.3		52.6	285	57.0 143	+4	08.4 146	**20**	39	6 07	30	13 01	36	21	53
15	45	13.2		52.8	300	30.4 144	+3	53.8 146	**30**	5 55	25	6 51	05	30	14	58
16	60	13.1		53.0	315	03.7 143		39.2 146	**35**	6 04	35	7 03	07	27	10	62
17	75	12.9	+22	53.2	329	37.0 143	+3	24.5 147	**40**	6 13	6 46	7 17	13 10	24	0 06	65
18	90	12.8	+22	53.4	344	10.2 142	+3	09.8 147	**45**	6 23	7 00	7 33	13 13	19	0 01	69
19	105	12.7		53.6	358	43.5 143	+2	55.1 147	**50**	34	15	7 53	16	15	** **	**
20	120	12.6		53.9	13	16.7 142		40.3 148	**52**	39	22	8 03	18	13	** **	**
21	135	12.5		54.1	27	49.9 142		25.5 148	**54**	44	30	13	20	10	** **	**
22	150	12.3		54.3	42	23.0 141	+2	10.7 148	**56**	50	39	26	22	7	** **	**
23	165	12.2		54.5	56	56.1 141	+1	55.8 149	**58**	6 57	7 49	40	24	5	** **	**
24	180	12.1	+22	54.7	71	29.2 141	+1	41.0 148	**60 S**	7 04	8 00	8 56	13 26	2	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.3			Mag: +0.7		
	6ʰ 53ᵐ.4		PMG: 9ʰ 36ᵐ			PMG: 7ʰ 35ᵐ			PMG: 7ʰ 13ᵐ			PMG: 4ʰ 45ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	256	21.5	215	59.1	+13 38.5	246	06.6	+2 28.4	251	28.8	+0 48.7	288	26.8	−14 10.5
1	271	24.0	230	58.6	39.4	261	07.4	29.1	266	31.0	48.8	303	29.3	10.5
2	286	26.5	245	58.2	40.3	276	08.1	29.8	281	33.1	48.9	318	31.7	10.5
3	301	28.9	260	57.8	41.2	291	08.9	30.5	296	35.2	49.1	333	34.2	10.6
4	316	31.4	275	57.4	42.2	306	09.7	31.2	311	37.3	49.2	348	36.7	10.6
5	331	33.9	290	57.0	+13 43.1	321	10.5	+2 31.9	326	39.5	+0 49.3	3	39.2	−14 10.6
6	346	36.3	305	56.6	+13 44.0	336	11.2	+2 32.6	341	41.6	+0 49.5	18	41.6	−14 10.6
7	1	38.8	320	56.1	44.9	351	12.0	33.4	356	43.7	49.6	33	44.1	10.6
8	16	41.2	335	55.7	45.8	6	12.8	34.1	11	45.9	49.7	48	46.6	10.6
9	31	43.7	350	55.3	46.8	21	13.5	34.8	26	48.0	49.9	63	49.1	10.6
10	46	46.2	5	54.9	47.7	36	14.3	35.5	41	50.1	50.0	78	51.5	10.6
11	61	48.6	20	54.5	+13 48.6	51	15.1	+2 36.2	56	52.3	+0 50.1	93	54.0	−14 10.7
12	76	51.1	35	54.0	+13 49.5	66	15.8	+2 36.9	71	54.4	+0 50.2	108	56.5	−14 10.7
13	91	53.6	50	53.6	50.4	81	16.6	37.6	86	56.5	50.4	123	59.0	10.7
14	106	56.0	65	53.2	51.3	96	17.4	38.3	101	58.7	50.5	139	01.4	10.7
15	121	58.5	80	52.8	52.3	111	18.2	39.0	117	00.8	50.6	154	03.9	10.7
16	137	01.0	95	52.4	53.2	126	18.9	39.7	132	02.9	50.8	169	06.4	10.7
17	152	03.4	110	51.9	+13 54.1	141	19.7	+2 40.4	147	05.1	+0 50.9	184	08.9	−14 10.7
18	167	05.9	125	51.5	+13 55.0	156	20.5	+2 41.2	162	07.2	+0 51.0	199	11.4	−14 10.7
19	182	08.3	140	51.1	55.9	171	21.2	41.9	177	09.3	51.2	214	13.8	10.8
20	197	10.8	155	50.7	56.8	186	22.0	42.6	192	11.5	51.3	229	16.3	10.8
21	212	13.3	170	50.2	57.7	201	22.8	43.3	207	13.6	51.4	244	18.8	10.8
22	227	15.7	185	49.8	58.6	216	23.6	44.0	222	15.7	51.6	259	21.3	10.8
23	242	18.2	200	49.4	+13 59.6	231	24.3	44.7	237	17.9	51.7	274	23.7	10.8
24	257	20.7	215	49.0	+14 00.5	246	25.1	+2 45.4	252	20.0	+0 51.8	289	26.2	−14 10.8
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 9ᵈ.5		PHE	4ʰ: 57′.4								
	PMG: 11ʰ 59ᵐ.3				SD: 15′.6			12ʰ: 57′.7								
					PMG: 19ʰ 50ᵐ			20ʰ: 58′.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	12.1	+22	54.7	71	29.2	+1	41.0	**60 N**	21 19	22 56	** **	13 53	94	1 25	2
1	195	12.0		54.9	86	02.3 141		26.0 150	**58**	21 00	22 12	** **	52	90	24	5
2	210	11.9		55.1	100	35.3 140	+1	11.1 149	**56**	20 44	21 45	** **	51	87	24	7
3	225	11.7		55.3	115	08.3 140	+0	56.1 150	**54**	30	23	23 01	50	84	23	11
4	240	11.6		55.5	129	41.3 140		41.1 150	**52**	18	21 06	22 21	49	82	23	12
5	255	11.5	+22	55.8	144	14.2 139	+0	26.1 150	**50**	20 07	20 51	21 55	13 48	79	1 22	15
6	270	11.4	+22	56.0	158	47.0 138	+0	11.1 150	**45**	19 45	20 22	21 11	13 47	74	1 21	20
7	285	11.2		56.2	173	19.9 139	−0	04.0 151	**40**	28	20 00	20 42	46	69	20	24
8	300	11.1		56.4	187	52.7 138		19.1 151	**35**	13	19 43	19	45	65	20	27
9	315	11.0		56.6	202	25.4 137		34.2 151	**30**	19 00	28	20 01	44	62	19	31
10	330	10.9		56.8	216	58.1 137	−0	49.3 151	**20**	18 39	19 03	19 32	42	56	18	36
11	345	10.8	+22	57.0	231	30.8 137	−1	04.4 151	**10 N**	18 20	18 43	19 10	13 41	51	1 17	41
12	0	10.6	+22	57.2	246	03.4 136	−1	19.6 152	**0**	18 03	18 25	18 52	13 39	47	1 16	45
13	15	10.5		57.4	260	36.0 136		34.8 152	**10 S**	17 46	18 09	35	38	42	15	50
14	30	10.4		57.6	275	08.5 135	−1	50.0 152	**20**	28	17 52	19	37	37	14	55
15	45	10.3		57.8	289	40.9 134	−2	05.2 152	**30**	17 07	33	18 03	35	32	12	61
16	60	10.1		58.0	304	13.3 134		20.4 152	**35**	16 55	23	17 54	34	29	12	63
17	75	10.0	+22	58.2	318	45.7 134	−2	35.6 152	**40**	16 41	17 11	17 45	13 34	25	1 11	67
18	90	09.9	+22	58.4	333	18.0 133	−2	50.8 152	**45**	16 25	16 58	17 35	13 32	21	1 10	72
19	105	09.8		58.6	347	50.2 132	−3	06.1 153	**50**	16 04	43	24	31	16	09	77
20	120	09.7		58.8	2	22.4 132		21.3 152	**52**	15 55	35	19	31	13	08	79
21	135	09.5		59.0	16	54.5 131		36.6 153	**54**	44	27	13	30	11	07	82
22	150	09.4		59.2	31	26.6 131	−3	51.8 152	**56**	32	19	07	29	9	07	85
23	165	09.3		59.4	45	58.6 130	−4	07.1 153	**58**	18	16 09	17 01	29	5	06	88
24	180	09.2	+22	59.6	60	30.5 129	−4	22.4 153	**60 S**	15 01	15 57	16 54	13 28	2	1 05	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6ʰ 49ᵐ.5		PMG: 9ʰ 37ᵐ			PMG: 7ʰ 34ᵐ			PMG: 7ʰ 10ᵐ			PMG: 4ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	257	20.7	215	49.0	+14 00.5	246	25.1	+2 45.4	252	20.0	+0 51.8	289	26.2	−14 10.8
1	272	23.1	230	48.5	01.4	261	25.9	46.1	267	22.1	52.0	304	28.7	10.8
2	287	25.6	245	48.1	02.3	276	26.6	46.8	282	24.3	52.1	319	31.2	10.8
3	302	28.1	260	47.7	03.2	291	27.4	47.5	297	26.4	52.2	334	33.6	10.9
4	317	30.5	275	47.3	04.1	306	28.2	48.2	312	28.5	52.4	349	36.1	10.9
5	332	33.0	290	46.8	+14 05.0	321	29.0	+2 48.9	327	30.7	+0 52.5	4	38.6	−14 10.9
6	347	35.5	305	46.4	+14 05.9	336	29.7	+2 49.7	342	32.8	+0 52.6	19	41.1	−14 10.9
7	2	37.9	320	46.0	06.8	351	30.5	50.4	357	34.9	52.8	34	43.6	10.9
8	17	40.4	335	45.6	07.7	6	31.3	51.1	12	37.1	52.9	49	46.0	10.9
9	32	42.8	350	45.1	08.6	21	32.0	51.8	27	39.2	53.0	64	48.5	10.9
10	47	45.3	5	44.7	09.5	36	32.8	52.5	42	41.4	53.1	79	51.0	10.9
11	62	47.8	20	44.3	+14 10.4	51	33.6	+2 53.2	57	43.5	+0 53.3	94	53.5	−14 11.0
12	77	50.2	35	43.8	+14 11.3	66	34.4	+2 53.9	72	45.6	+0 53.4	109	56.0	−14 11.0
13	92	52.7	50	43.4	12.2	81	35.1	54.6	87	47.8	53.5	124	58.4	11.0
14	107	55.2	65	43.0	13.2	96	35.9	55.3	102	49.9	53.7	140	00.9	11.0
15	122	57.6	80	42.5	14.1	111	36.7	56.0	117	52.0	53.8	155	03.4	11.0
16	138	00.1	95	42.1	15.0	126	37.4	56.7	132	54.2	53.9	170	05.9	11.0
17	153	02.6	110	41.7	+14 15.9	141	38.2	+2 57.4	147	56.3	+0 54.1	185	08.4	−14 11.0
18	168	05.0	125	41.2	+14 16.8	156	39.0	+2 58.1	162	58.5	+0 54.2	200	10.8	−14 11.1
19	183	07.5	140	40.8	17.7	171	39.8	58.9	178	00.6	54.3	215	13.3	11.1
20	198	09.9	155	40.4	18.6	186	40.5	+2 59.6	193	02.7	54.4	230	15.8	11.1
21	213	12.4	170	39.9	19.5	201	41.3	+3 00.3	208	04.9	54.6	245	18.3	11.1
22	228	14.9	185	39.5	20.4	216	42.1	01.0	223	07.0	54.7	260	20.8	11.1
23	243	17.3	200	39.1	21.3	231	42.8	01.7	238	09.2	54.8	275	23.2	11.1
24	258	19.8	215	38.6	+14 22.2	246	43.6	+3 02.4	253	11.3	+0 55.0	290	25.7	−14 11.1
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 10^{d}.5		PHE	4^{h}: 58′.3									
	PMG: 11^{h} 59^{m}.5				SD: 15′.8			12^{h}: 58′.6									
					PMG: 20^{h} 38^{m}			20^{h}: 59′.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	180	09.2	+22	59.6	60	30.5	−4	22.4		**60 N**	** **	1 03	2 39	15 27	101	1 27	2
1	195	09.0	+22	59.8	75	02.4	129	37.6	152	**58**	** **	1 46	2 59	22	97	29	6
2	210	08.9	+23	00.0	89	34.2	128	−4 52.9	153	**56**	** **	2 14	3 15	18	93	31	10
3	225	08.8	+23	00.2	104	06.0	128	−5 08.2	153	**54**	0 57	35	29	14	89	34	12
4	240	08.7		00.3	118	37.6	126	23.4	152	**52**	1 37	2 53	41	11	86	35	15
5	255	08.5	+23	00.5	133	09.2	126	−5 38.7	153	**50**	2 03	3 07	3 51	15 07	84	1 37	17
6	270	08.4	+23	00.7	147	40.8	126	−5 53.9	152	**45**	2 47	3 36	4 13	15 01	77	1 41	22
7	285	08.3		00.9	162	12.2	124	−6 09.2	153	**40**	3 17	3 58	31	14 55	73	44	26
8	300	08.2		01.1	176	43.6	124	24.4	152	**35**	40	4 16	46	50	69	47	30
9	315	08.0		01.3	191	14.9	123	39.6	152	**30**	3 58	31	4 58	46	66	50	33
10	330	07.9		01.5	205	46.1	122	−6 54.9	153	**20**	4 26	4 55	5 20	38	60	54	38
11	345	07.8	+23	01.7	220	17.3	122	−7 10.1	152	**10 N**	4 49	5 16	5 39	14 32	55	1 58	43
12	0	07.7	+23	01.9	234	48.3	120	−7 25.3	152	**0**	5 07	5 33	5 56	14 26	50	2 01	48
13	15	07.5		02.0	249	19.3	120	40.4	151	**10 S**	24	5 50	6 13	20	46	05	53
14	30	07.4		02.2	263	50.2	119	−7 55.6	152	**20**	40	6 07	31	14	41	09	58
15	45	07.3		02.4	278	21.1	119	−8 10.8	152	**30**	5 56	26	6 52	07	35	13	64
16	60	07.2		02.6	292	51.8	117	25.9	151	**35**	6 04	36	7 04	14 03	32	15	67
17	75	07.0	+23	02.8	307	22.4	116	−8 41.0	151	**40**	6 14	6 48	7 18	13 59	28	2 18	71
18	90	06.9	+23	03.0	321	53.0	116	−8 56.1	151	**45**	6 24	7 01	7 34	13 53	24	2 22	75
19	105	06.8		03.1	336	23.5	115	−9 11.1	150	**50**	35	16	7 55	47	19	26	80
20	120	06.7		03.3	350	53.9	114	26.1	150	**52**	40	24	8 04	44	17	27	84
21	135	06.5		03.5	5	24.1	112	41.1	150	**54**	46	32	15	41	14	29	87
22	150	06.4		03.7	19	54.3	112	−9 56.1	150	**56**	52	40	27	38	11	32	89
23	165	06.3		03.9	34	24.4	111	−10 11.1	150	**58**	6 58	7 50	42	34	7	34	93
24	180	06.2	+23	04.0	48	54.5	111	−10 26.0	149	**60 S**	7 05	8 02	8 59	13 30	3	2 37	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6^{h} 45^{m}.6		PMG: 9^{h} 38^{m}			PMG: 7^{h} 33^{m}			PMG: 7^{h} 06^{m}			PMG: 4^{h} 38^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	258	19.8	215	38.6	+14 22.2	246	43.6	+3 02.4	253	11.3	+0 55.0	290	25.7	−14 11.1
1	273	22.3	230	38.2	23.1	261	44.4	03.1	268	13.4	55.1	305	28.2	11.2
2	288	24.7	245	37.8	24.0	276	45.2	03.8	283	15.6	55.2	320	30.7	11.2
3	303	27.2	260	37.3	24.8	291	45.9	04.5	298	17.7	55.3	335	33.2	11.2
4	318	29.7	275	36.9	25.7	306	46.7	05.2	313	19.9	55.5	350	35.7	11.2
5	333	32.1	290	36.4	+14 26.6	321	47.5	+3 05.9	328	22.0	+0 55.6	5	38.1	−14 11.2
6	348	34.6	305	36.0	+14 27.5	336	48.3	+3 06.6	343	24.1	+0 55.7	20	40.6	−14 11.2
7	3	37.1	320	35.6	28.4	351	49.0	07.3	358	26.3	55.9	35	43.1	11.2
8	18	39.5	335	35.1	29.3	6	49.8	08.0	13	28.4	56.0	50	45.6	11.3
9	33	42.0	350	34.7	30.2	21	50.6	08.7	28	30.6	56.1	65	48.1	11.3
10	48	44.4	5	34.2	31.1	36	51.3	09.4	43	32.7	56.2	80	50.6	11.3
11	63	46.9	20	33.8	+14 32.0	51	52.1	+3 10.1	58	34.8	+0 56.4	95	53.0	−14 11.3
12	78	49.4	35	33.4	+14 32.9	66	52.9	+3 10.8	73	37.0	+0 56.5	110	55.5	−14 11.3
13	93	51.8	50	32.9	33.8	81	53.7	11.6	88	39.1	56.6	125	58.0	11.3
14	108	54.3	65	32.5	34.7	96	54.4	12.3	103	41.3	56.8	141	00.5	11.3
15	123	56.8	80	32.0	35.6	111	55.2	13.0	118	43.4	56.9	156	03.0	11.4
16	138	59.2	95	31.6	36.5	126	56.0	13.7	133	45.6	57.0	171	05.5	11.4
17	154	01.7	110	31.1	+14 37.3	141	56.8	+3 14.4	148	47.7	+0 57.1	186	07.9	−14 11.4
18	169	04.2	125	30.7	+14 38.2	156	57.5	+3 15.1	163	49.8	+0 57.3	201	10.4	−14 11.4
19	184	06.6	140	30.3	39.1	171	58.3	15.8	178	52.0	57.4	216	12.9	11.4
20	199	09.1	155	29.8	40.0	186	59.1	16.5	193	54.1	57.5	231	15.4	11.4
21	214	11.6	170	29.4	40.9	201	59.9	17.2	208	56.3	57.6	246	17.9	11.5
22	229	14.0	185	28.9	41.8	217	00.6	17.9	223	58.4	57.8	261	20.4	11.5
23	244	16.5	200	28.5	42.7	232	01.4	18.6	239	00.6	57.9	276	22.8	11.5
24	259	18.9	215	28.0	+14 43.6	247	02.2	+3 19.3	254	02.7	+0 58.0	291	25.3	−14 11.5
Dif	—			−4	+9		+8	+7		+21	+1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 11^{d}.5		PHE	4^{h}: 59′.3								
	PMG: 11^{h} 59^{m}.7		SD: 16′.1			12^{h}: 59′.6								
			PMG: 21^{h} 29^{m}			20^{h}: 59′.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 06.2	+23 04.0	48 54.5		−10 26.0		**60 N**	21 22	23 01	** **	17 08	109	1 29	4
1	195 06.0	04.2	63 24.4	109	40.9	149	**58**	21 02	22 15	** **	16 59	103	35	8
2	210 05.9	04.4	77 54.2	108	−10 55.7	148	**56**	20 45	21 47	** **	51	98	41	11
3	225 05.8	04.6	92 23.9	107	−11 10.5	148	**54**	31	25	23 06	43	95	46	15
4	240 05.7	04.8	106 53.5	106	25.3	148	**52**	19	21 08	22 24	37	91	50	18
5	255 05.5	+23 04.9	121 23.0	105	−11 40.0	147	**50**	20 09	20 53	21 57	16 31	88	1 54	21
6	270 05.4	+23 05.1	135 52.4	104	−11 54.7	147	**45**	19 47	20 24	21 13	16 18	82	2 03	26
7	285 05.3	05.3	150 21.7	103	−12 09.3	146	**40**	29	20 02	20 43	16 08	77	10	31
8	300 05.2	05.4	164 50.9	102	23.9	146	**35**	14	19 44	20	15 59	74	17	34
9	315 05.0	05.6	179 20.0	101	38.4	145	**30**	19 01	29	20 02	52	70	23	37
10	330 04.9	05.8	193 49.0	100	−12 52.9	145	**20**	18 39	19 04	19 33	38	65	32	44
11	345 04.8	+23 06.0	208 17.8	98	−13 07.3	144	**10 N**	18 21	18 44	19 11	15 27	60	2 41	48
12	0 04.7	+23 06.1	222 46.6	98	−13 21.7	144	**0**	18 03	18 26	18 52	15 16	56	2 49	53
13	15 04.5	06.3	237 15.2	96	36.1	144	**10 S**	17 46	18 09	35	15 06	51	2 58	57
14	30 04.4	06.5	251 43.8	96	−13 50.3	142	**20**	28	17 52	19	14 55	46	3 07	62
15	45 04.3	06.6	266 12.2	94	−14 04.5	142	**30**	17 07	33	18 03	42	41	17	67
16	60 04.1	06.8	280 40.5	93	18.7	142	**35**	16 55	23	17 54	35	37	22	72
17	75 04.0	+23 07.0	295 08.7	92	−14 32.8	141	**40**	16 41	17 11	17 45	14 27	33	3 29	75
18	90 03.9	+23 07.1	309 36.8	91	−14 46.8	140	**45**	16 24	16 58	17 35	14 17	30	3 37	80
19	105 03.8	07.3	324 04.7	89	−15 00.7	139	**50**	16 04	42	24	06	24	46	86
20	120 03.6	07.5	338 32.6	89	14.6	139	**52**	15 54	35	18	14 01	21	51	88
21	135 03.5	07.6	353 00.3	87	28.4	138	**54**	43	27	13	13 55	18	3 56	91
22	150 03.4	07.8	7 27.9	86	42.2	138	**56**	31	18	07	49	14	4 01	95
23	165 03.3	07.9	21 55.4	85	−15 55.8	136	**58**	17	16 08	17 00	41	11	07	99
24	180 03.1	+23 08.1	36 22.7	83	−16 09.4	136	**60 S**	15 00	15 57	16 53	13 33	6	4 14	104

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: +0.6		Mag: −2.4		Mag: +0.7	
	6^{h} 41^{m}.6	PMG: 9^{h} 38^{m}		PMG: 7^{h} 31^{m}		PMG: 7^{h} 03^{m}		PMG: 4^{h} 34^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	259 18.9	215 28.0	+14 43.6	247 02.2	+3 19.3	254 02.7	+0 58.0	291 25.3	−14 11.5
1	274 21.4	230 27.6	44.4	262 02.9	20.0	269 04.8	58.2	306 27.8	11.5
2	289 23.9	245 27.1	45.3	277 03.7	20.7	284 07.0	58.3	321 30.3	11.5
3	304 26.3	260 26.7	46.2	292 04.5	21.4	299 09.1	58.4	336 32.8	11.5
4	319 28.8	275 26.2	47.1	307 05.3	22.1	314 11.3	58.5	351 35.3	11.6
5	334 31.3	290 25.8	+14 48.0	322 06.0	+3 22.8	329 13.4	+0 58.7	6 37.8	−14 11.6
6	349 33.7	305 25.3	+14 48.9	337 06.8	+3 23.5	344 15.6	+0 58.8	21 40.2	−14 11.6
7	4 36.2	320 24.9	49.7	352 07.6	24.2	359 17.7	58.9	36 42.7	11.6
8	19 38.7	335 24.4	50.6	7 08.4	24.9	14 19.9	59.0	51 45.2	11.6
9	34 41.1	350 24.0	51.5	22 09.1	25.6	29 22.0	59.2	66 47.7	11.6
10	49 43.6	5 23.5	52.4	37 09.9	26.3	44 24.2	59.3	81 50.2	11.7
11	64 46.0	20 23.1	+14 53.3	52 10.7	+3 27.0	59 26.3	+0 59.4	96 52.7	−14 11.7
12	79 48.5	35 22.6	+14 54.1	67 11.5	+3 27.7	74 28.5	+0 59.5	111 55.2	−14 11.7
13	94 51.0	50 22.2	55.0	82 12.2	28.4	89 30.6	59.7	126 57.7	11.7
14	109 53.4	65 21.7	55.9	97 13.0	29.1	104 32.8	59.8	142 00.1	11.7
15	124 55.9	80 21.3	56.8	112 13.8	29.8	119 34.9	+0 59.9	157 02.6	11.7
16	139 58.4	95 20.8	57.6	127 14.6	30.6	134 37.0	+1 00.0	172 05.1	11.8
17	155 00.8	110 20.4	+14 58.5	142 15.3	+3 31.3	149 39.2	+1 00.2	187 07.6	−14 11.8
18	170 03.3	125 19.9	+14 59.4	157 16.1	+3 32.0	164 41.3	+1 00.3	202 10.1	−14 11.8
19	185 05.8	140 19.4	+15 00.3	172 16.9	32.7	179 43.5	00.4	217 12.6	11.8
20	200 08.2	155 19.0	01.1	187 17.7	33.4	194 45.6	00.5	232 15.1	11.8
21	215 10.7	170 18.5	02.0	202 18.4	34.1	209 47.8	00.7	247 17.6	11.8
22	230 13.2	185 18.1	02.9	217 19.2	34.8	224 49.9	00.8	262 20.1	11.9
23	245 15.6	200 17.6	03.8	232 20.0	35.5	239 52.1	00.9	277 22.5	11.9
24	260 18.1	215 17.2	+15 04.6	247 20.8	+3 36.2	254 54.2	+1 01.0	292 25.0	−14 11.9
Dif	—	−5	+9	+8	+7	+21	+1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 12^{d}.5		PHE	4^{h}: 60′.1									
	PMG: 11^{h} 59^{m}.9				SD: 16′.3			12^{h}: 60′.4									
					PMG: 22^{h} 26^{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	03.1	+23	08.1	36	22.7	−16	09.4		**60 N**	** **	0 58	2 38	18 57	113	1 33	7
1	195	03.0		08.3	50	49.9 82		22.9	135	**58**	** **	1 44	2 58	42	105	43	13
2	210	02.9		08.4	65	17.1 82		36.3	134	**56**	** **	2 13	3 14	29	100	1 52	18
3	225	02.7		08.6	79	44.0 79	−16	49.7	134	**54**	0 53	34	28	18	95	2 01	21
4	240	02.6		08.7	94	10.9 79	−17	02.9	132	**52**	1 35	2 52	40	18 08	92	08	24
5	255	02.5	+23	08.9	108	37.6 77	−17	16.1	132	**50**	2 02	3 06	3 51	17 59	89	2 15	27
6	270	02.4	+23	09.1	123	04.3 77	−17	29.2	131	**45**	2 46	3 36	4 13	17 40	84	2 29	33
7	285	02.2		09.2	137	30.7 74		42.1	129	**40**	3 16	3 58	31	25	80	41	37
8	300	02.1		09.4	151	57.1 74	−17	55.0	129	**35**	39	4 16	46	13	76	2 51	41
9	315	02.0		09.5	166	23.3 72	−18	07.8	128	**30**	3 58	31	4 58	17 02	73	3 00	44
10	330	01.8		09.7	180	49.4 71		20.5	127	**20**	4 26	4 56	5 20	16 43	68	16	49
11	345	01.7	+23	09.8	195	15.4 70	−18	33.1	126	**10 N**	4 49	5 16	5 39	16 27	64	3 29	54
12	0	01.6	+23	10.0	209	41.2 68	−18	45.5	124	**0**	5 08	5 34	5 56	16 12	60	3 42	58
13	15	01.5		10.1	224	07.0 68	−18	57.9	124	**10 S**	24	5 51	6 13	15 57	57	3 55	62
14	30	01.3		10.3	238	32.5 65	−19	10.2	123	**20**	40	6 08	32	41	53	4 09	66
15	45	01.2		10.4	252	58.0 65		22.3	121	**30**	5 57	26	6 53	23	48	24	72
16	60	01.1		10.6	267	23.3 63		34.4	121	**35**	6 05	37	7 05	12	46	34	74
17	75	00.9	+23	10.7	281	48.5 62	−19	46.3	119	**40**	6 14	6 48	7 19	15 00	42	4 44	79
18	90	00.8	+23	10.9	296	13.6 61	−19	58.1	118	**45**	6 25	7 02	7 35	14 47	37	4 57	83
19	105	00.7		11.0	310	38.5 59	−20	09.8	117	**50**	36	18	7 56	30	32	5 12	89
20	120	00.6		11.2	325	03.3 58		21.4	116	**52**	41	25	8 06	22	29	19	92
21	135	00.4		11.3	339	28.0 57		32.8	114	**54**	47	33	17	13	26	27	95
22	150	00.3		11.5	353	52.6 56		44.1	113	**56**	6 53	42	29	14 03	23	36	100
23	165	00.2		11.6	8	17.0 54	−20	55.3	112	**58**	7 00	7 52	8 43	13 52	18	46	105
24	180	00.0	+23	11.8	22	41.3 53	−21	06.4	111	**60 S**	7 07	8 03	9 01	13 39	12	5 58	111

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6^{h} 37^{m}.7		PMG: 9^{h} 39^{m}			PMG: 7^{h} 30^{m}			PMG: 6^{h} 59^{m}			PMG: 4^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	260	18.1	215	17.2	+15 04.6	247	20.8	+3 36.2	254	54.2	+1 01.0	292	25.0	−14 11.9
1	275	20.5	230	16.7	05.5	262	21.5	36.9	269	56.4	01.2	307	27.5	11.9
2	290	23.0	245	16.2	06.4	277	22.3	37.6	284	58.5	01.3	322	30.0	11.9
3	305	25.5	260	15.8	07.3	292	23.1	38.3	300	00.7	01.4	337	32.5	11.9
4	320	27.9	275	15.3	08.1	307	23.9	39.0	315	02.8	01.5	352	35.0	12.0
5	335	30.4	290	14.9	+15 09.0	322	24.6	+3 39.7	330	05.0	+1 01.7	7	37.5	−14 12.0
6	350	32.9	305	14.4	+15 09.9	337	25.4	+3 40.4	345	07.1	+1 01.8	22	40.0	−14 12.0
7	5	35.3	320	13.9	10.7	352	26.2	41.1	0	09.3	01.9	37	42.5	12.0
8	20	37.8	335	13.5	11.6	7	27.0	41.8	15	11.4	02.0	52	45.0	12.0
9	35	40.3	350	13.0	12.5	22	27.7	42.5	30	13.6	02.2	67	47.4	12.0
10	50	42.7	5	12.6	13.3	37	28.5	43.2	45	15.8	02.3	82	49.9	12.1
11	65	45.2	20	12.1	+15 14.2	52	29.3	+3 43.9	60	17.9	+1 02.4	97	52.4	−14 12.1
12	80	47.7	35	11.6	+15 15.1	67	30.1	+3 44.6	75	20.1	+1 02.5	112	54.9	−14 12.1
13	95	50.1	50	11.2	15.9	82	30.8	45.3	90	22.2	02.6	127	57.4	12.1
14	110	52.6	65	10.7	16.8	97	31.6	46.0	105	24.4	02.8	142	59.9	12.1
15	125	55.0	80	10.2	17.7	112	32.4	46.7	120	26.5	02.9	158	02.4	12.2
16	140	57.5	95	09.8	18.5	127	33.2	47.4	135	28.7	03.0	173	04.9	12.2
17	156	00.0	110	09.3	+15 19.4	142	33.9	+3 48.1	150	30.8	+1 03.1	188	07.4	−14 12.2
18	171	02.4	125	08.8	+15 20.2	157	34.7	+3 48.8	165	33.0	+1 03.3	203	09.9	−14 12.2
19	186	04.9	140	08.4	21.1	172	35.5	49.5	180	35.1	03.4	218	12.4	12.2
20	201	07.4	155	07.9	22.0	187	36.3	50.2	195	37.3	03.5	233	14.9	12.2
21	216	09.8	170	07.4	22.8	202	37.0	50.9	210	39.4	03.6	248	17.3	12.3
22	231	12.3	185	07.0	23.7	217	37.8	51.6	225	41.6	03.8	263	19.8	12.3
23	246	14.8	200	06.5	24.5	232	38.6	52.3	240	43.7	03.9	278	22.3	12.3
24	261	17.2	215	06.0	+15 25.4	247	39.4	+3 53.0	255	45.9	+1 04.0	293	24.8	−14 12.3
Dif	—			−5	+9		+8	+7		+22	+1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 13^{d}.5		PHE	4^{h}: 60′.8									
	PMG: 12^{h} 00^{m}.1				SD: 16′.5			12^{h}: 61′.0									
					PMG: 23^{h} 27^{m}			20^{h}: 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	00.0	+23	11.8	22	41.3	−21	06.4		**60 N**	21 24	23 05	** **	20 50	103	1 40	16
1	194	59.9		11.9	37	05.5 52		17.3	109	**58**	21 03	22 18	** **	27	96	1 56	23
2	209	59.8		12.0	51	29.5 50		28.1	108	**56**	20 47	21 49	** **	20 09	91	2 10	28
3	224	59.7		12.2	65	53.4 49		38.7	106	**54**	33	27	23 10	19 53	88	22	32
4	239	59.5		12.3	80	17.2 48		49.2	105	**52**	21	21 09	22 26	40	85	32	36
5	254	59.4	+23	12.5	94	40.9 47	−21	59.6	104	**50**	20 10	20 54	21 59	19 28	83	2 42	38
6	269	59.3	+23	12.6	109	04.4 45	−22	09.8	102	**45**	19 48	20 25	21 14	19 04	79	3 02	43
7	284	59.1		12.8	123	27.8 44		19.9	101	**40**	30	20 03	20 44	18 45	77	18	47
8	299	59.0		12.9	137	51.1 43		29.8	99	**35**	15	19 44	21	29	74	32	50
9	314	58.9		13.0	152	14.3 42		39.6	98	**30**	19 02	29	20 03	18 15	73	3 44	52
10	329	58.7		13.2	166	37.3 40		49.2	96	**20**	18 40	19 05	19 34	17 51	70	4 05	56
11	344	58.6	+23	13.3	181	00.2 39	−22	58.7	95	**10 N**	18 21	18 44	19 11	17 31	68	4 23	60
12	359	58.5	+23	13.4	195	23.0 38	−23	08.0	93	**0**	18 04	18 26	18 52	17 12	66	4 40	63
13	14	58.4		13.6	209	45.7 37		17.1	91	**10 S**	17 46	18 09	36	16 54	63	4 57	66
14	29	58.2		13.7	224	08.3 36		26.1	90	**20**	28	17 52	20	34	60	5 15	70
15	44	58.1		13.8	238	30.7 34		34.9	88	**30**	17 07	33	18 03	16 11	57	36	74
16	59	58.0		14.0	252	53.1 34		43.6	87	**35**	16 55	23	17 55	15 58	55	5 48	76
17	74	57.8	+23	14.1	267	15.3 32	−23	52.1	85	**40**	16 41	17 11	17 45	15 42	53	6 03	78
18	89	57.7	+23	14.2	281	37.4 31	−24	00.4	83	**45**	16 24	16 58	17 35	15 24	50	6 20	82
19	104	57.6		14.4	295	59.4 30		08.5	81	**50**	16 04	42	23	15 02	46	41	87
20	119	57.4		14.5	310	21.3 29		16.5	80	**52**	15 54	35	18	14 51	44	6 51	90
21	134	57.3		14.6	324	43.1 28		24.3	78	**54**	43	26	13	39	41	7 02	93
22	149	57.2		14.8	339	04.8 27		31.9	76	**56**	30	17	07	26	37	16	96
23	164	57.0		14.9	353	26.4 26		39.4	75	**58**	15 16	16 07	17 00	14 10	32	31	101
24	179	56.9	+23	15.0	7	47.9 25	−24	46.6	72	**60 S**	14 59	15 56	16 52	13 51	25	7 49	109

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6^{h} 33^{m}.8		PMG: 9^{h} 40^{m}			PMG: 7^{h} 29^{m}			PMG: 6^{h} 56^{m}			PMG: 4^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	261	17.2	215	06.0	+15 25.4	247	39.4	+3 53.0	255	45.9	+1 04.0	293	24.8	−14 12.3
1	276	19.7	230	05.6	26.3	262	40.1	53.7	270	48.1	04.1	308	27.3	12.3
2	291	22.2	245	05.1	27.1	277	40.9	54.4	285	50.2	04.2	323	29.8	12.4
3	306	24.6	260	04.6	28.0	292	41.7	55.1	300	52.4	04.4	338	32.3	12.4
4	321	27.1	275	04.1	28.8	307	42.5	55.8	315	54.5	04.5	353	34.8	12.4
5	336	29.5	290	03.7	+15 29.7	322	43.2	+3 56.5	330	56.7	+1 04.6	8	37.3	−14 12.4
6	351	32.0	305	03.2	+15 30.5	337	44.0	+3 57.2	345	58.8	+1 04.7	23	39.8	−14 12.4
7	6	34.5	320	02.7	31.4	352	44.8	57.9	1	01.0	04.8	38	42.3	12.4
8	21	36.9	335	02.3	32.2	7	45.6	58.6	16	03.1	05.0	53	44.8	12.5
9	36	39.4	350	01.8	33.1	22	46.3	+3 59.3	31	05.3	05.1	68	47.3	12.5
10	51	41.9	5	01.3	34.0	37	47.1	+4 00.0	46	07.5	05.2	83	49.8	12.5
11	66	44.3	20	00.8	+15 34.8	52	47.9	+4 00.7	61	09.6	+1 05.3	98	52.3	−14 12.5
12	81	46.8	35	00.4	+15 35.7	67	48.7	+4 01.4	76	11.8	+1 05.5	113	54.8	−14 12.5
13	96	49.3	49	59.9	36.5	82	49.4	02.1	91	13.9	05.6	128	57.2	12.6
14	111	51.7	64	59.4	37.4	97	50.2	02.8	106	16.1	05.7	143	59.7	12.6
15	126	54.2	79	58.9	38.2	112	51.0	03.4	121	18.3	05.8	159	02.2	12.6
16	141	56.7	94	58.5	39.1	127	51.8	04.1	136	20.4	05.9	174	04.7	12.6
17	156	59.1	109	58.0	+15 39.9	142	52.6	+4 04.8	151	22.6	+1 06.1	189	07.2	−14 12.6
18	172	01.6	124	57.5	+15 40.8	157	53.3	+4 05.5	166	24.7	+1 06.2	204	09.7	−14 12.7
19	187	04.0	139	57.0	41.6	172	54.1	06.2	181	26.9	06.3	219	12.2	12.7
20	202	06.5	154	56.5	42.5	187	54.9	06.9	196	29.0	06.4	234	14.7	12.7
21	217	09.0	169	56.1	43.3	202	55.7	07.6	211	31.2	06.5	249	17.2	12.7
22	232	11.4	184	55.6	44.1	217	56.4	08.3	226	33.4	06.7	264	19.7	12.7
23	247	13.9	199	55.1	45.0	232	57.2	09.0	241	35.5	06.8	279	22.2	12.7
24	262	16.4	214	54.6	+15 45.8	247	58.0	+4 09.7	256	37.7	+1 06.9	294	24.7	−14 12.8
Dif	—			−5	+9		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 00m.3				Edad: 14d.5 SD: 16′.7 PMG: **h **m		PHE 4h: 61′.2 12h: 61′.3 20h: 61′.3 Rº: **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	179	56.9	+23	15.0	7	47.9	−24	46.6	**60 N**	** **	0 55	2 37	22 33	67	1 56	35
1	194	56.8		15.1	22	09.3 24	−24	53.7 71	**58**	** **	1 42	2 57	22 03	67	2 19	43
2	209	56.7		15.3	36	30.6 23	−25	00.6 69	**56**	** **	2 11	3 13	21 40	68	38	47
3	224	56.5		15.4	50	51.8 22		07.3 67	**54**	0 50	33	27	21	68	2 54	50
4	239	56.4		15.5	65	12.9 21		13.8 65	**52**	1 34	2 51	40	21 05	68	3 08	52
5	254	56.3	+23	15.6	79	33.9 20	−25	20.1 63	**50**	2 01	3 06	3 50	20 51	69	3 20	53
6	269	56.1	+23	15.8	93	54.9 20	−25	26.3 62	**45**	2 46	3 35	4 13	20 23	69	3 45	57
7	284	56.0		15.9	108	15.7 18		32.2 59	**40**	3 16	3 58	31	20 02	68	4 05	59
8	299	55.9		16.0	122	36.5 18		37.9 57	**35**	39	4 16	46	19 43	69	22	60
9	314	55.7		16.1	136	57.2 17		43.5 56	**30**	3 58	31	4 58	28	68	4 36	62
10	329	55.6		16.2	151	17.8 16		48.8 53	**20**	4 27	4 56	5 20	19 01	68	5 01	64
11	344	55.5	+23	16.4	165	38.4 16	−25	54.0 52	**10 N**	4 49	5 16	5 39	18 39	67	5 23	65
12	359	55.3	+23	16.5	179	58.9 15	−25	58.9 49	**0**	5 08	5 34	5 57	18 18	67	5 43	66
13	14	55.2		16.6	194	19.3 14	−26	03.7 48	**10 S**	25	5 51	6 14	17 57	66	6 03	68
14	29	55.1		16.7	208	39.6 13		08.2 45	**20**	41	6 08	32	34	66	25	69
15	44	54.9		16.8	222	59.9 13		12.6 44	**30**	5 57	27	6 53	17 08	66	6 50	71
16	59	54.8		16.9	237	20.2 13		16.7 41	**35**	6 06	38	7 06	16 53	65	7 04	72
17	74	54.7	+23	17.1	251	40.3 11	−26	20.7 40	**40**	6 15	6 49	7 20	16 35	65	7 21	74
18	89	54.6	+23	17.2	266	00.5 12	−26	24.4 37	**45**	6 25	7 03	7 36	16 14	64	7 42	75
19	104	54.4		17.3	280	20.5 10		27.9 35	**50**	37	19	7 57	15 48	62	8 08	77
20	119	54.3		17.4	294	40.6 11		31.2 33	**52**	42	26	8 07	35	61	21	77
21	134	54.2		17.5	309	00.6 10		34.3 31	**54**	48	34	18	20	61	35	79
22	149	54.0		17.6	323	20.5 9		37.2 29	**56**	6 54	43	30	15 03	59	8 52	81
23	164	53.9		17.7	337	40.4 9		39.9 27	**58**	7 01	7 53	8 45	14 42	58	9 12	83
24	179	53.8	+23	17.8	352	00.3 9	−26	42.3 24	**60 S**	7 08	8 05	9 02	14 16	54	9 38	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 6h 29m.8		Mag: −3.9 PMG: 9h 41m			Mag: +0.6 PMG: 7h 28m			Mag: −2.4 PMG: 6h 52m			Mag: +0.7 PMG: 4h 22m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	262	16.4	214	54.6	+15 45.8	247	58.0	+4 09.7	256	37.7	+1 06.9	294	24.7	−14 12.8
1	277	18.8	229	54.1	46.7	262	58.8	10.4	271	39.8	07.0	309	27.2	12.8
2	292	21.3	244	53.7	47.5	277	59.5	11.1	286	42.0	07.1	324	29.7	12.8
3	307	23.8	259	53.2	48.4	293	00.3	11.8	301	44.2	07.3	339	32.2	12.8
4	322	26.2	274	52.7	49.2	308	01.1	12.5	316	46.3	07.4	354	34.7	12.8
5	337	28.7	289	52.2	+15 50.0	323	01.9	+4 13.2	331	48.5	+1 07.5	9	37.2	−14 12.9
6	352	31.2	304	51.7	+15 50.9	338	02.7	+4 13.9	346	50.7	+1 07.6	24	39.7	−14 12.9
7	7	33.6	319	51.2	51.7	353	03.4	14.6	1	52.8	07.7	39	42.2	12.9
8	22	36.1	334	50.8	52.6	8	04.2	15.3	16	55.0	07.9	54	44.7	12.9
9	37	38.5	349	50.3	53.4	23	05.0	16.0	31	57.1	08.0	69	47.2	12.9
10	52	41.0	4	49.8	54.2	38	05.8	16.7	46	59.3	08.1	84	49.7	13.0
11	67	43.5	19	49.3	+15 55.1	53	06.5	+4 17.4	62	01.5	+1 08.2	99	52.2	−14 13.0
12	82	45.9	34	48.8	+15 55.9	68	07.3	+4 18.1	77	03.6	+1 08.3	114	54.7	−14 13.0
13	97	48.4	49	48.3	56.8	83	08.1	18.8	92	05.8	08.4	129	57.2	13.0
14	112	50.9	64	47.8	57.6	98	08.9	19.5	107	08.0	08.6	144	59.7	13.0
15	127	53.3	79	47.4	58.4	113	09.6	20.2	122	10.1	08.7	160	02.2	13.1
16	142	55.8	94	46.9	+15 59.3	128	10.4	20.9	137	12.3	08.8	175	04.7	13.1
17	157	58.3	109	46.4	+16 00.1	143	11.2	+4 21.5	152	14.4	+1 08.9	190	07.2	−14 13.1
18	173	00.7	124	45.9	+16 00.9	158	12.0	+4 22.2	167	16.6	+1 09.0	205	09.7	−14 13.1
19	188	03.2	139	45.4	01.8	173	12.8	22.9	182	18.8	09.2	220	12.2	13.2
20	203	05.6	154	44.9	02.6	188	13.5	23.6	197	20.9	09.3	235	14.7	13.2
21	218	08.1	169	44.4	03.4	203	14.3	24.3	212	23.1	09.4	250	17.2	13.2
22	233	10.6	184	43.9	04.3	218	15.1	25.0	227	25.3	09.5	265	19.7	13.2
23	248	13.0	199	43.4	05.1	233	15.9	25.7	242	27.4	09.6	280	22.2	13.2
24	263	15.5	214	42.9	+16 05.9	248	16.6	+4 26.4	257	29.6	+1 09.7	295	24.7	−14 13.3
Dif	—			−5	+8		+8	+7		+22	+1		+25	0

UT	SOL				○ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 15ᵈ.5		PHE	4ʰ: 61′.3								
	PMG: 12ʰ 00ᵐ.5				SD: 16′.7			12ʰ: 61′.3								
					PMG: 0ʰ 33ᵐ			20ʰ: 61′.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	179	53.8	+23	17.8	352	00.3	9	−26 42.3	23	**60 N**	21 25	23 09	** **		23 40	31	2 31	74
1	194	53.6		18.0	6	20.2	8	44.6	20	**58**	21 05	22 20	** **		23 10	39	3 02	73
2	209	53.5		18.1	20	40.0	8	46.6	19	**56**	20 48	21 50	** **		22 48	42	25	72
3	224	53.4		18.2	34	59.8	8	48.5	16	**54**	34	28	23 14		29	46	3 44	71
4	239	53.2		18.3	49	19.6	8	50.1	14	**52**	22	21 11	22 28		13	49	4 00	71
5	254	53.1	+23	18.4	63	39.4	8	−26 51.5	12	**50**	20 11	20 55	22 01		22 00	50	4 13	71
6	269	53.0	+23	18.5	77	59.1	7	−26 52.7	9	**45**	19 49	20 26	21 16		21 32	54	4 42	70
7	284	52.8		18.6	92	18.9	8	53.6	8	**40**	31	20 03	20 45		21 10	56	5 04	70
8	299	52.7		18.7	106	38.7	8	54.4	5	**35**	16	19 45	22		20 52	58	22	70
9	314	52.6		18.8	120	58.4	7	54.9	4	**30**	19 03	30	20 03		36	59	5 38	69
10	329	52.4		18.9	135	18.2	8	55.3	1	**20**	18 41	19 05	19 34		20 09	62	6 05	68
11	344	52.3	+23	19.0	149	37.9	7	−26 55.4	1	**10 N**	18 22	18 45	19 12		19 46	64	6 28	68
12	359	52.2	+23	19.1	163	57.7	8	−26 55.3	1	**0**	18 04	18 27	18 53		19 25	65	6 49	67
13	14	52.0		19.2	178	17.5	8	55.0	3	**10 S**	17 47	18 10	36		19 03	68	7 11	66
14	29	51.9		19.3	192	37.3	8	54.5	5	**20**	28	17 52	20		18 40	69	7 34	65
15	44	51.8		19.4	206	57.1	8	53.7	8	**30**	17 07	34	18 03		18 14	71	8 01	64
16	59	51.6		19.5	221	17.0	9	52.8	9	**35**	16 55	23	17 55		17 58	72	16	64
17	74	51.5	+23	19.6	235	36.9	9	−26 51.6	12	**40**	16 41	17 11	17 45		17 40	74	8 35	62
18	89	51.4	+23	19.7	249	56.8	9	−26 50.2	14	**45**	16 24	16 58	17 35		17 18	76	8 57	61
19	104	51.2		19.8	264	16.7	9	48.6	16	**50**	16 03	42	23		16 50	78	9 25	59
20	119	51.1		19.9	278	36.7	10	46.8	18	**52**	15 54	34	18		36	80	38	59
21	134	51.0		20.0	292	56.8	11	44.8	20	**54**	43	26	12		21	81	9 54	57
22	149	50.8		20.1	307	16.8	10	42.6	22	**56**	30	17	06		16 02	83	10 13	55
23	164	50.7		20.2	321	37.0	12	40.2	24	**58**	15 15	16 07	17 00		15 40	86	10 35	53
24	179	50.6	+23	20.3	335	57.1	11	−26 37.5	27	**60 S**	14 58	15 55	16 52		15 10	91	11 05	48

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6ʰ 25ᵐ.9		PMG: 9ʰ 41ᵐ			PMG: 7ʰ 27ᵐ			PMG: 6ʰ 49ᵐ			PMG: 4ʰ 18ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	263	15.5	214	42.9	+16 05.9	248	16.6	+4 26.4	257	29.6	+1 09.7	295	24.7	−14 13.3
1	278	18.0	229	42.4	06.7	263	17.4	27.1	272	31.8	09.9	310	27.2	13.3
2	293	20.4	244	42.0	07.6	278	18.2	27.8	287	33.9	10.0	325	29.7	13.3
3	308	22.9	259	41.5	08.4	293	19.0	28.5	302	36.1	10.1	340	32.2	13.3
4	323	25.4	274	41.0	09.2	308	19.8	29.2	317	38.3	10.2	355	34.7	13.3
5	338	27.8	289	40.5	+16 10.1	323	20.5	+4 29.9	332	40.4	+1 10.3	10	37.2	−14 13.4
6	353	30.3	304	40.0	+16 10.9	338	21.3	+4 30.6	347	42.6	+1 10.4	25	39.7	−14 13.4
7	8	32.8	319	39.5	11.7	353	22.1	31.3	2	44.8	10.6	40	42.2	13.4
8	23	35.2	334	39.0	12.5	8	22.9	32.0	17	46.9	10.7	55	44.7	13.4
9	38	37.7	349	38.5	13.4	23	23.6	32.6	32	49.1	10.8	70	47.2	13.4
10	53	40.1	4	38.0	14.2	38	24.4	33.3	47	51.3	10.9	85	49.7	13.5
11	68	42.6	19	37.5	+16 15.0	53	25.2	+4 34.0	62	53.4	+1 11.0	100	52.2	−14 13.5
12	83	45.1	34	37.0	+16 15.8	68	26.0	+4 34.7	77	55.6	+1 11.1	115	54.7	−14 13.5
13	98	47.5	49	36.5	16.7	83	26.8	35.4	92	57.8	11.3	130	57.2	13.5
14	113	50.0	64	36.0	17.5	98	27.5	36.1	107	59.9	11.4	145	59.7	13.6
15	128	52.5	79	35.5	18.3	113	28.3	36.8	123	02.1	11.5	161	02.2	13.6
16	143	54.9	94	35.0	19.1	128	29.1	37.5	138	04.3	11.6	176	04.7	13.6
17	158	57.4	109	34.5	+16 19.9	143	29.9	+4 38.2	153	06.5	+1 11.7	191	07.2	−14 13.6
18	173	59.9	124	34.0	+16 20.8	158	30.7	+4 38.9	168	08.6	+1 11.8	206	09.7	−14 13.6
19	189	02.3	139	33.5	21.6	173	31.4	39.6	183	10.8	11.9	221	12.2	13.7
20	204	04.8	154	33.0	22.4	188	32.2	40.3	198	13.0	12.1	236	14.7	13.7
21	219	07.3	169	32.5	23.2	203	33.0	40.9	213	15.1	12.2	251	17.2	13.7
22	234	09.7	184	32.0	24.0	218	33.8	41.6	228	17.3	12.3	266	19.7	13.7
23	249	12.2	199	31.5	24.8	233	34.5	42.3	243	19.5	12.4	281	22.2	13.7
24	264	14.6	214	31.0	+16 25.7	248	35.3	+4 43.0	258	21.6	+1 12.5	296	24.8	−14 13.8
Dif	—			−5	+8		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 00m.7				Edad: 16d.5 SD: 16′.7 PMG: 1h 41m		PHE	4h: 61′.1 12h: 61′.0 20h: 60′.8 Rº: 64m								
	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	50.6	+23	20.3	335	57.1 13	−26	37.5 28	**60 N**	** **	0 52	2 36	** **	**	3 45	105
1	194	50.4		20.4	350	17.4 12		34.7 31	**58**	** **	1 41	2 56	23 49	20	4 15	96
2	209	50.3		20.5	4	37.6 14		31.6 32	**56**	** **	2 11	3 13	30	26	37	92
3	224	50.2		20.5	18	58.0 14		28.4 35	**54**	0 48	33	27	15	29	4 55	89
4	239	50.0		20.6	33	18.4 15		24.9 37	**52**	1 33	2 51	39	23 02	32	5 11	86
5	254	49.9	+23	20.7	47	38.9 15	−26	21.2 38	**50**	2 00	3 06	3 50	22 50	35	5 24	84
6	269	49.8	+23	20.8	61	59.4 16	−26	17.4 41	**45**	2 46	3 35	4 13	22 26	40	5 52	79
7	284	49.6		20.9	76	20.0 16		13.3 42	**40**	3 16	3 58	31	22 06	44	6 14	76
8	299	49.5		21.0	90	40.7 17		09.1 45	**35**	39	4 16	46	21 50	47	32	74
9	314	49.4		21.1	105	01.5 18	−26	04.6 47	**30**	3 58	31	4 59	35	50	6 47	72
10	329	49.2		21.2	119	22.4 19	−25	59.9 48	**20**	4 27	4 56	5 21	21 11	54	7 13	69
11	344	49.1	+23	21.2	133	43.3 19	−25	55.1 51	**10 N**	4 49	5 16	5 40	20 50	58	7 36	66
12	359	49.0	+23	21.3	148	04.3 20	−25	50.0 52	**0**	5 08	5 35	5 57	20 30	61	7 56	64
13	14	48.8		21.4	162	25.4 21		44.8 54	**10 S**	25	5 52	6 14	20 11	64	8 17	61
14	29	48.7		21.5	176	46.7 23		39.4 57	**20**	41	6 09	33	19 49	68	8 39	58
15	44	48.6		21.6	191	08.0 23		33.7 58	**30**	5 58	28	6 54	25	72	9 05	55
16	59	48.4		21.7	205	29.3 23		27.9 60	**35**	6 07	38	7 06	19 10	75	20	53
17	74	48.3	+23	21.7	219	50.8 25	−25	21.9 61	**40**	6 16	6 50	7 21	18 54	77	9 37	50
18	89	48.2	+23	21.8	234	12.4 26	−25	15.8 64	**45**	6 26	7 04	7 37	18 34	80	9 58	47
19	104	48.0		21.9	248	34.1 27		09.4 65	**50**	38	20	7 58	18 08	86	10 24	42
20	119	47.9		22.0	262	55.9 28	−25	02.9 67	**52**	43	27	8 08	17 56	88	37	40
21	134	47.8		22.1	277	17.9 30	−24	56.2 69	**54**	49	35	19	42	91	10 51	37
22	149	47.6		22.1	291	39.9 30		49.3 71	**56**	6 55	44	32	25	96	11 08	33
23	164	47.5		22.2	306	02.0 31		42.2 72	**58**	7 02	7 54	8 46	17 06	101	28	28
24	179	47.4	+23	22.3	320	24.2 32	−24	35.0	**60 S**	7 09	8 06	9 04	16 41	108	11 53	21

UT	ARIES		VENUS			MARTE		JÚPITER		SATURNO	
	PMG 6h 22m.0		Mag: −3.9 PMG: 9h 42m			Mag: +0.6 PMG: 7h 25m		Mag: −2.4 PMG: 6h 46m		Mag: +0.7 PMG: 4h 14m	
	hG ♈		hG ♀		Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º	′	º	′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	264	14.6	214	31.0	+16 25.7	248 35.3	+4 43.0	258 21.6	+1 12.5	296 24.8	−14 13.8
1	279	17.1	229	30.5	26.5	263 36.1	43.7	273 23.8	12.6	311 27.3	13.8
2	294	19.6	244	30.0	27.3	278 36.9	44.4	288 26.0	12.8	326 29.8	13.8
3	309	22.0	259	29.5	28.1	293 37.7	45.1	303 28.2	12.9	341 32.3	13.8
4	324	24.5	274	29.0	28.9	308 38.4	45.8	318 30.3	13.0	356 34.8	13.9
5	339	27.0	289	28.5	+16 29.7	323 39.2	+4 46.5	333 32.5	+1 13.1	11 37.3	−14 13.9
6	354	29.4	304	27.9	+16 30.5	338 40.0	+4 47.2	348 34.7	+1 13.2	26 39.8	−14 13.9
7	9	31.9	319	27.4	31.3	353 40.8	47.9	3 36.9	13.3	41 42.3	13.9
8	24	34.4	334	26.9	32.1	8 41.6	48.5	18 39.0	13.4	56 44.8	14.0
9	39	36.8	349	26.4	33.0	23 42.3	49.2	33 41.2	13.6	71 47.3	14.0
10	54	39.3	4	25.9	33.8	38 43.1	49.9	48 43.4	13.7	86 49.8	14.0
11	69	41.8	19	25.4	+16 34.6	53 43.9	+4 50.6	63 45.5	+1 13.8	101 52.3	−14 14.0
12	84	44.2	34	24.9	+16 35.4	68 44.7	+4 51.3	78 47.7	+1 13.9	116 54.8	−14 14.0
13	99	46.7	49	24.4	36.2	83 45.4	52.0	93 49.9	14.0	131 57.3	14.1
14	114	49.1	64	23.9	37.0	98 46.2	52.7	108 52.1	14.1	146 59.8	14.1
15	129	51.6	79	23.4	37.8	113 47.0	53.4	123 54.2	14.2	162 02.3	14.1
16	144	54.1	94	22.9	38.6	128 47.8	54.1	138 56.4	14.3	177 04.9	14.1
17	159	56.5	109	22.3	+16 39.4	143 48.6	+4 54.8	153 58.6	+1 14.5	192 07.4	−14 14.2
18	174	59.0	124	21.8	+16 40.2	158 49.3	+4 55.4	169 00.8	+1 14.6	207 09.9	−14 14.2
19	190	01.5	139	21.3	41.0	173 50.1	56.1	184 02.9	14.7	222 12.4	14.2
20	205	03.9	154	20.8	41.8	188 50.9	56.8	199 05.1	14.8	237 14.9	14.2
21	220	06.4	169	20.3	42.6	203 51.7	57.5	214 07.3	14.9	252 17.4	14.3
22	235	08.9	184	19.8	43.4	218 52.5	58.2	229 09.5	15.0	267 19.9	14.3
23	250	11.3	199	19.3	44.2	233 53.2	58.9	244 11.6	15.1	282 22.4	14.3
24	265	13.8	214	18.7	+16 45.0	248 54.0	+4 59.6	259 13.8	+1 15.2	297 24.9	−14 14.3
Dif	—			−5	+8		+8	+7	+22	+1	+25	0

UT	SOL SD: 15′.7 PMG: 12h 01m.0				LUNA Edad: 17d.5 SD: 16′.5 PMG: 2h 45m				PHE: 4h: 60′.6; 12h: 60′.4; 20h: 60′.1 Rº: 60m		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	47.4	+23	22.3	320	24.2		−24	35.0		**60 N**	21 26	23 12	** **	0 11	13	5 30	110
1	194	47.2		22.4	334	46.6	34		27.5	75	**58**	21 06	22 22	** **	** **	**	5 51	103
2	209	47.1		22.4	349	09.1	35		20.0	75	**56**	20 49	21 52	** **	23 56	16	6 09	97
3	224	47.0		22.5	3	31.7	36		12.2	78	**54**	35	30	23 16	44	20	24	93
4	239	46.8		22.6	17	54.4	37	−24	04.3	79	**52**	23	21 12	22 30	34	23	37	90
5	254	46.7	+23	22.7	32	17.2	38	−23	56.2	81	**50**	20 12	20 56	22 02	23 25	25	6 48	87
6	269	46.6	+23	22.7	46	40.1	39	−23	48.0	82	**45**	19 49	20 27	21 16	23 06	31	7 11	82
7	284	46.4		22.8	61	03.2	41		39.6	84	**40**	31	20 04	20 46	22 50	35	30	77
8	299	46.3		22.9	75	26.4	42		31.0	86	**35**	16	19 46	23	37	39	46	73
9	314	46.1		22.9	89	49.7	43		22.3	87	**30**	19 03	31	20 04	25	42	7 59	71
10	329	46.0		23.0	104	13.2	45		13.4	89	**20**	18 41	19 06	19 35	22 05	47	8 22	66
11	344	45.9	+23	23.1	118	36.7	45	−23	04.4	90	**10 N**	18 22	18 45	19 12	21 48	51	8 42	62
12	359	45.7	+23	23.1	133	00.4	47	−22	55.3	91	**0**	18 05	18 27	18 53	21 31	56	9 00	58
13	14	45.6		23.2	147	24.3	49		45.9	94	**10 S**	17 47	18 10	36	21 15	59	18	55
14	29	45.5		23.3	161	48.2	49		36.5	94	**20**	29	17 53	20	20 57	64	9 37	51
15	44	45.3		23.3	176	12.3	51		26.9	96	**30**	17 07	34	18 04	37	69	10 00	45
16	59	45.2		23.4	190	36.5	52		17.1	98	**35**	16 55	23	17 55	25	72	13	42
17	74	45.1	+23	23.5	205	00.8	53	−22	07.3	98	**40**	16 41	17 12	17 46	20 11	76	10 27	40
18	89	44.9	+23	23.5	219	25.3	55	−21	57.3	100	**45**	16 24	16 58	17 35	19 54	81	10 45	35
19	104	44.8		23.6	233	49.9	56		47.1	102	**50**	16 03	42	23	34	86	11 06	31
20	119	44.7		23.7	248	14.7	58		36.8	103	**52**	15 54	34	18	24	89	17	27
21	134	44.5		23.7	262	39.5	58		26.4	104	**54**	42	26	13	13	93	28	24
22	149	44.4		23.8	277	04.5	60		15.9	105	**56**	30	17	06	19 01	96	41	21
23	164	44.3		23.8	291	29.7	62	−21	05.2	107	**58**	15 15	16 07	17 00	18 47	100	11 56	16
24	179	44.1	+23	23.9	305	54.9	62	−20	54.4	108	**60 S**	14 58	15 55	16 52	18 29	107	12 14	11

UT	ARIES PMG 6h 18m.0		VENUS Mag: −3.9 PMG: 9h 43m			MARTE Mag: +0.6 PMG: 7h 24m			JÚPITER Mag: −2.4 PMG: 6h 42m			SATURNO Mag: +0.7 PMG: 4h 10m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	265	13.8	214	18.7	+16 45.0	248	54.0	+4 59.6	259	13.8	+1 15.2	297	24.9	−14 14.3
1	280	16.3	229	18.2	45.8	263	54.8	+5 00.3	274	16.0	15.4	312	27.4	14.3
2	295	18.7	244	17.7	46.6	278	55.6	01.0	289	18.2	15.5	327	29.9	14.4
3	310	21.2	259	17.2	47.4	293	56.4	01.6	304	20.4	15.6	342	32.4	14.4
4	325	23.6	274	16.7	48.2	308	57.1	02.3	319	22.5	15.7	357	35.0	14.4
5	340	26.1	289	16.2	+16 49.0	323	57.9	+5 03.0	334	24.7	+1 15.8	12	37.5	−14 14.4
6	355	28.6	304	15.6	+16 49.8	338	58.7	+5 03.7	349	26.9	+1 15.9	27	40.0	−14 14.5
7	10	31.0	319	15.1	50.6	353	59.5	04.4	4	29.1	16.0	42	42.5	14.5
8	25	33.5	334	14.6	51.4	9	00.3	05.1	19	31.2	16.1	57	45.0	14.5
9	40	36.0	349	14.1	52.2	24	01.0	05.8	34	33.4	16.3	72	47.5	14.5
10	55	38.4	4	13.6	53.0	39	01.8	06.5	49	35.6	16.4	87	50.0	14.6
11	70	40.9	19	13.0	+16 53.8	54	02.6	+5 07.1	64	37.8	+1 16.5	102	52.5	−14 14.6
12	85	43.4	34	12.5	+16 54.6	69	03.4	+5 07.8	79	40.0	+1 16.6	117	55.0	−14 14.6
13	100	45.8	49	12.0	55.4	84	04.2	08.5	94	42.1	16.7	132	57.5	14.6
14	115	48.3	64	11.5	56.1	99	04.9	09.2	109	44.3	16.8	148	00.1	14.7
15	130	50.8	79	11.0	56.9	114	05.7	09.9	124	46.5	16.9	163	02.6	14.7
16	145	53.2	94	10.4	57.7	129	06.5	10.6	139	48.7	17.0	178	05.1	14.7
17	160	55.7	109	09.9	+16 58.5	144	07.3	+5 11.3	154	50.9	+1 17.1	193	07.6	−14 14.7
18	175	58.1	124	09.4	+16 59.3	159	08.1	+5 11.9	169	53.0	+1 17.3	208	10.1	−14 14.8
19	191	00.6	139	08.9	+17 00.1	174	08.8	12.6	184	55.2	17.4	223	12.6	14.8
20	206	03.1	154	08.3	00.9	189	09.6	13.3	199	57.4	17.5	238	15.1	14.8
21	221	05.5	169	07.8	01.7	204	10.4	14.0	214	59.6	17.6	253	17.6	14.8
22	236	08.0	184	07.3	02.4	219	11.2	14.7	230	01.8	17.7	268	20.1	14.9
23	251	10.5	199	06.7	03.2	234	12.0	15.4	245	03.9	17.8	283	22.7	14.9
24	266	12.9	214	06.2	+17 04.0	249	12.7	+5 16.1	260	06.1	+1 17.9	298	25.2	−14 14.9
Dif	—			−5	+8		+8	+7		+22	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 18ᵈ.5		PHE	4ʰ: 59′.9									
	PMG: 12ʰ 01ᵐ.2				SD: 16′.3			12ʰ: 59′.6									
					PMG: 3ʰ 45ᵐ			20ʰ: 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	179	44.1	+23	23.9	305	54.9	64	−20	54.4	109	**60 N**	** **	0 50	2 36	0 24	7	7 20	104
1	194	44.0		24.0	320	20.3			43.5		**58**	** **	1 40	2 56	0 09	12	34	99
2	209	43.9		24.0	334	45.9	66		32.5	110	**56**	** **	2 10	3 13	** **	**	46	95
3	224	43.7		24.1	349	11.5	66		21.3	112	**54**	0 46	33	27	** **	**	7 57	91
4	239	43.6		24.1	3	37.3	68	−20	10.1	112	**52**	1 32	2 51	39	23 57	17	8 07	87
5	254	43.4	+23	24.2	18	03.3	70	−19	58.7	114	**50**	2 00	3 06	3 50	23 50	20	8 15	85
6	269	43.3	+23	24.2	32	29.3	70	−19	47.2	115	**45**	2 46	3 35	4 13	23 37	24	8 33	79
7	284	43.2		24.3	46	55.5	72		35.6	116	**40**	3 16	3 58	31	25	29	47	75
8	299	43.0		24.3	61	21.9	74		23.9	117	**35**	39	4 16	46	16	32	8 59	71
9	314	42.9		24.4	75	48.3	74		12.1	118	**30**	3 58	31	4 59	23 07	36	9 10	67
10	329	42.8		24.4	90	14.9	76	−19	00.2	119	**20**	4 27	4 56	5 21	22 52	41	28	62
11	344	42.6	+23	24.5	104	41.6	77	−18	48.2	120	**10 N**	4 50	5 17	5 40	22 39	46	9 44	57
12	359	42.5	+23	24.5	119	08.5	79	−18	36.1	121	**0**	5 09	5 35	5 57	22 27	50	9 58	53
13	14	42.4		24.6	133	35.4	79		23.9	122	**10 S**	26	5 52	6 15	14	55	10 13	48
14	29	42.2		24.6	148	02.5	81	−18	11.6	123	**20**	42	6 09	33	22 01	60	28	44
15	44	42.1		24.7	162	29.8	83	−17	59.2	124	**30**	5 58	28	6 55	21 46	65	45	39
16	59	42.0		24.7	176	57.1	83		46.8	124	**35**	6 07	39	7 07	37	68	10 55	36
17	74	41.8	+23	24.8	191	24.6	85	−17	34.2	126	**40**	6 17	6 51	7 21	21 27	72	11 07	32
18	89	41.7	+23	24.8	205	52.2	86	−17	21.5	127	**45**	6 27	7 04	7 38	21 15	76	11 20	28
19	104	41.6		24.9	220	20.0	88	−17	08.8	127	**50**	39	20	7 59	21 00	82	37	22
20	119	41.4		24.9	234	47.8	88	−16	56.0	128	**52**	44	28	8 09	20 53	85	44	20
21	134	41.3		25.0	249	15.8	90		43.1	129	**54**	50	36	20	46	88	11 52	17
22	149	41.1		25.0	263	43.9	91		30.1	130	**56**	6 56	45	32	37	91	12 02	13
23	164	41.0		25.0	278	12.1	92		17.1	130	**58**	7 03	7 55	8 47	27	96	12	10
24	179	40.9	+23	25.1	292	40.5	94	−16	03.9	132	**60 S**	7 10	8 07	9 05	20 16	100	12 25	5

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.6			Mag: −2.4			Mag: +0.7		
	6ʰ 14ᵐ.1		PMG: 9ʰ 44ᵐ			PMG: 7ʰ 23ᵐ			PMG: 6ʰ 39ᵐ			PMG: 4ʰ 06ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	266	12.9	214	06.2	+17 04.0	249	12.7	+5 16.1	260	06.1	+1 17.9	298	25.2	−14 14.9
1	281	15.4	229	05.7	04.8	264	13.5	16.7	275	08.3	18.0	313	27.7	14.9
2	296	17.9	244	05.2	05.6	279	14.3	17.4	290	10.5	18.1	328	30.2	15.0
3	311	20.3	259	04.6	06.4	294	15.1	18.1	305	12.7	18.2	343	32.7	15.0
4	326	22.8	274	04.1	07.1	309	15.9	18.8	320	14.9	18.4	358	35.2	15.0
5	341	25.3	289	03.6	+17 07.9	324	16.6	+5 19.5	335	17.0	+1 18.5	13	37.7	−14 15.0
6	356	27.7	304	03.0	+17 08.7	339	17.4	+5 20.2	350	19.2	+1 18.6	28	40.2	−14 15.1
7	11	30.2	319	02.5	09.5	354	18.2	20.8	5	21.4	18.7	43	42.8	15.1
8	26	32.6	334	02.0	10.3	9	19.0	21.5	20	23.6	18.8	58	45.3	15.1
9	41	35.1	349	01.5	11.0	24	19.8	22.2	35	25.8	18.9	73	47.8	15.1
10	56	37.6	4	00.9	11.8	39	20.6	22.9	50	28.0	19.0	88	50.3	15.2
11	71	40.0	19	00.4	+17 12.6	54	21.3	+5 23.6	65	30.1	+1 19.1	103	52.8	−14 15.2
12	86	42.5	33	59.9	+17 13.4	69	22.1	+5 24.3	80	32.3	+1 19.2	118	55.3	−14 15.2
13	101	45.0	48	59.3	14.1	84	22.9	25.0	95	34.5	19.3	133	57.8	15.2
14	116	47.4	63	58.8	14.9	99	23.7	25.6	110	36.7	19.4	149	00.4	15.3
15	131	49.9	78	58.3	15.7	114	24.5	26.3	125	38.9	19.5	164	02.9	15.3
16	146	52.4	93	57.7	16.5	129	25.2	27.0	140	41.1	19.7	179	05.4	15.3
17	161	54.8	108	57.2	+17 17.2	144	26.0	+5 27.7	155	43.3	+1 19.8	194	07.9	−14 15.3
18	176	57.3	123	56.6	+17 18.0	159	26.8	+5 28.4	170	45.4	+1 19.9	209	10.4	−14 15.4
19	191	59.7	138	56.1	18.8	174	27.6	29.1	185	47.6	20.0	224	12.9	15.4
20	207	02.2	153	55.6	19.5	189	28.4	29.7	200	49.8	20.1	239	15.5	15.4
21	222	04.7	168	55.0	20.3	204	29.1	30.4	215	52.0	20.2	254	18.0	15.4
22	237	07.1	183	54.5	21.1	219	29.9	31.1	230	54.2	20.3	269	20.5	15.5
23	252	09.6	198	54.0	21.8	234	30.7	31.8	245	56.4	20.4	284	23.0	15.5
24	267	12.1	213	53.4	+17 22.6	249	31.5	+5 32.5	260	58.6	+1 20.5	299	25.5	−14 15.5
Dif	—			−5	+8		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 19^{d}.5		PHE	4^{h}: 59′.0								
	PMG: 12^{h} 01^{m}.4				SD: 16′.1			12^{h}: 58′.7								
					PMG: 4^{h} 39^{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	179	40.9	+23	25.1	292	40.5	−16	03.9	**60 N**	21 27	23 14	** **	0 31	3	9 04	97
1	194	40.7		25.1	307	08.9 94	−15	50.7 132	**58**	21 07	22 23	** **	21	7	13	93
2	209	40.6		25.2	321	37.5 96		37.5 132	**56**	20 50	21 53	** **	12	11	21	89
3	224	40.5		25.2	336	06.2 97		24.1 134	**54**	36	30	23 18	0 04	14	28	86
4	239	40.3		25.2	350	35.0 98	−15	10.7 134	**52**	23	21 12	22 31	** **	**	34	83
5	254	40.2	+23	25.3	5	04.0 100	−14	57.2 135	**50**	20 12	20 57	22 03	** **	**	9 40	80
6	269	40.1	+23	25.3	19	33.0 100	−14	43.7 135	**45**	19 50	20 27	21 17	** **	**	9 52	75
7	284	39.9		25.4	34	02.2 102		30.1 136	**40**	32	20 05	20 46	23 54	25	10 02	70
8	299	39.8		25.4	48	31.5 103		16.5 136	**35**	17	19 47	23	48	29	10	67
9	314	39.7		25.4	63	00.8 103	−14	02.7 138	**30**	19 04	31	20 05	43	31	17	64
10	329	39.5		25.5	77	30.3 105	−13	49.0 137	**20**	18 42	19 06	19 35	33	37	30	58
11	344	39.4	+23	25.5	91	59.9 106	−13	35.1 139	**10 N**	18 23	18 46	19 13	23 25	42	10 41	53
12	359	39.2	+23	25.5	106	29.6 107	−13	21.3 138	**0**	18 05	18 28	18 54	23 17	46	10 51	48
13	14	39.1		25.6	120	59.5 109	−13	07.3 140	**10 S**	17 48	18 10	37	09	51	11 01	44
14	29	39.0		25.6	135	29.4 109	−12	53.3 140	**20**	29	17 53	21	23 01	55	12	39
15	44	38.8		25.6	149	59.4 110		39.3 140	**30**	17 08	34	18 04	22 51	61	24	34
16	59	38.7		25.7	164	29.5 111		25.2 141	**35**	16 55	24	17 55	45	65	31	30
17	74	38.6	+23	25.7	178	59.7 112	−12	11.1 141	**40**	16 41	17 12	17 46	22 39	68	11 39	27
18	89	38.4	+23	25.7	193	30.1 114	−11	56.9 142	**45**	16 24	16 58	17 36	22 31	73	11 48	23
19	104	38.3		25.7	208	00.5 114		42.7 142	**50**	16 04	42	24	22	78	11 59	18
20	119	38.2		25.8	222	31.0 115		28.5 142	**52**	15 54	35	18	18	81	12 04	15
21	134	38.0		25.8	237	01.6 116	−11	14.2 143	**54**	43	26	13	14	83	09	13
22	149	37.9		25.8	251	32.4 118	−10	59.9 143	**56**	30	17	07	08	87	15	10
23	164	37.8		25.8	266	03.2 118		45.5 144	**58**	15 15	16 07	17 00	22 03	89	22	7
24	179	37.6	+23	25.9	280	34.1 119	−10	31.1 144	**60 S**	14 58	15 55	16 52	21 56	94	12 30	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.4			Mag: +0.7		
	6^{h} 10^{m}.2		PMG: 9^{h} 45^{m}			PMG: 7^{h} 22^{m}			PMG: 6^{h} 35^{m}			PMG: 4^{h} 02^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	267	12.1	213	53.4	+17 22.6	249	31.5	+5 32.5	260	58.6	+1 20.5	299	25.5	−14 15.5
1	282	14.5	228	52.9	23.4	264	32.3	33.1	276	00.8	20.6	314	28.0	15.5
2	297	17.0	243	52.3	24.1	279	33.1	33.8	291	02.9	20.7	329	30.5	15.6
3	312	19.5	258	51.8	24.9	294	33.8	34.5	306	05.1	20.8	344	33.1	15.6
4	327	21.9	273	51.3	25.7	309	34.6	35.2	321	07.3	20.9	359	35.6	15.6
5	342	24.4	288	50.7	+17 26.4	324	35.4	+5 35.9	336	09.5	+1 21.1	14	38.1	−14 15.6
6	357	26.9	303	50.2	+17 27.2	339	36.2	+5 36.6	351	11.7	+1 21.2	29	40.6	−14 15.7
7	12	29.3	318	49.6	28.0	354	37.0	37.2	6	13.9	21.3	44	43.1	15.7
8	27	31.8	333	49.1	28.7	9	37.7	37.9	21	16.1	21.4	59	45.6	15.7
9	42	34.2	348	48.5	29.5	24	38.5	38.6	36	18.3	21.5	74	48.2	15.8
10	57	36.7	3	48.0	30.2	39	39.3	39.3	51	20.5	21.6	89	50.7	15.8
11	72	39.2	18	47.5	+17 31.0	54	40.1	+5 40.0	66	22.7	+1 21.7	104	53.2	−14 15.8
12	87	41.6	33	46.9	+17 31.8	69	40.9	+5 40.6	81	24.8	+1 21.8	119	55.7	−14 15.8
13	102	44.1	48	46.4	32.5	84	41.7	41.3	96	27.0	21.9	134	58.2	15.9
14	117	46.6	63	45.8	33.3	99	42.4	42.0	111	29.2	22.0	150	00.8	15.9
15	132	49.0	78	45.3	34.0	114	43.2	42.7	126	31.4	22.1	165	03.3	15.9
16	147	51.5	93	44.7	34.8	129	44.0	43.4	141	33.6	22.2	180	05.8	15.9
17	162	54.0	108	44.2	+17 35.5	144	44.8	+5 44.0	156	35.8	+1 22.3	195	08.3	−14 16.0
18	177	56.4	123	43.6	+17 36.3	159	45.6	+5 44.7	171	38.0	+1 22.4	210	10.8	−14 16.0
19	192	58.9	138	43.1	37.0	174	46.3	45.4	186	40.2	22.5	225	13.4	16.0
20	208	01.4	153	42.5	37.8	189	47.1	46.1	201	42.4	22.6	240	15.9	16.0
21	223	03.8	168	42.0	38.6	204	47.9	46.8	216	44.6	22.7	255	18.4	16.1
22	238	06.3	183	41.4	39.3	219	48.7	47.4	231	46.8	22.8	270	20.9	16.1
23	253	08.7	198	40.9	40.1	234	49.5	48.1	246	49.0	23.0	285	23.4	16.1
24	268	11.2	213	40.3	+17 40.8	249	50.3	+5 48.8	261	51.1	+1 23.1	300	26.0	−14 16.2
Dif	—			−5	+8		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7 PMG: 12h 01.m6				Edad: 20.d5 SD: 15′.9 PMG: 5h 28m		PHE	4h: 58′.1 12h: 57′.8 20h: 57′.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	179	37.6	+23	25.9	280	34.1	−10	31.1	**60 N**	** **	0 49	2 36	0 34	2	10 41	91
1	194	37.5		25.9	295	05.1 120		16.7 144	**58**	** **	1 40	2 56	28	6	46	87
2	209	37.3		25.9	309	36.1 120	−10	02.2 145	**56**	** **	2 10	3 13	23	8	50	84
3	224	37.2		25.9	324	07.3 122	−9	47.7 145	**54**	0 45	33	27	18	11	54	81
4	239	37.1		26.0	338	38.6 123		33.2 145	**52**	1 32	2 51	40	14	14	10 57	79
5	254	36.9	+23	26.0	353	09.9 123	−9	18.7 145	**50**	2 00	3 06	3 50	0 10	16	11 00	76
6	269	36.8	+23	26.0	7	41.3 124	−9	04.1 146	**45**	2 46	3 36	4 13	0 01	21	11 07	71
7	284	36.7		26.0	22	12.8 125	−8	49.5 146	**40**	3 16	3 58	31	** **	**	12	67
8	299	36.5		26.0	36	44.4 126		34.9 146	**35**	40	4 16	46	** **	**	17	63
9	314	36.4		26.1	51	16.1 127		20.3 146	**30**	3 58	32	4 59	** **	**	21	60
10	329	36.3		26.1	65	47.8 127	−8	05.6 147	**20**	4 27	4 57	5 21	** **	**	28	54
11	344	36.1	+23	26.1	80	19.6 128	−7	50.9 147	**10 N**	4 50	5 17	5 40	** **	**	11 34	49
12	359	36.0	+23	26.1	94	51.5 129	−7	36.2 147	**0**	5 09	5 35	5 58	** **	**	11 39	45
13	14	35.8		26.1	109	23.5 130		21.5 147	**10 S**	26	5 53	6 15	** **	**	45	41
14	29	35.7		26.1	123	55.6 131	−7	06.8 147	**20**	42	6 10	34	23 56	53	51	36
15	44	35.6		26.1	138	27.7 131	−6	52.0 148	**30**	5 59	29	6 55	52	59	11 58	30
16	59	35.4		26.2	152	59.9 132		37.3 147	**35**	6 08	39	7 08	50	62	12 01	28
17	74	35.3	+23	26.2	167	32.1 132	−6	22.5 148	**40**	6 17	6 51	7 22	23 47	65	12 06	24
18	89	35.2	+23	26.2	182	04.4 133	−6	07.7 148	**45**	6 27	7 05	7 39	23 44	70	12 11	20
19	104	35.0		26.2	196	36.8 134	−5	52.9 148	**50**	39	21	7 59	40	75	17	15
20	119	34.9		26.2	211	09.3 135		38.1 148	**52**	45	28	8 09	39	76	19	13
21	134	34.8		26.2	225	41.8 135		23.3 148	**54**	50	37	20	37	79	22	11
22	149	34.6		26.2	240	14.4 136	−5	08.5 148	**56**	6 56	46	33	35	82	25	9
23	164	34.5		26.2	254	47.0 136	−4	53.7 148	**58**	7 03	7 56	8 48	32	85	29	5
24	179	34.3	+23	26.2	269	19.7 137	−4	38.9 148	**60 S**	7 11	8 08	9 05	23 30	88	12 33	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 6h 06.m2		Mag: −3.9 PMG: 9h 46m			Mag: +0.5 PMG: 7h 20m			Mag: −2.4 PMG: 6h 32m			Mag: +0.6 PMG: 3h 58m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	268	11.2	213	40.3	+17 40.8	249	50.3	+5 48.8	261	51.1	+1 23.1	300	26.0	−14 16.2
1	283	13.7	228	39.8	41.6	264	51.0	49.5	276	53.3	23.2	315	28.5	16.2
2	298	16.1	243	39.2	42.3	279	51.8	50.2	291	55.5	23.3	330	31.0	16.2
3	313	18.6	258	38.7	43.1	294	52.6	50.8	306	57.7	23.4	345	33.5	16.2
4	328	21.1	273	38.1	43.8	309	53.4	51.5	321	59.9	23.5	0	36.0	16.3
5	343	23.5	288	37.6	+17 44.5	324	54.2	+5 52.2	337	02.1	+1 23.6	15	38.6	−14 16.3
6	358	26.0	303	37.0	+17 45.3	339	55.0	+5 52.9	352	04.3	+1 23.7	30	41.1	−14 16.3
7	13	28.5	318	36.5	46.0	354	55.7	53.5	7	06.5	23.8	45	43.6	16.3
8	28	30.9	333	35.9	46.8	9	56.5	54.2	22	08.7	23.9	60	46.1	16.4
9	43	33.4	348	35.3	47.5	24	57.3	54.9	37	10.9	24.0	75	48.6	16.4
10	58	35.8	3	34.8	48.3	39	58.1	55.6	52	13.1	24.1	90	51.2	16.4
11	73	38.3	18	34.2	+17 49.0	54	58.9	+5 56.3	67	15.3	+1 24.2	105	53.7	−14 16.5
12	88	40.8	33	33.7	+17 49.8	69	59.7	+5 56.9	82	17.5	+1 24.3	120	56.2	−14 16.5
13	103	43.2	48	33.1	50.5	85	00.4	57.6	97	19.7	24.4	135	58.7	16.5
14	118	45.7	63	32.6	51.2	100	01.2	58.3	112	21.9	24.5	151	01.2	16.5
15	133	48.2	78	32.0	52.0	115	02.0	59.0	127	24.1	24.6	166	03.8	16.6
16	148	50.6	93	31.4	52.7	130	02.8	+5 59.6	142	26.3	24.7	181	06.3	16.6
17	163	53.1	108	30.9	+17 53.4	145	03.6	+6 00.3	157	28.5	+1 24.8	196	08.8	−14 16.6
18	178	55.6	123	30.3	+17 54.2	160	04.4	+6 01.0	172	30.7	+1 24.9	211	11.3	−14 16.7
19	193	58.0	138	29.8	54.9	175	05.1	01.7	187	32.9	25.0	226	13.9	16.7
20	209	00.5	153	29.2	55.7	190	05.9	02.3	202	35.1	25.1	241	16.4	16.7
21	224	03.0	168	28.6	56.4	205	06.7	03.0	217	37.3	25.2	256	18.9	16.7
22	239	05.4	183	28.1	57.1	220	07.5	03.7	232	39.5	25.3	271	21.4	16.8
23	254	07.9	198	27.5	57.9	235	08.3	04.4	247	41.7	25.4	286	24.0	16.8
24	269	10.3	213	27.0	+17 58.6	250	09.1	+6 05.0	262	43.9	+1 25.5	301	26.5	−14 16.8
Dif	—			−6	+7		+8	+7		+22	+1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 21ᵈ.5		PHE	4ʰ: 57′.2									
	PMG: 12ʰ 01ᵐ.8				SD: 15′.6			12ʰ: 57′.0									
					PMG: 6ʰ 14ᵐ			20ʰ: 56′.7									
	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	34.3	+23	26.2	269	19.7	−4	38.9		**60 N**	21 28	23 15	** **	0 36	2	12 12	88
1	194	34.2		26.2	283	52.5 138		24.1	148	**58**	21 07	22 23	** **	34	4	13	84
2	209	34.1		26.2	298	25.3 138	−4	09.3	148	**56**	20 50	21 53	** **	31	8	14	81
3	224	33.9		26.3	312	58.2 139	−3	54.4	149	**54**	36	31	23 19	29	11	15	78
4	239	33.8		26.3	327	31.1 139		39.6	148	**52**	24	21 13	22 31	28	12	16	75
5	254	33.7	+23	26.3	342	04.1 140	−3	24.8	148	**50**	20 13	20 58	22 03	0 26	15	12 16	74
6	269	33.5	+23	26.3	356	37.1 140	−3	10.0	148	**45**	19 50	20 28	21 18	0 22	20	12 18	68
7	284	33.4		26.3	11	10.2 141	−2	55.2	148	**40**	32	20 05	20 47	19	24	19	64
8	299	33.3		26.3	25	43.3 141		40.4	148	**35**	17	19 47	24	17	26	20	61
9	314	33.1		26.3	40	16.5 142		25.6	148	**30**	19 04	32	20 05	14	30	21	57
10	329	33.0		26.3	54	49.7 142	−2	10.8	148	**20**	18 42	19 07	19 36	10	35	22	52
11	344	32.9	+23	26.3	69	22.9 142	−1	56.0	148	**10 N**	18 23	18 46	19 13	0 07	39	12 23	48
12	359	32.7	+23	26.3	83	56.2 143	−1	41.2	148	**0**	18 06	18 28	18 54	0 03	44	12 24	44
13	14	32.6		26.3	98	29.6 144		26.5	147	**10 S**	17 48	18 11	37	0 00	48	26	39
14	29	32.4		26.3	113	03.0 144	−1	11.7	148	**20**	29	17 53	21	** **	**	27	34
15	44	32.3		26.3	127	36.4 144	−0	57.0	147	**30**	17 08	35	18 04	** **	**	28	29
16	59	32.2		26.3	142	09.9 145		42.2	148	**35**	16 56	24	17 56	** **	**	29	26
17	74	32.0	+23	26.2	156	43.4 145	−0	27.5	147	**40**	16 42	17 12	17 46	** **	**	12 30	23
18	89	31.9	+23	26.2	171	16.9 145	−0	12.8	147	**45**	16 25	16 59	17 36	** **	**	12 31	19
19	104	31.8		26.2	185	50.5 146	+0	01.8	146	**50**	16 04	42	24	** **	**	32	14
20	119	31.6		26.2	200	24.1 146		16.5	147	**52**	15 54	35	19	** **	**	32	13
21	134	31.5		26.2	214	57.7 146		31.2	147	**54**	43	27	13	** **	**	33	10
22	149	31.4		26.2	229	31.4 147	+0	45.8	146	**56**	30	18	07	** **	**	34	7
23	164	31.2		26.2	244	05.0 146	+1	00.4	146	**58**	15 15	16 07	17 00	** **	**	34	5
24	179	31.1	+23	26.2	258	38.8 148	+1	15.0	146	**60 S**	14 58	15 56	16 53	** **	**	12 35	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.4			Mag: +0.6		
	6ʰ 02ᵐ.3		PMG: 9ʰ 47ᵐ			PMG: 7ʰ 19ᵐ			PMG: 6ʰ 28ᵐ			PMG: 3ʰ 54ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	269	10.3	213	27.0	+17 58.6	250	09.1	+6 05.0	262	43.9	+1 25.5	301	26.5	−14 16.8
1	284	12.8	228	26.4	+17 59.3	265	09.8	05.7	277	46.1	25.6	316	29.0	16.9
2	299	15.3	243	25.8	+18 00.1	280	10.6	06.4	292	48.3	25.7	331	31.5	16.9
3	314	17.7	258	25.3	00.8	295	11.4	07.1	307	50.5	25.8	346	34.0	16.9
4	329	20.2	273	24.7	01.5	310	12.2	07.7	322	52.7	25.9	1	36.6	16.9
5	344	22.7	288	24.1	+18 02.2	325	13.0	+6 08.4	337	54.9	+1 26.0	16	39.1	−14 17.0
6	359	25.1	303	23.6	+18 03.0	340	13.8	+6 09.1	352	57.1	+1 26.1	31	41.6	−14 17.0
7	14	27.6	318	23.0	03.7	355	14.5	09.8	7	59.3	26.3	46	44.1	17.0
8	29	30.1	333	22.4	04.4	10	15.3	10.4	23	01.5	26.4	61	46.7	17.1
9	44	32.5	348	21.9	05.2	25	16.1	11.1	38	03.7	26.5	76	49.2	17.1
10	59	35.0	3	21.3	05.9	40	16.9	11.8	53	05.9	26.6	91	51.7	17.1
11	74	37.5	18	20.7	+18 06.6	55	17.7	+6 12.5	68	08.1	+1 26.7	106	54.2	−14 17.1
12	89	39.9	33	20.2	+18 07.3	70	18.5	+6 13.1	83	10.3	+1 26.8	121	56.8	−14 17.2
13	104	42.4	48	19.6	08.0	85	19.2	13.8	98	12.5	26.9	136	59.3	17.2
14	119	44.8	63	19.0	08.8	100	20.0	14.5	113	14.7	27.0	152	01.8	17.2
15	134	47.3	78	18.5	09.5	115	20.8	15.2	128	16.9	27.1	167	04.4	17.3
16	149	49.8	93	17.9	10.2	130	21.6	15.8	143	19.1	27.2	182	06.9	17.3
17	164	52.2	108	17.3	+18 10.9	145	22.4	+6 16.5	158	21.3	+1 27.3	197	09.4	−14 17.3
18	179	54.7	123	16.7	+18 11.7	160	23.2	+6 17.2	173	23.5	+1 27.4	212	11.9	−14 17.4
19	194	57.2	138	16.2	12.4	175	23.9	17.9	188	25.7	27.5	227	14.5	17.4
20	209	59.6	153	15.6	13.1	190	24.7	18.5	203	27.9	27.6	242	17.0	17.4
21	225	02.1	168	15.0	13.8	205	25.5	19.2	218	30.1	27.7	257	19.5	17.4
22	240	04.6	183	14.4	14.5	220	26.3	19.9	233	32.3	27.8	272	22.0	17.5
23	255	07.0	198	13.9	15.2	235	27.1	20.5	248	34.5	27.9	287	24.6	17.5
24	270	09.5	213	13.3	+18 16.0	250	27.9	+6 21.2	263	36.7	+1 28.0	302	27.1	−14 17.5
Dif	—			−6	+7		+8	+7		+22	+1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 22ᵈ.5		PHE	4ʰ: 56′.5									
	PMG: 12ʰ 02ᵐ.0				SD: 15′.4			12ʰ: 56′.2									
					PMG: 6ʰ 58ᵐ			20ʰ: 56′.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	31.1	+23	26.2	258	38.8	+1	15.0		**60 N**	** **	0 49	2 36	0 38	1	13 40	86
1	194	30.9		26.2	273	12.5 147		29.6 146		**58**	** **	1 41	2 57	38	5	37	83
2	209	30.8		26.2	287	46.3 148		44.1 145		**56**	** **	2 11	3 13	39	8	35	80
3	224	30.7		26.2	302	20.1 148	+1	58.6 145		**54**	0 45	33	28	40	10	33	77
4	239	30.5		26.1	316	53.9 148	+2	13.1 145		**52**	1 33	2 51	40	40	12	31	75
5	254	30.4	+23	26.1	331	27.7 148	+2	27.6 145		**50**	2 01	3 06	3 51	0 41	14	13 30	72
6	269	30.3	+23	26.1	346	01.6 149	+2	42.1 145		**45**	2 46	3 36	4 13	0 42	19	13 26	67
7	284	30.1		26.1	0	35.5 149	+2	56.5 144		**40**	3 17	3 59	32	43	22	23	63
8	299	30.0		26.1	15	09.4 149	+3	10.9 144		**35**	40	4 17	4 47	43	26	21	59
9	314	29.9		26.1	29	43.3 149		25.2 143		**30**	3 59	32	5 00	44	29	18	57
10	329	29.7		26.0	44	17.2 149		39.6 144		**20**	4 28	4 57	22	45	34	14	52
11	344	29.6	+23	26.0	58	51.1 149	+3	53.9 143		**10 N**	4 51	5 18	5 41	0 46	39	13 11	47
12	359	29.5	+23	26.0	73	25.1 150	+4	08.2 143		**0**	5 10	5 36	5 58	0 47	43	13 08	43
13	14	29.3		26.0	87	59.1 150		22.4 142		**10 S**	27	5 53	6 16	48	48	05	38
14	29	29.2		26.0	102	33.0 149		36.6 142		**20**	43	6 10	34	49	52	13 01	35
15	44	29.0		26.0	117	07.0 150	+4	50.8 142		**30**	5 59	29	6 56	51	57	12 57	30
16	59	28.9		25.9	131	41.0 150	+5	04.9 141		**35**	6 08	40	7 08	52	60	55	27
17	74	28.8	+23	25.9	146	15.0 150	+5	19.1 142		**40**	6 18	6 52	7 22	0 52	64	12 53	23
18	89	28.6	+23	25.9	160	49.0 150	+5	33.1 140		**45**	6 28	7 05	7 39	0 54	67	12 50	19
19	104	28.5		25.9	175	23.0 150	+5	47.2 141		**50**	40	21	8 00	55	72	46	15
20	119	28.4		25.8	189	57.1 151	+6	01.2 140		**52**	45	29	10	55	75	45	12
21	134	28.2		25.8	204	31.1 150		15.1 139		**54**	51	37	21	56	77	43	10
22	149	28.1		25.8	219	05.1 150		29.1 140		**56**	6 57	46	34	57	80	41	8
23	164	28.0		25.8	233	39.1 150		42.9 138		**58**	7 04	7 56	8 48	57	84	39	5
24	179	27.8	+23	25.7	248	13.1 150	+6	56.8 139		**60 S**	7 11	8 08	9 06	0 58	87	12 37	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.4			Mag: +0.6		
	5ʰ 58ᵐ.4		PMG: 9ʰ 47ᵐ			PMG: 7ʰ 18ᵐ			PMG: 6ʰ 25ᵐ			PMG: 3ʰ 50ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	270	09.5	213	13.3	+18 16.0	250	27.9	+6 21.2	263	36.7	+1 28.0	302	27.1	−14 17.5
1	285	11.9	228	12.7	16.7	265	28.7	21.9	278	38.9	28.1	317	29.6	17.6
2	300	14.4	243	12.2	17.4	280	29.4	22.6	293	41.1	28.2	332	32.2	17.6
3	315	16.9	258	11.6	18.1	295	30.2	23.2	308	43.3	28.3	347	34.7	17.6
4	330	19.3	273	11.0	18.8	310	31.0	23.9	323	45.5	28.4	2	37.2	17.7
5	345	21.8	288	10.4	+18 19.5	325	31.8	+6 24.6	338	47.7	+1 28.5	17	39.7	−14 17.7
6	0	24.3	303	09.8	+18 20.2	340	32.6	+6 25.2	353	49.9	+1 28.6	32	42.3	−14 17.7
7	15	26.7	318	09.3	20.9	355	33.4	25.9	8	52.2	28.6	47	44.8	17.7
8	30	29.2	333	08.7	21.6	10	34.1	26.6	23	54.4	28.7	62	47.3	17.8
9	45	31.7	348	08.1	22.4	25	34.9	27.3	38	56.6	28.8	77	49.8	17.8
10	60	34.1	3	07.5	23.1	40	35.7	27.9	53	58.8	28.9	92	52.4	17.8
11	75	36.6	18	06.9	+18 23.8	55	36.5	+6 28.6	69	01.0	+1 29.0	107	54.9	−14 17.9
12	90	39.1	33	06.4	+18 24.5	70	37.3	+6 29.3	84	03.2	+1 29.1	122	57.4	−14 17.9
13	105	41.5	48	05.8	25.2	85	38.1	29.9	99	05.4	29.2	138	00.0	17.9
14	120	44.0	63	05.2	25.9	100	38.9	30.6	114	07.6	29.3	153	02.5	18.0
15	135	46.4	78	04.6	26.6	115	39.6	31.3	129	09.8	29.4	168	05.0	18.0
16	150	48.9	93	04.0	27.3	130	40.4	31.9	144	12.0	29.5	183	07.6	18.0
17	165	51.4	108	03.5	+18 28.0	145	41.2	+6 32.6	159	14.2	+1 29.6	198	10.1	−14 18.0
18	180	53.8	123	02.9	+18 28.7	160	42.0	+6 33.3	174	16.4	+1 29.7	213	12.6	−14 18.1
19	195	56.3	138	02.3	29.4	175	42.8	34.0	189	18.7	29.8	228	15.1	18.1
20	210	58.8	153	01.7	30.1	190	43.6	34.6	204	20.9	29.9	243	17.7	18.1
21	226	01.2	168	01.1	30.8	205	44.4	35.3	219	23.1	30.0	258	20.2	18.2
22	241	03.7	183	00.5	31.5	220	45.1	36.0	234	25.3	30.1	273	22.7	18.2
23	256	06.2	197	59.9	32.2	235	45.9	36.6	249	27.5	30.2	288	25.3	18.2
24	271	08.6	212	59.4	+18 32.9	250	46.7	+6 37.3	264	29.7	+1 30.3	303	27.8	−14 18.3
Dif	—			−6	+7		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 23^{d}.5		PHE	4^{h}: 55′.8								
	PMG: 12^{h} 02^{m}.3				SD: 15′.2			12^{h}: 55′.6								
					PMG: 7^{h} 40^{m}			20^{h}: 55′.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	27.8	+23	25.7	248	13.1	+6	56.8	**60 N**	21 28	23 14	** **	0 39	3	15 06	87
1	194	27.7		25.7	262	47.1 150	+7	10.6 138	**58**	21 08	22 23	** **	43	6	15 00	83
2	209	27.6		25.7	277	21.2 151		24.4 138	**56**	20 51	21 53	** **	47	8	14 55	79
3	224	27.4		25.6	291	55.2 150		38.1 137	**54**	36	31	23 18	50	11	50	76
4	239	27.3		25.6	306	29.2 150	+7	51.8 137	**52**	24	21 13	22 31	52	14	46	73
5	254	27.1	+23	25.6	321	03.2 150	+8	05.4 136	**50**	20 13	20 58	22 04	0 55	15	14 42	71
6	269	27.0	+23	25.6	335	37.2 150	+8	19.0 136	**45**	19 51	20 28	21 18	1 01	19	14 33	67
7	284	26.9		25.5	350	11.2 150		32.5 135	**40**	33	20 06	20 47	05	24	26	63
8	299	26.7		25.5	4	45.1 149		46.0 135	**35**	18	19 47	24	09	27	20	60
9	314	26.6		25.5	19	19.1 150	+8	59.5 135	**30**	19 05	32	20 05	13	30	15	57
10	329	26.5		25.4	33	53.1 150	+9	12.9 134	**20**	18 43	19 07	19 36	19	35	14 06	52
11	344	26.3	+23	25.4	48	27.0 149	+9	26.2 133	**10 N**	18 24	18 47	19 14	1 25	39	13 58	48
12	359	26.2	+23	25.3	63	00.9 149	+9	39.5 133	**0**	18 06	18 28	18 55	1 30	43	13 51	43
13	14	26.1		25.3	77	34.9 150	+9	52.8 133	**10 S**	17 48	18 11	38	36	47	43	40
14	29	25.9		25.3	92	08.8 149	+10	06.0 132	**20**	30	17 54	21	41	52	36	35
15	44	25.8		25.2	106	42.6 148		19.1 131	**30**	17 09	35	18 05	48	56	27	30
16	59	25.7		25.2	121	16.5 149		32.2 131	**35**	16 56	24	17 56	52	59	22	27
17	74	25.5	+23	25.2	135	50.4 149	+10	45.2 130	**40**	16 42	17 13	17 47	1 56	63	13 16	24
18	89	25.4	+23	25.1	150	24.2 148	+10	58.2 130	**45**	16 25	16 59	17 36	2 01	67	13 09	21
19	104	25.3		25.1	164	58.0 148	+11	11.2 130	**50**	16 05	43	25	07	72	13 01	16
20	119	25.1		25.0	179	31.8 148		24.0 128	**52**	15 55	36	19	10	74	12 57	15
21	134	25.0		25.0	194	05.6 148		36.9 129	**54**	44	27	14	13	77	53	12
22	149	24.8		24.9	208	39.3 147	+11	49.6 127	**56**	31	18	07	17	79	49	9
23	164	24.7		24.9	223	13.1 148	+12	02.3 127	**58**	15 16	16 08	17 01	21	82	44	6
24	179	24.6	+23	24.9	237	46.8 147	+12	15.0 127	**60 S**	14 59	15 56	16 53	2 25	86	12 39	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.4			Mag: +0.6		
	5^{h} 54^{m}.5		PMG: 9^{h} 48^{m}			PMG: 7^{h} 17^{m}			PMG: 6^{h} 21^{m}			PMG: 3^{h} 46^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	271	08.6	212	59.4	+18 32.9	250	46.7	+6 37.3	264	29.7	+1 30.3	303	27.8	−14 18.3
1	286	11.1	227	58.8	33.6	265	47.5	38.0	279	31.9	30.4	318	30.3	18.3
2	301	13.6	242	58.2	34.3	280	48.3	38.6	294	34.1	30.5	333	32.9	18.3
3	316	16.0	257	57.6	35.0	295	49.1	39.3	309	36.3	30.6	348	35.4	18.4
4	331	18.5	272	57.0	35.7	310	49.9	40.0	324	38.6	30.7	3	37.9	18.4
5	346	20.9	287	56.4	+18 36.4	325	50.6	+6 40.6	339	40.8	+1 30.8	18	40.5	−14 18.4
6	1	23.4	302	55.8	+18 37.0	340	51.4	+6 41.3	354	43.0	+1 30.9	33	43.0	−14 18.5
7	16	25.9	317	55.2	37.7	355	52.2	42.0	9	45.2	31.0	48	45.5	18.5
8	31	28.3	332	54.7	38.4	10	53.0	42.6	24	47.4	31.1	63	48.1	18.5
9	46	30.8	347	54.1	39.1	25	53.8	43.3	39	49.6	31.2	78	50.6	18.5
10	61	33.3	2	53.5	39.8	40	54.6	44.0	54	51.8	31.3	93	53.1	18.6
11	76	35.7	17	52.9	+18 40.5	55	55.4	+6 44.6	69	54.0	+1 31.4	108	55.7	−14 18.6
12	91	38.2	32	52.3	+18 41.2	70	56.1	+6 45.3	84	56.3	+1 31.5	123	58.2	−14 18.6
13	106	40.7	47	51.7	41.9	85	56.9	46.0	99	58.5	31.6	139	00.7	18.7
14	121	43.1	62	51.1	42.5	100	57.7	46.6	115	00.7	31.7	154	03.3	18.7
15	136	45.6	77	50.5	43.2	115	58.5	47.3	130	02.9	31.7	169	05.8	18.7
16	151	48.0	92	49.9	43.9	130	59.3	48.0	145	05.1	31.8	184	08.3	18.8
17	166	50.5	107	49.3	+18 44.6	146	00.1	+6 48.6	160	07.3	+1 31.9	199	10.9	−14 18.8
18	181	53.0	122	48.7	+18 45.3	161	00.9	+6 49.3	175	09.5	+1 32.0	214	13.4	−14 18.8
19	196	55.4	137	48.1	46.0	176	01.6	50.0	190	11.8	32.1	229	15.9	18.9
20	211	57.9	152	47.5	46.6	191	02.4	50.6	205	14.0	32.2	244	18.5	18.9
21	227	00.4	167	46.9	47.3	206	03.2	51.3	220	16.2	32.3	259	21.0	18.9
22	242	02.8	182	46.3	48.0	221	04.0	52.0	235	18.4	32.4	274	23.5	19.0
23	257	05.3	197	45.7	48.7	236	04.8	52.6	250	20.6	32.5	289	26.1	19.0
24	272	07.8	212	45.1	+18 49.4	251	05.6	+6 53.3	265	22.8	+1 32.6	304	28.6	−14 19.0
Dif	—			−6	+7		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 24ᵈ.5		PHE	4ʰ: 55′.2								
	PMG: 12ʰ 02ᵐ.5				SD: 15′.1			12ʰ: 55′.0								
					PMG: 8ʰ 24ᵐ			20ʰ: 54′.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	24.6	+23	24.9	237	46.8	+12	15.0	**60 N**	** **	0 51	2 37	0 42	3	16 33	87
1	194	24.4		24.8	252	20.4 146		27.6 126	**58**	** **	1 42	2 57	49	7	23	83
2	209	24.3		24.8	266	54.1 147		40.1 125	**56**	** **	2 11	3 14	0 55	10	14	79
3	224	24.2		24.7	281	27.7 146	+12	52.6 125	**54**	0 47	34	28	1 01	13	16 06	77
4	239	24.0		24.7	296	01.3 146	+13	05.0 124	**52**	1 33	2 52	41	06	15	15 59	74
5	254	23.9	+23	24.6	310	34.9 146	+13	17.3 123	**50**	2 01	3 07	3 51	1 10	18	15 53	71
6	269	23.8	+23	24.6	325	08.4 145	+13	29.6 123	**45**	2 47	3 37	4 14	1 20	23	15 40	66
7	284	23.6		24.5	339	42.0 146		41.8 122	**40**	3 17	3 59	32	29	26	29	63
8	299	23.5		24.5	354	15.4 144	+13	54.0 122	**35**	41	4 17	4 47	36	29	20	59
9	314	23.4		24.4	8	48.9 145	+14	06.0 120	**30**	3 59	33	5 00	43	31	15 12	57
10	329	23.2		24.4	23	22.3 144		18.1 121	**20**	4 28	4 58	22	1 54	36	14 58	52
11	344	23.1	+23	24.3	37	55.7 144	+14	30.0 119	**10 N**	4 51	5 18	5 41	2 04	40	14 46	48
12	359	23.0	+23	24.3	52	29.1 144	+14	41.9 119	**0**	5 10	5 36	5 59	2 13	44	14 34	45
13	14	22.8		24.2	67	02.4 143	+14	53.7 118	**10 S**	27	5 53	6 16	23	48	23	41
14	29	22.7		24.2	81	35.7 143	+15	05.5 118	**20**	5 43	6 11	35	33	52	14 11	38
15	44	22.6		24.1	96	08.9 142		17.1 116	**30**	6 00	30	6 56	44	57	13 57	33
16	59	22.4		24.0	110	42.1 142		28.7 116	**35**	09	40	7 08	51	60	49	31
17	74	22.3	+23	24.0	125	15.3 142	+15	40.3 116	**40**	6 18	6 52	7 23	2 59	63	13 40	28
18	89	22.2	+23	23.9	139	48.4 141	+15	51.7 114	**45**	6 28	7 06	7 39	3 08	67	13 30	24
19	104	22.0		23.9	154	21.5 141	+16	03.1 114	**50**	40	22	8 00	19	71	17	20
20	119	21.9		23.8	168	54.6 141		14.5 114	**52**	45	29	10	24	74	12	17
21	134	21.8		23.8	183	27.6 140		25.7 112	**54**	51	37	21	30	76	13 05	15
22	149	21.6		23.7	198	00.6 140		36.9 112	**56**	6 57	46	34	36	80	12 58	12
23	164	21.5		23.6	212	33.6 140		48.0 111	**58**	7 04	7 57	8 49	43	83	50	8
24	179	21.4	+23	23.6	227	06.5 139	+16	59.0 110	**60 S**	7 11	8 08	9 06	3 51	88	12 41	4

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.5			Mag: +0.6		
	5ʰ 50ᵐ.5		PMG: 9ʰ 49ᵐ			PMG: 7ʰ 15ᵐ			PMG: 6ʰ 18ᵐ			PMG: 3ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	272	07.8	212	45.1	+18 49.4	251	05.6	+6 53.3	265	22.8	+1 32.6	304	28.6	−14 19.0
1	287	10.2	227	44.5	50.0	266	06.4	54.0	280	25.1	32.7	319	31.1	19.1
2	302	12.7	242	43.9	50.7	281	07.2	54.6	295	27.3	32.8	334	33.7	19.1
3	317	15.2	257	43.3	51.4	296	07.9	55.3	310	29.5	32.9	349	36.2	19.1
4	332	17.6	272	42.7	52.1	311	08.7	56.0	325	31.7	33.0	4	38.7	19.2
5	347	20.1	287	42.1	+18 52.7	326	09.5	+6 56.6	340	33.9	+1 33.1	19	41.3	−14 19.2
6	2	22.5	302	41.5	+18 53.4	341	10.3	+6 57.3	355	36.2	+1 33.2	34	43.8	−14 19.2
7	17	25.0	317	40.9	54.1	356	11.1	57.9	10	38.4	33.3	49	46.3	19.3
8	32	27.5	332	40.3	54.8	11	11.9	58.6	25	40.6	33.4	64	48.9	19.3
9	47	29.9	347	39.7	55.4	26	12.7	59.3	40	42.8	33.4	79	51.4	19.3
10	62	32.4	2	39.1	56.1	41	13.4	+6 59.9	55	45.0	33.5	94	54.0	19.4
11	77	34.9	17	38.5	+18 56.8	56	14.2	+7 00.6	70	47.2	+1 33.6	109	56.5	−14 19.4
12	92	37.3	32	37.9	+18 57.4	71	15.0	+7 01.3	85	49.5	+1 33.7	124	59.0	−14 19.4
13	107	39.8	47	37.3	58.1	86	15.8	01.9	100	51.7	33.8	140	01.6	19.5
14	122	42.3	62	36.7	58.8	101	16.6	02.6	115	53.9	33.9	155	04.1	19.5
15	137	44.7	77	36.1	+18 59.4	116	17.4	03.3	130	56.1	34.0	170	06.6	19.5
16	152	47.2	92	35.5	+19 00.1	131	18.2	03.9	145	58.3	34.1	185	09.2	19.6
17	167	49.7	107	34.9	+19 00.8	146	19.0	+7 04.6	161	00.6	+1 34.2	200	11.7	−14 19.6
18	182	52.1	122	34.3	+19 01.4	161	19.7	+7 05.2	176	02.8	+1 34.3	215	14.3	−14 19.6
19	197	54.6	137	33.7	02.1	176	20.5	05.9	191	05.0	34.4	230	16.8	19.7
20	212	57.0	152	33.1	02.7	191	21.3	06.6	206	07.2	34.5	245	19.3	19.7
21	227	59.5	167	32.5	03.4	206	22.1	07.2	221	09.5	34.6	260	21.9	19.7
22	243	02.0	182	31.9	04.1	221	22.9	07.9	236	11.7	34.6	275	24.4	19.8
23	258	04.4	197	31.3	04.7	236	23.7	08.5	251	13.9	34.7	290	26.9	19.8
24	273	06.9	212	30.6	+19 05.4	251	24.5	+7 09.2	266	16.1	+1 34.8	305	29.5	−14 19.8
Dif	—			−6	+7		+8	+7		+22	+1		+25	0

UT	SOL SD: 15′.7 PMG: 12h 02m.7				LUNA Edad: 25d.5 SD: 14′.9 PMG: 9h 08m PHE 4h: 54′.7; 12h: 54′.6; 20h: 54′.5 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	179	21.4	+23	23.6	227	06.5	+16	59.0	**60 N**	21 28	23 12	** **	0 45	6	18 00	88
1	194	21.2		23.5	241	39.3 138	+17	09.9 109	**58**	21 07	22 23	** **	0 56	10	17 46	82
2	209	21.1		23.4	256	12.2 139		20.8 109	**56**	20 51	21 53	** **	1 05	14	33	78
3	224	21.0		23.4	270	44.9 137		31.5 107	**54**	37	31	23 17	14	16	23	74
4	239	20.8		23.3	285	17.7 138		42.2 107	**52**	24	21 13	22 31	21	20	13	72
5	254	20.7	+23	23.3	299	50.4 137	+17	52.9 107	**50**	20 13	20 58	22 03	1 28	22	17 04	70
6	269	20.5	+23	23.2	314	23.0 136	+18	03.4 105	**45**	19 51	20 28	21 18	1 43	26	16 46	66
7	284	20.4		23.1	328	55.6 136		13.9 105	**40**	33	20 06	20 47	1 55	29	32	62
8	299	20.3		23.1	343	28.2 136		24.2 103	**35**	18	19 48	24	2 05	33	19	60
9	314	20.1		23.0	358	00.7 135		34.5 103	**30**	19 05	32	20 06	14	35	16 09	56
10	329	20.0		22.9	12	33.2 135		44.7 102	**20**	18 43	19 07	19 37	30	39	15 50	53
11	344	19.9	+23	22.8	27	05.6 134	+18	54.9 102	**10 N**	18 24	18 47	19 14	2 44	43	15 34	50
12	359	19.7	+23	22.8	41	38.0 134	+19	04.9 100	**0**	18 06	18 29	18 55	2 57	46	15 19	47
13	14	19.6		22.7	56	10.3 133		14.8 99	**10 S**	17 49	18 12	38	3 11	49	15 04	44
14	29	19.5		22.6	70	42.6 133		24.7 99	**20**	30	17 54	22	25	52	14 49	40
15	44	19.3		22.6	85	14.8 132		34.5 98	**30**	17 09	36	18 05	41	57	30	37
16	59	19.2		22.5	99	47.0 132		44.2 97	**35**	16 57	25	17 57	3 51	59	20	35
17	74	19.1	+23	22.4	114	19.2 132	+19	53.8 96	**40**	16 43	17 13	17 47	4 02	62	14 08	32
18	89	18.9	+23	22.3	128	51.3 131	+20	03.3 95	**45**	16 26	17 00	17 37	4 15	66	13 54	28
19	104	18.8		22.3	143	23.3 130		12.7 94	**50**	16 05	16 44	25	30	71	37	24
20	119	18.7		22.2	157	55.3 130		22.0 93	**52**	15 55	36	20	38	73	29	22
21	134	18.6		22.1	172	27.3 130		31.2 92	**54**	44	28	14	46	76	20	19
22	149	18.4		22.0	186	59.2 129		40.4 92	**56**	32	19	08	4 56	79	13 10	16
23	164	18.3		22.0	201	31.0 128		49.4 90	**58**	15 17	16 09	17 01	5 06	83	12 58	13
24	179	18.2	+23	21.9	216	02.8 128	+20	58.4 90	**60 S**	14 59	15 57	16 54	5 19	88	12 45	8

UT	ARIES PMG 5h 46m.6		VENUS Mag: −3.9 PMG: 9h 50m			MARTE Mag: +0.5 PMG: 7h 14m			JÚPITER Mag: −2.5 PMG: 6h 14m			SATURNO Mag: +0.6 PMG: 3h 37m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	273	06.9	212	30.6	+19 05.4	251	24.5	+7 09.2	266	16.1	+1 34.8	305	29.5	−14 19.8
1	288	09.4	227	30.0	06.0	266	25.3	09.9	281	18.3	34.9	320	32.0	19.9
2	303	11.8	242	29.4	06.7	281	26.0	10.5	296	20.6	35.0	335	34.6	19.9
3	318	14.3	257	28.8	07.4	296	26.8	11.2	311	22.8	35.1	350	37.1	19.9
4	333	16.8	272	28.2	08.0	311	27.6	11.9	326	25.0	35.2	5	39.6	20.0
5	348	19.2	287	27.6	+19 08.7	326	28.4	+7 12.5	341	27.2	+1 35.3	20	42.2	−14 20.0
6	3	21.7	302	27.0	+19 09.3	341	29.2	+7 13.2	356	29.5	+1 35.4	35	44.7	−14 20.0
7	18	24.1	317	26.4	10.0	356	30.0	13.8	11	31.7	35.5	50	47.3	20.1
8	33	26.6	332	25.8	10.6	11	30.8	14.5	26	33.9	35.6	65	49.8	20.1
9	48	29.1	347	25.1	11.3	26	31.6	15.1	41	36.1	35.6	80	52.3	20.1
10	63	31.5	2	24.5	11.9	41	32.3	15.8	56	38.4	35.7	95	54.9	20.2
11	78	34.0	17	23.9	+19 12.6	56	33.1	+7 16.5	71	40.6	+1 35.8	110	57.4	−14 20.2
12	93	36.5	32	23.3	+19 13.2	71	33.9	+7 17.1	86	42.8	+1 35.9	126	00.0	−14 20.2
13	108	38.9	47	22.7	13.9	86	34.7	17.8	101	45.0	36.0	141	02.5	20.3
14	123	41.4	62	22.1	14.5	101	35.5	18.4	116	47.3	36.1	156	05.0	20.3
15	138	43.9	77	21.4	15.2	116	36.3	19.1	131	49.5	36.2	171	07.6	20.3
16	153	46.3	92	20.8	15.8	131	37.1	19.8	146	51.7	36.3	186	10.1	20.4
17	168	48.8	107	20.2	+19 16.5	146	37.9	+7 20.4	161	54.0	+1 36.4	201	12.7	−14 20.4
18	183	51.3	122	19.6	+19 17.1	161	38.7	+7 21.1	176	56.2	+1 36.5	216	15.2	−14 20.4
19	198	53.7	137	19.0	17.7	176	39.4	21.7	191	58.4	36.5	231	17.7	20.5
20	213	56.2	152	18.4	18.4	191	40.2	22.4	207	00.6	36.6	246	20.3	20.5
21	228	58.6	167	17.7	19.0	206	41.0	23.1	222	02.9	36.7	261	22.8	20.5
22	244	01.1	182	17.1	19.7	221	41.8	23.7	237	05.1	36.8	276	25.4	20.6
23	259	03.6	197	16.5	20.3	236	42.6	24.4	252	07.3	36.9	291	27.9	20.6
24	274	06.0	212	15.9	+19 20.9	251	43.4	+7 25.0	267	09.6	+1 37.0	306	30.5	−14 20.6
Dif	—			−6	+6		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 26ᵈ.5		PHE	4ʰ: 54′.4								
	PMG: 12ʰ 02ᵐ.9				SD: 14′.8			12ʰ: 54′.3								
					PMG: 9ʰ 55ᵐ			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	179	18.2	+23	21.9	216	02.8	+20	58.4	**60 N**	** **	0 53	2 38	0 51	10	19 28	82
1	194	18.0		21.8	230	34.6 128	+21	07.2 88	**58**	** **	1 43	2 58	1 06	16	19 08	76
2	209	17.9		21.7	245	06.3 127		16.0 88	**56**	** **	2 13	3 15	19	20	18 51	73
3	224	17.8		21.6	259	38.0 127		24.6 86	**54**	0 49	35	29	30	23	37	70
4	239	17.6		21.6	274	09.6 126		33.2 86	**52**	1 35	2 53	41	41	25	25	68
5	254	17.5	+23	21.5	288	41.1 125	+21	41.7 85	**50**	2 02	3 08	3 52	1 50	27	18 14	66
6	269	17.4	+23	21.4	303	12.6 125	+21	50.0 83	**45**	2 48	3 37	4 15	2 09	31	17 52	62
7	284	17.2		21.3	317	44.1 125	+21	58.3 83	**40**	3 18	4 00	33	24	35	34	59
8	299	17.1		21.2	332	15.5 124	+22	06.5 82	**35**	3 41	18	4 48	38	37	19	57
9	314	17.0		21.1	346	46.9 124		14.5 80	**30**	4 00	33	5 01	2 49	39	17 05	57
10	329	16.8		21.0	1	18.2 123		22.5 80	**20**	29	4 58	23	3 09	43	16 43	54
11	344	16.7	+23	21.0	15	49.5 123	+22	30.4 79	**10 N**	4 52	5 19	5 42	3 27	45	16 24	51
12	359	16.6	+23	20.9	30	20.7 122	+22	38.1 77	**0**	5 10	5 37	5 59	3 43	48	16 06	49
13	14	16.4		20.8	44	51.9 122		45.8 77	**10 S**	27	5 54	6 17	4 00	50	15 48	47
14	29	16.3		20.7	59	23.0 121	+22	53.3 75	**20**	5 44	6 11	35	17	54	29	45
15	44	16.2		20.6	73	54.1 121	+23	00.8 75	**30**	6 00	30	6 56	38	57	15 07	42
16	59	16.0		20.5	88	25.1 120		08.1 73	**35**	09	40	7 09	4 50	59	14 55	39
17	74	15.9	+23	20.4	102	56.1 120	+23	15.4 73	**40**	6 18	6 52	7 23	5 04	61	14 40	37
18	89	15.8	+23	20.3	117	27.0 119	+23	22.5 71	**45**	6 28	7 06	7 40	5 21	64	14 22	35
19	104	15.6		20.2	131	57.9 119		29.5 70	**50**	40	22	8 00	41	68	14 01	31
20	119	15.5		20.1	146	28.8 119		36.4 69	**52**	45	29	10	5 51	70	13 51	29
21	134	15.4		20.1	160	59.5 117		43.2 68	**54**	51	37	21	6 02	73	39	27
22	149	15.2		20.0	175	30.3 118		49.9 67	**56**	6 57	46	34	15	76	26	24
23	164	15.1		19.9	190	01.0 117	+23	56.5 66	**58**	7 04	7 57	8 48	29	80	13 11	20
24	179	15.0	+23	19.8	204	31.7 117	+24	03.0 65	**60 S**	7 11	8 08	9 06	6 47	86	12 53	14

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.5			Mag: +0.6		
	5ʰ 42ᵐ.7		PMG: 9ʰ 51ᵐ			PMG: 7ʰ 13ᵐ			PMG: 6ʰ 10ᵐ			PMG: 3ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	274	06.0	212	15.9	+19 20.9	251	43.4	+7 25.0	267	09.6	+1 37.0	306	30.5	−14 20.6
1	289	08.5	227	15.2	21.6	266	44.2	25.7	282	11.8	37.1	321	33.0	20.7
2	304	11.0	242	14.6	22.2	281	45.0	26.3	297	14.0	37.2	336	35.5	20.7
3	319	13.4	257	14.0	22.9	296	45.8	27.0	312	16.2	37.3	351	38.1	20.7
4	334	15.9	272	13.4	23.5	311	46.5	27.7	327	18.5	37.3	6	40.6	20.8
5	349	18.4	287	12.8	+19 24.1	326	47.3	+7 28.3	342	20.7	+1 37.4	21	43.2	−14 20.8
6	4	20.8	302	12.1	+19 24.8	341	48.1	+7 29.0	357	22.9	+1 37.5	36	45.7	−14 20.8
7	19	23.3	317	11.5	25.4	356	48.9	29.6	12	25.2	37.6	51	48.3	20.9
8	34	25.8	332	10.9	26.0	11	49.7	30.3	27	27.4	37.7	66	50.8	20.9
9	49	28.2	347	10.3	26.7	26	50.5	30.9	42	29.6	37.8	81	53.3	21.0
10	64	30.7	2	09.6	27.3	41	51.3	31.6	57	31.9	37.9	96	55.9	21.0
11	79	33.1	17	09.0	+19 27.9	56	52.1	+7 32.2	72	34.1	+1 38.0	111	58.4	−14 21.0
12	94	35.6	32	08.4	+19 28.5	71	52.9	+7 32.9	87	36.3	+1 38.0	127	01.0	−14 21.1
13	109	38.1	47	07.8	29.2	86	53.6	33.6	102	38.6	38.1	142	03.5	21.1
14	124	40.5	62	07.1	29.8	101	54.4	34.2	117	40.8	38.2	157	06.1	21.1
15	139	43.0	77	06.5	30.4	116	55.2	34.9	132	43.0	38.3	172	08.6	21.2
16	154	45.5	92	05.9	31.0	131	56.0	35.5	147	45.3	38.4	187	11.1	21.2
17	169	47.9	107	05.2	+19 31.7	146	56.8	+7 36.2	162	47.5	+1 38.5	202	13.7	−14 21.2
18	184	50.4	122	04.6	+19 32.3	161	57.6	+7 36.8	177	49.7	+1 38.6	217	16.2	−14 21.3
19	199	52.9	137	04.0	32.9	176	58.4	37.5	192	52.0	38.7	232	18.8	21.3
20	214	55.3	152	03.3	33.5	191	59.2	38.1	207	54.2	38.7	247	21.3	21.3
21	229	57.8	167	02.7	34.2	207	00.0	38.8	222	56.4	38.8	262	23.9	21.4
22	245	00.3	182	02.1	34.8	222	00.8	39.4	237	58.7	38.9	277	26.4	21.4
23	260	02.7	197	01.5	35.4	237	01.5	40.1	253	00.9	39.0	292	29.0	21.5
24	275	05.2	212	00.8	+19 36.0	252	02.3	+7 40.7	268	03.1	+1 39.1	307	31.5	−14 21.5
Dif	—			−6	+6		+8	+7		+22	+1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 27^{d}.5		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 03^{m}.1				SD: 14′.8			12^{h}: 54′.1									
					PMG: 10^{h} 43^{m}			20^{h}: 54′.0									
	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	15.0	+23	19.8	204	31.7	+24	03.0		**60 N**	21 27	23 10	** **	1 01	20	20 50	68
1	194	14.9		19.7	219	02.3 116		09.3	63	**58**	21 07	22 22	** **	22	25	24	65
2	209	14.7		19.6	233	32.8 115		15.6	63	**56**	20 50	21 52	** **	39	29	20 04	62
3	224	14.6		19.5	248	03.4 116		21.7	61	**54**	36	30	23 15	1 53	32	19 47	61
4	239	14.5		19.4	262	33.8 114		27.7	60	**52**	24	21 13	22 30	2 06	34	33	59
5	254	14.3	+23	19.3	277	04.3 115	+24	33.6	59	**50**	20 13	20 58	22 03	2 17	35	19 20	58
6	269	14.2	+23	19.2	291	34.7 114	+24	39.4	58	**45**	19 51	20 28	21 18	2 40	39	18 54	57
7	284	14.1		19.1	306	05.0 113		45.1	57	**40**	33	20 06	20 47	2 59	41	33	56
8	299	13.9		19.0	320	35.3 113		50.6	55	**35**	18	19 48	24	3 15	42	16	55
9	314	13.8		18.9	335	05.6 113	+24	56.1	55	**30**	19 05	33	20 06	28	44	18 02	53
10	329	13.7		18.8	349	35.8 112	+25	01.4	53	**20**	18 43	19 08	19 37	3 52	46	17 37	52
11	344	13.5	+23	18.7	4	06.0 112	+25	06.6	52	**10 N**	18 24	18 47	19 14	4 12	48	17 15	51
12	359	13.4	+23	18.6	18	36.2 112	+25	11.7	51	**0**	18 07	18 29	18 55	4 31	50	16 55	50
13	14	13.3		18.5	33	06.3 111		16.7	50	**10 S**	17 49	18 12	39	4 50	52	35	49
14	29	13.2		18.3	47	36.4 111		21.5	48	**20**	31	17 55	22	5 11	53	16 14	47
15	44	13.0		18.2	62	06.4 110		26.3	48	**30**	17 10	36	18 06	35	55	15 49	46
16	59	12.9		18.1	76	36.4 110		30.9	46	**35**	16 58	26	17 57	5 49	56	34	46
17	74	12.8	+23	18.0	91	06.4 110	+25	35.4	45	**40**	16 43	17 14	17 48	6 05	58	15 17	45
18	89	12.6	+23	17.9	105	36.3 109	+25	39.8	44	**45**	16 27	17 01	17 38	6 25	60	14 57	43
19	104	12.5		17.8	120	06.2 109		44.0	42	**50**	16 06	16 45	26	6 49	63	32	40
20	119	12.4		17.7	134	36.1 109		48.1	41	**52**	15 56	37	21	7 01	64	20	39
21	134	12.2		17.6	149	05.9 108		52.1	40	**54**	45	29	15	15	66	14 06	37
22	149	12.1		17.5	163	35.8 109		56.0	39	**56**	33	20	09	31	68	13 50	35
23	164	12.0		17.4	178	05.5 107	+25	59.8	38	**58**	18	16 10	17 02	7 49	72	31	32
24	179	11.9	+23	17.2	192	35.3 108	+26	03.4	36	**60 S**	15 01	15 58	16 55	8 13	77	13 07	27

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.5			Mag: +0.6		
	5^{h} 38^{m}.7		PMG: 9^{h} 52^{m}			PMG: 7^{h} 11^{m}			PMG: 6^{h} 07^{m}			PMG: 3^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	275	05.2	212	00.8	+19 36.0	252	02.3	+7 40.7	268	03.1	+1 39.1	307	31.5	−14 21.5
1	290	07.6	227	00.2	36.6	267	03.1	41.4	283	05.4	39.2	322	34.1	21.5
2	305	10.1	241	59.6	37.3	282	03.9	42.1	298	07.6	39.3	337	36.6	21.6
3	320	12.6	256	58.9	37.9	297	04.7	42.7	313	09.8	39.3	352	39.1	21.6
4	335	15.0	271	58.3	38.5	312	05.5	43.4	328	12.1	39.4	7	41.7	21.6
5	350	17.5	286	57.7	+19 39.1	327	06.3	+7 44.0	343	14.3	+1 39.5	22	44.2	−14 21.7
6	5	20.0	301	57.0	+19 39.7	342	07.1	+7 44.7	358	16.5	+1 39.6	37	46.8	−14 21.7
7	20	22.4	316	56.4	40.3	357	07.9	45.3	13	18.8	39.7	52	49.3	21.7
8	35	24.9	331	55.7	40.9	12	08.7	46.0	28	21.0	39.8	67	51.9	21.8
9	50	27.4	346	55.1	41.5	27	09.5	46.6	43	23.3	39.9	82	54.4	21.8
10	65	29.8	1	54.5	42.2	42	10.2	47.3	58	25.5	39.9	97	57.0	21.8
11	80	32.3	16	53.8	+19 42.8	57	11.0	+7 47.9	73	27.7	+1 40.0	112	59.5	−14 21.9
12	95	34.8	31	53.2	+19 43.4	72	11.8	+7 48.6	88	30.0	+1 40.1	128	02.1	−14 21.9
13	110	37.2	46	52.6	44.0	87	12.6	49.2	103	32.2	40.2	143	04.6	22.0
14	125	39.7	61	51.9	44.6	102	13.4	49.9	118	34.4	40.3	158	07.2	22.0
15	140	42.1	76	51.3	45.2	117	14.2	50.5	133	36.7	40.4	173	09.7	22.0
16	155	44.6	91	50.6	45.8	132	15.0	51.2	148	38.9	40.4	188	12.3	22.1
17	170	47.1	106	50.0	+19 46.4	147	15.8	+7 51.8	163	41.2	+1 40.5	203	14.8	−14 22.1
18	185	49.5	121	49.4	+19 47.0	162	16.6	+7 52.5	178	43.4	+1 40.6	218	17.4	−14 22.1
19	200	52.0	136	48.7	47.6	177	17.4	53.1	193	45.6	40.7	233	19.9	22.2
20	215	54.5	151	48.1	48.2	192	18.1	53.8	208	47.9	40.8	248	22.5	22.2
21	230	56.9	166	47.4	48.8	207	18.9	54.4	223	50.1	40.9	263	25.0	22.3
22	245	59.4	181	46.8	49.4	222	19.7	55.1	238	52.4	40.9	278	27.6	22.3
23	261	01.9	196	46.2	50.0	237	20.5	55.7	253	54.6	41.0	293	30.1	22.3
24	276	04.3	211	45.5	+19 50.6	252	21.3	+7 56.4	268	56.9	+1 41.1	308	32.7	−14 22.4
Dif	—			−6	+6		+8	+7		+22	+1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 28^{d}.5		PHE	4^{h}: 54′.0								
	PMG: 12^{h} 03^{m}.3				SD: 14′.7			12^{h}: 54′.0								
					PMG: 11^{h} 33^{m}			20^{h}: 53′.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	11.9	+23	17.2	192	35.3	+26	03.4	**60 N**	** **	0 57	2 39	1 21	37	21 58	45
1	194	11.7		17.1	207	05.0 107		06.9 35	**58**	** **	1 45	3 00	1 47	41	29	46
2	209	11.6		17.0	221	34.7 107		10.3 34	**56**	** **	2 14	16	2 08	42	21 06	47
3	224	11.5		16.9	236	04.3 106		13.6 33	**54**	0 52	36	30	25	44	20 48	48
4	239	11.3		16.8	250	34.0 107		16.7 31	**52**	1 36	2 54	42	40	44	32	49
5	254	11.2	+23	16.7	265	03.6 106	+26	19.8 31	**50**	2 04	3 09	3 53	2 52	46	20 18	49
6	269	11.1	+23	16.6	279	33.2 106	+26	22.7 29	**45**	2 49	3 38	4 16	3 19	47	19 51	49
7	284	11.0		16.4	294	02.7 105		25.4 27	**40**	3 19	4 01	33	40	47	29	50
8	299	10.8		16.3	308	32.3 106		28.1 27	**35**	3 42	19	4 48	3 57	48	19 11	50
9	314	10.7		16.2	323	01.8 105		30.6 25	**30**	4 01	34	5 01	4 12	49	18 55	51
10	329	10.6		16.1	337	31.3 105		33.0 24	**20**	30	4 59	23	4 38	50	29	51
11	344	10.4	+23	16.0	352	00.8 105	+26	35.2 22	**10 N**	4 52	5 19	5 42	5 00	50	18 06	51
12	359	10.3	+23	15.8	6	30.2 104	+26	37.4 22	**0**	5 11	5 37	6 00	5 21	51	17 45	51
13	14	10.2		15.7	20	59.7 105		39.4 20	**10 S**	28	5 54	17	5 42	51	24	51
14	29	10.1		15.6	35	29.1 104		41.2 18	**20**	5 44	6 11	35	6 04	52	17 01	51
15	44	09.9		15.5	49	58.5 104		43.0 18	**30**	6 00	30	6 56	30	52	16 35	51
16	59	09.8		15.3	64	27.9 104		44.6 16	**35**	09	41	7 09	6 45	53	20	51
17	74	09.7	+23	15.2	78	57.3 104	+26	46.1 15	**40**	6 18	6 52	7 23	7 03	53	16 02	50
18	89	09.5	+23	15.1	93	26.7 104	+26	47.5 14	**45**	6 29	7 06	7 40	7 25	53	15 40	51
19	104	09.4		15.0	107	56.1 104		48.7 12	**50**	40	22	8 00	7 52	54	15 12	51
20	119	09.3		14.8	122	25.4 103		49.8 11	**52**	45	29	10	8 05	54	14 59	50
21	134	09.2		14.7	136	54.8 104		50.8 10	**54**	51	37	21	21	54	43	51
22	149	09.0		14.6	151	24.1 103		51.6 8	**56**	6 57	46	33	8 39	55	25	50
23	164	08.9		14.5	165	53.4 103		52.3 7	**58**	7 04	7 56	8 48	9 01	56	14 03	49
24	179	08.8	+23	14.3	180	22.8 104	+26	52.9 6	**60 S**	7 11	8 08	9 05	9 30	57	13 34	48

UT	ARIES		VENUS			MARTE		JÚPITER		SATURNO	
	PMG		Mag: −3.9			Mag: +0.5		Mag: −2.5		Mag: +0.6	
	5^{h} 34^{m}.8		PMG: 9^{h} 53^{m}			PMG: 7^{h} 10^{m}		PMG: 6^{h} 03^{m}		PMG: 3^{h} 25^{m}	
	hG ♈		hG ♀		Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	°	′	°	′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	276	04.3	211	45.5	+19 50.6	252 21.3	+7 56.4	268 56.9	+1 41.1	308 32.7	−14 22.4
1	291	06.8	226	44.9	51.2	267 22.1	57.0	283 59.1	41.2	323 35.2	22.4
2	306	09.2	241	44.2	51.8	282 22.9	57.7	299 01.3	41.3	338 37.8	22.4
3	321	11.7	256	43.6	52.4	297 23.7	58.3	314 03.6	41.4	353 40.3	22.5
4	336	14.2	271	42.9	53.0	312 24.5	59.0	329 05.8	41.4	8 42.9	22.5
5	351	16.6	286	42.3	+19 53.6	327 25.3	+7 59.6	344 08.1	+1 41.5	23 45.4	−14 22.6
6	6	19.1	301	41.6	+19 54.2	342 26.1	+8 00.3	359 10.3	+1 41.6	38 48.0	−14 22.6
7	21	21.6	316	41.0	54.8	357 26.9	00.9	14 12.6	41.7	53 50.5	22.6
8	36	24.0	331	40.3	55.4	12 27.6	01.6	29 14.8	41.8	68 53.1	22.7
9	51	26.5	346	39.7	56.0	27 28.4	02.2	44 17.0	41.9	83 55.6	22.7
10	66	29.0	1	39.0	56.5	42 29.2	02.9	59 19.3	41.9	98 58.2	22.7
11	81	31.4	16	38.4	+19 57.1	57 30.0	+8 03.5	74 21.5	+1 42.0	114 00.7	−14 22.8
12	96	33.9	31	37.7	+19 57.7	72 30.8	+8 04.1	89 23.8	+1 42.1	129 03.3	−14 22.8
13	111	36.4	46	37.1	58.3	87 31.6	04.8	104 26.0	42.2	144 05.8	22.9
14	126	38.8	61	36.4	58.9	102 32.4	05.4	119 28.3	42.3	159 08.4	22.9
15	141	41.3	76	35.8	+19 59.5	117 33.2	06.1	134 30.5	42.3	174 10.9	22.9
16	156	43.7	91	35.1	+20 00.1	132 34.0	06.7	149 32.8	42.4	189 13.5	23.0
17	171	46.2	106	34.5	+20 00.6	147 34.8	+8 07.4	164 35.0	+1 42.5	204 16.0	−14 23.0
18	186	48.7	121	33.8	+20 01.2	162 35.6	+8 08.0	179 37.2	+1 42.6	219 18.6	−14 23.0
19	201	51.1	136	33.2	01.8	177 36.4	08.7	194 39.5	42.7	234 21.1	23.1
20	216	53.6	151	32.5	02.4	192 37.1	09.3	209 41.7	42.8	249 23.7	23.1
21	231	56.1	166	31.9	03.0	207 37.9	10.0	224 44.0	42.8	264 26.2	23.2
22	246	58.5	181	31.2	03.5	222 38.7	10.6	239 46.2	42.9	279 28.8	23.2
23	262	01.0	196	30.6	04.1	237 39.5	11.2	254 48.5	43.0	294 31.3	23.2
24	277	03.5	211	29.9	+20 04.7	252 40.3	+8 11.9	269 50.7	+1 43.1	309 33.9	−14 23.3
Dif	—				−6 +6		+8 +6		+22 +1		+26 0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 29ᵈ.5		PHE	4ʰ: 53′.9									
	PMG: 12ʰ 03ᵐ.5				SD: 14′.7			12ʰ: 53′.9									
					PMG: 12ʰ 24ᵐ			20ʰ: 53′.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	08.8	+23	14.3	180	22.8	+26	52.9		**60 N**	21 26	23 07	** **	1 58	61	22 43	24
1	194	08.6		14.2	194	52.1 103		53.4	5	**58**	21 06	22 20	** **	2 28	58	22 15	30
2	209	08.5		14.1	209	21.4 103		53.7	3	**56**	20 50	21 51	** **	2 50	58	21 53	34
3	224	08.4		13.9	223	50.7 103		53.9	2	**54**	36	30	23 12	3 09	56	36	35
4	239	08.3		13.8	238	20.1 104		54.0	1	**52**	24	21 12	22 29	24	56	21	37
5	254	08.1	+23	13.7	252	49.4 103	+26	53.9	1	**50**	20 13	20 57	22 02	3 38	55	21 07	39
6	269	08.0	+23	13.5	267	18.7 103	+26	53.8	1	**45**	19 51	20 28	21 17	4 06	54	20 40	41
7	284	07.9		13.4	281	48.0 103		53.5	3	**40**	33	20 06	20 47	27	54	19	43
8	299	07.8		13.3	296	17.3 103		53.0	5	**35**	18	19 48	24	4 45	54	20 01	44
9	314	07.6		13.1	310	46.7 104		52.4	6	**30**	19 05	33	20 06	5 01	53	19 46	45
10	329	07.5		13.0	325	16.0 103		51.7	7	**20**	18 43	19 08	19 37	28	52	19 20	47
11	344	07.4	+23	12.8	339	45.4 104	+26	50.9	8	**10 N**	18 25	18 48	19 15	5 50	52	18 57	49
12	359	07.3	+23	12.7	354	14.7 103	+26	49.9	10	**0**	18 07	18 30	18 56	6 12	50	18 36	50
13	14	07.1		12.6	8	44.1 104		48.9	10	**10 S**	17 50	18 13	39	33	50	18 15	51
14	29	07.0		12.4	23	13.4 103		47.6	13	**20**	32	17 56	23	6 56	49	17 52	53
15	44	06.9		12.3	37	42.8 104		46.3	13	**30**	17 11	37	18 07	7 22	48	26	54
16	59	06.7		12.1	52	12.2 104		44.8	15	**35**	16 58	26	17 58	38	47	17 11	55
17	74	06.6	+23	12.0	66	41.6 104	+26	43.2	16	**40**	16 44	17 15	17 49	7 56	46	16 52	57
18	89	06.5	+23	11.9	81	11.1 105	+26	41.5	17	**45**	16 28	17 01	17 39	8 18	45	16 31	58
19	104	06.4		11.7	95	40.5 104		39.6	19	**50**	16 07	16 46	27	46	43	16 03	60
20	119	06.2		11.6	110	10.0 105		37.6	20	**52**	15 57	38	22	8 59	43	15 49	61
21	134	06.1		11.4	124	39.4 104		35.5	21	**54**	46	30	16	9 15	42	34	62
22	149	06.0		11.3	139	08.9 105		33.3	22	**56**	34	21	10	34	40	15 15	64
23	164	05.9		11.1	153	38.4 105		30.9	24	**58**	20	11	17 04	9 57	37	14 52	67
24	179	05.7	+23	11.0	168	08.0 106	+26	28.4	25	**60 S**	15 02	16 00	16 56	10 27	33	14 22	72

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.5			Mag: +0.6		
	5ʰ 30ᵐ.9		PMG: 9ʰ 54ᵐ			PMG: 7ʰ 09ᵐ			PMG: 6ʰ 00ᵐ			PMG: 3ʰ 21ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	277	03.5	211	29.9	+20 04.7	252	40.3	+8 11.9	269	50.7	+1 43.1	309	33.9	−14 23.3
1	292	05.9	226	29.3	05.3	267	41.1	12.5	284	53.0	43.2	324	36.4	23.3
2	307	08.4	241	28.6	05.8	282	41.9	13.2	299	55.2	43.2	339	39.0	23.3
3	322	10.9	256	28.0	06.4	297	42.7	13.8	314	57.5	43.3	354	41.5	23.4
4	337	13.3	271	27.3	07.0	312	43.5	14.5	329	59.7	43.4	9	44.1	23.4
5	352	15.8	286	26.6	+20 07.6	327	44.3	+8 15.1	345	02.0	+1 43.5	24	46.7	−14 23.5
6	7	18.2	301	26.0	+20 08.1	342	45.1	+8 15.8	0	04.2	+1 43.6	39	49.2	−14 23.5
7	22	20.7	316	25.3	08.7	357	45.9	16.4	15	06.5	43.6	54	51.8	23.5
8	37	23.2	331	24.7	09.3	12	46.7	17.0	30	08.7	43.7	69	54.3	23.6
9	52	25.6	346	24.0	09.9	27	47.5	17.7	45	11.0	43.8	84	56.9	23.6
10	67	28.1	1	23.4	10.4	42	48.2	18.3	60	13.2	43.9	99	59.4	23.7
11	82	30.6	16	22.7	+20 11.0	57	49.0	+8 19.0	75	15.5	+1 44.0	115	02.0	−14 23.7
12	97	33.0	31	22.0	+20 11.6	72	49.8	+8 19.6	90	17.7	+1 44.0	130	04.5	−14 23.7
13	112	35.5	46	21.4	12.1	87	50.6	20.3	105	20.0	44.1	145	07.1	23.8
14	127	38.0	61	20.7	12.7	102	51.4	20.9	120	22.2	44.2	160	09.6	23.8
15	142	40.4	76	20.1	13.2	117	52.2	21.5	135	24.5	44.3	175	12.2	23.8
16	157	42.9	91	19.4	13.8	132	53.0	22.2	150	26.7	44.3	190	14.7	23.9
17	172	45.4	106	18.7	+20 14.4	147	53.8	+8 22.8	165	29.0	+1 44.4	205	17.3	−14 23.9
18	187	47.8	121	18.1	+20 14.9	162	54.6	+8 23.5	180	31.2	+1 44.5	220	19.9	−14 24.0
19	202	50.3	136	17.4	15.5	177	55.4	24.1	195	33.5	44.6	235	22.4	24.0
20	217	52.7	151	16.7	16.1	192	56.2	24.8	210	35.7	44.7	250	25.0	24.0
21	232	55.2	166	16.1	16.6	207	57.0	25.4	225	38.0	44.7	265	27.5	24.1
22	247	57.7	181	15.4	17.2	222	57.8	26.0	240	40.2	44.8	280	30.1	24.1
23	263	00.1	196	14.7	17.7	237	58.6	26.7	255	42.5	44.9	295	32.6	24.2
24	278	02.6	211	14.1	+20 18.3	252	59.4	+8 27.3	270	44.8	+1 45.0	310	35.2	−14 24.2
Dif	—			−7	+6		+8	+6		+23	+1		+26	0

UT	SOL SD: 15′.7 PMG: 12h 03m.7				LUNA Edad: 0d.9 SD: 14′.7 PMG: 13h 14m PHE: 4h: 54′.0; 12h: 54′.0; 20h: 54′.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	179	05.7	+23	11.0	168	08.0	+26	28.4	**60 N**	** **	1 01	2 41	2 59	79	23 07	13
1	194	05.6		10.8	182	37.5 105		25.8 26	**58**	** **	1 47	3 01	3 26	74	22 45	18
2	209	05.5		10.7	197	07.1 106		23.1 27	**56**	** **	2 16	18	3 48	69	27	22
3	224	05.4		10.5	211	36.7 106		20.2 29	**54**	0 56	38	32	4 05	68	22 11	25
4	239	05.2		10.4	226	06.3 106		17.2 30	**52**	1 39	2 55	44	20	66	21 58	27
5	254	05.1	+23	10.2	240	36.0 107	+26	14.1 31	**50**	2 05	3 10	3 54	4 33	64	21 46	30
6	269	05.0	+23	10.1	255	05.7 107	+26	10.8 33	**45**	2 50	3 39	4 17	5 00	61	21 21	34
7	284	04.9		09.9	269	35.4 107		07.5 33	**40**	3 20	4 02	34	21	59	21 02	36
8	299	04.7		09.8	284	05.1 107		04.0 35	**35**	3 43	20	4 49	39	57	20 45	39
9	314	04.6		09.6	298	34.9 108	+26	00.4 36	**30**	4 01	35	5 02	5 54	55	31	41
10	329	04.5		09.5	313	04.7 108	+25	56.6 38	**20**	30	4 59	24	6 20	53	20 07	44
11	344	04.4	+23	09.3	327	34.5 108	+25	52.8 38	**10 N**	4 53	5 20	5 43	6 42	51	19 46	46
12	359	04.2	+23	09.2	342	04.4 109	+25	48.8 40	**0**	5 11	5 38	6 00	7 02	49	19 26	49
13	14	04.1		09.0	356	34.3 109		44.7 41	**10 S**	28	5 54	17	23	47	19 06	51
14	29	04.0		08.9	11	04.2 109		40.4 43	**20**	5 44	6 12	36	7 45	45	18 45	53
15	44	03.9		08.7	25	34.2 110		36.1 43	**30**	6 00	30	6 57	8 10	43	20	57
16	59	03.8		08.5	40	04.2 110		31.6 45	**35**	09	41	7 09	25	42	18 06	58
17	74	03.6	+23	08.4	54	34.2 110	+25	27.0 46	**40**	6 18	6 52	7 23	8 42	40	17 49	60
18	89	03.5	+23	08.2	69	04.3 111	+25	22.3 47	**45**	6 28	7 06	7 39	9 03	37	17 29	62
19	104	03.4		08.1	83	34.4 111		17.5 48	**50**	40	21	8 00	29	34	17 03	67
20	119	03.3		07.9	98	04.5 111		12.5 50	**52**	45	29	10	42	32	16 50	69
21	134	03.1		07.7	112	34.7 112		07.5 50	**54**	51	37	20	9 57	30	36	71
22	149	03.0		07.6	127	04.9 112	+25	02.3 52	**56**	6 57	46	33	10 14	27	16 19	74
23	164	02.9		07.4	141	35.2 113	+24	57.0 53	**58**	7 03	7 56	8 47	10 34	23	15 59	78
24	179	02.8	+23	07.2	156	05.5 113	+24	51.6 54	**60 S**	7 11	8 07	9 04	11 00	17	15 34	84

UT	ARIES PMG 5h 26m.9		VENUS Mag: −3.9 PMG: 9h 56m			MARTE Mag: +0.5 PMG: 7h 08m			JÚPITER Mag: −2.5 PMG: 5h 56m			SATURNO Mag: +0.6 PMG: 3h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	278	02.6	211	14.1	+20 18.3	252	59.4	+8 27.3	270	44.8	+1 45.0	310	35.2	−14 24.2
1	293	05.1	226	13.4	18.8	268	00.1	28.0	285	47.0	45.0	325	37.8	24.2
2	308	07.5	241	12.8	19.4	283	00.9	28.6	300	49.3	45.1	340	40.3	24.3
3	323	10.0	256	12.1	19.9	298	01.7	29.2	315	51.5	45.2	355	42.9	24.3
4	338	12.5	271	11.4	20.5	313	02.5	29.9	330	53.8	45.3	10	45.4	24.4
5	353	14.9	286	10.8	+20 21.0	328	03.3	+8 30.5	345	56.0	+1 45.4	25	48.0	−14 24.4
6	8	17.4	301	10.1	+20 21.6	343	04.1	+8 31.2	0	58.3	+1 45.4	40	50.5	−14 24.4
7	23	19.9	316	09.4	22.1	358	04.9	31.8	16	00.5	45.5	55	53.1	24.5
8	38	22.3	331	08.7	22.7	13	05.7	32.4	31	02.8	45.6	70	55.7	24.5
9	53	24.8	346	08.1	23.2	28	06.5	33.1	46	05.1	45.7	85	58.2	24.6
10	68	27.2	1	07.4	23.8	43	07.3	33.7	61	07.3	45.7	101	00.8	24.6
11	83	29.7	16	06.7	+20 24.3	58	08.1	+8 34.3	76	09.6	+1 45.8	116	03.3	−14 24.6
12	98	32.2	31	06.1	+20 24.9	73	08.9	+8 35.0	91	11.8	+1 45.9	131	05.9	−14 24.7
13	113	34.6	46	05.4	25.4	88	09.7	35.6	106	14.1	46.0	146	08.4	24.7
14	128	37.1	61	04.7	26.0	103	10.5	36.3	121	16.3	46.0	161	11.0	24.8
15	143	39.6	76	04.1	26.5	118	11.3	36.9	136	18.6	46.1	176	13.6	24.8
16	158	42.0	91	03.4	27.0	133	12.1	37.5	151	20.9	46.2	191	16.1	24.8
17	173	44.5	106	02.7	+20 27.6	148	12.9	+8 38.2	166	23.1	+1 46.3	206	18.7	−14 24.9
18	188	47.0	121	02.0	+20 28.1	163	13.7	+8 38.8	181	25.4	+1 46.3	221	21.2	−14 24.9
19	203	49.4	136	01.4	28.7	178	14.4	39.5	196	27.6	46.4	236	23.8	25.0
20	218	51.9	151	00.7	29.2	193	15.2	40.1	211	29.9	46.5	251	26.4	25.0
21	233	54.4	166	00.0	29.7	208	16.0	40.7	226	32.2	46.6	266	28.9	25.0
22	248	56.8	180	59.3	30.3	223	16.8	41.4	241	34.4	46.6	281	31.5	25.1
23	263	59.3	195	58.7	30.8	238	17.6	42.0	256	36.7	46.7	296	34.0	25.1
24	279	01.7	210	58.0	+20 31.3	253	18.4	+8 42.6	271	38.9	+1 46.8	311	36.6	−14 25.2
Dif	—			−7	+5		+8	+6		+23	+1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 1^{d}.9		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 03^{m}.9				SD: 14′.7			12^{h}: 54′.2									
					PMG: 14^{h} 03^{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	179	02.8	+23	07.2	156	05.5	+24	51.6		**60 N**	21 25	23 03	** **	4 18	86	23 20	7
1	194	02.6		07.1	170	35.8 113		46.0	56	**58**	21 05	22 18	** **	40	80	23 03	12
2	209	02.5		06.9	185	06.2 114		40.4	56	**56**	20 49	21 50	** **	4 57	77	22 49	15
3	224	02.4		06.7	199	36.6 114		34.6	58	**54**	35	29	23 08	5 13	73	36	19
4	239	02.3		06.6	214	07.1 115		28.7	59	**52**	23	21 11	22 27	26	70	25	21
5	254	02.2	+23	06.4	228	37.6 115	+24	22.7	60	**50**	20 13	20 57	22 01	5 37	69	22 16	23
6	269	02.0	+23	06.2	243	08.2 116	+24	16.6	61	**45**	19 50	20 28	21 17	6 01	64	21 55	28
7	284	01.9		06.1	257	38.8 116		10.4	62	**40**	33	20 05	20 47	20	61	38	31
8	299	01.8		05.9	272	09.4 116	+24	04.1	63	**35**	18	19 48	24	36	59	24	34
9	314	01.7		05.7	286	40.1 117	+23	57.6	65	**30**	19 05	33	20 06	6 49	57	21 12	36
10	329	01.6		05.6	301	10.9 118		51.1	65	**20**	18 44	19 08	19 37	7 13	53	20 51	40
11	344	01.4	+23	05.4	315	41.7 118	+23	44.4	67	**10 N**	18 25	18 48	19 15	7 33	50	20 32	43
12	359	01.3	+23	05.2	330	12.5 118	+23	37.7	67	**0**	18 08	18 30	18 56	7 51	48	20 15	46
13	14	01.2		05.0	344	43.4 119		30.8	69	**10 S**	17 50	18 13	39	8 10	45	19 57	50
14	29	01.1		04.9	359	14.3 119		23.8	70	**20**	32	17 56	24	30	42	38	53
15	44	00.9		04.7	13	45.3 120		16.7	71	**30**	17 11	38	18 07	8 53	38	17	57
16	59	00.8		04.5	28	16.3 120		09.5	72	**35**	16 59	27	17 59	9 07	36	19 04	59
17	74	00.7	+23	04.3	42	47.3 120	+23	02.2	73	**40**	16 45	17 16	17 50	9 22	34	18 49	62
18	89	00.6	+23	04.2	57	18.5 122	+22	54.8	74	**45**	16 29	17 02	17 40	9 40	31	18 31	66
19	104	00.5		04.0	71	49.6 121		47.2	76	**50**	16 08	16 47	28	10 03	26	18 10	69
20	119	00.3		03.8	86	20.8 122		39.6	76	**52**	15 59	39	23	14	24	17 59	72
21	134	00.2		03.6	100	52.1 123		31.9	77	**54**	48	31	17	27	21	47	75
22	149	00.1		03.5	115	23.4 123		24.1	78	**56**	35	22	11	41	18	33	79
23	164	00.0		03.3	129	54.8 124		16.1	80	**58**	21	12	17 05	10 57	15	17 17	83
24	178	59.9	+23	03.1	144	26.2 124	+22	08.1	80	**60 S**	15 04	16 01	16 58	11 17	9	16 58	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.5			Mag: −2.5			Mag: +0.6		
	5^{h} 23^{m}.0		PMG: 9^{h} 57^{m}			PMG: 7^{h} 06^{m}			PMG: 5^{h} 53^{m}			PMG: 3^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	279	01.7	210	58.0	+20 31.3	253	18.4	+8 42.6	271	38.9	+1 46.8	311	36.6	−14 25.2
1	294	04.2	225	57.3	31.9	268	19.2	43.3	286	41.2	46.9	326	39.2	25.2
2	309	06.7	240	56.6	32.4	283	20.0	43.9	301	43.5	46.9	341	41.7	25.2
3	324	09.1	255	56.0	32.9	298	20.8	44.5	316	45.7	47.0	356	44.3	25.3
4	339	11.6	270	55.3	33.5	313	21.6	45.2	331	48.0	47.1	11	46.8	25.3
5	354	14.1	285	54.6	+20 34.0	328	22.4	+8 45.8	346	50.2	+1 47.2	26	49.4	−14 25.4
6	9	16.5	300	53.9	+20 34.5	343	23.2	+8 46.4	1	52.5	+1 47.2	41	52.0	−14 25.4
7	24	19.0	315	53.2	35.1	358	24.0	47.1	16	54.8	47.3	56	54.5	25.4
8	39	21.5	330	52.6	35.6	13	24.8	47.7	31	57.0	47.4	71	57.1	25.5
9	54	23.9	345	51.9	36.1	28	25.6	48.3	46	59.3	47.5	86	59.6	25.5
10	69	26.4	0	51.2	36.6	43	26.4	49.0	62	01.6	47.5	102	02.2	25.6
11	84	28.8	15	50.5	+20 37.2	58	27.2	+8 49.6	77	03.8	+1 47.6	117	04.8	−14 25.6
12	99	31.3	30	49.8	+20 37.7	73	28.0	+8 50.3	92	06.1	+1 47.7	132	07.3	−14 25.7
13	114	33.8	45	49.2	38.2	88	28.8	50.9	107	08.4	47.8	147	09.9	25.7
14	129	36.2	60	48.5	38.7	103	29.6	51.5	122	10.6	47.8	162	12.4	25.7
15	144	38.7	75	47.8	39.2	118	30.4	52.2	137	12.9	47.9	177	15.0	25.8
16	159	41.2	90	47.1	39.8	133	31.2	52.8	152	15.1	48.0	192	17.6	25.8
17	174	43.6	105	46.4	+20 40.3	148	31.9	+8 53.4	167	17.4	+1 48.0	207	20.1	−14 25.9
18	189	46.1	120	45.7	+20 40.8	163	32.7	+8 54.1	182	19.7	+1 48.1	222	22.7	−14 25.9
19	204	48.6	135	45.1	41.3	178	33.5	54.7	197	21.9	48.2	237	25.3	25.9
20	219	51.0	150	44.4	41.8	193	34.3	55.3	212	24.2	48.3	252	27.8	26.0
21	234	53.5	165	43.7	42.3	208	35.1	55.9	227	26.5	48.3	267	30.4	26.0
22	249	56.0	180	43.0	42.9	223	35.9	56.6	242	28.7	48.4	282	32.9	26.1
23	264	58.4	195	42.3	43.4	238	36.7	57.2	257	31.0	48.5	297	35.5	26.1
24	280	00.9	210	41.6	+20 43.9	253	37.5	+8 57.8	272	33.3	+1 48.6	312	38.1	−14 26.1
Dif	—			−7	+5		+8	+6		+23	+1		+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 2.ᵈ9		PHE	4ʰ: 54′.3								
	PMG: 12ʰ 04.ᵐ1				SD: 14′.8			12ʰ: 54′.4								
					PMG: 14ʰ 50ᵐ			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	178	59.9	+23	03.1	144	26.2	+22	08.1	**60 N**	** **	1 06	2 43	5 44	88	23 27	4
1	193	59.7		02.9	158	57.6 124	+22	00.0 81	**58**	** **	1 50	3 03	6 00	83	15	8
2	208	59.6		02.7	173	29.1 125	+21	51.7 83	**56**	** **	2 18	19	14	79	23 04	11
3	223	59.5		02.5	188	00.7 126		43.4 83	**54**	1 00	39	33	26	76	22 55	14
4	238	59.4		02.4	202	32.3 126		35.0 84	**52**	1 41	2 57	45	36	73	46	17
5	253	59.3	+23	02.2	217	04.0 127	+21	26.4 86	**50**	2 07	3 12	3 56	6 46	70	22 39	19
6	268	59.1	+23	02.0	231	35.7 127	+21	17.8 86	**45**	2 51	3 41	4 18	7 05	66	22 23	23
7	283	59.0		01.8	246	07.4 127		09.1 87	**40**	3 21	4 03	35	21	63	22 09	27
8	298	58.9		01.6	260	39.2 128	+21	00.3 88	**35**	3 44	21	4 50	35	59	21 58	30
9	313	58.8		01.4	275	11.1 129	+20	51.3 90	**30**	4 02	4 36	5 03	7 46	57	48	33
10	328	58.7		01.2	289	43.0 129		42.3 90	**20**	31	5 00	25	8 06	52	31	37
11	343	58.6	+23	01.1	304	14.9 129	+20	33.2 91	**10 N**	4 53	5 20	5 43	8 23	49	21 15	41
12	358	58.4	+23	00.9	318	46.9 130	+20	24.0 92	**0**	5 12	5 38	6 00	8 39	45	21 01	45
13	13	58.3		00.7	333	19.0 131		14.8 92	**10 S**	29	5 55	18	8 55	42	20 47	48
14	28	58.2		00.5	347	51.1 131	+20	05.4 94	**20**	5 44	6 12	36	9 12	38	31	52
15	43	58.1		00.3	2	23.2 131	+19	55.9 95	**30**	6 01	30	6 57	31	35	14	56
16	58	58.0	+23	00.1	16	55.4 132		46.3 96	**35**	09	41	7 09	43	31	20 03	59
17	73	57.8	+22	59.9	31	27.6 132	+19	36.7 96	**40**	6 18	6 52	7 23	9 56	28	19 51	63
18	88	57.7	+22	59.7	45	59.9 133	+19	27.0 97	**45**	6 28	7 05	7 39	10 11	25	19 37	66
19	103	57.6		59.5	60	32.3 134		17.1 99	**50**	40	21	7 59	29	21	19	72
20	118	57.5		59.3	75	04.6 133	+19	07.2 99	**52**	45	28	8 09	38	19	11	74
21	133	57.4		59.1	89	37.1 135	+18	57.2 100	**54**	50	36	20	48	16	19 02	76
22	148	57.3		58.9	104	09.5 134		47.1 101	**56**	6 56	45	32	10 59	13	18 52	79
23	163	57.1		58.7	118	42.1 136		37.0 101	**58**	7 03	7 55	8 46	11 12	9	40	83
24	178	57.0	+22	58.5	133	14.6 135	+18	26.7 103	**60 S**	7 10	8 06	9 03	11 26	5	18 26	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.4			Mag: −2.5			Mag: +0.6		
	5ʰ 19.ᵐ1		PMG: 9ʰ 58ᵐ			PMG: 7ʰ 05ᵐ			PMG: 5ʰ 49ᵐ			PMG: 3ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	280	00.9	210	41.6	+20 43.9	253	37.5	+8 57.8	272	33.3	+1 48.6	312	38.1	−14 26.1
1	295	03.3	225	41.0	44.4	268	38.3	58.5	287	35.5	48.6	327	40.6	26.2
2	310	05.8	240	40.3	44.9	283	39.1	59.1	302	37.8	48.7	342	43.2	26.2
3	325	08.3	255	39.6	45.4	298	39.9	+8 59.7	317	40.1	48.8	357	45.8	26.3
4	340	10.7	270	38.9	45.9	313	40.7	+9 00.4	332	42.3	48.8	12	48.3	26.3
5	355	13.2	285	38.2	+20 46.4	328	41.5	+9 01.0	347	44.6	+1 48.9	27	50.9	−14 26.4
6	10	15.7	300	37.5	+20 46.9	343	42.3	+9 01.6	2	46.9	+1 49.0	42	53.5	−14 26.4
7	25	18.1	315	36.8	47.4	358	43.1	02.3	17	49.2	49.1	57	56.0	26.4
8	40	20.6	330	36.1	47.9	13	43.9	02.9	32	51.4	49.1	72	58.6	26.5
9	55	23.1	345	35.4	48.4	28	44.7	03.5	47	53.7	49.2	88	01.1	26.5
10	70	25.5	0	34.8	48.9	43	45.5	04.1	62	56.0	49.3	103	03.7	26.6
11	85	28.0	15	34.1	+20 49.4	58	46.3	+9 04.8	77	58.2	+1 49.3	118	06.3	−14 26.6
12	100	30.5	30	33.4	+20 49.9	73	47.1	+9 05.4	93	00.5	+1 49.4	133	08.8	−14 26.7
13	115	32.9	45	32.7	50.4	88	47.9	06.0	108	02.8	49.5	148	11.4	26.7
14	130	35.4	60	32.0	50.9	103	48.7	06.7	123	05.0	49.5	163	14.0	26.7
15	145	37.8	75	31.3	51.4	118	49.5	07.3	138	07.3	49.6	178	16.5	26.8
16	160	40.3	90	30.6	51.9	133	50.3	07.9	153	09.6	49.7	193	19.1	26.8
17	175	42.8	105	29.9	+20 52.4	148	51.1	+9 08.5	168	11.9	+1 49.8	208	21.7	−14 26.9
18	190	45.2	120	29.2	+20 52.9	163	51.9	+9 09.2	183	14.1	+1 49.8	223	24.2	−14 26.9
19	205	47.7	135	28.5	53.4	178	52.7	09.8	198	16.4	49.9	238	26.8	26.9
20	220	50.2	150	27.8	53.9	193	53.5	10.4	213	18.7	50.0	253	29.4	27.0
21	235	52.6	165	27.1	54.4	208	54.3	11.1	228	20.9	50.0	268	31.9	27.0
22	250	55.1	180	26.4	54.9	223	55.1	11.7	243	23.2	50.1	283	34.5	27.1
23	265	57.6	195	25.7	55.4	238	55.9	12.3	258	25.5	50.2	298	37.1	27.1
24	281	00.0	210	25.0	+20 55.9	253	56.6	+9 12.9	273	27.8	+1 50.2	313	39.6	−14 27.2
Dif	—			−7	+5		+8	+6		+23	+1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 3^{d}.9		PHE	4^{h}: 54′.7								
	PMG: 12^{h} 04^{m}.3				SD: 14′.9			12^{h}: 54′.8								
					PMG: 15^{h} 35^{m}			20^{h}: 55′.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	57.0	+22	58.5	133	14.6	+18	26.7	**60 N**	21 23	22 58	** **	7 12	86	23 31	3
1	193	56.9		58.3	147	47.2 136		16.4 103	**58**	21 04	22 16	** **	23	83	23	6
2	208	56.8		58.1	162	19.9 137	+18	06.0 104	**56**	20 48	21 48	** **	33	79	15	9
3	223	56.7		57.9	176	52.6 137	+17	55.5 105	**54**	34	27	23 04	42	76	09	11
4	238	56.6		57.7	191	25.3 137		44.9 106	**52**	22	21 10	22 25	49	74	23 03	14
5	253	56.4	+22	57.5	205	58.1 138	+17	34.2 107	**50**	20 12	20 56	21 59	7 56	72	22 58	16
6	268	56.3	+22	57.3	220	30.9 138	+17	23.5 107	**45**	19 50	20 27	21 16	8 11	67	22 46	20
7	283	56.2		57.1	235	03.8 139		12.7 108	**40**	32	20 05	20 46	24	62	36	24
8	298	56.1		56.9	249	36.7 139	+17	01.8 109	**35**	18	19 47	24	34	59	28	27
9	313	56.0		56.7	264	09.7 140	+16	50.8 110	**30**	19 05	32	20 06	43	56	21	30
10	328	55.9		56.5	278	42.7 140		39.8 110	**20**	18 44	19 08	19 37	8 58	52	22 08	35
11	343	55.8	+22	56.3	293	15.7 140	+16	28.6 112	**10 N**	18 25	18 48	19 15	9 12	48	21 56	40
12	358	55.6	+22	56.1	307	48.8 141	+16	17.4 112	**0**	18 08	18 30	18 57	9 24	44	21 46	43
13	13	55.5		55.9	322	21.9 141	+16	06.2 112	**10 S**	17 51	18 14	40	37	40	35	47
14	28	55.4		55.7	336	55.0 141	+15	54.8 114	**20**	33	17 57	24	9 50	36	23	52
15	43	55.3		55.5	351	28.2 142		43.4 114	**30**	12	38	08	10 06	31	10	57
16	58	55.2		55.3	6	01.5 143		31.9 115	**35**	17 00	28	18 00	14	29	21 02	60
17	73	55.1	+22	55.1	20	34.7 142	+15	20.3 116	**40**	16 46	17 17	17 51	10 24	26	20 54	62
18	88	55.0	+22	54.9	35	08.0 143	+15	08.7 116	**45**	16 30	17 04	17 41	10 36	22	20 43	67
19	103	54.8		54.7	49	41.4 144	+14	57.0 117	**50**	10	16 48	29	50	17	31	71
20	118	54.7		54.4	64	14.7 143		45.2 118	**52**	16 00	41	24	10 57	15	25	73
21	133	54.6		54.2	78	48.1 144		33.4 118	**54**	15 49	33	19	11 04	12	18	76
22	148	54.5		54.0	93	21.6 145		21.5 119	**56**	37	24	13	12	10	11	79
23	163	54.4		53.8	107	55.1 145	+14	09.5 120	**58**	23	14	17 06	21	7	20 03	82
24	178	54.3	+22	53.6	122	28.6 145	+13	57.4 121	**60 S**	15 06	16 03	16 59	11 31	3	19 53	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.4			Mag: −2.5			Mag: +0.6		
	5^{h} 15^{m}.1		PMG: 9^{h} 59^{m}			PMG: 7^{h} 04^{m}			PMG: 5^{h} 45^{m}			PMG: 3^{h} 05^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	281	00.0	210	25.0	+20 55.9	253	56.6	+9 12.9	273	27.8	+1 50.2	313	39.6	−14 27.2
1	296	02.5	225	24.4	56.4	268	57.4	13.6	288	30.0	50.3	328	42.2	27.2
2	311	05.0	240	23.7	56.8	283	58.2	14.2	303	32.3	50.4	343	44.8	27.2
3	326	07.4	255	23.0	57.3	298	59.0	14.8	318	34.6	50.4	358	47.3	27.3
4	341	09.9	270	22.3	57.8	313	59.8	15.4	333	36.9	50.5	13	49.9	27.3
5	356	12.3	285	21.6	+20 58.3	329	00.6	+9 16.1	348	39.1	+1 50.6	28	52.5	−14 27.4
6	11	14.8	300	20.9	+20 58.8	344	01.4	+9 16.7	3	41.4	+1 50.6	43	55.0	−14 27.4
7	26	17.3	315	20.2	59.3	359	02.2	17.3	18	43.7	50.7	58	57.6	27.5
8	41	19.7	330	19.5	+20 59.8	14	03.0	18.0	33	46.0	50.8	74	00.2	27.5
9	56	22.2	345	18.8	+21 00.2	29	03.8	18.6	48	48.2	50.9	89	02.7	27.5
10	71	24.7	0	18.1	00.7	44	04.6	19.2	63	50.5	50.9	104	05.3	27.6
11	86	27.1	15	17.4	+21 01.2	59	05.4	+9 19.8	78	52.8	+1 51.0	119	07.9	−14 27.6
12	101	29.6	30	16.7	+21 01.7	74	06.2	+9 20.5	93	55.1	+1 51.1	134	10.4	−14 27.7
13	116	32.1	45	16.0	02.1	89	07.0	21.1	108	57.4	51.1	149	13.0	27.7
14	131	34.5	60	15.3	02.6	104	07.8	21.7	123	59.6	51.2	164	15.6	27.8
15	146	37.0	75	14.6	03.1	119	08.6	22.3	139	01.9	51.3	179	18.1	27.8
16	161	39.4	90	13.9	03.6	134	09.4	22.9	154	04.2	51.3	194	20.7	27.9
17	176	41.9	105	13.2	+21 04.0	149	10.2	+9 23.6	169	06.5	+1 51.4	209	23.3	−14 27.9
18	191	44.4	120	12.5	+21 04.5	164	11.0	+9 24.2	184	08.7	+1 51.5	224	25.8	−14 27.9
19	206	46.8	135	11.7	05.0	179	11.8	24.8	199	11.0	51.5	239	28.4	28.0
20	221	49.3	150	11.0	05.5	194	12.6	25.4	214	13.3	51.6	254	31.0	28.0
21	236	51.8	165	10.3	05.9	209	13.4	26.1	229	15.6	51.7	269	33.6	28.1
22	251	54.2	180	09.6	06.4	224	14.2	26.7	244	17.9	51.7	284	36.1	28.1
23	266	56.7	195	08.9	06.9	239	15.0	27.3	259	20.1	51.8	299	38.7	28.2
24	281	59.2	210	08.2	+21 07.3	254	15.8	+9 27.9	274	22.4	+1 51.9	314	41.3	−14 28.2
Dif	—			−7	+5		+8	+6		+23	+1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 4ᵈ.9		PHE	4ʰ: 55′.1									
	PMG: 12ʰ 04ᵐ.5				SD: 15′.0			12ʰ: 55′.3									
					PMG: 16ʰ 19ᵐ			20ʰ: 55′.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	54.3	+22	53.6	122	28.6	+13	57.4		**60 N**	** **	1 11	2 46	8 38	86	23 34	1
1	193	54.2		53.4	137	02.1 145		45.3	121	**58**	** **	1 53	3 05	46	82	29	5
2	208	54.0		53.2	151	35.7 146		33.2	121	**56**	** **	2 21	21	52	79	24	8
3	223	53.9		52.9	166	09.2 145		20.9	123	**54**	1 05	42	35	8 58	76	20	11
4	238	53.8		52.7	180	42.9 147	+13	08.6	123	**52**	1 44	2 59	47	9 03	74	17	12
5	253	53.7	+22	52.5	195	16.5 146	+12	56.3	123	**50**	2 10	3 13	3 57	9 08	71	23 14	14
6	268	53.6	+22	52.3	209	50.2 147	+12	43.8	125	**45**	2 53	3 42	4 19	9 18	67	23 06	20
7	283	53.5		52.1	224	23.9 147		31.3	125	**40**	3 23	4 04	36	26	63	23 00	23
8	298	53.4		51.9	238	57.6 147		18.8	125	**35**	3 45	22	4 51	33	60	22 55	26
9	313	53.3		51.6	253	31.4 148	+12	06.2	126	**30**	4 03	4 36	5 04	39	57	51	29
10	328	53.1		51.4	268	05.2 148	+11	53.5	127	**20**	32	5 01	25	9 50	52	43	34
11	343	53.0	+22	51.2	282	39.0 148	+11	40.8	127	**10 N**	4 54	5 21	5 44	10 00	47	22 36	38
12	358	52.9	+22	51.0	297	12.8 148	+11	28.0	128	**0**	5 12	5 38	6 01	10 08	43	22 29	43
13	13	52.8		50.7	311	46.6 148		15.2	128	**10 S**	29	5 55	18	17	39	22	47
14	28	52.7		50.5	326	20.5 149	+11	02.3	129	**20**	5 45	6 12	36	26	35	15	51
15	43	52.6		50.3	340	54.4 149	+10	49.4	129	**30**	6 01	30	6 57	37	29	07	56
16	58	52.5		50.1	355	28.3 149		36.4	130	**35**	09	41	7 09	43	27	22 02	59
17	73	52.4	+22	49.8	10	02.2 149	+10	23.3	131	**40**	6 18	6 52	7 22	10 50	23	21 56	63
18	88	52.3	+22	49.6	24	36.2 150	+10	10.2	131	**45**	6 28	7 05	7 39	10 58	19	21 50	67
19	103	52.1		49.4	39	10.1 149	+9	57.0	132	**50**	39	21	7 59	11 07	15	42	72
20	118	52.0		49.2	53	44.1 150		43.8	132	**52**	44	28	8 08	12	13	38	75
21	133	51.9		48.9	68	18.1 150		30.6	132	**54**	50	36	19	16	11	34	77
22	148	51.8		48.7	82	52.1 150		17.3	133	**56**	6 56	44	31	22	8	30	80
23	163	51.7		48.5	97	26.1 150	+9	03.9	134	**58**	7 02	7 54	8 45	28	5	25	83
24	178	51.6	+22	48.2	112	00.1 150	+8	50.5	134	**60 S**	7 09	8 05	9 02	11 34	2	21 20	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: +0.4			Mag: −2.5			Mag: +0.6		
	5ʰ 11ᵐ.2		PMG: 10ʰ 00ᵐ			PMG: 7ʰ 03ᵐ			PMG: 5ʰ 42ᵐ			PMG: 3ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	281	59.2	210	08.2	+21 07.3	254	15.8	+9 27.9	274	22.4	+1 51.9	314	41.3	−14 28.2
1	297	01.6	225	07.5	07.8	269	16.6	28.6	289	24.7	51.9	329	43.8	28.2
2	312	04.1	240	06.8	08.3	284	17.4	29.2	304	27.0	52.0	344	46.4	28.3
3	327	06.6	255	06.1	08.7	299	18.2	29.8	319	29.3	52.1	359	49.0	28.3
4	342	09.0	270	05.4	09.2	314	19.0	30.4	334	31.5	52.1	14	51.5	28.4
5	357	11.5	285	04.7	+21 09.6	329	19.8	+9 31.0	349	33.8	+1 52.2	29	54.1	−14 28.4
6	12	13.9	300	04.0	+21 10.1	344	20.6	+9 31.7	4	36.1	+1 52.2	44	56.7	−14 28.5
7	27	16.4	315	03.3	10.6	359	21.4	32.3	19	38.4	52.3	59	59.3	28.5
8	42	18.9	330	02.6	11.0	14	22.2	32.9	34	40.7	52.4	75	01.8	28.6
9	57	21.3	345	01.9	11.5	29	23.0	33.5	49	43.0	52.4	90	04.4	28.6
10	72	23.8	0	01.1	11.9	44	23.8	34.1	64	45.2	52.5	105	07.0	28.6
11	87	26.3	15	00.4	+21 12.4	59	24.6	+9 34.8	79	47.5	+1 52.6	120	09.5	−14 28.7
12	102	28.7	29	59.7	+21 12.8	74	25.4	+9 35.4	94	49.8	+1 52.6	135	12.1	−14 28.7
13	117	31.2	44	59.0	13.3	89	26.2	36.0	109	52.1	52.7	150	14.7	28.8
14	132	33.7	59	58.3	13.7	104	27.0	36.6	124	54.4	52.8	165	17.3	28.8
15	147	36.1	74	57.6	14.2	119	27.8	37.2	139	56.7	52.8	180	19.8	28.9
16	162	38.6	89	56.9	14.6	134	28.6	37.9	154	58.9	52.9	195	22.4	28.9
17	177	41.1	104	56.2	+21 15.1	149	29.4	+9 38.5	170	01.2	+1 53.0	210	25.0	−14 29.0
18	192	43.5	119	55.4	+21 15.5	164	30.2	+9 39.1	185	03.5	+1 53.0	225	27.5	−14 29.0
19	207	46.0	134	54.7	16.0	179	31.0	39.7	200	05.8	53.1	240	30.1	29.0
20	222	48.4	149	54.0	16.4	194	31.8	40.3	215	08.1	53.1	255	32.7	29.1
21	237	50.9	164	53.3	16.9	209	32.6	41.0	230	10.4	53.2	270	35.3	29.1
22	252	53.4	179	52.6	17.3	224	33.4	41.6	245	12.7	53.3	285	37.8	29.2
23	267	55.8	194	51.9	17.8	239	34.2	42.2	260	14.9	53.3	300	40.4	29.2
24	282	58.3	209	51.2	+21 18.2	254	35.0	+9 42.8	275	17.2	+1 53.4	315	43.0	−14 29.3
Dif	—			−7	+5		+8	+6		+23	+1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7		Edad: 5ᵈ.9		PHE	4ʰ: 55′.7								
	PMG: 12ʰ 04ᵐ.6		SD: 15′.1			12ʰ: 55′.9								
			PMG: 17ʰ 01ᵐ			20ʰ: 56′.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 51.6	+22 48.2	112 00.1		+8 50.5		**60 N**	21 21	22 53	** **	10 04	87	23 35	2
1	193 51.5	48.0	126 34.1	150	37.0	135	**58**	21 02	22 13	** **	08	83	34	4
2	208 51.4	47.8	141 08.2	151	23.5	135	**56**	20 47	21 46	** **	11	81	32	7
3	223 51.3	47.5	155 42.2	150	+8 10.0	135	**54**	33	26	22 59	14	78	31	10
4	238 51.2	47.3	170 16.3	151	+7 56.4	136	**52**	21	21 09	22 22	17	75	29	13
5	253 51.1	+22 47.1	184 50.3	150	+7 42.8	136	**50**	20 11	20 55	21 57	10 19	73	23 28	14
6	268 50.9	+22 46.8	199 24.4	151	+7 29.1	137	**45**	19 49	20 26	21 15	10 25	67	23 26	18
7	283 50.8	46.6	213 58.4	150	15.4	137	**40**	32	20 05	20 46	29	64	23	23
8	298 50.7	46.4	228 32.5	151	+7 01.6	138	**35**	18	19 47	23	33	60	21	27
9	313 50.6	46.1	243 06.6	151	+6 47.8	138	**30**	19 05	32	20 05	36	57	20	29
10	328 50.5	45.9	257 40.7	151	33.9	139	**20**	18 44	19 08	19 37	42	52	17	34
11	343 50.4	+22 45.7	272 14.7	150	+6 20.0	139	**10 N**	18 25	18 48	19 15	10 47	47	23 14	39
12	358 50.3	+22 45.4	286 48.8	151	+6 06.1	139	**0**	18 08	18 31	18 57	10 51	43	23 12	43
13	13 50.2	45.2	301 22.9	151	+5 52.1	140	**10 S**	17 51	18 14	40	10 56	39	09	48
14	28 50.1	44.9	315 56.9	150	38.1	140	**20**	33	17 57	25	11 01	34	06	53
15	43 50.0	44.7	330 31.0	151	24.1	140	**30**	13	39	09	06	29	03	58
16	58 49.9	44.5	345 05.0	150	+5 10.0	141	**35**	17 01	29	18 01	10	26	23 01	61
17	73 49.8	+22 44.2	359 39.1	151	+4 55.9	141	**40**	16 47	17 18	17 52	11 13	23	22 59	65
18	88 49.6	+22 44.0	14 13.1	150	+4 41.8	141	**45**	16 31	17 05	17 42	11 17	19	22 57	69
19	103 49.5	43.7	28 47.2	151	27.6	142	**50**	11	16 49	30	22	15	54	74
20	118 49.4	43.5	43 21.2	150	+4 13.4	142	**52**	16 02	42	25	25	12	53	76
21	133 49.3	43.2	57 55.2	150	+3 59.1	143	**54**	15 51	34	20	27	10	51	79
22	148 49.2	43.0	72 29.2	150	44.9	142	**56**	39	26	14	30	7	50	81
23	163 49.1	42.7	87 03.2	150	30.6	143	**58**	25	16	08	33	5	48	84
24	178 49.0	+22 42.5	101 37.1	149	+3 16.2	144	**60 S**	15 09	16 05	17 01	11 36	2	22 46	87

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.8		Mag: +0.4		Mag: −2.5		Mag: +0.5	
	5ʰ 07ᵐ.3	PMG: 10ʰ 01ᵐ		PMG: 7ʰ 01ᵐ		PMG: 5ʰ 38ᵐ		PMG: 2ʰ 57ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	282 58.3	209 51.2	+21 18.2	254 35.0	+9 42.8	275 17.2	+1 53.4	315 43.0	−14 29.3
1	298 00.8	224 50.4	18.7	269 35.8	43.4	290 19.5	53.5	330 45.6	29.3
2	313 03.2	239 49.7	19.1	284 36.6	44.0	305 21.8	53.5	345 48.1	29.4
3	328 05.7	254 49.0	19.5	299 37.4	44.7	320 24.1	53.6	0 50.7	29.4
4	343 08.2	269 48.3	20.0	314 38.2	45.3	335 26.4	53.7	15 53.3	29.4
5	358 10.6	284 47.6	+21 20.4	329 39.0	+9 45.9	350 28.7	+1 53.7	30 55.8	−14 29.5
6	13 13.1	299 46.9	+21 20.9	344 39.8	+9 46.5	5 31.0	+1 53.8	45 58.4	−14 29.5
7	28 15.5	314 46.1	21.3	359 40.6	47.1	20 33.2	53.8	61 01.0	29.6
8	43 18.0	329 45.4	21.7	14 41.4	47.7	35 35.5	53.9	76 03.6	29.6
9	58 20.5	344 44.7	22.2	29 42.2	48.4	50 37.8	54.0	91 06.1	29.7
10	73 22.9	359 44.0	22.6	44 43.0	49.0	65 40.1	54.0	106 08.7	29.7
11	88 25.4	14 43.3	+21 23.0	59 43.8	+9 49.6	80 42.4	+1 54.1	121 11.3	−14 29.8
12	103 27.9	29 42.5	+21 23.5	74 44.6	+9 50.2	95 44.7	+1 54.1	136 13.9	−14 29.8
13	118 30.3	44 41.8	23.9	89 45.4	50.8	110 47.0	54.2	151 16.4	29.9
14	133 32.8	59 41.1	24.3	104 46.2	51.4	125 49.3	54.3	166 19.0	29.9
15	148 35.3	74 40.4	24.7	119 47.0	52.0	140 51.6	54.3	181 21.6	29.9
16	163 37.7	89 39.7	25.2	134 47.8	52.7	155 53.9	54.4	196 24.2	30.0
17	178 40.2	104 38.9	+21 25.6	149 48.6	+9 53.3	170 56.2	+1 54.5	211 26.7	−14 30.0
18	193 42.7	119 38.2	+21 26.0	164 49.4	+9 53.9	185 58.4	+1 54.5	226 29.3	−14 30.1
19	208 45.1	134 37.5	26.4	179 50.2	54.5	201 00.7	54.6	241 31.9	30.1
20	223 47.6	149 36.8	26.9	194 51.0	55.1	216 03.0	54.6	256 34.5	30.2
21	238 50.0	164 36.1	27.3	209 51.8	55.7	231 05.3	54.7	271 37.0	30.2
22	253 52.5	179 35.3	27.7	224 52.6	56.3	246 07.6	54.8	286 39.6	30.3
23	268 55.0	194 34.6	28.1	239 53.4	57.0	261 09.9	54.8	301 42.2	30.3
24	283 57.4	209 33.9	+21 28.5	254 54.2	+9 57.6	276 12.2	+1 54.9	316 44.8	−14 30.4
Dif	—	−7	+4	+8	+6	+23	+1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 6ᵈ.9		PHE	4ʰ: 56′.4									
	PMG: 12ʰ 04ᵐ.8				SD: 15′.3			12ʰ: 56′.7									
					PMG: 17ʰ 45ᵐ			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	178	49.0	+22	42.5	101	37.1	+3	16.2		**60 N**	** **	1 17	2 48	11 31	90	23 37	2
1	193	48.9		42.3	116	11.1 150	+3	01.9	143	**58**	** **	1 57	3 07	31	86	38	5
2	208	48.8		42.0	130	45.0 149	+2	47.5	144	**56**	** **	2 23	23	32	82	39	9
3	223	48.7		41.8	145	18.9 149		33.1	144	**54**	1 10	2 44	37	32	80	41	10
4	238	48.6		41.5	159	52.8 149		18.6	145	**52**	1 47	3 01	48	32	77	42	13
5	253	48.5	+22	41.3	174	26.7 149	+2	04.1	145	**50**	2 12	3 15	3 59	11 32	75	23 42	16
6	268	48.4	+22	41.0	189	00.5 148	+1	49.6	145	**45**	2 55	3 43	4 20	11 32	70	23 44	21
7	283	48.3		40.7	203	34.3 148		35.1	145	**40**	3 24	4 05	38	33	65	46	24
8	298	48.2		40.5	218	08.1 148		20.6	145	**35**	3 46	23	4 52	33	62	48	27
9	313	48.1		40.2	232	41.9 148	+1	06.0	146	**30**	4 04	4 37	5 05	33	59	49	31
10	328	48.0		40.0	247	15.6 147	+0	51.4	146	**20**	32	5 01	26	34	53	51	36
11	343	47.9	+22	39.7	261	49.4 148	+0	36.8	146	**10 N**	4 54	5 21	5 44	11 34	49	23 53	41
12	358	47.8	+22	39.5	276	23.0 146	+0	22.2	146	**0**	5 13	5 39	6 01	11 34	44	23 55	45
13	13	47.6		39.2	290	56.7 147	+0	07.6	146	**10 S**	29	5 55	18	35	39	57	50
14	28	47.5		39.0	305	30.3 146	−0	07.1	147	**20**	5 45	6 12	36	35	35	23 59	55
15	43	47.4		38.7	320	03.9 146		21.8	147	**30**	6 00	30	6 56	35	30	** **	**
16	58	47.3		38.4	334	37.5 146		36.5	147	**35**	09	40	7 08	36	27	** **	**
17	73	47.2	+22	38.2	349	11.0 145	−0	51.2	147	**40**	6 18	6 52	7 22	11 36	23	** **	**
18	88	47.1	+22	37.9	3	44.5 145	−1	05.9	147	**45**	6 28	7 05	7 38	11 36	20	** **	**
19	103	47.0		37.7	18	17.9 144		20.6	147	**50**	39	20	7 58	37	15	** **	**
20	118	46.9		37.4	32	51.3 144		35.4	148	**52**	44	27	8 07	37	13	** **	**
21	133	46.8		37.1	47	24.6 143	−1	50.1	147	**54**	49	35	18	37	11	** **	**
22	148	46.7		36.9	61	58.0 144	−2	04.9	148	**56**	6 55	43	30	37	8	** **	**
23	163	46.6		36.6	76	31.2 142		19.7	148	**58**	7 01	7 53	8 44	38	5	** **	**
24	178	46.5	+22	36.4	91	04.5 143	−2	34.4	147	**60 S**	7 08	8 04	9 00	11 38	2	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.5			Mag: +0.5		
	5ʰ 03ᵐ.3		PMG: 10ʰ 02ᵐ			PMG: 7ʰ 00ᵐ			PMG: 5ʰ 34ᵐ			PMG: 2ʰ 53ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	283	57.4	209	33.9	+21 28.5	254	54.2	+9 57.6	276	12.2	+1 54.9	316	44.8	−14 30.4
1	298	59.9	224	33.2	29.0	269	55.0	58.2	291	14.5	54.9	331	47.4	30.4
2	314	02.4	239	32.4	29.4	284	55.8	58.8	306	16.8	55.0	346	49.9	30.4
3	329	04.8	254	31.7	29.8	299	56.6	+9 59.4	321	19.1	55.1	1	52.5	30.5
4	344	07.3	269	31.0	30.2	314	57.4	+10 00.0	336	21.4	55.1	16	55.1	30.5
5	359	09.8	284	30.3	+21 30.6	329	58.2	+10 00.6	351	23.7	+1 55.2	31	57.7	−14 30.6
6	14	12.2	299	29.5	+21 31.0	344	59.0	+10 01.2	6	26.0	+1 55.2	47	00.2	−14 30.6
7	29	14.7	314	28.8	31.4	359	59.9	01.8	21	28.3	55.3	62	02.8	30.7
8	44	17.1	329	28.1	31.9	15	00.7	02.5	36	30.6	55.4	77	05.4	30.7
9	59	19.6	344	27.3	32.3	30	01.5	03.1	51	32.9	55.4	92	08.0	30.8
10	74	22.1	359	26.6	32.7	45	02.3	03.7	66	35.2	55.5	107	10.5	30.8
11	89	24.5	14	25.9	+21 33.1	60	03.1	+10 04.3	81	37.5	+1 55.5	122	13.1	−14 30.9
12	104	27.0	29	25.2	+21 33.5	75	03.9	+10 04.9	96	39.8	+1 55.6	137	15.7	−14 30.9
13	119	29.5	44	24.4	33.9	90	04.7	05.5	111	42.0	55.6	152	18.3	31.0
14	134	31.9	59	23.7	34.3	105	05.5	06.1	126	44.3	55.7	167	20.9	31.0
15	149	34.4	74	23.0	34.7	120	06.3	06.7	141	46.6	55.8	182	23.4	31.0
16	164	36.9	89	22.2	35.1	135	07.1	07.3	156	48.9	55.8	197	26.0	31.1
17	179	39.3	104	21.5	+21 35.5	150	07.9	+10 08.0	171	51.2	+1 55.9	212	28.6	−14 31.1
18	194	41.8	119	20.8	+21 35.9	165	08.7	+10 08.6	186	53.5	+1 55.9	227	31.2	−14 31.2
19	209	44.3	134	20.0	36.3	180	09.5	09.2	201	55.8	56.0	242	33.7	31.2
20	224	46.7	149	19.3	36.7	195	10.3	09.8	216	58.1	56.1	257	36.3	31.3
21	239	49.2	164	18.6	37.1	210	11.1	10.4	232	00.4	56.1	272	38.9	31.3
22	254	51.6	179	17.8	37.5	225	11.9	11.0	247	02.7	56.2	287	41.5	31.4
23	269	54.1	194	17.1	37.9	240	12.7	11.6	262	05.0	56.2	302	44.1	31.4
24	284	56.6	209	16.4	+21 38.3	255	13.5	+10 12.2	277	07.3	+1 56.3	317	46.6	−14 31.5
Dif	—			−7	+4		+8	+6		+23	+1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 7^{d}.9		PHE	4^{h}: 57′.2									
	PMG: 12^{h} 05^{m}.0				SD: 15′.5			12^{h}: 57′.5									
					PMG: 18^{h} 29^{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	178	46.5	+22	36.4	91	04.5	−2	34.4		**60 N**	21 19	22 48	** **	13 01	94	23 39	3
1	193	46.4		36.1	105	37.6^{141}	−2	49.2^{148}		**58**	21 00	22 10	** **	12 57	91	43	7
2	208	46.3		35.8	120	10.8^{142}	−3	04.0^{148}		**56**	20 45	21 44	** **	54	88	48	10
3	223	46.2		35.6	134	43.8^{140}		18.8^{148}		**54**	32	24	22 55	52	84	51	13
4	238	46.1		35.3	149	16.9^{141}		33.6^{148}		**52**	20	21 07	22 20	49	82	55	15
5	253	46.0	+22	35.0	163	49.8^{139}	−3	48.4^{148}		**50**	20 10	20 53	21 55	12 47	79	23 58	18
6	268	45.9	+22	34.8	178	22.8^{140}	−4	03.2^{148}		**45**	19 49	20 25	21 13	12 42	74	** **	**
7	283	45.8		34.5	192	55.6^{138}		18.0^{148}		**40**	32	20 04	20 45	38	69	** **	**
8	298	45.7		34.2	207	28.4^{138}		32.8^{148}		**35**	17	19 46	23	35	65	** **	**
9	313	45.6		34.0	222	01.2^{138}	−4	47.6^{148}		**30**	19 05	32	20 05	32	62	** **	**
10	328	45.5		33.7	236	33.9^{137}	−5	02.5^{149}		**20**	18 44	19 08	19 37	27	56	** **	**
11	343	45.4	+22	33.4	251	06.5^{136}	−5	17.3^{148}		**10 N**	18 25	18 48	19 15	12 23	51	** **	**
12	358	45.3	+22	33.1	265	39.1^{136}	−5	32.0^{147}		**0**	18 09	18 31	18 57	12 18	47	** **	**
13	13	45.2		32.9	280	11.6^{135}	−5	46.8^{148}		**10 S**	17 52	18 15	41	14	43	** **	**
14	28	45.1		32.6	294	44.0^{134}	−6	01.6^{148}		**20**	34	17 58	25	10	38	** **	**
15	43	45.0		32.3	309	16.4^{134}		16.4^{148}		**30**	14	40	10	05	33	0 01	60
16	58	44.9		32.0	323	48.7^{133}		31.1^{147}		**35**	17 02	30	18 01	12 03	29	02	64
17	73	44.8	+22	31.8	338	21.0^{133}	−6	45.9^{148}		**40**	16 49	17 19	17 53	11 59	26	0 04	67
18	88	44.7	+22	31.5	352	53.1^{131}	−7	00.6^{147}		**45**	16 33	17 06	17 43	11 56	21	0 06	71
19	103	44.6		31.2	7	25.2^{131}		15.4^{148}		**50**	13	16 51	32	52	16	08	76
20	118	44.5		30.9	21	57.3^{131}		30.1^{147}		**52**	16 04	44	27	50	14	09	78
21	133	44.4		30.7	36	29.2^{129}		44.8^{147}		**54**	15 53	36	22	48	11	10	81
22	148	44.3		30.4	51	01.1^{129}	−7	59.5^{147}		**56**	41	28	16	45	9	11	84
23	163	44.2		30.1	65	32.9^{128}	−8	14.1^{146}		**58**	28	18	10	43	6	12	88
24	178	44.1	+22	29.8	80	04.6^{127}	−8	28.8^{147}		**60 S**	15 11	16 07	17 03	11 40	2	0 13	92

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.5			Mag: +0.5		
	4^{h} 59^{m}.4		PMG: 10^{h} 03^{m}			PMG: 6^{h} 59^{m}			PMG: 5^{h} 31^{m}			PMG: 2^{h} 48^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	284	56.6	209	16.4	+21 38.3	255	13.5	+10 12.2	277	07.3	+1 56.3	317	46.6	−14 31.5
1	299	59.0	224	15.7	38.7	270	14.3	12.8	292	09.6	56.3	332	49.2	31.5
2	315	01.5	239	14.9	39.1	285	15.1	13.4	307	11.9	56.4	347	51.8	31.6
3	330	04.0	254	14.2	39.5	300	15.9	14.0	322	14.2	56.5	2	54.4	31.6
4	345	06.4	269	13.4	39.9	315	16.7	14.6	337	16.5	56.5	17	57.0	31.7
5	0	08.9	284	12.7	+21 40.3	330	17.5	+10 15.2	352	18.8	+1 56.6	32	59.5	−14 31.7
6	15	11.4	299	12.0	+21 40.6	345	18.3	+10 15.9	7	21.1	+1 56.6	48	02.1	−14 31.7
7	30	13.8	314	11.2	41.0	0	19.1	16.5	22	23.4	56.7	63	04.7	31.8
8	45	16.3	329	10.5	41.4	15	19.9	17.1	37	25.8	56.7	78	07.3	31.8
9	60	18.8	344	09.8	41.8	30	20.7	17.7	52	28.1	56.8	93	09.9	31.9
10	75	21.2	359	09.0	42.2	45	21.5	18.3	67	30.4	56.8	108	12.4	31.9
11	90	23.7	14	08.3	+21 42.6	60	22.3	+10 18.9	82	32.7	+1 56.9	123	15.0	−14 32.0
12	105	26.1	29	07.6	+21 43.0	75	23.1	+10 19.5	97	35.0	+1 57.0	138	17.6	−14 32.0
13	120	28.6	44	06.8	43.3	90	23.9	20.1	112	37.3	57.0	153	20.2	32.1
14	135	31.1	59	06.1	43.7	105	24.8	20.7	127	39.6	57.1	168	22.8	32.1
15	150	33.5	74	05.3	44.1	120	25.6	21.3	142	41.9	57.1	183	25.3	32.2
16	165	36.0	89	04.6	44.5	135	26.4	21.9	157	44.2	57.2	198	27.9	32.2
17	180	38.5	104	03.9	+21 44.9	150	27.2	+10 22.5	172	46.5	+1 57.2	213	30.5	−14 32.3
18	195	40.9	119	03.1	+21 45.2	165	28.0	+10 23.1	187	48.8	+1 57.3	228	33.1	−14 32.3
19	210	43.4	134	02.4	45.6	180	28.8	23.7	202	51.1	57.3	243	35.7	32.4
20	225	45.9	149	01.6	46.0	195	29.6	24.3	217	53.4	57.4	258	38.3	32.4
21	240	48.3	164	00.9	46.4	210	30.4	24.9	232	55.7	57.5	273	40.8	32.5
22	255	50.8	179	00.2	46.7	225	31.2	25.5	247	58.0	57.5	288	43.4	32.5
23	270	53.2	193	59.4	47.1	240	32.0	26.1	263	00.3	57.6	303	46.0	32.6
24	285	55.7	208	58.7	+21 47.5	255	32.8	+10 26.7	278	02.6	+1 57.6	318	48.6	−14 32.6
Dif	—			−7	+4		+8	+6		+23	+1		+26	0

UT	SOL SD: 15′.7 PMG: 12h 05.m1				LUNA Edad: 8.d9 SD: 15′.8 PMG: 19h 17m PHE 4h: 58′.1, 12h: 58′.4, 20h: 58′.7 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	44.1	+22	29.8	80	04.6	−8	28.8	**60 N**	** **	1 23	2 51	14 35	102	23 42	5
1	193	44.0		29.5	94	36.2 126		43.4 146	**58**	** **	2 00	3 10	28	97	50	10
2	208	43.9		29.3	109	07.8 126	−8	58.0 146	**56**	** **	26	25	22	92	23 58	14
3	223	43.8		29.0	123	39.3 125	−9	12.6 146	**54**	1 16	2 46	39	16	89	** **	**
4	238	43.7		28.7	138	10.7 124		27.1 145	**52**	1 51	3 03	3 50	11	86	** **	**
5	253	43.6	+22	28.4	152	42.0 123	−9	41.6 145	**50**	2 15	3 17	4 00	14 06	83	** **	**
6	268	43.5	+22	28.1	167	13.2 122	−9	56.1 145	**45**	2 57	3 45	4 22	13 56	77	0 05	23
7	283	43.4		27.8	181	44.3 121	−10	10.6 145	**40**	3 26	4 06	39	47	73	10	28
8	298	43.4		27.6	196	15.4 121		25.0 144	**35**	3 48	24	4 53	40	70	15	31
9	313	43.3		27.3	210	46.3 119		39.4 144	**30**	4 05	4 38	5 06	34	66	20	34
10	328	43.2		27.0	225	17.2 119	−10	53.8 144	**20**	33	5 02	27	23	61	27	40
11	343	43.1	+22	26.7	239	47.9 117	−11	08.1 143	**10 N**	4 55	5 22	5 45	13 14	56	0 34	44
12	358	43.0	+22	26.4	254	18.6 117	−11	22.4 143	**0**	5 13	5 39	6 01	13 05	52	0 40	49
13	13	42.9		26.1	268	49.2 116		36.7 143	**10 S**	29	5 55	18	12 57	47	47	53
14	28	42.8		25.8	283	19.7 115	−11	50.9 142	**20**	5 45	6 12	36	48	42	0 54	58
15	43	42.7		25.5	297	50.0 113	−12	05.1 142	**30**	6 00	30	6 56	38	36	1 01	64
16	58	42.6		25.3	312	20.3 113		19.2 141	**35**	09	40	7 08	32	33	06	67
17	73	42.5	+22	25.0	326	50.5 112	−12	33.3 141	**40**	6 17	6 51	7 21	12 25	30	1 11	71
18	88	42.4	+22	24.7	341	20.6 111	−12	47.4 141	**45**	6 27	7 04	7 37	12 17	26	1 17	75
19	103	42.3		24.4	355	50.5 109	−13	01.4 140	**50**	38	19	7 57	08	21	24	81
20	118	42.2		24.1	10	20.4 109		15.3 139	**52**	43	26	8 06	12 04	18	27	84
21	133	42.1		23.8	24	50.2 108		29.2 139	**54**	48	34	16	11 59	16	31	86
22	148	42.0		23.5	39	19.8 106		43.1 139	**56**	6 54	42	28	54	12	35	90
23	163	41.9		23.2	53	49.4 106	−13	56.9 138	**58**	7 00	7 52	42	49	8	40	93
24	178	41.8	+22	22.9	68	18.8 104	−14	10.6 137	**60 S**	7 07	8 02	8 58	11 42	5	1 45	97

UT	ARIES PMG 4h 55.m5		VENUS Mag: −3.8 PMG: 10h 05m			MARTE Mag: +0.4 PMG: 6h 57m			JÚPITER Mag: −2.5 PMG: 5h 27m			SATURNO Mag: +0.5 PMG: 2h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	285	55.7	208	58.7	+21 47.5	255	32.8	+10 26.7	278	02.6	+1 57.6	318	48.6	−14 32.6
1	300	58.2	223	57.9	47.8	270	33.6	27.3	293	04.9	57.7	333	51.2	32.6
2	316	00.6	238	57.2	48.2	285	34.4	27.9	308	07.3	57.7	348	53.8	32.7
3	331	03.1	253	56.5	48.6	300	35.2	28.5	323	09.6	57.8	3	56.3	32.7
4	346	05.6	268	55.7	48.9	315	36.0	29.1	338	11.9	57.8	18	58.9	32.8
5	1	08.0	283	55.0	+21 49.3	330	36.8	+10 29.7	353	14.2	+1 57.9	34	01.5	−14 32.8
6	16	10.5	298	54.2	+21 49.7	345	37.6	+10 30.3	8	16.5	+1 57.9	49	04.1	−14 32.9
7	31	13.0	313	53.5	50.0	0	38.4	30.9	23	18.8	58.0	64	06.7	32.9
8	46	15.4	328	52.7	50.4	15	39.2	31.5	38	21.1	58.0	79	09.3	33.0
9	61	17.9	343	52.0	50.8	30	40.0	32.1	53	23.4	58.1	94	11.8	33.0
10	76	20.4	358	51.2	51.1	45	40.8	32.8	68	25.7	58.1	109	14.4	33.1
11	91	22.8	13	50.5	+21 51.5	60	41.7	+10 33.4	83	28.0	+1 58.2	124	17.0	−14 33.1
12	106	25.3	28	49.7	+21 51.8	75	42.5	+10 34.0	98	30.3	+1 58.3	139	19.6	−14 33.2
13	121	27.7	43	49.0	52.2	90	43.3	34.6	113	32.7	58.3	154	22.2	33.2
14	136	30.2	58	48.3	52.6	105	44.1	35.2	128	35.0	58.4	169	24.8	33.3
15	151	32.7	73	47.5	52.9	120	44.9	35.8	143	37.3	58.4	184	27.3	33.3
16	166	35.1	88	46.8	53.3	135	45.7	36.3	158	39.6	58.5	199	29.9	33.4
17	181	37.6	103	46.0	+21 53.6	150	46.5	+10 36.9	173	41.9	+1 58.5	214	32.5	−14 33.4
18	196	40.1	118	45.3	+21 54.0	165	47.3	+10 37.5	188	44.2	+1 58.6	229	35.1	−14 33.5
19	211	42.5	133	44.5	54.3	180	48.1	38.1	203	46.5	58.6	244	37.7	33.5
20	226	45.0	148	43.8	54.7	195	48.9	38.7	218	48.8	58.7	259	40.3	33.6
21	241	47.5	163	43.0	55.0	210	49.7	39.3	233	51.2	58.7	274	42.8	33.6
22	256	49.9	178	42.3	55.4	225	50.5	39.9	248	53.5	58.8	289	45.4	33.7
23	271	52.4	193	41.5	55.7	240	51.3	40.5	263	55.8	58.8	304	48.0	33.7
24	286	54.9	208	40.8	+21 56.1	255	52.1	+10 41.1	278	58.1	+1 58.9	319	50.6	−14 33.8
Dif	—			−7	+4		+8	+6		+23	+1		+26	0

UT	SOL SD: 15′.7 PMG: 12h 05m.3				LUNA Edad: 9d.9 SD: 16′.0 PMG: 20h 10m PHE 4h: 59′.0; 12h: 59′.3; 20h: 59′.6 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	178	41.8	+22	22.9	68	18.8	−14	10.6	**60 N**	21 17	22 42	** **	16 17	109	23 47	10
1	193	41.7		22.6	82	48.1 103		24.3 137	**58**	20 58	22 06	** **	16 05	102	** **	**
2	208	41.6		22.3	97	17.3 102		37.9 136	**56**	43	21 41	** **	15 54	97	** **	**
3	223	41.6		22.0	111	46.4 101	−14	51.5 136	**54**	30	22	22 50	45	93	0 04	18
4	238	41.5		21.7	126	15.4 100	−15	05.0 135	**52**	19	21 06	22 16	37	89	10	21
5	253	41.4	+22	21.4	140	44.3 99	−15	18.4 134	**50**	20 09	20 52	21 53	15 29	87	0 16	23
6	268	41.3	+22	21.1	155	13.0 97	−15	31.8 134	**45**	19 48	20 24	21 12	15 13	81	0 28	28
7	283	41.2		20.8	169	41.6 96		45.1 133	**40**	31	20 03	20 44	15 00	77	38	32
8	298	41.1		20.5	184	10.2 96	−15	58.3 132	**35**	17	19 46	22	14 50	72	46	37
9	313	41.0		20.2	198	38.5 93	−16	11.5 132	**30**	19 04	31	20 04	40	70	0 54	39
10	328	40.9		19.9	213	06.8 93		24.6 131	**20**	18 44	19 08	19 37	24	65	1 07	45
11	343	40.8	+22	19.6	227	35.0 92	−16	37.6 130	**10 N**	18 26	18 48	19 15	14 10	60	1 18	50
12	358	40.7	+22	19.3	242	03.0 90	−16	50.5 129	**0**	18 09	18 31	18 57	13 57	56	1 29	54
13	13	40.6		19.0	256	30.9 89	−17	03.4 129	**10 S**	17 52	18 15	41	44	52	40	58
14	28	40.5		18.7	270	58.7 88		16.2 128	**20**	35	17 59	26	30	48	1 52	62
15	43	40.5		18.4	285	26.3 86		28.9 127	**30**	15	41	11	14	43	2 05	68
16	58	40.4		18.1	299	53.9 86		41.5 126	**35**	17 03	31	18 02	13 05	40	13	71
17	73	40.3	+22	17.8	314	21.3 84	−17	54.0 125	**40**	16 50	17 20	17 54	12 55	37	2 22	74
18	88	40.2	+22	17.5	328	48.5 82	−18	06.4 124	**45**	16 34	17 07	17 44	12 43	32	2 32	79
19	103	40.1		17.2	343	15.7 82		18.7 123	**50**	15	16 52	33	29	27	45	85
20	118	40.0		16.8	357	42.7 80		31.0 123	**52**	16 05	45	29	22	24	51	88
21	133	39.9		16.5	12	09.6 79		43.1 121	**54**	15 55	38	23	15	21	2 57	91
22	148	39.8		16.2	26	36.4 78	−18	55.2 121	**56**	44	30	18	12 06	18	3 05	94
23	163	39.7		15.9	41	03.0 76	−19	07.1 119	**58**	30	20	12	11 57	14	13	99
24	178	39.7	+22	15.6	55	29.5 75	−19	19.0 119	**60 S**	15 14	16 09	17 05	11 47	8	3 22	105

UT	ARIES PMG 4h 51m.5		VENUS Mag: −3.8 PMG: 10h 06m			MARTE Mag: +0.4 PMG: 6h 56m			JÚPITER Mag: −2.6 PMG: 5h 23m			SATURNO Mag: +0.5 PMG: 2h 40m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	286	54.9	208	40.8	+21 56.1	255	52.1	+10 41.1	278	58.1	+1 58.9	319	50.6	−14 33.8
1	301	57.3	223	40.0	56.4	270	52.9	41.7	294	00.4	58.9	334	53.2	33.8
2	316	59.8	238	39.3	56.8	285	53.7	42.3	309	02.7	59.0	349	55.8	33.9
3	332	02.2	253	38.5	57.1	300	54.5	42.9	324	05.0	59.0	4	58.4	33.9
4	347	04.7	268	37.8	57.4	315	55.4	43.5	339	07.4	59.1	20	00.9	34.0
5	2	07.2	283	37.0	+21 57.8	330	56.2	+10 44.1	354	09.7	+1 59.1	35	03.5	−14 34.0
6	17	09.6	298	36.3	+21 58.1	345	57.0	+10 44.7	9	12.0	+1 59.2	50	06.1	−14 34.1
7	32	12.1	313	35.5	58.5	0	57.8	45.3	24	14.3	59.2	65	08.7	34.1
8	47	14.6	328	34.8	58.8	15	58.6	45.9	39	16.6	59.3	80	11.3	34.2
9	62	17.0	343	34.0	59.1	30	59.4	46.5	54	18.9	59.3	95	13.9	34.2
10	77	19.5	358	33.3	59.5	46	00.2	47.1	69	21.3	59.4	110	16.5	34.2
11	92	22.0	13	32.5	+21 59.8	61	01.0	+10 47.7	84	23.6	+1 59.4	125	19.1	−14 34.3
12	107	24.4	28	31.7	+22 00.1	76	01.8	+10 48.3	99	25.9	+1 59.5	140	21.6	−14 34.3
13	122	26.9	43	31.0	00.5	91	02.6	48.9	114	28.2	59.5	155	24.2	34.4
14	137	29.3	58	30.2	00.8	106	03.4	49.5	129	30.5	59.6	170	26.8	34.4
15	152	31.8	73	29.5	01.1	121	04.2	50.1	144	32.8	59.6	185	29.4	34.5
16	167	34.3	88	28.7	01.5	136	05.0	50.7	159	35.2	59.7	200	32.0	34.5
17	182	36.7	103	28.0	+22 01.8	151	05.8	+10 51.3	174	37.5	+1 59.7	215	34.6	−14 34.6
18	197	39.2	118	27.2	+22 02.1	166	06.7	+10 51.9	189	39.8	+1 59.8	230	37.2	−14 34.6
19	212	41.7	133	26.5	02.4	181	07.5	52.5	204	42.1	59.8	245	39.7	34.7
20	227	44.1	148	25.7	02.8	196	08.3	53.0	219	44.4	59.9	260	42.3	34.7
21	242	46.6	163	24.9	03.1	211	09.1	53.6	234	46.8	+1 59.9	275	44.9	34.8
22	257	49.1	178	24.2	03.4	226	09.9	54.2	249	49.1	+2 00.0	290	47.5	34.8
23	272	51.5	193	23.4	03.7	241	10.7	54.8	264	51.4	+2 00.0	305	50.1	34.9
24	287	54.0	208	22.7	+22 04.1	256	11.5	+10 55.4	279	53.7	+2 00.1	320	52.7	−14 34.9
Dif	—			−8	+3		+8	+6		+23	0		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 10^{d}.9		PHE	4^{h}: 59′.9									
	PMG: 12^{h} 05^{m}.4				SD: 16′.3			12^{h}: 60′.1									
					PMG: 21^{h} 07^{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	178	39.7	+22	15.6	55	29.5	−19	19.0		**60 N**	** **	1 29	2 55	18 06	109	23 57	23
1	193	39.6		15.3	69	55.8	73	30.7	117	**58**	** **	2 05	3 13	17 47	101	0 00	17
2	208	39.5		15.0	84	22.1	73	42.4	117	**56**	** **	30	28	31	96	12	21
3	223	39.4		14.7	98	48.2	71	−19 53.9	115	**54**	1 21	2 49	41	18	91	22	25
4	238	39.3		14.3	113	14.2	70	−20 05.3	114	**52**	1 55	3 05	3 52	17 06	89	31	28
5	253	39.2	+22	14.0	127	40.0	68	−20 16.7	114	**50**	2 18	3 19	4 02	16 56	86	0 39	31
6	268	39.1	+22	13.7	142	05.7	67	−20 27.9	112	**45**	2 59	3 47	4 23	16 34	81	0 56	37
7	283	39.0		13.4	156	31.3	66	38.9	110	**40**	3 27	4 08	40	17	77	1 10	41
8	298	39.0		13.1	170	56.7	64	−20 49.9	110	**35**	3 49	25	4 54	16 02	75	23	44
9	313	38.9		12.8	185	22.0	63	−21 00.7	108	**30**	4 07	4 39	5 06	15 50	72	33	47
10	328	38.8		12.4	199	47.2	62	11.5	108	**20**	34	5 03	27	29	68	1 52	51
11	343	38.7	+22	12.1	214	12.2	60	−21 22.1	106	**10 N**	4 56	5 22	5 45	15 10	65	2 08	55
12	358	38.6	+22	11.8	228	37.1	59	−21 32.5	104	**0**	5 13	5 39	6 02	14 53	62	2 23	59
13	13	38.5		11.5	243	01.9	58	42.9	104	**10 S**	29	5 56	18	36	59	38	63
14	28	38.4		11.2	257	26.5	56	−21 53.1	102	**20**	5 45	6 12	36	14 18	56	2 54	67
15	43	38.3		10.8	271	51.0	55	−22 03.2	101	**30**	6 00	30	6 56	13 57	52	3 13	71
16	58	38.3		10.5	286	15.4	54	13.1	99	**35**	08	39	7 07	45	50	24	74
17	73	38.2	+22	10.2	300	39.7	53	−22 22.9	98	**40**	6 17	6 50	7 21	13 32	46	3 36	78
18	88	38.1	+22	09.9	315	03.8	51	−22 32.6	97	**45**	6 26	7 03	7 36	13 15	43	3 51	82
19	103	38.0		09.5	329	27.7	49	42.1	95	**50**	37	18	7 56	12 56	37	4 10	87
20	118	37.9		09.2	343	51.6	49	−22 51.5	94	**52**	42	25	8 05	46	35	19	89
21	133	37.8		08.9	358	15.3	47	−23 00.7	92	**54**	47	32	15	36	32	28	93
22	148	37.8		08.6	12	38.9	46	09.8	91	**56**	53	41	26	24	28	39	97
23	163	37.7		08.2	27	02.4	45	18.7	89	**58**	6 59	7 50	40	12 11	23	4 52	102
24	178	37.6	+22	07.9	41	25.7	43	−23 27.5	88	**60 S**	7 05	8 01	8 55	11 55	16	5 07	109

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.6			Mag: +0.5		
	4^{h} 47^{m}.6		PMG: 10^{h} 07^{m}			PMG: 6^{h} 55^{m}			PMG: 5^{h} 20^{m}			PMG: 2^{h} 36^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	287	54.0	208	22.7	+22 04.1	256	11.5	+10 55.4	279	53.7	+2 00.1	320	52.7	−14 34.9
1	302	56.5	223	21.9	04.4	271	12.3	56.0	294	56.0	00.1	335	55.3	35.0
2	317	58.9	238	21.2	04.7	286	13.1	56.6	309	58.4	00.2	350	57.9	35.0
3	333	01.4	253	20.4	05.0	301	13.9	57.2	325	00.7	00.2	6	00.5	35.1
4	348	03.8	268	19.6	05.3	316	14.7	57.8	340	03.0	00.3	21	03.0	35.1
5	3	06.3	283	18.9	+22 05.6	331	15.5	+10 58.4	355	05.3	+2 00.3	36	05.6	−14 35.2
6	18	08.8	298	18.1	+22 06.0	346	16.3	+10 59.0	10	07.7	+2 00.4	51	08.2	−14 35.2
7	33	11.2	313	17.4	06.3	1	17.2	+10 59.6	25	10.0	00.4	66	10.8	35.3
8	48	13.7	328	16.6	06.6	16	18.0	+11 00.2	40	12.3	00.4	81	13.4	35.3
9	63	16.2	343	15.8	06.9	31	18.8	00.7	55	14.6	00.5	96	16.0	35.4
10	78	18.6	358	15.1	07.2	46	19.6	01.3	70	16.9	00.5	111	18.6	35.4
11	93	21.1	13	14.3	+22 07.5	61	20.4	+11 01.9	85	19.3	+2 00.6	126	21.2	−14 35.5
12	108	23.6	28	13.6	+22 07.8	76	21.2	+11 02.5	100	21.6	+2 00.6	141	23.8	−14 35.5
13	123	26.0	43	12.8	08.1	91	22.0	03.1	115	23.9	00.7	156	26.4	35.6
14	138	28.5	58	12.0	08.4	106	22.8	03.7	130	26.2	00.7	171	28.9	35.6
15	153	31.0	73	11.3	08.7	121	23.6	04.3	145	28.6	00.8	186	31.5	35.7
16	168	33.4	88	10.5	09.1	136	24.4	04.9	160	30.9	00.8	201	34.1	35.7
17	183	35.9	103	09.7	+22 09.4	151	25.2	+11 05.5	175	33.2	+2 00.9	216	36.7	−14 35.8
18	198	38.3	118	09.0	+22 09.7	166	26.0	+11 06.1	190	35.5	+2 00.9	231	39.3	−14 35.8
19	213	40.8	133	08.2	10.0	181	26.9	06.6	205	37.9	01.0	246	41.9	35.9
20	228	43.3	148	07.5	10.3	196	27.7	07.2	220	40.2	01.0	261	44.5	35.9
21	243	45.7	163	06.7	10.6	211	28.5	07.8	235	42.5	01.0	276	47.1	36.0
22	258	48.2	178	05.9	10.9	226	29.3	08.4	250	44.9	01.1	291	49.7	36.0
23	273	50.7	193	05.2	11.2	241	30.1	09.0	265	47.2	01.1	306	52.3	36.1
24	288	53.1	208	04.4	+22 11.5	256	30.9	+11 09.6	280	49.5	+2 01.2	321	54.8	−14 36.1
Dif	—		−8		+3	+8		+6	+23		0	+26		−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 11^{d}.9		PHE	4^{h}: 60′.6									
	PMG: 12^{h} 05^{m}.6				SD: 16′.5			12^{h}: 60′.8									
					PMG: 22^{h} 10^{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	178	37.6	+22	07.9	41	25.7	42	−23	27.5	86	**60 N**	21 14	22 37	** **	87	** **	**
1	193	37.5		07.6	55	48.9			36.1		**58**	20 56	22 03	** **	83	0 17	30
2	208	37.4		07.2	70	12.0	41		44.6	85	**56**	41	21 38	** **	80	33	36
3	223	37.3		06.9	84	35.0	40	−23	52.9	83	**54**	28	19	22 44	79	47	39
4	238	37.2		06.6	98	57.8	38	−24	01.0	81	**52**	17	21 04	22 13	77	0 59	43
5	253	37.2	+22	06.3	113	20.6	38	−24	09.0	80	**50**	20 07	20 50	21 50	76	1 10	45
6	268	37.1	+22	05.9	127	43.2	36	−24	16.8	78	**45**	19 47	20 23	21 10	74	1 33	49
7	283	37.0		05.6	142	05.7	35		24.5	77	**40**	30	20 02	20 42	73	1 51	52
8	298	36.9		05.3	156	28.0	33		32.0	75	**35**	16	19 45	21	72	2 07	54
9	313	36.8		04.9	170	50.3	33		39.3	73	**30**	19 04	31	20 04	71	20	56
10	328	36.8		04.6	185	12.4	31		46.4	71	**20**	18 43	19 08	19 36	69	2 43	60
11	343	36.7	+22	04.3	199	34.5	31	−24	53.4	70	**10 N**	18 26	18 48	19 15	68	3 03	62
12	358	36.6	+22	03.9	213	56.4	29	−25	00.2	68	**0**	18 09	18 31	18 57	66	3 22	64
13	13	36.5		03.6	228	18.2	28		06.8	66	**10 S**	17 53	18 15	42	65	3 41	66
14	28	36.4		03.2	242	39.9	27		13.2	64	**20**	36	17 59	27	63	4 01	69
15	43	36.3		02.9	257	01.5	26		19.5	63	**30**	16	42	11	61	24	72
16	58	36.3		02.6	271	23.0	25		25.5	60	**35**	17 04	32	18 03	59	38	73
17	73	36.2	+22	02.2	285	44.4	24	−25	31.4	59	**40**	16 51	17 21	17 55	58	4 54	75
18	88	36.1	+22	01.9	300	05.7	23	−25	37.1	57	**45**	16 36	17 09	17 46	56	5 13	78
19	103	36.0		01.6	314	26.9	22		42.6	55	**50**	17	16 54	35	54	37	81
20	118	35.9		01.2	328	48.0	21		47.9	53	**52**	16 07	47	30	52	5 48	84
21	133	35.9		00.9	343	09.0	20		53.1	52	**54**	15 57	40	25	50	6 01	86
22	148	35.8		00.5	357	30.0	20	−25	58.0	49	**56**	46	32	20	47	16	89
23	163	35.7	+22	00.2	11	50.8	18	−26	02.7	47	**58**	33	22	14	43	34	93
24	178	35.6	+21	59.8	26	11.6	18	−26	07.3	46	**60 S**	15 17	16 12	17 07	37	6 56	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.6			Mag: +0.5		
	4^{h} 43^{m}.7		PMG: 10^{h} 08^{m}			PMG: 6^{h} 54^{m}			PMG: 5^{h} 16^{m}			PMG: 2^{h} 32^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	288	53.1	208	04.4	+22 11.5	256	30.9	+11 09.6	280	49.5	+2 01.2	321	54.8	−14 36.1
1	303	55.6	223	03.6	11.7	271	31.7	10.2	295	51.8	01.2	336	57.4	36.2
2	318	58.1	238	02.9	12.0	286	32.5	10.8	310	54.2	01.3	352	00.0	36.2
3	334	00.5	253	02.1	12.3	301	33.3	11.3	325	56.5	01.3	7	02.6	36.3
4	349	03.0	268	01.3	12.6	316	34.1	11.9	340	58.8	01.4	22	05.2	36.3
5	4	05.5	283	00.6	+22 12.9	331	34.9	+11 12.5	356	01.2	+2 01.4	37	07.8	−14 36.4
6	19	07.9	297	59.8	+22 13.2	346	35.8	+11 13.1	11	03.5	+2 01.5	52	10.4	−14 36.4
7	34	10.4	312	59.0	13.5	1	36.6	13.7	26	05.8	01.5	67	13.0	36.5
8	49	12.8	327	58.3	13.8	16	37.4	14.3	41	08.1	01.5	82	15.6	36.5
9	64	15.3	342	57.5	14.1	31	38.2	14.9	56	10.5	01.6	97	18.2	36.6
10	79	17.8	357	56.7	14.4	46	39.0	15.4	71	12.8	01.6	112	20.8	36.6
11	94	20.2	12	56.0	+22 14.6	61	39.8	+11 16.0	86	15.1	+2 01.7	127	23.4	−14 36.7
12	109	22.7	27	55.2	+22 14.9	76	40.6	+11 16.6	101	17.5	+2 01.7	142	26.0	−14 36.7
13	124	25.2	42	54.4	15.2	91	41.4	17.2	116	19.8	01.8	157	28.5	36.8
14	139	27.6	57	53.7	15.5	106	42.2	17.8	131	22.1	01.8	172	31.1	36.8
15	154	30.1	72	52.9	15.8	121	43.0	18.4	146	24.5	01.8	187	33.7	36.9
16	169	32.6	87	52.1	16.0	136	43.9	19.0	161	26.8	01.9	202	36.3	37.0
17	184	35.0	102	51.3	+22 16.3	151	44.7	+11 19.5	176	29.1	+2 01.9	217	38.9	−14 37.0
18	199	37.5	117	50.6	+22 16.6	166	45.5	+11 20.1	191	31.5	+2 02.0	232	41.5	−14 37.1
19	214	40.0	132	49.8	16.9	181	46.3	20.7	206	33.8	02.0	247	44.1	37.1
20	229	42.4	147	49.0	17.1	196	47.1	21.3	221	36.1	02.1	262	46.7	37.2
21	244	44.9	162	48.3	17.4	211	47.9	21.9	236	38.5	02.1	277	49.3	37.2
22	259	47.3	177	47.5	17.7	226	48.7	22.5	251	40.8	02.1	292	51.9	37.3
23	274	49.8	192	46.7	18.0	241	49.5	23.0	266	43.1	02.2	307	54.5	37.3
24	289	52.3	207	45.9	+22 18.2	256	50.3	+11 23.6	281	45.5	+2 02.2	322	57.1	−14 37.4
Dif	—			−8	+3		+8	+6		+23	0		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 12^{d}.9		PHE	4^{h}: 61′.1									
	PMG: 12^{h} 05^{m}.7				SD: 16′.6			12^{h}: 61′.2									
					PMG: 23^{h} 17^{m}			20^{h}: 61′.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	35.6	+21	59.8	26	11.6	−26	07.3		**60 N**	** **	1 35	2 58	21 22	47	0 20	53
1	193	35.5		59.5	40	32.3 17		11.6	43	**58**	** **	2 09	3 16	20 51	52	0 47	57
2	208	35.5		59.1	54	52.9 16		15.7	41	**56**	** **	33	31	27	55	1 09	59
3	223	35.4		58.8	69	13.4 15		19.7	40	**54**	1 27	2 52	43	20 08	57	26	61
4	238	35.3		58.5	83	33.9 15		23.4	37	**52**	1 59	3 08	3 54	19 52	58	42	61
5	253	35.2	+21	58.1	97	54.3 14	−26	26.9	35	**50**	2 21	3 22	4 04	19 38	60	1 55	62
6	268	35.2	+21	57.8	112	14.6 13	−26	30.3	34	**45**	3 01	3 49	4 25	19 09	62	2 22	63
7	283	35.1		57.4	126	34.9 13		33.4	31	**40**	29	4 09	41	18 47	63	2 43	65
8	298	35.0		57.1	140	55.1 12		36.3	29	**35**	3 50	26	4 55	29	63	3 01	65
9	313	34.9		56.7	155	15.3 12		39.0	27	**30**	4 08	4 40	5 08	18 13	64	16	66
10	328	34.8		56.4	169	35.4 11		41.5	25	**20**	35	5 04	28	17 46	65	3 43	66
11	343	34.8	+21	56.0	183	55.4 10	−26	43.8	23	**10 N**	4 56	5 23	5 46	17 23	66	4 05	67
12	358	34.7	+21	55.7	198	15.4 10	−26	45.9	21	**0**	5 14	5 40	6 02	17 01	67	4 26	67
13	13	34.6		55.3	212	35.4 10		47.8	19	**10 S**	30	5 56	18	16 40	68	4 47	68
14	28	34.5		55.0	226	55.3 9		49.5	17	**20**	5 45	6 12	36	16 17	68	5 10	67
15	43	34.5		54.6	241	15.2 9		50.9	14	**30**	6 00	29	6 55	15 50	69	36	68
16	58	34.4		54.3	255	35.1 9		52.2	13	**35**	08	39	7 07	34	70	5 51	69
17	73	34.3	+21	53.9	269	54.9 8	−26	53.2	10	**40**	6 16	6 50	7 20	15 16	70	6 09	69
18	88	34.2	+21	53.5	284	14.7 8	−26	54.0	8	**45**	6 25	7 02	7 35	14 54	71	6 31	68
19	103	34.2		53.2	298	34.5 8		54.6	6	**50**	36	17	7 54	27	71	6 58	69
20	118	34.1		52.8	312	54.2 7		55.0	4	**52**	41	23	8 03	14 13	72	7 12	68
21	133	34.0		52.5	327	14.0 8		55.2	2	**54**	46	31	13	13 58	72	27	68
22	148	33.9		52.1	341	33.7 7		55.1	1	**56**	51	39	25	39	73	7 45	68
23	163	33.9		51.8	355	53.4 7		54.9	2	**58**	6 57	48	38	13 17	73	8 07	68
24	178	33.8	+21	51.4	10	13.1 7	−26	54.4	5	**60 S**	7 04	7 59	8 53	12 48	74	8 36	67

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.6			Mag: +0.5		
	4^{h} 39^{m}.7		PMG: 10^{h} 09^{m}			PMG: 6^{h} 52^{m}			PMG: 5^{h} 12^{m}			PMG: 2^{h} 28^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	289	52.3	207	45.9	+22 18.2	256	50.3	+11 23.6	281	45.5	+2 02.2	322	57.1	−14 37.4
1	304	54.7	222	45.2	18.5	271	51.1	24.2	296	47.8	02.3	337	59.7	37.4
2	319	57.2	237	44.4	18.8	286	52.0	24.8	311	50.1	02.3	353	02.3	37.5
3	334	59.7	252	43.6	19.0	301	52.8	25.4	326	52.5	02.4	8	04.9	37.5
4	350	02.1	267	42.9	19.3	316	53.6	25.9	341	54.8	02.4	23	07.5	37.6
5	5	04.6	282	42.1	+22 19.6	331	54.4	+11 26.5	356	57.1	+2 02.4	38	10.0	−14 37.6
6	20	07.1	297	41.3	+22 19.8	346	55.2	+11 27.1	11	59.5	+2 02.5	53	12.6	−14 37.7
7	35	09.5	312	40.5	20.1	1	56.0	27.7	27	01.8	02.5	68	15.2	37.7
8	50	12.0	327	39.8	20.4	16	56.8	28.3	42	04.2	02.6	83	17.8	37.8
9	65	14.5	342	39.0	20.6	31	57.6	28.8	57	06.5	02.6	98	20.4	37.8
10	80	16.9	357	38.2	20.9	46	58.4	29.4	72	08.8	02.6	113	23.0	37.9
11	95	19.4	12	37.4	+22 21.1	61	59.3	+11 30.0	87	11.2	+2 02.7	128	25.6	−14 37.9
12	110	21.8	27	36.7	+22 21.4	77	00.1	+11 30.6	102	13.5	+2 02.7	143	28.2	−14 38.0
13	125	24.3	42	35.9	21.7	92	00.9	31.2	117	15.8	02.8	158	30.8	38.0
14	140	26.8	57	35.1	21.9	107	01.7	31.7	132	18.2	02.8	173	33.4	38.1
15	155	29.2	72	34.3	22.2	122	02.5	32.3	147	20.5	02.8	188	36.0	38.1
16	170	31.7	87	33.6	22.4	137	03.3	32.9	162	22.9	02.9	203	38.6	38.2
17	185	34.2	102	32.8	+22 22.7	152	04.1	+11 33.5	177	25.2	+2 02.9	218	41.2	−14 38.2
18	200	36.6	117	32.0	+22 22.9	167	04.9	+11 34.1	192	27.5	+2 03.0	233	43.8	−14 38.3
19	215	39.1	132	31.2	23.2	182	05.8	34.6	207	29.9	03.0	248	46.4	38.3
20	230	41.6	147	30.4	23.4	197	06.6	35.2	222	32.2	03.0	263	49.0	38.4
21	245	44.0	162	29.7	23.7	212	07.4	35.8	237	34.6	03.1	278	51.6	38.4
22	260	46.5	177	28.9	23.9	227	08.2	36.4	252	36.9	03.1	293	54.2	38.5
23	275	49.0	192	28.1	24.2	242	09.0	37.0	267	39.3	03.2	308	56.8	38.6
24	290	51.4	207	27.3	+22 24.4	257	09.8	+11 37.5	282	41.6	+2 03.2	323	59.4	−14 38.6
Dif	—			−8	+3		+8	+6		+23	0		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 13^{d}.9		PHE	4^{h}: 61′.4									
	PMG: 12^{h} 05^{m}.8				SD: 16′.7			12^{h}: 61′.4									
					PMG: **^{h} **^{m}			20^{h}: 61′.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	33.8	+21	51.4	10	13.1	−26	54.4	7	**60 N**	21 11	22 31	** **	22 09	20	1 13	93
1	193	33.7		51.0	24	32.9 8		53.7		**58**	20 53	21 59	** **	21 43	28	1 44	88
2	208	33.6		50.7	38	52.6 7		52.8	9	**56**	39	35	23 34	22	34	2 08	84
3	223	33.6		50.3	53	12.3 7		51.7	11	**54**	26	17	22 39	21 05	37	27	82
4	238	33.5		50.0	67	32.0 7		50.3	14	**52**	15	21 01	22 09	20 50	41	43	81
5	253	33.4	+21	49.6	81	51.8 8	−26	48.8	15	**50**	20 06	20 48	21 47	20 38	42	2 57	79
6	268	33.3	+21	49.2	96	11.6 8	−26	47.0	18	**45**	19 45	20 21	21 08	20 11	47	3 25	77
7	283	33.3		48.9	110	31.4 8		45.1	19	**40**	29	20 01	20 41	19 50	51	3 48	74
8	298	33.2		48.5	124	51.2 8		42.9	22	**35**	15	19 44	20	32	54	4 06	73
9	313	33.1		48.1	139	11.0 8		40.5	24	**30**	19 03	30	20 03	19 17	56	22	72
10	328	33.1		47.8	153	30.9 9		37.9	26	**20**	18 43	19 07	19 36	18 51	60	4 49	70
11	343	33.0	+21	47.4	167	50.8 9	−26	35.0	29	**10 N**	18 26	18 48	19 15	18 29	62	5 12	68
12	358	32.9	+21	47.0	182	10.7 9	−26	32.0	30	**0**	18 09	18 32	18 58	18 08	65	5 33	67
13	13	32.8		46.7	196	30.7 10		28.7	33	**10 S**	17 53	16	42	17 48	67	5 55	64
14	28	32.8		46.3	210	50.7 10		25.3	34	**20**	36	18 00	27	17 25	70	6 17	63
15	43	32.7		45.9	225	10.8 11		21.6	37	**30**	17	17 43	12	16 59	74	6 44	60
16	58	32.6		45.6	239	30.9 11		17.7	39	**35**	17 05	33	18 04	44	75	7 00	58
17	73	32.6	+21	45.2	253	51.1 12	−26	13.7	40	**40**	16 53	17 23	17 56	16 26	78	7 18	57
18	88	32.5	+21	44.8	268	11.3 12	−26	09.4	43	**45**	16 37	17 10	17 47	16 05	81	7 39	55
19	103	32.4		44.4	282	31.6 13		04.9	45	**50**	19	16 56	37	15 38	85	8 07	51
20	118	32.3		44.1	296	52.0 14	−26	00.2	47	**52**	10	49	32	25	87	20	49
21	133	32.3		43.7	311	12.4 14	−25	55.3	49	**54**	16 00	42	27	15 10	89	35	47
22	148	32.2		43.3	325	32.9 15		50.2	51	**56**	15 49	34	22	14 52	93	8 53	44
23	163	32.1		43.0	339	53.4 15		44.9	53	**58**	36	25	16	30	98	9 15	40
24	178	32.1	+21	42.6	354	14.1 17	−25	39.4	55	**60 S**	15 21	16 15	17 09	14 02	105	9 43	33

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.6			Mag: +0.5		
	4^{h} 35^{m}.8		PMG: 10^{h} 11^{m}			PMG: 6^{h} 51^{m}			PMG: 5^{h} 08^{m}			PMG: 2^{h} 24^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	290	51.4	207	27.3	+22 24.4	257	09.8	+11 37.5	282	41.6	+2 03.2	323	59.4	−14 38.6
1	305	53.9	222	26.5	24.6	272	10.6	38.1	297	43.9	03.2	339	02.0	38.7
2	320	56.3	237	25.8	24.9	287	11.4	38.7	312	46.3	03.3	354	04.6	38.7
3	335	58.8	252	25.0	25.1	302	12.2	39.3	327	48.6	03.3	9	07.2	38.8
4	351	01.3	267	24.2	25.4	317	13.1	39.8	342	51.0	03.4	24	09.8	38.8
5	6	03.7	282	23.4	+22 25.6	332	13.9	+11 40.4	357	53.3	+2 03.4	39	12.4	−14 38.9
6	21	06.2	297	22.6	+22 25.9	347	14.7	+11 41.0	12	55.7	+2 03.4	54	15.0	−14 38.9
7	36	08.7	312	21.9	26.1	2	15.5	41.6	27	58.0	03.5	69	17.6	39.0
8	51	11.1	327	21.1	26.3	17	16.3	42.1	43	00.3	03.5	84	20.1	39.0
9	66	13.6	342	20.3	26.6	32	17.1	42.7	58	02.7	03.6	99	22.7	39.1
10	81	16.1	357	19.5	26.8	47	17.9	43.3	73	05.0	03.6	114	25.3	39.1
11	96	18.5	12	18.7	+22 27.0	62	18.7	+11 43.9	88	07.4	+2 03.6	129	27.9	−14 39.2
12	111	21.0	27	18.0	+22 27.3	77	19.6	+11 44.4	103	09.7	+2 03.7	144	30.5	−14 39.2
13	126	23.5	42	17.2	27.5	92	20.4	45.0	118	12.1	03.7	159	33.1	39.3
14	141	25.9	57	16.4	27.7	107	21.2	45.6	133	14.4	03.7	174	35.7	39.3
15	156	28.4	72	15.6	27.9	122	22.0	46.2	148	16.8	03.8	189	38.3	39.4
16	171	30.8	87	14.8	28.2	137	22.8	46.7	163	19.1	03.8	204	40.9	39.4
17	186	33.3	102	14.0	+22 28.4	152	23.6	+11 47.3	178	21.5	+2 03.9	219	43.5	−14 39.5
18	201	35.8	117	13.3	+22 28.6	167	24.4	+11 47.9	193	23.8	+2 03.9	234	46.1	−14 39.5
19	216	38.2	132	12.5	28.9	182	25.3	48.5	208	26.1	03.9	249	48.7	39.6
20	231	40.7	147	11.7	29.1	197	26.1	49.0	223	28.5	04.0	264	51.3	39.7
21	246	43.2	162	10.9	29.3	212	26.9	49.6	238	30.8	04.0	279	53.9	39.7
22	261	45.6	177	10.1	29.5	227	27.7	50.2	253	33.2	04.0	294	56.5	39.8
23	276	48.1	192	09.3	29.7	242	28.5	50.7	268	35.5	04.1	309	59.1	39.8
24	291	50.6	207	08.6	+22 30.0	257	29.3	+11 51.3	283	37.9	+2 04.1	325	01.7	−14 39.9
Dif	—		−8		+2	+8		+6	+23		0	+26		−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 14^{d}.9		PHE	4^{h}: 61′.3									
	PMG: 12^{h} 05^{m}.9				SD: 16′.7			12^{h}: 61′.2									
					PMG: 0^{h} 24^{m}			20^{h}: 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	178	32.1	+21	42.6	354	14.1	−25	39.4		**60 N**	** **	1 41	3 02	22 29	10	2 46	113
1	193	32.0		42.2	8	34.8	17	33.7	57	**58**	** **	2 13	19	22 11	15	3 12	104
2	208	31.9		41.8	22	55.6	18	27.8	59	**56**	0 38	37	33	21 56	20	32	99
3	223	31.9		41.4	37	16.5	19	21.8	60	**54**	1 33	2 55	46	42	24	3 49	95
4	238	31.8		41.1	51	37.4	19	15.5	63	**52**	2 03	3 11	3 57	31	27	4 04	91
5	253	31.7	+21	40.7	65	58.5	21	−25 09.0	65	**50**	2 25	3 24	4 06	21 20	31	4 16	88
6	268	31.7	+21	40.3	80	19.6	21	−25 02.4	66	**45**	3 04	3 51	4 27	20 58	36	4 42	83
7	283	31.6		39.9	94	40.9	23	−24 55.5	69	**40**	31	4 11	43	41	40	5 02	80
8	298	31.5		39.6	109	02.2	23	48.5	70	**35**	3 52	28	4 57	26	43	19	77
9	313	31.5		39.2	123	23.6	24	41.3	72	**30**	4 09	4 42	5 09	20 13	46	34	74
10	328	31.4		38.8	137	45.1	25	33.9	74	**20**	36	5 05	29	19 51	51	5 59	69
11	343	31.3	+21	38.4	152	06.8	27	−24 26.3	76	**10 N**	4 57	5 23	5 46	19 31	56	6 20	66
12	358	31.3	+21	38.0	166	28.5	27	−24 18.6	77	**0**	5 14	5 40	6 02	19 13	60	6 40	62
13	13	31.2		37.6	180	50.3	28	10.6	80	**10 S**	30	5 56	18	18 55	63	6 59	59
14	28	31.1		37.3	195	12.3	30	−24 02.5	81	**20**	44	6 12	35	35	68	7 20	56
15	43	31.1		36.9	209	34.3	30	−23 54.2	83	**30**	5 59	29	6 55	18 13	72	44	51
16	58	31.0		36.5	223	56.5	32	45.8	84	**35**	6 07	38	7 06	17 59	76	7 58	49
17	73	30.9	+21	36.1	238	18.8	33	−23 37.2	86	**40**	6 15	6 49	7 19	17 44	79	8 15	45
18	88	30.9	+21	35.7	252	41.2	34	−23 28.4	88	**45**	6 24	7 01	7 34	17 26	83	8 34	41
19	103	30.8		35.3	267	03.7	35	19.4	90	**50**	35	15	7 53	17 03	89	8 58	36
20	118	30.7		34.9	281	26.3	36	10.3	91	**52**	39	22	8 01	16 52	92	9 09	34
21	133	30.7		34.6	295	49.0	37	−23 01.1	92	**54**	44	29	11	39	96	22	31
22	148	30.6		34.2	310	11.9	39	−22 51.6	95	**56**	49	37	22	25	99	37	27
23	163	30.5		33.8	324	34.9	40	42.0	96	**58**	6 55	46	35	16 08	104	9 55	21
24	178	30.5	+21	33.4	338	58.0	41	−22 32.3	97	**60 S**	7 02	7 56	8 50	15 47	112	10 16	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.4			Mag: −2.6			Mag: +0.5		
	4^{h} 31^{m}.9		PMG: 10^{h} 12^{m}			PMG: 6^{h} 50^{m}			PMG: 5^{h} 05^{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	291	50.6	207	08.6	+22 30.0	257	29.3	+11 51.3	283	37.9	+2 04.1	325	01.7	−14 39.9
1	306	53.0	222	07.8	30.2	272	30.1	51.9	298	40.2	04.1	340	04.3	39.9
2	321	55.5	237	07.0	30.4	287	30.9	52.5	313	42.6	04.2	355	06.9	40.0
3	336	58.0	252	06.2	30.6	302	31.8	53.0	328	44.9	04.2	10	09.5	40.0
4	352	00.4	267	05.4	30.8	317	32.6	53.6	343	47.3	04.2	25	12.1	40.1
5	7	02.9	282	04.6	+22 31.0	332	33.4	+11 54.2	358	49.6	+2 04.3	40	14.7	−14 40.1
6	22	05.3	297	03.8	+22 31.2	347	34.2	+11 54.7	13	52.0	+2 04.3	55	17.3	−14 40.2
7	37	07.8	312	03.1	31.5	2	35.0	55.3	28	54.3	04.4	70	19.9	40.2
8	52	10.3	327	02.3	31.7	17	35.8	55.9	43	56.7	04.4	85	22.5	40.3
9	67	12.7	342	01.5	31.9	32	36.6	56.4	58	59.0	04.4	100	25.1	40.3
10	82	15.2	357	00.7	32.1	47	37.5	57.0	74	01.4	04.5	115	27.7	40.4
11	97	17.7	11	59.9	+22 32.3	62	38.3	+11 57.6	89	03.7	+2 04.5	130	30.3	−14 40.5
12	112	20.1	26	59.1	+22 32.5	77	39.1	+11 58.2	104	06.1	+2 04.5	145	32.9	−14 40.5
13	127	22.6	41	58.3	32.7	92	39.9	58.7	119	08.5	04.6	160	35.5	40.6
14	142	25.1	56	57.5	32.9	107	40.7	59.3	134	10.8	04.6	175	38.1	40.6
15	157	27.5	71	56.8	33.1	122	41.5	+11 59.9	149	13.2	04.6	190	40.7	40.7
16	172	30.0	86	56.0	33.3	137	42.4	+12 00.4	164	15.5	04.7	205	43.3	40.7
17	187	32.4	101	55.2	+22 33.5	152	43.2	+12 01.0	179	17.9	+2 04.7	220	45.9	−14 40.8
18	202	34.9	116	54.4	+22 33.7	167	44.0	+12 01.6	194	20.2	+2 04.7	235	48.5	−14 40.8
19	217	37.4	131	53.6	33.9	182	44.8	02.1	209	22.6	04.8	250	51.1	40.9
20	232	39.8	146	52.8	34.1	197	45.6	02.7	224	24.9	04.8	265	53.7	40.9
21	247	42.3	161	52.0	34.3	212	46.4	03.3	239	27.3	04.8	280	56.3	41.0
22	262	44.8	176	51.2	34.5	227	47.2	03.8	254	29.6	04.9	295	58.9	41.0
23	277	47.2	191	50.4	34.7	242	48.1	04.4	269	32.0	04.9	311	01.6	41.1
24	292	49.7	206	49.6	+22 34.9	257	48.9	+12 05.0	284	34.4	+2 04.9	326	04.2	−14 41.1
Dif	—		−8		+2	+8		+6	+24		0	+26		−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 15^{d}.9		PHE	4^{h}: 60′.9									
	PMG: 12^{h} 06^{m}.0				SD: 16′.6			12^{h}: 60′.7									
					PMG: 1^{h} 28^{m}			20^{h}: 60′.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	30.5	+21	33.4	338	58.0 42	−22	32.3 99		**60 N**	21 07	22 25	** **	22 39	4	4 39	111
1	193	30.4		33.0	353	21.2		22.4		**58**	20 50	21 54	** **	26	10	4 56	105
2	208	30.3		32.6	7	44.5 43		12.3 101		**56**	36	32	23 21	16	13	5 11	100
3	223	30.3		32.2	22	08.0 45	−22	02.2 101		**54**	24	21 14	22 33	22 06	17	24	95
4	238	30.2		31.8	36	31.6 46	−21	51.8 104		**52**	13	20 59	22 05	21 58	20	35	92
5	253	30.1	+21	31.4	50	55.3 47	−21	41.3 105		**50**	20 04	20 46	21 44	21 51	22	5 44	90
6	268	30.1	+21	31.0	65	19.1 48	−21	30.7 106		**45**	19 44	20 20	21 06	21 34	28	6 05	83
7	283	30.0		30.6	79	43.1 50		19.9 108		**40**	28	20 00	20 40	21	32	22	78
8	298	30.0		30.2	94	07.2 51	−21	09.0 109		**35**	14	19 43	19	21 09	37	36	74
9	313	29.9		29.9	108	31.5 53	−20	58.0 110		**30**	19 03	30	20 02	20 59	40	6 48	71
10	328	29.8		29.5	122	55.8 53		46.9 111		**20**	18 43	19 07	19 36	42	45	7 08	66
11	343	29.8	+21	29.1	137	20.3 55	−20	35.6 113		**10 N**	18 26	18 48	19 15	20 27	50	7 26	61
12	358	29.7	+21	28.7	151	44.9 56	−20	24.1 115		**0**	18 10	18 32	18 58	20 13	54	7 42	57
13	13	29.7		28.3	166	09.7 58		12.6 115		**10 S**	17 54	16	42	19 58	59	7 58	53
14	28	29.6		27.9	180	34.5 58	−20	00.9 117		**20**	37	18 01	28	43	64	8 16	48
15	43	29.5		27.5	194	59.5 60	−19	49.1 118		**30**	18	17 44	13	25	70	35	43
16	58	29.5		27.1	209	24.7 62		37.2 119		**35**	17 07	34	18 06	15	73	8 47	40
17	73	29.4	+21	26.7	223	49.9 62	−19	25.2 120		**40**	16 54	17 24	17 57	19 03	77	9 00	36
18	88	29.3	+21	26.3	238	15.3 64	−19	13.0 122		**45**	16 39	17 12	17 48	18 49	81	9 15	32
19	103	29.3		25.9	252	40.9 66	−19	00.8 122		**50**	21	16 58	38	32	87	34	26
20	118	29.2		25.5	267	06.5 66	−18	48.4 124		**52**	12	51	34	24	90	43	23
21	133	29.2		25.1	281	32.3 68		36.0 124		**54**	16 02	44	29	15	93	9 53	20
22	148	29.1		24.6	295	58.2 69		23.4 126		**56**	15 51	36	24	18 04	97	10 04	17
23	163	29.0		24.2	310	24.2 70	−18	10.7 127		**58**	39	28	18	17 52	102	16	13
24	178	29.0	+21	23.8	324	50.4 72	−17	57.9 128		**60 S**	15 24	16 18	17 12	17 39	107	10 31	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.3			Mag: −2.6			Mag: +0.5		
	4^{h} 28^{m}.0		PMG: 10^{h} 13^{m}			PMG: 6^{h} 48^{m}			PMG: 5^{h} 01^{m}			PMG: 2^{h} 15^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	292	49.7	206	49.6	+22 34.9	257	48.9	+12 05.0	284	34.4	+2 04.9	326	04.2	−14 41.1
1	307	52.2	221	48.9	35.1	272	49.7	05.5	299	36.7	05.0	341	06.8	41.2
2	322	54.6	236	48.1	35.3	287	50.5	06.1	314	39.1	05.0	356	09.4	41.3
3	337	57.1	251	47.3	35.5	302	51.3	06.7	329	41.4	05.0	11	12.0	41.3
4	352	59.6	266	46.5	35.6	317	52.1	07.2	344	43.8	05.1	26	14.6	41.4
5	8	02.0	281	45.7	+22 35.8	332	52.9	+12 07.8	359	46.1	+2 05.1	41	17.2	−14 41.4
6	23	04.5	296	44.9	+22 36.0	347	53.8	+12 08.4	14	48.5	+2 05.1	56	19.8	−14 41.5
7	38	06.9	311	44.1	36.2	2	54.6	08.9	29	50.9	05.2	71	22.4	41.5
8	53	09.4	326	43.3	36.4	17	55.4	09.5	44	53.2	05.2	86	25.0	41.6
9	68	11.9	341	42.5	36.6	32	56.2	10.1	59	55.6	05.2	101	27.6	41.6
10	83	14.3	356	41.7	36.8	47	57.0	10.6	74	57.9	05.3	116	30.2	41.7
11	98	16.8	11	40.9	+22 36.9	62	57.8	+12 11.2	90	00.3	+2 05.3	131	32.8	−14 41.7
12	113	19.3	26	40.1	+22 37.1	77	58.7	+12 11.7	105	02.7	+2 05.3	146	35.4	−14 41.8
13	128	21.7	41	39.3	37.3	92	59.5	12.3	120	05.0	05.3	161	38.0	41.9
14	143	24.2	56	38.5	37.5	108	00.3	12.9	135	07.4	05.4	176	40.6	41.9
15	158	26.7	71	37.8	37.6	123	01.1	13.4	150	09.7	05.4	191	43.2	42.0
16	173	29.1	86	37.0	37.8	138	01.9	14.0	165	12.1	05.4	206	45.8	42.0
17	188	31.6	101	36.2	+22 38.0	153	02.7	+12 14.6	180	14.5	+2 05.5	221	48.4	−14 42.1
18	203	34.1	116	35.4	+22 38.2	168	03.6	+12 15.1	195	16.8	+2 05.5	236	51.0	−14 42.1
19	218	36.5	131	34.6	38.3	183	04.4	15.7	210	19.2	05.5	251	53.6	42.2
20	233	39.0	146	33.8	38.5	198	05.2	16.2	225	21.5	05.6	266	56.2	42.2
21	248	41.4	161	33.0	38.7	213	06.0	16.8	240	23.9	05.6	281	58.8	42.3
22	263	43.9	176	32.2	38.8	228	06.8	17.4	255	26.3	05.6	297	01.4	42.3
23	278	46.4	191	31.4	39.0	243	07.6	17.9	270	28.6	05.7	312	04.0	42.4
24	293	48.8	206	30.6	+22 39.2	258	08.5	+12 18.5	285	31.0	+2 05.7	327	06.6	−14 42.5
Dif	—			−8	+2		+8	+6		+24	0		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06.m1				☾ LUNA Edad: 16.d9 SD: 16′.4 PMG: 2h 26m PHE 4h: 60′.2 12h: 59′.9 20h: 59′.6 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	29.0	+21	23.8	324	50.4		−17 57.9	**60 N**	** **	1 48	3 05	22 43	3	6 30	103
1	193	28.9		23.4	339	16.7 73		45.1 128	**58**	** **	2 18	22	36	6	41	99
2	208	28.9		23.0	353	43.1 74		32.1 130	**56**	0 52	41	36	29	10	51	94
3	223	28.8		22.6	8	09.7 76		19.0 131	**54**	1 39	2 59	48	23	13	6 59	91
4	238	28.8		22.2	22	36.4 77	−17	05.9 131	**52**	2 07	3 14	3 59	18	15	7 07	88
5	253	28.7	+21	21.8	37	03.2 78	−16	52.6 133	**50**	2 28	3 27	4 09	22 13	18	7 14	85
6	268	28.6	+21	21.4	51	30.1 79	−16	39.3 133	**45**	3 06	3 53	4 28	22 02	23	7 28	79
7	283	28.6		21.0	65	57.1 80		25.9 134	**40**	33	4 13	44	21 53	28	40	75
8	298	28.5		20.6	80	24.3 82	−16	12.4 135	**35**	3 54	29	4 58	46	31	50	71
9	313	28.5		20.2	94	51.6 83	−15	58.8 136	**30**	4 10	4 43	5 10	39	34	7 59	67
10	328	28.4		19.7	109	19.0 84		45.1 137	**20**	37	5 05	30	27	40	8 14	61
11	343	28.4	+21	19.3	123	46.6 86	−15	31.4 137	**10 N**	4 57	5 24	5 47	21 17	45	8 27	57
12	358	28.3	+21	18.9	138	14.2 86	−15	17.6 138	**0**	5 14	5 40	6 03	21 07	50	8 39	52
13	13	28.2		18.5	152	42.0 88	−15	03.7 139	**10 S**	30	5 56	18	20 57	54	8 51	47
14	28	28.2		18.1	167	09.9 89	−14	49.8 139	**20**	44	6 11	35	47	59	9 04	42
15	43	28.1		17.7	181	37.9 90		35.7 141	**30**	5 59	28	6 54	35	65	18	37
16	58	28.1		17.3	196	06.1 92		21.6 141	**35**	6 06	38	7 05	28	68	27	33
17	73	28.0	+21	16.9	210	34.3 92	−14	07.5 141	**40**	6 14	6 48	7 18	20 20	72	9 36	30
18	88	28.0	+21	16.4	225	02.7 94	−13	53.3 142	**45**	6 23	7 00	7 33	20 10	77	9 47	25
19	103	27.9		16.0	239	31.2 95		39.0 143	**50**	33	14	51	19 59	83	10 00	20
20	118	27.9		15.6	253	59.8 96		24.7 143	**52**	38	20	7 59	54	85	06	18
21	133	27.8		15.2	268	28.5 97	−13	10.3 144	**54**	43	27	8 09	48	88	13	15
22	148	27.7		14.8	282	57.3 98	−12	55.8 145	**56**	48	35	20	41	92	21	11
23	163	27.7		14.3	297	26.2 99		41.3 145	**58**	53	44	32	34	95	29	8
24	178	27.6	+21	13.9	311	55.3 101	−12	26.8 145	**60 S**	6 59	7 54	8 47	19 26	99	10 38	4

UT	ARIES PMG 4h 24.m0		VENUS Mag: −3.8 PMG: 10h 15m			MARTE Mag: +0.3 PMG: 6h 47m			JÚPITER Mag: −2.6 PMG: 4h 57m			SATURNO Mag: +0.5 PMG: 2h 11m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	293	48.8	206	30.6	+22 39.2	258	08.5	+12 18.5	285	31.0	+2 05.7	327	06.6	−14 42.5
1	308	51.3	221	29.8	39.3	273	09.3	19.1	300	33.4	05.7	342	09.2	42.5
2	323	53.8	236	29.0	39.5	288	10.1	19.6	315	35.7	05.7	357	11.9	42.6
3	338	56.2	251	28.2	39.7	303	10.9	20.2	330	38.1	05.8	12	14.5	42.6
4	353	58.7	266	27.4	39.8	318	11.7	20.7	345	40.4	05.8	27	17.1	42.7
5	9	01.2	281	26.6	+22 40.0	333	12.5	+12 21.3	0	42.8	+2 05.8	42	19.7	−14 42.7
6	24	03.6	296	25.8	+22 40.2	348	13.4	+12 21.9	15	45.2	+2 05.9	57	22.3	−14 42.8
7	39	06.1	311	25.0	40.3	3	14.2	22.4	30	47.5	05.9	72	24.9	42.8
8	54	08.6	326	24.2	40.5	18	15.0	23.0	45	49.9	05.9	87	27.5	42.9
9	69	11.0	341	23.4	40.6	33	15.8	23.5	60	52.3	05.9	102	30.1	42.9
10	84	13.5	356	22.6	40.8	48	16.6	24.1	75	54.6	06.0	117	32.7	43.0
11	99	15.9	11	21.8	+22 40.9	63	17.5	+12 24.6	90	57.0	+2 06.0	132	35.3	−14 43.1
12	114	18.4	26	21.0	+22 41.1	78	18.3	+12 25.2	105	59.4	+2 06.0	147	37.9	−14 43.1
13	129	20.9	41	20.2	41.2	93	19.1	25.8	121	01.7	06.1	162	40.5	43.2
14	144	23.3	56	19.4	41.4	108	19.9	26.3	136	04.1	06.1	177	43.1	43.2
15	159	25.8	71	18.6	41.5	123	20.7	26.9	151	06.5	06.1	192	45.7	43.3
16	174	28.3	86	17.8	41.7	138	21.5	27.4	166	08.8	06.1	207	48.3	43.3
17	189	30.7	101	17.0	+22 41.8	153	22.4	+12 28.0	181	11.2	+2 06.2	222	50.9	−14 43.4
18	204	33.2	116	16.2	+22 42.0	168	23.2	+12 28.5	196	13.6	+2 06.2	237	53.5	−14 43.4
19	219	35.7	131	15.4	42.1	183	24.0	29.1	211	15.9	06.2	252	56.2	43.5
20	234	38.1	146	14.6	42.3	198	24.8	29.7	226	18.3	06.3	267	58.8	43.5
21	249	40.6	161	13.8	42.4	213	25.6	30.2	241	20.7	06.3	283	01.4	43.6
22	264	43.0	176	13.0	42.6	228	26.5	30.8	256	23.1	06.3	298	04.0	43.7
23	279	45.5	191	12.2	42.7	243	27.3	31.3	271	25.4	06.3	313	06.6	43.7
24	294	48.0	206	11.4	+22 42.8	258	28.1	+12 31.9	286	27.8	+2 06.4	328	09.2	−14 43.8
Dif	—			−8	+2		+8	+6		+24	0		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 17^{d}.9		PHE	4^{h}: 59′.3								
	PMG: 12^{h} 06^{m}.2				SD: 16′.2			12^{h}: 59′.0								
					PMG: 3^{h} 19^{m}			20^{h}: 58′.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	27.6	+21	13.9	311	55.3	−12	26.8	**60 N**	21 04	22 18	** **	22 46	2	8 13	97
1	193	27.6		13.5	326	24.4 101	−12	12.2 146	**58**	20 47	21 50	** **	42	6	20	92
2	208	27.5		13.1	340	53.6 102	−11	57.5 147	**56**	34	28	23 10	39	8	25	89
3	223	27.5		12.7	355	23.0 104		42.9 146	**54**	22	21 11	22 28	36	11	30	86
4	238	27.4		12.2	9	52.4 104		28.1 148	**52**	11	20 56	22 01	33	14	35	83
5	253	27.4	+21	11.8	24	22.0 106	−11	13.3 148	**50**	20 02	20 44	21 41	22 31	15	8 39	80
6	268	27.3	+21	11.4	38	51.7 107	−10	58.5 148	**45**	19 42	20 18	21 04	22 25	21	8 47	75
7	283	27.3		11.0	53	21.4 107		43.7 148	**40**	27	19 58	20 38	21	24	8 55	70
8	298	27.2		10.5	67	51.3 109		28.8 149	**35**	13	42	18	17	28	9 01	67
9	313	27.2		10.1	82	21.2 109	−10	13.9 149	**30**	19 02	29	20 01	13	31	06	64
10	328	27.1		09.7	96	51.3 111	−9	58.9 150	**20**	18 42	19 06	19 35	07	37	15	58
11	343	27.1	+21	09.3	111	21.4 111	−9	43.9 150	**10 N**	18 25	18 48	19 15	22 02	41	9 24	52
12	358	27.0	+21	08.8	125	51.7 113	−9	28.9 150	**0**	18 10	18 32	18 58	21 57	46	9 31	48
13	13	27.0		08.4	140	22.0 113	−9	13.9 150	**10 S**	17 54	17	43	51	51	38	44
14	28	26.9		08.0	154	52.4 114	−8	58.8 151	**20**	38	18 01	28	46	56	46	39
15	43	26.9		07.5	169	22.9 115		43.7 151	**30**	19	17 45	14	40	61	9 55	33
16	58	26.8		07.1	183	53.5 116		28.6 151	**35**	17 08	36	18 07	36	65	10 00	30
17	73	26.8	+21	06.7	198	24.2 117	−8	13.4 152	**40**	16 56	17 25	17 59	21 32	69	10 06	26
18	88	26.7	+21	06.2	212	55.0 118	−7	58.3 151	**45**	16 41	17 14	17 50	21 27	73	10 12	22
19	103	26.7		05.8	227	25.9 119		43.1 152	**50**	23	17 00	40	22	78	20	17
20	118	26.6		05.4	241	56.8 119		27.9 152	**52**	14	16 53	36	19	80	24	14
21	133	26.6		04.9	256	27.8 120	−7	12.7 152	**54**	16 05	47	31	16	83	28	12
22	148	26.5		04.5	270	58.9 121	−6	57.4 153	**56**	15 54	39	26	13	86	32	9
23	163	26.5		04.1	285	30.1 122		42.2 152	**58**	42	30	21	09	90	37	6
24	178	26.4	+21	03.6	300	01.4 123	−6	26.9 153	**60 S**	15 28	16 21	17 15	21 05	93	10 42	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.3			Mag: −2.6			Mag: +0.5		
	4^{h} 20^{m}.1		PMG: 10^{h} 16^{m}			PMG: 6^{h} 46^{m}			PMG: 4^{h} 53^{m}			PMG: 2^{h} 07^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	294	48.0	206	11.4	+22 42.8	258	28.1	+12 31.9	286	27.8	+2 06.4	328	09.2	−14 43.8
1	309	50.4	221	10.6	43.0	273	28.9	32.4	301	30.2	06.4	343	11.8	43.8
2	324	52.9	236	09.8	43.1	288	29.7	33.0	316	32.5	06.4	358	14.4	43.9
3	339	55.4	251	09.0	43.3	303	30.5	33.5	331	34.9	06.4	13	17.0	43.9
4	354	57.8	266	08.2	43.4	318	31.4	34.1	346	37.3	06.5	28	19.6	44.0
5	10	00.3	281	07.4	+22 43.5	333	32.2	+12 34.7	1	39.7	+2 06.5	43	22.2	−14 44.0
6	25	02.8	296	06.6	+22 43.7	348	33.0	+12 35.2	16	42.0	+2 06.5	58	24.8	−14 44.1
7	40	05.2	311	05.8	43.8	3	33.8	35.8	31	44.4	06.5	73	27.4	44.2
8	55	07.7	326	05.0	43.9	18	34.6	36.3	46	46.8	06.6	88	30.1	44.2
9	70	10.2	341	04.2	44.0	33	35.5	36.9	61	49.1	06.6	103	32.7	44.3
10	85	12.6	356	03.4	44.2	48	36.3	37.4	76	51.5	06.6	118	35.3	44.3
11	100	15.1	11	02.6	+22 44.3	63	37.1	+12 38.0	91	53.9	+2 06.6	133	37.9	−14 44.4
12	115	17.5	26	01.8	+22 44.4	78	37.9	+12 38.5	106	56.3	+2 06.7	148	40.5	−14 44.4
13	130	20.0	41	01.0	44.6	93	38.7	39.1	121	58.6	06.7	163	43.1	44.5
14	145	22.5	56	00.2	44.7	108	39.6	39.6	137	01.0	06.7	178	45.7	44.5
15	160	24.9	70	59.4	44.8	123	40.4	40.2	152	03.4	06.7	193	48.3	44.6
16	175	27.4	85	58.6	44.9	138	41.2	40.7	167	05.8	06.8	208	50.9	44.7
17	190	29.9	100	57.8	+22 45.0	153	42.0	+12 41.3	182	08.1	+2 06.8	223	53.5	−14 44.7
18	205	32.3	115	57.0	+22 45.2	168	42.8	+12 41.8	197	10.5	+2 06.8	238	56.1	−14 44.8
19	220	34.8	130	56.2	45.3	183	43.7	42.4	212	12.9	06.8	253	58.8	44.8
20	235	37.3	145	55.4	45.4	198	44.5	42.9	227	15.3	06.9	269	01.4	44.9
21	250	39.7	160	54.6	45.5	213	45.3	43.5	242	17.6	06.9	284	04.0	44.9
22	265	42.2	175	53.8	45.6	228	46.1	44.0	257	20.0	06.9	299	06.6	45.0
23	280	44.7	190	52.9	45.8	243	46.9	44.6	272	22.4	06.9	314	09.2	45.1
24	295	47.1	205	52.1	+22 45.9	258	47.8	+12 45.1	287	24.8	+2 07.0	329	11.8	−14 45.1
Dif	—			−8	+1		+8	+6		+24	0		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06.m3				LUNA Edad: 18.d9 SD: 15′.9 PMG: 4h 08m PHE: 4h: 58′.4; 12h: 58′.0; 20h: 57′.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	178	26.4	+21	03.6	300	01.4	−6	26.9	**60 N**	** **	1 55	3 09	22 48	2	9 50	91
1	193	26.4		03.2	314	32.7 123	−6	11.7 152	**58**	** **	2 23	26	48	4	52	88
2	208	26.3		02.8	329	04.1 124	−5	56.4 153	**56**	1 03	2 45	39	47	8	54	85
3	223	26.3		02.3	343	35.6 125		41.1 153	**54**	1 45	3 02	3 51	47	10	56	82
4	238	26.2		01.9	358	07.2 126		25.9 152	**52**	2 12	17	4 02	47	12	58	79
5	253	26.2	+21	01.5	12	38.8 126	−5	10.6 153	**50**	2 32	3 29	4 11	22 46	15	9 59	77
6	268	26.1	+21	01.0	27	10.5 127	−4	55.3 153	**45**	3 09	3 55	4 30	22 46	19	10 02	72
7	283	26.1		00.6	41	42.3 128		40.0 153	**40**	35	4 14	46	45	24	05	67
8	298	26.0	+21	00.1	56	14.1 128		24.7 153	**35**	3 55	30	4 59	45	27	08	63
9	313	26.0	+20	59.7	70	46.0 129	−4	09.4 153	**30**	4 12	4 44	5 11	44	30	10	60
10	328	25.9		59.3	85	17.9 129	−3	54.1 153	**20**	38	5 06	30	44	35	13	55
11	343	25.9	+20	58.8	99	50.0 131	−3	38.8 153	**10 N**	4 58	5 24	5 47	22 43	40	10 16	50
12	358	25.9	+20	58.4	114	22.0 130	−3	23.5 153	**0**	5 15	5 41	6 03	22 43	44	10 19	45
13	13	25.8		57.9	128	54.2 132	−3	08.3 152	**10 S**	30	5 56	18	42	49	22	40
14	28	25.8		57.5	143	26.4 132	−2	53.0 153	**20**	44	6 11	35	42	53	25	35
15	43	25.7		57.0	157	58.6 132		37.7 153	**30**	5 58	27	6 53	41	59	28	30
16	58	25.7		56.6	172	31.0 134		22.5 152	**35**	6 06	37	7 04	41	62	30	27
17	73	25.6	+20	56.2	187	03.3 133	−2	07.3 152	**40**	6 14	6 47	7 17	22 41	65	10 32	24
18	88	25.6	+20	55.7	201	35.7 134	−1	52.0 153	**45**	6 22	6 58	7 31	22 40	70	10 34	20
19	103	25.5		55.3	216	08.2 135		36.8 152	**50**	32	7 12	49	40	75	37	15
20	118	25.5		54.8	230	40.7 135		21.6 152	**52**	36	18	7 57	39	78	38	13
21	133	25.5		54.4	245	13.3 136	−1	06.4 152	**54**	41	25	8 07	39	80	40	10
22	148	25.4		53.9	259	45.9 136	−0	51.3 151	**56**	46	33	17	39	83	41	8
23	163	25.4		53.5	274	18.6 137		36.1 152	**58**	51	41	29	39	86	43	5
24	178	25.3	+20	53.0	288	51.3 137	−0	21.0 151	**60 S**	6 57	7 51	8 44	22 38	90	10 45	2

UT	ARIES PMG 4h 16.m2		VENUS Mag: −3.8 PMG: 10h 17m			MARTE Mag: +0.3 PMG: 6h 44m			JÚPITER Mag: −2.6 PMG: 4h 50m			SATURNO Mag: +0.5 PMG: 2h 03m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	295	47.1	205	52.1	+22 45.9	258	47.8	+12 45.1	287	24.8	+2 07.0	329	11.8	−14 45.1
1	310	49.6	220	51.3	46.0	273	48.6	45.7	302	27.2	07.0	344	14.4	45.2
2	325	52.0	235	50.5	46.1	288	49.4	46.2	317	29.5	07.0	359	17.0	45.2
3	340	54.5	250	49.7	46.2	303	50.2	46.8	332	31.9	07.0	14	19.6	45.3
4	355	57.0	265	48.9	46.3	318	51.0	47.3	347	34.3	07.1	29	22.2	45.3
5	10	59.4	280	48.1	+22 46.4	333	51.9	+12 47.9	2	36.7	+2 07.1	44	24.9	−14 45.4
6	26	01.9	295	47.3	+22 46.5	348	52.7	+12 48.4	17	39.1	+2 07.1	59	27.5	−14 45.4
7	41	04.4	310	46.5	46.6	3	53.5	49.0	32	41.4	07.1	74	30.1	45.5
8	56	06.8	325	45.7	46.7	18	54.3	49.5	47	43.8	07.1	89	32.7	45.6
9	71	09.3	340	44.9	46.8	33	55.2	50.1	62	46.2	07.2	104	35.3	45.6
10	86	11.8	355	44.1	46.9	48	56.0	50.6	77	48.6	07.2	119	37.9	45.7
11	101	14.2	10	43.3	+22 47.0	63	56.8	+12 51.2	92	51.0	+2 07.2	134	40.5	−14 45.7
12	116	16.7	25	42.5	+22 47.1	78	57.6	+12 51.7	107	53.3	+2 07.2	149	43.1	−14 45.8
13	131	19.1	40	41.7	47.2	93	58.4	52.3	122	55.7	07.3	164	45.7	45.8
14	146	21.6	55	40.8	47.3	108	59.3	52.8	137	58.1	07.3	179	48.4	45.9
15	161	24.1	70	40.0	47.4	124	00.1	53.4	153	00.5	07.3	194	51.0	46.0
16	176	26.5	85	39.2	47.5	139	00.9	53.9	168	02.9	07.3	209	53.6	46.0
17	191	29.0	100	38.4	+22 47.6	154	01.7	+12 54.5	183	05.3	+2 07.3	224	56.2	−14 46.1
18	206	31.5	115	37.6	+22 47.7	169	02.6	+12 55.0	198	07.6	+2 07.4	239	58.8	−14 46.1
19	221	33.9	130	36.8	47.8	184	03.4	55.5	213	10.0	07.4	255	01.4	46.2
20	236	36.4	145	36.0	47.9	199	04.2	56.1	228	12.4	07.4	270	04.0	46.2
21	251	38.9	160	35.2	48.0	214	05.0	56.6	243	14.8	07.4	285	06.6	46.3
22	266	41.3	175	34.4	48.1	229	05.8	57.2	258	17.2	07.4	300	09.2	46.3
23	281	43.8	190	33.6	48.2	244	06.7	57.7	273	19.6	07.5	315	11.9	46.4
24	296	46.3	205	32.8	+22 48.2	259	07.5	+12 58.3	288	21.9	+2 07.5	330	14.5	−14 46.5
Dif	—			−8	+1		+8	+5		+24	0		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 19^{d}.9		PHE	4^{h}: 57′.4								
	PMG: 12^{h} 06^{m}.3				SD: 15′.7			12^{h}: 57′.1								
					PMG: 4^{h} 53^{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	178	25.3	+20	53.0	288	51.3	−0	21.0	**60 N**	21 00	22 12	** **	22 50	2	11 21	89
1	193	25.3		52.6	303	24.0 137	−0	05.9 151	**58**	20 44	21 45	** **	52	6	20	85
2	208	25.2		52.1	317	56.8 138	+0	09.2 151	**56**	31	24	23 00	55	8	19	82
3	223	25.2		51.7	332	29.7 139		24.3 151	**54**	19	21 08	22 22	57	11	18	79
4	238	25.2		51.2	347	02.5 138		39.4 151	**52**	09	20 53	21 57	22 59	13	17	76
5	253	25.1	+20	50.8	1	35.5 140	+0	54.4 150	**50**	20 00	20 41	21 38	23 01	15	11 16	74
6	268	25.1	+20	50.3	16	08.4 139	+1	09.4 150	**45**	19 41	20 16	21 02	23 05	20	11 14	69
7	283	25.0		49.8	30	41.4 140		24.4 150	**40**	25	19 57	20 36	09	23	12	65
8	298	25.0		49.4	45	14.4 140		39.3 149	**35**	12	41	16	12	27	11	61
9	313	25.0		48.9	59	47.5 141	+1	54.2 149	**30**	19 01	28	20 00	14	30	10	58
10	328	24.9		48.5	74	20.5 140	+2	09.1 149	**20**	18 42	19 06	19 34	19	35	08	53
11	343	24.9	+20	48.0	88	53.7 142	+2	24.0 149	**10 N**	18 25	18 48	19 14	23 23	40	11 06	48
12	358	24.8	+20	47.6	103	26.8 141	+2	38.8 148	**0**	18 10	18 32	18 58	23 27	44	11 04	44
13	13	24.8		47.1	118	00.0 142	+2	53.6 148	**10 S**	17 55	17	43	31	48	02	40
14	28	24.7		46.6	132	33.2 142	+3	08.4 148	**20**	38	18 02	29	35	53	11 00	35
15	43	24.7		46.2	147	06.4 142		23.1 147	**30**	20	17 46	15	40	58	10 58	30
16	58	24.7		45.7	161	39.6 142		37.8 147	**35**	17 09	37	08	43	61	57	27
17	73	24.6	+20	45.3	176	12.9 143	+3	52.5 147	**40**	16 57	17 27	18 00	23 46	65	10 56	23
18	88	24.6	+20	44.8	190	46.2 143	+4	07.1 146	**45**	16 43	17 15	17 52	23 50	69	10 54	20
19	103	24.6		44.3	205	19.5 143		21.7 146	**50**	25	17 02	42	55	73	52	15
20	118	24.5		43.9	219	52.9 144		36.2 145	**52**	17	16 56	38	57	75	51	13
21	133	24.5		43.4	234	26.2 143	+4	50.8 146	**54**	16 08	49	33	23 59	78	50	11
22	148	24.4		43.0	248	59.6 144	+5	05.2 144	**56**	15 57	41	29	** **	**	49	8
23	163	24.4		42.5	263	33.0 144		19.7 145	**58**	45	33	23	** **	**	48	5
24	178	24.4	+20	42.0	278	06.4 144	+5	34.1 144	**60 S**	15 31	16 24	17 17	** **	**	10 47	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.3			Mag: −2.6			Mag: +0.4		
	4^{h} 12^{m}.2		PMG: 10^{h} 18^{m}			PMG: 6^{h} 43^{m}			PMG: 4^{h} 46^{m}			PMG: 1^{h} 59^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	296	46.3	205	32.8	+22 48.2	259	07.5	+12 58.3	288	21.9	+2 07.5	330	14.5	−14 46.5
1	311	48.7	220	32.0	48.3	274	08.3	58.8	303	24.3	07.5	345	17.1	46.5
2	326	51.2	235	31.1	48.4	289	09.1	59.4	318	26.7	07.5	0	19.7	46.6
3	341	53.6	250	30.3	48.5	304	10.0	+12 59.9	333	29.1	07.5	15	22.3	46.6
4	356	56.1	265	29.5	48.6	319	10.8	+13 00.4	348	31.5	07.6	30	24.9	46.7
5	11	58.6	280	28.7	+22 48.7	334	11.6	+13 01.0	3	33.9	+2 07.6	45	27.5	−14 46.7
6	27	01.0	295	27.9	+22 48.7	349	12.4	+13 01.5	18	36.3	+2 07.6	60	30.2	−14 46.8
7	42	03.5	310	27.1	48.8	4	13.2	02.1	33	38.6	07.6	75	32.8	46.9
8	57	06.0	325	26.3	48.9	19	14.1	02.6	48	41.0	07.6	90	35.4	46.9
9	72	08.4	340	25.5	49.0	34	14.9	03.1	63	43.4	07.7	105	38.0	47.0
10	87	10.9	355	24.7	49.0	49	15.7	03.7	78	45.8	07.7	120	40.6	47.0
11	102	13.4	10	23.8	+22 49.1	64	16.5	+13 04.2	93	48.2	+2 07.7	135	43.2	−14 47.1
12	117	15.8	25	23.0	+22 49.2	79	17.4	+13 04.8	108	50.6	+2 07.7	150	45.8	−14 47.1
13	132	18.3	40	22.2	49.3	94	18.2	05.3	123	53.0	07.7	165	48.4	47.2
14	147	20.7	55	21.4	49.3	109	19.0	05.9	138	55.4	07.8	180	51.1	47.3
15	162	23.2	70	20.6	49.4	124	19.8	06.4	153	57.8	07.8	195	53.7	47.3
16	177	25.7	85	19.8	49.5	139	20.7	06.9	169	00.1	07.8	210	56.3	47.4
17	192	28.1	100	19.0	+22 49.5	154	21.5	+13 07.5	184	02.5	+2 07.8	225	58.9	−14 47.4
18	207	30.6	115	18.2	+22 49.6	169	22.3	+13 08.0	199	04.9	+2 07.8	241	01.5	−14 47.5
19	222	33.1	130	17.4	49.7	184	23.1	08.6	214	07.3	07.8	256	04.1	47.5
20	237	35.5	145	16.5	49.7	199	24.0	09.1	229	09.7	07.9	271	06.7	47.6
21	252	38.0	160	15.7	49.8	214	24.8	09.6	244	12.1	07.9	286	09.4	47.7
22	267	40.5	175	14.9	49.9	229	25.6	10.2	259	14.5	07.9	301	12.0	47.7
23	282	42.9	190	14.1	49.9	244	26.4	10.7	274	16.9	07.9	316	14.6	47.8
24	297	45.4	205	13.3	+22 50.0	259	27.3	+13 11.2	289	19.3	+2 07.9	331	17.2	−14 47.8
Dif	—			−8	+1		+8	+5		+24	0		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06.m4				LUNA Edad: 20.d9 SD: 15′.4 PMG: 5h 38m PHE 4h: 56′.5 12h: 56′.3 20h: 56′.0 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	178	24.4	+20	42.0	278	06.4	+5	34.1	**60 N**	** **	2 01	3 14	22 52	2	12 50	88
1	193	24.3		41.6	292	39.8 144	+5	48.4 143	**58**	** **	28		22 58	6	45	84
2	208	24.3		41.1	307	13.2 144	+6	02.7 143	**56**	1 14	2 49	43	23 03	10	41	80
3	223	24.3		40.6	321	46.6 144		17.0 143	**54**	1 51	3 06	3 54	08	12	37	77
4	238	24.2		40.2	336	20.1 145		31.2 142	**52**	2 16	20	4 04	12	15	33	75
5	253	24.2	+20	39.7	350	53.5 144	+6	45.4 142	**50**	2 36	3 32	4 13	23 16	17	12 30	73
6	268	24.1	+20	39.2	5	27.0 145	+6	59.5 141	**45**	3 11	3 57	4 32	23 25	22	12 23	68
7	283	24.1		38.8	20	00.5 145	+7	13.6 141	**40**	37	4 16	4 48	32	26	17	64
8	298	24.1		38.3	34	33.9 144		27.6 140	**35**	3 57	32	5 01	39	28	12	61
9	313	24.0		37.8	49	07.4 145		41.6 140	**30**	4 13	4 45	12	44	32	08	58
10	328	24.0		37.3	63	40.9 145	+7	55.6 140	**20**	39	5 07	31	23 54	36	12 01	52
11	343	24.0	+20	36.9	78	14.4 145	+8	09.4 138	**10 N**	4 58	5 25	5 48	** **	**	11 54	48
12	358	23.9	+20	36.4	92	47.9 145	+8	23.3 139	**0**	5 15	5 41	6 03	** **	**	11 48	44
13	13	23.9		35.9	107	21.4 145		37.1 138	**10 S**	30	5 56	18	** **	**	42	40
14	28	23.9		35.5	121	54.8 144	+8	50.8 137	**20**	44	6 11	34	** **	**	35	36
15	43	23.8		35.0	136	28.3 145	+9	04.5 137	**30**	5 57	27	6 52	** **	**	28	31
16	58	23.8		34.5	151	01.8 145		18.1 136	**35**	6 05	36	7 03	** **	**	24	28
17	73	23.8	+20	34.0	165	35.3 145	+9	31.7 136	**40**	6 12	6 46	7 15	** **	**	11 19	25
18	88	23.7	+20	33.6	180	08.7 144	+9	45.2 135	**45**	6 21	6 57	7 30	** **	**	11 14	20
19	103	23.7		33.1	194	42.2 145	+9	58.7 135	**50**	30	7 10	47	** **	**	07	16
20	118	23.7		32.6	209	15.7 145	+10	12.1 134	**52**	34	16	7 55	** **	**	04	14
21	133	23.6		32.1	223	49.1 144		25.4 133	**54**	39	23	8 04	** **	**	11 01	11
22	148	23.6		31.6	238	22.5 144		38.7 133	**56**	44	30	15	0 02	81	10 57	9
23	163	23.6		31.2	252	56.0 145	+10	51.9 132	**58**	49	39	26	05	84	53	6
24	178	23.5	+20	30.7	267	29.4 144	+11	05.1 132	**60 S**	6 54	7 48	8 40	0 08	88	10 49	2

UT	ARIES PMG 4h 08.m3		VENUS Mag: −3.8 PMG: 10h 20m			MARTE Mag: +0.3 PMG: 6h 42m			JÚPITER Mag: −2.6 PMG: 4h 42m			SATURNO Mag: +0.4 PMG: 1h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	297	45.4	205	13.3	+22 50.0	259	27.3	+13 11.2	289	19.3	+2 07.9	331	17.2	−14 47.8
1	312	47.9	220	12.5	50.0	274	28.1	11.8	304	21.7	08.0	346	19.8	47.9
2	327	50.3	235	11.7	50.1	289	28.9	12.3	319	24.1	08.0	1	22.4	47.9
3	342	52.8	250	10.9	50.1	304	29.7	12.9	334	26.5	08.0	16	25.0	48.0
4	357	55.2	265	10.0	50.2	319	30.6	13.4	349	28.8	08.0	31	27.7	48.1
5	12	57.7	280	09.2	+22 50.2	334	31.4	+13 13.9	4	31.2	+2 08.0	46	30.3	−14 48.1
6	28	00.2	295	08.4	+22 50.3	349	32.2	+13 14.5	19	33.6	+2 08.0	61	32.9	−14 48.2
7	43	02.6	310	07.6	50.4	4	33.0	15.0	34	36.0	08.1	76	35.5	48.2
8	58	05.1	325	06.8	50.4	19	33.9	15.5	49	38.4	08.1	91	38.1	48.3
9	73	07.6	340	06.0	50.5	34	34.7	16.1	64	40.8	08.1	106	40.7	48.4
10	88	10.0	355	05.2	50.5	49	35.5	16.6	79	43.2	08.1	121	43.4	48.4
11	103	12.5	10	04.3	+22 50.5	64	36.3	+13 17.2	94	45.6	+2 08.1	136	46.0	−14 48.5
12	118	15.0	25	03.5	+22 50.6	79	37.2	+13 17.7	109	48.0	+2 08.1	151	48.6	−14 48.5
13	133	17.4	40	02.7	50.6	94	38.0	18.2	124	50.4	08.1	166	51.2	48.6
14	148	19.9	55	01.9	50.7	109	38.8	18.8	139	52.8	08.2	181	53.8	48.6
15	163	22.4	70	01.1	50.7	124	39.6	19.3	154	55.2	08.2	196	56.4	48.7
16	178	24.8	85	00.3	50.8	139	40.5	19.8	169	57.6	08.2	211	59.1	48.8
17	193	27.3	99	59.5	+22 50.8	154	41.3	+13 20.4	185	00.0	+2 08.2	227	01.7	−14 48.8
18	208	29.7	114	58.6	+22 50.8	169	42.1	+13 20.9	200	02.4	+2 08.2	242	04.3	−14 48.9
19	223	32.2	129	57.8	50.9	184	42.9	21.4	215	04.8	08.2	257	06.9	48.9
20	238	34.7	144	57.0	50.9	199	43.8	22.0	230	07.2	08.3	272	09.5	49.0
21	253	37.1	159	56.2	51.0	214	44.6	22.5	245	09.6	08.3	287	12.1	49.0
22	268	39.6	174	55.4	51.0	229	45.4	23.0	260	12.0	08.3	302	14.8	49.1
23	283	42.1	189	54.6	51.0	244	46.2	23.6	275	14.4	08.3	317	17.4	49.2
24	298	44.5	204	53.8	+22 51.1	259	47.1	+13 24.1	290	16.8	+2 08.3	332	20.0	−14 49.2
Dif	—			−8	0		+8	+5		+24	0		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06m.5				LUNA Edad: 21d.9 SD: 15′.2 PMG: 6h 21m PHE 4h: 55′.7; 12h: 55′.5; 20h: 55′.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	178	23.5	+20	30.7	267	29.4	+11	05.1	**60 N**	20 56	22 06	** **	22 54	5	14 18	88
1	193	23.5		30.2	282	02.8 144		18.2 131	**58**	41	21 40	** **	23 04	9	09	84
2	208	23.5		29.7	296	36.2 144		31.2 130	**56**	28	20	22 51	13	12	14 01	80
3	223	23.4		29.3	311	09.6 144		44.2 130	**54**	16	21 04	22 17	20	16	13 54	77
4	238	23.4		28.8	325	42.9 143	+11	57.1 129	**52**	20 06	20 50	21 53	27	18	48	75
5	253	23.4	+20	28.3	340	16.3 144	+12	10.0 129	**50**	19 58	20 38	21 34	23 33	21	13 43	72
6	268	23.4	+20	27.8	354	49.6 143	+12	22.8 128	**45**	19 39	20 14	20 59	23 47	24	13 31	67
7	283	23.3		27.3	9	22.9 143		35.5 127	**40**	24	19 55	34	23 58	28	21	63
8	298	23.3		26.8	23	56.2 143	+12	48.2 127	**35**	11	40	20 15	** **	**	13	60
9	313	23.3		26.4	38	29.5 143	+13	00.8 126	**30**	19 00	27	19 59	** **	**	13 06	57
10	328	23.2		25.9	53	02.7 142		13.3 125	**20**	18 41	19 05	34	** **	**	12 53	53
11	343	23.2	+20	25.4	67	36.0 143	+13	25.8 125	**10 N**	18 25	18 48	19 14	0 03	40	12 42	49
12	358	23.2	+20	24.9	82	09.2 142	+13	38.2 124	**0**	18 10	18 32	18 58	0 11	44	12 32	45
13	13	23.1		24.4	96	42.4 142	+13	50.5 123	**10 S**	17 55	17	43	19	48	22	41
14	28	23.1		23.9	111	15.5 141	+14	02.7 122	**20**	39	18 03	30	28	52	12 11	37
15	43	23.1		23.4	125	48.7 142		14.9 122	**30**	21	17 47	16	38	57	11 59	32
16	58	23.1		22.9	140	21.8 141		27.0 121	**35**	17 11	38	09	44	60	52	29
17	73	23.0	+20	22.5	154	54.9 141	+14	39.1 121	**40**	16 59	17 28	18 01	0 51	63	11 44	26
18	88	23.0	+20	22.0	169	28.0 141	+14	51.0 119	**45**	16 45	17 17	17 53	0 59	67	11 34	23
19	103	23.0		21.5	184	01.0 140	+15	02.9 119	**50**	27	17 04	44	1 08	72	23	18
20	118	23.0		21.0	198	34.0 140		14.8 119	**52**	19	16 58	40	12	75	18	16
21	133	22.9		20.5	213	07.0 140		26.5 117	**54**	10	51	36	17	78	12	14
22	148	22.9		20.0	227	39.9 139		38.2 117	**56**	16 00	44	31	23	80	11 06	11
23	163	22.9		19.5	242	12.8 139	+15	49.8 116	**58**	15 49	36	26	29	84	10 59	7
24	178	22.8	+20	19.0	256	45.7 139	+16	01.3 115	**60 S**	15 35	16 27	17 20	1 36	88	10 51	4

UT	ARIES PMG 4h 04m.4		VENUS Mag: −3.8 PMG: 10h 21m			MARTE Mag: +0.3 PMG: 6h 40m			JÚPITER Mag: −2.6 PMG: 4h 38m			SATURNO Mag: +0.4 PMG: 1h 50m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	298	44.5	204	53.8	+22 51.1	259	47.1	+13 24.1	290	16.8	+2 08.3	332	20.0	−14 49.2
1	313	47.0	219	52.9	51.1	274	47.9	24.6	305	19.2	08.3	347	22.6	49.3
2	328	49.5	234	52.1	51.1	289	48.7	25.2	320	21.6	08.3	2	25.2	49.3
3	343	51.9	249	51.3	51.1	304	49.6	25.7	335	24.0	08.4	17	27.8	49.4
4	358	54.4	264	50.5	51.2	319	50.4	26.2	350	26.4	08.4	32	30.5	49.5
5	13	56.8	279	49.7	+22 51.2	334	51.2	+13 26.7	5	28.8	+2 08.4	47	33.1	−14 49.5
6	28	59.3	294	48.9	+22 51.2	349	52.0	+13 27.3	20	31.2	+2 08.4	62	35.7	−14 49.6
7	44	01.8	309	48.0	51.2	4	52.9	27.8	35	33.6	08.4	77	38.3	49.6
8	59	04.2	324	47.2	51.3	19	53.7	28.3	50	36.0	08.4	92	40.9	49.7
9	74	06.7	339	46.4	51.3	34	54.5	28.9	65	38.4	08.4	107	43.5	49.7
10	89	09.2	354	45.6	51.3	49	55.4	29.4	80	40.8	08.4	122	46.2	49.8
11	104	11.6	9	44.8	+22 51.3	64	56.2	+13 29.9	95	43.2	+2 08.5	137	48.8	−14 49.9
12	119	14.1	24	44.0	+22 51.3	79	57.0	+13 30.5	110	45.6	+2 08.5	152	51.4	−14 49.9
13	134	16.6	39	43.1	51.4	94	57.8	31.0	125	48.0	08.5	167	54.0	50.0
14	149	19.0	54	42.3	51.4	109	58.7	31.5	140	50.4	08.5	182	56.6	50.0
15	164	21.5	69	41.5	51.4	124	59.5	32.0	155	52.8	08.5	197	59.3	50.1
16	179	24.0	84	40.7	51.4	140	00.3	32.6	170	55.2	08.5	213	01.9	50.2
17	194	26.4	99	39.9	+22 51.4	155	01.1	+13 33.1	185	57.6	+2 08.5	228	04.5	−14 50.2
18	209	28.9	114	39.1	+22 51.4	170	02.0	+13 33.6	201	00.0	+2 08.5	243	07.1	−14 50.3
19	224	31.3	129	38.2	51.4	185	02.8	34.2	216	02.4	08.6	258	09.7	50.3
20	239	33.8	144	37.4	51.5	200	03.6	34.7	231	04.8	08.6	273	12.3	50.4
21	254	36.3	159	36.6	51.5	215	04.5	35.2	246	07.3	08.6	288	15.0	50.4
22	269	38.7	174	35.8	51.5	230	05.3	35.7	261	09.7	08.6	303	17.6	50.5
23	284	41.2	189	35.0	51.5	245	06.1	36.3	276	12.1	08.6	318	20.2	50.6
24	299	43.7	204	34.2	+22 51.5	260	07.0	+13 36.8	291	14.5	+2 08.6	333	22.8	−14 50.6
Dif	—			−8	0		+8	+5		+24	0		+26	−1

UT	SOL SD: 15′.7 PMG: 12h 06.m5				LUNA Edad: 22.d9 SD: 15′.0 PMG: 7h 06m PHE 4h: 55′.1; 12h: 54′.9; 20h: 54′.8 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	178	22.8	+20	19.0	256	45.7	+16	01.3	**60 N**	** **	2 08	3 18	22 59	9	15 46	88
1	193	22.8		18.5	271	18.6 139		12.7 114	**58**	** **	33	33	23 13	14	33	83
2	208	22.8		18.0	285	51.4 138		24.1 114	**56**	1 23	2 53	46	25	18	21	79
3	223	22.8		17.5	300	24.2 138		35.4 113	**54**	1 57	3 09	3 57	36	20	11	76
4	238	22.7		17.0	314	57.0 138		46.6 112	**52**	2 21	23	4 07	45	23	15 03	73
5	253	22.7	+20	16.5	329	29.7 137	+16	57.7 111	**50**	2 39	3 35	4 16	23 54	25	14 55	70
6	268	22.7	+20	16.0	344	02.4 137	+17	08.7 110	**45**	3 14	3 59	4 34	** **	**	14 38	66
7	283	22.7		15.5	358	35.0 136		19.7 110	**40**	39	4 18	4 49	** **	**	24	63
8	298	22.6		15.0	13	07.6 136		30.6 109	**35**	3 59	33	5 02	0 07	32	13	59
9	313	22.6		14.5	27	40.2 136		41.4 108	**30**	4 15	4 46	13	16	34	14 03	57
10	328	22.6		14.0	42	12.8 136	+17	52.1 107	**20**	40	5 08	32	30	39	13 46	53
11	343	22.6	+20	13.5	56	45.3 135	+18	02.7 106	**10 N**	4 59	5 25	5 48	0 43	42	13 31	49
12	358	22.6	+20	13.0	71	17.7 134	+18	13.3 106	**0**	5 15	5 41	6 03	0 55	46	13 17	46
13	13	22.5		12.5	85	50.2 135		23.7 104	**10 S**	30	5 55	18	1 07	49	13 03	43
14	28	22.5		12.0	100	22.5 133		34.1 104	**20**	43	6 10	34	20	53	12 48	40
15	43	22.5		11.5	114	54.9 134		44.4 103	**30**	5 57	26	6 52	35	57	31	36
16	58	22.5		11.0	129	27.2 133	+18	54.6 102	**35**	6 04	35	7 02	44	60	21	34
17	73	22.4	+20	10.5	143	59.5 133	+19	04.7 101	**40**	6 11	6 44	7 14	1 54	63	12 10	31
18	88	22.4	+20	10.0	158	31.7 132	+19	14.7 100	**45**	6 19	6 55	7 28	2 06	67	11 57	27
19	103	22.4		09.5	173	03.9 132		24.6 99	**50**	28	7 08	45	20	72	41	23
20	118	22.4		09.0	187	36.0 131		34.5 99	**52**	32	14	7 53	27	74	34	20
21	133	22.4		08.5	202	08.1 131		44.2 97	**54**	37	21	8 02	35	76	26	18
22	148	22.3		08.0	216	40.2 131	+19	53.9 97	**56**	41	28	12	43	80	17	14
23	163	22.3		07.5	231	12.2 130	+20	03.5 96	**58**	46	36	23	2 53	83	11 06	11
24	178	22.3	+20	07.0	245	44.2 130	+20	12.9 94	**60 S**	6 52	7 45	8 36	3 04	88	10 55	6

UT	ARIES PMG 4h 00.m4		VENUS Mag: −3.8 PMG: 10h 22m			MARTE Mag: +0.3 PMG: 6h 39m			JÚPITER Mag: −2.6 PMG: 4h 34m			SATURNO Mag: +0.4 PMG: 1h 46m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	299	43.7	204	34.2	+22 51.5	260	07.0	+13 36.8	291	14.5	+2 08.6	333	22.8	−14 50.6
1	314	46.1	219	33.3	51.5	275	07.8	37.3	306	16.9	08.6	348	25.4	50.7
2	329	48.6	234	32.5	51.5	290	08.6	37.8	321	19.3	08.6	3	28.1	50.7
3	344	51.1	249	31.7	51.5	305	09.4	38.4	336	21.7	08.6	18	30.7	50.8
4	359	53.5	264	30.9	51.5	320	10.3	38.9	351	24.1	08.6	33	33.3	50.9
5	14	56.0	279	30.1	+22 51.5	335	11.1	+13 39.4	6	26.5	+2 08.7	48	35.9	−14 50.9
6	29	58.5	294	29.2	+22 51.5	350	11.9	+13 39.9	21	28.9	+2 08.7	63	38.5	−14 51.0
7	45	00.9	309	28.4	51.5	5	12.8	40.5	36	31.3	08.7	78	41.2	51.0
8	60	03.4	324	27.6	51.5	20	13.6	41.0	51	33.7	08.7	93	43.8	51.1
9	75	05.8	339	26.8	51.5	35	14.4	41.5	66	36.2	08.7	108	46.4	51.2
10	90	08.3	354	26.0	51.5	50	15.3	42.0	81	38.6	08.7	123	49.0	51.2
11	105	10.8	9	25.2	+22 51.5	65	16.1	+13 42.6	96	41.0	+2 08.7	138	51.6	−14 51.3
12	120	13.2	24	24.3	+22 51.4	80	16.9	+13 43.1	111	43.4	+2 08.7	153	54.3	−14 51.3
13	135	15.7	39	23.5	51.4	95	17.7	43.6	126	45.8	08.7	168	56.9	51.4
14	150	18.2	54	22.7	51.4	110	18.6	44.1	141	48.2	08.7	183	59.5	51.4
15	165	20.6	69	21.9	51.4	125	19.4	44.7	156	50.6	08.8	199	02.1	51.5
16	180	23.1	84	21.1	51.4	140	20.2	45.2	171	53.0	08.8	214	04.7	51.6
17	195	25.6	99	20.2	+22 51.4	155	21.1	+13 45.7	186	55.4	+2 08.8	229	07.4	−14 51.6
18	210	28.0	114	19.4	+22 51.4	170	21.9	+13 46.2	201	57.9	+2 08.8	244	10.0	−14 51.7
19	225	30.5	129	18.6	51.4	185	22.7	46.7	217	00.3	08.8	259	12.6	51.7
20	240	32.9	144	17.8	51.3	200	23.6	47.3	232	02.7	08.8	274	15.2	51.8
21	255	35.4	159	17.0	51.3	215	24.4	47.8	247	05.1	08.8	289	17.8	51.9
22	270	37.9	174	16.1	51.3	230	25.2	48.3	262	07.5	08.8	304	20.5	51.9
23	285	40.3	189	15.3	51.3	245	26.1	48.8	277	09.9	08.8	319	23.1	52.0
24	300	42.8	204	14.5	+22 51.3	260	26.9	+13 49.4	292	12.3	+2 08.8	334	25.7	−14 52.0
Dif	—			−8	0		+8	+5		+24	0		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7		Edad: 23ᵈ.9		PHE	4ʰ: 54′.6								
	PMG: 12ʰ 06ᵐ.5		SD: 14′.9			12ʰ: 54′.5								
			PMG: 7ʰ 52ᵐ			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 22.3	+20 07.0	245 44.2	129	+20 12.9	94	**60 N**	20 51	22 00	** **	23 08	16	17 14	85
1	193 22.3	06.5	260 16.1	129	22.3	93	**58**	37	21 35	** **	27	22	16 56	78
2	208 22.3	06.0	274 48.0	129	31.6	92	**56**	24	16	22 42	43	26	40	75
3	223 22.2	05.5	289 19.9	129	40.8	92	**54**	13	21 01	22 11	23 56	29	27	72
4	238 22.2	05.0	303 51.7	128	49.9	91	**52**	20 04	20 47	21 48	** **	**	16	69
5	253 22.2	+20 04.4	318 23.4	127	+20 58.9	90	**50**	19 55	20 36	21 30	** **	**	16 05	68
6	268 22.2	+20 03.9	332 55.1	127	+21 07.8	89	**45**	19 37	20 12	20 57	0 11	30	15 44	63
7	283 22.2	03.4	347 26.8	127	16.6	88	**40**	22	19 53	32	26	33	27	60
8	298 22.1	02.9	1 58.4	126	25.3	87	**35**	19 10	38	20 13	39	35	12	59
9	313 22.1	02.4	16 30.0	126	33.9	86	**30**	18 59	26	19 57	0 50	37	15 00	56
10	328 22.1	01.9	31 01.6	126	42.4	85	**20**	41	19 05	33	1 09	41	14 39	53
11	343 22.1	+20 01.4	45 33.0	124	+21 50.8	84	**10 N**	18 25	18 47	19 14	1 25	45	14 20	51
12	358 22.1	+20 00.9	60 04.5	125	+21 59.1	83	**0**	18 10	18 32	18 58	1 41	47	14 03	49
13	13 22.1	+20 00.3	74 35.9	124	+22 07.3	82	**10 S**	17 55	18	43	1 56	50	13 46	46
14	28 22.0	+19 59.8	89 07.2	123	15.4	81	**20**	40	18 03	30	2 13	53	28	43
15	43 22.0	59.3	103 38.6	124	23.4	80	**30**	22	17 48	17	32	57	13 07	40
16	58 22.0	58.8	118 09.8	122	31.3	79	**35**	12	39	10	44	59	12 55	38
17	73 22.0	+19 58.3	132 41.0	122	+22 39.1	78	**40**	17 00	17 30	18 03	2 57	62	12 41	36
18	88 22.0	+19 57.8	147 12.2	122	+22 46.8	77	**45**	16 47	17 19	17 55	3 13	64	12 24	33
19	103 22.0	57.2	161 43.4	122	+22 54.3	75	**50**	30	06	46	32	69	12 04	29
20	118 21.9	56.7	176 14.4	120	+23 01.8	75	**52**	22	17 00	42	41	71	11 54	27
21	133 21.9	56.2	190 45.5	121	09.2	74	**54**	13	16 54	38	3 51	74	44	24
22	148 21.9	55.7	205 16.5	120	16.4	72	**56**	16 04	47	34	4 03	77	31	21
23	163 21.9	55.2	219 47.4	119	23.6	72	**58**	15 52	39	29	16	82	17	17
24	178 21.9	+19 54.6	234 18.3	119	+23 30.6	70	**60 S**	15 39	16 30	17 23	4 32	88	11 01	11

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.8		Mag: +0.3		Mag: −2.7		Mag: +0.4	
	3ʰ 56ᵐ.5	PMG: 10ʰ 24ᵐ		PMG: 6ʰ 38ᵐ		PMG: 4ʰ 30ᵐ		PMG: 1ʰ 42ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	300 42.8	204 14.5	+22 51.3	260 26.9	+13 49.4	292 12.3	+2 08.8	334 25.7	−14 52.0
1	315 45.3	219 13.7	51.2	275 27.7	49.9	307 14.8	08.8	349 28.3	52.1
2	330 47.7	234 12.9	51.2	290 28.6	50.4	322 17.2	08.8	4 31.0	52.2
3	345 50.2	249 12.0	51.2	305 29.4	50.9	337 19.6	08.9	19 33.6	52.2
4	0 52.7	264 11.2	51.1	320 30.2	51.4	352 22.0	08.9	34 36.2	52.3
5	15 55.1	279 10.4	+22 51.1	335 31.0	+13 52.0	7 24.4	+2 08.9	49 38.8	−14 52.3
6	30 57.6	294 09.6	+22 51.1	350 31.9	+13 52.5	22 26.8	+2 08.9	64 41.4	−14 52.4
7	46 00.1	309 08.8	51.1	5 32.7	53.0	37 29.3	08.9	79 44.1	52.5
8	61 02.5	324 07.9	51.0	20 33.5	53.5	52 31.7	08.9	94 46.7	52.5
9	76 05.0	339 07.1	51.0	35 34.4	54.0	67 34.1	08.9	109 49.3	52.6
10	91 07.4	354 06.3	51.0	50 35.2	54.5	82 36.5	08.9	124 51.9	52.6
11	106 09.9	9 05.5	+22 50.9	65 36.0	+13 55.1	97 38.9	+2 08.9	139 54.6	−14 52.7
12	121 12.4	24 04.7	+22 50.9	80 36.9	+13 55.6	112 41.3	+2 08.9	154 57.2	−14 52.7
13	136 14.8	39 03.8	50.9	95 37.7	56.1	127 43.8	08.9	169 59.8	52.8
14	151 17.3	54 03.0	50.8	110 38.5	56.6	142 46.2	08.9	185 02.4	52.9
15	166 19.8	69 02.2	50.8	125 39.4	57.1	157 48.6	08.9	200 05.0	52.9
16	181 22.2	84 01.4	50.7	140 40.2	57.6	172 51.0	08.9	215 07.7	53.0
17	196 24.7	99 00.6	+22 50.7	155 41.0	+13 58.2	187 53.4	+2 08.9	230 10.3	−14 53.0
18	211 27.2	113 59.7	+22 50.6	170 41.9	+13 58.7	202 55.9	+2 08.9	245 12.9	−14 53.1
19	226 29.6	128 58.9	50.6	185 42.7	59.2	217 58.3	08.9	260 15.5	53.2
20	241 32.1	143 58.1	50.6	200 43.5	+13 59.7	233 00.7	09.0	275 18.2	53.2
21	256 34.6	158 57.3	50.5	215 44.4	+14 00.2	248 03.1	09.0	290 20.8	53.3
22	271 37.0	173 56.5	50.5	230 45.2	00.7	263 05.5	09.0	305 23.4	53.3
23	286 39.5	188 55.6	50.4	245 46.0	01.3	278 08.0	09.0	320 26.0	53.4
24	301 41.9	203 54.8	+22 50.4	260 46.9	+14 01.8	293 10.4	+2 09.0	335 28.7	−14 53.5
Dif	—	−8	0	+8	+5	+24	0	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 24^{d}.9		PHE	4^{h}: 54′.3									
	PMG: 12^{h} 06^{m}.6				SD: 14′.8			12^{h}: 54′.2									
					PMG: 8^{h} 40^{m}			20^{h}: 54′.1									
	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	21.9	+19	54.6	234	18.3	+23	30.6		**60 N**	** **	2 14	3 22	23 24	31	18 39	73
1	193	21.9		54.1	248	49.2 119		37.6	70	**58**	0 25	38	37	23 49	35	18 14	69
2	208	21.9		53.6	263	20.0 118		44.4	68	**56**	1 32	2 57	3 49	** **	**	17 55	66
3	223	21.8		53.1	277	50.8 118		51.1	67	**54**	2 03	3 13	4 00	** **	**	39	63
4	238	21.8		52.5	292	21.5 117	+23	57.7	66	**52**	25	26	10	0 08	31	25	62
5	253	21.8	+19	52.0	306	52.2 117	+24	04.2	65	**50**	2 43	3 38	4 18	0 19	33	17 13	61
6	268	21.8	+19	51.5	321	22.9 117	+24	10.6	64	**45**	3 17	4 02	4 36	0 41	36	16 47	59
7	283	21.8		51.0	335	53.5 116		16.9	63	**40**	3 41	20	4 51	0 59	39	27	57
8	298	21.8		50.4	350	24.0 115		23.0	61	**35**	4 00	35	5 03	1 14	41	16 11	56
9	313	21.8		49.9	4	54.6 116		29.1	61	**30**	16	4 48	14	27	43	15 56	55
10	328	21.8		49.4	19	25.0 114		35.0	59	**20**	4 40	5 09	33	1 50	45	32	53
11	343	21.7	+19	48.9	33	55.5 115	+24	40.8	58	**10 N**	5 00	5 26	5 48	2 10	47	15 11	51
12	358	21.7	+19	48.3	48	25.9 114	+24	46.5	57	**0**	5 15	5 41	6 03	2 28	49	14 52	49
13	13	21.7		47.8	62	56.2 113		52.1	56	**10 S**	30	5 55	18	2 46	52	32	48
14	28	21.7		47.3	77	26.5 113	+24	57.5	54	**20**	43	6 10	33	3 06	54	14 11	47
15	43	21.7		46.7	91	56.8 113	+25	02.9	54	**30**	5 56	25	6 50	29	56	13 47	45
16	58	21.7		46.2	106	27.1 113		08.1	52	**35**	6 03	33	7 01	43	57	33	44
17	73	21.7	+19	45.7	120	57.3 112	+25	13.2	51	**40**	6 10	6 43	7 12	3 59	59	13 17	42
18	88	21.7	+19	45.1	135	27.4 111	+25	18.2	50	**45**	6 18	6 54	7 26	4 17	62	12 57	40
19	103	21.7		44.6	149	57.6 112		23.1	49	**50**	26	7 06	42	41	65	33	37
20	118	21.7		44.1	164	27.7 111		27.9	48	**52**	30	12	50	4 52	67	21	36
21	133	21.6		43.5	178	57.7 110		32.5	46	**54**	34	18	7 59	5 05	69	12 08	34
22	148	21.6		43.0	193	27.7 110		37.0	45	**56**	39	25	8 08	20	71	11 52	32
23	163	21.6		42.5	207	57.7 110		41.4	44	**58**	44	33	20	5 38	75	34	28
24	178	21.6	+19	41.9	222	27.7 110	+25	45.7	43	**60 S**	6 49	7 42	8 32	6 00	81	11 12	22

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.3			Mag: −2.7			Mag: +0.4		
	3^{h} 52^{m}.6		PMG: 10^{h} 25^{m}			PMG: 6^{h} 37^{m}			PMG: 4^{h} 27^{m}			PMG: 1^{h} 38^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	301	41.9	203	54.8	+22 50.4	260	46.9	+14 01.8	293	10.4	+2 09.0	335	28.7	−14 53.5
1	316	44.4	218	54.0	50.3	275	47.7	02.3	308	12.8	09.0	350	31.3	53.5
2	331	46.9	233	53.2	50.3	290	48.6	02.8	323	15.2	09.0	5	33.9	53.6
3	346	49.3	248	52.4	50.2	305	49.4	03.3	338	17.7	09.0	20	36.5	53.6
4	1	51.8	263	51.5	50.2	320	50.2	03.8	353	20.1	09.0	35	39.1	53.7
5	16	54.3	278	50.7	+22 50.1	335	51.1	+14 04.3	8	22.5	+2 09.0	50	41.8	−14 53.8
6	31	56.7	293	49.9	+22 50.0	350	51.9	+14 04.9	23	24.9	+2 09.0	65	44.4	−14 53.8
7	46	59.2	308	49.1	50.0	5	52.7	05.4	38	27.4	09.0	80	47.0	53.9
8	62	01.7	323	48.3	49.9	20	53.6	05.9	53	29.8	09.0	95	49.6	53.9
9	77	04.1	338	47.4	49.9	35	54.4	06.4	68	32.2	09.0	110	52.3	54.0
10	92	06.6	353	46.6	49.8	50	55.2	06.9	83	34.6	09.0	125	54.9	54.1
11	107	09.1	8	45.8	+22 49.7	65	56.1	+14 07.4	98	37.1	+2 09.0	140	57.5	−14 54.1
12	122	11.5	23	45.0	+22 49.7	80	56.9	+14 07.9	113	39.5	+2 09.0	156	00.1	−14 54.2
13	137	14.0	38	44.1	49.6	95	57.7	08.4	128	41.9	09.0	171	02.8	54.2
14	152	16.4	53	43.3	49.5	110	58.6	08.9	143	44.3	09.0	186	05.4	54.3
15	167	18.9	68	42.5	49.5	125	59.4	09.5	158	46.8	09.0	201	08.0	54.4
16	182	21.4	83	41.7	49.4	141	00.2	10.0	173	49.2	09.0	216	10.6	54.4
17	197	23.8	98	40.9	+22 49.3	156	01.1	+14 10.5	188	51.6	+2 09.0	231	13.3	−14 54.5
18	212	26.3	113	40.0	+22 49.3	171	01.9	+14 11.0	203	54.0	+2 09.0	246	15.9	−14 54.5
19	227	28.8	128	39.2	49.2	186	02.8	11.5	218	56.5	09.0	261	18.5	54.6
20	242	31.2	143	38.4	49.1	201	03.6	12.0	233	58.9	09.0	276	21.1	54.7
21	257	33.7	158	37.6	49.1	216	04.4	12.5	249	01.3	09.0	291	23.8	54.7
22	272	36.2	173	36.8	49.0	231	05.3	13.0	264	03.8	09.0	306	26.4	54.8
23	287	38.6	188	35.9	48.9	246	06.1	13.5	279	06.2	09.0	321	29.0	54.8
24	302	41.1	203	35.1	+22 48.8	261	06.9	+14 14.0	294	08.6	+2 09.0	336	31.6	−14 54.9
Dif	—			−8	−1		+8	+5		+24	0		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7		Edad: 25^{d}.9		PHE	4^{h}: 54′.1								
	PMG: 12^{h} 06^{m}.6		SD: 14′.7			12^{h}: 54′.0								
			PMG: 9^{h} 29^{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	178 21.6	+19 41.9	222 27.7		+25 45.7		**60 N**	20 47	21 53	** **	23 55	54	19 52	52
1	193 21.6	41.4	236 57.6	109	49.9	42	**58**	33	30	23 24	** **	**	23	52
2	208 21.6	40.9	251 27.5	109	53.9	40	**56**	21	21 12	22 34	0 09	38	19 01	52
3	223 21.6	40.3	265 57.4	109	+25 57.8	39	**54**	10	20 57	22 05	25	40	18 42	52
4	238 21.6	39.8	280 27.2	108	+26 01.6	38	**52**	20 01	44	21 44	39	42	27	52
5	253 21.6	+19 39.3	294 57.0	108	+26 05.3	37	**50**	19 53	20 33	21 26	0 52	42	18 14	51
6	268 21.6	+19 38.7	309 26.8	108	+26 08.8	35	**45**	19 35	20 10	20 54	1 17	45	17 46	52
7	283 21.6	38.2	323 56.5	107	12.2	34	**40**	21	19 52	30	38	45	24	52
8	298 21.6	37.6	338 26.2	107	15.5	33	**35**	19 09	37	20 11	1 55	47	17 07	51
9	313 21.6	37.1	352 55.9	107	18.7	32	**30**	18 58	24	19 56	2 10	47	16 51	52
10	328 21.5	36.6	7 25.5	106	21.7	30	**20**	40	19 04	32	35	49	25	51
11	343 21.5	+19 36.0	21 55.2	107	+26 24.6	29	**10 N**	18 25	18 47	19 13	2 57	49	16 02	51
12	358 21.5	+19 35.5	36 24.8	106	+26 27.4	28	**0**	18 10	18 32	18 58	3 17	51	15 41	51
13	13 21.5	34.9	50 54.4	106	30.1	27	**10 S**	17 56	18	44	3 38	51	15 20	51
14	28 21.5	34.4	65 23.9	105	32.6	25	**20**	41	18 04	31	4 00	52	14 58	50
15	43 21.5	33.8	79 53.5	106	35.0	24	**30**	23	17 49	18	25	53	32	50
16	58 21.5	33.3	94 23.0	105	37.3	23	**35**	13	41	11	40	54	14 17	49
17	73 21.5	+19 32.8	108 52.5	105	+26 39.5	22	**40**	17 02	17 31	18 04	4 58	54	13 59	49
18	88 21.5	+19 32.2	123 22.0	105	+26 41.5	20	**45**	16 49	17 21	17 57	5 19	55	13 37	49
19	103 21.5	31.7	137 51.5	105	43.4	19	**50**	32	09	48	46	56	13 10	48
20	118 21.5	31.1	152 20.9	104	45.2	18	**52**	25	17 03	45	5 59	57	12 57	47
21	133 21.5	30.6	166 50.3	104	46.9	17	**54**	16	16 57	41	6 14	58	42	46
22	148 21.5	30.0	181 19.8	105	48.4	15	**56**	16 07	50	36	31	60	24	45
23	163 21.5	29.5	195 49.2	104	49.8	14	**58**	15 56	42	32	6 53	61	12 02	44
24	178 21.5	+19 28.9	210 18.6	104	+26 51.0	12	**60 S**	15 44	16 34	17 27	7 21	63	11 34	42

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.8		Mag: +0.3		Mag: −2.7		Mag: +0.4	
	3^{h} 48^{m}.6	PMG: 10^{h} 26^{m}		PMG: 6^{h} 35^{m}		PMG: 4^{h} 23^{m}		PMG: 1^{h} 34^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	302 41.1	203 35.1	+22 48.8	261 06.9	+14 14.0	294 08.6	+2 09.0	336 31.6	−14 54.9
1	317 43.6	218 34.3	48.7	276 07.8	14.5	309 11.1	09.0	351 34.3	55.0
2	332 46.0	233 33.5	48.7	291 08.6	15.1	324 13.5	09.0	6 36.9	55.0
3	347 48.5	248 32.7	48.6	306 09.5	15.6	339 15.9	09.0	21 39.5	55.1
4	2 50.9	263 31.8	48.5	321 10.3	16.1	354 18.3	09.0	36 42.1	55.1
5	17 53.4	278 31.0	+22 48.4	336 11.1	+14 16.6	9 20.8	+2 09.0	51 44.8	−14 55.2
6	32 55.9	293 30.2	+22 48.3	351 12.0	+14 17.1	24 23.2	+2 09.0	66 47.4	−14 55.3
7	47 58.3	308 29.4	48.3	6 12.8	17.6	39 25.6	09.0	81 50.0	55.3
8	63 00.8	323 28.5	48.2	21 13.6	18.1	54 28.1	09.0	96 52.7	55.4
9	78 03.3	338 27.7	48.1	36 14.5	18.6	69 30.5	09.0	111 55.3	55.5
10	93 05.7	353 26.9	48.0	51 15.3	19.1	84 32.9	09.0	126 57.9	55.5
11	108 08.2	8 26.1	+22 47.9	66 16.2	+14 19.6	99 35.4	+2 09.0	142 00.5	−14 55.6
12	123 10.7	23 25.3	+22 47.8	81 17.0	+14 20.1	114 37.8	+2 09.0	157 03.2	−14 55.6
13	138 13.1	38 24.4	47.7	96 17.8	20.6	129 40.2	09.0	172 05.8	55.7
14	153 15.6	53 23.6	47.6	111 18.7	21.1	144 42.7	09.0	187 08.4	55.8
15	168 18.0	68 22.8	47.5	126 19.5	21.6	159 45.1	09.0	202 11.0	55.8
16	183 20.5	83 22.0	47.4	141 20.4	22.1	174 47.5	09.0	217 13.7	55.9
17	198 23.0	98 21.2	+22 47.3	156 21.2	+14 22.6	189 50.0	+2 09.0	232 16.3	−14 55.9
18	213 25.4	113 20.3	+22 47.2	171 22.0	+14 23.1	204 52.4	+2 09.0	247 18.9	−14 56.0
19	228 27.9	128 19.5	47.1	186 22.9	23.7	219 54.8	09.0	262 21.5	56.1
20	243 30.4	143 18.7	47.0	201 23.7	24.2	234 57.3	09.0	277 24.2	56.1
21	258 32.8	158 17.9	46.9	216 24.5	24.7	249 59.7	09.0	292 26.8	56.2
22	273 35.3	173 17.0	46.8	231 25.4	25.2	265 02.2	09.0	307 29.4	56.2
23	288 37.8	188 16.2	46.7	246 26.2	25.7	280 04.6	09.0	322 32.1	56.3
24	303 40.2	203 15.4	+22 46.6	261 27.1	+14 26.2	295 07.0	+2 09.0	337 34.7	−14 56.4
Dif	—	−8	−1	+8	+5	+24	0	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 26^{d}.9		PHE	4^{h}: 54′.0									
	PMG: 12^{h} 06^{m}.6				SD: 14′.7			12^{h}: 54′.0									
					PMG: 10^{h} 20^{m}			20^{h}: 54′.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	178	21.5	+19	28.9	210	18.6	+26	51.0		**60 N**	** **	2 21	3 27	** **	**	20 44	29
1	193	21.5		28.4	224	47.9	103	52.2	12	**58**	0 50	2 44	41	0 24	54	20 15	34
2	208	21.5		27.8	239	17.3	104	53.2	10	**56**	1 40	3 02	3 53	0 47	53	19 53	37
3	223	21.5		27.3	253	46.7	104	54.1	9	**54**	2 09	17	4 03	1 05	53	34	39
4	238	21.5		26.7	268	16.0	103	54.8	7	**52**	30	30	13	21	52	19	40
5	253	21.5	+19	26.2	282	45.4	104	+26 55.4	6	**50**	2 47	3 41	4 21	1 34	53	19 05	42
6	268	21.5	+19	25.6	297	14.7	103	+26 55.9	5	**45**	3 20	4 04	4 39	2 02	52	18 38	43
7	283	21.5		25.1	311	44.0	103	56.3	4	**40**	3 44	22	4 53	23	53	18 16	45
8	298	21.5		24.5	326	13.4	104	56.5	2	**35**	4 02	37	5 05	42	52	17 58	46
9	313	21.5		24.0	340	42.7	103	56.6	1	**30**	17	4 49	15	2 57	52	43	47
10	328	21.5		23.4	355	12.0	103	56.6	0	**20**	4 41	5 10	33	3 24	51	17 16	49
11	343	21.5	+19	22.8	9	41.3	103	+26 56.4	2	**10 N**	5 00	5 26	5 49	3 46	51	16 53	50
12	358	21.5	+19	22.3	24	10.6	103	+26 56.2	2	**0**	5 16	5 41	6 03	4 08	50	16 32	51
13	13	21.5		21.7	38	40.0	104	55.7	5	**10 S**	29	5 55	17	29	50	16 11	51
14	28	21.5		21.2	53	09.3	103	55.2	5	**20**	42	6 09	32	4 52	50	15 48	53
15	43	21.5		20.6	67	38.6	103	54.5	7	**30**	5 55	24	49	5 18	50	22	53
16	58	21.5		20.1	82	08.0	104	53.7	8	**35**	6 01	32	6 59	34	49	15 06	54
17	73	21.5	+19	19.5	96	37.3	103	+26 52.8	9	**40**	6 08	6 41	7 11	5 52	49	14 48	55
18	88	21.5	+19	18.9	111	06.6	103	+26 51.7	11	**45**	6 16	6 52	7 24	6 14	48	14 26	56
19	103	21.5		18.4	125	36.0	104	50.5	12	**50**	24	7 04	40	42	47	13 58	57
20	118	21.5		17.8	140	05.3	103	49.2	13	**52**	28	09	47	6 56	46	44	58
21	133	21.5		17.3	154	34.7	104	47.8	14	**54**	32	16	7 56	7 12	45	28	59
22	148	21.5		16.7	169	04.1	104	46.2	16	**56**	36	22	8 05	31	44	13 09	61
23	163	21.5		16.1	183	33.5	104	44.5	17	**58**	41	30	16	7 54	42	12 46	63
24	178	21.5	+19	15.6	198	02.9	104	+26 42.6	19	**60 S**	6 46	7 38	8 28	8 24	40	12 16	65

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.3			Mag: −2.7			Mag: +0.4		
	3^{h} 44^{m}.7		PMG: 10^{h} 28^{m}			PMG: 6^{h} 34^{m}			PMG: 4^{h} 19^{m}			PMG: 1^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	303	40.2	203	15.4	+22 46.6	261	27.1	+14 26.2	295	07.0	+2 09.0	337	34.7	−14 56.4
1	318	42.7	218	14.6	46.5	276	27.9	26.7	310	09.5	09.0	352	37.3	56.4
2	333	45.2	233	13.8	46.4	291	28.7	27.2	325	11.9	09.0	7	39.9	56.5
3	348	47.6	248	12.9	46.3	306	29.6	27.7	340	14.3	09.0	22	42.6	56.5
4	3	50.1	263	12.1	46.2	321	30.4	28.2	355	16.8	09.0	37	45.2	56.6
5	18	52.5	278	11.3	+22 46.1	336	31.3	+14 28.7	10	19.2	+2 09.0	52	47.8	−14 56.7
6	33	55.0	293	10.5	+22 46.0	351	32.1	+14 29.2	25	21.7	+2 09.0	67	50.4	−14 56.7
7	48	57.5	308	09.7	45.9	6	33.0	29.7	40	24.1	09.0	82	53.1	56.8
8	63	59.9	323	08.8	45.7	21	33.8	30.2	55	26.5	09.0	97	55.7	56.8
9	79	02.4	338	08.0	45.6	36	34.6	30.7	70	29.0	09.0	112	58.3	56.9
10	94	04.9	353	07.2	45.5	51	35.5	31.2	85	31.4	09.0	128	01.0	57.0
11	109	07.3	8	06.4	+22 45.4	66	36.3	+14 31.7	100	33.9	+2 09.0	143	03.6	−14 57.0
12	124	09.8	23	05.6	+22 45.3	81	37.2	+14 32.2	115	36.3	+2 09.0	158	06.2	−14 57.1
13	139	12.3	38	04.7	45.2	96	38.0	32.7	130	38.7	09.0	173	08.8	57.2
14	154	14.7	53	03.9	45.0	111	38.8	33.2	145	41.2	09.0	188	11.5	57.2
15	169	17.2	68	03.1	44.9	126	39.7	33.7	160	43.6	09.0	203	14.1	57.3
16	184	19.7	83	02.3	44.8	141	40.5	34.2	175	46.1	09.0	218	16.7	57.3
17	199	22.1	98	01.4	+22 44.7	156	41.4	+14 34.7	190	48.5	+2 09.0	233	19.4	−14 57.4
18	214	24.6	113	00.6	+22 44.5	171	42.2	+14 35.2	205	51.0	+2 09.0	248	22.0	−14 57.5
19	229	27.0	127	59.8	44.4	186	43.1	35.7	220	53.4	09.0	263	24.6	57.5
20	244	29.5	142	59.0	44.3	201	43.9	36.2	235	55.8	09.0	278	27.2	57.6
21	259	32.0	157	58.2	44.2	216	44.7	36.7	250	58.3	09.0	293	29.9	57.6
22	274	34.4	172	57.3	44.0	231	45.6	37.1	266	00.7	09.0	308	32.5	57.7
23	289	36.9	187	56.5	43.9	246	46.4	37.6	281	03.2	08.9	323	35.1	57.8
24	304	39.4	202	55.7	+22 43.8	261	47.3	+14 38.1	296	05.6	+2 08.9	338	37.8	−14 57.8
Dif	—			−8	−1		+8	+5		+24	0		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 27.d9		PHE	4h: 54′.0									
	PMG: 12h 06.m6				SD: 14′.7			12h: 54′.0									
					PMG: 11h 11m			20h: 54′.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	21.5	+19	15.6	198	02.9	+26	42.6		**60 N**	20 43	21 47	** **	0 49	75	21 13	16
1	193	21.5		15.0	212	32.3 104		40.7	19	**58**	29	25	23 08	1 18	70	20 49	21
2	208	21.5		14.5	227	01.7 104		38.6	21	**56**	17	21 07	22 26	40	67	30	25
3	223	21.5		13.9	241	31.2 105		36.4	22	**54**	20 07	20 53	21 59	1 58	65	20 13	28
4	238	21.5		13.3	256	00.6 104		34.0	24	**52**	19 58	40	39	2 13	64	19 59	31
5	253	21.5	+19	12.8	270	30.1 105	+26	31.6	24	**50**	19 50	20 29	21 22	2 27	62	19 47	32
6	268	21.5	+19	12.2	284	59.6 105	+26	29.0	26	**45**	19 33	20 07	20 51	2 54	59	19 21	36
7	283	21.6		11.6	299	29.1 105		26.2	28	**40**	19	19 50	28	3 16	57	19 01	39
8	298	21.6		11.1	313	58.7 106		23.4	28	**35**	19 07	35	20 09	34	56	18 44	41
9	313	21.6		10.5	328	28.2 105		20.4	30	**30**	18 57	23	19 54	3 49	55	30	42
10	328	21.6		09.9	342	57.8 106		17.3	31	**20**	39	19 03	31	4 15	53	18 05	44
11	343	21.6	+19	09.4	357	27.4 106	+26	14.1	32	**10 N**	18 24	18 46	19 13	4 37	52	17 43	47
12	358	21.6	+19	08.8	11	57.1 107	+26	10.7	34	**0**	18 10	18 32	18 57	4 58	50	17 23	49
13	13	21.6		08.2	26	26.7 106		07.2	35	**10 S**	17 56	18	44	5 19	49	17 02	52
14	28	21.6		07.7	40	56.4 107	+26	03.6	36	**20**	41	18 05	31	5 42	46	16 41	53
15	43	21.6		07.1	55	26.1 107	+25	59.9	37	**30**	25	17 50	19	6 08	44	15	56
16	58	21.6		06.5	69	55.9 108		56.0	39	**35**	15	42	13	23	43	16 00	58
17	73	21.6	+19	05.9	84	25.6 107	+25	52.0	40	**40**	17 04	17 33	18 06	6 41	41	15 43	59
18	88	21.6	+19	05.4	98	55.4 108	+25	47.9	41	**45**	16 51	17 23	17 59	7 02	40	15 22	62
19	103	21.6		04.8	113	25.3 109		43.7	42	**50**	35	11	50	29	37	14 55	66
20	118	21.7		04.2	127	55.1 108		39.4	43	**52**	28	05	47	42	35	42	67
21	133	21.7		03.6	142	25.0 109		34.9	45	**54**	19	17 00	43	7 57	33	27	70
22	148	21.7		03.1	156	54.9 109		30.3	46	**56**	10	16 53	39	8 15	30	14 10	72
23	163	21.7		02.5	171	24.9 110		25.6	47	**58**	16 00	46	35	8 36	27	13 49	76
24	178	21.7	+19	01.9	185	54.9 110	+25	20.7	49	**60 S**	15 48	16 38	17 30	9 04	21	13 21	82

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.4		
	3h 40.m8		PMG: 10h 29m			PMG: 6h 32m			PMG: 4h 15m			PMG: 1h 25m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	304	39.4	202	55.7	+22 43.8	261	47.3	+14 38.1	296	05.6	+2 08.9	338	37.8	−14 57.8
1	319	41.8	217	54.9	43.6	276	48.1	38.6	311	08.1	08.9	353	40.4	57.9
2	334	44.3	232	54.1	43.5	291	49.0	39.1	326	10.5	08.9	8	43.0	57.9
3	349	46.8	247	53.2	43.4	306	49.8	39.6	341	13.0	08.9	23	45.6	58.0
4	4	49.2	262	52.4	43.2	321	50.6	40.1	356	15.4	08.9	38	48.3	58.1
5	19	51.7	277	51.6	+22 43.1	336	51.5	+14 40.6	11	17.9	+2 08.9	53	50.9	−14 58.1
6	34	54.2	292	50.8	+22 43.0	351	52.3	+14 41.1	26	20.3	+2 08.9	68	53.5	−14 58.2
7	49	56.6	307	50.0	42.8	6	53.2	41.6	41	22.8	08.9	83	56.2	58.3
8	64	59.1	322	49.1	42.7	21	54.0	42.1	56	25.2	08.9	98	58.8	58.3
9	80	01.5	337	48.3	42.5	36	54.9	42.6	71	27.6	08.9	114	01.4	58.4
10	95	04.0	352	47.5	42.4	51	55.7	43.1	86	30.1	08.9	129	04.1	58.4
11	110	06.5	7	46.7	+22 42.2	66	56.5	+14 43.6	101	32.5	+2 08.9	144	06.7	−14 58.5
12	125	08.9	22	45.9	+22 42.1	81	57.4	+14 44.1	116	35.0	+2 08.9	159	09.3	−14 58.6
13	140	11.4	37	45.0	41.9	96	58.2	44.6	131	37.4	08.9	174	11.9	58.6
14	155	13.9	52	44.2	41.8	111	59.1	45.1	146	39.9	08.9	189	14.6	58.7
15	170	16.3	67	43.4	41.7	126	59.9	45.5	161	42.3	08.8	204	17.2	58.7
16	185	18.8	82	42.6	41.5	142	00.8	46.0	176	44.8	08.8	219	19.8	58.8
17	200	21.3	97	41.8	+22 41.3	157	01.6	+14 46.5	191	47.2	+2 08.8	234	22.5	−14 58.9
18	215	23.7	112	40.9	+22 41.2	172	02.5	+14 47.0	206	49.7	+2 08.8	249	25.1	−14 58.9
19	230	26.2	127	40.1	41.0	187	03.3	47.5	221	52.1	08.8	264	27.7	59.0
20	245	28.7	142	39.3	40.9	202	04.2	48.0	236	54.6	08.8	279	30.4	59.1
21	260	31.1	157	38.5	40.7	217	05.0	48.5	251	57.0	08.8	294	33.0	59.1
22	275	33.6	172	37.7	40.6	232	05.8	49.0	266	59.5	08.8	309	35.6	59.2
23	290	36.0	187	36.8	40.4	247	06.7	49.5	282	01.9	08.8	324	38.3	59.2
24	305	38.5	202	36.0	+22 40.3	262	07.5	+14 50.0	297	04.4	+2 08.8	339	40.9	−14 59.3
Dif	—			−8	−1		+8	+5		+24	0		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.7				Edad: 28^{d}.9		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 06^{m}.5				SD: 14′.7			12^{h}: 54′.2									
					PMG: 12^{h} 00^{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	178	21.7	+19	01.9	185	54.9	+25	20.7		**60 N**	** **	2 27	3 31	2 04	85	21 29	8
1	193	21.7		01.3	200	24.9	110	15.8	49	**58**	1 06	2 49	45	28	79	21 10	13
2	208	21.7		00.8	214	55.0	111	10.7	51	**56**	1 48	3 06	3 56	2 47	75	20 55	17
3	223	21.7	+19	00.2	229	25.1	111	05.5	52	**54**	2 14	21	4 07	3 03	72	41	20
4	238	21.7	+18	59.6	243	55.3	112	+25 00.2	53	**52**	35	33	16	17	70	30	22
5	253	21.7	+18	59.0	258	25.4	111	+24 54.8	54	**50**	2 51	3 44	4 24	3 29	68	20 19	25
6	268	21.8	+18	58.5	272	55.7	113	+24 49.2	56	**45**	3 23	4 06	4 41	3 53	64	19 57	30
7	283	21.8		57.9	287	25.9	112	43.6	56	**40**	3 46	24	4 55	4 13	61	40	32
8	298	21.8		57.3	301	56.2	113	37.8	58	**35**	4 04	38	5 06	30	58	25	35
9	313	21.8		56.7	316	26.6	114	31.9	59	**30**	19	4 50	17	4 44	57	19 12	37
10	328	21.8		56.1	330	56.9	113	25.9	60	**20**	4 42	5 10	34	5 08	54	18 49	42
11	343	21.8	+18	55.6	345	27.4	115	+24 19.7	62	**10 N**	5 01	5 27	5 49	5 29	51	18 30	44
12	358	21.8	+18	55.0	359	57.8	114	+24 13.5	62	**0**	5 16	5 41	6 03	5 48	49	18 12	47
13	13	21.9		54.4	14	28.4	116	07.2	63	**10 S**	29	5 55	17	6 08	45	17 54	50
14	28	21.9		53.8	28	58.9	115	+24 00.7	65	**20**	42	6 08	32	28	43	34	53
15	43	21.9		53.2	43	29.5	116	+23 54.1	66	**30**	5 54	23	48	6 52	40	17 11	57
16	58	21.9		52.6	58	00.1	116	47.4	67	**35**	6 00	31	6 58	7 06	38	16 58	59
17	73	21.9	+18	52.1	72	30.8	117	+23 40.6	68	**40**	6 07	6 40	7 09	7 22	36	16 42	62
18	88	21.9	+18	51.5	87	01.6	118	+23 33.7	69	**45**	6 14	6 50	7 22	7 42	32	16 24	65
19	103	21.9		50.9	101	32.4	118	26.7	70	**50**	22	7 02	37	8 06	28	16 01	69
20	118	22.0		50.3	116	03.2	118	19.5	72	**52**	26	07	45	17	26	15 49	72
21	133	22.0		49.7	130	34.0	118	12.3	72	**54**	29	13	7 53	30	24	37	74
22	148	22.0		49.1	145	05.0	120	+23 04.9	74	**56**	33	19	8 02	8 45	21	22	78
23	163	22.0		48.5	159	35.9	119	+22 57.5	74	**58**	38	26	12	9 03	16	15 05	82
24	178	22.0	+18	47.9	174	06.9	120	+22 49.9	76	**60 S**	6 42	7 34	8 24	9 25	10	14 43	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.4		
	3^{h} 36^{m}.8		PMG: 10^{h} 30^{m}			PMG: 6^{h} 31^{m}			PMG: 4^{h} 11^{m}			PMG: 1^{h} 21^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	305	38.5	202	36.0	+22 40.3	262	07.5	+14 50.0	297	04.4	+2 08.8	339	40.9	−14 59.3
1	320	41.0	217	35.2	40.1	277	08.4	50.5	312	06.9	08.8	354	43.5	59.4
2	335	43.4	232	34.4	39.9	292	09.2	50.9	327	09.3	08.8	9	46.1	59.4
3	350	45.9	247	33.6	39.8	307	10.1	51.4	342	11.8	08.8	24	48.8	59.5
4	5	48.4	262	32.7	39.6	322	10.9	51.9	357	14.2	08.7	39	51.4	59.6
5	20	50.8	277	31.9	+22 39.4	337	11.8	+14 52.4	12	16.7	+2 08.7	54	54.0	−14 59.6
6	35	53.3	292	31.1	+22 39.3	352	12.6	+14 52.9	27	19.1	+2 08.7	69	56.7	−14 59.7
7	50	55.8	307	30.3	39.1	7	13.5	53.4	42	21.6	08.7	84	59.3	59.7
8	65	58.2	322	29.5	38.9	22	14.3	53.9	57	24.0	08.7	100	01.9	59.8
9	81	00.7	337	28.6	38.8	37	15.2	54.4	72	26.5	08.7	115	04.6	59.9
10	96	03.1	352	27.8	38.6	52	16.0	54.8	87	28.9	08.7	130	07.2	−14 59.9
11	111	05.6	7	27.0	+22 38.4	67	16.9	+14 55.3	102	31.4	+2 08.7	145	09.8	−15 00.0
12	126	08.1	22	26.2	+22 38.3	82	17.7	+14 55.8	117	33.9	+2 08.7	160	12.5	−15 00.0
13	141	10.5	37	25.4	38.1	97	18.6	56.3	132	36.3	08.7	175	15.1	−15 00.1
14	156	13.0	52	24.6	37.9	112	19.4	56.8	147	38.8	08.6	190	17.7	00.2
15	171	15.5	67	23.7	37.7	127	20.2	57.3	162	41.2	08.6	205	20.4	00.2
16	186	17.9	82	22.9	37.5	142	21.1	57.8	177	43.7	08.6	220	23.0	00.3
17	201	20.4	97	22.1	+22 37.4	157	21.9	+14 58.3	192	46.1	+2 08.6	235	25.6	−15 00.4
18	216	22.9	112	21.3	+22 37.2	172	22.8	+14 58.7	207	48.6	+2 08.6	250	28.3	−15 00.4
19	231	25.3	127	20.5	37.0	187	23.6	59.2	222	51.1	08.6	265	30.9	00.5
20	246	27.8	142	19.6	36.8	202	24.5	+14 59.7	237	53.5	08.6	280	33.5	00.5
21	261	30.3	157	18.8	36.6	217	25.3	+15 00.2	252	56.0	08.6	295	36.1	00.6
22	276	32.7	172	18.0	36.5	232	26.2	00.7	267	58.4	08.6	310	38.8	00.7
23	291	35.2	187	17.2	36.3	247	27.0	01.2	283	00.9	08.5	325	41.4	00.7
24	306	37.6	202	16.4	+22 36.1	262	27.9	+15 01.6	298	03.4	+2 08.5	340	44.0	−15 00.8
Dif	—			−8	−2		+8	+5		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 06m.5				LUNA Edad: 29d.9 SD: 14′.8 PMG: 12h 48m PHE 4h: 54′.3; 12h: 54′.4; 20h: 54′.5 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	178	22.0	+18	47.9	174	06.9	+22	49.9	**60 N**	20 38	21 40	** **	3 29	89	21 37	4
1	193	22.0		47.4	188	38.0 121		42.3 76	**58**	25	20	22 55	3 47	83	23	9
2	208	22.1		46.8	203	09.1 121		34.5 78	**56**	14	21 03	22 18	4 02	79	12	12
3	223	22.1		46.2	217	40.3 122		26.6 79	**54**	20 04	20 49	21 53	15	76	21 01	15
4	238	22.1		45.6	232	11.5 122		18.6 80	**52**	19 55	37	34	27	73	20 52	18
5	253	22.1	+18	45.0	246	42.7 122	+22	10.5 81	**50**	19 47	20 26	21 18	4 37	70	20 44	20
6	268	22.1	+18	44.4	261	14.0 123	+22	02.3 82	**45**	19 31	20 05	20 48	4 57	67	20 27	24
7	283	22.1		43.8	275	45.4 124	+21	54.1 82	**40**	17	19 47	25	5 14	63	12	28
8	298	22.2		43.2	290	16.8 124		45.7 84	**35**	19 05	33	20 07	28	60	20 00	31
9	313	22.2		42.6	304	48.2 124		37.2 85	**30**	18 55	22	19 53	5 41	57	19 49	34
10	328	22.2		42.0	319	19.7 125		28.6 86	**20**	38	19 02	30	6 02	53	31	38
11	343	22.2	+18	41.4	333	51.3 126	+21	19.9 87	**10 N**	18 24	18 46	19 12	6 20	49	19 14	42
12	358	22.2	+18	40.8	348	22.9 126	+21	11.1 88	**0**	18 10	18 32	18 57	6 37	46	18 59	46
13	13	22.3		40.2	2	54.5 126	+21	02.2 89	**10 S**	17 56	19	44	6 53	43	44	49
14	28	22.3		39.7	17	26.2 127	+20	53.3 89	**20**	42	18 05	32	7 11	40	27	53
15	43	22.3		39.1	31	58.0 128		44.2 91	**30**	26	17 51	20	32	35	18 08	57
16	58	22.3		38.5	46	29.8 128		35.0 92	**35**	16	43	14	44	33	17 57	60
17	73	22.3	+18	37.9	61	01.6 128	+20	25.7 93	**40**	17 06	17 35	18 07	7 58	30	17 44	63
18	88	22.4	+18	37.3	75	33.5 129	+20	16.4 93	**45**	16 53	17 25	18 00	8 14	26	17 29	67
19	103	22.4		36.7	90	05.5 130	+20	06.9 95	**50**	38	13	17 53	34	22	10	72
20	118	22.4		36.1	104	37.5 130	+19	57.4 95	**52**	31	08	49	43	20	17 01	74
21	133	22.4		35.5	119	09.5 130		47.8 96	**54**	23	17 02	46	8 54	17	16 51	77
22	148	22.4		34.9	133	41.6 131		38.0 98	**56**	14	16 56	42	9 06	14	40	80
23	163	22.5		34.3	148	13.7 131		28.2 98	**58**	16 04	49	38	19	11	27	83
24	178	22.5	+18	33.7	162	45.9 132	+19	18.3 99	**60 S**	15 52	16 41	17 33	9 35	6	16 11	89

UT	ARIES PMG 3h 32m.9		VENUS Mag: −3.8 PMG: 10h 31m			MARTE Mag: +0.2 PMG: 6h 30m			JÚPITER Mag: −2.7 PMG: 4h 07m			SATURNO Mag: +0.4 PMG: 1h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	306	37.6	202	16.4	+22 36.1	262	27.9	+15 01.6	298	03.4	+2 08.5	340	44.0	−15 00.8
1	321	40.1	217	15.5	35.9	277	28.7	02.1	313	05.8	08.5	355	46.7	00.9
2	336	42.6	232	14.7	35.7	292	29.6	02.6	328	08.3	08.5	10	49.3	00.9
3	351	45.0	247	13.9	35.5	307	30.4	03.1	343	10.7	08.5	25	51.9	01.0
4	6	47.5	262	13.1	35.3	322	31.3	03.6	358	13.2	08.5	40	54.6	01.0
5	21	50.0	277	12.3	+22 35.1	337	32.1	+15 04.1	13	15.7	+2 08.5	55	57.2	−15 01.1
6	36	52.4	292	11.5	+22 34.9	352	33.0	+15 04.5	28	18.1	+2 08.5	70	59.8	−15 01.2
7	51	54.9	307	10.6	34.7	7	33.8	05.0	43	20.6	08.4	86	02.5	01.2
8	66	57.4	322	09.8	34.5	22	34.7	05.5	58	23.1	08.4	101	05.1	01.3
9	81	59.8	337	09.0	34.3	37	35.5	06.0	73	25.5	08.4	116	07.7	01.4
10	97	02.3	352	08.2	34.2	52	36.4	06.5	88	28.0	08.4	131	10.4	01.4
11	112	04.8	7	07.4	+22 34.0	67	37.2	+15 06.9	103	30.4	+2 08.4	146	13.0	−15 01.5
12	127	07.2	22	06.6	+22 33.8	82	38.1	+15 07.4	118	32.9	+2 08.4	161	15.6	−15 01.5
13	142	09.7	37	05.7	33.5	97	38.9	07.9	133	35.4	08.4	176	18.3	01.6
14	157	12.1	52	04.9	33.3	112	39.8	08.4	148	37.8	08.4	191	20.9	01.7
15	172	14.6	67	04.1	33.1	127	40.6	08.9	163	40.3	08.3	206	23.5	01.7
16	187	17.1	82	03.3	32.9	142	41.5	09.3	178	42.8	08.3	221	26.2	01.8
17	202	19.5	97	02.5	+22 32.7	157	42.4	+15 09.8	193	45.2	+2 08.3	236	28.8	−15 01.8
18	217	22.0	112	01.7	+22 32.5	172	43.2	+15 10.3	208	47.7	+2 08.3	251	31.4	−15 01.9
19	232	24.5	127	00.8	32.3	187	44.1	10.8	223	50.2	08.3	266	34.1	02.0
20	247	26.9	142	00.0	32.1	202	44.9	11.3	238	52.6	08.3	281	36.7	02.0
21	262	29.4	156	59.2	31.9	217	45.8	11.7	253	55.1	08.3	296	39.3	02.1
22	277	31.9	171	58.4	31.7	232	46.6	12.2	268	57.6	08.2	311	42.0	02.2
23	292	34.3	186	57.6	31.5	247	47.5	12.7	284	00.0	08.2	326	44.6	02.2
24	307	36.8	201	56.8	+22 31.3	262	48.3	+15 13.2	299	02.5	+2 08.2	341	47.2	−15 02.3
Dif	—			−8	−2		+9	+5		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 06.m5				LUNA Edad: 1.d3 SD: 14′.9 PMG: 13h 34m PHE: 4h: 54′.6; 12h: 54′.7; 20h: 54′.8 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	22.5	+18	33.7	162	45.9	+19	18.3	**60 N**	** **	2 34	3 36	4 58	87	21 41	3
1	193	22.5		33.1	177	18.2 133	+19	08.3 100	**58**	1 19	2 54	3 49	5 10	84	32	6
2	208	22.5		32.5	191	50.4 132	+18	58.3 100	**56**	1 55	3 11	4 00	21	80	24	9
3	223	22.6		31.9	206	22.8 134		48.1 102	**54**	2 20	25	10	31	77	16	12
4	238	22.6		31.3	220	55.2 134		37.9 102	**52**	40	37	19	40	74	10	14
5	253	22.6	+18	30.6	235	27.6 134	+18	27.5 104	**50**	2 55	3 47	4 26	5 47	72	21 04	16
6	268	22.6	+18	30.0	250	00.1 135	+18	17.1 104	**45**	3 26	4 09	4 43	6 04	66	20 51	21
7	283	22.7		29.4	264	32.6 135	+18	06.6 105	**40**	3 48	26	4 56	17	63	40	25
8	298	22.7		28.8	279	05.1 135	+17	56.0 106	**35**	4 06	40	5 08	28	60	31	28
9	313	22.7		28.2	293	37.8 137		45.4 106	**30**	20	4 52	18	38	57	23	31
10	328	22.7		27.6	308	10.4 136		34.6 108	**20**	4 43	5 11	35	6 55	52	20 09	35
11	343	22.8	+18	27.0	322	43.1 137	+17	23.8 108	**10 N**	5 01	5 27	5 49	7 09	48	19 56	40
12	358	22.8	+18	26.4	337	15.9 138	+17	12.9 109	**0**	5 16	5 41	6 03	7 23	44	19 45	43
13	13	22.8		25.8	351	48.7 138	+17	01.9 110	**10 S**	29	5 54	16	36	41	33	47
14	28	22.8		25.2	6	21.5 138	+16	50.9 110	**20**	41	6 08	31	7 51	37	20	52
15	43	22.9		24.6	20	54.4 139		39.7 112	**30**	53	22	47	8 07	32	19 05	57
16	58	22.9		24.0	35	27.3 139		28.5 112	**35**	5 59	29	6 56	17	29	18 57	59
17	73	22.9	+18	23.4	50	00.3 140	+16	17.2 113	**40**	6 05	6 38	7 07	8 28	26	18 47	63
18	88	23.0	+18	22.8	64	33.3 140	+16	05.9 113	**45**	6 12	6 48	7 19	8 40	23	18 36	66
19	103	23.0		22.1	79	06.3 140	+15	54.4 115	**50**	20	6 59	34	8 56	18	22	71
20	118	23.0		21.5	93	39.4 141		42.9 115	**52**	23	7 04	42	9 03	16	15	74
21	133	23.0		20.9	108	12.6 142		31.4 115	**54**	27	10	49	11	13	08	76
22	148	23.1		20.3	122	45.7 141		19.7 117	**56**	30	16	7 58	20	10	18 00	79
23	163	23.1		19.7	137	18.9 142	+15	08.0 117	**58**	34	23	8 08	30	7	17 50	83
24	178	23.1	+18	19.1	151	52.2 143	+14	56.2 118	**60 S**	6 39	7 31	8 19	9 41	4	17 40	87

UT	ARIES PMG 3h 29.m0		VENUS Mag: −3.8 PMG: 10h 33m			MARTE Mag: +0.2 PMG: 6h 28m			JÚPITER Mag: −2.7 PMG: 4h 03m			SATURNO Mag: +0.4 PMG: 1h 13m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	307	36.8	201	56.8	+22 31.3	262	48.3	+15 13.2	299	02.5	+2 08.2	341	47.2	−15 02.3
1	322	39.3	216	55.9	31.0	277	49.2	13.6	314	05.0	08.2	356	49.9	02.3
2	337	41.7	231	55.1	30.8	292	50.0	14.1	329	07.4	08.2	11	52.5	02.4
3	352	44.2	246	54.3	30.6	307	50.9	14.6	344	09.9	08.2	26	55.2	02.5
4	7	46.6	261	53.5	30.4	322	51.7	15.1	359	12.4	08.2	41	57.8	02.5
5	22	49.1	276	52.7	+22 30.2	337	52.6	+15 15.5	14	14.8	+2 08.1	57	00.4	−15 02.6
6	37	51.6	291	51.9	+22 29.9	352	53.4	+15 16.0	29	17.3	+2 08.1	72	03.1	−15 02.7
7	52	54.0	306	51.1	29.7	7	54.3	16.5	44	19.8	08.1	87	05.7	02.7
8	67	56.5	321	50.2	29.5	22	55.1	17.0	59	22.3	08.1	102	08.3	02.8
9	82	59.0	336	49.4	29.3	37	56.0	17.4	74	24.7	08.1	117	11.0	02.8
10	98	01.4	351	48.6	29.1	52	56.9	17.9	89	27.2	08.1	132	13.6	02.9
11	113	03.9	6	47.8	+22 28.8	67	57.7	+15 18.4	104	29.7	+2 08.0	147	16.2	−15 03.0
12	128	06.4	21	47.0	+22 28.6	82	58.6	+15 18.9	119	32.1	+2 08.0	162	18.9	−15 03.0
13	143	08.8	36	46.2	28.4	97	59.4	19.3	134	34.6	08.0	177	21.5	03.1
14	158	11.3	51	45.4	28.1	113	00.3	19.8	149	37.1	08.0	192	24.1	03.2
15	173	13.7	66	44.5	27.9	128	01.1	20.3	164	39.6	08.0	207	26.8	03.2
16	188	16.2	81	43.7	27.7	143	02.0	20.8	179	42.0	08.0	222	29.4	03.3
17	203	18.7	96	42.9	+22 27.4	158	02.8	+15 21.2	194	44.5	+2 07.9	237	32.0	−15 03.4
18	218	21.1	111	42.1	+22 27.2	173	03.7	+15 21.7	209	47.0	+2 07.9	252	34.7	−15 03.4
19	233	23.6	126	41.3	27.0	188	04.6	22.2	224	49.5	07.9	267	37.3	03.5
20	248	26.1	141	40.5	26.7	203	05.4	22.6	239	51.9	07.9	282	39.9	03.5
21	263	28.5	156	39.7	26.5	218	06.3	23.1	254	54.4	07.9	297	42.6	03.6
22	278	31.0	171	38.8	26.3	233	07.1	23.6	269	56.9	07.9	312	45.2	03.7
23	293	33.5	186	38.0	26.0	248	08.0	24.1	284	59.3	07.8	327	47.9	03.7
24	308	35.9	201	37.2	+22 25.8	263	08.8	+15 24.5	300	01.8	+2 07.8	342	50.5	−15 03.8
Dif	—			−8	−2		+9	+5		+25	0		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 2^{d}.3		PHE	4^{h}: 55′.0									
	PMG: 12^{h} 06^{m}.4				SD: 15′.0			12^{h}: 55′.1									
					PMG: 14^{h} 18^{m}			20^{h}: 55′.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	23.1	+18	19.1	151	52.2	+14	56.2		**60 N**	20 33	21 34	** **	6 25	87	21 44	2
1	193	23.2		18.5	166	25.5 143		44.4 118		**58**	20	21 14	22 43	34	82	38	5
2	208	23.2		17.8	180	58.8 143		32.5 119		**56**	10	20 58	22 11	41	79	33	8
3	223	23.2		17.2	195	32.2 144		20.5 120		**54**	20 00	45	21 47	48	76	28	11
4	238	23.2		16.6	210	05.6 144	+14	08.4 121		**52**	19 52	33	29	54	73	24	13
5	253	23.3	+18	16.0	224	39.0 144	+13	56.3 121		**50**	19 44	20 23	21 14	6 59	71	21 20	15
6	268	23.3	+18	15.4	239	12.5 145	+13	44.1 122		**45**	19 28	20 02	20 44	7 10	67	21 12	19
7	283	23.3		14.8	253	46.0 145		31.9 122		**40**	15	19 45	23	20	62	21 05	23
8	298	23.4		14.1	268	19.5 145		19.6 123		**35**	19 04	32	20 05	28	59	20 59	26
9	313	23.4		13.5	282	53.1 146	+13	07.2 124		**30**	18 54	20	19 51	35	56	54	29
10	328	23.4		12.9	297	26.7 146	+12	54.8 124		**20**	38	19 01	29	47	51	44	34
11	343	23.5	+18	12.3	312	00.3 146	+12	42.3 125		**10 N**	18 23	18 45	19 11	7 57	48	20 36	38
12	358	23.5	+18	11.7	326	34.0 147	+12	29.7 126		**0**	18 10	18 32	18 57	8 07	43	20 28	43
13	13	23.5		11.0	341	07.7 147		17.1 126		**10 S**	17 57	19	44	17	39	20	47
14	28	23.6		10.4	355	41.4 147	+12	04.4 127		**20**	43	18 06	33	28	34	12	51
15	43	23.6		09.8	10	15.2 148	+11	51.7 127		**30**	27	17 52	21	39	30	20 02	56
16	58	23.6		09.2	24	49.0 148		38.9 128		**35**	18	45	15	46	27	19 56	60
17	73	23.7	+18	08.6	39	22.8 148	+11	26.1 128		**40**	17 07	17 36	18 09	8 54	24	19 50	63
18	88	23.7	+18	07.9	53	56.6 148	+11	13.2 129		**45**	16 55	17 27	18 02	9 03	20	19 42	67
19	103	23.7		07.3	68	30.5 149	+11	00.3 129		**50**	40	16	17 55	14	15	33	72
20	118	23.8		06.7	83	04.4 149	+10	47.3 130		**52**	33	11	52	19	13	29	74
21	133	23.8		06.1	97	38.3 149		34.2 131		**54**	26	17 05	48	24	11	24	77
22	148	23.8		05.4	112	12.2 149		21.1 131		**56**	17	16 59	45	30	9	19	79
23	163	23.9		04.8	126	46.2 150	+10	08.0 131		**58**	16 08	53	41	37	6	13	83
24	178	23.9	+18	04.2	141	20.2 150	+9	54.8 132		**60 S**	15 56	16 45	17 37	9 45	2	19 07	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.4		
	3^{h} 25^{m}.0		PMG: 10^{h} 34^{m}			PMG: 6^{h} 27^{m}			PMG: 3^{h} 59^{m}			PMG: 1^{h} 08^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	308	35.9	201	37.2	+22 25.8	263	08.8	+15 24.5	300	01.8	+2 07.8	342	50.5	−15 03.8
1	323	38.4	216	36.4	25.5	278	09.7	25.0	315	04.3	07.8	357	53.1	03.9
2	338	40.9	231	35.6	25.3	293	10.5	25.5	330	06.8	07.8	12	55.8	03.9
3	353	43.3	246	34.8	25.0	308	11.4	25.9	345	09.3	07.8	27	58.4	04.0
4	8	45.8	261	34.0	24.8	323	12.3	26.4	0	11.7	07.7	43	01.0	04.0
5	23	48.2	276	33.2	+22 24.5	338	13.1	+15 26.9	15	14.2	+2 07.7	58	03.7	−15 04.1
6	38	50.7	291	32.3	+22 24.3	353	14.0	+15 27.4	30	16.7	+2 07.7	73	06.3	−15 04.2
7	53	53.2	306	31.5	24.1	8	14.8	27.8	45	19.2	07.7	88	08.9	04.2
8	68	55.6	321	30.7	23.8	23	15.7	28.3	60	21.6	07.7	103	11.6	04.3
9	83	58.1	336	29.9	23.6	38	16.5	28.8	75	24.1	07.6	118	14.2	04.4
10	99	00.6	351	29.1	23.3	53	17.4	29.2	90	26.6	07.6	133	16.8	04.4
11	114	03.0	6	28.3	+22 23.0	68	18.3	+15 29.7	105	29.1	+2 07.6	148	19.5	−15 04.5
12	129	05.5	21	27.5	+22 22.8	83	19.1	+15 30.2	120	31.6	+2 07.6	163	22.1	−15 04.5
13	144	08.0	36	26.7	22.5	98	20.0	30.6	135	34.0	07.6	178	24.8	04.6
14	159	10.4	51	25.8	22.3	113	20.8	31.1	150	36.5	07.5	193	27.4	04.7
15	174	12.9	66	25.0	22.0	128	21.7	31.6	165	39.0	07.5	208	30.0	04.7
16	189	15.4	81	24.2	21.8	143	22.6	32.0	180	41.5	07.5	223	32.7	04.8
17	204	17.8	96	23.4	+22 21.5	158	23.4	+15 32.5	195	44.0	+2 07.5	238	35.3	−15 04.9
18	219	20.3	111	22.6	+22 21.2	173	24.3	+15 33.0	210	46.4	+2 07.5	253	37.9	−15 04.9
19	234	22.7	126	21.8	21.0	188	25.1	33.4	225	48.9	07.4	268	40.6	05.0
20	249	25.2	141	21.0	20.7	203	26.0	33.9	240	51.4	07.4	283	43.2	05.1
21	264	27.7	156	20.2	20.4	218	26.9	34.4	255	53.9	07.4	298	45.9	05.1
22	279	30.1	171	19.4	20.2	233	27.7	34.8	270	56.4	07.4	313	48.5	05.2
23	294	32.6	186	18.6	19.9	248	28.6	35.3	285	58.8	07.4	328	51.1	05.2
24	309	35.1	201	17.7	+22 19.6	263	29.4	+15 35.7	301	01.3	+2 07.3	343	53.8	−15 05.3
Dif	—			−8	−3		+9	+5		+25	0		+26	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 3ᵈ.3		PHE	4ʰ: 55′.4								
	PMG: 12ʰ 06ᵐ.4				SD: 15′.1			12ʰ: 55′.6								
					PMG: 15ʰ 01ᵐ			20ʰ: 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	178	23.9	+18	04.2	141	20.2 150	+9	54.8 133	**60 N**	** **	2 40	3 41	7 52	86	21 46	1
1	193	23.9		03.6	155	54.2 150		41.5 133	**58**	1 30	2 59	3 53	7 56	83	43	5
2	208	24.0		02.9	170	28.2 150		28.2 133	**56**	2 03	3 15	4 04	8 00	80	41	7
3	223	24.0		02.3	185	02.3 151		14.9 133	**54**	26	29	13	04	77	39	9
4	238	24.1		01.7	199	36.3 150	+9	01.5 134	**52**	44	40	22	07	75	37	12
5	253	24.1	+18	01.0	214	10.4 151	+8	48.1 134	**50**	2 59	3 50	4 29	8 10	72	21 35	14
6	268	24.1	+18	00.4	228	44.5 151	+8	34.6 135	**45**	3 29	4 11	4 45	8 17	67	21 31	19
7	283	24.2	+17	59.8	243	18.6 151		21.1 135	**40**	3 51	28	4 58	22	63	28	22
8	298	24.2		59.2	257	52.7 151	+8	07.5 136	**35**	4 08	42	5 09	27	60	25	26
9	313	24.2		58.5	272	26.9 152	+7	53.9 136	**30**	22	4 53	19	31	57	23	28
10	328	24.3		57.9	287	01.0 151		40.3 136	**20**	4 44	5 12	35	38	52	18	34
11	343	24.3	+17	57.3	301	35.2 152	+7	26.6 137	**10 N**	5 02	5 27	5 50	8 45	46	21 14	39
12	358	24.4	+17	56.6	316	09.3 151	+7	12.9 137	**0**	5 16	5 41	6 03	8 50	43	21 11	42
13	13	24.4		56.0	330	43.5 152	+6	59.1 138	**10 S**	28	5 54	16	8 56	38	07	47
14	28	24.4		55.4	345	17.7 152		45.3 138	**20**	40	6 07	30	9 02	34	21 03	52
15	43	24.5		54.7	359	51.9 152		31.5 138	**30**	52	20	46	09	29	20 58	57
16	58	24.5		54.1	14	26.1 152		17.6 139	**35**	5 57	28	6 55	13	26	56	60
17	73	24.6	+17	53.5	29	00.3 152	+6	03.7 139	**40**	6 03	6 36	7 05	9 18	22	20 53	63
18	88	24.6	+17	52.8	43	34.5 152	+5	49.7 140	**45**	6 10	6 45	7 17	9 23	19	20 49	68
19	103	24.6		52.2	58	08.7 152		35.8 139	**50**	17	6 56	32	29	15	45	72
20	118	24.7		51.6	72	43.0 153		21.7 141	**52**	20	7 01	38	32	12	43	74
21	133	24.7		50.9	87	17.2 152	+5	07.7 140	**54**	24	07	46	35	10	41	77
22	148	24.8		50.3	101	51.4 152	+4	53.6 141	**56**	27	13	7 54	39	7	38	80
23	163	24.8		49.6	116	25.6 152		39.5 141	**58**	31	19	8 04	43	4	36	82
24	178	24.8	+17	49.0	130	59.8 152	+4	25.4 141	**60 S**	6 35	7 27	8 15	9 47	1	20 33	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.4		
	3ʰ 21ᵐ.1		PMG: 10ʰ 35ᵐ			PMG: 6ʰ 26ᵐ			PMG: 3ʰ 55ᵐ			PMG: 1ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	309	35.1	201	17.7	+22 19.6	263	29.4	+15 35.7	301	01.3	+2 07.3	343	53.8	−15 05.3
1	324	37.5	216	16.9	19.4	278	30.3	36.2	316	03.8	07.3	358	56.4	05.4
2	339	40.0	231	16.1	19.1	293	31.2	36.7	331	06.3	07.3	13	59.0	05.4
3	354	42.5	246	15.3	18.8	308	32.0	37.1	346	08.8	07.3	29	01.7	05.5
4	9	44.9	261	14.5	18.6	323	32.9	37.6	1	11.3	07.3	44	04.3	05.6
5	24	47.4	276	13.7	+22 18.3	338	33.7	+15 38.1	16	13.8	+2 07.2	59	06.9	−15 05.6
6	39	49.8	291	12.9	+22 18.0	353	34.6	+15 38.5	31	16.2	+2 07.2	74	09.6	−15 05.7
7	54	52.3	306	12.1	17.7	8	35.5	39.0	46	18.7	07.2	89	12.2	05.7
8	69	54.8	321	11.3	17.5	23	36.3	39.5	61	21.2	07.2	104	14.9	05.8
9	84	57.2	336	10.5	17.2	38	37.2	39.9	76	23.7	07.1	119	17.5	05.9
10	99	59.7	351	09.7	16.9	53	38.0	40.4	91	26.2	07.1	134	20.1	05.9
11	115	02.2	6	08.8	+22 16.6	68	38.9	+15 40.8	106	28.7	+2 07.1	149	22.8	−15 06.0
12	130	04.6	21	08.0	+22 16.3	83	39.8	+15 41.3	121	31.2	+2 07.1	164	25.4	−15 06.1
13	145	07.1	36	07.2	16.0	98	40.6	41.8	136	33.6	07.1	179	28.0	06.1
14	160	09.6	51	06.4	15.8	113	41.5	42.2	151	36.1	07.0	194	30.7	06.2
15	175	12.0	66	05.6	15.5	128	42.4	42.7	166	38.6	07.0	209	33.3	06.3
16	190	14.5	81	04.8	15.2	143	43.2	43.1	181	41.1	07.0	224	36.0	06.3
17	205	17.0	96	04.0	+22 14.9	158	44.1	+15 43.6	196	43.6	+2 07.0	239	38.6	−15 06.4
18	220	19.4	111	03.2	+22 14.6	173	44.9	+15 44.1	211	46.1	+2 06.9	254	41.2	−15 06.4
19	235	21.9	126	02.4	14.3	188	45.8	44.5	226	48.6	06.9	269	43.9	06.5
20	250	24.3	141	01.6	14.0	203	46.7	45.0	241	51.1	06.9	284	46.5	06.6
21	265	26.8	156	00.8	13.7	218	47.5	45.4	256	53.5	06.9	299	49.2	06.6
22	280	29.3	171	00.0	13.4	233	48.4	45.9	271	56.0	06.8	314	51.8	06.7
23	295	31.7	185	59.2	13.2	248	49.3	46.4	286	58.5	06.8	329	54.4	06.8
24	310	34.2	200	58.4	+22 12.9	263	50.1	+15 46.8	302	01.0	+2 06.8	344	57.1	−15 06.8
Dif	—			−8	−3		+9	+5		+25	0		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 4ᵈ.3		PHE	4ʰ: 55′.9									
	PMG: 12ʰ 06ᵐ.3				SD: 15′.2			12ʰ: 56′.1									
					PMG: 15ʰ 43ᵐ			20ʰ: 56′.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	178	24.8	+17	49.0	130	59.8	+4	25.4		**60 N**	20 28	21 27	23 26	9 18	87	21 47	2
1	193	24.9		48.4	145	34.1 153	+4	11.2 142		**58**	16	21 09	22 33	19	84	48	4
2	208	24.9		47.7	160	08.3 152	+3	57.0 142		**56**	20 06	20 53	22 03	20	81	48	8
3	223	25.0		47.1	174	42.5 152		42.8 142		**54**	19 57	40	21 42	21	78	48	10
4	238	25.0		46.4	189	16.7 152		28.6 142		**52**	48	29	24	22	75	49	12
5	253	25.1	+17	45.8	203	50.9 152	+3	14.3 143		**50**	19 41	20 19	21 10	9 22	74	21 49	15
6	268	25.1	+17	45.2	218	25.1 152	+3	00.0 143		**45**	19 26	19 59	20 41	9 24	68	21 50	19
7	283	25.1		44.5	232	59.2 151	+2	45.7 143		**40**	13	43	20	25	65	50	23
8	298	25.2		43.9	247	33.4 152		31.4 143		**35**	19 02	30	20 03	27	60	51	26
9	313	25.2		43.2	262	07.6 152		17.0 144		**30**	18 53	18	19 49	28	57	51	30
10	328	25.3		42.6	276	41.7 151	+2	02.6 144		**20**	37	19 00	28	30	52	52	35
11	343	25.3	+17	41.9	291	15.8 151	+1	48.2 144		**10 N**	18 23	18 45	19 11	9 31	48	21 53	39
12	358	25.4	+17	41.3	305	50.0 152	+1	33.8 144		**0**	18 10	18 31	18 57	9 33	43	21 53	44
13	13	25.4		40.7	320	24.1 151		19.4 144		**10 S**	17 57	19	44	34	39	54	48
14	28	25.5		40.0	334	58.1 150	+1	04.9 145		**20**	43	18 07	33	36	34	55	52
15	43	25.5		39.4	349	32.2 151	+0	50.5 144		**30**	28	17 53	22	38	29	55	59
16	58	25.6		38.7	4	06.2 150		36.0 145		**35**	19	46	16	39	26	56	61
17	73	25.6	+17	38.1	18	40.3 151	+0	21.5 145		**40**	17 09	17 38	18 10	9 40	23	21 56	65
18	88	25.7	+17	37.4	33	14.3 150	+0	07.0 145		**45**	16 57	17 29	18 04	9 42	19	21 57	69
19	103	25.7		36.8	47	48.3 150	−0	07.6 146		**50**	43	18	17 57	44	14	57	74
20	118	25.7		36.1	62	22.2 149		22.1 145		**52**	36	13	54	44	12	57	77
21	133	25.8		35.5	76	56.1 149		36.6 145		**54**	29	08	51	45	10	58	79
22	148	25.8		34.8	91	30.0 149	−0	51.2 146		**56**	21	17 02	48	46	7	58	82
23	163	25.9		34.2	106	03.9 149	−1	05.8 146		**58**	12	16 56	44	47	5	58	85
24	178	25.9	+17	33.5	120	37.8 149	−1	20.4 146		**60 S**	16 01	16 49	17 40	9 48	2	21 59	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.4		
	3ʰ 17ᵐ.2		PMG: 10ʰ 37ᵐ			PMG: 6ʰ 24ᵐ			PMG: 3ʰ 51ᵐ			PMG: 1ʰ 00ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	′	º	′	′	º	′	′	º	′	′
0	310	34.2	200	58.4	+22 12.9	263	50.1	+15 46.8	302	01.0	+2 06.8	344	57.1	−15 06.8
1	325	36.7	215	57.5	12.6	278	51.0	47.3	317	03.5	06.8	359	59.7	06.9
2	340	39.1	230	56.7	12.3	293	51.9	47.7	332	06.0	06.7	15	02.3	07.0
3	355	41.6	245	55.9	12.0	308	52.7	48.2	347	08.5	06.7	30	05.0	07.0
4	10	44.1	260	55.1	11.7	323	53.6	48.6	2	11.0	06.7	45	07.6	07.1
5	25	46.5	275	54.3	+22 11.4	338	54.4	+15 49.1	17	13.5	+2 06.7	60	10.3	−15 07.1
6	40	49.0	290	53.5	+22 11.1	353	55.3	+15 49.6	32	16.0	+2 06.6	75	12.9	−15 07.2
7	55	51.4	305	52.7	10.8	8	56.2	50.0	47	18.5	06.6	90	15.5	07.3
8	70	53.9	320	51.9	10.5	23	57.0	50.5	62	21.0	06.6	105	18.2	07.3
9	85	56.4	335	51.1	10.1	38	57.9	50.9	77	23.5	06.6	120	20.8	07.4
10	100	58.8	350	50.3	09.8	53	58.8	51.4	92	25.9	06.5	135	23.5	07.5
11	116	01.3	5	49.5	+22 09.5	68	59.6	+15 51.8	107	28.4	+2 06.5	150	26.1	−15 07.5
12	131	03.8	20	48.7	+22 09.2	84	00.5	+15 52.3	122	30.9	+2 06.5	165	28.7	−15 07.6
13	146	06.2	35	47.9	08.9	99	01.4	52.7	137	33.4	06.5	180	31.4	07.6
14	161	08.7	50	47.1	08.6	114	02.2	53.2	152	35.9	06.4	195	34.0	07.7
15	176	11.2	65	46.3	08.3	129	03.1	53.6	167	38.4	06.4	210	36.6	07.8
16	191	13.6	80	45.5	08.0	144	04.0	54.1	182	40.9	06.4	225	39.3	07.8
17	206	16.1	95	44.7	+22 07.7	159	04.8	+15 54.6	197	43.4	+2 06.3	240	41.9	−15 07.9
18	221	18.6	110	43.9	+22 07.3	174	05.7	+15 55.0	212	45.9	+2 06.3	255	44.6	−15 08.0
19	236	21.0	125	43.1	07.0	189	06.6	55.5	227	48.4	06.3	270	47.2	08.0
20	251	23.5	140	42.3	06.7	204	07.4	55.9	242	50.9	06.3	285	49.8	08.1
21	266	25.9	155	41.5	06.4	219	08.3	56.4	257	53.4	06.2	300	52.5	08.2
22	281	28.4	170	40.7	06.1	234	09.2	56.8	272	55.9	06.2	315	55.1	08.2
23	296	30.9	185	39.9	05.8	249	10.0	57.3	287	58.4	06.2	330	57.8	08.3
24	311	33.3	200	39.1	+22 05.4	264	10.9	+15 57.7	303	00.9	+2 06.2	346	00.4	−15 08.3
Dif	—			−8	−3		+9	+5		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 06.m2				LUNA Edad: 5.d3 SD: 15′.4 PMG: 16h 26m PHE: 4h: 56′.5; 12h: 56′.7; 20h: 57′.0 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	178	25.9	+17	33.5	120	37.8	−1	20.4	**60 N**	0 47	2 46	3 45	10 45	91	21 49	2
1	193	26.0		32.9	135	11.6 148		34.9 145	**58**	1 40	3 05	3 57	43	87	52	6
2	208	26.0		32.2	149	45.4 148	−1	49.5 146	**56**	2 10	20	4 08	41	83	56	8
3	223	26.1		31.6	164	19.1 147	−2	04.1 146	**54**	32	33	17	39	80	21 58	12
4	238	26.1		30.9	178	52.8 147		18.7 146	**52**	2 49	44	25	37	78	22 01	14
5	253	26.2	+17	30.3	193	26.5 147	−2	33.3 146	**50**	3 04	3 54	4 32	10 36	75	22 04	16
6	268	26.2	+17	29.6	208	00.2 147	−2	47.9 146	**45**	3 32	4 14	4 47	10 32	71	22 09	21
7	283	26.3		29.0	222	33.8 146	−3	02.5 146	**40**	3 53	30	5 00	30	66	13	26
8	298	26.3		28.3	237	07.4 146		17.1 146	**35**	4 10	43	11	27	63	17	29
9	313	26.4		27.7	251	40.9 145		31.7 146	**30**	23	4 54	20	25	60	21	32
10	328	26.4		27.0	266	14.4 145	−3	46.3 146	**20**	4 45	5 13	36	22	54	27	37
11	343	26.5	+17	26.3	280	47.8 144	−4	00.9 146	**10 N**	5 02	5 28	5 50	10 19	49	22 32	42
12	358	26.5	+17	25.7	295	21.3 145	−4	15.5 146	**0**	5 16	5 41	6 03	10 16	45	22 37	46
13	13	26.6		25.0	309	54.6 143		30.1 146	**10 S**	28	5 53	15	13	41	42	51
14	28	26.6		24.4	324	27.9 143		44.7 146	**20**	39	6 06	29	10	36	47	56
15	43	26.7		23.7	339	01.2 143	−4	59.3 146	**30**	50	19	44	07	31	54	60
16	58	26.8		23.1	353	34.4 142	−5	13.9 146	**35**	5 56	26	6 53	05	28	22 57	64
17	73	26.8	+17	22.4	8	07.6 142	−5	28.4 145	**40**	6 02	6 34	7 03	10 03	24	23 01	68
18	88	26.9	+17	21.7	22	40.7 141	−5	43.0 146	**45**	6 08	6 43	7 14	10 01	20	23 06	72
19	103	26.9		21.1	37	13.8 141	−5	57.5 145	**50**	15	54	29	9 58	15	11	78
20	118	27.0		20.4	51	46.8 140	−6	12.0 145	**52**	18	6 58	35	56	14	14	80
21	133	27.0		19.8	66	19.7 139		26.6 146	**54**	21	7 03	42	55	11	17	82
22	148	27.1		19.1	80	52.6 139		41.1 145	**56**	24	09	7 51	53	9	20	85
23	163	27.1		18.4	95	25.5 139	−6	55.5 144	**58**	28	15	8 00	52	5	23	90
24	178	27.2	+17	17.8	109	58.3 138	−7	10.0 145	**60 S**	6 31	7 22	8 10	9 50	2	23 27	93

UT	ARIES PMG 3h 13.m2		VENUS Mag: −3.8 PMG: 10h 38m			MARTE Mag: +0.2 PMG: 6h 23m			JÚPITER Mag: −2.7 PMG: 3h 47m			SATURNO Mag: +0.3 PMG: 0h 56m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	311	33.3	200	39.1	+22 05.4	264	10.9	+15 57.7	303	00.9	+2 06.2	346	00.4	−15 08.3
1	326	35.8	215	38.3	05.1	279	11.8	58.2	318	03.4	06.1	1	03.0	08.4
2	341	38.3	230	37.5	04.8	294	12.6	58.6	333	05.9	06.1	16	05.7	08.5
3	356	40.7	245	36.7	04.5	309	13.5	59.1	348	08.4	06.1	31	08.3	08.5
4	11	43.2	260	35.9	04.1	324	14.4	+15 59.5	3	10.9	06.0	46	11.0	08.6
5	26	45.7	275	35.0	+22 03.8	339	15.3	+16 00.0	18	13.4	+2 06.0	61	13.6	−15 08.7
6	41	48.1	290	34.2	+22 03.5	354	16.1	+16 00.4	33	15.9	+2 06.0	76	16.2	−15 08.7
7	56	50.6	305	33.4	03.1	9	17.0	00.9	48	18.4	06.0	91	18.9	08.8
8	71	53.0	320	32.6	02.8	24	17.9	01.3	63	20.9	05.9	106	21.5	08.9
9	86	55.5	335	31.8	02.5	39	18.7	01.8	78	23.4	05.9	121	24.2	08.9
10	101	58.0	350	31.0	02.1	54	19.6	02.2	93	25.9	05.9	136	26.8	09.0
11	117	00.4	5	30.2	+22 01.8	69	20.5	+16 02.7	108	28.4	+2 05.8	151	29.4	−15 09.0
12	132	02.9	20	29.4	+22 01.5	84	21.3	+16 03.1	123	30.9	+2 05.8	166	32.1	−15 09.1
13	147	05.4	35	28.6	01.1	99	22.2	03.6	138	33.4	05.8	181	34.7	09.2
14	162	07.8	50	27.8	00.8	114	23.1	04.0	153	35.9	05.8	196	37.4	09.2
15	177	10.3	65	27.1	00.5	129	23.9	04.5	168	38.4	05.7	211	40.0	09.3
16	192	12.8	80	26.3	+22 00.1	144	24.8	04.9	183	40.9	05.7	226	42.6	09.4
17	207	15.2	95	25.5	+21 59.8	159	25.7	+16 05.3	198	43.4	+2 05.7	241	45.3	−15 09.4
18	222	17.7	110	24.7	+21 59.4	174	26.6	+16 05.8	213	45.9	+2 05.6	256	47.9	−15 09.5
19	237	20.2	125	23.9	59.1	189	27.4	06.2	228	48.4	05.6	271	50.6	09.6
20	252	22.6	140	23.1	58.7	204	28.3	06.7	243	50.9	05.6	286	53.2	09.6
21	267	25.1	155	22.3	58.4	219	29.2	07.1	258	53.4	05.5	301	55.8	09.7
22	282	27.5	170	21.5	58.1	234	30.0	07.6	273	55.9	05.5	316	58.5	09.8
23	297	30.0	185	20.7	57.7	249	30.9	08.0	288	58.4	05.5	332	01.1	09.8
24	312	32.5	200	19.9	+21 57.4	264	31.8	+16 08.5	304	00.9	+2 05.5	347	03.8	−15 09.9
Dif	—			−8	−3		+9	+4		+25	0		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 6ᵈ.3		PHE	4ʰ: 57′.2									
	PMG: 12ʰ 06ᵐ.1				SD: 15′.5			12ʰ: 57′.4									
					PMG: 17ʰ 12ᵐ			20ʰ: 57′.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	27.2	+17	17.8	109	58.3	−7	10.0		**60 N**	20 23	21 21	23 06	12 16	96	21 51	3
1	193	27.2		17.1	124	31.0 137		24.5 145		**58**	11	21 03	22 23	10	92	21 58	8
2	208	27.3		16.4	139	03.7 137		38.9 144		**56**	20 02	20 48	21 56	12 04	88	22 04	12
3	223	27.4		15.8	153	36.3 136	−7	53.3 144		**54**	19 53	36	36	11 59	85	10	15
4	238	27.4		15.1	168	08.8 135	−8	07.7 144		**52**	45	25	19	55	82	15	18
5	253	27.5	+17	14.5	182	41.3 135	−8	22.1 144		**50**	19 38	20 16	21 05	11 51	80	22 20	20
6	268	27.5	+17	13.8	197	13.7 134	−8	36.4 143		**45**	19 23	19 56	20 38	11 43	74	22 30	25
7	283	27.6		13.1	211	46.0 133	−8	50.7 143		**40**	11	41	17	36	69	39	29
8	298	27.6		12.5	226	18.3 133	−9	05.0 143		**35**	19 00	28	20 01	30	66	46	33
9	313	27.7		11.8	240	50.5 132		19.3 143		**30**	18 51	19 17	19 48	25	62	22 53	36
10	328	27.8		11.1	255	22.6 131		33.5 142		**20**	36	18 59	26	16	57	23 04	41
11	343	27.8	+17	10.5	269	54.6 130	−9	47.8 143		**10 N**	18 22	18 44	19 10	11 08	53	23 14	46
12	358	27.9	+17	09.8	284	26.6 130	−10	01.9 141		**0**	18 10	18 31	18 56	11 01	48	23 23	50
13	13	27.9		09.1	298	58.5 129		16.1 142		**10 S**	17 57	19	44	10 54	43	33	54
14	28	28.0		08.5	313	30.3 128		30.2 141		**20**	44	18 07	34	46	39	43	59
15	43	28.1		07.8	328	02.1 128		44.3 141		**30**	29	17 54	23	38	33	23 54	65
16	58	28.1		07.1	342	33.8 127	−10	58.3 140		**35**	21	47	18	33	30	** **	**
17	73	28.2	+17	06.4	357	05.4 126	−11	12.3 140		**40**	17 11	17 40	18 12	10 27	27	** **	**
18	88	28.2	+17	05.8	11	36.9 125	−11	26.3 140		**45**	17 00	17 31	18 06	10 21	23	** **	**
19	103	28.3		05.1	26	08.3 124		40.2 139		**50**	16 46	21	18 00	13	18	** **	**
20	118	28.4		04.4	40	39.6 123	−11	54.1 139		**52**	39	16	17 57	10	15	** **	**
21	133	28.4		03.8	55	10.9 123	−12	08.0 139		**54**	32	11	54	06	13	** **	**
22	148	28.5		03.1	69	42.0 121		21.8 138		**56**	24	06	51	10 02	10	** **	**
23	163	28.5		02.4	84	13.1 121		35.5 137		**58**	16	17 00	47	9 57	7	** **	**
24	178	28.6	+17	01.7	98	44.1 120	−12	49.2 137		**60 S**	16 05	16 53	17 44	9 52	3	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.3		
	3ʰ 09ᵐ.3		PMG: 10ʰ 39ᵐ			PMG: 6ʰ 22ᵐ			PMG: 3ʰ 43ᵐ			PMG: 0ʰ 52ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	312	32.5	200	19.9	+21 57.4	264	31.8	+16 08.5	304	00.9	+2 05.5	347	03.8	−15 09.9
1	327	34.9	215	19.1	57.0	279	32.7	08.9	319	03.5	05.4	2	06.4	09.9
2	342	37.4	230	18.3	56.7	294	33.5	09.4	334	06.0	05.4	17	09.0	10.0
3	357	39.9	245	17.5	56.3	309	34.4	09.8	349	08.5	05.4	32	11.7	10.1
4	12	42.3	260	16.7	56.0	324	35.3	10.2	4	11.0	05.3	47	14.3	10.1
5	27	44.8	275	15.9	+21 55.6	339	36.2	+16 10.7	19	13.5	+2 05.3	62	17.0	−15 10.2
6	42	47.3	290	15.1	+21 55.2	354	37.0	+16 11.1	34	16.0	+2 05.3	77	19.6	−15 10.3
7	57	49.7	305	14.3	54.9	9	37.9	11.6	49	18.5	05.2	92	22.3	10.3
8	72	52.2	320	13.5	54.5	24	38.8	12.0	64	21.0	05.2	107	24.9	10.4
9	87	54.7	335	12.7	54.2	39	39.6	12.5	79	23.5	05.2	122	27.5	10.5
10	102	57.1	350	11.9	53.8	54	40.5	12.9	94	26.0	05.1	137	30.2	10.5
11	117	59.6	5	11.1	+21 53.4	69	41.4	+16 13.3	109	28.5	+2 05.1	152	32.8	−15 10.6
12	133	02.0	20	10.3	+21 53.1	84	42.3	+16 13.8	124	31.0	+2 05.1	167	35.5	−15 10.6
13	148	04.5	35	09.5	52.7	99	43.1	14.2	139	33.5	05.0	182	38.1	10.7
14	163	07.0	50	08.7	52.4	114	44.0	14.7	154	36.1	05.0	197	40.7	10.8
15	178	09.4	65	07.9	52.0	129	44.9	15.1	169	38.6	05.0	212	43.4	10.8
16	193	11.9	80	07.1	51.6	144	45.8	15.6	184	41.1	04.9	227	46.0	10.9
17	208	14.4	95	06.3	+21 51.3	159	46.6	+16 16.0	199	43.6	+2 04.9	242	48.7	−15 11.0
18	223	16.8	110	05.6	+21 50.9	174	47.5	+16 16.4	214	46.1	+2 04.9	257	51.3	−15 11.0
19	238	19.3	125	04.8	50.5	189	48.4	16.9	229	48.6	04.8	272	53.9	11.1
20	253	21.8	140	04.0	50.1	204	49.3	17.3	244	51.1	04.8	287	56.6	11.2
21	268	24.2	155	03.2	49.8	219	50.1	17.8	259	53.6	04.8	302	59.2	11.2
22	283	26.7	170	02.4	49.4	234	51.0	18.2	274	56.2	04.7	318	01.9	11.3
23	298	29.1	185	01.6	49.0	249	51.9	18.6	289	58.7	04.7	333	04.5	11.3
24	313	31.6	200	00.8	+21 48.6	264	52.8	+16 19.1	305	01.2	+2 04.7	348	07.2	−15 11.4
Dif	—			−8	−4		+9	+4		+25	0		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 7ᵈ.3		PHE	4ʰ: 57′.9									
	PMG: 12ʰ 06ᵐ.0				SD: 15′.7			12ʰ: 58′.2									
					PMG: 18ʰ 01ᵐ			20ʰ: 58′.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	178	28.6	+17	01.7	98	44.1	−12	49.2		**60 N**	1 07	2 52	3 50	13 52	103	21 54	8
1	193	28.7		01.1	113	15.0 119	−13	02.9	137	**58**	1 50	3 10	4 01	42	97	22 06	13
2	208	28.7	+17	00.4	127	45.8 118		16.5	136	**56**	2 17	24	11	32	93	16	17
3	223	28.8	+16	59.7	142	16.5 117		30.1	136	**54**	37	37	20	24	89	25	21
4	238	28.8		59.0	156	47.1 116		43.6	135	**52**	2 54	47	28	17	86	33	24
5	253	28.9	+16	58.4	171	17.7 116	−13	57.0	134	**50**	3 08	3 57	4 35	13 11	83	22 40	26
6	268	29.0	+16	57.7	185	48.1 114	−14	10.4	134	**45**	3 35	4 17	4 50	12 57	77	22 55	32
7	283	29.0		57.0	200	18.4 113		23.8	134	**40**	3 55	32	5 02	45	73	23 08	36
8	298	29.1		56.3	214	48.6 112		37.1	133	**35**	4 12	45	12	36	69	19	39
9	313	29.2		55.7	229	18.8 112	−14	50.3	132	**30**	25	4 56	21	27	67	29	42
10	328	29.2		55.0	243	48.8 110	−15	03.5	132	**20**	4 46	5 14	37	13	61	23 45	47
11	343	29.3	+16	54.3	258	18.7 109	−15	16.6	131	**10 N**	5 02	5 28	5 50	12 01	56	** **	**
12	358	29.4	+16	53.6	272	48.5 108	−15	29.6	130	**0**	5 16	5 41	6 03	11 49	52	** **	**
13	13	29.4		52.9	287	18.3 108		42.6	130	**10 S**	28	5 53	15	37	49	** **	**
14	28	29.5		52.3	301	47.9 106	−15	55.5	129	**20**	38	6 05	28	25	44	** **	**
15	43	29.6		51.6	316	17.4 105	−16	08.3	128	**30**	49	18	43	11	39	** **	**
16	58	29.6		50.9	330	46.8 104		21.1	128	**35**	5 54	24	6 51	11 03	36	0 01	67
17	73	29.7	+16	50.2	345	16.1 103	−16	33.8	127	**40**	6 00	6 32	7 01	10 54	33	0 09	71
18	88	29.8	+16	49.5	359	45.3 102	−16	46.4	126	**45**	6 06	6 41	7 12	10 44	28	0 18	75
19	103	29.8		48.8	14	14.3 100	−16	59.0	126	**50**	12	51	25	31	23	29	81
20	118	29.9		48.2	28	43.3 100	−17	11.4	124	**52**	15	6 55	32	25	21	34	83
21	133	30.0		47.5	43	12.2 99		23.8	124	**54**	18	7 00	39	19	18	39	87
22	148	30.0		46.8	57	40.9 97		36.1	123	**56**	21	05	47	12	14	45	91
23	163	30.1		46.1	72	09.5 96	−17	48.3	122	**58**	24	11	7 55	10 04	10	0 53	94
24	178	30.2	+16	45.4	86	38.0 95	−18	00.5	122	**60 S**	6 27	7 18	8 05	9 55	6	1 00	100

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.2			Mag: −2.7			Mag: +0.3		
	3ʰ 05ᵐ.4		PMG: 10ʰ 41ᵐ			PMG: 6ʰ 20ᵐ			PMG: 3ʰ 39ᵐ			PMG: 0ʰ 47ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	313	31.6	200	00.8	+21 48.6	264	52.8	+16 19.1	305	01.2	+2 04.7	348	07.2	−15 11.4
1	328	34.1	215	00.0	48.3	279	53.6	19.5	320	03.7	04.6	3	09.8	11.5
2	343	36.5	229	59.2	47.9	294	54.5	19.9	335	06.2	04.6	18	12.4	11.5
3	358	39.0	244	58.4	47.5	309	55.4	20.4	350	08.7	04.6	33	15.1	11.6
4	13	41.5	259	57.6	47.1	324	56.3	20.8	5	11.2	04.5	48	17.7	11.7
5	28	43.9	274	56.8	+21 46.8	339	57.2	+16 21.3	20	13.8	+2 04.5	63	20.4	−15 11.7
6	43	46.4	289	56.1	+21 46.4	354	58.0	+16 21.7	35	16.3	+2 04.5	78	23.0	−15 11.8
7	58	48.9	304	55.3	46.0	9	58.9	22.1	50	18.8	04.4	93	25.6	11.9
8	73	51.3	319	54.5	45.6	24	59.8	22.6	65	21.3	04.4	108	28.3	11.9
9	88	53.8	334	53.7	45.2	40	00.7	23.0	80	23.8	04.4	123	30.9	12.0
10	103	56.3	349	52.9	44.8	55	01.5	23.4	95	26.3	04.3	138	33.6	12.1
11	118	58.7	4	52.1	+21 44.4	70	02.4	+16 23.9	110	28.8	+2 04.3	153	36.2	−15 12.1
12	134	01.2	19	51.3	+21 44.1	85	03.3	+16 24.3	125	31.4	+2 04.3	168	38.9	−15 12.2
13	149	03.6	34	50.5	43.7	100	04.2	24.7	140	33.9	04.2	183	41.5	12.2
14	164	06.1	49	49.7	43.3	115	05.1	25.2	155	36.4	04.2	198	44.1	12.3
15	179	08.6	64	48.9	42.9	130	05.9	25.6	170	38.9	04.1	213	46.8	12.4
16	194	11.0	79	48.2	42.5	145	06.8	26.0	185	41.4	04.1	228	49.4	12.4
17	209	13.5	94	47.4	+21 42.1	160	07.7	+16 26.5	200	44.0	+2 04.1	243	52.1	−15 12.5
18	224	16.0	109	46.6	+21 41.7	175	08.6	+16 26.9	215	46.5	+2 04.0	258	54.7	−15 12.6
19	239	18.4	124	45.8	41.3	190	09.5	27.3	230	49.0	04.0	273	57.4	12.6
20	254	20.9	139	45.0	40.9	205	10.3	27.8	245	51.5	04.0	289	00.0	12.7
21	269	23.4	154	44.2	40.5	220	11.2	28.2	260	54.0	03.9	304	02.6	12.8
22	284	25.8	169	43.4	40.1	235	12.1	28.6	275	56.6	03.9	319	05.3	12.8
23	299	28.3	184	42.6	39.7	250	13.0	29.1	290	59.1	03.9	334	07.9	12.9
24	314	30.8	199	41.9	+21 39.3	265	13.9	+16 29.5	306	01.6	+2 03.8	349	10.6	−15 13.0
Dif	—			−8	−4		+9	+4		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 05m.9				LUNA Edad: 8d.3 SD: 16′.0 PMG: 18h 55m PHE 4h: 58′.7; 12h: 58′.9; 20h: 59′.2 Rº: 59m				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	30.2	+16	45.4	86	38.0 94	−18	00.5 120	**60 N**	20 18	21 14	22 51	15 35	107	22 02	15
1	193	30.2		44.7	101	06.4 93		12.5 120	**58**	20 07	20 57	22 14	19	99	19	22
2	208	30.3		44.1	115	34.7 92		24.5 119	**56**	19 57	43	21 49	15 05	94	33	28
3	223	30.4		43.4	130	02.9 90		36.4 118	**54**	49	32	30	14 53	90	46	31
4	238	30.4		42.7	144	30.9 89		48.2 117	**52**	41	21	14	43	87	22 57	34
5	253	30.5	+16	42.0	158	58.8 84	−18	59.9 116	**50**	19 35	20 12	21 01	14 34	84	23 06	37
6	268	30.6	+16	41.3	173	26.6 88	−19	11.5 115	**45**	19 20	19 53	20 34	14 14	79	23 27	42
7	283	30.6		40.6	187	54.3 87		23.0 114	**40**	19 08	38	20 14	13 58	75	44	45
8	298	30.7		39.9	202	21.9 86		34.4 113	**35**	18 58	26	19 59	45	72	23 58	48
9	313	30.8		39.2	216	49.3 84		45.7 112	**30**	49	19 15	46	34	69	** **	**
10	328	30.9		38.5	231	16.7 84	−19	56.9 111	**20**	34	18 58	25	13 14	65	** **	**
11	343	30.9	+16	37.9	245	43.9 82	−20	08.0 110	**10 N**	18 21	18 43	19 09	12 57	61	0 00	51
12	358	31.0	+16	37.2	260	10.9 80	−20	19.0 109	**0**	18 09	18 31	18 56	12 41	58	0 13	55
13	13	31.1		36.5	274	37.9 80		29.9 108	**10 S**	17 57	19	45	26	54	27	59
14	28	31.1		35.8	289	04.7 78		40.7 106	**20**	45	18 08	34	12 09	51	42	62
15	43	31.2		35.1	303	31.5 78	−20	51.3 106	**30**	30	17 55	24	11 50	47	0 59	67
16	58	31.3		34.4	317	58.0 75	−21	01.9 106	**35**	22	49	19	39	44	1 08	71
17	73	31.4	+16	33.7	332	24.5 75	−21	12.3 104	**40**	17 13	17 41	18 14	11 27	40	1 20	74
18	88	31.4	+16	33.0	346	50.9 74	−21	22.7 104	**45**	17 02	17 33	18 08	11 12	37	1 33	78
19	103	31.5		32.3	1	17.1 72		32.9 102	**50**	16 49	23	18 02	10 54	32	50	83
20	118	31.6		31.6	15	43.2 71		43.0 101	**52**	42	19	17 59	46	29	1 57	87
21	133	31.6		30.9	30	09.1 69	−21	52.9 99	**54**	36	14	57	37	26	2 06	90
22	148	31.7		30.2	44	35.0 69	−22	02.8 99	**56**	28	09	54	26	22	16	93
23	163	31.8		29.5	59	00.7 67		12.5 97	**58**	20	17 03	51	14	18	27	98
24	178	31.9	+16	28.8	73	26.3 66	−22	22.1 96	**60 S**	16 10	16 57	17 47	10 01	11	2 40	104

UT	ARIES PMG 3h 01m.5		VENUS Mag: −3.8 PMG: 10h 42m			MARTE Mag: +0.2 PMG: 6h 19m			JÚPITER Mag: −2.7 PMG: 3h 35m			SATURNO Mag: +0.3 PMG: 0h 43m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	314	30.8	199	41.9	+21 39.3	265	13.9	+16 29.5	306	01.6	+2 03.8	349	10.6	−15 13.0
1	329	33.2	214	41.1	38.9	280	14.7	29.9	321	04.1	03.8	4	13.2	13.0
2	344	35.7	229	40.3	38.5	295	15.6	30.4	336	06.6	03.7	19	15.9	13.1
3	359	38.1	244	39.5	38.1	310	16.5	30.8	351	09.2	03.7	34	18.5	13.1
4	14	40.6	259	38.7	37.7	325	17.4	31.2	6	11.7	03.7	49	21.1	13.2
5	29	43.1	274	37.9	+21 37.3	340	18.3	+16 31.7	21	14.2	+2 03.6	64	23.8	−15 13.3
6	44	45.5	289	37.1	+21 36.9	355	19.1	+16 32.1	36	16.7	+2 03.6	79	26.4	−15 13.3
7	59	48.0	304	36.4	36.5	10	20.0	32.5	51	19.2	03.5	94	29.1	13.4
8	74	50.5	319	35.6	36.1	25	20.9	33.0	66	21.8	03.5	109	31.7	13.5
9	89	52.9	334	34.8	35.6	40	21.8	33.4	81	24.3	03.5	124	34.4	13.5
10	104	55.4	349	34.0	35.2	55	22.7	33.8	96	26.8	03.4	139	37.0	13.6
11	119	57.9	4	33.2	+21 34.8	70	23.5	+16 34.2	111	29.3	+2 03.4	154	39.6	−15 13.7
12	135	00.3	19	32.4	+21 34.4	85	24.4	+16 34.7	126	31.9	+2 03.4	169	42.3	−15 13.7
13	150	02.8	34	31.7	34.0	100	25.3	35.1	141	34.4	03.3	184	44.9	13.8
14	165	05.2	49	30.9	33.6	115	26.2	35.5	156	36.9	03.3	199	47.6	13.8
15	180	07.7	64	30.1	33.1	130	27.1	36.0	171	39.4	03.2	214	50.2	13.9
16	195	10.2	79	29.3	32.7	145	28.0	36.4	186	42.0	03.2	229	52.9	14.0
17	210	12.6	94	28.5	+21 32.3	160	28.8	+16 36.8	201	44.5	+2 03.2	244	55.5	−15 14.0
18	225	15.1	109	27.7	+21 31.9	175	29.7	+16 37.2	216	47.0	+2 03.1	259	58.1	−15 14.1
19	240	17.6	124	27.0	31.5	190	30.6	37.7	231	49.6	03.1	275	00.8	14.2
20	255	20.0	139	26.2	31.0	205	31.5	38.1	246	52.1	03.0	290	03.4	14.2
21	270	22.5	154	25.4	30.6	220	32.4	38.5	261	54.6	03.0	305	06.1	14.3
22	285	25.0	169	24.6	30.2	235	33.3	38.9	276	57.1	03.0	320	08.7	14.4
23	300	27.4	184	23.8	29.8	250	34.2	39.4	291	59.7	02.9	335	11.4	14.4
24	315	29.9	199	23.1	+21 29.3	265	35.0	+16 39.8	307	02.2	+2 02.9	350	14.0	−15 14.5
Dif	—			−8	−4		+9	+4		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 05.m8				LUNA Edad: 9.d3 SD: 16′.2 PMG: 19h 54m PHE: 4h: 59′.4; 12h: 59′.7; 20h: 59′.9 Rº: 63m				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	31.9	+16	28.8	73	26.3	−22	22.1	**60 N**	1 22	2 59	3 55	17 22	97	22 17	35
1	193	31.9		28.1	87	51.8 65		31.5 94	**58**	1 58	3 15	4 06	16 58	90	22 41	42
2	208	32.0		27.5	102	17.1 63		40.9 94	**56**	2 23	29	15	39	86	23 01	46
3	223	32.1		26.8	116	42.4 63		50.0 91	**54**	43	41	24	23	83	17	49
4	238	32.2		26.1	131	07.5 61	−22	59.1 91	**52**	2 58	3 51	31	16 10	80	31	51
5	253	32.2	+16	25.4	145	32.5 60	−23	08.0 89	**50**	3 12	4 00	4 38	15 58	78	23 43	53
6	268	32.3	+16	24.7	159	57.3 58	−23	16.8 88	**45**	3 38	4 19	4 52	15 33	75	** **	**
7	283	32.4		24.0	174	22.1 58		25.5 87	**40**	3 58	34	5 04	15 13	73	** **	**
8	298	32.5		23.3	188	46.7 56		34.0 85	**35**	4 13	46	14	14 57	71	** **	**
9	313	32.6		22.6	203	11.2 55		42.3 83	**30**	26	4 57	23	43	69	0 11	50
10	328	32.6		21.9	217	35.6 54		50.5 82	**20**	4 47	5 14	38	14 19	67	32	54
11	343	32.7	+16	21.2	231	59.8 52	−23	58.6 81	**10 N**	5 03	5 28	5 50	13 58	65	0 51	57
12	358	32.8	+16	20.5	246	24.0 52	−24	06.5 79	**0**	5 16	5 41	6 02	13 39	63	1 08	60
13	13	32.9		19.8	260	48.0 50		14.2 77	**10 S**	27	5 52	14	20	60	26	63
14	28	32.9		19.1	275	11.9 49		21.8 76	**20**	37	6 04	27	13 00	58	1 44	66
15	43	33.0		18.3	289	35.7 48		29.3 75	**30**	47	16	41	12 37	55	2 06	70
16	58	33.1		17.6	303	59.4 47		36.6 73	**35**	52	23	49	23	53	19	72
17	73	33.2	+16	16.9	318	22.9 45	−24	43.7 71	**40**	5 58	6 30	6 58	12 07	52	2 34	74
18	88	33.3	+16	16.2	332	46.4 45	−24	50.7 70	**45**	6 03	6 38	7 09	11 49	48	2 51	78
19	103	33.3		15.5	347	09.7 43	−24	57.5 68	**50**	09	48	22	26	44	3 13	82
20	118	33.4		14.8	1	33.0 43	−25	04.1 66	**52**	12	52	28	15	42	24	84
21	133	33.5		14.1	15	56.1 41		10.6 65	**54**	14	6 57	35	11 03	39	36	87
22	148	33.6		13.4	30	19.1 40		16.9 63	**56**	17	7 02	42	10 48	37	3 49	91
23	163	33.7		12.7	44	42.1 40		23.1 62	**58**	20	07	7 51	32	32	4 05	96
24	178	33.7	+16	12.0	59	04.9 38	−25	29.0 59	**60 S**	6 23	7 14	8 00	10 12	25	4 24	103

UT	ARIES PMG 2h 57.m5		VENUS Mag: −3.8 PMG: 10h 43m			MARTE Mag: +0.1 PMG: 6h 17m			JÚPITER Mag: −2.8 PMG: 3h 31m			SATURNO Mag: +0.3 PMG: 0h 39m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	315	29.9	199	23.1	+21 29.3	265	35.0	+16 39.8	307	02.2	+2 02.9	350	14.0	−15 14.5
1	330	32.4	214	22.3	28.9	280	35.9	40.2	322	04.7	02.8	5	16.6	14.6
2	345	34.8	229	21.5	28.5	295	36.8	40.6	337	07.2	02.8	20	19.3	14.6
3	0	37.3	244	20.7	28.0	310	37.7	41.1	352	09.8	02.8	35	21.9	14.7
4	15	39.7	259	19.9	27.6	325	38.6	41.5	7	12.3	02.7	50	24.6	14.7
5	30	42.2	274	19.2	+21 27.2	340	39.5	+16 41.9	22	14.8	+2 02.7	65	27.2	−15 14.8
6	45	44.7	289	18.4	+21 26.7	355	40.4	+16 42.3	37	17.4	+2 02.6	80	29.9	−15 14.9
7	60	47.1	304	17.6	26.3	10	41.2	42.8	52	19.9	02.6	95	32.5	14.9
8	75	49.6	319	16.8	25.9	25	42.1	43.2	67	22.4	02.6	110	35.1	15.0
9	90	52.1	334	16.0	25.4	40	43.0	43.6	82	25.0	02.5	125	37.8	15.1
10	105	54.5	349	15.3	25.0	55	43.9	44.0	97	27.5	02.5	140	40.4	15.1
11	120	57.0	4	14.5	+21 24.6	70	44.8	+16 44.5	112	30.0	+2 02.4	155	43.1	−15 15.2
12	135	59.5	19	13.7	+21 24.1	85	45.7	+16 44.9	127	32.6	+2 02.4	170	45.7	−15 15.3
13	151	01.9	34	12.9	23.7	100	46.6	45.3	142	35.1	02.3	185	48.4	15.3
14	166	04.4	49	12.2	23.2	115	47.4	45.7	157	37.6	02.3	200	51.0	15.4
15	181	06.9	64	11.4	22.8	130	48.3	46.1	172	40.2	02.3	215	53.7	15.5
16	196	09.3	79	10.6	22.3	145	49.2	46.6	187	42.7	02.2	230	56.3	15.5
17	211	11.8	94	09.8	+21 21.9	160	50.1	+16 47.0	202	45.2	+2 02.2	245	58.9	−15 15.6
18	226	14.2	109	09.1	+21 21.4	175	51.0	+16 47.4	217	47.8	+2 02.1	261	01.6	−15 15.6
19	241	16.7	124	08.3	21.0	190	51.9	47.8	232	50.3	02.1	276	04.2	15.7
20	256	19.2	139	07.5	20.5	205	52.8	48.2	247	52.8	02.0	291	06.9	15.8
21	271	21.6	154	06.7	20.1	220	53.7	48.7	262	55.4	02.0	306	09.5	15.8
22	286	24.1	169	06.0	19.6	235	54.6	49.1	277	57.9	02.0	321	12.2	15.9
23	301	26.6	184	05.2	19.2	250	55.4	49.5	293	00.4	01.9	336	14.8	16.0
24	316	29.0	199	04.4	+21 18.7	265	56.3	+16 49.9	308	03.0	+2 01.9	351	17.4	−15 16.0
Dif	—		−8		−4	+9		+4	+25		0	+26		−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 10^{d}.3		PHE	4^{h}: 60′.1									
	PMG: 12^{h} 05^{m}.7				SD: 16′.3			12^{h}: 60′.3									
					PMG: 20^{h} 57^{m}			20^{h}: 60′.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	33.7	+16	12.0	59	04.9	−25	29.0		**60 N**	20 12	21 07	22 37	18 59	64	22 52	74
1	193	33.8		11.3	73	27.6 37		34.8	58	**58**	20 02	20 52	22 05	28	65	23 23	73
2	208	33.9		10.6	87	50.2 36		40.4	56	**56**	19 53	38	21 42	18 05	66	23 47	71
3	223	34.0		09.9	102	12.7 35		45.9	55	**54**	45	27	24	17 46	66	** **	**
4	238	34.1		09.2	116	35.1 34		51.2	53	**52**	38	17	21 09	30	66	** **	**
5	253	34.1	+16	08.5	130	57.4 33	−25	56.2	50	**50**	19 31	20 08	20 56	17 16	66	** **	**
6	268	34.2	+16	07.7	145	19.7 33	−26	01.2	50	**45**	19 17	19 50	20 31	16 48	66	0 09	55
7	283	34.3		07.0	159	41.8 31		05.9	47	**40**	19 06	35	20 12	26	66	29	57
8	298	34.4		06.3	174	03.9 31		10.4	45	**35**	18 56	23	19 56	16 08	66	0 46	59
9	313	34.5		05.6	188	25.8 29		14.8	44	**30**	48	19 13	44	15 52	66	1 01	60
10	328	34.6		04.9	202	47.7 29		18.9	41	**20**	33	18 56	24	26	65	26	62
11	343	34.6	+16	04.2	217	09.5 28	−26	22.9	40	**10 N**	18 21	18 43	19 08	15 03	65	1 48	63
12	358	34.7	+16	03.5	231	31.2 27	−26	26.7	38	**0**	18 09	18 31	18 56	14 42	65	2 08	65
13	13	34.8		02.8	245	52.9 27		30.3	36	**10 S**	17 58	19	45	14 20	66	29	65
14	28	34.9		02.1	260	14.5 26		33.7	34	**20**	45	18 08	35	13 58	65	2 50	67
15	43	35.0		01.3	274	36.0 25		37.0	33	**30**	32	17 57	25	32	64	3 16	68
16	58	35.1	+16	00.6	288	57.4 24		40.0	30	**35**	24	50	20	13 16	64	31	69
17	73	35.2	+15	59.9	303	18.7 23	−26	42.8	28	**40**	17 15	17 43	18 15	12 59	63	3 48	70
18	88	35.2	+15	59.2	317	40.0 23	−26	45.5	27	**45**	17 04	17 35	18 10	12 37	63	4 09	71
19	103	35.3		58.5	332	01.3 23		47.9	24	**50**	16 51	26	05	12 10	62	35	73
20	118	35.4		57.8	346	22.4 21		50.1	22	**52**	46	22	02	11 57	61	4 48	74
21	133	35.5		57.0	0	43.6 22		52.2	21	**54**	39	17	18 00	42	60	5 03	75
22	148	35.6		56.3	15	04.6 20		54.0	18	**56**	32	12	17 57	25	59	20	77
23	163	35.7		55.6	29	25.6 20		55.7	17	**58**	24	07	54	11 04	57	5 41	79
24	178	35.8	+15	54.9	43	46.6 20	−26	57.1	14	**60 S**	16 14	17 01	17 51	10 37	54	6 07	82

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2^{h} 53^{m}.6		PMG: 10^{h} 44^{m}			PMG: 6^{h} 16^{m}			PMG: 3^{h} 27^{m}			PMG: 0^{h} 35^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	316	29.0	199	04.4	+21 18.7	265	56.3	+16 49.9	308	03.0	+2 01.9	351	17.4	−15 16.0
1	331	31.5	214	03.6	18.3	280	57.2	50.3	323	05.5	01.8	6	20.1	16.1
2	346	34.0	229	02.9	17.8	295	58.1	50.8	338	08.0	01.8	21	22.7	16.2
3	1	36.4	244	02.1	17.4	310	59.0	51.2	353	10.6	01.7	36	25.4	16.2
4	16	38.9	259	01.3	16.9	325	59.9	51.6	8	13.1	01.7	51	28.0	16.3
5	31	41.4	274	00.5	+21 16.5	341	00.8	+16 52.0	23	15.6	+2 01.7	66	30.7	−15 16.4
6	46	43.8	288	59.8	+21 16.0	356	01.7	+16 52.4	38	18.2	+2 01.6	81	33.3	−15 16.4
7	61	46.3	303	59.0	15.5	11	02.6	52.9	53	20.7	01.6	96	36.0	16.5
8	76	48.7	318	58.2	15.1	26	03.5	53.3	68	23.3	01.5	111	38.6	16.5
9	91	51.2	333	57.5	14.6	41	04.3	53.7	83	25.8	01.5	126	41.2	16.6
10	106	53.7	348	56.7	14.1	56	05.2	54.1	98	28.3	01.4	141	43.9	16.7
11	121	56.1	3	55.9	+21 13.7	71	06.1	+16 54.5	113	30.9	+2 01.4	156	46.5	−15 16.7
12	136	58.6	18	55.1	+21 13.2	86	07.0	+16 54.9	128	33.4	+2 01.3	171	49.2	−15 16.8
13	152	01.1	33	54.4	12.7	101	07.9	55.4	143	36.0	01.3	186	51.8	16.9
14	167	03.5	48	53.6	12.3	116	08.8	55.8	158	38.5	01.3	201	54.5	16.9
15	182	06.0	63	52.8	11.8	131	09.7	56.2	173	41.0	01.2	216	57.1	17.0
16	197	08.5	78	52.1	11.3	146	10.6	56.6	188	43.6	01.2	231	59.8	17.1
17	212	10.9	93	51.3	+21 10.9	161	11.5	+16 57.0	203	46.1	+2 01.1	247	02.4	−15 17.1
18	227	13.4	108	50.5	+21 10.4	176	12.4	+16 57.4	218	48.7	+2 01.1	262	05.0	−15 17.2
19	242	15.9	123	49.8	09.9	191	13.3	57.8	233	51.2	01.0	277	07.7	17.3
20	257	18.3	138	49.0	09.4	206	14.2	58.3	248	53.7	01.0	292	10.3	17.3
21	272	20.8	153	48.2	09.0	221	15.1	58.7	263	56.3	00.9	307	13.0	17.4
22	287	23.2	168	47.4	08.5	236	16.0	59.1	278	58.8	00.9	322	15.6	17.4
23	302	25.7	183	46.7	08.0	251	16.8	59.5	294	01.4	00.8	337	18.3	17.5
24	317	28.2	198	45.9	+21 07.5	266	17.7	+16 59.9	309	03.9	+2 00.8	352	20.9	−15 17.6
Dif	—			−8	−5		+9	+4		+25	0		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 11^{d}.3		PHE	4^{h}: 60′.6									
	PMG: 12^{h} 05^{m}.5				SD: 16′.5			12^{h}: 60′.7									
					PMG: 22^{h} 03^{m}			20^{h}: 60′.8									
	hG ☉		Dec		hG ☾	Dif	Dec	R°: 64^{m}	Dif		Náutico	Civil		Hora	R°	Hora	R°
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	178	35.8	+15	54.9	43	46.6	−26	57.1		**60 N**	1 35	3 05	4 00	20 03	30	** **	**
1	193	35.8		54.2	58	07.5 19		58.3	12	**58**	2 07	20	10	19 33	38	** **	**
2	208	35.9		53.5	72	28.4 19	−26	59.4	11	**56**	30	34	19	19 11	42	** **	**
3	223	36.0		52.7	86	49.3 19	−27	00.2	8	**54**	2 48	45	27	18 52	45	0 06	71
4	238	36.1		52.0	101	10.1 18		00.8	6	**52**	3 03	3 55	34	36	48	22	70
5	253	36.2	+15	51.3	115	30.8 17	−27	01.3	5	**50**	3 16	4 04	4 41	18 22	50	0 36	70
6	268	36.3	+15	50.6	129	51.6 18	−27	01.5	2	**45**	3 41	4 22	4 54	17 54	54	1 04	70
7	283	36.4		49.9	144	12.3 17		01.5	0	**40**	4 00	36	5 06	32	56	26	69
8	298	36.5		49.1	158	33.0 17		01.3	2	**35**	15	48	15	17 14	58	1 45	68
9	313	36.6		48.4	172	53.7 17		00.9	4	**30**	28	4 58	24	16 58	59	2 01	68
10	328	36.6		47.7	187	14.3 16	−27	00.3	6	**20**	4 48	5 15	38	31	62	28	67
11	343	36.7	+15	47.0	201	35.0 17	−26	59.5	8	**10 N**	5 03	5 29	5 51	16 08	64	2 51	66
12	358	36.8	+15	46.3	215	55.6 16	−26	58.5	10	**0**	5 16	5 41	6 02	15 47	65	3 13	65
13	13	36.9		45.5	230	16.2 16		57.3	12	**10 S**	27	5 52	14	26	66	34	65
14	28	37.0		44.8	244	36.8 16		55.8	15	**20**	36	6 03	26	15 03	68	3 57	64
15	43	37.1		44.1	258	57.5 17		54.2	16	**30**	46	14	39	14 36	71	4 24	63
16	58	37.2		43.4	273	18.1 16		52.3	19	**35**	51	21	47	20	72	40	62
17	73	37.3	+15	42.6	287	38.7 16	−26	50.3	20	**40**	5 55	6 28	6 56	14 02	73	4 58	61
18	88	37.4	+15	41.9	301	59.3 16	−26	48.0	23	**45**	6 01	6 35	7 06	13 40	75	5 20	60
19	103	37.5		41.2	316	20.0 17		45.6	24	**50**	06	44	19	13 12	78	5 48	58
20	118	37.6		40.5	330	40.6 16		42.9	27	**52**	08	49	25	12 58	79	6 02	57
21	133	37.6		39.7	345	01.3 17		40.0	29	**54**	11	53	31	42	81	18	55
22	148	37.7		39.0	359	22.0 17		36.9	31	**56**	13	6 58	38	24	83	6 37	53
23	163	37.8		38.3	13	42.7 17		33.7	32	**58**	16	7 03	46	12 01	86	7 00	50
24	178	37.9	+15	37.5	28	03.5 18	−26	30.2	35	**60 S**	6 19	7 09	7 55	11 31	91	7 29	46

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2^{h} 49^{m}.7		PMG: 10^{h} 45^{m}			PMG: 6^{h} 14^{m}			PMG: 3^{h} 23^{m}			PMG: 0^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	317	28.2	198	45.9	+21 07.5	266	17.7	+16 59.9	309	03.9	+2 00.8	352	20.9	−15 17.6
1	332	30.6	213	45.1	07.0	281	18.6	+17 00.3	324	06.5	00.7	7	23.6	17.6
2	347	33.1	228	44.4	06.6	296	19.5	00.7	339	09.0	00.7	22	26.2	17.7
3	2	35.6	243	43.6	06.1	311	20.4	01.1	354	11.5	00.7	37	28.9	17.8
4	17	38.0	258	42.8	05.6	326	21.3	01.6	9	14.1	00.6	52	31.5	17.8
5	32	40.5	273	42.1	+21 05.1	341	22.2	+17 02.0	24	16.6	+2 00.6	67	34.1	−15 17.9
6	47	43.0	288	41.3	+21 04.6	356	23.1	+17 02.4	39	19.2	+2 00.5	82	36.8	−15 18.0
7	62	45.4	303	40.6	04.1	11	24.0	02.8	54	21.7	00.5	97	39.4	18.0
8	77	47.9	318	39.8	03.7	26	24.9	03.2	69	24.3	00.4	112	42.1	18.1
9	92	50.4	333	39.0	03.2	41	25.8	03.6	84	26.8	00.4	127	44.7	18.2
10	107	52.8	348	38.3	02.7	56	26.7	04.0	99	29.4	00.3	142	47.4	18.2
11	122	55.3	3	37.5	+21 02.2	71	27.6	+17 04.4	114	31.9	+2 00.3	157	50.0	−15 18.3
12	137	57.7	18	36.7	+21 01.7	86	28.5	+17 04.8	129	34.5	+2 00.2	172	52.7	−15 18.3
13	153	00.2	33	36.0	01.2	101	29.4	05.2	144	37.0	00.2	187	55.3	18.4
14	168	02.7	48	35.2	00.7	116	30.3	05.7	159	39.6	00.1	202	57.9	18.5
15	183	05.1	63	34.4	+21 00.2	131	31.2	06.1	174	42.1	+2 00.1	218	00.6	18.5
16	198	07.6	78	33.7	+20 59.7	146	32.1	06.5	189	44.7	+2 00.0	233	03.2	18.6
17	213	10.1	93	32.9	+20 59.2	161	33.0	+17 06.9	204	47.2	+2 00.0	248	05.9	−15 18.7
18	228	12.5	108	32.2	+20 58.7	176	33.9	+17 07.3	219	49.7	+1 59.9	263	08.5	−15 18.7
19	243	15.0	123	31.4	58.2	191	34.8	07.7	234	52.3	59.9	278	11.2	18.8
20	258	17.5	138	30.6	57.7	206	35.7	08.1	249	54.8	59.8	293	13.8	18.9
21	273	19.9	153	29.9	57.2	221	36.6	08.5	264	57.4	59.8	308	16.5	18.9
22	288	22.4	168	29.1	56.7	236	37.5	08.9	279	59.9	59.7	323	19.1	19.0
23	303	24.9	183	28.3	56.2	251	38.4	09.3	295	02.5	59.7	338	21.8	19.1
24	318	27.3	198	27.6	+20 55.7	266	39.3	+17 09.7	310	05.0	+1 59.6	353	24.4	−15 19.1
Dif	—			−8	−5		+9	+4		+25	0		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 05m.4				LUNA Edad: 12d.3 SD: 16′.6 PMG: 23h 07m PHE 4h: 60′.9 12h: 60′.9 20h: 60′.9 Rº: 61m				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	37.9	+15	37.5	28 03.5		−26 30.2		**60 N**	20 07	21 01	22 26	20 33	13	0 06	106
1	193	38.0		36.8	42 24.2	17	26.5	37	**58**	19 57	20 46	21 57	20 11	20	36	97
2	208	38.1		36.1	56 45.0	18	22.6	39	**56**	48	33	35	19 53	25	0 58	93
3	223	38.2		35.4	71 05.9	19	18.5	41	**54**	41	22	18	37	30	1 17	89
4	238	38.3		34.6	85 26.8	19	14.2	43	**52**	34	13	21 04	24	33	32	87
5	253	38.4	+15	33.9	99 47.7	19	−26 09.7	45	**50**	19 28	20 04	20 51	19 12	36	1 46	84
6	268	38.5	+15	33.2	114 08.7	20	−26 05.0	47	**45**	19 14	19 47	20 27	18 48	40	2 14	80
7	283	38.6		32.4	128 29.7	20	−26 00.1	49	**40**	19 03	33	20 09	28	45	35	77
8	298	38.7		31.7	142 50.7	20	−25 55.0	51	**35**	18 54	21	19 54	18 12	48	2 53	75
9	313	38.8		31.0	157 11.9	22	49.7	53	**30**	46	19 11	42	17 57	51	3 09	72
10	328	38.9		30.2	171 33.0	21	44.2	55	**20**	32	18 55	22	33	55	35	69
11	343	39.0	+15	29.5	185 54.3	23	−25 38.5	57	**10 N**	18 20	18 42	19 07	17 12	59	3 57	67
12	358	39.1	+15	28.8	200 15.5	22	−25 32.6	59	**0**	18 09	18 30	18 55	16 52	62	4 18	64
13	13	39.2		28.0	214 36.9	24	26.6	60	**10 S**	17 58	19	45	32	66	4 39	61
14	28	39.3		27.3	228 58.3	24	20.3	63	**20**	46	18 09	35	16 11	69	5 01	59
15	43	39.4		26.6	243 19.8	25	13.8	65	**30**	33	17 58	26	15 47	73	27	55
16	58	39.5		25.8	257 41.4	26	07.2	66	**35**	25	51	21	32	76	42	53
17	73	39.6	+15	25.1	272 03.0	26	−25 00.4	68	**40**	17 16	17 45	18 17	15 15	79	5 59	51
18	88	39.6	+15	24.4	286 24.7	27	−24 53.4	70	**45**	17 06	17 37	18 12	14 55	83	6 20	47
19	103	39.7		23.6	300 46.5	28	46.2	72	**50**	16 54	29	07	30	88	46	43
20	118	39.8		22.9	315 08.3	28	38.8	74	**52**	49	25	05	17	91	6 59	40
21	133	39.9		22.2	329 30.3	30	31.2	76	**54**	42	20	03	14 03	94	7 13	37
22	148	40.0		21.4	343 52.3	30	23.5	77	**56**	36	16	18 00	13 47	98	30	33
23	163	40.1		20.7	358 14.4	31	15.5	80	**58**	28	11	17 58	27	103	7 50	28
24	178	40.2	+15	19.9	12 36.6	32	−24 07.4	81	**60 S**	16 19	17 05	17 55	13 02	111	8 15	21

UT	ARIES PMG 2h 45m.7		VENUS Mag: −3.8 PMG: 10h 47m			MARTE Mag: +0.1 PMG: 6h 13m			JÚPITER Mag: −2.8 PMG: 3h 19m			SATURNO Mag: +0.3 PMG: 0h 26m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	318	27.3	198	27.6	+20 55.7	266	39.3	+17 09.7	310	05.0	+1 59.6	353	24.4	−15 19.1
1	333	29.8	213	26.8	55.2	281	40.2	10.1	325	07.6	59.6	8	27.0	19.2
2	348	32.2	228	26.1	54.7	296	41.1	10.5	340	10.2	59.5	23	29.7	19.2
3	3	34.7	243	25.3	54.2	311	42.0	10.9	355	12.7	59.5	38	32.3	19.3
4	18	37.2	258	24.5	53.7	326	42.9	11.3	10	15.3	59.4	53	35.0	19.4
5	33	39.6	273	23.8	+20 53.2	341	43.8	+17 11.8	25	17.8	+1 59.4	68	37.6	−15 19.4
6	48	42.1	288	23.0	+20 52.6	356	44.7	+17 12.2	40	20.4	+1 59.3	83	40.3	−15 19.5
7	63	44.6	303	22.3	52.1	11	45.6	12.6	55	22.9	59.3	98	42.9	19.6
8	78	47.0	318	21.5	51.6	26	46.5	13.0	70	25.5	59.2	113	45.6	19.6
9	93	49.5	333	20.8	51.1	41	47.4	13.4	85	28.0	59.2	128	48.2	19.7
10	108	52.0	348	20.0	50.6	56	48.3	13.8	100	30.6	59.1	143	50.9	19.8
11	123	54.4	3	19.2	+20 50.1	71	49.2	+17 14.2	115	33.1	+1 59.1	158	53.5	−15 19.8
12	138	56.9	18	18.5	+20 49.6	86	50.1	+17 14.6	130	35.7	+1 59.0	173	56.1	−15 19.9
13	153	59.3	33	17.7	49.0	101	51.0	15.0	145	38.2	59.0	188	58.8	20.0
14	169	01.8	48	17.0	48.5	116	51.9	15.4	160	40.8	58.9	204	01.4	20.0
15	184	04.3	63	16.2	48.0	131	52.8	15.8	175	43.3	58.9	219	04.1	20.1
16	199	06.7	78	15.5	47.5	146	53.7	16.2	190	45.9	58.8	234	06.7	20.1
17	214	09.2	93	14.7	+20 47.0	161	54.6	+17 16.6	205	48.5	+1 58.8	249	09.4	−15 20.2
18	229	11.7	108	14.0	+20 46.4	176	55.5	+17 17.0	220	51.0	+1 58.7	264	12.0	−15 20.3
19	244	14.1	123	13.2	45.9	191	56.4	17.4	235	53.6	58.7	279	14.7	20.3
20	259	16.6	138	12.4	45.4	206	57.3	17.8	250	56.1	58.6	294	17.3	20.4
21	274	19.1	153	11.7	44.9	221	58.2	18.2	265	58.7	58.6	309	20.0	20.5
22	289	21.5	168	10.9	44.3	236	59.1	18.6	281	01.2	58.5	324	22.6	20.5
23	304	24.0	183	10.2	43.8	252	00.0	19.0	296	03.8	58.5	339	25.2	20.6
24	319	26.5	198	09.4	+20 43.3	267	00.9	+17 19.4	311	06.4	+1 58.4	354	27.9	−15 20.7
Dif	—			−8	−5		+9	+4		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 13ᵈ.3		PHE	4ʰ: 60′.9									
	PMG: 12ʰ 05ᵐ.2				SD: 16′.6			12ʰ: 60′.8									
					PMG: **ʰ **ᵐ			20ʰ: 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	178	40.2	+15	19.9	12	36.6	−24	07.4		**60 N**	1 46	3 11	4 04	20 46	6	1 52	113
1	193	40.3		19.2	26	58.9 33	−23	59.2	82	**58**	2 15	26	14	31	12	2 13	107
2	208	40.4		18.5	41	21.3 34		50.7	85	**56**	36	38	23	18	16	31	101
3	223	40.5		17.7	55	43.8 35		42.1	86	**54**	2 53	49	31	20 07	19	46	96
4	238	40.6		17.0	70	06.3 35		33.3	88	**52**	3 08	3 58	37	19 57	23	2 59	93
5	253	40.7	+15	16.2	84	29.0 37	−23	24.3	90	**50**	3 20	4 07	4 44	19 48	25	3 10	90
6	268	40.8	+15	15.5	98	51.7 37	−23	15.2	91	**45**	3 44	4 24	4 57	19 28	32	3 34	84
7	283	40.9		14.8	113	14.6 39	−23	05.9	93	**40**	4 02	38	5 08	13	36	3 52	80
8	298	41.0		14.0	127	37.6 40	−22	56.4	95	**35**	17	4 50	17	19 00	39	4 08	76
9	313	41.1		13.3	142	00.6 40		46.8	96	**30**	29	5 00	25	18 48	43	21	73
10	328	41.2		12.5	156	23.8 42		37.1	97	**20**	4 49	16	39	28	48	4 44	68
11	343	41.4	+15	11.8	170	47.1 43	−22	27.1	100	**10 N**	5 03	5 29	5 51	18 11	53	5 04	64
12	358	41.5	+15	11.0	185	10.4 43	−22	17.0	101	**0**	5 15	5 40	6 02	17 54	58	5 22	60
13	13	41.6		10.3	199	33.9 45	−22	06.8	102	**10 S**	26	5 51	13	38	62	5 40	56
14	28	41.7		09.6	213	57.5 46	−21	56.4	104	**20**	35	6 02	24	20	67	6 00	51
15	43	41.8		08.8	228	21.2 47		45.9	105	**30**	44	13	37	17 00	72	22	47
16	58	41.9		08.1	242	45.0 48		35.2	107	**35**	49	19	45	16 48	75	35	44
17	73	42.0	+15	07.3	257	08.9 49	−21	24.3	109	**40**	5 53	6 25	6 54	16 34	79	6 50	40
18	88	42.1	+15	06.6	271	32.9 50	−21	13.4	109	**45**	5 58	6 33	7 03	16 18	83	7 07	36
19	103	42.2		05.8	285	57.1 52	−21	02.3	111	**50**	6 03	41	15	15 58	89	29	30
20	118	42.3		05.1	300	21.3 52	−20	51.0	113	**52**	05	45	21	48	93	39	27
21	133	42.4		04.3	314	45.7 54		39.6	114	**54**	07	49	27	37	96	7 50	25
22	148	42.5		03.6	329	10.1 54		28.1	115	**56**	10	54	34	25	100	8 03	21
23	163	42.6		02.8	343	34.7 56		16.4	117	**58**	12	6 59	41	15 10	105	18	16
24	178	42.7	+15	02.1	357	59.4 57	−20	04.7	117	**60 S**	6 15	7 04	7 50	14 53	111	8 36	10

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2ʰ 41ᵐ.8		PMG: 10ʰ 48ᵐ			PMG: 6ʰ 12ᵐ			PMG: 3ʰ 15ᵐ			PMG: 0ʰ 22ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	319	26.5	198	09.4	+20 43.3	267	00.9	+17 19.4	311	06.4	+1 58.4	354	27.9	−15 20.7
1	334	28.9	213	08.7	42.7	282	01.8	19.8	326	08.9	58.4	9	30.5	20.7
2	349	31.4	228	07.9	42.2	297	02.7	20.2	341	11.5	58.3	24	33.2	20.8
3	4	33.8	243	07.2	41.7	312	03.6	20.6	356	14.0	58.3	39	35.8	20.9
4	19	36.3	258	06.4	41.1	327	04.5	21.0	11	16.6	58.2	54	38.5	20.9
5	34	38.8	273	05.7	+20 40.6	342	05.4	+17 21.4	26	19.2	+1 58.1	69	41.1	−15 21.0
6	49	41.2	288	04.9	+20 40.1	357	06.3	+17 21.8	41	21.7	+1 58.1	84	43.8	−15 21.0
7	64	43.7	303	04.2	39.5	12	07.2	22.2	56	24.3	58.0	99	46.4	21.1
8	79	46.2	318	03.4	39.0	27	08.1	22.6	71	26.8	58.0	114	49.1	21.2
9	94	48.6	333	02.7	38.5	42	09.0	23.0	86	29.4	57.9	129	51.7	21.2
10	109	51.1	348	01.9	37.9	57	09.9	23.4	101	32.0	57.9	144	54.4	21.3
11	124	53.6	3	01.2	+20 37.4	72	10.9	+17 23.8	116	34.5	+1 57.8	159	57.0	−15 21.4
12	139	56.0	18	00.4	+20 36.8	87	11.8	+17 24.2	131	37.1	+1 57.8	174	59.6	−15 21.4
13	154	58.5	32	59.7	36.3	102	12.7	24.6	146	39.6	57.7	190	02.3	21.5
14	170	01.0	47	58.9	35.7	117	13.6	25.0	161	42.2	57.7	205	04.9	21.6
15	185	03.4	62	58.2	35.2	132	14.5	25.4	176	44.8	57.6	220	07.6	21.6
16	200	05.9	77	57.4	34.7	147	15.4	25.8	191	47.3	57.6	235	10.2	21.7
17	215	08.3	92	56.7	+20 34.1	162	16.3	+17 26.1	206	49.9	+1 57.5	250	12.9	−15 21.8
18	230	10.8	107	55.9	+20 33.6	177	17.2	+17 26.5	221	52.5	+1 57.4	265	15.5	−15 21.8
19	245	13.3	122	55.2	33.0	192	18.1	26.9	236	55.0	57.4	280	18.2	21.9
20	260	15.7	137	54.4	32.5	207	19.0	27.3	251	57.6	57.3	295	20.8	21.9
21	275	18.2	152	53.7	31.9	222	19.9	27.7	267	00.1	57.3	310	23.5	22.0
22	290	20.7	167	52.9	31.4	237	20.8	28.1	282	02.7	57.2	325	26.1	22.1
23	305	23.1	182	52.2	30.8	252	21.7	28.5	297	05.3	57.2	340	28.8	22.1
24	320	25.6	197	51.5	+20 30.2	267	22.7	+17 28.9	312	07.8	+1 57.1	355	31.4	−15 22.2
Dif	—			−7	−5		+9	+4		+26	−1		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 14^{d}.3		PHE	4^{h}: 60′.6								
	PMG: 12^{h} 05^{m}.1		SD: 16′.5			12^{h}: 60′.5								
			PMG: 0^{h} 08^{m}			20^{h}: 60′.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	178 42.7	+15 02.1	357 59.4	58	−20 04.7	120	**60 N**	20 02	20 54	22 15	20 52	4	3 45	110
1	193 42.8	01.3	12 24.2	60	−19 52.7	120	**58**	19 52	40	21 48	43	7	4 00	103
2	208 42.9	+15 00.6	26 49.2	60	40.7	122	**56**	44	28	28	34	11	12	99
3	223 43.0	+14 59.8	41 14.2	62	28.5	122	**54**	37	18	21 12	26	15	22	95
4	238 43.1	59.1	55 39.4	63	16.3	124	**52**	30	09	20 58	20	17	32	91
5	253 43.2	+14 58.3	70 04.7	63	−19 03.9	124	**50**	19 24	20 00	20 47	20 13	20	4 40	89
6	268 43.3	+14 57.6	84 30.0	63	−18 51.3	126	**45**	19 11	19 44	20 23	20 00	25	4 58	82
7	283 43.4	56.8	98 55.6	66	38.7	126	**40**	19 01	30	20 06	19 49	30	5 12	78
8	298 43.6	56.1	113 21.2	66	26.0	127	**35**	18 52	19	19 51	39	34	24	74
9	313 43.7	55.3	127 46.9	67	13.1	129	**30**	44	19 09	40	31	37	34	71
10	328 43.8	54.6	142 12.8	69	−18 00.1	130	**20**	31	18 54	21	16	43	5 52	65
11	343 43.9	+14 53.8	156 38.7	69	−17 47.1	130	**10 N**	18 19	18 41	19 06	19 04	48	6 08	59
12	358 44.0	+14 53.1	171 04.8	71	−17 33.9	132	**0**	18 08	18 30	18 55	18 52	52	6 22	55
13	13 44.1	52.3	185 31.0	72	20.6	133	**10 S**	17 58	20	45	40	57	36	51
14	28 44.2	51.6	199 57.3	73	−17 07.2	134	**20**	47	18 09	36	27	62	6 51	46
15	43 44.3	50.8	214 23.7	74	−16 53.8	134	**30**	34	17 59	27	12	68	7 09	40
16	58 44.4	50.1	228 50.3	76	40.2	136	**35**	27	53	23	18 03	72	19	36
17	73 44.5	+14 49.3	243 16.9	76	−16 26.5	137	**40**	17 18	17 46	18 19	17 53	76	7 30	33
18	88 44.6	+14 48.6	257 43.7	78	−16 12.8	137	**45**	17 09	17 39	18 14	17 41	81	7 43	28
19	103 44.7	47.8	272 10.6	79	−15 59.0	138	**50**	16 57	31	09	27	87	7 59	23
20	118 44.9	47.0	286 37.6	80	45.0	140	**52**	52	28	08	21	89	8 06	21
21	133 45.0	46.3	301 04.7	81	31.0	140	**54**	46	24	05	13	93	15	17
22	148 45.1	45.5	315 31.9	82	16.9	141	**56**	39	19	03	17 05	96	24	14
23	163 45.2	44.8	329 59.2	83	−15 02.8	141	**58**	32	14	18 01	16 55	101	34	10
24	178 45.3	+14 44.0	344 26.6	84	−14 48.5	143	**60 S**	16 24	17 09	17 59	16 44	106	8 46	5

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.8		Mag: +0.1		Mag: −2.8		Mag: +0.3	
	2^{h} 37^{m}.9	PMG: 10^{h} 49^{m}		PMG: 6^{h} 10^{m}		PMG: 3^{h} 11^{m}		PMG: 0^{h} 18^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	320 25.6	197 51.5	+20 30.2	267 22.7	+17 28.9	312 07.8	+1 57.1	355 31.4	−15 22.2
1	335 28.1	212 50.7	29.7	282 23.6	29.3	327 10.4	57.1	10 34.0	22.3
2	350 30.5	227 50.0	29.1	297 24.5	29.7	342 13.0	57.0	25 36.7	22.3
3	5 33.0	242 49.2	28.6	312 25.4	30.1	357 15.5	56.9	40 39.3	22.4
4	20 35.5	257 48.5	28.0	327 26.3	30.5	12 18.1	56.9	55 42.0	22.5
5	35 37.9	272 47.7	+20 27.5	342 27.2	+17 30.9	27 20.7	+1 56.8	70 44.6	−15 22.5
6	50 40.4	287 47.0	+20 26.9	357 28.1	+17 31.3	42 23.2	+1 56.8	85 47.3	−15 22.6
7	65 42.8	302 46.2	26.3	12 29.0	31.7	57 25.8	56.7	100 49.9	22.7
8	80 45.3	317 45.5	25.8	27 29.9	32.0	72 28.4	56.7	115 52.6	22.7
9	95 47.8	332 44.8	25.2	42 30.8	32.4	87 30.9	56.6	130 55.2	22.8
10	110 50.2	347 44.0	24.6	57 31.8	32.8	102 33.5	56.5	145 57.9	22.8
11	125 52.7	2 43.3	+20 24.1	72 32.7	+17 33.2	117 36.1	+1 56.5	161 00.5	−15 22.9
12	140 55.2	17 42.5	+20 23.5	87 33.6	+17 33.6	132 38.6	+1 56.4	176 03.2	−15 23.0
13	155 57.6	32 41.8	22.9	102 34.5	34.0	147 41.2	56.4	191 05.8	23.0
14	171 00.1	47 41.1	22.4	117 35.4	34.4	162 43.8	56.3	206 08.4	23.1
15	186 02.6	62 40.3	21.8	132 36.3	34.8	177 46.4	56.3	221 11.1	23.2
16	201 05.0	77 39.6	21.2	147 37.2	35.2	192 48.9	56.2	236 13.7	23.2
17	216 07.5	92 38.8	+20 20.7	162 38.1	+17 35.6	207 51.5	+1 56.1	251 16.4	−15 23.3
18	231 09.9	107 38.1	+20 20.1	177 39.1	+17 35.9	222 54.1	+1 56.1	266 19.0	−15 23.4
19	246 12.4	122 37.4	19.5	192 40.0	36.3	237 56.6	56.0	281 21.7	23.4
20	261 14.9	137 36.6	18.9	207 40.9	36.7	252 59.2	56.0	296 24.3	23.5
21	276 17.3	152 35.9	18.4	222 41.8	37.1	268 01.8	55.9	311 27.0	23.6
22	291 19.8	167 35.1	17.8	237 42.7	37.5	283 04.4	55.9	326 29.6	23.6
23	306 22.3	182 34.4	17.2	252 43.6	37.9	298 06.9	55.8	341 32.3	23.7
24	321 24.7	197 33.7	+20 16.6	267 44.5	+17 38.3	313 09.5	+1 55.7	356 34.9	−15 23.7
Dif	—	−7	−6	+9	+4	+26	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 15^{d}.3		PHE	4^{h}: 60′.1									
	PMG: 12^{h} 04^{m}.9				SD: 16′.4			12^{h}: 59′.9									
					PMG: 1^{h} 05^{m}			20^{h}: 59′.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	178	45.3	+14	44.0	344	26.6	−14	48.5		**60 N**	1 56	3 17	4 09	20 56	2	5 35	102
1	193	45.4		43.2	358	54.1 85		34.2	143	**58**	2 22	31	19	50	6	43	98
2	208	45.5		42.5	13	21.8 87		19.8	144	**56**	42	43	27	45	9	51	94
3	223	45.6		41.7	27	49.5 87	−14	05.3	145	**54**	2 59	3 53	34	41	12	5 57	91
4	238	45.7		41.0	42	17.4 89	−13	50.8	145	**52**	3 12	4 02	41	37	14	6 03	88
5	253	45.9	+14	40.2	56	45.3 89	−13	36.2	146	**50**	3 24	4 10	4 47	20 33	17	6 09	85
6	268	46.0	+14	39.4	71	13.4 91	−13	21.5	147	**45**	3 47	4 27	4 59	20 25	22	6 20	79
7	283	46.1		38.7	85	41.6 92	−13	06.8	147	**40**	4 05	40	5 10	19	26	30	74
8	298	46.2		37.9	100	09.9 93	−12	52.0	148	**35**	19	4 51	18	13	30	38	70
9	313	46.3		37.2	114	38.2 93		37.1	149	**30**	31	5 01	26	20 08	33	45	67
10	328	46.4		36.4	129	06.7 95		22.2	149	**20**	4 49	16	39	19 59	39	6 57	61
11	343	46.5	+14	35.6	143	35.3 96	−12	07.3	149	**10 N**	5 04	5 29	5 51	19 52	44	7 07	56
12	358	46.6	+14	34.9	158	03.9 96	−11	52.2	151	**0**	5 15	5 40	6 01	19 44	49	7 17	51
13	13	46.8		34.1	172	32.7 98		37.2	150	**10 S**	25	5 50	12	37	54	27	46
14	28	46.9		33.3	187	01.6 99		22.1	151	**20**	34	6 00	23	29	59	37	41
15	43	47.0		32.6	201	30.5 99	−11	06.9	152	**30**	43	11	36	20	65	49	35
16	58	47.1		31.8	215	59.6 101	−10	51.7	152	**35**	47	17	43	15	68	7 55	32
17	73	47.2	+14	31.1	230	28.8 102	−10	36.4	153	**40**	5 51	6 23	6 51	19 09	72	8 03	28
18	88	47.3	+14	30.3	244	58.0 102	−10	21.1	153	**45**	5 55	6 30	7 00	19 02	77	8 11	24
19	103	47.5		29.5	259	27.3 103	−10	05.8	153	**50**	6 00	38	12	18 54	82	22	18
20	118	47.6		28.8	273	56.8 105	−9	50.4	154	**52**	02	42	17	50	85	27	15
21	133	47.7		28.0	288	26.3 105		35.0	154	**54**	04	45	23	46	88	32	13
22	148	47.8		27.2	302	55.9 106		19.6	154	**56**	06	50	29	41	91	38	10
23	163	47.9		26.5	317	25.6 107	−9	04.1	155	**58**	08	6 54	37	36	94	44	7
24	178	48.0	+14	25.7	331	55.4 108	−8	48.6	155	**60 S**	6 10	7 00	7 45	18 30	98	8 51	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2^{h} 33^{m}.9		PMG: 10^{h} 50^{m}			PMG: 6^{h} 09^{m}			PMG: 3^{h} 07^{m}			PMG: 0^{h} 14^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	321	24.7	197	33.7	+20 16.6	267	44.5	+17 38.3	313	09.5	+1 55.7	356	34.9	−15 23.7
1	336	27.2	212	32.9	16.0	282	45.5	38.7	328	12.1	55.7	11	37.6	23.8
2	351	29.7	227	32.2	15.5	297	46.4	39.0	343	14.6	55.6	26	40.2	23.9
3	6	32.1	242	31.5	14.9	312	47.3	39.4	358	17.2	55.6	41	42.9	23.9
4	21	34.6	257	30.7	14.3	327	48.2	39.8	13	19.8	55.5	56	45.5	24.0
5	36	37.1	272	30.0	+20 13.7	342	49.1	+17 40.2	28	22.4	+1 55.4	71	48.1	−15 24.1
6	51	39.5	287	29.3	+20 13.1	357	50.0	+17 40.6	43	24.9	+1 55.4	86	50.8	−15 24.1
7	66	42.0	302	28.5	12.5	12	50.9	41.0	58	27.5	55.3	101	53.4	24.2
8	81	44.4	317	27.8	12.0	27	51.9	41.4	73	30.1	55.3	116	56.1	24.3
9	96	46.9	332	27.0	11.4	42	52.8	41.7	88	32.7	55.2	131	58.7	24.3
10	111	49.4	347	26.3	10.8	57	53.7	42.1	103	35.2	55.1	147	01.4	24.4
11	126	51.8	2	25.6	+20 10.2	72	54.6	+17 42.5	118	37.8	+1 55.1	162	04.0	−15 24.5
12	141	54.3	17	24.8	+20 09.6	87	55.5	+17 42.9	133	40.4	+1 55.0	177	06.7	−15 24.5
13	156	56.8	32	24.1	09.0	102	56.4	43.3	148	43.0	55.0	192	09.3	24.6
14	171	59.2	47	23.4	08.4	117	57.4	43.7	163	45.5	54.9	207	12.0	24.6
15	187	01.7	62	22.7	07.8	132	58.3	44.0	178	48.1	54.8	222	14.6	24.7
16	202	04.2	77	21.9	07.2	147	59.2	44.4	193	50.7	54.8	237	17.3	24.8
17	217	06.6	92	21.2	+20 06.6	163	00.1	+17 44.8	208	53.3	+1 54.7	252	19.9	−15 24.8
18	232	09.1	107	20.5	+20 06.0	178	01.0	+17 45.2	223	55.9	+1 54.7	267	22.6	−15 24.9
19	247	11.6	122	19.7	05.4	193	02.0	45.6	238	58.4	54.6	282	25.2	25.0
20	262	14.0	137	19.0	04.8	208	02.9	45.9	254	01.0	54.5	297	27.8	25.0
21	277	16.5	152	18.3	04.2	223	03.8	46.3	269	03.6	54.5	312	30.5	25.1
22	292	18.9	167	17.5	03.6	238	04.7	46.7	284	06.2	54.4	327	33.1	25.2
23	307	21.4	182	16.8	03.0	253	05.6	47.1	299	08.8	54.4	342	35.8	25.2
24	322	23.9	197	16.1	+20 02.4	268	06.5	+17 47.5	314	11.3	+1 54.3	357	38.4	−15 25.3
Dif	—			−7	−6		+9	+4		+26	−1		+26	−1

UT	SOL				☾ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 16ᵈ.3		PHE	4ʰ: 59′.3								
	PMG: 12ʰ 04ᵐ.7				SD: 16′.2			12ʰ: 59′.0								
					PMG: 1ʰ 56ᵐ			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	178	48.0	+14	25.7	331	55.4	−8	48.6	**60 N**	19 56	20 48	22 04	20 58	1	7 17	96
1	193	48.1		24.9	346	25.2 108		33.0 156	**58**	47	34	21 40	56	5	21	93
2	208	48.3		24.1	0	55.2 110		17.5 155	**56**	39	23	22	54	8	25	89
3	223	48.4		23.4	15	25.2 110	−8	01.9 156	**54**	32	13	21 06	53	10	28	86
4	238	48.5		22.6	29	55.3 111	−7	46.3 156	**52**	26	20 04	20 53	51	13	31	83
5	253	48.6	+14	21.8	44	25.5 112	−7	30.6 157	**50**	19 20	19 56	20 42	20 50	15	7 34	80
6	268	48.7	+14	21.1	58	55.8 113	−7	15.0 156	**45**	19 08	19 40	20 20	20 47	21	7 39	75
7	283	48.9		20.3	73	26.1 113	−6	59.3 157	**40**	18 58	27	20 02	45	24	44	71
8	298	49.0		19.5	87	56.5 114		43.6 157	**35**	50	17	19 49	43	28	48	67
9	313	49.1		18.8	102	27.0 115		27.9 157	**30**	42	19 07	37	41	32	52	63
10	328	49.2		18.0	116	57.6 116	−6	12.2 157	**20**	29	18 52	19	38	37	7 58	57
11	343	49.3	+14	17.2	131	28.2 116	−5	56.5 157	**10 N**	18 18	18 40	19 05	20 36	41	8 03	52
12	358	49.5	+14	16.4	145	58.9 117	−5	40.7 158	**0**	18 08	18 29	18 54	20 33	47	8 08	47
13	13	49.6		15.7	160	29.7 118		25.0 157	**10 S**	17 58	20	45	31	51	13	43
14	28	49.7		14.9	175	00.6 119	−5	09.2 158	**20**	47	10	36	28	56	18	38
15	43	49.8		14.1	189	31.5 119	−4	53.5 157	**30**	35	18 00	28	25	62	24	32
16	58	49.9		13.3	204	02.5 120		37.7 158	**35**	28	17 54	24	23	65	27	29
17	73	50.1	+14	12.6	218	33.5 120	−4	21.9 158	**40**	17 20	17 48	18 20	20 21	69	8 31	25
18	88	50.2	+14	11.8	233	04.7 122	−4	06.2 157	**45**	17 11	17 42	18 16	20 19	73	8 35	21
19	103	50.3		11.0	247	35.8 121	−3	50.4 158	**50**	17 00	34	12	16	79	40	16
20	118	50.4		10.2	262	07.1 123		34.6 158	**52**	16 55	30	10	15	81	42	14
21	133	50.5		09.5	276	38.4 123		18.9 157	**54**	49	27	08	14	83	45	11
22	148	50.7		08.7	291	09.7 123	−3	03.1 158	**56**	43	23	07	12	87	48	8
23	163	50.8		07.9	305	41.1 124	−2	47.3 158	**58**	36	18	05	10	90	51	5
24	178	50.9	+14	07.1	320	12.6 125	−2	31.6 157	**60 S**	16 28	17 13	18 03	20 08	94	8 54	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2ʰ 30ᵐ.0		PMG: 10ʰ 51ᵐ			PMG: 6ʰ 07ᵐ			PMG: 3ʰ 03ᵐ			PMG: 0ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	322	23.9	197	16.1	+20 02.4	268	06.5	+17 47.5	314	11.3	+1 54.3	357	38.4	−15 25.3
1	337	26.3	212	15.3	01.8	283	07.5	47.8	329	13.9	54.2	12	41.1	25.4
2	352	28.8	227	14.6	01.2	298	08.4	48.2	344	16.5	54.2	27	43.7	25.4
3	7	31.3	242	13.9	+20 00.6	313	09.3	48.6	359	19.1	54.1	42	46.4	25.5
4	22	33.7	257	13.2	+20 00.0	328	10.2	49.0	14	21.7	54.0	57	49.0	25.5
5	37	36.2	272	12.4	+19 59.4	343	11.2	+17 49.4	29	24.2	+1 54.0	72	51.7	−15 25.6
6	52	38.7	287	11.7	+19 58.8	358	12.1	+17 49.7	44	26.8	+1 53.9	87	54.3	−15 25.7
7	67	41.1	302	11.0	58.2	13	13.0	50.1	59	29.4	53.9	102	57.0	25.7
8	82	43.6	317	10.3	57.6	28	13.9	50.5	74	32.0	53.8	117	59.6	25.8
9	97	46.0	332	09.5	56.9	43	14.8	50.9	89	34.6	53.7	133	02.3	25.9
10	112	48.5	347	08.8	56.3	58	15.8	51.3	104	37.1	53.7	148	04.9	25.9
11	127	51.0	2	08.1	+19 55.7	73	16.7	+17 51.6	119	39.7	+1 53.6	163	07.5	−15 26.0
12	142	53.4	17	07.4	+19 55.1	88	17.6	+17 52.0	134	42.3	+1 53.5	178	10.2	−15 26.1
13	157	55.9	32	06.6	54.5	103	18.5	52.4	149	44.9	53.5	193	12.8	26.1
14	172	58.4	47	05.9	53.9	118	19.4	52.8	164	47.5	53.4	208	15.5	26.2
15	188	00.8	62	05.2	53.2	133	20.4	53.1	179	50.1	53.4	223	18.1	26.2
16	203	03.3	77	04.5	52.6	148	21.3	53.5	194	52.6	53.3	238	20.8	26.3
17	218	05.8	92	03.7	+19 52.0	163	22.2	+17 53.9	209	55.2	+1 53.2	253	23.4	−15 26.4
18	233	08.2	107	03.0	+19 51.4	178	23.1	+17 54.3	224	57.8	+1 53.2	268	26.1	−15 26.4
19	248	10.7	122	02.3	50.8	193	24.1	54.6	240	00.4	53.1	283	28.7	26.5
20	263	13.2	137	01.6	50.1	208	25.0	55.0	255	03.0	53.0	298	31.4	26.6
21	278	15.6	152	00.8	49.5	223	25.9	55.4	270	05.6	53.0	313	34.0	26.6
22	293	18.1	167	00.1	48.9	238	26.8	55.8	285	08.2	52.9	328	36.7	26.7
23	308	20.5	181	59.4	48.3	253	27.8	56.1	300	10.7	52.8	343	39.3	26.8
24	323	23.0	196	58.7	+19 47.6	268	28.7	+17 56.5	315	13.3	+1 52.8	358	42.0	−15 26.8
Dif	—			−7	−6		+9	+4		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 17^{d}.3		PHE	4^{h}: 58′.5									
	PMG: 12^{h} 04^{m}.5				SD: 16′.0			12^{h}: 58′.1									
					PMG: 2^{h} 44^{m}			20^{h}: 57′.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	50.9	+14	07.1	320	12.6	−2	31.6		**60 N**	2 06	3 22	4 14	20 59	2	8 53	93
1	193	51.0		06.4	334	44.1 125		15.9	157	**58**	30	36	23	21 01	5	54	88
2	208	51.1		05.6	349	15.7 126	−2	00.1	158	**56**	2 48	47	31	02	8	54	85
3	223	51.3		04.8	3	47.4 127	−1	44.4	157	**54**	3 04	3 57	38	03	11	54	82
4	238	51.4		04.0	18	19.0 126		28.7	157	**52**	17	4 06	44	04	13	54	80
5	253	51.5	+14	03.2	32	50.8 128	−1	13.0	157	**50**	3 28	4 13	4 50	21 05	16	8 54	78
6	268	51.6	+14	02.5	47	22.5 127	−0	57.4	156	**45**	3 50	4 30	5 02	21 08	20	8 54	73
7	283	51.8		01.7	61	54.4 129		41.7	157	**40**	4 07	42	11	09	24	55	67
8	298	51.9		00.9	76	26.3 129		26.1	156	**35**	21	4 53	20	11	28	55	64
9	313	52.0	+14	00.1	90	58.2 129	−0	10.4	157	**30**	32	5 02	27	13	30	55	61
10	328	52.1	+13	59.3	105	30.1 129	+0	05.2	156	**20**	4 50	17	40	15	36	55	55
11	343	52.3	+13	58.6	120	02.1 130	+0	20.7	155	**10 N**	5 04	5 29	5 51	21 17	41	8 55	51
12	358	52.4	+13	57.8	134	34.2 131	+0	36.3	156	**0**	5 15	5 40	6 01	21 20	45	8 55	46
13	13	52.5		57.0	149	06.3 131	+0	51.8	155	**10 S**	25	50	11	22	49	56	41
14	28	52.6		56.2	163	38.4 131	+1	07.3	155	**20**	33	5 59	22	24	55	56	36
15	43	52.8		55.4	178	10.6 132		22.8	155	**30**	41	6 09	34	27	60	56	31
16	58	52.9		54.6	192	42.8 132		38.2	154	**35**	45	15	41	28	64	56	28
17	73	53.0	+13	53.9	207	15.0 132	+1	53.7	155	**40**	5 49	6 20	6 48	21 30	67	8 56	24
18	88	53.1	+13	53.1	221	47.3 133	+2	09.0	153	**45**	5 52	6 27	6 57	21 32	71	8 56	20
19	103	53.3		52.3	236	19.6 133		24.4	154	**50**	56	34	7 08	35	76	56	15
20	118	53.4		51.5	250	51.9 133		39.7	153	**52**	5 58	38	13	36	79	56	13
21	133	53.5		50.7	265	24.2 133	+2	55.0	153	**54**	6 00	42	19	37	82	56	11
22	148	53.6		49.9	279	56.6 134	+3	10.3	153	**56**	02	46	25	39	84	56	8
23	163	53.8		49.2	294	29.1 135		25.5	152	**58**	04	50	32	40	88	56	5
24	178	53.9	+13	48.4	309	01.5 134	+3	40.7	152	**60 S**	6 06	6 55	7 39	21 42	92	8 56	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2^{h} 26^{m}.1		PMG: 10^{h} 53^{m}			PMG: 6^{h} 06^{m}			PMG: 2^{h} 59^{m}			PMG: 0^{h} 05^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	323	23.0	196	58.7	+19 47.6	268	28.7	+17 56.5	315	13.3	+1 52.8	358	42.0	−15 26.8
1	338	25.5	211	58.0	47.0	283	29.6	56.9	330	15.9	52.7	13	44.6	26.9
2	353	27.9	226	57.2	46.4	298	30.5	57.3	345	18.5	52.6	28	47.2	27.0
3	8	30.4	241	56.5	45.7	313	31.5	57.6	0	21.1	52.6	43	49.9	27.0
4	23	32.9	256	55.8	45.1	328	32.4	58.0	15	23.7	52.5	58	52.5	27.1
5	38	35.3	271	55.1	+19 44.5	343	33.3	+17 58.4	30	26.3	+1 52.5	73	55.2	−15 27.1
6	53	37.8	286	54.4	+19 43.9	358	34.3	+17 58.8	45	28.9	+1 52.4	88	57.8	−15 27.2
7	68	40.3	301	53.7	43.2	13	35.2	59.1	60	31.5	52.3	104	00.5	27.3
8	83	42.7	316	52.9	42.6	28	36.1	59.5	75	34.0	52.3	119	03.1	27.3
9	98	45.2	331	52.2	41.9	43	37.0	+17 59.9	90	36.6	52.2	134	05.8	27.4
10	113	47.6	346	51.5	41.3	58	38.0	+18 00.2	105	39.2	52.1	149	08.4	27.5
11	128	50.1	1	50.8	+19 40.7	73	38.9	+18 00.6	120	41.8	+1 52.1	164	11.1	−15 27.5
12	143	52.6	16	50.1	+19 40.0	88	39.8	+18 01.0	135	44.4	+1 52.0	179	13.7	−15 27.6
13	158	55.0	31	49.3	39.4	103	40.7	01.4	150	47.0	51.9	194	16.4	27.7
14	173	57.5	46	48.6	38.7	118	41.7	01.7	165	49.6	51.9	209	19.0	27.7
15	189	00.0	61	47.9	38.1	133	42.6	02.1	180	52.2	51.8	224	21.7	27.8
16	204	02.4	76	47.2	37.5	148	43.5	02.5	195	54.8	51.7	239	24.3	27.8
17	219	04.9	91	46.5	+19 36.8	163	44.5	+18 02.8	210	57.4	+1 51.7	254	27.0	−15 27.9
18	234	07.4	106	45.8	+19 36.2	178	45.4	+18 03.2	226	00.0	+1 51.6	269	29.6	−15 28.0
19	249	09.8	121	45.1	35.5	193	46.3	03.6	241	02.5	51.5	284	32.2	28.0
20	264	12.3	136	44.3	34.9	208	47.3	03.9	256	05.1	51.5	299	34.9	28.1
21	279	14.8	151	43.6	34.2	223	48.2	04.3	271	07.7	51.4	314	37.5	28.2
22	294	17.2	166	42.9	33.6	238	49.1	04.7	286	10.3	51.3	329	40.2	28.2
23	309	19.7	181	42.2	32.9	253	50.0	05.0	301	12.9	51.3	344	42.8	28.3
24	324	22.1	196	41.5	+19 32.3	268	51.0	+18 05.4	316	15.5	+1 51.2	359	45.5	−15 28.4
Dif	—			−7	−6		+9	+4		+26	−1		+26	−1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 18.d3		PHE	4h: 57′.5								
	PMG: 12h 04.m3				SD: 15′.7			12h: 57′.2								
					PMG: 3h 30m			20h: 56′.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	178	53.9	+13	48.4	309	01.5	+3	40.7	**60 N**	19 50	20 41	21 54	21 01	2	10 26	91
1	193	54.0		47.6	323	34.0 135	+3	55.8 151	**58**	42	28	32	06	6	22	87
2	208	54.2		46.8	338	06.5 135	+4	10.9 151	**56**	35	17	15	10	9	19	84
3	223	54.3		46.0	352	39.0 135		26.0 151	**54**	28	08	21 00	14	12	16	81
4	238	54.4		45.2	7	11.5 135		41.0 150	**52**	22	20 00	20 48	17	15	14	78
5	253	54.5	+13	44.4	21	44.1 136	+4	56.0 150	**50**	19 17	19 52	20 37	21 21	16	10 12	75
6	268	54.7	+13	43.6	36	16.7 136	+5	11.0 150	**45**	19 05	19 37	20 16	21 28	21	10 07	70
7	283	54.8		42.8	50	49.3 136		25.9 149	**40**	18 56	24	19 59	33	26	10 02	67
8	298	54.9		42.1	65	21.9 136		40.7 148	**35**	47	14	46	39	28	9 59	62
9	313	55.1		41.3	79	54.5 136	+5	55.5 148	**30**	40	19 05	35	43	32	56	59
10	328	55.2		40.5	94	27.1 136	+6	10.3 148	**20**	28	18 51	18	51	37	50	54
11	343	55.3	+13	39.7	108	59.8 137	+6	25.0 147	**10 N**	18 17	18 39	19 04	21 58	41	9 46	49
12	358	55.4	+13	38.9	123	32.5 137	+6	39.7 147	**0**	18 08	18 29	18 54	22 05	45	9 41	45
13	13	55.6		38.1	138	05.2 137	+6	54.3 146	**10 S**	17 58	20	44	11	50	37	40
14	28	55.7		37.3	152	37.9 137	+7	08.8 145	**20**	48	10	36	19	53	32	36
15	43	55.8		36.5	167	10.6 137		23.3 145	**30**	36	18 01	29	27	59	27	31
16	58	56.0		35.7	181	43.3 137		37.8 145	**35**	30	17 56	25	32	62	24	27
17	73	56.1	+13	34.9	196	16.0 137	+7	52.2 144	**40**	17 22	17 50	18 22	22 37	66	9 20	25
18	88	56.2	+13	34.1	210	48.7 137	+8	06.6 144	**45**	17 13	17 44	18 18	22 43	70	9 16	21
19	103	56.4		33.3	225	21.4 137		20.9 143	**50**	17 03	37	15	51	75	11	16
20	118	56.5		32.6	239	54.2 138		35.1 142	**52**	16 58	33	13	55	77	09	14
21	133	56.6		31.8	254	26.9 137	+8	49.3 142	**54**	53	30	12	22 59	80	07	11
22	148	56.8		31.0	268	59.7 138	+9	03.4 141	**56**	47	26	10	23 03	83	04	8
23	163	56.9		30.2	283	32.4 137		17.5 141	**58**	40	22	08	08	86	9 01	6
24	178	57.0	+13	29.4	298	05.1 137	+9	31.5 140	**60 S**	16 33	17 17	18 06	23 14	90	8 58	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.8			Mag: +0.1			Mag: −2.8			Mag: +0.3		
	2h 22.m1		PMG: 10h 54m			PMG: 6h 04m			PMG: 2h 54m			PMG: 0h 01m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	324	22.1	196	41.5	+19 32.3	268	51.0	+18 05.4	316	15.5	+1 51.2	359	45.5	−15 28.4
1	339	24.6	211	40.8	31.6	283	51.9	05.8	331	18.1	51.1	14	48.1	28.4
2	354	27.1	226	40.1	31.0	298	52.8	06.1	346	20.7	51.1	29	50.8	28.5
3	9	29.5	241	39.4	30.3	313	53.8	06.5	1	23.3	51.0	44	53.4	28.5
4	24	32.0	256	38.7	29.7	328	54.7	06.9	16	25.9	50.9	59	56.1	28.6
5	39	34.5	271	37.9	+19 29.0	343	55.6	+18 07.2	31	28.5	+1 50.8	74	58.7	−15 28.7
6	54	36.9	286	37.2	+19 28.4	358	56.6	+18 07.6	46	31.1	+1 50.8	90	01.4	−15 28.7
7	69	39.4	301	36.5	27.7	13	57.5	08.0	61	33.7	50.7	105	04.0	28.8
8	84	41.9	316	35.8	27.0	28	58.4	08.3	76	36.3	50.6	120	06.7	28.9
9	99	44.3	331	35.1	26.4	43	59.4	08.7	91	38.9	50.6	135	09.3	28.9
10	114	46.8	346	34.4	25.7	59	00.3	09.1	106	41.5	50.5	150	11.9	29.0
11	129	49.3	1	33.7	+19 25.1	74	01.2	+18 09.4	121	44.1	+1 50.4	165	14.6	−15 29.1
12	144	51.7	16	33.0	+19 24.4	89	02.2	+18 09.8	136	46.7	+1 50.4	180	17.2	−15 29.1
13	159	54.2	31	32.3	23.7	104	03.1	10.2	151	49.3	50.3	195	19.9	29.2
14	174	56.6	46	31.6	23.1	119	04.0	10.5	166	51.9	50.2	210	22.5	29.2
15	189	59.1	61	30.9	22.4	134	05.0	10.9	181	54.5	50.2	225	25.2	29.3
16	205	01.6	76	30.2	21.7	149	05.9	11.3	196	57.1	50.1	240	27.8	29.4
17	220	04.0	91	29.5	+19 21.1	164	06.9	+18 11.6	211	59.7	+1 50.0	255	30.5	−15 29.4
18	235	06.5	106	28.7	+19 20.4	179	07.8	+18 12.0	227	02.3	+1 50.0	270	33.1	−15 29.5
19	250	09.0	121	28.0	19.7	194	08.7	12.3	242	04.9	49.9	285	35.8	29.6
20	265	11.4	136	27.3	19.1	209	09.7	12.7	257	07.5	49.8	300	38.4	29.6
21	280	13.9	151	26.6	18.4	224	10.6	13.1	272	10.1	49.7	315	41.1	29.7
22	295	16.4	166	25.9	17.7	239	11.5	13.4	287	12.7	49.7	330	43.7	29.8
23	310	18.8	181	25.2	17.0	254	12.5	13.8	302	15.3	49.6	345	46.4	29.8
24	325	21.3	196	24.5	+19 16.4	269	13.4	+18 14.1	317	17.9	+1 49.5	0	49.0	−15 29.9
Dif	—			−7	−7		+9	+4		+26	−1		−8974	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8 PMG: 12h 04.m1				Edad: 19.d3 SD: 15′.5 PMG: 4h 15m		PHE	4h: 56′.6 12h: 56′.4 20h: 56′.1 Rº: 46m								
	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	57.0	+13	29.4	298	05.1	+9	31.5	**60 N**	2 15	3 28	4 19	21 03	4	11 57	90
1	193	57.2		28.6	312	37.9 138		45.4 139	**58**	37	41	27	12	8	49	86
2	208	57.3		27.8	327	10.6 137	+9	59.3 139	**56**	2 54	3 52	35	19	11	43	82
3	223	57.4		27.0	341	43.4 138	+10	13.1 138	**54**	3 09	4 01	41	26	14	37	79
4	238	57.6		26.2	356	16.1 137		26.9 138	**52**	21	09	47	32	17	32	76
5	253	57.7	+13	25.4	10	48.8 137	+10	40.6 137	**50**	3 32	4 17	4 52	21 37	19	11 27	74
6	268	57.8	+13	24.6	25	21.6 138	+10	54.2 136	**45**	3 53	4 32	5 04	21 49	24	11 17	69
7	283	58.0		23.8	39	54.3 137	+11	07.8 136	**40**	4 10	45	13	21 59	27	09	65
8	298	58.1		23.0	54	27.0 137		21.3 135	**35**	23	4 55	21	22 07	31	11 01	62
9	313	58.2		22.2	68	59.7 137		34.7 134	**30**	34	5 03	28	15	33	10 55	59
10	328	58.4		21.4	83	32.4 137	+11	48.1 134	**20**	4 51	18	41	28	38	44	54
11	343	58.5	+13	20.6	98	05.1 137	+12	01.4 133	**10 N**	5 04	5 29	5 51	22 39	42	10 35	49
12	358	58.6	+13	19.8	112	37.7 136	+12	14.6 132	**0**	5 15	5 39	6 01	22 50	46	10 26	46
13	13	58.8		19.0	127	10.4 137		27.8 132	**10 S**	24	49	10	23 01	49	17	42
14	28	58.9		18.2	141	43.0 136		40.8 130	**20**	32	5 58	20	12	54	10 08	37
15	43	59.0		17.4	156	15.7 137	+12	53.9 131	**30**	39	6 07	32	26	58	9 58	32
16	58	59.2		16.6	170	48.3 136	+13	06.8 129	**35**	43	12	38	34	61	51	30
17	73	59.3	+13	15.8	185	20.9 136	+13	19.7 129	**40**	5 46	6 18	6 46	23 43	64	9 45	26
18	88	59.5	+13	15.0	199	53.5 136	+13	32.5 128	**45**	5 50	6 24	6 54	23 53	68	9 37	22
19	103	59.6		14.2	214	26.0 135		45.2 127	**50**	53	31	7 05	** **	**	27	18
20	118	59.7		13.4	228	58.6 136	+13	57.8 126	**52**	55	34	09	** **	**	23	15
21	133	59.9		12.6	243	31.1 135	+14	10.4 126	**54**	56	38	15	** **	**	18	13
22	149	00.0		11.8	258	03.6 135		22.9 125	**56**	58	41	20	** **	**	12	10
23	164	00.1		11.0	272	36.1 135		35.3 124	**58**	5 59	45	27	** **	**	07	6
24	179	00.3	+13	10.2	287	08.6 135	+14	47.6 123	**60 S**	6 01	6 50	7 34	** **	**	9 00	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 2h 18.m2		Mag: −3.8 PMG: 10h 55m			Mag: 0.0 PMG: 6h 03m			Mag: −2.8 PMG: 2h 50m			Mag: +0.3 PMG: 23h 53m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	325	21.3	196	24.5	+19 16.4	269	13.4	+18 14.1	317	17.9	+1 49.5	0	49.0	−15 29.9
1	340	23.7	211	23.8	15.7	284	14.4	14.5	332	20.5	49.5	15	51.7	29.9
2	355	26.2	226	23.1	15.0	299	15.3	14.9	347	23.1	49.4	30	54.3	30.0
3	10	28.7	241	22.4	14.3	314	16.2	15.2	2	25.7	49.3	45	56.9	30.1
4	25	31.1	256	21.7	13.7	329	17.2	15.6	17	28.3	49.2	60	59.6	30.1
5	40	33.6	271	21.0	+19 13.0	344	18.1	+18 15.9	32	30.9	+1 49.2	76	02.2	−15 30.2
6	55	36.1	286	20.3	+19 12.3	359	19.0	+18 16.3	47	33.5	+1 49.1	91	04.9	−15 30.3
7	70	38.5	301	19.6	11.6	14	20.0	16.7	62	36.1	49.0	106	07.5	30.3
8	85	41.0	316	18.9	10.9	29	20.9	17.0	77	38.7	49.0	121	10.2	30.4
9	100	43.5	331	18.2	10.3	44	21.9	17.4	92	41.3	48.9	136	12.8	30.5
10	115	45.9	346	17.5	09.6	59	22.8	17.7	107	43.9	48.8	151	15.5	30.5
11	130	48.4	1	16.8	+19 08.9	74	23.7	+18 18.1	122	46.5	+1 48.7	166	18.1	−15 30.6
12	145	50.9	16	16.1	+19 08.2	89	24.7	+18 18.5	137	49.1	+1 48.7	181	20.8	−15 30.6
13	160	53.3	31	15.4	07.5	104	25.6	18.8	152	51.7	48.6	196	23.4	30.7
14	175	55.8	46	14.7	06.8	119	26.6	19.2	167	54.3	48.5	211	26.1	30.8
15	190	58.2	61	14.0	06.1	134	27.5	19.5	182	56.9	48.5	226	28.7	30.8
16	206	00.7	76	13.3	05.5	149	28.5	19.9	197	59.5	48.4	241	31.4	30.9
17	221	03.2	91	12.6	+19 04.8	164	29.4	+18 20.2	213	02.1	+1 48.3	256	34.0	−15 31.0
18	236	05.6	106	11.9	+19 04.1	179	30.3	+18 20.6	228	04.7	+1 48.2	271	36.6	−15 31.0
19	251	08.1	121	11.2	03.4	194	31.3	21.0	243	07.3	48.2	286	39.3	31.1
20	266	10.6	136	10.5	02.7	209	32.2	21.3	258	09.9	48.1	301	41.9	31.1
21	281	13.0	151	09.8	02.0	224	33.2	21.7	273	12.6	48.0	316	44.6	31.2
22	296	15.5	166	09.2	01.3	239	34.1	22.0	288	15.2	48.0	331	47.2	31.3
23	311	18.0	181	08.5	+19 00.6	254	35.1	22.4	303	17.8	47.9	346	49.9	31.3
24	326	20.4	196	07.8	+18 59.9	269	36.0	+18 22.7	318	20.4	+1 47.8	1	52.5	−15 31.4
Dif	—			−7	−7		+9	+4		+26	−1		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 03m.9				LUNA Edad: 20d.3 SD: 15′.2 PMG: 5h 01m PHE 4h: 55′.8; 12h: 55′.6; 20h: 55′.4 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	179	00.3	+13	10.2	287	08.6	+14	47.6	**60 N**	19 45	20 34	21 45	21 07	7	13 27	90
1	194	00.4		09.4	301	41.0 134	+14	59.9 123	**58**	37	22	25	20	11	15	85
2	209	00.6		08.5	316	13.5 135	+15	12.1 122	**56**	30	12	21 08	30	16	13 05	81
3	224	00.7		07.7	330	45.9 134		24.2 121	**54**	24	20 03	20 54	40	19	12 56	78
4	239	00.8		06.9	345	18.3 134		36.2 120	**52**	18	19 55	43	49	21	48	75
5	254	01.0	+13	06.1	359	50.6 133	+15	48.1 119	**50**	19 13	19 48	20 33	21 56	24	12 41	73
6	269	01.1	+13	05.3	14	23.0 134	+16	00.0 119	**45**	19 02	19 33	20 12	22 13	28	12 26	68
7	284	01.2		04.5	28	55.3 133	+16	11.8 118	**40**	18 53	21	19 56	26	32	14	64
8	299	01.4		03.7	43	27.5 132		23.4 116	**35**	45	12	43	38	34	12 03	61
9	314	01.5		02.9	57	59.8 133		35.0 116	**30**	38	19 03	33	22 48	37	11 54	58
10	329	01.7		02.1	72	32.0 132		46.6 116	**20**	27	18 49	16	23 06	41	38	54
11	344	01.8	+13	01.3	87	04.2 132	+16	58.0 114	**10 N**	18 17	18 38	19 03	23 21	44	11 24	51
12	359	01.9	+13	00.5	101	36.4 132	+17	09.3 113	**0**	18 07	18 28	18 53	23 36	47	11 12	46
13	14	02.1	+12	59.7	116	08.5 131		20.6 113	**10 S**	17 58	20	44	23 50	51	10 59	43
14	29	02.2		58.9	130	40.6 131		31.8 112	**20**	48	11	37	** **	**	45	40
15	44	02.4		58.0	145	12.7 131		42.8 110	**30**	37	18 02	30	** **	**	30	35
16	59	02.5		57.2	159	44.8 131	+17	53.8 110	**35**	31	17 57	27	** **	**	21	33
17	74	02.7	+12	56.4	174	16.8 130	+18	04.7 109	**40**	17 24	17 52	18 24	** **	**	10 11	29
18	89	02.8	+12	55.6	188	48.8 130	+18	15.5 108	**45**	17 16	17 46	18 20	** **	**	9 59	26
19	104	02.9		54.8	203	20.7 129		26.3 108	**50**	06	39	17	0 06	73	45	21
20	119	03.1		54.0	217	52.6 129		36.9 106	**52**	17 01	36	16	12	76	38	19
21	134	03.2		53.2	232	24.5 129		47.4 105	**54**	16 56	33	15	19	78	31	16
22	149	03.4		52.4	246	56.4 129	+18	57.9 105	**56**	51	30	13	26	82	22	14
23	164	03.5		51.6	261	28.2 128	+19	08.2 103	**58**	44	26	12	34	86	13	10
24	179	03.6	+12	50.7	276	00.0 128	+19	18.5 103	**60 S**	16 37	17 22	18 10	0 44	91	9 03	5

UT	ARIES PMG 2h 14m.3		VENUS Mag: −3.8 PMG: 10h 56m			MARTE Mag: 0.0 PMG: 6h 01m			JÚPITER Mag: −2.8 PMG: 2h 46m			SATURNO Mag: +0.3 PMG: 23h 48m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	326	20.4	196	07.8	+18 59.9	269	36.0	+18 22.7	318	20.4	+1 47.8	1	52.5	−15 31.4
1	341	22.9	211	07.1	59.2	284	36.9	23.1	333	23.0	47.7	16	55.2	31.5
2	356	25.3	226	06.4	58.5	299	37.9	23.4	348	25.6	47.7	31	57.8	31.5
3	11	27.8	241	05.7	57.8	314	38.8	23.8	3	28.2	47.6	47	00.5	31.6
4	26	30.3	256	05.0	57.1	329	39.8	24.1	18	30.8	47.5	62	03.1	31.7
5	41	32.7	271	04.3	+18 56.4	344	40.7	+18 24.5	33	33.4	+1 47.4	77	05.8	−15 31.7
6	56	35.2	286	03.6	+18 55.7	359	41.7	+18 24.8	48	36.0	+1 47.4	92	08.4	−15 31.8
7	71	37.7	301	02.9	55.0	14	42.6	25.2	63	38.6	47.3	107	11.1	31.8
8	86	40.1	316	02.2	54.3	29	43.6	25.6	78	41.3	47.2	122	13.7	31.9
9	101	42.6	331	01.5	53.6	44	44.5	25.9	93	43.9	47.1	137	16.3	32.0
10	116	45.1	346	00.8	52.9	59	45.5	26.3	108	46.5	47.1	152	19.0	32.0
11	131	47.5	1	00.2	+18 52.2	74	46.4	+18 26.6	123	49.1	+1 47.0	167	21.6	−15 32.1
12	146	50.0	15	59.5	+18 51.5	89	47.3	+18 27.0	138	51.7	+1 46.9	182	24.3	−15 32.2
13	161	52.5	30	58.8	50.8	104	48.3	27.3	153	54.3	46.8	197	26.9	32.2
14	176	54.9	45	58.1	50.0	119	49.2	27.7	168	56.9	46.8	212	29.6	32.3
15	191	57.4	60	57.4	49.3	134	50.2	28.0	183	59.5	46.7	227	32.2	32.4
16	206	59.8	75	56.7	48.6	149	51.1	28.4	199	02.2	46.6	242	34.9	32.4
17	222	02.3	90	56.0	+18 47.9	164	52.1	+18 28.7	214	04.8	+1 46.5	257	37.5	−15 32.5
18	237	04.8	105	55.3	+18 47.2	179	53.0	+18 29.1	229	07.4	+1 46.5	272	40.2	−15 32.5
19	252	07.2	120	54.7	46.5	194	54.0	29.4	244	10.0	46.4	287	42.8	32.6
20	267	09.7	135	54.0	45.8	209	54.9	29.8	259	12.6	46.3	302	45.5	32.7
21	282	12.2	150	53.3	45.0	224	55.9	30.1	274	15.2	46.2	317	48.1	32.7
22	297	14.6	165	52.6	44.3	239	56.8	30.5	289	17.8	46.2	332	50.8	32.8
23	312	17.1	180	51.9	43.6	254	57.8	30.8	304	20.4	46.1	347	53.4	32.9
24	327	19.6	195	51.2	+18 42.9	269	58.7	+18 31.2	319	23.1	+1 46.0	2	56.0	−15 32.9
Dif	—			−7	−7		+9	+4		+26	−1		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 03.m6				LUNA Edad: 21.d3 SD: 15′.1 PMG: 5h 47m PHE: 4h: 55′.2; 12h: 55′.0; 20h: 54′.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	179	03.6	+12	50.7	276	00.0	+19	18.5	**60 N**	2 23	3 34	4 24	21 14	13	14 57	88
1	194	03.8		49.9	290	31.7 127		28.6 101	**58**	2 44	46	32	31	19	40	82
2	209	03.9		49.1	305	03.4 127		38.7 101	**56**	3 00	3 56	39	46	23	26	78
3	224	04.1		48.3	319	35.1 127		48.7 100	**54**	14	4 05	45	21 59	25	14	74
4	239	04.2		47.5	334	06.7 126	+19	58.5 98	**52**	25	13	50	22 10	28	14 03	72
5	254	04.4	+12	46.7	348	38.3 126	+20	08.3 98	**50**	3 36	4 20	4 55	22 20	30	13 54	69
6	269	04.5	+12	45.9	3	09.9 126	+20	18.0 97	**45**	3 56	4 35	5 06	22 41	34	13 34	65
7	284	04.7		45.0	17	41.4 125		27.5 95	**40**	4 12	47	15	22 58	37	18	62
8	299	04.8		44.2	32	12.9 125		37.0 95	**35**	25	4 56	23	23 12	40	13 04	60
9	314	04.9		43.4	46	44.4 125		46.4 94	**30**	35	5 05	30	25	41	12 52	58
10	329	05.1		42.6	61	15.8 124	+20	55.7 93	**20**	4 52	18	41	23 47	44	32	54
11	344	05.2	+12	41.8	75	47.2 124	+21	04.8 91	**10 N**	5 04	5 29	5 51	** **	**	12 15	51
12	359	05.4	+12	41.0	90	18.5 123	+21	13.9 91	**0**	5 14	5 39	6 00	** **	**	11 58	49
13	14	05.5		40.1	104	49.8 123		22.9 90	**10 S**	23	48	09	** **	**	42	46
14	29	05.7		39.3	119	21.1 123		31.7 88	**20**	31	5 56	19	0 06	54	25	42
15	44	05.8		38.5	133	52.3 122		40.5 88	**30**	37	6 05	30	24	58	11 05	39
16	59	06.0		37.7	148	23.5 122		49.2 87	**35**	40	10	36	35	60	10 54	36
17	74	06.1	+12	36.9	162	54.6 121	+21	57.7 85	**40**	5 43	6 15	6 43	0 47	63	10 40	34
18	89	06.3	+12	36.0	177	25.8 122	+22	06.2 85	**45**	5 47	6 21	6 51	1 01	67	10 25	31
19	104	06.4		35.2	191	56.8 120		14.5 83	**50**	50	27	7 01	19	72	10 06	26
20	119	06.5		34.4	206	27.9 121		22.7 82	**52**	51	30	05	28	73	9 57	24
21	134	06.7		33.6	220	58.8 119		30.9 82	**54**	52	33	10	37	77	47	22
22	149	06.8		32.8	235	29.8 120		38.9 80	**56**	53	37	16	1 48	80	36	18
23	164	07.0		31.9	250	00.7 119		46.8 79	**58**	55	41	22	2 00	84	23	14
24	179	07.1	+12	31.1	264	31.6 119	+22	54.6 78	**60 S**	5 56	6 45	7 29	2 15	89	9 08	8

UT	ARIES PMG 2h 10.m3		VENUS Mag: −3.8 PMG: 10h 57m			MARTE Mag: 0.0 PMG: 6h 00m			JÚPITER Mag: −2.8 PMG: 2h 42m			SATURNO Mag: +0.3 PMG: 23h 44m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	327	19.6	195	51.2	+18 42.9	269	58.7	+18 31.2	319	23.1	+1 46.0	2	56.0	−15 32.9
1	342	22.0	210	50.5	42.2	284	59.7	31.5	334	25.7	45.9	17	58.7	33.0
2	357	24.5	225	49.9	41.4	300	00.6	31.9	349	28.3	45.9	33	01.3	33.0
3	12	27.0	240	49.2	40.7	315	01.6	32.2	4	30.9	45.8	48	04.0	33.1
4	27	29.4	255	48.5	40.0	330	02.5	32.5	19	33.5	45.7	63	06.6	33.2
5	42	31.9	270	47.8	+18 39.3	345	03.5	+18 32.9	34	36.1	+1 45.6	78	09.3	−15 33.2
6	57	34.3	285	47.1	+18 38.6	0	04.4	+18 33.2	49	38.8	+1 45.6	93	11.9	−15 33.3
7	72	36.8	300	46.4	37.8	15	05.4	33.6	64	41.4	45.5	108	14.6	33.4
8	87	39.3	315	45.8	37.1	30	06.4	33.9	79	44.0	45.4	123	17.2	33.4
9	102	41.7	330	45.1	36.4	45	07.3	34.3	94	46.6	45.3	138	19.9	33.5
10	117	44.2	345	44.4	35.6	60	08.3	34.6	109	49.2	45.2	153	22.5	33.5
11	132	46.7	0	43.7	+18 34.9	75	09.2	+18 35.0	124	51.9	+1 45.2	168	25.2	−15 33.6
12	147	49.1	15	43.0	+18 34.2	90	10.2	+18 35.3	139	54.5	+1 45.1	183	27.8	−15 33.7
13	162	51.6	30	42.4	33.5	105	11.1	35.7	154	57.1	45.0	198	30.4	33.7
14	177	54.1	45	41.7	32.7	120	12.1	36.0	169	59.7	44.9	213	33.1	33.8
15	192	56.5	60	41.0	32.0	135	13.0	36.3	185	02.3	44.9	228	35.7	33.9
16	207	59.0	75	40.3	31.3	150	14.0	36.7	200	04.9	44.8	243	38.4	33.9
17	223	01.4	90	39.6	+18 30.5	165	14.9	+18 37.0	215	07.6	+1 44.7	258	41.0	−15 34.0
18	238	03.9	105	39.0	+18 29.8	180	15.9	+18 37.4	230	10.2	+1 44.6	273	43.7	−15 34.0
19	253	06.4	120	38.3	29.0	195	16.9	37.7	245	12.8	44.5	288	46.3	34.1
20	268	08.8	135	37.6	28.3	210	17.8	38.1	260	15.4	44.5	303	49.0	34.2
21	283	11.3	150	36.9	27.6	225	18.8	38.4	275	18.1	44.4	318	51.6	34.2
22	298	13.8	165	36.3	26.8	240	19.7	38.7	290	20.7	44.3	333	54.3	34.3
23	313	16.2	180	35.6	26.1	255	20.7	39.1	305	23.3	44.2	348	56.9	34.4
24	328	18.7	195	34.9	+18 25.3	270	21.6	+18 39.4	320	25.9	+1 44.1	3	59.6	−15 34.4
Dif	—			−7	−7		+10	+3		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 22.ᵈ3		PHE	4ʰ: 54′.7									
	PMG: 12ʰ 03.ᵐ4				SD: 14′.9			12ʰ: 54′.5									
					PMG: 6ʰ 35ᵐ			20ʰ: 54′.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	07.1	+12	31.1	264	31.6	+22	54.6		**60 N**	19 39	20 28	21 36	21 27	24	16 25	79
1	194	07.3		30.3	279	02.4 118	+23	02.3	77	**58**	32	17	17	21 50	30	16 02	74
2	209	07.4		29.5	293	33.2 118		09.9	76	**56**	25	20 07	21 02	22 09	33	15 44	70
3	224	07.6		28.6	308	04.0 118		17.3	74	**54**	19	19 58	20 49	24	36	28	68
4	239	07.7		27.8	322	34.7 117		24.7	74	**52**	14	51	37	38	38	15	65
5	254	07.9	+12	27.0	337	05.4 117	+23	32.0	73	**50**	19 09	19 44	20 28	22 50	39	15 03	64
6	269	08.0	+12	26.2	351	36.0 116	+23	39.1	71	**45**	18 58	19 30	20 08	23 15	42	14 39	61
7	284	08.2		25.4	6	06.6 116		46.1	70	**40**	50	18	19 53	35	43	20	58
8	299	08.3		24.5	20	37.2 116		53.0	69	**35**	43	09	41	23 52	44	14 04	57
9	314	08.5		23.7	35	07.7 115	+23	59.8	68	**30**	36	19 01	30	** **	**	13 50	55
10	329	08.6		22.9	49	38.2 115	+24	06.5	67	**20**	25	18 48	14	** **	**	26	53
11	344	08.8	+12	22.1	64	08.6 114	+24	13.1	66	**10 N**	18 16	18 37	19 02	0 05	47	13 06	51
12	359	08.9	+12	21.2	78	39.1 115	+24	19.5	64	**0**	18 07	18 28	18 52	0 23	49	12 47	49
13	14	09.1		20.4	93	09.4 113		25.9	64	**10 S**	17 58	19	44	0 41	51	28	47
14	29	09.2		19.6	107	39.8 114		32.1	62	**20**	49	11	37	1 00	54	12 07	46
15	44	09.4		18.7	122	10.1 113		38.2	61	**30**	38	18 03	31	22	57	11 44	43
16	59	09.5		17.9	136	40.4 113		44.2	60	**35**	32	17 58	28	35	59	30	42
17	74	09.7	+12	17.1	151	10.6 112	+24	50.0	58	**40**	17 26	17 54	18 25	1 50	61	11 14	41
18	89	09.8	+12	16.3	165	40.8 112	+24	55.8	58	**45**	17 18	17 48	18 22	2 08	63	10 56	37
19	104	10.0		15.4	180	10.9 111	+25	01.4	56	**50**	09	42	20	31	67	32	35
20	119	10.1		14.6	194	41.1 112		06.9	55	**52**	04	39	19	41	69	21	33
21	134	10.3		13.8	209	11.2 111		12.3	54	**54**	17 00	36	18	2 54	71	10 09	30
22	149	10.4		13.0	223	41.2 110		17.6	53	**56**	16 54	33	17	3 08	74	9 54	28
23	164	10.6		12.1	238	11.3 111		22.8	52	**58**	49	30	16	24	79	37	23
24	179	10.7	+12	11.3	252	41.3 110	+25	27.8	50	**60 S**	16 42	17 26	18 15	3 44	86	9 16	18

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.8			Mag: +0.3		
	2ʰ 06.ᵐ4		PMG: 10ʰ 58ᵐ			PMG: 5ʰ 58ᵐ			PMG: 2ʰ 38ᵐ			PMG: 23ʰ 40ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	328	18.7	195	34.9	+18 25.3	270	21.6	+18 39.4	320	25.9	+1 44.1	3	59.6	−15 34.4
1	343	21.2	210	34.2	24.6	285	22.6	39.8	335	28.5	44.1	19	02.2	34.5
2	358	23.6	225	33.6	23.9	300	23.6	40.1	350	31.2	44.0	34	04.8	34.6
3	13	26.1	240	32.9	23.1	315	24.5	40.5	5	33.8	43.9	49	07.5	34.6
4	28	28.6	255	32.2	22.4	330	25.5	40.8	20	36.4	43.8	64	10.1	34.7
5	43	31.0	270	31.5	+18 21.6	345	26.4	+18 41.1	35	39.0	+1 43.8	79	12.8	−15 34.7
6	58	33.5	285	30.9	+18 20.9	0	27.4	+18 41.5	50	41.7	+1 43.7	94	15.4	−15 34.8
7	73	35.9	300	30.2	20.1	15	28.4	41.8	65	44.3	43.6	109	18.1	34.9
8	88	38.4	315	29.5	19.4	30	29.3	42.2	80	46.9	43.5	124	20.7	34.9
9	103	40.9	330	28.9	18.6	45	30.3	42.5	95	49.5	43.4	139	23.4	35.0
10	118	43.3	345	28.2	17.9	60	31.2	42.8	110	52.2	43.4	154	26.0	35.1
11	133	45.8	0	27.5	+18 17.1	75	32.2	+18 43.2	125	54.8	+1 43.3	169	28.7	−15 35.1
12	148	48.3	15	26.8	+18 16.4	90	33.2	+18 43.5	140	57.4	+1 43.2	184	31.3	−15 35.2
13	163	50.7	30	26.2	15.6	105	34.1	43.8	156	00.0	43.1	199	34.0	35.2
14	178	53.2	45	25.5	14.9	120	35.1	44.2	171	02.7	43.0	214	36.6	35.3
15	193	55.7	60	24.8	14.1	135	36.0	44.5	186	05.3	43.0	229	39.2	35.4
16	208	58.1	75	24.2	13.4	150	37.0	44.9	201	07.9	42.9	244	41.9	35.4
17	224	00.6	90	23.5	+18 12.6	165	38.0	+18 45.2	216	10.5	+1 42.8	259	44.5	−15 35.5
18	239	03.1	105	22.8	+18 11.8	180	38.9	+18 45.5	231	13.2	+1 42.7	274	47.2	−15 35.6
19	254	05.5	120	22.2	11.1	195	39.9	45.9	246	15.8	42.6	289	49.8	35.6
20	269	08.0	135	21.5	10.3	210	40.9	46.2	261	18.4	42.5	304	52.5	35.7
21	284	10.4	150	20.8	09.6	225	41.8	46.5	276	21.0	42.5	319	55.1	35.7
22	299	12.9	165	20.2	08.8	240	42.8	46.9	291	23.7	42.4	334	57.8	35.8
23	314	15.4	180	19.5	08.0	255	43.8	47.2	306	26.3	42.3	350	00.4	35.9
24	329	17.8	195	18.8	+18 07.3	270	44.7	+18 47.5	321	28.9	+1 42.2	5	03.1	−15 35.9
Dif	—			−7	−8		+10	+3		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 23ᵈ.3		PHE	4ʰ: 54′.3									
	PMG: 12ʰ 03ᵐ.2				SD: 14′.8			12ʰ: 54′.2									
					PMG: 7ʰ 24ᵐ			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	179	10.7	+12	11.3	252	41.3	+25	27.8		**60 N**	2 31	3 40	4 28	21 51	46	17 44	60
1	194	10.9		10.5	267	11.2 109		32.7	49	**58**	2 50	3 51	36	22 20	47	17 16	58
2	209	11.0		09.6	281	41.2 110		37.5	48	**56**	3 06	4 01	42	22 42	48	16 54	57
3	224	11.2		08.8	296	11.1 109		42.2	47	**54**	19	09	48	23 00	49	36	56
4	239	11.4		08.0	310	40.9 108		46.7	45	**52**	30	17	54	16	49	20	56
5	254	11.5	+12	07.1	325	10.8 109	+25	51.1	44	**50**	3 39	4 23	4 58	23 29	50	16 07	55
6	269	11.7	+12	06.3	339	40.6 108	+25	55.4	43	**45**	3 59	4 37	5 09	23 57	50	15 40	54
7	284	11.8		05.5	354	10.4 108	+25	59.6	42	**40**	4 14	49	17	** **	**	18	54
8	299	12.0		04.6	8	40.1 107	+26	03.7	41	**35**	26	4 58	24	** **	**	15 01	53
9	314	12.1		03.8	23	09.8 107		07.6	39	**30**	36	5 06	31	0 06	46	14 45	53
10	329	12.3		03.0	37	39.6 108		11.4	38	**20**	4 52	19	42	31	47	14 19	52
11	344	12.4	+12	02.1	52	09.2 106	+26	15.1	37	**10 N**	5 04	5 30	5 51	0 52	49	13 57	51
12	359	12.6	+12	01.3	66	38.9 107	+26	18.6	35	**0**	5 14	5 39	6 00	1 12	50	13 36	51
13	14	12.7	+12	00.5	81	08.5 106		22.0	34	**10 S**	22	47	08	32	52	13 15	50
14	29	12.9	+11	59.6	95	38.1 106		25.3	33	**20**	29	5 55	17	1 54	53	12 53	49
15	44	13.1		58.8	110	07.7 106		28.5	32	**30**	35	6 03	28	2 19	54	27	49
16	59	13.2		58.0	124	37.2 105		31.6	31	**35**	38	08	34	34	55	12 12	48
17	74	13.4	+11	57.1	139	06.8 106	+26	34.5	29	**40**	5 41	6 12	6 40	2 51	56	11 55	46
18	89	13.5	+11	56.3	153	36.3 105	+26	37.3	28	**45**	5 43	6 18	6 48	3 11	58	11 33	46
19	104	13.7		55.5	168	05.8 105		39.9	26	**50**	46	24	6 57	38	59	11 07	44
20	119	13.8		54.6	182	35.3 105		42.5	26	**52**	47	26	7 01	3 50	61	10 54	43
21	134	14.0		53.8	197	04.7 104		44.9	24	**54**	48	29	06	4 05	62	39	42
22	149	14.1		52.9	211	34.2 105		47.2	23	**56**	49	32	11	22	64	22	40
23	164	14.3		52.1	226	03.6 104		49.3	21	**58**	50	36	17	4 43	67	10 00	39
24	179	14.5	+11	51.3	240	33.0 104	+26	51.4	21	**60 S**	5 51	6 39	7 23	5 10	71	9 34	34

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.8			Mag: +0.3		
	2ʰ 02ᵐ.5		PMG: 10ʰ 59ᵐ			PMG: 5ʰ 57ᵐ			PMG: 2ʰ 34ᵐ			PMG: 23ʰ 36ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	329	17.8	195	18.8	+18 07.3	270	44.7	+18 47.5	321	28.9	+1 42.2	5	03.1	−15 35.9
1	344	20.3	210	18.2	06.5	285	45.7	47.9	336	31.6	42.1	20	05.7	36.0
2	359	22.8	225	17.5	05.7	300	46.7	48.2	351	34.2	42.1	35	08.3	36.1
3	14	25.2	240	16.8	05.0	315	47.6	48.6	6	36.8	42.0	50	11.0	36.1
4	29	27.7	255	16.2	04.2	330	48.6	48.9	21	39.5	41.9	65	13.6	36.2
5	44	30.2	270	15.5	+18 03.4	345	49.6	+18 49.2	36	42.1	+1 41.8	80	16.3	−15 36.2
6	59	32.6	285	14.8	+18 02.7	0	50.5	+18 49.6	51	44.7	+1 41.7	95	18.9	−15 36.3
7	74	35.1	300	14.2	01.9	15	51.5	49.9	66	47.3	41.6	110	21.6	36.4
8	89	37.6	315	13.5	01.1	30	52.5	50.2	81	50.0	41.6	125	24.2	36.4
9	104	40.0	330	12.8	+18 00.4	45	53.4	50.6	96	52.6	41.5	140	26.9	36.5
10	119	42.5	345	12.2	+17 59.6	60	54.4	50.9	111	55.2	41.4	155	29.5	36.5
11	134	44.9	0	11.5	+17 58.8	75	55.4	+18 51.2	126	57.9	+1 41.3	170	32.2	−15 36.6
12	149	47.4	15	10.9	+17 58.0	90	56.3	+18 51.5	142	00.5	+1 41.2	185	34.8	−15 36.7
13	164	49.9	30	10.2	57.3	105	57.3	51.9	157	03.1	41.1	200	37.4	36.7
14	179	52.3	45	09.5	56.5	120	58.3	52.2	172	05.8	41.1	215	40.1	36.8
15	194	54.8	60	08.9	55.7	135	59.2	52.5	187	08.4	41.0	230	42.7	36.9
16	209	57.3	75	08.2	54.9	151	00.2	52.9	202	11.0	40.9	245	45.4	36.9
17	224	59.7	90	07.6	+17 54.2	166	01.2	+18 53.2	217	13.7	+1 40.8	260	48.0	−15 37.0
18	240	02.2	105	06.9	+17 53.4	181	02.1	+18 53.5	232	16.3	+1 40.7	275	50.7	−15 37.0
19	255	04.7	120	06.3	52.6	196	03.1	53.9	247	18.9	40.6	290	53.3	37.1
20	270	07.1	135	05.6	51.8	211	04.1	54.2	262	21.6	40.6	305	56.0	37.2
21	285	09.6	150	04.9	51.0	226	05.1	54.5	277	24.2	40.5	320	58.6	37.2
22	300	12.1	165	04.3	50.2	241	06.0	54.9	292	26.8	40.4	336	01.3	37.3
23	315	14.5	180	03.6	49.5	256	07.0	55.2	307	29.5	40.3	351	03.9	37.4
24	330	17.0	195	03.0	+17 48.7	271	08.0	+18 55.5	322	32.1	+1 40.2	6	06.5	−15 37.4
Dif	—			−7	−8		+10	+3		+26	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 24^{d}.3		PHE	4^{h}: 54′.1									
	PMG: 12^{h} 02^{m}.9				SD: 14′.7			12^{h}: 54′.1									
					PMG: 8^{h} 15^{m}			20^{h}: 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	179	14.5	+11	51.3	240	33.0	+26	51.4		**60 N**	19 33	20 21	21 27	22 37	70	18 44	35
1	194	14.6		50.4	255	02.4	104	53.3	19	**58**	26	11	21 10	23 07	66	18 14	39
2	209	14.8		49.6	269	31.8	104	55.0	17	**56**	20	20 01	20 55	30	64	17 51	41
3	224	14.9		48.8	284	01.1	103	56.7	17	**54**	14	19 53	43	23 49	62	32	43
4	239	15.1		47.9	298	30.5	104	58.2	15	**52**	09	46	32	** **	**	16	44
5	254	15.2	+11	47.1	312	59.8	103	+26 59.6	14	**50**	19 05	19 40	20 23	** **	**	17 02	45
6	269	15.4	+11	46.2	327	29.2	104	+27 00.8	12	**45**	18 55	19 26	20 04	** **	**	16 34	46
7	284	15.6		45.4	341	58.5	103	01.9	11	**40**	47	15	19 50	0 18	51	16 12	47
8	299	15.7		44.6	356	27.8	103	02.9	10	**35**	40	19 06	38	36	51	15 54	48
9	314	15.9		43.7	10	57.1	103	03.8	9	**30**	34	18 59	28	0 52	51	38	49
10	329	16.0		42.9	25	26.4	103	04.5	7	**20**	24	46	13	1 18	51	15 11	50
11	344	16.2	+11	42.0	39	55.7	103	+27 05.1	6	**10 N**	18 15	18 36	19 01	1 41	51	14 48	51
12	359	16.4	+11	41.2	54	25.0	103	+27 05.6	5	**0**	18 06	18 27	18 52	2 02	51	14 27	51
13	14	16.5		40.3	68	54.3	103	05.9	3	**10 S**	17 58	19	44	24	51	14 05	52
14	29	16.7		39.5	83	23.6	103	06.2	3	**20**	49	12	38	2 47	50	13 42	52
15	44	16.8		38.7	97	52.8	102	06.2	0	**30**	40	04	32	3 13	51	16	52
16	59	17.0		37.8	112	22.1	103	06.2	0	**35**	34	18 00	29	29	51	13 00	53
17	74	17.2	+11	37.0	126	51.4	103	+27 06.0	2	**40**	17 28	17 55	18 27	3 47	51	12 41	54
18	89	17.3	+11	36.1	141	20.7	103	+27 05.7	3	**45**	17 20	17 50	18 25	4 09	51	12 19	54
19	104	17.5		35.3	155	50.0	103	05.3	4	**50**	12	45	22	37	51	11 51	55
20	119	17.6		34.4	170	19.3	103	04.7	6	**52**	08	42	22	4 51	50	37	55
21	134	17.8		33.6	184	48.6	103	04.0	7	**54**	17 03	40	21	5 07	50	21	56
22	149	18.0		32.8	199	17.9	103	03.2	8	**56**	16 58	37	20	26	49	11 02	56
23	164	18.1		31.9	213	47.2	103	02.2	10	**58**	53	34	19	5 50	48	10 39	57
24	179	18.3	+11	31.1	228	16.5	103	+27 01.1	11	**60 S**	16 47	17 30	18 19	6 21	47	10 08	58

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.8			Mag: +0.3		
	1^{h} 58^{m}.5		PMG: 11^{h} 00^{m}			PMG: 5^{h} 55^{m}			PMG: 2^{h} 29^{m}			PMG: 23^{h} 31^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	330	17.0	195	03.0	+17 48.7	271	08.0	+18 55.5	322	32.1	+1 40.2	6	06.5	−15 37.4
1	345	19.4	210	02.3	47.9	286	08.9	55.8	337	34.7	40.1	21	09.2	37.5
2	0	21.9	225	01.7	47.1	301	09.9	56.2	352	37.4	40.1	36	11.8	37.5
3	15	24.4	240	01.0	46.3	316	10.9	56.5	7	40.0	40.0	51	14.5	37.6
4	30	26.8	255	00.3	45.5	331	11.9	56.8	22	42.7	39.9	66	17.1	37.7
5	45	29.3	269	59.7	+17 44.7	346	12.8	+18 57.2	37	45.3	+1 39.8	81	19.8	−15 37.7
6	60	31.8	284	59.0	+17 44.0	1	13.8	+18 57.5	52	47.9	+1 39.7	96	22.4	−15 37.8
7	75	34.2	299	58.4	43.2	16	14.8	57.8	67	50.6	39.6	111	25.1	37.9
8	90	36.7	314	57.7	42.4	31	15.8	58.1	82	53.2	39.5	126	27.7	37.9
9	105	39.2	329	57.1	41.6	46	16.7	58.5	97	55.8	39.5	141	30.3	38.0
10	120	41.6	344	56.4	40.8	61	17.7	58.8	112	58.5	39.4	156	33.0	38.0
11	135	44.1	359	55.8	+17 40.0	76	18.7	+18 59.1	128	01.1	+1 39.3	171	35.6	−15 38.1
12	150	46.5	14	55.1	+17 39.2	91	19.7	+18 59.4	143	03.8	+1 39.2	186	38.3	−15 38.2
13	165	49.0	29	54.5	38.4	106	20.6	+18 59.8	158	06.4	39.1	201	40.9	38.2
14	180	51.5	44	53.8	37.6	121	21.6	+19 00.1	173	09.0	39.0	216	43.6	38.3
15	195	53.9	59	53.2	36.8	136	22.6	00.4	188	11.7	38.9	231	46.2	38.3
16	210	56.4	74	52.5	36.0	151	23.6	00.7	203	14.3	38.9	246	48.9	38.4
17	225	58.9	89	51.9	+17 35.2	166	24.6	+19 01.1	218	17.0	+1 38.8	261	51.5	−15 38.5
18	241	01.3	104	51.2	+17 34.4	181	25.5	+19 01.4	233	19.6	+1 38.7	276	54.2	−15 38.5
19	256	03.8	119	50.6	33.6	196	26.5	01.7	248	22.2	38.6	291	56.8	38.6
20	271	06.3	134	49.9	32.8	211	27.5	02.0	263	24.9	38.5	306	59.4	38.7
21	286	08.7	149	49.3	32.0	226	28.5	02.4	278	27.5	38.4	322	02.1	38.7
22	301	11.2	164	48.6	31.2	241	29.5	02.7	293	30.2	38.3	337	04.7	38.8
23	316	13.7	179	48.0	30.4	256	30.4	03.0	308	32.8	38.3	352	07.4	38.8
24	331	16.1	194	47.3	+17 29.6	271	31.4	+19 03.3	323	35.4	+1 38.2	7	10.0	−15 38.9
Dif	—			−7	−8		+10	+3		+26	−1		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 02m.7				LUNA Edad: 25d.3 SD: 14′.7 PMG: 9h 05m PHE: 4h: 54′.1; 12h: 54′.1; 20h: 54′.1 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	18.3	+11	31.1	228	16.5	+27	01.1	**60 N**	2 39	3 45	4 33	23 47	84	19 19	19
1	194	18.4		30.2	242	45.8 103	+26	59.9 12	**58**	2 57	3 56	40	** **	**	18 53	24
2	209	18.6		29.4	257	15.1 103		58.6 13	**56**	3 11	4 05	46	** **	**	32	28
3	224	18.8		28.5	271	44.4 103		57.1 15	**54**	24	13	52	** **	**	15	31
4	239	18.9		27.7	286	13.8 104		55.5 16	**52**	34	20	4 57	0 05	60	18 00	33
5	254	19.1	+11	26.8	300	43.1 103	+26	53.7 18	**50**	3 43	4 27	5 01	0 19	59	17 47	35
6	269	19.3	+11	26.0	315	12.5 104	+26	51.9 18	**45**	4 02	4 40	5 11	0 47	57	17 20	39
7	284	19.4		25.1	329	41.9 104		49.9 20	**40**	17	4 51	19	1 09	56	16 59	41
8	299	19.6		24.3	344	11.3 104		47.8 21	**35**	28	5 00	26	27	55	42	42
9	314	19.7		23.4	358	40.7 104		45.5 23	**30**	38	07	32	1 43	54	27	43
10	329	19.9		22.6	13	10.1 104		43.1 24	**20**	4 53	20	42	2 09	53	16 01	46
11	344	20.1	+11	21.7	27	39.6 105	+26	40.6 25	**10 N**	5 05	5 30	5 51	2 32	51	15 39	48
12	359	20.2	+11	20.9	42	09.1 105	+26	38.0 26	**0**	5 14	5 38	5 59	2 53	51	15 18	50
13	14	20.4		20.0	56	38.5 104		35.2 28	**10 S**	21	46	6 07	3 15	49	14 57	51
14	29	20.6		19.2	71	08.1 106		32.3 29	**20**	28	5 54	16	3 37	48	34	54
15	44	20.7		18.3	85	37.6 105		29.3 30	**30**	33	6 01	26	4 04	46	14 08	56
16	59	20.9		17.5	100	07.1 105		26.2 31	**35**	36	05	31	20	45	13 53	57
17	74	21.1	+11	16.6	114	36.7 106	+26	22.9 33	**40**	5 38	6 10	6 37	4 38	44	13 35	58
18	89	21.2	+11	15.8	129	06.3 106	+26	19.5 34	**45**	5 40	6 14	6 44	5 00	42	13 13	61
19	104	21.4		14.9	143	35.9 106		16.0 35	**50**	42	20	53	28	39	12 46	63
20	119	21.6		14.1	158	05.6 107		12.3 37	**52**	43	22	6 57	41	38	32	65
21	134	21.7		13.2	172	35.2 106		08.5 38	**54**	44	25	7 01	5 57	36	12 17	66
22	149	21.9		12.4	187	04.9 107		04.6 39	**56**	44	28	06	6 15	35	11 58	70
23	164	22.1		11.5	201	34.7 108	+26	00.6 40	**58**	45	31	11	6 38	31	36	73
24	179	22.2	+11	10.7	216	04.4 107	+25	56.5 41	**60 S**	5 46	6 34	7 17	7 08	25	11 06	79

UT	ARIES PMG 1h 54m.6		VENUS Mag: −3.9 PMG: 11h 01m			MARTE Mag: 0.0 PMG: 5h 54m		JÚPITER Mag: −2.8 PMG: 2h 25m		SATURNO Mag: +0.3 PMG: 23h 27m	
	hG ♈		hG ♀		Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º	′	º	′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	331	16.1	194	47.3	+17 29.6	271 31.4	+19 03.3	323 35.4	+1 38.2	7 10.0	−15 38.9
1	346	18.6	209	46.7	28.8	286 32.4	03.6	338 38.1	38.1	22 12.7	39.0
2	1	21.0	224	46.1	28.0	301 33.4	04.0	353 40.7	38.0	37 15.3	39.0
3	16	23.5	239	45.4	27.2	316 34.4	04.3	8 43.4	37.9	52 18.0	39.1
4	31	26.0	254	44.8	26.4	331 35.3	04.6	23 46.0	37.8	67 20.6	39.1
5	46	28.4	269	44.1	+17 25.5	346 36.3	+19 04.9	38 48.7	+1 37.7	82 23.2	−15 39.2
6	61	30.9	284	43.5	+17 24.7	1 37.3	+19 05.3	53 51.3	+1 37.6	97 25.9	−15 39.3
7	76	33.4	299	42.8	23.9	16 38.3	05.6	68 54.0	37.6	112 28.5	39.3
8	91	35.8	314	42.2	23.1	31 39.3	05.9	83 56.6	37.5	127 31.2	39.4
9	106	38.3	329	41.5	22.3	46 40.3	06.2	98 59.2	37.4	142 33.8	39.5
10	121	40.8	344	40.9	21.5	61 41.2	06.5	114 01.9	37.3	157 36.5	39.5
11	136	43.2	359	40.3	+17 20.7	76 42.2	+19 06.9	129 04.5	+1 37.2	172 39.1	−15 39.6
12	151	45.7	14	39.6	+17 19.8	91 43.2	+19 07.2	144 07.2	+1 37.1	187 41.8	−15 39.6
13	166	48.2	29	39.0	19.0	106 44.2	07.5	159 09.8	37.0	202 44.4	39.7
14	181	50.6	44	38.3	18.2	121 45.2	07.8	174 12.5	36.9	217 47.0	39.8
15	196	53.1	59	37.7	17.4	136 46.2	08.1	189 15.1	36.8	232 49.7	39.8
16	211	55.5	74	37.1	16.6	151 47.1	08.4	204 17.8	36.8	247 52.3	39.9
17	226	58.0	89	36.4	+17 15.8	166 48.1	+19 08.8	219 20.4	+1 36.7	262 55.0	−15 39.9
18	242	00.5	104	35.8	+17 14.9	181 49.1	+19 09.1	234 23.1	+1 36.6	277 57.6	−15 40.0
19	257	02.9	119	35.1	14.1	196 50.1	09.4	249 25.7	36.5	293 00.3	40.1
20	272	05.4	134	34.5	13.3	211 51.1	09.7	264 28.3	36.4	308 02.9	40.1
21	287	07.9	149	33.9	12.5	226 52.1	10.0	279 31.0	36.3	323 05.5	40.2
22	302	10.3	164	33.2	11.6	241 53.1	10.3	294 33.6	36.2	338 08.2	40.3
23	317	12.8	179	32.6	10.8	256 54.1	10.7	309 36.3	36.1	353 10.8	40.3
24	332	15.3	194	32.0	+17 10.0	271 55.0	+19 11.0	324 38.9	+1 36.0	8 13.5	−15 40.4
Dif	—			−6	−8		+10	+3	+26	−1	+26 −1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 26.ᵈ3		PHE	4ʰ: 54′.2									
	PMG: 12ʰ 02.ᵐ4				SD: 14′.8			12ʰ: 54′.2									
					PMG: 9ʰ 56ᵐ			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	179	22.2	+11	10.7	216	04.4	+25	56.5		**60 N**	19 27	20 15	21 19	** **	**	19 38	9
1	194	22.4		09.8	230	34.2 108		52.2	43	**58**	21	20 05	21 02	0 13	78	17	15
2	209	22.6		09.0	245	04.0 108		47.8	44	**56**	15	19 56	20 49	34	74	19 00	19
3	224	22.7		08.1	259	33.8 108		43.3	45	**54**	10	48	37	0 51	71	18 46	22
4	239	22.9		07.3	274	03.7 109		38.6	47	**52**	05	41	27	1 05	69	33	25
5	254	23.1	+11	06.4	288	33.6 109	+25	33.9	47	**50**	19 01	19 35	20 18	1 18	67	18 22	27
6	269	23.2	+11	05.5	303	03.6 110	+25	29.0	49	**45**	18 52	19 23	20 00	1 44	63	17 59	31
7	284	23.4		04.7	317	33.5 109		24.0	50	**40**	44	12	19 46	2 05	60	40	34
8	299	23.6		03.8	332	03.6 111		18.9	51	**35**	38	19 04	35	22	58	24	37
9	314	23.7		03.0	346	33.6 110		13.6	53	**30**	32	18 56	26	2 37	56	17 10	39
10	329	23.9		02.1	1	03.7 111		08.2	54	**20**	22	45	11	3 02	54	16 47	42
11	344	24.1	+11	01.3	15	33.8 111	+25	02.7	55	**10 N**	18 14	18 35	19 00	3 23	52	16 27	45
12	359	24.2	+11	00.4	30	03.9 111	+24	57.1	56	**0**	18 06	18 27	18 51	3 44	49	16 08	48
13	14	24.4	+10	59.6	44	34.1 112		51.4	57	**10 S**	17 58	19	44	4 04	47	15 48	51
14	29	24.6		58.7	59	04.4 113		45.6	58	**20**	50	12	38	25	45	28	54
15	44	24.7		57.8	73	34.6 112		39.6	60	**30**	41	05	33	4 50	41	15 04	57
16	59	24.9		57.0	88	04.9 113		33.5	61	**35**	35	18 01	31	5 05	39	14 50	59
17	74	25.1	+10	56.1	102	35.3 114	+24	27.3	62	**40**	17 30	17 57	18 29	5 22	37	14 33	62
18	89	25.2	+10	55.3	117	05.7 114	+24	21.0	63	**45**	17 23	17 53	18 27	5 42	34	14 14	65
19	104	25.4		54.4	131	36.1 114		14.6	64	**50**	15	48	25	6 07	31	13 49	69
20	119	25.6		53.5	146	06.6 115		08.0	66	**52**	11	45	25	19	29	37	72
21	134	25.8		52.7	160	37.1 115	+24	01.4	66	**54**	07	43	24	33	26	23	75
22	149	25.9		51.8	175	07.6 115	+23	54.6	68	**56**	17 02	40	24	6 50	22	13 08	77
23	164	26.1		51.0	189	38.2 116		47.7	69	**58**	16 57	38	23	7 09	19	12 49	81
24	179	26.3	+10	50.1	204	08.8 116	+23	40.7	70	**60 S**	16 51	17 34	18 23	7 33	13	12 25	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.9			Mag: +0.3		
	1ʰ 50.ᵐ7		PMG: 11ʰ 02ᵐ			PMG: 5ʰ 52ᵐ			PMG: 2ʰ 21ᵐ			PMG: 23ʰ 23ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	332	15.3	194	32.0	+17 10.0	271	55.0	+19 11.0	324	38.9	+1 36.0	8	13.5	−15 40.4
1	347	17.7	209	31.3	09.2	286	56.0	11.3	339	41.6	36.0	23	16.1	40.4
2	2	20.2	224	30.7	08.3	301	57.0	11.6	354	44.2	35.9	38	18.8	40.5
3	17	22.7	239	30.1	07.5	316	58.0	11.9	9	46.9	35.8	53	21.4	40.6
4	32	25.1	254	29.4	06.7	331	59.0	12.2	24	49.5	35.7	68	24.1	40.6
5	47	27.6	269	28.8	+17 05.8	347	00.0	+19 12.6	39	52.2	+1 35.6	83	26.7	−15 40.7
6	62	30.0	284	28.1	+17 05.0	2	01.0	+19 12.9	54	54.8	+1 35.5	98	29.3	−15 40.7
7	77	32.5	299	27.5	04.2	17	02.0	13.2	69	57.5	35.4	113	32.0	40.8
8	92	35.0	314	26.9	03.3	32	03.0	13.5	85	00.1	35.3	128	34.6	40.9
9	107	37.4	329	26.2	02.5	47	04.0	13.8	100	02.8	35.2	143	37.3	40.9
10	122	39.9	344	25.6	01.7	62	04.9	14.1	115	05.4	35.1	158	39.9	41.0
11	137	42.4	359	25.0	+17 00.8	77	05.9	+19 14.4	130	08.1	+1 35.1	173	42.6	−15 41.0
12	152	44.8	14	24.4	+17 00.0	92	06.9	+19 14.8	145	10.7	+1 35.0	188	45.2	−15 41.1
13	167	47.3	29	23.7	+16 59.2	107	07.9	15.1	160	13.4	34.9	203	47.8	41.2
14	182	49.8	44	23.1	58.3	122	08.9	15.4	175	16.1	34.8	218	50.5	41.2
15	197	52.2	59	22.5	57.5	137	09.9	15.7	190	18.7	34.7	233	53.1	41.3
16	212	54.7	74	21.8	56.7	152	10.9	16.0	205	21.4	34.6	248	55.8	41.4
17	227	57.1	89	21.2	+16 55.8	167	11.9	+19 16.3	220	24.0	+1 34.5	263	58.4	−15 41.4
18	242	59.6	104	20.6	+16 55.0	182	12.9	+19 16.6	235	26.7	+1 34.4	279	01.1	−15 41.5
19	258	02.1	119	19.9	54.1	197	13.9	16.9	250	29.3	34.3	294	03.7	41.5
20	273	04.5	134	19.3	53.3	212	14.9	17.2	265	32.0	34.2	309	06.3	41.6
21	288	07.0	149	18.7	52.4	227	15.9	17.6	280	34.6	34.1	324	09.0	41.7
22	303	09.5	164	18.1	51.6	242	16.9	17.9	295	37.3	34.0	339	11.6	41.7
23	318	11.9	179	17.4	50.8	257	17.9	18.2	310	39.9	34.0	354	14.3	41.8
24	333	14.4	194	16.8	+16 49.9	272	18.9	+19 18.5	325	42.6	+1 33.9	9	16.9	−15 41.8
Dif	—			−6	−8		+10	+3		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 27^{d}.3		PHE	4^{h}: 54′.4									
	PMG: 12^{h} 02^{m}.1				SD: 14′.8			12^{h}: 54′.5									
					PMG: 10^{h} 44^{m}			20^{h}: 54′.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	179	26.3	+10	50.1	204	08.8	+23	40.7		**60 N**	2 47	3 51	4 38	1 11	89	19 47	5
1	194	26.4		49.2	218	39.5 117		33.6	71	**58**	3 03	4 01	45	31	84	32	10
2	209	26.6		48.4	233	10.2 117		26.4	72	**56**	17	09	50	1 48	79	19	13
3	224	26.8		47.5	247	41.0 118		19.1	73	**54**	28	17	4 56	2 02	76	19 08	16
4	239	26.9		46.7	262	11.8 118		11.7	74	**52**	38	24	5 00	14	73	18 58	19
5	254	27.1	+10	45.8	276	42.7 119	+23	04.1	76	**50**	3 47	4 30	5 04	2 25	71	18 49	21
6	269	27.3	+10	44.9	291	13.6 119	+22	56.5	76	**45**	4 05	4 43	5 13	2 47	66	18 30	25
7	284	27.5		44.1	305	44.5 119		48.7	78	**40**	19	4 53	21	3 05	63	14	30
8	299	27.6		43.2	320	15.5 120		40.8	79	**35**	30	5 01	27	20	60	18 01	32
9	314	27.8		42.3	334	46.5 120		32.8	80	**30**	39	08	33	33	58	17 49	35
10	329	28.0		41.5	349	17.6 121		24.8	80	**20**	4 54	20	43	3 56	53	29	40
11	344	28.1	+10	40.6	3	48.8 122	+22	16.6	82	**10 N**	5 05	5 30	5 51	4 15	50	17 12	43
12	359	28.3	+10	39.8	18	19.9 121	+22	08.3	83	**0**	5 13	5 38	5 59	4 33	47	16 56	46
13	14	28.5		38.9	32	51.1 122	+21	59.9	84	**10 S**	20	45	6 06	4 51	44	39	50
14	29	28.7		38.0	47	22.4 123		51.4	85	**20**	26	52	14	5 10	40	22	53
15	44	28.8		37.2	61	53.7 123		42.8	86	**30**	31	5 59	23	31	37	16 01	58
16	59	29.0		36.3	76	25.1 124		34.1	87	**35**	33	6 03	29	44	35	15 49	60
17	74	29.2	+10	35.4	90	56.5 124	+21	25.3	88	**40**	5 35	6 07	6 34	5 59	32	15 35	64
18	89	29.4	+10	34.6	105	27.9 124	+21	16.4	89	**45**	5 37	6 11	6 41	6 16	28	15 19	67
19	104	29.5		33.7	119	59.4 125	+21	07.4	90	**50**	39	16	49	38	23	14 58	72
20	119	29.7		32.8	134	31.0 126	+20	58.3	91	**52**	39	18	53	48	21	49	74
21	134	29.9		32.0	149	02.6 126		49.1	92	**54**	40	21	6 57	6 59	19	38	77
22	149	30.1		31.1	163	34.2 126		39.8	93	**56**	40	23	7 01	7 12	16	25	80
23	164	30.2		30.2	178	05.9 127		30.4	94	**58**	40	26	06	28	11	14 10	85
24	179	30.4	+10	29.4	192	37.6 127	+20	20.9	95	**60 S**	5 41	6 29	7 12	7 46	6	13 53	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: 0.0			Mag: −2.9			Mag: +0.3		
	1^{h} 46^{m}.7		PMG: 11^{h} 03^{m}			PMG: 5^{h} 50^{m}			PMG: 2^{h} 17^{m}			PMG: 23^{h} 19^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	333	14.4	194	16.8	+16 49.9	272	18.9	+19 18.5	325	42.6	+1 33.9	9	16.9	−15 41.8
1	348	16.9	209	16.2	49.1	287	19.9	18.8	340	45.2	33.8	24	19.6	41.9
2	3	19.3	224	15.6	48.2	302	20.9	19.1	355	47.9	33.7	39	22.2	42.0
3	18	21.8	239	14.9	47.4	317	21.9	19.4	10	50.6	33.6	54	24.8	42.0
4	33	24.3	254	14.3	46.5	332	22.9	19.7	25	53.2	33.5	69	27.5	42.1
5	48	26.7	269	13.7	+16 45.7	347	23.9	+19 20.0	40	55.9	+1 33.4	84	30.1	−15 42.1
6	63	29.2	284	13.1	+16 44.8	2	24.9	+19 20.3	55	58.5	+1 33.3	99	32.8	−15 42.2
7	78	31.6	299	12.4	44.0	17	25.9	20.6	71	01.2	33.2	114	35.4	42.3
8	93	34.1	314	11.8	43.1	32	26.9	21.0	86	03.8	33.1	129	38.1	42.3
9	108	36.6	329	11.2	42.3	47	27.9	21.3	101	06.5	33.0	144	40.7	42.4
10	123	39.0	344	10.6	41.4	62	28.9	21.6	116	09.2	32.9	159	43.3	42.4
11	138	41.5	359	09.9	+16 40.5	77	29.9	+19 21.9	131	11.8	+1 32.8	174	46.0	−15 42.5
12	153	44.0	14	09.3	+16 39.7	92	30.9	+19 22.2	146	14.5	+1 32.7	189	48.6	−15 42.6
13	168	46.4	29	08.7	38.8	107	31.9	22.5	161	17.1	32.7	204	51.3	42.6
14	183	48.9	44	08.1	38.0	122	32.9	22.8	176	19.8	32.6	219	53.9	42.7
15	198	51.4	59	07.5	37.1	137	33.9	23.1	191	22.5	32.5	234	56.6	42.7
16	213	53.8	74	06.8	36.3	152	34.9	23.4	206	25.1	32.4	249	59.2	42.8
17	228	56.3	89	06.2	+16 35.4	167	35.9	+19 23.7	221	27.8	+1 32.3	265	01.8	−15 42.9
18	243	58.8	104	05.6	+16 34.5	182	36.9	+19 24.0	236	30.4	+1 32.2	280	04.5	−15 42.9
19	259	01.2	119	05.0	33.7	197	37.9	24.3	251	33.1	32.1	295	07.1	43.0
20	274	03.7	134	04.4	32.8	212	38.9	24.6	266	35.7	32.0	310	09.8	43.0
21	289	06.1	149	03.7	32.0	227	39.9	24.9	281	38.4	31.9	325	12.4	43.1
22	304	08.6	164	03.1	31.1	242	40.9	25.2	296	41.1	31.8	340	15.1	43.2
23	319	11.1	179	02.5	30.2	257	41.9	25.5	311	43.7	31.7	355	17.7	43.2
24	334	13.5	194	01.9	+16 29.4	272	42.9	+19 25.8	326	46.4	+1 31.6	10	20.3	−15 43.3
Dif	—			−6	−9		+10	+3		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 28.ᵈ3		PHE	4ʰ: 54′.7									
	PMG: 12ʰ 01.ᵐ8				SD: 14′.9			12ʰ: 54′.8									
					PMG: 11ʰ 31ᵐ			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	179	30.4	+10	29.4	192	37.6	+20	20.9		**60 N**	19 22	20 08	21 10	2 40	89	19 52	3
1	194	30.6		28.5	207	09.4 128		11.3	96	**58**	15	19 59	20 55	2 55	84	42	6
2	209	30.8		27.6	221	41.2 128	+20	01.6	97	**56**	10	50	42	3 07	80	32	10
3	224	30.9		26.8	236	13.1 129	+19	51.8	98	**54**	05	43	31	18	77	24	13
4	239	31.1		25.9	250	45.0 129		42.0	98	**52**	19 01	37	22	27	75	17	15
5	254	31.3	+10	25.0	265	17.0 130	+19	32.0	100	**50**	18 57	19 31	20 13	3 36	72	19 10	17
6	269	31.5	+10	24.2	279	49.0 130	+19	22.0	100	**45**	18 48	19 19	19 56	3 53	68	18 55	22
7	284	31.6		23.3	294	21.0 130		11.8	102	**40**	41	09	43	4 08	63	44	25
8	299	31.8		22.4	308	53.1 131	+19	01.6	102	**35**	35	19 01	32	20	61	33	29
9	314	32.0		21.5	323	25.3 132	+18	51.3	103	**30**	30	18 54	23	31	58	24	32
10	329	32.2		20.7	337	57.5 132		40.9	104	**20**	20	43	19 09	4 49	53	18 09	36
11	344	32.3	+10	19.8	352	29.7 132	+18	30.4	105	**10 N**	18 12	18 34	18 59	5 05	49	17 55	40
12	359	32.5	+10	18.9	7	02.0 133	+18	19.8	106	**0**	18 05	18 26	18 51	5 20	45	17 42	44
13	14	32.7		18.1	21	34.3 133	+18	09.1	107	**10 S**	17 58	19	44	35	41	29	48
14	29	32.9		17.2	36	06.7 134	+17	58.4	107	**20**	50	13	38	5 50	38	17 15	52
15	44	33.0		16.3	50	39.1 134		47.5	109	**30**	42	06	34	6 08	33	16 59	57
16	59	33.2		15.4	65	11.6 135		36.6	109	**35**	37	18 03	32	19	30	49	61
17	74	33.4	+10	14.6	79	44.1 135	+17	25.6	110	**40**	17 31	17 59	18 30	6 31	27	16 39	63
18	89	33.6	+10	13.7	94	16.6 135	+17	14.5	111	**45**	17 25	17 55	18 29	6 44	24	16 26	67
19	104	33.8		12.8	108	49.2 136	+17	03.4	111	**50**	17	50	28	7 01	19	10	73
20	119	33.9		12.0	123	21.8 136	+16	52.1	113	**52**	14	48	28	09	17	16 03	75
21	134	34.1		11.1	137	54.5 137		40.8	113	**54**	10	46	27	18	14	15 55	77
22	149	34.3		10.2	152	27.2 137		29.4	114	**56**	06	44	27	28	11	45	81
23	164	34.5		09.3	166	59.9 137		17.9	115	**58**	17 01	41	27	39	8	35	84
24	179	34.6	+10	08.5	181	32.7 138	+16	06.4	115	**60 S**	16 56	17 39	18 27	7 52	4	15 23	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.9			Mag: +0.3		
	1ʰ 42.ᵐ8		PMG: 11ʰ 04ᵐ			PMG: 5ʰ 49ᵐ			PMG: 2ʰ 13ᵐ			PMG: 23ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	334	13.5	194	01.9	+16 29.4	272	42.9	+19 25.8	326	46.4	+1 31.6	10	20.3	−15 43.3
1	349	16.0	209	01.3	28.5	287	43.9	26.1	341	49.1	31.5	25	23.0	43.4
2	4	18.5	224	00.7	27.6	302	44.9	26.4	356	51.7	31.4	40	25.6	43.4
3	19	20.9	239	00.1	26.8	317	45.9	26.8	11	54.4	31.3	55	28.3	43.5
4	34	23.4	253	59.4	25.9	332	46.9	27.1	26	57.0	31.2	70	30.9	43.5
5	49	25.9	268	58.8	+16 25.0	347	47.9	+19 27.4	41	59.7	+1 31.1	85	33.5	−15 43.6
6	64	28.3	283	58.2	+16 24.1	2	48.9	+19 27.7	57	02.4	+1 31.0	100	36.2	−15 43.7
7	79	30.8	298	57.6	23.3	17	50.0	28.0	72	05.0	31.0	115	38.8	43.7
8	94	33.2	313	57.0	22.4	32	51.0	28.3	87	07.7	30.9	130	41.5	43.8
9	109	35.7	328	56.4	21.5	47	52.0	28.6	102	10.4	30.8	145	44.1	43.8
10	124	38.2	343	55.8	20.7	62	53.0	28.9	117	13.0	30.7	160	46.8	43.9
11	139	40.6	358	55.1	+16 19.8	77	54.0	+19 29.2	132	15.7	+1 30.6	175	49.4	−15 44.0
12	154	43.1	13	54.5	+16 18.9	92	55.0	+19 29.5	147	18.4	+1 30.5	190	52.0	−15 44.0
13	169	45.6	28	53.9	18.0	107	56.0	29.8	162	21.0	30.4	205	54.7	44.1
14	184	48.0	43	53.3	17.1	122	57.0	30.1	177	23.7	30.3	220	57.3	44.1
15	199	50.5	58	52.7	16.3	137	58.0	30.4	192	26.3	30.2	236	00.0	44.2
16	214	53.0	73	52.1	15.4	152	59.0	30.7	207	29.0	30.1	251	02.6	44.3
17	229	55.4	88	51.5	+16 14.5	168	00.1	+19 31.0	222	31.7	+1 30.0	266	05.2	−15 44.3
18	244	57.9	103	50.9	+16 13.6	183	01.1	+19 31.3	237	34.3	+1 29.9	281	07.9	−15 44.4
19	260	00.4	118	50.3	12.8	198	02.1	31.6	252	37.0	29.8	296	10.5	44.4
20	275	02.8	133	49.7	11.9	213	03.1	31.9	267	39.7	29.7	311	13.2	44.5
21	290	05.3	148	49.0	11.0	228	04.1	32.2	282	42.3	29.6	326	15.8	44.6
22	305	07.7	163	48.4	10.1	243	05.1	32.5	297	45.0	29.5	341	18.4	44.6
23	320	10.2	178	47.8	09.2	258	06.1	32.8	312	47.7	29.4	356	21.1	44.7
24	335	12.7	193	47.2	+16 08.3	273	07.2	+19 33.0	327	50.3	+1 29.3	11	23.7	−15 44.7
Dif	—			−6	−9		+10	+3		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 29^{d}.3		PHE	4^{h}: 55′.1									
	PMG: 12^{h} 01^{m}.5				SD: 15′.0			12^{h}: 55′.2									
					PMG: 12^{h} 16^{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	179	34.6	+10	08.5	181	32.7	+16	06.4		**60 N**	2 54	3 56	4 43	4 09	88	19 55	2
1	194	34.8		07.6	196	05.6 139	+15	54.7	117	**58**	3 09	4 06	49	19	84	48	5
2	209	35.0		06.7	210	38.4 138		43.0	117	**56**	22	14	54	27	81	42	8
3	224	35.2		05.8	225	11.3 139		31.3	117	**54**	33	21	4 59	35	77	37	10
4	239	35.4		05.0	239	44.3 140		19.4	119	**52**	42	27	5 03	42	75	32	13
5	254	35.5	+10	04.1	254	17.3 140	+15	07.5	119	**50**	3 51	4 33	5 07	4 48	72	19 27	15
6	269	35.7	+10	03.2	268	50.3 140	+14	55.5	120	**45**	4 08	4 45	5 16	5 01	67	19 17	20
7	284	35.9		02.3	283	23.3 140		43.4	121	**40**	21	4 55	23	11	64	09	24
8	299	36.1		01.4	297	56.4 141		31.3	121	**35**	32	5 03	29	21	60	19 02	27
9	314	36.3	+10	00.6	312	29.6 142		19.1	122	**30**	41	10	34	29	57	18 56	30
10	329	36.4	+9	59.7	327	02.7 141	+14	06.8	123	**20**	4 54	21	43	42	52	45	35
11	344	36.6	+9	58.8	341	35.9 142	+13	54.5	123	**10 N**	5 05	5 30	5 51	5 54	48	18 35	40
12	359	36.8	+9	57.9	356	09.2 143	+13	42.1	124	**0**	5 13	5 37	5 58	6 05	44	18 26	44
13	14	37.0		57.1	10	42.4 142		29.6	125	**10 S**	19	44	6 05	16	40	17	48
14	29	37.2		56.2	25	15.7 143		17.1	125	**20**	25	51	13	28	36	18 07	52
15	44	37.3		55.3	39	49.1 144	+13	04.5	126	**30**	29	5 57	21	41	31	17 56	57
16	59	37.5		54.4	54	22.4 143	+12	51.8	127	**35**	31	6 00	26	49	28	50	60
17	74	37.7	+9	53.5	68	55.8 144	+12	39.1	127	**40**	5 32	6 04	6 31	6 58	24	17 42	64
18	89	37.9	+9	52.7	83	29.2 144	+12	26.3	128	**45**	5 34	6 08	6 38	7 08	21	17 33	68
19	104	38.1		51.8	98	02.7 145		13.5	128	**50**	35	12	45	20	16	23	72
20	119	38.2		50.9	112	36.2 145	+12	00.6	129	**52**	35	14	48	26	14	18	74
21	134	38.4		50.0	127	09.7 145	+11	47.6	130	**54**	35	16	52	32	12	12	78
22	149	38.6		49.1	141	43.2 145		34.6	130	**56**	35	18	6 56	39	9	17 06	80
23	164	38.8		48.3	156	16.8 146		21.5	131	**58**	35	21	7 01	47	6	16 59	84
24	179	39.0	+9	47.4	170	50.4 146	+11	08.4	131	**60 S**	5 35	6 23	7 06	7 56	2	16 51	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.9			Mag: +0.3		
	1^{h} 38^{m}.9		PMG: 11^{h} 05^{m}			PMG: 5^{h} 47^{m}			PMG: 2^{h} 08^{m}			PMG: 23^{h} 10^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	335	12.7	193	47.2	+16 08.3	273	07.2	+19 33.0	327	50.3	+1 29.3	11	23.7	−15 44.7
1	350	15.1	208	46.6	07.4	288	08.2	33.3	342	53.0	29.2	26	26.4	44.8
2	5	17.6	223	46.0	06.6	303	09.2	33.6	357	55.7	29.1	41	29.0	44.9
3	20	20.1	238	45.4	05.7	318	10.2	33.9	12	58.3	29.0	56	31.7	44.9
4	35	22.5	253	44.8	04.8	333	11.2	34.2	28	01.0	28.9	71	34.3	45.0
5	50	25.0	268	44.2	+16 03.9	348	12.2	+19 34.5	43	03.7	+1 28.8	86	36.9	−15 45.0
6	65	27.5	283	43.6	+16 03.0	3	13.2	+19 34.8	58	06.4	+1 28.7	101	39.6	−15 45.1
7	80	29.9	298	43.0	02.1	18	14.3	35.1	73	09.0	28.6	116	42.2	45.1
8	95	32.4	313	42.4	01.2	33	15.3	35.4	88	11.7	28.5	131	44.9	45.2
9	110	34.9	328	41.8	+16 00.3	48	16.3	35.7	103	14.4	28.4	146	47.5	45.3
10	125	37.3	343	41.2	+15 59.4	63	17.3	36.0	118	17.0	28.3	161	50.1	45.3
11	140	39.8	358	40.6	+15 58.5	78	18.3	+19 36.3	133	19.7	+1 28.2	176	52.8	−15 45.4
12	155	42.2	13	40.0	+15 57.7	93	19.4	+19 36.6	148	22.4	+1 28.1	191	55.4	−15 45.4
13	170	44.7	28	39.4	56.8	108	20.4	36.9	163	25.0	28.0	206	58.1	45.5
14	185	47.2	43	38.8	55.9	123	21.4	37.2	178	27.7	27.9	222	00.7	45.6
15	200	49.6	58	38.2	55.0	138	22.4	37.5	193	30.4	27.8	237	03.3	45.6
16	215	52.1	73	37.6	54.1	153	23.4	37.8	208	33.1	27.7	252	06.0	45.7
17	230	54.6	88	37.0	+15 53.2	168	24.5	+19 38.1	223	35.7	+1 27.6	267	08.6	−15 45.7
18	245	57.0	103	36.4	+15 52.3	183	25.5	+19 38.4	238	38.4	+1 27.5	282	11.3	−15 45.8
19	260	59.5	118	35.8	51.4	198	26.5	38.6	253	41.1	27.4	297	13.9	45.9
20	276	02.0	133	35.2	50.5	213	27.5	38.9	268	43.7	27.3	312	16.5	45.9
21	291	04.4	148	34.6	49.6	228	28.5	39.2	283	46.4	27.2	327	19.2	46.0
22	306	06.9	163	34.0	48.7	243	29.6	39.5	298	49.1	27.1	342	21.8	46.0
23	321	09.3	178	33.4	47.8	258	30.6	39.8	313	51.8	27.0	357	24.5	46.1
24	336	11.8	193	32.8	+15 46.9	273	31.6	+19 40.1	328	54.4	+1 26.9	12	27.1	−15 46.2
Dif	—			−6	−9		+10	+3		+27	−1		+26	−1

UT	SOL SD: 15′.8 PMG: 12h 01m.3				LUNA Edad: 30d.3 SD: 15′.1 PMG: 12h 59m PHE 4h: 55′.5; 12h: 55′.7; 20h: 55′.8 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	179	39.0	+9	47.4	170	50.4	+11	08.4	**60 N**	19 16	20 02	21 02	5 37	87	19 57	1
1	194	39.2		46.5	185	24.0 146	+10	55.2 132	**58**	10	19 53	20 48	43	83	53	5
2	209	39.3		45.6	199	57.6 146		41.9 133	**56**	05	45	36	48	80	50	7
3	224	39.5		44.7	214	31.3 147		28.7 132	**54**	19 00	38	25	52	78	47	10
4	239	39.7		43.9	229	05.0 147		15.3 134	**52**	18 56	32	16	5 57	75	45	12
5	254	39.9	+9	43.0	243	38.7 147	+10	01.9 134	**50**	18 53	19 27	20 08	6 00	73	19 42	14
6	269	40.1	+9	42.1	258	12.4 147	+9	48.5 134	**45**	18 45	19 15	19 52	6 08	68	19 37	19
7	284	40.3		41.2	272	46.2 148		35.0 135	**40**	38	19 06	39	15	64	33	22
8	299	40.4		40.3	287	19.9 147		21.4 136	**35**	32	18 58	29	21	60	29	26
9	314	40.6		39.4	301	53.7 148	+9	07.8 136	**30**	27	52	21	26	57	26	29
10	329	40.8		38.6	316	27.5 148	+8	54.2 136	**20**	19	41	19 07	34	52	20	34
11	344	41.0	+9	37.7	331	01.4 149	+8	40.5 137	**10 N**	18 11	18 33	18 58	6 42	47	19 15	38
12	359	41.2	+9	36.8	345	35.2 148	+8	26.8 137	**0**	18 05	18 26	18 50	6 49	43	19 10	43
13	14	41.4		35.9	0	09.1 149	+8	13.0 138	**10 S**	17 58	19	44	6 56	39	19 05	47
14	29	41.5		35.0	14	42.9 148	+7	59.2 138	**20**	51	13	39	7 04	34	18 59	52
15	44	41.7		34.1	29	16.8 149		45.3 139	**30**	43	07	35	12	29	53	57
16	59	41.9		33.3	43	50.7 149		31.4 139	**35**	38	04	33	17	26	50	60
17	74	42.1	+9	32.4	58	24.6 149	+7	17.5 139	**40**	17 33	18 01	18 32	7 22	23	18 46	63
18	89	42.3	+9	31.5	72	58.5 149	+7	03.5 140	**45**	17 27	17 57	18 31	7 29	19	18 41	68
19	104	42.5		30.6	87	32.5 150	+6	49.5 140	**50**	20	53	31	36	15	35	73
20	119	42.7		29.7	102	06.4 149		35.5 140	**52**	17	51	31	40	12	32	76
21	134	42.8		28.8	116	40.4 150		21.4 141	**54**	14	50	31	44	10	30	77
22	149	43.0		27.9	131	14.3 149	+6	07.2 142	**56**	10	48	31	48	7	26	81
23	164	43.2		27.0	145	48.3 150	+5	53.1 141	**58**	05	45	31	53	4	23	83
24	179	43.4	+9	26.2	160	22.2 149	+5	38.9 142	**60 S**	17 01	17 43	18 31	7 58	1	18 19	87

UT	ARIES PMG 1h 35m.0		VENUS Mag: −3.9 PMG: 11h 06m			MARTE Mag: −0.1 PMG: 5h 45m			JÚPITER Mag: −2.9 PMG: 2h 04m			SATURNO Mag: +0.3 PMG: 23h 06m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	336	11.8	193	32.8	+15 46.9	273	31.6	+19 40.1	328	54.4	+1 26.9	12	27.1	−15 46.2
1	351	14.3	208	32.2	46.0	288	32.6	40.4	343	57.1	26.8	27	29.7	46.2
2	6	16.7	223	31.6	45.1	303	33.7	40.7	358	59.8	26.7	42	32.4	46.3
3	21	19.2	238	31.0	44.1	318	34.7	41.0	14	02.5	26.6	57	35.0	46.3
4	36	21.7	253	30.4	43.2	333	35.7	41.3	29	05.1	26.5	72	37.7	46.4
5	51	24.1	268	29.8	+15 42.3	348	36.7	+19 41.6	44	07.8	+1 26.4	87	40.3	−15 46.5
6	66	26.6	283	29.2	+15 41.4	3	37.8	+19 41.8	59	10.5	+1 26.3	102	42.9	−15 46.5
7	81	29.1	298	28.6	40.5	18	38.8	42.1	74	13.2	26.2	117	45.6	46.6
8	96	31.5	313	28.0	39.6	33	39.8	42.4	89	15.8	26.1	132	48.2	46.6
9	111	34.0	328	27.4	38.7	48	40.8	42.7	104	18.5	26.0	147	50.9	46.7
10	126	36.5	343	26.8	37.8	63	41.9	43.0	119	21.2	25.9	162	53.5	46.8
11	141	38.9	358	26.3	+15 36.9	78	42.9	+19 43.3	134	23.9	+1 25.8	177	56.1	−15 46.8
12	156	41.4	13	25.7	+15 36.0	93	43.9	+19 43.6	149	26.5	+1 25.7	192	58.8	−15 46.9
13	171	43.8	28	25.1	35.0	108	45.0	43.9	164	29.2	25.6	208	01.4	46.9
14	186	46.3	43	24.5	34.1	123	46.0	44.2	179	31.9	25.5	223	04.1	47.0
15	201	48.8	58	23.9	33.2	138	47.0	44.4	194	34.6	25.4	238	06.7	47.0
16	216	51.2	73	23.3	32.3	153	48.0	44.7	209	37.3	25.3	253	09.3	47.1
17	231	53.7	88	22.7	+15 31.4	168	49.1	+19 45.0	224	39.9	+1 25.2	268	12.0	−15 47.2
18	246	56.2	103	22.1	+15 30.5	183	50.1	+19 45.3	239	42.6	+1 25.1	283	14.6	−15 47.2
19	261	58.6	118	21.5	29.5	198	51.1	45.6	254	45.3	25.0	298	17.2	47.3
20	277	01.1	133	20.9	28.6	213	52.2	45.9	269	48.0	24.9	313	19.9	47.3
21	292	03.6	148	20.4	27.7	228	53.2	46.2	284	50.6	24.8	328	22.5	47.4
22	307	06.0	163	19.8	26.8	243	54.2	46.4	299	53.3	24.7	343	25.2	47.5
23	322	08.5	178	19.2	25.9	258	55.3	46.7	314	56.0	24.6	358	27.8	47.5
24	337	10.9	193	18.6	+15 24.9	273	56.3	+19 47.0	329	58.7	+1 24.5	13	30.4	−15 47.6
Dif	—			−6	−9		+10	+3		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 1.ᵈ7 SD: 15′.2		PHE	4ʰ: 56′.0 12ʰ: 56′.1 20ʰ: 56′.3									
	PMG: 12ʰ 01.ᵐ0				PMG: 13ʰ 42ᵐ			Rº: 44ᵐ									
	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	43.4	+9	26.2	160	22.2	+5	38.9		**60 N**	3 01	4 02	4 48	7 04	88	19 58	1
1	194	43.6		25.3	174	56.2 150		24.6 143		**58**	15	10	53	06	84	58	4
2	209	43.8		24.4	189	30.2 150	+5	10.4 142		**56**	27	18	4 58	08	81	57	7
3	224	44.0		23.5	204	04.2 150	+4	56.1 143		**54**	38	25	5 03	10	78	57	10
4	239	44.2		22.6	218	38.2 150		41.8 143		**52**	47	31	07	12	75	57	12
5	254	44.3	+9	21.7	233	12.1 149	+4	27.4 144		**50**	3 54	4 36	5 10	7 13	73	19 56	15
6	269	44.5	+9	20.8	247	46.1 150	+4	13.0 144		**45**	4 11	4 48	5 18	7 16	69	19 56	19
7	284	44.7		19.9	262	20.1 150	+3	58.6 144		**40**	23	4 57	25	19	64	55	23
8	299	44.9		19.1	276	54.1 150		44.2 144		**35**	34	5 04	30	21	61	55	26
9	314	45.1		18.2	291	28.1 150		29.7 145		**30**	42	11	35	23	58	55	29
10	329	45.3		17.3	306	02.0 149		15.3 144		**20**	4 55	21	44	26	53	54	34
11	344	45.5	+9	16.4	320	36.0 150	+3	00.8 145		**10 N**	5 05	5 30	5 51	7 29	48	19 53	39
12	359	45.7	+9	15.5	335	10.0 150	+2	46.2 146		**0**	5 12	5 37	5 58	7 32	43	19 53	43
13	14	45.8		14.6	349	43.9 149		31.7 145		**10 S**	18	43	6 04	35	39	52	48
14	29	46.0		13.7	4	17.9 150		17.1 146		**20**	23	49	11	38	34	51	53
15	44	46.2		12.8	18	51.8 149	+2	02.5 146		**30**	27	55	19	41	29	50	59
16	59	46.4		11.9	33	25.7 149	+1	47.9 146		**35**	28	5 58	23	43	26	50	61
17	74	46.6	+9	11.0	47	59.6 149	+1	33.3 146		**40**	5 30	6 01	6 28	7 45	23	19 49	65
18	89	46.8	+9	10.1	62	33.5 149	+1	18.7 146		**45**	5 30	6 04	6 34	7 48	19	19 49	69
19	104	47.0		09.3	77	07.4 149	+1	04.0 147		**50**	31	08	41	51	14	48	74
20	119	47.2		08.4	91	41.3 149	+0	49.3 147		**52**	31	10	44	52	12	48	76
21	134	47.4		07.5	106	15.2 149		34.6 147		**54**	31	12	47	54	9	47	79
22	149	47.5		06.6	120	49.0 148		19.9 147		**56**	31	14	51	55	8	47	82
23	164	47.7		05.7	135	22.8 148	+0	05.2 147		**58**	30	16	6 55	57	5	46	85
24	179	47.9	+9	04.8	149	56.6 148	−0	09.5 147		**60 S**	5 30	6 18	7 00	7 59	1	19 46	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.9			Mag: +0.3		
	1ʰ 31.ᵐ0		PMG: 11ʰ 07ᵐ			PMG: 5ʰ 44ᵐ			PMG: 2ʰ 00ᵐ			PMG: 23ʰ 02ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	337	10.9	193	18.6	+15 24.9	273	56.3	+19 47.0	329	58.7	+1 24.5	13	30.4	−15 47.6
1	352	13.4	208	18.0	24.0	288	57.3	47.3	345	01.4	24.4	28	33.1	47.6
2	7	15.9	223	17.4	23.1	303	58.4	47.6	0	04.0	24.3	43	35.7	47.7
3	22	18.3	238	16.8	22.2	318	59.4	47.9	15	06.7	24.2	58	38.4	47.7
4	37	20.8	253	16.3	21.2	334	00.4	48.1	30	09.4	24.1	73	41.0	47.8
5	52	23.3	268	15.7	+15 20.3	349	01.5	+19 48.4	45	12.1	+1 24.0	88	43.6	−15 47.9
6	67	25.7	283	15.1	+15 19.4	4	02.5	+19 48.7	60	14.8	+1 23.9	103	46.3	−15 47.9
7	82	28.2	298	14.5	18.5	19	03.5	49.0	75	17.4	23.8	118	48.9	48.0
8	97	30.7	313	13.9	17.5	34	04.6	49.3	90	20.1	23.7	133	51.5	48.0
9	112	33.1	328	13.3	16.6	49	05.6	49.6	105	22.8	23.6	148	54.2	48.1
10	127	35.6	343	12.8	15.7	64	06.7	49.8	120	25.5	23.5	163	56.8	48.2
11	142	38.1	358	12.2	+15 14.8	79	07.7	+19 50.1	135	28.2	+1 23.4	178	59.5	−15 48.2
12	157	40.5	13	11.6	+15 13.8	94	08.7	+19 50.4	150	30.9	+1 23.3	194	02.1	−15 48.3
13	172	43.0	28	11.0	12.9	109	09.8	50.7	165	33.5	23.2	209	04.7	48.3
14	187	45.4	43	10.4	12.0	124	10.8	51.0	180	36.2	23.1	224	07.4	48.4
15	202	47.9	58	09.8	11.0	139	11.8	51.3	195	38.9	23.0	239	10.0	48.5
16	217	50.4	73	09.3	10.1	154	12.9	51.5	210	41.6	22.9	254	12.7	48.5
17	232	52.8	88	08.7	+15 09.2	169	13.9	+19 51.8	225	44.3	+1 22.8	269	15.3	−15 48.6
18	247	55.3	103	08.1	+15 08.2	184	15.0	+19 52.1	240	47.0	+1 22.7	284	17.9	−15 48.6
19	262	57.8	118	07.5	07.3	199	16.0	52.4	255	49.6	22.6	299	20.6	48.7
20	278	00.2	133	07.0	06.3	214	17.0	52.7	270	52.3	22.5	314	23.2	48.7
21	293	02.7	148	06.4	05.4	229	18.1	52.9	285	55.0	22.4	329	25.8	48.8
22	308	05.2	163	05.8	04.5	244	19.1	53.2	300	57.7	22.3	344	28.5	48.9
23	323	07.6	178	05.2	03.5	259	20.2	53.5	316	00.4	22.2	359	31.1	48.9
24	338	10.1	193	04.6	+15 02.6	274	21.2	+19 53.8	331	03.1	+1 22.1	14	33.8	−15 49.0
Dif	—			−6	−9		+10	+3		+27	−1		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 2^{d}.7		PHE	4^{h}: 56′.5								
	PMG: 12^{h} 00^{m}.7		SD: 15′.4			12^{h}: 56′.6								
			PMG: 14^{h} 26^{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	179 47.9	+9 04.8	149 56.6		−0 09.5		**60 N**	19 10	19 55	20 54	8 32	90	19 59	2
1	194 48.1	03.9	164 30.4	148	24.2	147	**58**	04	47	41	30	87	20 02	5
2	209 48.3	03.0	179 04.2	148	39.0	148	**56**	19 00	39	29	29	83	04	8
3	224 48.5	02.1	193 37.9	147	−0 53.7	147	**54**	18 56	33	20	28	80	07	10
4	239 48.7	01.2	208 11.6	147	−1 08.4	147	**52**	52	27	11	27	78	09	13
5	254 48.9	+9 00.3	222 45.3	147	−1 23.2	148	**50**	18 48	19 22	20 04	8 26	76	20 11	15
6	269 49.1	+8 59.4	237 19.0	147	−1 38.0	148	**45**	18 41	19 11	19 48	8 25	70	20 15	20
7	284 49.3	58.5	251 52.7	147	−1 52.7	147	**40**	35	19 03	36	23	66	18	24
8	299 49.4	57.6	266 26.3	146	−2 07.5	148	**35**	30	18 56	26	22	62	21	28
9	314 49.6	56.7	280 59.9	146	22.3	148	**30**	25	49	18	21	59	24	31
10	329 49.8	55.8	295 33.4	145	37.0	147	**20**	17	39	19 06	19	53	28	36
11	344 50.0	+8 54.9	310 07.0	146	−2 51.8	148	**10 N**	18 10	18 32	18 56	8 17	49	20 32	41
12	359 50.2	+8 54.0	324 40.5	145	−3 06.6	148	**0**	18 04	18 25	18 49	8 15	45	20 36	45
13	14 50.4	53.1	339 13.9	144	21.3	147	**10 S**	17 58	19	44	14	40	40	50
14	29 50.6	52.3	353 47.3	144	36.1	148	**20**	51	13	39	12	35	44	55
15	44 50.8	51.4	8 20.7	144	−3 50.8	147	**30**	44	08	36	10	30	49	60
16	59 51.0	50.5	22 54.1	144	−4 05.6	148	**35**	40	05	35	09	27	51	64
17	74 51.2	+8 49.6	37 27.4	143	−4 20.3	147	**40**	17 35	18 02	18 34	8 08	23	20 54	67
18	89 51.4	+8 48.7	52 00.7	143	−4 35.1	148	**45**	17 30	17 59	18 33	8 07	19	20 58	71
19	104 51.6	47.8	66 33.9	142	−4 49.8	147	**50**	23	56	33	05	15	21 02	77
20	119 51.8	46.9	81 07.1	142	−5 04.5	147	**52**	20	54	34	04	13	04	79
21	134 51.9	46.0	95 40.3	142	19.2	147	**54**	17	53	34	03	11	06	82
22	149 52.1	45.1	110 13.4	141	33.9	147	**56**	14	51	34	03	7	09	84
23	164 52.3	44.2	124 46.5	141	−5 48.6	147	**58**	10	49	35	02	4	11	88
24	179 52.5	+8 43.3	139 19.5	140	−6 03.2	146	**60 S**	17 05	17 48	18 36	8 00	2	21 14	92

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.1		Mag: −2.9		Mag: +0.3	
	1^{h} 27^{m}.1	PMG: 11^{h} 08^{m}		PMG: 5^{h} 42^{m}		PMG: 1^{h} 55^{m}		PMG: 22^{h} 58^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	338 10.1	193 04.6	+15 02.6	274 21.2	+19 53.8	331 03.1	+1 22.1	14 33.8	−15 49.0
1	353 12.5	208 04.1	01.7	289 22.3	54.1	346 05.7	21.9	29 36.4	49.0
2	8 15.0	223 03.5	+15 00.7	304 23.3	54.3	1 08.4	21.8	44 39.0	49.1
3	23 17.5	238 02.9	+14 59.8	319 24.3	54.6	16 11.1	21.7	59 41.7	49.1
4	38 19.9	253 02.3	58.8	334 25.4	54.9	31 13.8	21.6	74 44.3	49.2
5	53 22.4	268 01.8	+14 57.9	349 26.4	+19 55.2	46 16.5	+1 21.5	89 46.9	−15 49.3
6	68 24.9	283 01.2	+14 56.9	4 27.5	+19 55.4	61 19.2	+1 21.4	104 49.6	−15 49.3
7	83 27.3	298 00.6	56.0	19 28.5	55.7	76 21.9	21.3	119 52.2	49.4
8	98 29.8	313 00.0	55.0	34 29.6	56.0	91 24.6	21.2	134 54.8	49.4
9	113 32.3	327 59.5	54.1	49 30.6	56.3	106 27.2	21.1	149 57.5	49.5
10	128 34.7	342 58.9	53.2	64 31.7	56.5	121 29.9	21.0	165 00.1	49.6
11	143 37.2	357 58.3	+14 52.2	79 32.7	+19 56.8	136 32.6	+1 20.9	180 02.8	−15 49.6
12	158 39.7	12 57.8	+14 51.3	94 33.8	+19 57.1	151 35.3	+1 20.8	195 05.4	−15 49.7
13	173 42.1	27 57.2	50.3	109 34.8	57.4	166 38.0	20.7	210 08.0	49.7
14	188 44.6	42 56.6	49.4	124 35.9	57.7	181 40.7	20.6	225 10.7	49.8
15	203 47.0	57 56.0	48.4	139 36.9	57.9	196 43.4	20.5	240 13.3	49.8
16	218 49.5	72 55.5	47.5	154 38.0	58.2	211 46.1	20.4	255 15.9	49.9
17	233 52.0	87 54.9	+14 46.5	169 39.0	+19 58.5	226 48.7	+1 20.3	270 18.6	−15 50.0
18	248 54.4	102 54.3	+14 45.6	184 40.1	+19 58.8	241 51.4	+1 20.2	285 21.2	−15 50.0
19	263 56.9	117 53.8	44.6	199 41.1	59.0	256 54.1	20.1	300 23.8	50.1
20	278 59.4	132 53.2	43.6	214 42.2	59.3	271 56.8	19.9	315 26.5	50.1
21	294 01.8	147 52.6	42.7	229 43.2	59.6	286 59.5	19.8	330 29.1	50.2
22	309 04.3	162 52.1	41.7	244 44.3	+19 59.8	302 02.2	19.7	345 31.8	50.2
23	324 06.8	177 51.5	40.8	259 45.3	+20 00.1	317 04.9	19.6	0 34.4	50.3
24	339 09.2	192 50.9	+14 39.8	274 46.4	+20 00.4	332 07.6	+1 19.5	15 37.0	−15 50.4
Dif	—	−6	−9	+10	+3	+27	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 3ᵈ.7		PHE	4ʰ: 57′.0									
	PMG: 12ʰ 00ᵐ.3				SD: 15′.5			12ʰ: 57′.2									
					PMG: 15ʰ 10ᵐ			20ʰ: 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	179	52.5	+8	43.3	139	19.5	−6	03.2		**60 N**	3 08	4 07	4 52	10 02	94	20 01	2
1	194	52.7		42.4	153	52.5 140		17.9	147	**58**	21	15	4 58	9 57	90	07	7
2	209	52.9		41.5	168	25.4 139		32.5	146	**56**	32	22	5 02	52	87	12	11
3	224	53.1		40.6	182	58.3 139	−6	47.1	146	**54**	42	29	06	48	84	17	14
4	239	53.3		39.7	197	31.2 139	−7	01.7	146	**52**	51	34	10	45	80	22	16
5	254	53.5	+8	38.8	212	03.9 137	−7	16.3	146	**50**	3 58	4 40	5 13	9 42	78	20 26	18
6	269	53.7	+8	37.9	226	36.7 138	−7	30.8	145	**45**	4 14	4 50	5 21	9 35	72	20 35	23
7	284	53.9		37.0	241	09.3 136		45.3	145	**40**	26	4 59	27	29	68	42	28
8	299	54.1		36.1	255	42.0 137	−7	59.8	145	**35**	35	5 06	32	24	65	49	31
9	314	54.3		35.2	270	14.5 135	−8	14.3	145	**30**	43	12	36	20	61	20 55	34
10	329	54.5		34.3	284	47.0 135		28.7	144	**20**	4 56	22	44	12	56	21 04	40
11	344	54.7	+8	33.4	299	19.5 135	−8	43.1	144	**10 N**	5 05	5 30	5 51	9 06	51	21 13	44
12	359	54.9	+8	32.5	313	51.9 134	−8	57.5	144	**0**	5 12	5 36	5 57	9 00	46	21 21	49
13	14	55.1		31.6	328	24.2 133	−9	11.9	144	**10 S**	17	42	6 03	8 54	42	30	52
14	29	55.3		30.6	342	56.5 133		26.2	143	**20**	22	47	09	47	38	39	57
15	44	55.4		29.7	357	28.7 132		40.5	143	**30**	25	53	17	40	32	49	62
16	59	55.6		28.8	12	00.8 131	−9	54.8	143	**35**	26	55	21	36	29	21 55	65
17	74	55.8	+8	27.9	26	32.9 131	−10	09.0	142	**40**	5 27	5 58	6 25	8 31	26	22 01	70
18	89	56.0	+8	27.0	41	04.9 130	−10	23.2	142	**45**	5 27	6 01	6 30	8 26	22	22 09	74
19	104	56.2		26.1	55	36.8 129		37.3	141	**50**	27	04	37	20	16	19	79
20	119	56.4		25.2	70	08.7 129	−10	51.4	141	**52**	27	06	40	17	14	23	82
21	134	56.6		24.3	84	40.5 128	−11	05.5	141	**54**	26	07	43	14	12	28	85
22	149	56.8		23.4	99	12.3 128		19.5	140	**56**	26	09	46	10	9	33	88
23	164	57.0		22.5	113	43.9 126		33.5	140	**58**	25	10	50	06	6	39	92
24	179	57.2	+8	21.6	128	15.5 126	−11	47.5	140	**60 S**	5 24	6 12	6 54	8 02	2	22 46	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.9			Mag: +0.3		
	1ʰ 23ᵐ.2		PMG: 11ʰ 09ᵐ			PMG: 5ʰ 41ᵐ			PMG: 1ʰ 51ᵐ			PMG: 22ʰ 54ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	339	09.2	192	50.9	+14 39.8	274	46.4	+20 00.4	332	07.6	+1 19.5	15	37.0	−15 50.4
1	354	11.7	207	50.4	38.9	289	47.4	00.7	347	10.3	19.4	30	39.7	50.4
2	9	14.2	222	49.8	37.9	304	48.5	00.9	2	13.0	19.3	45	42.3	50.5
3	24	16.6	237	49.2	36.9	319	49.5	01.2	17	15.6	19.2	60	44.9	50.5
4	39	19.1	252	48.7	36.0	334	50.6	01.5	32	18.3	19.1	75	47.6	50.6
5	54	21.5	267	48.1	+14 35.0	349	51.6	+20 01.8	47	21.0	+1 19.0	90	50.2	−15 50.6
6	69	24.0	282	47.5	+14 34.1	4	52.7	+20 02.0	62	23.7	+1 18.9	105	52.8	−15 50.7
7	84	26.5	297	47.0	33.1	19	53.8	02.3	77	26.4	18.8	120	55.5	50.8
8	99	28.9	312	46.4	32.1	34	54.8	02.6	92	29.1	18.7	135	58.1	50.8
9	114	31.4	327	45.8	31.2	49	55.9	02.8	107	31.8	18.6	151	00.7	50.9
10	129	33.9	342	45.3	30.2	64	56.9	03.1	122	34.5	18.5	166	03.4	50.9
11	144	36.3	357	44.7	+14 29.2	79	58.0	+20 03.4	137	37.2	+1 18.3	181	06.0	−15 51.0
12	159	38.8	12	44.1	+14 28.3	94	59.0	+20 03.6	152	39.9	+1 18.2	196	08.7	−15 51.0
13	174	41.3	27	43.6	27.3	110	00.1	03.9	167	42.6	18.1	211	11.3	51.1
14	189	43.7	42	43.0	26.3	125	01.2	04.2	182	45.3	18.0	226	13.9	51.2
15	204	46.2	57	42.5	25.4	140	02.2	04.5	197	48.0	17.9	241	16.6	51.2
16	219	48.6	72	41.9	24.4	155	03.3	04.7	212	50.7	17.8	256	19.2	51.3
17	234	51.1	87	41.3	+14 23.4	170	04.3	+20 05.0	227	53.4	+1 17.7	271	21.8	−15 51.3
18	249	53.6	102	40.8	+14 22.5	185	05.4	+20 05.3	242	56.0	+1 17.6	286	24.5	−15 51.4
19	264	56.0	117	40.2	21.5	200	06.5	05.5	257	58.7	17.5	301	27.1	51.4
20	279	58.5	132	39.7	20.5	215	07.5	05.8	273	01.4	17.4	316	29.7	51.5
21	295	01.0	147	39.1	19.6	230	08.6	06.1	288	04.1	17.3	331	32.4	51.6
22	310	03.4	162	38.6	18.6	245	09.7	06.3	303	06.8	17.2	346	35.0	51.6
23	325	05.9	177	38.0	17.6	260	10.7	06.6	318	09.5	17.1	1	37.6	51.7
24	340	08.4	192	37.4	+14 16.6	275	11.8	+20 06.9	333	12.2	+1 16.9	16	40.3	−15 51.7
Dif	—			−6	−10		+11	+3		+27	−1		+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.8		Edad: 4ᵈ.7		PHE	4ʰ: 57′.5								
	PMG: 12ʰ 00ᵐ.0		SD: 15′.6			12ʰ: 57′.7								
			PMG: 15ʰ 58ᵐ			20ʰ: 57′.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	179 57.2	+8 21.6	128 15.5		−11 47.5		**60 N**	19 04	19 49	20 47	11 36	101	20 03	6
1	194 57.4	20.7	142 47.0	125	−12 01.4	139	**58**	18 59	41	34	27	95	14	10
2	209 57.6	19.8	157 18.5	125	15.2	138	**56**	55	34	23	19	91	23	14
3	224 57.8	18.9	171 49.8	123	29.0	138	**54**	51	28	14	12	87	31	18
4	239 58.0	18.0	186 21.1	123	42.8	138	**52**	47	23	20 06	05	84	38	21
5	254 58.2	+8 17.1	200 52.3	122	−12 56.5	137	**50**	18 44	19 18	19 59	11 00	81	20 44	24
6	269 58.4	+8 16.2	215 23.5	122	−13 10.1	136	**45**	18 37	19 08	19 44	10 47	76	20 58	29
7	284 58.6	15.3	229 54.5	120	23.7	136	**40**	32	18 59	32	37	71	21 10	33
8	299 58.8	14.4	244 25.5	120	37.2	135	**35**	27	53	23	29	67	20	36
9	314 59.0	13.5	258 56.4	119	−13 50.7	135	**30**	23	47	16	21	64	29	39
10	329 59.2	12.5	273 27.2	118	−14 04.2	135	**20**	15	38	19 04	10 08	59	44	44
11	344 59.4	+8 11.6	287 57.9	117	−14 17.5	133	**10 N**	18 09	18 30	18 55	9 57	54	21 57	49
12	359 59.6	+8 10.7	302 28.5	116	−14 30.8	133	**0**	18 03	18 24	18 48	9 46	51	22 10	52
13	14 59.8	09.8	316 59.1	116	44.1	133	**10 S**	17 58	19	43	36	46	22	57
14	30 00.0	08.9	331 29.5	114	−14 57.3	132	**20**	52	14	40	25	42	36	60
15	45 00.2	08.0	345 59.9	114	−15 10.4	131	**30**	45	09	37	12	37	22 51	66
16	60 00.4	07.1	0 30.2	113	23.4	130	**35**	41	07	36	9 05	34	23 00	69
17	75 00.6	+8 06.2	15 00.4	112	−15 36.4	130	**40**	17 37	18 04	18 36	8 57	30	23 11	72
18	90 00.8	+8 05.3	29 30.5	111	−15 49.3	129	**45**	17 32	18 02	18 36	8 48	26	23 23	76
19	105 01.0	04.4	44 00.5	110	−16 02.1	128	**50**	26	17 59	36	36	21	38	82
20	120 01.2	03.5	58 30.4	109	14.9	128	**52**	24	58	37	31	19	45	84
21	135 01.4	02.5	73 00.2	108	27.6	127	**54**	21	56	37	26	15	23 53	87
22	150 01.6	01.6	87 29.9	107	40.2	126	**56**	17	55	38	19	13	** **	**
23	165 01.8	+8 00.7	101 59.6	107	−16 52.8	126	**58**	14	53	39	12	9	** **	**
24	180 02.0	+7 59.8	116 29.1	105	−17 05.2	124	**60 S**	17 10	17 52	18 40	8 04	4	** **	**

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.1		Mag: −2.9		Mag: +0.3	
	1ʰ 19ᵐ.2	PMG: 11ʰ 10ᵐ		PMG: 5ʰ 39ᵐ		PMG: 1ʰ 47ᵐ		PMG: 22ʰ 49ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	340 08.4	192 37.4	+14 16.6	275 11.8	+20 06.9	333 12.2	+1 16.9	16 40.3	−15 51.7
1	355 10.8	207 36.9	15.7	290 12.8	07.1	348 14.9	16.8	31 42.9	51.8
2	10 13.3	222 36.3	14.7	305 13.9	07.4	3 17.6	16.7	46 45.5	51.8
3	25 15.8	237 35.8	13.7	320 15.0	07.7	18 20.3	16.6	61 48.2	51.9
4	40 18.2	252 35.2	12.7	335 16.0	07.9	33 23.0	16.5	76 50.8	52.0
5	55 20.7	267 34.7	+14 11.8	350 17.1	+20 08.2	48 25.7	+1 16.4	91 53.4	−15 52.0
6	70 23.1	282 34.1	+14 10.8	5 18.2	+20 08.5	63 28.4	+1 16.3	106 56.1	−15 52.1
7	85 25.6	297 33.5	09.8	20 19.2	08.7	78 31.1	16.2	121 58.7	52.1
8	100 28.1	312 33.0	08.8	35 20.3	09.0	93 33.8	16.1	137 01.3	52.2
9	115 30.5	327 32.4	07.8	50 21.4	09.3	108 36.5	16.0	152 04.0	52.2
10	130 33.0	342 31.9	06.9	65 22.4	09.5	123 39.2	15.9	167 06.6	52.3
11	145 35.5	357 31.3	+14 05.9	80 23.5	+20 09.8	138 41.9	+1 15.7	182 09.2	−15 52.3
12	160 37.9	12 30.8	+14 04.9	95 24.6	+20 10.0	153 44.6	+1 15.6	197 11.9	−15 52.4
13	175 40.4	27 30.2	03.9	110 25.6	10.3	168 47.3	15.5	212 14.5	52.5
14	190 42.9	42 29.7	02.9	125 26.7	10.6	183 50.0	15.4	227 17.1	52.5
15	205 45.3	57 29.1	01.9	140 27.8	10.8	198 52.7	15.3	242 19.8	52.6
16	220 47.8	72 28.6	+14 01.0	155 28.9	11.1	213 55.4	15.2	257 22.4	52.6
17	235 50.2	87 28.0	+14 00.0	170 29.9	+20 11.4	228 58.1	+1 15.1	272 25.0	−15 52.7
18	250 52.7	102 27.5	+13 59.0	185 31.0	+20 11.6	244 00.8	+1 15.0	287 27.7	−15 52.7
19	265 55.2	117 26.9	58.0	200 32.1	11.9	259 03.5	14.9	302 30.3	52.8
20	280 57.6	132 26.4	57.0	215 33.1	12.2	274 06.2	14.8	317 32.9	52.9
21	296 00.1	147 25.8	56.0	230 34.2	12.4	289 08.9	14.6	332 35.6	52.9
22	311 02.6	162 25.3	55.0	245 35.3	12.7	304 11.6	14.5	347 38.2	53.0
23	326 05.0	177 24.7	54.0	260 36.4	12.9	319 14.3	14.4	2 40.8	53.0
24	341 07.5	192 24.2	+13 53.1	275 37.4	+20 13.2	334 17.0	+1 14.3	17 43.5	−15 53.1
Dif	—	−6	−10	+11	+3	+27	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.8				Edad: 5^{d}.7		PHE	4^{h}: 58′.1									
	PMG: 11^{h} 59^{m}.7				SD: 15′.8			12^{h}: 58′.2									
					PMG: 16^{h} 49^{m}			20^{h}: 58′.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	180	02.0	+7	59.8	116	29.1	−17	05.2		**60 N**	3 14	4 12	4 57	13 17	104	20 09	10
1	195	02.2		58.9	130	58.5 104		17.6	124	**58**	27	20	5 02	13 02	98	24	17
2	210	02.4		58.0	145	27.9 104		29.9	123	**56**	37	27	06	12 50	92	37	22
3	225	02.6		57.1	159	57.1 102		42.2	123	**54**	47	33	10	39	88	49	26
4	240	02.8		56.2	174	26.3 102	−17	54.3	121	**52**	3 55	38	13	29	85	20 59	29
5	255	03.0	+7	55.3	188	55.3 100	−18	06.3	120	**50**	4 02	4 43	5 16	12 21	82	21 08	32
6	270	03.2	+7	54.4	203	24.2 99	−18	18.3	120	**45**	4 16	4 53	5 23	12 03	77	21 27	37
7	285	03.4		53.4	217	53.1 99		30.2	119	**40**	28	5 01	29	11 48	73	43	41
8	300	03.6		52.5	232	21.8 97		42.0	118	**35**	37	07	33	36	70	21 56	44
9	315	03.8		51.6	246	50.4 96	−18	53.7	117	**30**	44	13	37	25	67	22 08	46
10	330	04.0		50.7	261	19.0 96	−19	05.3	116	**20**	4 56	22	45	11 07	62	28	50
11	345	04.2	+7	49.8	275	47.4 94	−19	16.8	115	**10 N**	5 05	5 30	5 51	10 51	59	22 46	53
12	0	04.4	+7	48.9	290	15.7 93	−19	28.2	114	**0**	5 11	5 36	5 56	10 37	54	23 02	57
13	15	04.6		48.0	304	43.9 92		39.5	113	**10 S**	16	41	6 02	22	51	19	60
14	30	04.8		47.0	319	12.0 91	−19	50.7	112	**20**	20	46	08	10 07	47	36	64
15	45	05.0		46.1	333	40.0 90	−20	01.8	111	**30**	22	50	14	9 49	43	23 57	67
16	60	05.2		45.2	348	07.9 89		12.8	110	**35**	23	53	18	39	40	** **	**
17	75	05.4	+7	44.3	2	35.7 88	−20	23.7	109	**40**	5 24	5 55	6 22	9 27	37	** **	**
18	90	05.6	+7	43.4	17	03.4 87	−20	34.5	108	**45**	5 23	5 57	6 27	9 14	32	** **	**
19	105	05.8		42.5	31	31.0 86		45.2	107	**50**	23	6 00	33	8 57	28	** **	**
20	120	06.0		41.6	45	58.5 85	−20	55.7	105	**52**	22	01	35	50	24	** **	**
21	135	06.2		40.6	60	25.8 83	−21	06.2	105	**54**	22	02	38	41	22	** **	**
22	150	06.4		39.7	74	53.1 83		16.6	104	**56**	21	04	41	32	18	0 01	92
23	165	06.6		38.8	89	20.2 81		26.8	102	**58**	20	05	45	21	14	11	97
24	180	06.8	+7	37.9	103	47.3 81	−21	36.9	101	**60 S**	5 19	6 07	6 48	8 08	9	0 23	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.1			Mag: −2.9			Mag: +0.4		
	1^{h} 15^{m}.3		PMG: 11^{h} 11^{m}			PMG: 5^{h} 37^{m}			PMG: 1^{h} 43^{m}			PMG: 22^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	341	07.5	192	24.2	+13 53.1	275	37.4	+20 13.2	334	17.0	+1 14.3	17	43.5	−15 53.1
1	356	10.0	207	23.6	52.1	290	38.5	13.5	349	19.7	14.2	32	46.1	53.1
2	11	12.4	222	23.1	51.1	305	39.6	13.7	4	22.4	14.1	47	48.7	53.2
3	26	14.9	237	22.5	50.1	320	40.7	14.0	19	25.1	14.0	62	51.4	53.2
4	41	17.4	252	22.0	49.1	335	41.7	14.2	34	27.8	13.9	77	54.0	53.3
5	56	19.8	267	21.4	+13 48.1	350	42.8	+20 14.5	49	30.5	+1 13.8	92	56.6	−15 53.4
6	71	22.3	282	20.9	+13 47.1	5	43.9	+20 14.8	64	33.2	+1 13.7	107	59.3	−15 53.4
7	86	24.7	297	20.4	46.1	20	45.0	15.0	79	35.9	13.5	123	01.9	53.5
8	101	27.2	312	19.8	45.1	35	46.0	15.3	94	38.6	13.4	138	04.5	53.5
9	116	29.7	327	19.3	44.1	50	47.1	15.5	109	41.3	13.3	153	07.2	53.6
10	131	32.1	342	18.7	43.1	65	48.2	15.8	124	44.0	13.2	168	09.8	53.6
11	146	34.6	357	18.2	+13 42.1	80	49.3	+20 16.1	139	46.7	+1 13.1	183	12.4	−15 53.7
12	161	37.1	12	17.6	+13 41.1	95	50.4	+20 16.3	154	49.4	+1 13.0	198	15.1	−15 53.7
13	176	39.5	27	17.1	40.1	110	51.4	16.6	169	52.1	12.9	213	17.7	53.8
14	191	42.0	42	16.6	39.1	125	52.5	16.8	184	54.8	12.8	228	20.3	53.9
15	206	44.5	57	16.0	38.1	140	53.6	17.1	199	57.5	12.6	243	23.0	53.9
16	221	46.9	72	15.5	37.1	155	54.7	17.3	215	00.2	12.5	258	25.6	54.0
17	236	49.4	87	14.9	+13 36.1	170	55.8	+20 17.6	230	03.0	+1 12.4	273	28.2	−15 54.0
18	251	51.9	102	14.4	+13 35.1	185	56.8	+20 17.9	245	05.7	+1 12.3	288	30.9	−15 54.1
19	266	54.3	117	13.8	34.1	200	57.9	18.1	260	08.4	12.2	303	33.5	54.1
20	281	56.8	132	13.3	33.1	215	59.0	18.4	275	11.1	12.1	318	36.1	54.2
21	296	59.2	147	12.8	32.1	231	00.1	18.6	290	13.8	12.0	333	38.7	54.2
22	312	01.7	162	12.2	31.1	246	01.2	18.9	305	16.5	11.9	348	41.4	54.3
23	327	04.2	177	11.7	30.1	261	02.3	19.1	320	19.2	11.8	3	44.0	54.4
24	342	06.6	192	11.2	+13 29.1	276	03.3	+20 19.4	335	21.9	+1 11.6	18	46.6	−15 54.4
Dif	—		−5		−10	+11		+3	+27		−1	+26		−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 6^{d}.7		PHE	4^{h}: 58′.6								
	PMG: 11^{h} 59^{m}.4		SD: 15′.9			12^{h}: 58′.8								
			PMG: 17^{h} 45^{m}			20^{h}: 58′.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 06.8	+7 37.9	103 47.3	79	−21 36.9	100	**60 N**	18 58	19 42	20 39	15 01	101	20 19	25
1	195 07.0	37.0	118 14.2	78	46.9	99	**58**	53	35	27	14 40	92	41	33
2	210 07.2	36.1	132 41.0	77	−21 56.8	98	**56**	49	28	17	22	88	20 59	37
3	225 07.4	35.2	147 07.7	76	−22 06.6	96	**54**	46	23	08	14 07	85	21 15	40
4	240 07.6	34.2	161 34.3	75	16.2	95	**52**	43	18	20 01	13 54	82	28	43
5	255 07.8	+7 33.3	176 00.8	74	−22 25.7	94	**50**	18 40	19 13	19 54	13 43	79	21 40	45
6	270 08.0	+7 32.4	190 27.2	73	−22 35.1	93	**45**	18 34	19 04	19 40	13 20	75	22 04	49
7	285 08.2	31.5	204 53.5	72	44.4	91	**40**	29	18 56	29	13 01	72	24	51
8	300 08.5	30.6	219 19.7	70	−22 53.5	90	**35**	24	50	20	12 46	69	40	53
9	315 08.7	29.6	233 45.7	70	−23 02.5	88	**30**	20	45	13	32	68	22 54	55
10	330 08.9	28.7	248 11.7	68	11.3	88	**20**	14	36	19 02	12 09	65	23 18	58
11	345 09.1	+7 27.8	262 37.5	68	−23 20.1	86	**10 N**	18 08	18 29	18 54	11 50	61	23 39	60
12	0 09.3	+7 26.9	277 03.3	66	−23 28.7	84	**0**	18 03	18 23	18 48	11 31	60	23 59	61
13	15 09.5	26.0	291 28.9	66	37.1	83	**10 S**	17 57	19	43	11 13	57	** **	**
14	30 09.7	25.1	305 54.5	64	45.4	82	**20**	52	14	40	10 54	54	** **	**
15	45 09.9	24.1	320 19.9	63	−23 53.6	81	**30**	46	10	38	32	50	** **	**
16	60 10.1	23.2	334 45.2	62	−24 01.7	79	**35**	43	08	37	19	48	0 09	70
17	75 10.3	+7 22.3	349 10.4	61	−24 09.6	77	**40**	17 39	18 06	18 37	10 04	46	0 23	73
18	90 10.5	+7 21.4	3 35.5	60	−24 17.3	76	**45**	17 34	18 04	18 38	9 46	43	0 39	77
19	105 10.7	20.5	18 00.5	60	24.9	75	**50**	29	02	39	25	38	1 00	81
20	120 10.9	19.5	32 25.5	58	32.4	73	**52**	27	01	40	14	36	09	84
21	135 11.1	18.6	46 50.3	57	39.7	71	**54**	24	18 00	41	9 03	33	20	87
22	150 11.3	17.7	61 15.0	56	46.8	70	**56**	21	17 59	42	8 50	29	33	91
23	165 11.5	16.8	75 39.6	55	−24 53.8	68	**58**	18	58	43	35	24	1 48	95
24	180 11.7	+7 15.9	90 04.1		−25 00.6		**60 S**	17 14	17 56	18 45	8 17	17	2 05	103

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.2		Mag: −2.9		Mag: +0.4	
	1^{h} 11^{m}.4	PMG: 11^{h} 12^{m}		PMG: 5^{h} 35^{m}		PMG: 1^{h} 38^{m}		PMG: 22^{h} 41^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	342 06.6	192 11.2	+13 29.1	276 03.3	+20 19.4	335 21.9	+1 11.6	18 46.6	−15 54.4
1	357 09.1	207 10.6	28.1	291 04.4	19.6	350 24.6	11.5	33 49.3	54.5
2	12 11.6	222 10.1	27.1	306 05.5	19.9	5 27.3	11.4	48 51.9	54.5
3	27 14.0	237 09.5	26.1	321 06.6	20.2	20 30.0	11.3	63 54.5	54.6
4	42 16.5	252 09.0	25.1	336 07.7	20.4	35 32.7	11.2	78 57.2	54.6
5	57 19.0	267 08.5	+13 24.0	351 08.8	+20 20.7	50 35.4	+1 11.1	93 59.8	−15 54.7
6	72 21.4	282 07.9	+13 23.0	6 09.9	+20 20.9	65 38.1	+1 11.0	109 02.4	−15 54.7
7	87 23.9	297 07.4	22.0	21 10.9	21.2	80 40.8	10.8	124 05.1	54.8
8	102 26.3	312 06.9	21.0	36 12.0	21.4	95 43.6	10.7	139 07.7	54.9
9	117 28.8	327 06.3	20.0	51 13.1	21.7	110 46.3	10.6	154 10.3	54.9
10	132 31.3	342 05.8	19.0	66 14.2	21.9	125 49.0	10.5	169 12.9	55.0
11	147 33.7	357 05.3	+13 18.0	81 15.3	+20 22.2	140 51.7	+1 10.4	184 15.6	−15 55.0
12	162 36.2	12 04.7	+13 17.0	96 16.4	+20 22.4	155 54.4	+1 10.3	199 18.2	−15 55.1
13	177 38.7	27 04.2	15.9	111 17.5	22.7	170 57.1	10.2	214 20.8	55.1
14	192 41.1	42 03.7	14.9	126 18.6	22.9	185 59.8	10.1	229 23.5	55.2
15	207 43.6	57 03.1	13.9	141 19.7	23.2	201 02.5	09.9	244 26.1	55.2
16	222 46.1	72 02.6	12.9	156 20.8	23.4	216 05.2	09.8	259 28.7	55.3
17	237 48.5	87 02.1	+13 11.9	171 21.9	+20 23.7	231 07.9	+1 09.7	274 31.4	−15 55.3
18	252 51.0	102 01.5	+13 10.9	186 22.9	+20 23.9	246 10.6	+1 09.6	289 34.0	−15 55.4
19	267 53.5	117 01.0	09.8	201 24.0	24.2	261 13.4	09.5	304 36.6	55.5
20	282 55.9	132 00.5	08.8	216 25.1	24.4	276 16.1	09.4	319 39.2	55.5
21	297 58.4	146 59.9	07.8	231 26.2	24.7	291 18.8	09.3	334 41.9	55.6
22	313 00.8	161 59.4	06.8	246 27.3	24.9	306 21.5	09.1	349 44.5	55.6
23	328 03.3	176 58.9	05.8	261 28.4	25.2	321 24.2	09.0	4 47.1	55.7
24	343 05.8	191 58.4	+13 04.7	276 29.5	+20 25.4	336 26.9	+1 08.9	19 49.8	−15 55.7
Dif	—	−5	−10	+11	+3	+27	−1	+26	−1

UT	SOL		LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 7ᵈ.7		PHE	4ʰ: 59′.1								
	PMG: 11ʰ 59ᵐ.1		SD: 16′.1			12ʰ: 59′.3								
			PMG: 18ʰ 45ᵐ			20ʰ: 59′.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 11.7	+7 15.9	90 04.1		−25 00.6		**60 N**	3 20	4 17	5 02	16 42	76	20 44	56
1	195 11.9	14.9	104 28.5	54	07.3	67	**58**	32	25	06	16 12	74	21 14	58
2	210 12.1	14.0	118 52.8	53	13.9	66	**56**	42	31	10	15 50	72	36	60
3	225 12.4	13.1	133 17.1	53	20.2	63	**54**	51	36	13	32	70	21 55	60
4	240 12.6	12.2	147 41.2	51	26.4	62	**52**	3 59	41	16	16	70	22 11	61
5	255 12.8	+7 11.3	162 05.2	50	−25 32.5	61	**50**	4 05	4 46	5 19	15 02	70	22 25	61
6	270 13.0	+7 10.3	176 29.2	50	−25 38.4	59	**45**	4 19	4 55	5 25	14 35	68	22 53	62
7	285 13.2	09.4	190 53.0	48	44.1	57	**40**	30	5 03	30	14 13	67	23 15	62
8	300 13.4	08.5	205 16.8	48	49.6	55	**35**	39	09	35	13 55	66	33	63
9	315 13.6	07.6	219 40.5	47	−25 55.0	54	**30**	46	14	39	40	65	23 49	63
10	330 13.8	06.6	234 04.1	46	−26 00.2	52	**20**	4 57	23	45	13 14	64	** **	**
11	345 14.0	+7 05.7	248 27.6	45	−26 05.3	51	**10 N**	5 05	5 29	5 51	12 51	64	** **	**
12	0 14.2	+7 04.8	262 51.1	45	−26 10.2	49	**0**	5 11	5 35	5 56	12 31	62	** **	**
13	15 14.4	03.9	277 14.4	43	14.9	47	**10 S**	15	40	6 01	12 10	61	0 19	63
14	30 14.6	02.9	291 37.7	43	19.4	45	**20**	18	44	06	11 48	60	0 40	65
15	45 14.8	02.0	306 00.9	42	23.7	43	**30**	20	48	12	22	59	1 04	67
16	60 15.0	01.1	320 24.0	41	27.9	42	**35**	21	50	15	11 07	58	19	68
17	75 15.3	+7 00.2	334 47.1	41	−26 31.9	40	**40**	5 21	5 52	6 19	10 50	57	1 36	69
18	90 15.5	+6 59.3	349 10.0	39	−26 35.7	38	**45**	5 20	5 54	6 23	10 29	55	1 56	72
19	105 15.7	58.3	3 32.9	39	39.4	37	**50**	19	56	28	10 03	53	2 21	75
20	120 15.9	57.4	17 55.8	39	42.9	35	**52**	18	57	31	9 50	52	33	77
21	135 16.1	56.5	32 18.6	38	46.1	32	**54**	17	58	33	36	50	2 47	79
22	150 16.3	55.6	46 41.3	37	49.2	31	**56**	16	5 59	36	9 19	48	3 04	80
23	165 16.5	54.6	61 03.9	36	52.1	29	**58**	14	6 00	39	8 59	45	23	85
24	180 16.7	+6 53.7	75 26.5	36	−26 54.9	28	**60 S**	5 13	6 01	6 43	8 34	39	3 48	90

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.2		Mag: −2.9		Mag: +0.4	
	1ʰ 07ᵐ.4	PMG: 11ʰ 13ᵐ		PMG: 5ʰ 34ᵐ		PMG: 1ʰ 34ᵐ		PMG: 22ʰ 37ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	343 05.8	191 58.4	+13 04.7	276 29.5	+20 25.4	336 26.9	+1 08.9	19 49.8	−15 55.7
1	358 08.2	206 57.8	03.7	291 30.6	25.7	351 29.6	08.8	34 52.4	55.8
2	13 10.7	221 57.3	02.7	306 31.7	25.9	6 32.3	08.7	49 55.0	55.8
3	28 13.2	236 56.8	01.7	321 32.8	26.2	21 35.1	08.6	64 57.7	55.9
4	43 15.6	251 56.2	+13 00.7	336 33.9	26.4	36 37.8	08.5	80 00.3	55.9
5	58 18.1	266 55.7	+12 59.6	351 35.0	+20 26.7	51 40.5	+1 08.3	95 02.9	−15 56.0
6	73 20.6	281 55.2	+12 58.6	6 36.1	+20 26.9	66 43.2	+1 08.2	110 05.5	−15 56.1
7	88 23.0	296 54.7	57.6	21 37.2	27.2	81 45.9	08.1	125 08.2	56.1
8	103 25.5	311 54.1	56.6	36 38.3	27.4	96 48.6	08.0	140 10.8	56.2
9	118 28.0	326 53.6	55.5	51 39.4	27.7	111 51.3	07.9	155 13.4	56.2
10	133 30.4	341 53.1	54.5	66 40.5	27.9	126 54.0	07.8	170 16.1	56.3
11	148 32.9	356 52.6	+12 53.5	81 41.6	+20 28.2	141 56.8	+1 07.7	185 18.7	−15 56.3
12	163 35.3	11 52.0	+12 52.4	96 42.7	+20 28.4	156 59.5	+1 07.5	200 21.3	−15 56.4
13	178 37.8	26 51.5	51.4	111 43.8	28.7	172 02.2	07.4	215 23.9	56.4
14	193 40.3	41 51.0	50.4	126 44.9	28.9	187 04.9	07.3	230 26.6	56.5
15	208 42.7	56 50.5	49.3	141 46.0	29.2	202 07.6	07.2	245 29.2	56.5
16	223 45.2	71 49.9	48.3	156 47.1	29.4	217 10.3	07.1	260 31.8	56.6
17	238 47.7	86 49.4	+12 47.3	171 48.2	+20 29.7	232 13.0	+1 07.0	275 34.4	−15 56.7
18	253 50.1	101 48.9	+12 46.2	186 49.3	+20 29.9	247 15.8	+1 06.8	290 37.1	−15 56.7
19	268 52.6	116 48.4	45.2	201 50.4	30.1	262 18.5	06.7	305 39.7	56.8
20	283 55.1	131 47.9	44.2	216 51.5	30.4	277 21.2	06.6	320 42.3	56.8
21	298 57.5	146 47.3	43.1	231 52.6	30.6	292 23.9	06.5	335 45.0	56.9
22	314 00.0	161 46.8	42.1	246 53.7	30.9	307 26.6	06.4	350 47.6	56.9
23	329 02.5	176 46.3	41.1	261 54.9	31.1	322 29.3	06.3	5 50.2	57.0
24	344 04.9	191 45.8	+12 40.0	276 56.0	+20 31.4	337 32.0	+1 06.2	20 52.8	−15 57.0
Dif	—	−5	−10	+11	+2	+27	−1	+26	−1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9 PMG: 11h 58m.7		Edad: 8d.7 SD: 16′.2 PMG: 19h 48m		PHE: 4h: 59′.6; 12h: 59′.7; 20h: 59′.8 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	180 16.7	+6 53.7	75 26.5	36	−26 54.9	25	**60 N**	18 52	19 36	20 31	17 58	39	21 40	93
1	195 16.9	52.8	89 49.1	35	57.4	24	**58**	48	29	20	26	45	22 12	87
2	210 17.1	51.9	104 11.6	34	−26 59.8	21	**56**	44	23	11	17 02	49	36	83
3	225 17.3	50.9	118 34.0	34	−27 01.9	20	**54**	41	18	20 03	16 42	51	22 55	81
4	240 17.6	50.0	132 56.4	33	03.9	18	**52**	38	13	19 55	26	53	23 12	78
5	255 17.8	+6 49.1	147 18.7	33	−27 05.7	16	**50**	18 36	19 09	19 49	16 12	54	23 26	77
6	270 18.0	+6 48.1	161 41.0	32	−27 07.3	15	**45**	18 30	19 00	19 36	15 43	56	23 55	74
7	285 18.2	47.2	176 03.2	32	08.8	12	**40**	25	18 53	26	20	58	** **	**
8	300 18.4	46.3	190 25.4	32	10.0	10	**35**	21	47	17	15 01	60	** **	**
9	315 18.6	45.4	204 47.6	31	11.0	9	**30**	18	42	10	14 45	60	** **	**
10	330 18.8	44.4	219 09.7	31	11.9	6	**20**	12	34	19 00	14 18	62	0 16	63
11	345 19.0	+6 43.5	233 31.8	31	−27 12.5	5	**10 N**	18 07	18 28	18 53	13 55	62	0 39	63
12	0 19.2	+6 42.6	247 53.9	31	−27 13.0	2	**0**	18 02	18 23	18 47	13 33	64	1 00	63
13	15 19.4	41.7	262 16.0	31	13.2	1	**10 S**	17 57	18	43	13 11	65	22	63
14	30 19.7	40.7	276 38.0	30	13.3	1	**20**	53	15	40	12 48	65	1 45	63
15	45 19.9	39.8	291 00.0	30	13.2	3	**30**	47	11	39	21	66	2 11	63
16	60 20.1	38.9	305 21.9	29	12.9	6	**35**	44	09	39	12 05	67	27	63
17	75 20.3	+6 37.9	319 43.9	30	−27 12.3	7	**40**	17 41	18 08	18 39	11 47	67	2 45	63
18	90 20.5	+6 37.0	334 05.8	29	−27 11.6	9	**45**	17 37	18 06	18 40	11 24	69	3 08	62
19	105 20.7	36.1	348 27.8	30	10.7	11	**50**	32	04	42	10 56	70	36	62
20	120 20.9	35.2	2 49.7	29	09.6	12	**52**	30	04	43	42	70	3 50	61
21	135 21.1	34.2	17 11.6	29	08.4	15	**54**	28	03	44	26	71	4 06	61
22	150 21.3	33.3	31 33.5	29	06.9	17	**56**	25	02	45	10 07	72	24	61
23	165 21.5	32.4	45 55.4	29	05.2	19	**58**	22	02	47	9 44	73	4 48	59
24	180 21.8	+6 31.4	60 17.3	29	−27 03.3		**60 S**	17 19	18 01	18 49	9 13	76	5 18	58

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 1h 03m.5	Mag: −3.9 PMG: 11h 13m		Mag: −0.2 PMG: 5h 32m		Mag: −2.9 PMG: 1h 30m		Mag: +0.4 PMG: 22h 33m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	344 04.9	191 45.8	+12 40.0	276 56.0	+20 31.4	337 32.0	+1 06.2	20 52.8	−15 57.0
1	359 07.4	206 45.3	39.0	291 57.1	31.6	352 34.8	06.0	35 55.5	57.1
2	14 09.8	221 44.7	38.0	306 58.2	31.9	7 37.5	05.9	50 58.1	57.1
3	29 12.3	236 44.2	36.9	321 59.3	32.1	22 40.2	05.8	66 00.7	57.2
4	44 14.8	251 43.7	35.9	337 00.4	32.3	37 42.9	05.7	81 03.4	57.2
5	59 17.2	266 43.2	+12 34.8	352 01.5	+20 32.6	52 45.6	+1 05.6	96 06.0	−15 57.3
6	74 19.7	281 42.7	+12 33.8	7 02.6	+20 32.8	67 48.4	+1 05.5	111 08.6	−15 57.4
7	89 22.2	296 42.1	32.8	22 03.7	33.1	82 51.1	05.3	126 11.2	57.4
8	104 24.6	311 41.6	31.7	37 04.8	33.3	97 53.8	05.2	141 13.9	57.5
9	119 27.1	326 41.1	30.7	52 05.9	33.6	112 56.5	05.1	156 16.5	57.5
10	134 29.6	341 40.6	29.6	67 07.1	33.8	127 59.2	05.0	171 19.1	57.6
11	149 32.0	356 40.1	+12 28.6	82 08.2	+20 34.0	143 01.9	+1 04.9	186 21.7	−15 57.6
12	164 34.5	11 39.6	+12 27.6	97 09.3	+20 34.3	158 04.7	+1 04.8	201 24.4	−15 57.7
13	179 37.0	26 39.0	26.5	112 10.4	34.5	173 07.4	04.6	216 27.0	57.7
14	194 39.4	41 38.5	25.5	127 11.5	34.8	188 10.1	04.5	231 29.6	57.8
15	209 41.9	56 38.0	24.4	142 12.6	35.0	203 12.8	04.4	246 32.2	57.8
16	224 44.3	71 37.5	23.4	157 13.7	35.2	218 15.5	04.3	261 34.9	57.9
17	239 46.8	86 37.0	+12 22.3	172 14.9	+20 35.5	233 18.3	+1 04.2	276 37.5	−15 57.9
18	254 49.3	101 36.5	+12 21.3	187 16.0	+20 35.7	248 21.0	+1 04.0	291 40.1	−15 58.0
19	269 51.7	116 36.0	20.2	202 17.1	36.0	263 23.7	03.9	306 42.7	58.0
20	284 54.2	131 35.5	19.2	217 18.2	36.2	278 26.4	03.8	321 45.4	58.1
21	299 56.7	146 34.9	18.1	232 19.3	36.4	293 29.1	03.7	336 48.0	58.1
22	314 59.1	161 34.4	17.1	247 20.4	36.7	308 31.9	03.6	351 50.6	58.2
23	330 01.6	176 33.9	16.0	262 21.6	36.9	323 34.6	03.5	6 53.3	58.3
24	345 04.1	191 33.4	+12 15.0	277 22.7	+20 37.2	338 37.3	+1 03.3	21 55.9	−15 58.3
Dif	—	−5	−10	+11	+2	+27	−1	+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 9.ᵈ7		PHE	4ʰ: 59′.9									
	PMG: 11ʰ 58.ᵐ4				SD: 16′.3			12ʰ: 60′.0									
					PMG: 20ʰ 52ᵐ			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	180	21.8	+6	31.4	60	17.3	−27	03.3		**60 N**	3 27	4 23	5 06	18 37	17	23 13	110
1	195	22.0		30.5	74	39.2 29	−27	01.2	21	**58**	38	29	10	18 11	25	39	102
2	210	22.2		29.6	89	01.2 30	−26	59.0	22	**56**	47	35	14	17 51	30	23 59	97
3	225	22.4		28.6	103	23.1 29		56.5	25	**54**	3 55	40	17	33	34	** **	**
4	240	22.6		27.7	117	45.0 29		53.9	26	**52**	4 02	45	20	19	37	** **	**
5	255	22.8	+6	26.8	132	07.0 30	−26	51.0	29	**50**	4 09	4 49	5 22	17 06	39	** **	**
6	270	23.0	+6	25.9	146	29.0 30	−26	48.0	30	**45**	4 22	4 58	5 28	16 39	45	** **	**
7	285	23.2		24.9	160	50.9 29		44.7	33	**40**	32	5 05	32	18	48	0 17	72
8	300	23.5		24.0	175	13.0 31		41.3	34	**35**	40	11	36	16 01	50	36	70
9	315	23.7		23.1	189	35.0 30		37.7	36	**30**	47	15	40	15 45	53	0 52	69
10	330	23.9		22.1	203	57.1 31		33.9	38	**20**	4 57	23	45	15 20	56	1 19	66
11	345	24.1	+6	21.2	218	19.1 30	−26	29.9	40	**10 N**	5 05	5 29	5 51	14 57	59	1 42	65
12	0	24.3	+6	20.3	232	41.3 32	−26	25.7	42	**0**	5 10	5 34	5 55	14 37	61	2 03	63
13	15	24.5		19.3	247	03.4 31		21.3	44	**10 S**	14	39	6 00	14 16	64	25	61
14	30	24.7		18.4	261	25.6 32		16.7	46	**20**	17	42	04	13 53	68	2 48	59
15	45	24.9		17.5	275	47.8 32		11.9	48	**30**	18	46	10	27	71	3 14	57
16	60	25.2		16.5	290	10.1 33		07.0	49	**35**	18	47	12	13 12	73	30	55
17	75	25.4	+6	15.6	304	32.4 33	−26	01.8	52	**40**	5 17	5 49	6 16	12 54	75	3 48	53
18	90	25.6	+6	14.7	318	54.8 34	−25	56.5	53	**45**	5 16	5 50	6 20	12 33	78	4 10	50
19	105	25.8		13.7	333	17.2 34		51.0	55	**50**	14	52	24	12 06	82	38	46
20	120	26.0		12.8	347	39.7 35		45.3	57	**52**	13	52	26	11 52	85	4 51	45
21	135	26.2		11.9	2	02.2 35		39.4	59	**54**	12	53	28	37	88	5 07	42
22	150	26.4		10.9	16	24.7 35		33.3	61	**56**	11	54	31	11 19	91	25	39
23	165	26.6		10.0	30	47.4 37		27.1	62	**58**	09	54	34	10 57	96	5 47	34
24	180	26.9	+6	09.1	45	10.0 36	−25	20.7	64	**60 S**	5 07	5 55	6 37	10 29	103	6 16	27

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.9			Mag: +0.4		
	0ʰ 59.ᵐ6		PMG: 11ʰ 14ᵐ			PMG: 5ʰ 30ᵐ			PMG: 1ʰ 25ᵐ			PMG: 22ʰ 28ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	345	04.1	191	33.4	+12 15.0	277	22.7	+20 37.2	338	37.3	+1 03.3	21	55.9	−15 58.3
1	0	06.5	206	32.9	13.9	292	23.8	37.4	353	40.0	03.2	36	58.5	58.4
2	15	09.0	221	32.4	12.9	307	24.9	37.6	8	42.7	03.1	52	01.1	58.4
3	30	11.5	236	31.9	11.8	322	26.0	37.9	23	45.5	03.0	67	03.8	58.5
4	45	13.9	251	31.4	10.8	337	27.2	38.1	38	48.2	02.9	82	06.4	58.5
5	60	16.4	266	30.9	+12 09.7	352	28.3	+20 38.3	53	50.9	+1 02.8	97	09.0	−15 58.6
6	75	18.8	281	30.3	+12 08.7	7	29.4	+20 38.6	68	53.6	+1 02.6	112	11.6	−15 58.6
7	90	21.3	296	29.8	07.6	22	30.5	38.8	83	56.3	02.5	127	14.3	58.7
8	105	23.8	311	29.3	06.5	37	31.6	39.1	98	59.1	02.4	142	16.9	58.7
9	120	26.2	326	28.8	05.5	52	32.8	39.3	114	01.8	02.3	157	19.5	58.8
10	135	28.7	341	28.3	04.4	67	33.9	39.5	129	04.5	02.2	172	22.1	58.8
11	150	31.2	356	27.8	+12 03.4	82	35.0	+20 39.8	144	07.2	+1 02.0	187	24.8	−15 58.9
12	165	33.6	11	27.3	+12 02.3	97	36.1	+20 40.0	159	10.0	+1 01.9	202	27.4	−15 58.9
13	180	36.1	26	26.8	01.3	112	37.3	40.2	174	12.7	01.8	217	30.0	59.0
14	195	38.6	41	26.3	+12 00.2	127	38.4	40.5	189	15.4	01.7	232	32.6	59.0
15	210	41.0	56	25.8	+11 59.1	142	39.5	40.7	204	18.1	01.6	247	35.2	59.1
16	225	43.5	71	25.3	58.1	157	40.7	40.9	219	20.9	01.4	262	37.9	59.2
17	240	45.9	86	24.8	+11 57.0	172	41.8	+20 41.2	234	23.6	+1 01.3	277	40.5	−15 59.2
18	255	48.4	101	24.3	+11 56.0	187	42.9	+20 41.4	249	26.3	+1 01.2	292	43.1	−15 59.3
19	270	50.9	116	23.8	54.9	202	44.0	41.6	264	29.0	01.1	307	45.7	59.3
20	285	53.3	131	23.3	53.8	217	45.2	41.9	279	31.8	01.0	322	48.4	59.4
21	300	55.8	146	22.8	52.8	232	46.3	42.1	294	34.5	00.9	337	51.0	59.4
22	315	58.3	161	22.3	51.7	247	47.4	42.3	309	37.2	00.7	352	53.6	59.5
23	331	00.7	176	21.8	50.6	262	48.6	42.6	324	39.9	00.6	7	56.2	59.5
24	346	03.2	191	21.2	+11 49.6	277	49.7	+20 42.8	339	42.7	+1 00.5	22	58.9	−15 59.6
Dif	—			−5	−11		+11	+2		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 10^{d}.7		PHE	4^{h}: 60′.1									
	PMG: 11^{h} 58^{m}.0				SD: 16′.4			12^{h}: 60′.2									
					PMG: 21^{h} 53^{m}			20^{h}: 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	180	26.9	+6	09.1	45	10.0	−25	20.7		**60 N**	18 46	19 29	20 24	18 54	8	** **	**
1	195	27.1		08.1	59	32.8 38		14.0	67	**58**	42	23	14	36	14	** **	**
2	210	27.3		07.2	73	55.6 38		07.3	67	**56**	39	17	20 05	21	18	** **	**
3	225	27.5		06.3	88	18.5 39	−25	00.3	70	**54**	36	13	19 57	18 07	23	0 16	92
4	240	27.7		05.3	102	41.4 39	−24	53.1	72	**52**	34	08	50	17 56	26	30	89
5	255	27.9	+6	04.4	117	04.4 40	−24	45.8	73	**50**	18 31	19 04	19 44	17 45	29	0 43	86
6	270	28.1	+6	03.5	131	27.5 41	−24	38.3	75	**45**	18 26	18 56	19 32	17 24	34	1 09	81
7	285	28.4		02.5	145	50.6 41		30.7	76	**40**	22	50	22	17 06	39	29	77
8	300	28.6		01.6	160	13.8 42		22.8	79	**35**	19	44	14	16 51	42	1 46	74
9	315	28.8	+6	00.7	174	37.1 43		14.8	80	**30**	15	40	19 08	38	45	2 01	71
10	330	29.0	+5	59.7	189	00.5 44	−24	06.7	81	**20**	10	32	18 58	16 16	50	25	68
11	345	29.2	+5	58.8	203	23.9 44	−23	58.3	84	**10 N**	18 06	18 27	18 51	15 56	55	2 47	63
12	0	29.4	+5	57.8	217	47.5 46	−23	49.8	85	**0**	18 01	18 22	18 46	15 38	59	3 06	61
13	15	29.6		56.9	232	11.1 46		41.1	87	**10 S**	17 57	18	43	20	62	26	57
14	30	29.9		56.0	246	34.7 46		32.3	88	**20**	53	15	41	15 01	66	3 47	53
15	45	30.1		55.0	260	58.5 48		23.3	90	**30**	48	12	40	14 38	71	4 11	49
16	60	30.3		54.1	275	22.4 49		14.1	92	**35**	46	11	40	25	74	25	46
17	75	30.5	+5	53.2	289	46.3 49	−23	04.8	93	**40**	17 43	18 10	18 41	14 09	78	4 41	43
18	90	30.7	+5	52.2	304	10.3 50	−22	55.4	94	**45**	17 39	18 08	18 42	13 51	82	5 00	40
19	105	30.9		51.3	318	34.4 51		45.7	97	**50**	35	07	45	28	88	24	34
20	120	31.2		50.4	332	58.6 52		36.0	97	**52**	33	07	46	17	91	36	31
21	135	31.4		49.4	347	22.9 53		26.0	100	**54**	31	06	47	13 05	94	5 49	28
22	150	31.6		48.5	1	47.3 54		16.0	100	**56**	29	06	49	12 50	98	6 04	24
23	165	31.8		47.5	16	11.8 55	−22	05.7	103	**58**	26	06	51	33	104	21	19
24	180	32.0	+5	46.6	30	36.3 55	−21	55.4	103	**60 S**	17 24	18 05	18 54	12 12	111	6 43	12

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.9			Mag: +0.4		
	0^{h} 55^{m}.6		PMG: 11^{h} 15^{m}			PMG: 5^{h} 28^{m}			PMG: 1^{h} 21^{m}			PMG: 22^{h} 24^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	346	03.2	191	21.2	+11 49.6	277	49.7	+20 42.8	339	42.7	+1 00.5	22	58.9	−15 59.6
1	1	05.7	206	20.7	48.5	292	50.8	43.0	354	45.4	00.4	38	01.5	59.6
2	16	08.1	221	20.2	47.4	307	51.9	43.3	9	48.1	00.3	53	04.1	59.7
3	31	10.6	236	19.7	46.4	322	53.1	43.5	24	50.8	+1 00.1	68	06.7	59.7
4	46	13.1	251	19.2	45.3	337	54.2	43.7	39	53.6	+1 00.0	83	09.4	59.8
5	61	15.5	266	18.7	+11 44.2	352	55.3	+20 44.0	54	56.3	+0 59.9	98	12.0	−15 59.8
6	76	18.0	281	18.2	+11 43.2	7	56.5	+20 44.2	69	59.0	+0 59.8	113	14.6	−15 59.9
7	91	20.4	296	17.7	42.1	22	57.6	44.4	85	01.7	59.7	128	17.2	−15 59.9
8	106	22.9	311	17.2	41.0	37	58.7	44.7	100	04.5	59.5	143	19.8	−16 00.0
9	121	25.4	326	16.7	40.0	52	59.9	44.9	115	07.2	59.4	158	22.5	−16 00.0
10	136	27.8	341	16.2	38.9	68	01.0	45.1	130	09.9	59.3	173	25.1	−16 00.1
11	151	30.3	356	15.7	+11 37.8	83	02.2	+20 45.4	145	12.6	+0 59.2	188	27.7	−16 00.1
12	166	32.8	11	15.2	+11 36.8	98	03.3	+20 45.6	160	15.4	+0 59.1	203	30.3	−16 00.2
13	181	35.2	26	14.8	35.7	113	04.4	45.8	175	18.1	58.9	218	33.0	00.2
14	196	37.7	41	14.3	34.6	128	05.6	46.1	190	20.8	58.8	233	35.6	00.3
15	211	40.2	56	13.8	33.5	143	06.7	46.3	205	23.5	58.7	248	38.2	00.3
16	226	42.6	71	13.3	32.5	158	07.8	46.5	220	26.3	58.6	263	40.8	00.4
17	241	45.1	86	12.8	+11 31.4	173	09.0	+20 46.7	235	29.0	+0 58.5	278	43.4	−16 00.5
18	256	47.6	101	12.3	+11 30.3	188	10.1	+20 47.0	250	31.7	+0 58.3	293	46.1	−16 00.5
19	271	50.0	116	11.8	29.2	203	11.3	47.2	265	34.5	58.2	308	48.7	00.6
20	286	52.5	131	11.3	28.2	218	12.4	47.4	280	37.2	58.1	323	51.3	00.6
21	301	54.9	146	10.8	27.1	233	13.6	47.7	295	39.9	58.0	338	53.9	00.7
22	316	57.4	161	10.3	26.0	248	14.7	47.9	310	42.6	57.9	353	56.6	00.7
23	331	59.9	176	09.8	24.9	263	15.8	48.1	325	45.4	57.7	8	59.2	00.8
24	347	02.3	191	09.3	+11 23.9	278	17.0	+20 48.3	340	48.1	+0 57.6	24	01.8	−16 00.8
Dif	—			−5	−11		+11	+2		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 11^{d}.7		PHE	4^{h}: 60′.1									
	PMG: 11^{h} 57^{m}.7				SD: 16′.4			12^{h}: 60′.1									
					PMG: 22^{h} 50^{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	180	32.0	+5	46.6	30	36.3	−21	55.4		**60 N**	3 33	4 28	5 11	19 02	4	1 03	111
1	195	32.2		45.7	45	01.0	57	44.8	106	**58**	43	34	15	18 50	8	21	104
2	210	32.4		44.7	59	25.7	57	34.2	106	**56**	3 52	39	18	39	13	36	99
3	225	32.7		43.8	73	50.6	59	23.4	108	**54**	4 00	44	20	30	16	48	95
4	240	32.9		42.8	88	15.5	59	12.4	110	**52**	06	48	23	22	19	1 59	92
5	255	33.1	+5	41.9	102	40.6	61	−21	01.4 110	**50**	4 12	4 52	5 25	18 14	22	2 09	89
6	270	33.3	+5	41.0	117	05.7	61	−20	50.1 113	**45**	4 25	5 00	5 30	17 58	27	2 30	82
7	285	33.5		40.0	131	30.9	62		38.8 113	**40**	34	07	34	45	31	2 46	78
8	300	33.7		39.1	145	56.2	63		27.3 115	**35**	42	12	38	33	36	3 00	74
9	315	34.0		38.1	160	21.7	65		15.7 116	**30**	48	17	41	23	39	12	71
10	330	34.2		37.2	174	47.2	65	−20	04.0 117	**20**	4 58	24	46	17 06	45	33	65
11	345	34.4	+5	36.3	189	12.8	66	−19	52.1 119	**10 N**	5 05	5 29	5 50	16 51	49	3 50	61
12	0	34.6	+5	35.3	203	38.5	67	−19	40.1 120	**0**	5 10	5 34	5 54	16 37	54	4 07	56
13	15	34.8		34.4	218	04.3	68		28.0 121	**10 S**	13	37	5 58	22	59	23	52
14	30	35.0		33.4	232	30.2	69		15.8 122	**20**	15	40	6 03	16 07	64	4 40	47
15	45	35.3		32.5	246	56.2	70	−19	03.4 124	**30**	15	43	07	15 49	70	5 00	42
16	60	35.5		31.6	261	22.3	71	−18	50.9 125	**35**	15	44	10	39	73	11	39
17	75	35.7	+5	30.6	275	48.6	73	−18	38.4 125	**40**	5 14	5 45	6 13	15 27	77	5 24	35
18	90	35.9	+5	29.7	290	14.9	73	−18	25.7 127	**45**	5 13	5 47	6 16	15 13	82	5 40	30
19	105	36.1		28.7	304	41.3	74	−18	12.9 128	**50**	10	48	20	14 56	87	5 58	25
20	120	36.3		27.8	319	07.8	75	−17	59.9 130	**52**	09	48	22	48	90	6 07	22
21	135	36.6		26.9	333	34.4	76		46.9 130	**54**	07	48	23	39	93	17	19
22	150	36.8		25.9	348	01.1	77		33.8 131	**56**	06	49	26	28	98	28	15
23	165	37.0		25.0	2	27.8	77		20.6 132	**58**	04	49	28	17	102	40	12
24	180	37.2	+5	24.0	16	54.7	79	−17	07.2 134	**60 S**	5 01	5 49	6 31	14 03	107	6 55	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.9			Mag: +0.4		
	0^{h} 51^{m}.7		PMG: 11^{h} 16^{m}			PMG: 5^{h} 26^{m}			PMG: 1^{h} 17^{m}			PMG: 22^{h} 20^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	347	02.3	191	09.3	+11 23.9	278	17.0	+20 48.3	340	48.1	+0 57.6	24	01.8	−16 00.8
1	2	04.8	206	08.8	22.8	293	18.1	48.6	355	50.8	57.5	39	04.4	00.9
2	17	07.3	221	08.3	21.7	308	19.3	48.8	10	53.6	57.4	54	07.0	00.9
3	32	09.7	236	07.8	20.6	323	20.4	49.0	25	56.3	57.2	69	09.7	01.0
4	47	12.2	251	07.3	19.5	338	21.6	49.3	40	59.0	57.1	84	12.3	01.0
5	62	14.7	266	06.8	+11 18.5	353	22.7	+20 49.5	56	01.8	+0 57.0	99	14.9	−16 01.1
6	77	17.1	281	06.3	+11 17.4	8	23.8	+20 49.7	71	04.5	+0 56.9	114	17.5	−16 01.1
7	92	19.6	296	05.9	16.3	23	25.0	49.9	86	07.2	56.8	129	20.1	01.2
8	107	22.1	311	05.4	15.2	38	26.1	50.2	101	09.9	56.6	144	22.8	01.2
9	122	24.5	326	04.9	14.1	53	27.3	50.4	116	12.7	56.5	159	25.4	01.3
10	137	27.0	341	04.4	13.0	68	28.4	50.6	131	15.4	56.4	174	28.0	01.3
11	152	29.4	356	03.9	+11 12.0	83	29.6	+20 50.8	146	18.1	+0 56.3	189	30.6	−16 01.4
12	167	31.9	11	03.4	+11 10.9	98	30.7	+20 51.1	161	20.9	+0 56.2	204	33.2	−16 01.4
13	182	34.4	26	02.9	09.8	113	31.9	51.3	176	23.6	56.0	219	35.9	01.5
14	197	36.8	41	02.4	08.7	128	33.0	51.5	191	26.3	55.9	234	38.5	01.5
15	212	39.3	56	01.9	07.6	143	34.2	51.7	206	29.1	55.8	249	41.1	01.6
16	227	41.8	71	01.4	06.5	158	35.3	52.0	221	31.8	55.7	264	43.7	01.6
17	242	44.2	86	01.0	+11 05.4	173	36.5	+20 52.2	236	34.5	+0 55.5	279	46.3	−16 01.7
18	257	46.7	101	00.5	+11 04.3	188	37.6	+20 52.4	251	37.3	+0 55.4	294	49.0	−16 01.7
19	272	49.2	116	00.0	03.3	203	38.8	52.6	266	40.0	55.3	309	51.6	01.8
20	287	51.6	130	59.5	02.2	218	40.0	52.9	281	42.7	55.2	324	54.2	01.8
21	302	54.1	145	59.0	+11 01.1	233	41.1	53.1	296	45.5	55.1	339	56.8	01.9
22	317	56.5	160	58.5	+11 00.0	248	42.3	53.3	311	48.2	54.9	354	59.4	01.9
23	332	59.0	175	58.0	+10 58.9	263	43.4	53.5	326	50.9	54.8	10	02.1	02.0
24	348	01.5	190	57.5	+10 57.8	278	44.6	+20 53.7	341	53.7	+0 54.7	25	04.7	−16 02.0
Dif	—			−5	−11		+11	+2		+27	−1		+26	−1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 12^{d}.7		PHE	4^{h}: 59′.9									
	PMG: 11^{h} 57^{m}.3				SD: 16′.3			12^{h}: 59′.8									
					PMG: 23^{h} 43^{m}			20^{h}: 59′.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	180	37.2	+5	24.0	16	54.7	−17	07.2		**60 N**	18 40	19 23	20 17	19 06	2	2 54	105
1	195	37.4		23.1	31	21.7 80	−16	53.8	134	**58**	37	17	20 07	18 58	6	3 05	100
2	210	37.7		22.2	45	48.8 81		40.3	135	**56**	34	12	19 59	52	9	15	96
3	225	37.9		21.2	60	16.0 82		26.6	137	**54**	31	07	51	46	12	23	93
4	240	38.1		20.3	74	43.3 83	−16	12.9	137	**52**	29	03	45	41	15	31	89
5	255	38.3	+5	19.3	89	10.6 83	−15	59.1	138	**50**	18 27	19 00	19 39	18 36	17	3 38	86
6	270	38.5	+5	18.4	103	38.1 85	−15	45.2	139	**45**	18 23	18 52	19 28	18 25	23	3 52	80
7	285	38.7		17.4	118	05.7 86		31.2	140	**40**	19	46	19	16	28	4 04	75
8	300	39.0		16.5	132	33.3 86		17.2	140	**35**	16	41	11	09	31	14	71
9	315	39.2		15.6	147	01.1 88	−15	03.0	142	**30**	13	37	19 05	18 02	35	23	68
10	330	39.4		14.6	161	28.9 88	−14	48.8	142	**20**	08	30	18 56	17 51	40	38	62
11	345	39.6	+5	13.7	175	56.9 90	−14	34.5	143	**10 N**	18 04	18 25	18 50	17 40	46	4 51	57
12	0	39.8	+5	12.7	190	24.9 90	−14	20.1	144	**0**	18 01	18 21	18 45	17 31	50	5 03	52
13	15	40.1		11.8	204	53.0 91	−14	05.6	145	**10 S**	17 57	18	43	21	55	15	47
14	30	40.3		10.8	219	21.2 92	−13	51.1	145	**20**	53	15	41	17 11	60	27	43
15	45	40.5		09.9	233	49.5 93		36.4	147	**30**	49	13	41	16 59	66	42	36
16	60	40.7		08.9	248	17.9 94		21.8	146	**35**	47	12	42	52	70	50	33
17	75	40.9	+5	08.0	262	46.4 95	−13	07.0	148	**40**	17 44	18 11	18 43	16 44	74	5 59	30
18	90	41.1	+5	07.1	277	14.9 95	−12	52.2	148	**45**	17 41	18 11	18 45	16 35	78	6 10	25
19	105	41.4		06.1	291	43.6 97		37.3	149	**50**	38	10	48	23	85	23	20
20	120	41.6		05.2	306	12.3 97		22.4	149	**52**	36	10	49	18	87	29	17
21	135	41.8		04.2	320	41.1 98	−12	07.3	151	**54**	35	10	51	12	91	36	14
22	150	42.0		03.3	335	10.0 99	−11	52.3	150	**56**	33	10	53	16 06	94	43	11
23	165	42.2		02.3	349	39.0 100		37.2	151	**58**	31	10	55	15 59	97	6 52	7
24	180	42.5	+5	01.4	4	08.1 101	−11	22.0	152	**60 S**	17 28	18 10	18 58	15 50	102	7 01	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.2			Mag: −2.9			Mag: +0.4		
	0^{h} 47^{m}.8		PMG: 11^{h} 17^{m}			PMG: 5^{h} 25^{m}			PMG: 1^{h} 12^{m}			PMG: 22^{h} 16^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	348	01.5	190	57.5	+10 57.8	278	44.6	+20 53.7	341	53.7	+0 54.7	25	04.7	−16 02.0
1	3	03.9	205	57.1	56.7	293	45.7	54.0	356	56.4	54.6	40	07.3	02.1
2	18	06.4	220	56.6	55.6	308	46.9	54.2	11	59.1	54.4	55	09.9	02.1
3	33	08.9	235	56.1	54.5	323	48.0	54.4	27	01.9	54.3	70	12.5	02.2
4	48	11.3	250	55.6	53.4	338	49.2	54.6	42	04.6	54.2	85	15.2	02.2
5	63	13.8	265	55.1	+10 52.3	353	50.4	+20 54.9	57	07.3	+0 54.1	100	17.8	−16 02.3
6	78	16.3	280	54.6	+10 51.2	8	51.5	+20 55.1	72	10.1	+0 53.9	115	20.4	−16 02.3
7	93	18.7	295	54.2	50.2	23	52.7	55.3	87	12.8	53.8	130	23.0	02.4
8	108	21.2	310	53.7	49.1	38	53.8	55.5	102	15.5	53.7	145	25.6	02.4
9	123	23.7	325	53.2	48.0	53	55.0	55.7	117	18.3	53.6	160	28.3	02.5
10	138	26.1	340	52.7	46.9	68	56.2	56.0	132	21.0	53.5	175	30.9	02.5
11	153	28.6	355	52.2	+10 45.8	83	57.3	+20 56.2	147	23.7	+0 53.3	190	33.5	−16 02.6
12	168	31.0	10	51.7	+10 44.7	98	58.5	+20 56.4	162	26.5	+0 53.2	205	36.1	−16 02.6
13	183	33.5	25	51.3	43.6	113	59.6	56.6	177	29.2	53.1	220	38.7	02.7
14	198	36.0	40	50.8	42.5	129	00.8	56.8	192	32.0	53.0	235	41.3	02.7
15	213	38.4	55	50.3	41.4	144	02.0	57.1	207	34.7	52.8	250	44.0	02.8
16	228	40.9	70	49.8	40.3	159	03.1	57.3	222	37.4	52.7	265	46.6	02.8
17	243	43.4	85	49.3	+10 39.2	174	04.3	+20 57.5	237	40.2	+0 52.6	280	49.2	−16 02.9
18	258	45.8	100	48.9	+10 38.1	189	05.5	+20 57.7	252	42.9	+0 52.5	295	51.8	−16 02.9
19	273	48.3	115	48.4	37.0	204	06.6	57.9	267	45.6	52.3	310	54.4	03.0
20	288	50.8	130	47.9	35.9	219	07.8	58.2	282	48.4	52.2	325	57.0	03.0
21	303	53.2	145	47.4	34.8	234	09.0	58.4	297	51.1	52.1	340	59.7	03.1
22	318	55.7	160	46.9	33.7	249	10.1	58.6	312	53.8	52.0	356	02.3	03.1
23	333	58.1	175	46.5	32.6	264	11.3	58.8	327	56.6	51.9	11	04.9	03.2
24	349	00.6	190	46.0	+10 31.5	279	12.5	+20 59.0	342	59.3	+0 51.7	26	07.5	−16 03.2
Dif	—			−5	−11		+12	+2		+27	−1		+26	−1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 13^{d}.7		PHE	4^{h}: 59′.5								
	PMG: 11^{h} 57^{m}.0				SD: 16′.2			12^{h}: 59′.4								
					PMG: **^{h} **^{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	180	42.5	+5	01.4	4	08.1	−11	22.0	**60 N**	3 39	4 33	5 16	19 08	1	4 39	100
1	195	42.7	+5	00.4	18	37.2 101	−11	06.8 152	**58**	48	38	19	04	5	45	96
2	210	42.9	+4	59.5	33	06.5 103	−10	51.5 153	**56**	3 57	43	22	19 01	8	51	92
3	225	43.1		58.5	47	35.8 103		36.1 154	**54**	4 04	48	24	18 58	11	4 56	88
4	240	43.3		57.6	62	05.2 104		20.8 153	**52**	10	52	26	56	13	5 00	86
5	255	43.6	+4	56.7	76	34.6 104	−10	05.3 155	**50**	4 16	4 55	5 28	18 53	16	5 04	83
6	270	43.8	+4	55.7	91	04.2 106	−9	49.9 154	**45**	4 27	5 03	5 33	18 48	21	5 12	78
7	285	44.0		54.8	105	33.8 106		34.4 155	**40**	36	09	36	44	25	19	73
8	300	44.2		53.8	120	03.5 107		18.8 156	**35**	44	14	39	40	29	25	69
9	315	44.4		52.9	134	33.2 107	−9	03.2 156	**30**	49	18	42	37	32	31	65
10	330	44.7		51.9	149	03.1 109	−8	47.6 156	**20**	4 58	24	46	31	38	40	59
11	345	44.9	+4	51.0	163	33.0 109	−8	32.0 156	**10 N**	5 05	5 29	5 50	18 26	43	5 48	53
12	0	45.1	+4	50.0	178	03.0 110	−8	16.3 157	**0**	5 09	5 33	5 54	18 21	48	5 55	49
13	15	45.3		49.1	192	33.0 110	−8	00.5 158	**10 S**	12	36	5 57	16	53	6 02	44
14	30	45.5		48.1	207	03.1 111	−7	44.8 157	**20**	13	39	6 01	11	58	10	39
15	45	45.8		47.2	221	33.3 112		29.0 158	**30**	13	41	05	05	64	18	34
16	60	46.0		46.2	236	03.6 113	−7	13.2 158	**35**	12	42	07	18 02	67	23	30
17	75	46.2	+4	45.3	250	33.9 113	−6	57.4 158	**40**	5 11	5 42	6 09	17 58	71	6 29	26
18	90	46.4	+4	44.3	265	04.2 113	−6	41.5 159	**45**	5 09	5 43	6 12	17 53	76	6 35	22
19	105	46.6		43.4	279	34.7 115		25.7 158	**50**	06	43	15	48	81	43	17
20	120	46.9		42.4	294	05.2 115	−6	09.8 159	**52**	04	43	17	45	84	46	15
21	135	47.1		41.5	308	35.8 116	−5	53.8 160	**54**	02	43	19	43	86	50	12
22	150	47.3		40.5	323	06.4 116		37.9 159	**56**	5 00	43	20	40	89	54	9
23	165	47.5		39.6	337	37.1 117		22.0 159	**58**	4 58	43	22	36	93	6 59	6
24	180	47.7	+4	38.6	352	07.8 117	−5	06.0 160	**60 S**	4 55	5 43	6 25	17 32	97	7 04	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.3			Mag: −2.9			Mag: +0.4		
	0^{h} 43^{m}.8		PMG: 11^{h} 17^{m}			PMG: 5^{h} 23^{m}			PMG: 1^{h} 08^{m}			PMG: 22^{h} 12^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	349	00.6	190	46.0	+10 31.5	279	12.5	+20 59.0	342	59.3	+0 51.7	26	07.5	−16 03.2
1	4	03.1	205	45.5	30.3	294	13.6	59.2	358	02.1	51.6	41	10.1	03.3
2	19	05.5	220	45.0	29.2	309	14.8	59.5	13	04.8	51.5	56	12.8	03.3
3	34	08.0	235	44.6	28.1	324	16.0	59.7	28	07.5	51.4	71	15.4	03.4
4	49	10.5	250	44.1	27.0	339	17.1	+20 59.9	43	10.3	51.2	86	18.0	03.4
5	64	12.9	265	43.6	+10 25.9	354	18.3	+21 00.1	58	13.0	+0 51.1	101	20.6	−16 03.5
6	79	15.4	280	43.1	+10 24.8	9	19.5	+21 00.3	73	15.7	+0 51.0	116	23.2	−16 03.5
7	94	17.9	295	42.7	23.7	24	20.7	00.5	88	18.5	50.9	131	25.8	03.6
8	109	20.3	310	42.2	22.6	39	21.8	00.8	103	21.2	50.7	146	28.4	03.6
9	124	22.8	325	41.7	21.5	54	23.0	01.0	118	24.0	50.6	161	31.1	03.7
10	139	25.3	340	41.2	20.4	69	24.2	01.2	133	26.7	50.5	176	33.7	03.7
11	154	27.7	355	40.8	+10 19.3	84	25.4	+21 01.4	148	29.4	+0 50.4	191	36.3	−16 03.8
12	169	30.2	10	40.3	+10 18.2	99	26.5	+21 01.6	163	32.2	+0 50.2	206	38.9	−16 03.8
13	184	32.6	25	39.8	17.1	114	27.7	01.8	178	34.9	50.1	221	41.5	03.9
14	199	35.1	40	39.3	15.9	129	28.9	02.1	193	37.7	50.0	236	44.1	03.9
15	214	37.6	55	38.9	14.8	144	30.1	02.3	208	40.4	49.9	251	46.8	04.0
16	229	40.0	70	38.4	13.7	159	31.2	02.5	223	43.1	49.7	266	49.4	04.0
17	244	42.5	85	37.9	+10 12.6	174	32.4	+21 02.7	238	45.9	+0 49.6	281	52.0	−16 04.1
18	259	45.0	100	37.4	+10 11.5	189	33.6	+21 02.9	253	48.6	+0 49.5	296	54.6	−16 04.1
19	274	47.4	115	37.0	10.4	204	34.8	03.1	268	51.4	49.4	311	57.2	04.2
20	289	49.9	130	36.5	09.3	219	36.0	03.3	283	54.1	49.2	326	59.8	04.2
21	304	52.4	145	36.0	08.2	234	37.1	03.5	298	56.8	49.1	342	02.4	04.3
22	319	54.8	160	35.6	07.0	249	38.3	03.8	313	59.6	49.0	357	05.1	04.3
23	334	57.3	175	35.1	05.9	264	39.5	04.0	329	02.3	48.9	12	07.7	04.4
24	349	59.8	190	34.6	+10 04.8	279	40.7	+21 04.2	344	05.1	+0 48.7	27	10.3	−16 04.4
Dif	—			−5	−11		+12	+2		+27	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 14^{d}.7		PHE	4^{h}: 58′.9								
	PMG: 11^{h} 56^{m}.6		SD: 16′.1			12^{h}: 58′.7								
			PMG: 0^{h} 33^{m}			20^{h}: 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	180 47.7	+4 38.6	352 07.8		−5 06.0		**60 N**	18 34	19 16	20 09	19 09	2	6 19	95
1	195 48.0	37.7	6 38.6	118	−4 50.1	159	**58**	31	11	20 00	09	5	21	91
2	210 48.2	36.7	21 09.5	119	34.1	160	**56**	28	06	19 53	09	8	23	88
3	225 48.4	35.8	35 40.4	119	18.1	160	**54**	26	19 02	46	09	11	24	85
4	240 48.6	34.8	50 11.3	119	−4 02.1	160	**52**	24	18 59	40	09	13	26	82
5	255 48.8	+4 33.9	64 42.3	120	−3 46.1	160	**50**	18 23	18 55	19 35	19 09	15	6 27	80
6	270 49.1	+4 32.9	79 13.4	121	−3 30.1	160	**45**	18 19	18 48	19 24	19 09	20	6 30	74
7	285 49.3	32.0	93 44.5	121	−3 14.1	160	**40**	16	43	15	09	24	32	70
8	300 49.5	31.0	108 15.7	122	−2 58.1	160	**35**	13	38	08	09	28	34	66
9	315 49.7	30.1	122 46.9	122	42.1	160	**30**	10	35	19 03	09	31	36	63
10	330 49.9	29.1	137 18.1	122	26.1	160	**20**	06	29	18 54	09	36	39	57
11	345 50.2	+4 28.2	151 49.4	123	−2 10.1	160	**10 N**	18 03	18 24	18 49	19 09	41	6 41	52
12	0 50.4	+4 27.2	166 20.7	123	−1 54.1	160	**0**	18 00	18 21	18 45	19 09	46	6 44	47
13	15 50.6	26.3	180 52.1	124	38.2	159	**10 S**	17 57	18	42	09	51	46	43
14	30 50.8	25.3	195 23.5	124	22.2	160	**20**	54	16	41	09	56	49	37
15	45 51.0	24.4	209 55.0	125	−1 06.2	160	**30**	50	14	42	09	62	52	31
16	60 51.3	23.4	224 26.5	125	−0 50.3	159	**35**	48	14	43	09	65	53	28
17	75 51.5	+4 22.5	238 58.1	126	−0 34.3	160	**40**	17 46	18 13	18 45	19 09	69	6 55	25
18	90 51.7	+4 21.5	253 29.6	125	−0 18.4	159	**45**	17 44	18 13	18 47	19 09	73	6 57	20
19	105 51.9	20.6	268 01.2	126	−0 02.5	159	**50**	41	13	51	09	79	7 00	15
20	120 52.2	19.6	282 32.9	127	+0 13.4	159	**52**	40	13	52	09	81	01	13
21	135 52.4	18.7	297 04.6	127	29.2	158	**54**	38	13	54	09	84	02	10
22	150 52.6	17.7	311 36.3	127	+0 45.1	159	**56**	37	14	18 57	09	87	03	8
23	165 52.8	16.8	326 08.0	127	+1 00.9	158	**58**	35	14	19 00	09	91	05	4
24	180 53.0	+4 15.8	340 39.8	128	+1 16.7	158	**60 S**	17 33	18 14	19 03	19 09	94	7 06	2

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.3		Mag: −2.9		Mag: +0.4	
	0^{h} 39^{m}.9	PMG: 11^{h} 18^{m}		PMG: 5^{h} 21^{m}		PMG: 1^{h} 03^{m}		PMG: 22^{h} 07^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	349 59.8	190 34.6	+10 04.8	279 40.7	+21 04.2	344 05.1	+0 48.7	27 10.3	−16 04.4
1	5 02.2	205 34.1	03.7	294 41.9	04.4	359 07.8	48.6	42 12.9	04.5
2	20 04.7	220 33.7	02.6	309 43.0	04.6	14 10.5	48.5	57 15.5	04.5
3	35 07.1	235 33.2	01.5	324 44.2	04.8	29 13.3	48.4	72 18.1	04.6
4	50 09.6	250 32.7	+10 00.3	339 45.4	05.0	44 16.0	48.2	87 20.8	04.6
5	65 12.1	265 32.3	+9 59.2	354 46.6	+21 05.2	59 18.8	+0 48.1	102 23.4	−16 04.7
6	80 14.5	280 31.8	+9 58.1	9 47.8	+21 05.5	74 21.5	+0 48.0	117 26.0	−16 04.7
7	95 17.0	295 31.3	57.0	24 49.0	05.7	89 24.2	47.9	132 28.6	04.8
8	110 19.5	310 30.9	55.9	39 50.2	05.9	104 27.0	47.7	147 31.2	04.8
9	125 21.9	325 30.4	54.7	54 51.3	06.1	119 29.7	47.6	162 33.8	04.8
10	140 24.4	340 29.9	53.6	69 52.5	06.3	134 32.5	47.5	177 36.4	04.9
11	155 26.9	355 29.5	+9 52.5	84 53.7	+21 06.5	149 35.2	+0 47.4	192 39.0	−16 04.9
12	170 29.3	10 29.0	+9 51.4	99 54.9	+21 06.7	164 38.0	+0 47.2	207 41.7	−16 05.0
13	185 31.8	25 28.5	50.3	114 56.1	06.9	179 40.7	47.1	222 44.3	05.0
14	200 34.2	40 28.1	49.1	129 57.3	07.1	194 43.4	47.0	237 46.9	05.1
15	215 36.7	55 27.6	48.0	144 58.5	07.3	209 46.2	46.9	252 49.5	05.1
16	230 39.2	70 27.1	46.9	159 59.7	07.6	224 48.9	46.7	267 52.1	05.2
17	245 41.6	85 26.7	+9 45.8	175 00.9	+21 07.8	239 51.7	+0 46.6	282 54.7	−16 05.2
18	260 44.1	100 26.2	+9 44.6	190 02.0	+21 08.0	254 54.4	+0 46.5	297 57.3	−16 05.3
19	275 46.6	115 25.7	43.5	205 03.2	08.2	269 57.2	46.3	313 00.0	05.3
20	290 49.0	130 25.3	42.4	220 04.4	08.4	284 59.9	46.2	328 02.6	05.4
21	305 51.5	145 24.8	41.3	235 05.6	08.6	300 02.7	46.1	343 05.2	05.4
22	320 54.0	160 24.3	40.1	250 06.8	08.8	315 05.4	46.0	358 07.8	05.5
23	335 56.4	175 23.9	39.0	265 08.0	09.0	330 08.1	45.8	13 10.4	05.5
24	350 58.9	190 23.4	+9 37.9	280 09.2	+21 09.2	345 10.9	+0 45.7	28 13.0	−16 05.6
Dif	—	−5	−11	+12	+2	+27	−1	+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 15^{d}.7 SD: 15′.9		PHE	4^{h}: 58′.2 12^{h}: 57′.9 20^{h}: 57′.7								
	PMG: 11^{h} 56^{m}.3				PMG: 1^{h} 20^{m}			Rº: 46^{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	53.0	+4	15.8	340	39.8	+1	16.7	**60 N**	3 45	4 38	5 21	19 11	1	7 54	94
1	195	53.3		14.9	355	11.6 128		32.5 158	**58**	3 53	43	23	14	5	52	90
2	210	53.5		13.9	9	43.4 128	+1	48.3 158	**56**	4 01	48	25	17	8	51	86
3	225	53.7		13.0	24	15.3 129	+2	04.0 157	**54**	08	52	28	20	11	49	84
4	240	53.9		12.0	38	47.2 129		19.7 157	**52**	14	55	29	22	14	48	81
5	255	54.2	+4	11.1	53	19.1 129	+2	35.4 157	**50**	4 19	4 58	5 31	19 24	16	7 47	78
6	270	54.4	+4	10.1	67	51.0 129	+2	51.0 156	**45**	4 30	5 05	5 35	19 29	21	7 44	73
7	285	54.6		09.2	82	23.0 130	+3	06.6 156	**40**	38	11	38	33	25	42	68
8	300	54.8		08.2	96	54.9 129		22.2 156	**35**	45	15	41	37	28	40	65
9	315	55.0		07.3	111	26.9 130		37.8 156	**30**	51	19	43	40	31	39	61
10	330	55.3		06.3	125	59.0 131	+3	53.3 155	**20**	4 59	25	47	45	37	36	55
11	345	55.5	+4	05.3	140	31.0 130	+4	08.7 154	**10 N**	5 04	5 29	5 50	19 50	42	7 33	51
12	0	55.7	+4	04.4	155	03.0 130	+4	24.2 155	**0**	5 08	5 32	5 53	19 55	46	7 31	46
13	15	55.9		03.4	169	35.1 131		39.6 154	**10 S**	11	35	56	20 00	50	29	41
14	30	56.1		02.5	184	07.2 131	+4	54.9 153	**20**	11	37	5 59	05	55	26	37
15	45	56.4		01.5	198	39.3 131	+5	10.3 154	**30**	11	38	6 02	11	60	23	31
16	60	56.6	+4	00.6	213	11.4 131		25.5 152	**35**	09	39	04	14	64	21	29
17	75	56.8	+3	59.6	227	43.5 131	+5	40.8 153	**40**	5 08	5 39	6 06	20 18	67	7 20	24
18	90	57.0	+3	58.7	242	15.6 131	+5	55.9 151	**45**	5 05	5 39	6 08	20 22	72	7 17	21
19	105	57.3		57.7	256	47.8 132	+6	11.1 152	**50**	02	39	11	28	77	15	15
20	120	57.5		56.8	271	19.9 131		26.2 151	**52**	5 00	39	12	30	80	14	13
21	135	57.7		55.8	285	52.1 132		41.2 150	**54**	4 58	39	14	33	83	12	11
22	150	57.9		54.8	300	24.2 131	+6	56.2 150	**56**	55	38	15	36	86	11	8
23	165	58.1		53.9	314	56.4 132	+7	11.2 150	**58**	52	38	17	40	89	09	5
24	180	58.4	+3	52.9	329	28.6 132	+7	26.1 149	**60 S**	4 49	5 37	6 19	20 43	93	7 08	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.3			Mag: −2.9			Mag: +0.4		
	0^{h} 36^{m}.0		PMG: 11^{h} 19^{m}			PMG: 5^{h} 19^{m}			PMG: 0^{h} 59^{m}			PMG: 22^{h} 03^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	350	58.9	190	23.4	+9 37.9	280	09.2	+21 09.2	345	10.9	+0 45.7	28	13.0	−16 05.6
1	6	01.4	205	23.0	36.7	295	10.4	09.4	0	13.6	45.6	43	15.6	05.6
2	21	03.8	220	22.5	35.6	310	11.6	09.6	15	16.4	45.5	58	18.2	05.7
3	36	06.3	235	22.0	34.5	325	12.8	09.8	30	19.1	45.3	73	20.9	05.7
4	51	08.7	250	21.6	33.4	340	14.0	10.1	45	21.9	45.2	88	23.5	05.8
5	66	11.2	265	21.1	+9 32.2	355	15.2	+21 10.3	60	24.6	+0 45.1	103	26.1	−16 05.8
6	81	13.7	280	20.6	+9 31.1	10	16.4	+21 10.5	75	27.4	+0 45.0	118	28.7	−16 05.9
7	96	16.1	295	20.2	30.0	25	17.6	10.7	90	30.1	44.8	133	31.3	05.9
8	111	18.6	310	19.7	28.8	40	18.8	10.9	105	32.8	44.7	148	33.9	06.0
9	126	21.1	325	19.3	27.7	55	20.0	11.1	120	35.6	44.6	163	36.5	06.0
10	141	23.5	340	18.8	26.6	70	21.2	11.3	135	38.3	44.5	178	39.1	06.0
11	156	26.0	355	18.3	+9 25.4	85	22.4	+21 11.5	150	41.1	+0 44.3	193	41.7	−16 06.1
12	171	28.5	10	17.9	+9 24.3	100	23.6	+21 11.7	165	43.8	+0 44.2	208	44.4	−16 06.1
13	186	30.9	25	17.4	23.2	115	24.8	11.9	180	46.6	44.1	223	47.0	06.2
14	201	33.4	40	17.0	22.0	130	26.0	12.1	195	49.3	43.9	238	49.6	06.2
15	216	35.8	55	16.5	20.9	145	27.2	12.3	210	52.1	43.8	253	52.2	06.3
16	231	38.3	70	16.0	19.8	160	28.4	12.5	225	54.8	43.7	268	54.8	06.3
17	246	40.8	85	15.6	+9 18.6	175	29.6	+21 12.7	240	57.6	+0 43.6	283	57.4	−16 06.4
18	261	43.2	100	15.1	+9 17.5	190	30.8	+21 12.9	256	00.3	+0 43.4	299	00.0	−16 06.4
19	276	45.7	115	14.7	16.4	205	32.0	13.1	271	03.1	43.3	314	02.6	06.5
20	291	48.2	130	14.2	15.2	220	33.2	13.3	286	05.8	43.2	329	05.2	06.5
21	306	50.6	145	13.8	14.1	235	34.4	13.5	301	08.6	43.1	344	07.8	06.6
22	321	53.1	160	13.3	13.0	250	35.7	13.7	316	11.3	42.9	359	10.5	06.6
23	336	55.6	175	12.8	11.8	265	36.9	13.9	331	14.0	42.8	14	13.1	06.7
24	351	58.0	190	12.4	+9 10.7	280	38.1	+21 14.1	346	16.8	+0 42.7	29	15.7	−16 06.7
Dif	—			−5	−11		+12	+2		+27	−1		+26	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 16.d7		PHE	4h: 57′.4								
	PMG: 11h 55.m9				SD: 15′.7			12h: 57′.1								
					PMG: 2h 06m			20h: 56′.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	58.4	+3	52.9	329	28.6	+7	26.1	**60 N**	18 28	19 10	20 02	19 12	3	9 28	93
1	195	58.6		52.0	344	00.8 132		40.9 148	**58**	25	05	19 54	19	7	22	89
2	210	58.8		51.0	358	32.9 131	+7	55.7 148	**56**	23	19 01	47	25	10	17	85
3	225	59.0		50.1	13	05.1 132	+8	10.4 147	**54**	21	18 57	40	31	13	13	81
4	240	59.3		49.1	27	37.3 132		25.1 147	**52**	20	54	35	36	15	09	79
5	255	59.5	+3	48.2	42	09.5 132	+8	39.7 146	**50**	18 18	18 51	19 30	19 40	18	9 05	76
6	270	59.7	+3	47.2	56	41.7 132	+8	54.3 146	**45**	18 15	18 44	19 20	19 50	23	8 57	71
7	285	59.9		46.2	71	13.8 131	+9	08.8 145	**40**	12	39	12	19 58	27	50	68
8	301	00.2		45.3	85	46.0 132		23.2 144	**35**	10	35	05	20 05	30	45	63
9	316	00.4		44.3	100	18.2 132		37.6 144	**30**	08	32	19 00	11	34	40	60
10	331	00.6		43.4	114	50.4 132	+9	51.9 143	**20**	05	27	18 52	22	38	31	55
11	346	00.8	+3	42.4	129	22.5 131	+10	06.2 143	**10 N**	18 02	18 23	18 47	20 32	42	8 24	50
12	1	01.0	+3	41.5	143	54.7 132	+10	20.4 142	**0**	17 59	18 20	18 44	20 41	47	8 17	46
13	16	01.3		40.5	158	26.8 131		34.5 141	**10 S**	57	18	42	20 50	51	10	42
14	31	01.5		39.6	172	59.0 132	+10	48.6 141	**20**	54	16	42	21 00	55	8 03	37
15	46	01.7		38.6	187	31.1 131	+11	02.6 140	**30**	51	15	43	11	60	7 54	33
16	61	01.9		37.6	202	03.2 131		16.5 139	**35**	50	15	44	18	63	50	29
17	76	02.2	+3	36.7	216	35.3 131	+11	30.3 138	**40**	17 48	18 15	18 47	21 25	67	7 44	26
18	91	02.4	+3	35.7	231	07.4 131	+11	44.1 138	**45**	17 46	18 15	18 49	21 34	71	7 38	22
19	106	02.6		34.8	245	39.5 131	+11	57.9 138	**50**	44	16	54	45	76	30	17
20	121	02.8		33.8	260	11.6 131	+12	11.5 136	**52**	43	16	56	50	79	27	14
21	136	03.1		32.8	274	43.7 131		25.1 136	**54**	42	17	18 58	21 56	81	23	12
22	151	03.3		31.9	289	15.7 130		38.6 135	**56**	40	17	19 01	22 02	84	19	9
23	166	03.5		30.9	303	47.7 130	+12	52.0 134	**58**	39	18	04	09	88	14	6
24	181	03.7	+3	30.0	318	19.8 131	+13	05.4 134	**60 S**	17 38	18 19	19 08	22 16	94	7 09	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.3			Mag: −2.9			Mag: +0.4		
	0h 32.m0		PMG: 11h 20m			PMG: 5h 17m			PMG: 0h 55m			PMG: 21h 59m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	351	58.0	190	12.4	+9 10.7	280	38.1	+21 14.1	346	16.8	+0 42.7	29	15.7	−16 06.7
1	7	00.5	205	11.9	09.5	295	39.3	14.3	1	19.5	42.5	44	18.3	06.8
2	22	03.0	220	11.5	08.4	310	40.5	14.5	16	22.3	42.4	59	20.9	06.8
3	37	05.4	235	11.0	07.3	325	41.7	14.7	31	25.0	42.3	74	23.5	06.8
4	52	07.9	250	10.6	06.1	340	42.9	15.0	46	27.8	42.2	89	26.1	06.9
5	67	10.3	265	10.1	+9 05.0	355	44.1	+21 15.2	61	30.5	+0 42.0	104	28.7	−16 06.9
6	82	12.8	280	09.7	+9 03.8	10	45.3	+21 15.4	76	33.3	+0 41.9	119	31.3	−16 07.0
7	97	15.3	295	09.2	02.7	25	46.6	15.6	91	36.0	41.8	134	33.9	07.0
8	112	17.7	310	08.7	01.6	40	47.8	15.8	106	38.8	41.6	149	36.6	07.1
9	127	20.2	325	08.3	+9 00.4	55	49.0	16.0	121	41.5	41.5	164	39.2	07.1
10	142	22.7	340	07.8	+8 59.3	70	50.2	16.2	136	44.3	41.4	179	41.8	07.2
11	157	25.1	355	07.4	+8 58.1	85	51.4	+21 16.4	151	47.0	+0 41.3	194	44.4	−16 07.2
12	172	27.6	10	06.9	+8 57.0	100	52.6	+21 16.6	166	49.8	+0 41.1	209	47.0	−16 07.3
13	187	30.1	25	06.5	55.8	115	53.8	16.8	181	52.5	41.0	224	49.6	07.3
14	202	32.5	40	06.0	54.7	130	55.1	17.0	196	55.3	40.9	239	52.2	07.4
15	217	35.0	55	05.6	53.5	145	56.3	17.2	211	58.0	40.7	254	54.8	07.4
16	232	37.4	70	05.1	52.4	160	57.5	17.4	227	00.8	40.6	269	57.4	07.4
17	247	39.9	85	04.7	+8 51.3	175	58.7	+21 17.6	242	03.5	+0 40.5	285	00.0	−16 07.5
18	262	42.4	100	04.2	+8 50.1	190	59.9	+21 17.8	257	06.3	+0 40.4	300	02.6	−16 07.5
19	277	44.8	115	03.8	49.0	206	01.2	18.0	272	09.0	40.2	315	05.2	07.6
20	292	47.3	130	03.3	47.8	221	02.4	18.2	287	11.8	40.1	330	07.9	07.6
21	307	49.8	145	02.9	46.7	236	03.6	18.4	302	14.5	40.0	345	10.5	07.7
22	322	52.2	160	02.4	45.5	251	04.8	18.5	317	17.3	39.8	0	13.1	07.7
23	337	54.7	175	02.0	44.4	266	06.1	18.7	332	20.0	39.7	15	15.7	07.8
24	352	57.2	190	01.5	+8 43.2	281	07.3	+21 18.9	347	22.8	+0 39.6	30	18.3	−16 07.8
Dif	—			−5	−11		+12	+2		+27	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 55m.6				LUNA Edad: 17d.7 SD: 15′.4 PMG: 2h 52m PHE: 4h: 56′.6; 12h: 56′.3; 20h: 56′.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	181	03.7	+3	30.0	318	19.8	+13	05.4	**60 N**	3 50	4 43	5 25	19 15	5	11 01	93
1	196	03.9		29.0	332	51.8 130		18.6 132	**58**	3 59	47	27	26	10	10 51	88
2	211	04.2		28.1	347	23.7 129		31.8 132	**56**	4 06	52	29	35	14	42	84
3	226	04.4		27.1	1	55.7 130		45.0 132	**54**	12	55	31	44	16	34	81
4	241	04.6		26.1	16	27.6 129	+13	58.0 130	**52**	18	4 59	33	51	20	28	77
5	256	04.8	+3	25.2	30	59.6 130	+14	11.0 130	**50**	4 23	5 02	5 34	19 58	22	10 21	76
6	271	05.1	+3	24.2	45	31.5 129	+14	23.9 129	**45**	4 33	5 08	5 37	20 13	26	10 08	70
7	286	05.3		23.3	60	03.4 129		36.7 128	**40**	41	13	40	25	30	9 58	66
8	301	05.5		22.3	74	35.2 128	+14	49.4 127	**35**	47	17	42	35	34	48	63
9	316	05.7		21.3	89	07.1 129	+15	02.0 126	**30**	52	20	44	20 45	36	40	60
10	331	06.0		20.4	103	38.9 128		14.6 126	**20**	4 59	25	47	21 00	41	26	55
11	346	06.2	+3	19.4	118	10.7 128	+15	27.1 125	**10 N**	5 04	5 29	5 50	21 14	45	9 14	51
12	1	06.4	+3	18.5	132	42.4 127	+15	39.5 124	**0**	5 08	5 32	5 52	21 28	47	9 03	47
13	16	06.6		17.5	147	14.2 128	+15	51.8 123	**10 S**	09	34	55	41	51	8 52	43
14	31	06.8		16.6	161	45.9 127	+16	04.0 122	**20**	10	35	5 57	21 55	55	40	39
15	46	07.1		15.6	176	17.6 127		16.1 121	**30**	08	36	6 00	22 11	60	27	34
16	61	07.3		14.6	190	49.3 127		28.1 120	**35**	07	36	01	21	62	19	31
17	76	07.5	+3	13.7	205	20.9 126	+16	40.1 120	**40**	5 04	5 36	6 03	22 32	65	8 10	28
18	91	07.7	+3	12.7	219	52.5 126	+16	51.9 118	**45**	5 01	5 35	6 05	22 45	69	8 00	24
19	106	08.0		11.8	234	24.1 126	+17	03.7 118	**50**	4 57	35	07	23 01	74	7 47	20
20	121	08.2		10.8	248	55.7 126		15.4 117	**52**	55	34	08	09	76	41	18
21	136	08.4		09.8	263	27.2 125		27.0 116	**54**	53	34	09	17	79	35	15
22	151	08.6		08.9	277	58.7 125		38.5 115	**56**	50	33	10	26	83	28	12
23	166	08.9		07.9	292	30.2 125	+17	49.9 114	**58**	46	32	11	37	88	20	8
24	181	09.1	+3	06.9	307	01.6 124	+18	01.2 113	**60 S**	4 43	5 31	6 13	23 50	93	7 11	4

UT	ARIES PMG 0h 28m.1		VENUS Mag: −3.9 PMG: 11h 20m			MARTE Mag: −0.3 PMG: 5h 15m			JÚPITER Mag: −2.9 PMG: 0h 50m			SATURNO Mag: +0.4 PMG: 21h 55m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	352	57.2	190	01.5	+8 43.2	281	07.3	+21 18.9	347	22.8	+0 39.6	30	18.3	−16 07.8
1	7	59.6	205	01.1	42.1	296	08.5	19.1	2	25.5	39.5	45	20.9	07.9
2	23	02.1	220	00.6	40.9	311	09.7	19.3	17	28.3	39.3	60	23.5	07.9
3	38	04.6	235	00.2	39.8	326	11.0	19.5	32	31.0	39.2	75	26.1	08.0
4	53	07.0	249	59.7	38.6	341	12.2	19.7	47	33.8	39.1	90	28.7	08.0
5	68	09.5	264	59.3	+8 37.5	356	13.4	+21 19.9	62	36.5	+0 38.9	105	31.3	−16 08.0
6	83	11.9	279	58.8	+8 36.3	11	14.6	+21 20.1	77	39.3	+0 38.8	120	33.9	−16 08.1
7	98	14.4	294	58.4	35.2	26	15.9	20.3	92	42.0	38.7	135	36.5	08.1
8	113	16.9	309	57.9	34.0	41	17.1	20.5	107	44.8	38.6	150	39.1	08.2
9	128	19.3	324	57.5	32.9	56	18.3	20.7	122	47.5	38.4	165	41.7	08.2
10	143	21.8	339	57.0	31.7	71	19.6	20.9	137	50.3	38.3	180	44.3	08.3
11	158	24.3	354	56.6	+8 30.5	86	20.8	+21 21.1	152	53.1	+0 38.2	195	47.0	−16 08.3
12	173	26.7	9	56.1	+8 29.4	101	22.0	+21 21.3	167	55.8	+0 38.0	210	49.6	−16 08.4
13	188	29.2	24	55.7	28.2	116	23.2	21.5	182	58.6	37.9	225	52.2	08.4
14	203	31.7	39	55.3	27.1	131	24.5	21.7	198	01.3	37.8	240	54.8	08.5
15	218	34.1	54	54.8	25.9	146	25.7	21.9	213	04.1	37.7	255	57.4	08.5
16	233	36.6	69	54.4	24.8	161	26.9	22.1	228	06.8	37.5	271	00.0	08.5
17	248	39.1	84	53.9	+8 23.6	176	28.2	+21 22.3	243	09.6	+0 37.4	286	02.6	−16 08.6
18	263	41.5	99	53.5	+8 22.5	191	29.4	+21 22.5	258	12.3	+0 37.3	301	05.2	−16 08.6
19	278	44.0	114	53.0	21.3	206	30.6	22.7	273	15.1	37.1	316	07.8	08.7
20	293	46.4	129	52.6	20.1	221	31.9	22.9	288	17.8	37.0	331	10.4	08.7
21	308	48.9	144	52.1	19.0	236	33.1	23.1	303	20.6	36.9	346	13.0	08.8
22	323	51.4	159	51.7	17.8	251	34.4	23.2	318	23.3	36.8	1	15.6	08.8
23	338	53.8	174	51.3	16.7	266	35.6	23.4	333	26.1	36.6	16	18.2	08.9
24	353	56.3	189	50.8	+8 15.5	281	36.8	+21 23.6	348	28.8	+0 36.5	31	20.8	−16 08.9
Dif	—			−4	−12		+12	+2		+28	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 55m.2		LUNA Edad: 18d.7 SD: 15′.2 PMG: 3h 39m PHE 4h: 55′.9; 12h: 55′.6; 20h: 55′.4 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	181 09.1	+3 06.9	307 01.6		+18 01.2		**60 N**	18 21	19 04	19 55	19 20	9	12 34	91
1	196 09.3	06.0	321 33.0	124	12.4	112	**58**	20	18 59	48	36	15	19	86
2	211 09.5	05.0	336 04.4	124	23.5	111	**56**	18	55	41	19 49	19	12 06	81
3	226 09.8	04.1	350 35.7	123	34.5	110	**54**	16	52	35	20 00	23	11 55	78
4	241 10.0	03.1	5 07.1	124	45.4	109	**52**	15	49	30	11	25	45	75
5	256 10.2	+3 02.1	19 38.3	122	+18 56.3	109	**50**	18 14	18 46	19 25	20 20	28	11 37	72
6	271 10.4	+3 01.2	34 09.6	123	+19 07.0	107	**45**	18 11	18 41	19 15	20 39	32	11 18	68
7	286 10.6	+3 00.2	48 40.8	122	17.6	106	**40**	09	36	08	20 55	36	11 04	64
8	301 10.9	+2 59.3	63 12.0	122	28.1	105	**35**	07	32	19 02	21 09	38	10 51	62
9	316 11.1	58.3	77 43.1	121	38.5	104	**30**	06	29	18 57	21	40	40	59
10	331 11.3	57.3	92 14.3	122	48.9	104	**20**	03	25	51	41	43	21	56
11	346 11.5	+2 56.4	106 45.3	120	+19 59.1	102	**10 N**	18 01	18 22	18 46	21 59	46	10 05	52
12	1 11.8	+2 55.4	121 16.4	121	+20 09.2	101	**0**	17 58	18 19	18 43	22 15	49	9 50	49
13	16 12.0	54.5	135 47.4	120	19.2	100	**10 S**	57	18	42	32	52	35	46
14	31 12.2	53.5	150 18.4	120	29.1	99	**20**	55	17	42	22 50	55	19	42
15	46 12.4	52.5	164 49.3	119	38.9	98	**30**	52	16	44	23 11	58	9 01	38
16	61 12.7	51.6	179 20.2	119	48.6	97	**35**	51	17	46	23	61	8 50	36
17	76 12.9	+2 50.6	193 51.1	119	+20 58.2	96	**40**	17 50	18 17	18 48	23 37	63	8 38	33
18	91 13.1	+2 49.6	208 22.0	119	+21 07.7	95	**45**	17 49	18 18	18 52	23 54	66	8 24	29
19	106 13.3	48.7	222 52.8	118	17.1	94	**50**	47	19	57	** **	**	8 07	24
20	121 13.6	47.7	237 23.5	117	26.4	93	**52**	46	20	18 59	** **	**	7 59	22
21	136 13.8	46.8	251 54.3	118	35.5	91	**54**	45	20	19 02	** **	**	50	19
22	151 14.0	45.8	266 25.0	117	44.6	91	**56**	44	21	05	** **	**	40	16
23	166 14.2	44.8	280 55.6	116	+21 53.5	89	**58**	43	22	08	** **	**	28	12
24	181 14.4	+2 43.9	295 26.3	117	+22 02.3	88	**60 S**	17 42	18 24	19 13	** **	**	7 15	6

UT	ARIES PMG 0h 24m.2	VENUS Mag: −3.9 PMG: 11h 21m		MARTE Mag: −0.3 PMG: 5h 13m		JÚPITER Mag: −2.9 PMG: 0h 46m		SATURNO Mag: +0.4 PMG: 21h 51m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	353 56.3	189 50.8	+8 15.5	281 36.8	+21 23.6	348 28.8	+0 36.5	31 20.8	−16 08.9
1	8 58.8	204 50.4	14.3	296 38.1	23.8	3 31.6	36.4	46 23.4	08.9
2	24 01.2	219 49.9	13.2	311 39.3	24.0	18 34.4	36.2	61 26.0	09.0
3	39 03.7	234 49.5	12.0	326 40.6	24.2	33 37.1	36.1	76 28.6	09.0
4	54 06.2	249 49.0	10.9	341 41.8	24.4	48 39.9	36.0	91 31.2	09.1
5	69 08.6	264 48.6	+8 09.7	356 43.0	+21 24.6	63 42.6	+0 35.8	106 33.8	−16 09.1
6	84 11.1	279 48.2	+8 08.5	11 44.3	+21 24.8	78 45.4	+0 35.7	121 36.4	−16 09.2
7	99 13.5	294 47.7	07.4	26 45.5	25.0	93 48.1	35.6	136 39.0	09.2
8	114 16.0	309 47.3	06.2	41 46.8	25.2	108 50.9	35.5	151 41.7	09.3
9	129 18.5	324 46.8	05.1	56 48.0	25.4	123 53.6	35.3	166 44.3	09.3
10	144 20.9	339 46.4	03.9	71 49.3	25.6	138 56.4	35.2	181 46.9	09.3
11	159 23.4	354 46.0	+8 02.7	86 50.5	+21 25.7	153 59.1	+0 35.1	196 49.5	−16 09.4
12	174 25.9	9 45.5	+8 01.6	101 51.7	+21 25.9	169 01.9	+0 34.9	211 52.1	−16 09.4
13	189 28.3	24 45.1	+8 00.4	116 53.0	26.1	184 04.7	34.8	226 54.7	09.5
14	204 30.8	39 44.6	+7 59.2	131 54.2	26.3	199 07.4	34.7	241 57.3	09.5
15	219 33.3	54 44.2	58.1	146 55.5	26.5	214 10.2	34.5	256 59.9	09.6
16	234 35.7	69 43.8	56.9	161 56.7	26.7	229 12.9	34.4	272 02.5	09.6
17	249 38.2	84 43.3	+7 55.7	176 58.0	+21 26.9	244 15.7	+0 34.3	287 05.1	−16 09.7
18	264 40.7	99 42.9	+7 54.6	191 59.2	+21 27.1	259 18.4	+0 34.2	302 07.7	−16 09.7
19	279 43.1	114 42.4	53.4	207 00.5	27.3	274 21.2	34.0	317 10.3	09.7
20	294 45.6	129 42.0	52.2	222 01.7	27.5	289 23.9	33.9	332 12.9	09.8
21	309 48.0	144 41.6	51.1	237 03.0	27.6	304 26.7	33.8	347 15.5	09.8
22	324 50.5	159 41.1	49.9	252 04.2	27.8	319 29.5	33.6	2 18.1	09.9
23	339 53.0	174 40.7	48.7	267 05.5	28.0	334 32.2	33.5	17 20.7	09.9
24	354 55.4	189 40.3	+7 47.6	282 06.8	+21 28.2	349 35.0	+0 33.4	32 23.3	−16 10.0
Dif	—	−4	−12	+12	+2	+28	−1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 19^{d}.7		PHE	4^{h}: 55′.2									
	PMG: 11^{h} 54^{m}.9				SD: 15′.1			12^{h}: 55′.0									
					PMG: 4^{h} 27^{m}			20^{h}: 54′.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	181	14.4	+2	43.9	295	26.3	+22	02.3		**60 N**	3 56	4 48	5 30	19 29	19	14 05	86
1	196	14.7		42.9	309	56.9 116		11.1	88	**58**	4 04	52	32	19 51	25	13 45	79
2	211	14.9		41.9	324	27.4 115		19.7	86	**56**	10	56	33	20 08	29	27	75
3	226	15.1		41.0	338	58.0 116		28.2	85	**54**	16	4 59	35	23	32	13	72
4	241	15.3		40.0	353	28.5 115		36.6	84	**52**	21	5 02	36	36	34	13 00	70
5	256	15.6	+2	39.0	7	58.9 114	+22	44.8	82	**50**	4 26	5 05	5 37	20 48	35	12 49	68
6	271	15.8	+2	38.1	22	29.3 114	+22	53.0	82	**45**	4 35	5 10	5 40	21 11	39	12 26	64
7	286	16.0		37.1	36	59.7 114	+23	01.0	80	**40**	43	15	42	31	41	12 08	61
8	301	16.2		36.2	51	30.1 114		09.0	80	**35**	48	18	43	21 47	43	11 53	59
9	316	16.5		35.2	66	00.4 113		16.8	78	**30**	4 53	21	45	22 01	44	39	58
10	331	16.7		34.2	80	30.7 113		24.5	77	**20**	5 00	26	48	24	47	11 17	54
11	346	16.9	+2	33.3	95	00.9 112	+23	32.1	76	**10 N**	5 04	5 29	5 50	22 45	49	10 57	52
12	1	17.1	+2	32.3	109	31.1 112	+23	39.5	74	**0**	5 07	5 31	5 52	23 04	51	10 39	50
13	16	17.4		31.3	124	01.3 112		46.9	74	**10 S**	08	32	53	24	52	21	47
14	31	17.6		30.4	138	31.4 111	+23	54.1	72	**20**	08	33	55	23 45	54	10 01	45
15	46	17.8		29.4	153	01.5 111	+24	01.2	71	**30**	06	33	57	** **	**	9 39	42
16	61	18.0		28.4	167	31.6 111		08.2	70	**35**	04	33	58	** **	**	26	40
17	76	18.3	+2	27.5	182	01.7 111	+24	15.1	69	**40**	5 01	5 32	5 59	** **	**	9 11	38
18	91	18.5	+2	26.5	196	31.7 110	+24	21.8	67	**45**	4 58	5 32	6 01	** **	**	8 53	35
19	106	18.7		25.5	211	01.7 110		28.5	67	**50**	53	30	02	0 15	71	31	32
20	121	18.9		24.6	225	31.6 109		35.0	65	**52**	50	29	03	25	73	21	29
21	136	19.1		23.6	240	01.5 109		41.4	64	**54**	47	29	04	36	76	8 09	27
22	151	19.4		22.7	254	31.4 109		47.6	62	**56**	44	28	05	0 49	79	7 56	23
23	166	19.6		21.7	269	01.3 109		53.8	62	**58**	41	27	06	1 05	83	40	19
24	181	19.8	+2	20.7	283	31.1 108	+24	59.8	60	**60 S**	4 36	5 25	6 07	1 23	90	7 21	13

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.3			Mag: −2.9			Mag: +0.4		
	0^{h} 20^{m}.2		PMG: 11^{h} 22^{m}			PMG: 5^{h} 11^{m}			PMG: 0^{h} 42^{m}			PMG: 21^{h} 47^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	354	55.4	189	40.3	+7 47.6	282	06.8	+21 28.2	349	35.0	+0 33.4	32	23.3	−16 10.0
1	9	57.9	204	39.8	46.4	297	08.0	28.4	4	37.7	33.2	47	25.9	10.0
2	25	00.4	219	39.4	45.2	312	09.3	28.6	19	40.5	33.1	62	28.5	10.1
3	40	02.8	234	38.9	44.1	327	10.5	28.8	34	43.2	33.0	77	31.1	10.1
4	55	05.3	249	38.5	42.9	342	11.8	29.0	49	46.0	32.9	92	33.7	10.1
5	70	07.8	264	38.1	+7 41.7	357	13.0	+21 29.2	64	48.8	+0 32.7	107	36.3	−16 10.2
6	85	10.2	279	37.6	+7 40.5	12	14.3	+21 29.3	79	51.5	+0 32.6	122	38.9	−16 10.2
7	100	12.7	294	37.2	39.4	27	15.6	29.5	94	54.3	32.5	137	41.5	10.3
8	115	15.2	309	36.8	38.2	42	16.8	29.7	109	57.0	32.3	152	44.1	10.3
9	130	17.6	324	36.3	37.0	57	18.1	29.9	124	59.8	32.2	167	46.7	10.4
10	145	20.1	339	35.9	35.8	72	19.3	30.1	140	02.5	32.1	182	49.3	10.4
11	160	22.5	354	35.5	+7 34.7	87	20.6	+21 30.3	155	05.3	+0 31.9	197	51.9	−16 10.4
12	175	25.0	9	35.0	+7 33.5	102	21.9	+21 30.5	170	08.1	+0 31.8	212	54.5	−16 10.5
13	190	27.5	24	34.6	32.3	117	23.1	30.7	185	10.8	31.7	227	57.1	10.5
14	205	29.9	39	34.2	31.2	132	24.4	30.8	200	13.6	31.5	242	59.7	10.6
15	220	32.4	54	33.7	30.0	147	25.6	31.0	215	16.3	31.4	258	02.3	10.6
16	235	34.9	69	33.3	28.8	162	26.9	31.2	230	19.1	31.3	273	04.9	10.7
17	250	37.3	84	32.9	+7 27.6	177	28.2	+21 31.4	245	21.8	+0 31.1	288	07.5	−16 10.7
18	265	39.8	99	32.4	+7 26.5	192	29.4	+21 31.6	260	24.6	+0 31.0	303	10.1	−16 10.7
19	280	42.3	114	32.0	25.3	207	30.7	31.8	275	27.4	30.9	318	12.7	10.8
20	295	44.7	129	31.6	24.1	222	32.0	31.9	290	30.1	30.8	333	15.3	10.8
21	310	47.2	144	31.1	22.9	237	33.2	32.1	305	32.9	30.6	348	17.9	10.9
22	325	49.6	159	30.7	21.7	252	34.5	32.3	320	35.6	30.5	3	20.5	10.9
23	340	52.1	174	30.3	20.6	267	35.8	32.5	335	38.4	30.4	18	23.1	11.0
24	355	54.6	189	29.8	+7 19.4	282	37.1	+21 32.7	350	41.2	+0 30.2	33	25.7	−16 11.0
Dif	—			−4	−12		+13	+2		+28	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 54m.5		LUNA Edad: 20d.7 SD: 14′.9 PMG: 5h 17m PHE { 4h: 54′.7; 12h: 54′.6; 20h: 54′.5 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	181 19.8	+2 20.7	283 31.1		+24 59.8		**60 N**	18 15	18 57	19 48	19 48	37	15 31	69
1	196 20.0	19.8	298 00.9	108	+25 05.7	59	**58**	14	53	41	20 16	40	15 04	65
2	211 20.3	18.8	312 30.7	108	11.5	58	**56**	13	50	35	37	43	14 42	63
3	226 20.5	17.8	327 00.4	107	17.1	56	**54**	11	47	29	20 55	44	25	61
4	241 20.7	16.9	341 30.1	107	22.7	56	**52**	10	44	25	21 10	45	14 10	60
5	256 20.9	+2 15.9	355 59.8	107	+25 28.1	54	**50**	18 09	18 42	19 20	21 23	46	13 57	59
6	271 21.2	+2 14.9	10 29.4	106	+25 33.4	53	**45**	18 07	18 37	19 11	21 50	47	13 30	58
7	286 21.4	14.0	24 59.1	107	38.5	51	**40**	06	33	19 05	22 12	48	13 09	56
8	301 21.6	13.0	39 28.7	106	43.6	51	**35**	04	30	18 59	30	48	12 52	55
9	316 21.8	12.0	53 58.3	106	48.5	49	**30**	03	27	55	22 45	49	37	54
10	331 22.1	11.1	68 27.8	105	53.2	47	**20**	18 01	23	49	23 11	50	12 11	53
11	346 22.3	+2 10.1	82 57.3	105	+25 57.9	47	**10 N**	17 59	18 20	18 45	23 34	50	11 49	52
12	1 22.5	+2 09.1	97 26.8	105	+26 02.4	45	**0**	17 58	18 18	18 42	23 55	51	11 29	51
13	16 22.7	08.2	111 56.3	105	06.8	44	**10 S**	56	17	42	** **	**	11 08	50
14	31 22.9	07.2	126 25.8	105	11.1	43	**20**	55	17	43	** **	**	10 46	49
15	46 23.2	06.2	140 55.2	104	15.2	41	**30**	54	17	45	0 09	56	21	47
16	61 23.4	05.3	155 24.6	104	19.2	40	**35**	53	18	47	24	57	10 06	46
17	76 23.6	+2 04.3	169 54.0	104	+26 23.1	39	**40**	17 52	18 19	18 50	0 40	59	9 49	45
18	91 23.8	+2 03.3	184 23.4	104	+26 26.9	38	**45**	17 51	18 20	18 54	1 00	61	9 28	43
19	106 24.1	02.4	198 52.7	103	30.5	36	**50**	50	22	19 00	26	63	9 03	40
20	121 24.3	01.4	213 22.1	104	34.0	35	**52**	49	23	02	38	65	8 50	39
21	136 24.5	+2 00.4	227 51.4	103	37.4	34	**54**	49	24	05	1 52	67	36	37
22	151 24.7	+1 59.5	242 20.7	103	40.6	32	**56**	48	25	09	2 08	70	8 19	35
23	166 25.0	58.5	256 50.0	103	43.7	31	**58**	48	27	13	28	73	7 59	32
24	181 25.2	+1 57.5	271 19.3	103	+26 46.7	30	**60 S**	17 47	18 28	19 17	2 53	79	7 34	26

UT	ARIES PMG 0h 16m.3	VENUS Mag: −3.9 PMG: 11h 22m		MARTE Mag: −0.4 PMG: 5h 09m		JÚPITER Mag: −2.9 PMG: 0h 37m		SATURNO Mag: +0.4 PMG: 21h 43m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	355 54.6	189 29.8	+7 19.4	282 37.1	+21 32.7	350 41.2	+0 30.2	33 25.7	−16 11.0
1	10 57.0	204 29.4	18.2	297 38.3	32.9	5 43.9	30.1	48 28.3	11.0
2	25 59.5	219 29.0	17.0	312 39.6	33.1	20 46.7	30.0	63 30.9	11.1
3	41 02.0	234 28.5	15.9	327 40.9	33.2	35 49.4	29.8	78 33.5	11.1
4	56 04.4	249 28.1	14.7	342 42.1	33.4	50 52.2	29.7	93 36.1	11.2
5	71 06.9	264 27.7	+7 13.5	357 43.4	+21 33.6	65 55.0	+0 29.6	108 38.7	−16 11.2
6	86 09.4	279 27.2	+7 12.3	12 44.7	+21 33.8	80 57.7	+0 29.4	123 41.3	−16 11.3
7	101 11.8	294 26.8	11.1	27 46.0	34.0	96 00.5	29.3	138 43.9	11.3
8	116 14.3	309 26.4	10.0	42 47.2	34.2	111 03.2	29.2	153 46.5	11.3
9	131 16.8	324 26.0	08.8	57 48.5	34.3	126 06.0	29.0	168 49.1	11.4
10	146 19.2	339 25.5	07.6	72 49.8	34.5	141 08.8	28.9	183 51.7	11.4
11	161 21.7	354 25.1	+7 06.4	87 51.1	+21 34.7	156 11.5	+0 28.8	198 54.3	−16 11.5
12	176 24.1	9 24.7	+7 05.2	102 52.3	+21 34.9	171 14.3	+0 28.7	213 56.9	−16 11.5
13	191 26.6	24 24.2	04.0	117 53.6	35.1	186 17.0	28.5	228 59.5	11.6
14	206 29.1	39 23.8	02.9	132 54.9	35.2	201 19.8	28.4	244 02.1	11.6
15	221 31.5	54 23.4	01.7	147 56.2	35.4	216 22.6	28.3	259 04.7	11.6
16	236 34.0	69 23.0	+7 00.5	162 57.5	35.6	231 25.3	28.1	274 07.3	11.7
17	251 36.5	84 22.5	+6 59.3	177 58.7	+21 35.8	246 28.1	+0 28.0	289 09.9	−16 11.7
18	266 38.9	99 22.1	+6 58.1	193 00.0	+21 36.0	261 30.8	+0 27.9	304 12.5	−16 11.8
19	281 41.4	114 21.7	56.9	208 01.3	36.2	276 33.6	27.7	319 15.1	11.8
20	296 43.9	129 21.2	55.8	223 02.6	36.3	291 36.4	27.6	334 17.7	11.9
21	311 46.3	144 20.8	54.6	238 03.9	36.5	306 39.1	27.5	349 20.3	11.9
22	326 48.8	159 20.4	53.4	253 05.2	36.7	321 41.9	27.3	4 22.9	11.9
23	341 51.3	174 20.0	52.2	268 06.4	36.9	336 44.6	27.2	19 25.5	12.0
24	356 53.7	189 19.5	+6 51.0	283 07.7	+21 37.1	351 47.4	+0 27.1	34 28.1	−16 12.0
Dif	—	−4	−12	+13	+2	+28	−1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 21^{d}.7		PHE	4^{h}: 54′.4									
	PMG: 11^{h} 54^{m}.1				SD: 14′.8			12^{h}: 54′.3									
					PMG: 6^{h} 07^{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	181	25.2	+1	57.5	271	19.3	+26	46.7		**60 N**	4 01	4 53	5 35	20 25	62	16 40	44
1	196	25.4		56.6	285	48.5	102	49.5	28	**58**	08	4 56	36	20 56	60	16 09	46
2	211	25.6		55.6	300	17.8	103	52.3	28	**56**	15	5 00	37	21 20	58	15 45	48
3	226	25.9		54.6	314	47.0	102	54.9	26	**54**	20	03	38	39	57	26	48
4	241	26.1		53.7	329	16.2	102	57.3	24	**52**	25	05	39	21 55	57	15 10	49
5	256	26.3	+1	52.7	343	45.4	102	+26 59.6	23	**50**	4 29	5 08	5 40	22 09	56	14 56	49
6	271	26.5	+1	51.7	358	14.6	102	+27 01.8	22	**45**	4 38	5 13	5 42	22 37	56	14 28	49
7	286	26.7		50.8	12	43.8	102	03.9	21	**40**	45	16	44	23 00	54	14 05	50
8	301	27.0		49.8	27	13.0	102	05.8	19	**35**	50	20	45	18	54	13 47	50
9	316	27.2		48.8	41	42.2	102	07.6	18	**30**	4 54	22	46	23 34	53	31	51
10	331	27.4		47.9	56	11.3	101	09.3	17	**20**	5 00	26	48	** **	**	13 04	51
11	346	27.6	+1	46.9	70	40.5	102	+27 10.8	15	**10 N**	5 04	5 29	5 50	** **	**	12 41	51
12	1	27.9	+1	45.9	85	09.6	101	+27 12.3	15	**0**	5 06	5 30	5 51	** **	**	12 20	51
13	16	28.1		45.0	99	38.8	102	13.5	12	**10 S**	07	31	52	0 16	52	11 58	51
14	31	28.3		44.0	114	07.9	101	14.7	12	**20**	06	31	53	0 39	52	35	51
15	46	28.5		43.0	128	37.1	102	15.7	10	**30**	03	31	55	1 05	53	11 08	51
16	61	28.8		42.0	143	06.2	101	16.6	9	**35**	5 01	30	55	21	53	10 52	52
17	76	29.0	+1	41.1	157	35.4	102	+27 17.3	7	**40**	4 58	5 29	5 56	1 39	53	10 34	51
18	91	29.2	+1	40.1	172	04.5	101	+27 17.9	6	**45**	4 54	5 28	5 57	2 01	54	10 11	52
19	106	29.4		39.1	186	33.6	101	18.4	5	**50**	48	26	58	29	55	9 43	51
20	121	29.6		38.2	201	02.8	102	18.8	4	**52**	45	25	58	43	55	29	51
21	136	29.9		37.2	215	31.9	101	19.0	2	**54**	42	24	59	2 59	55	9 13	51
22	151	30.1		36.2	230	01.1	102	19.1	1	**56**	39	22	5 59	3 18	55	8 54	51
23	166	30.3		35.3	244	30.2	101	19.0	1	**58**	35	21	6 00	3 41	56	31	50
24	181	30.5	+1	34.3	258	59.4	102	+27 18.9	1	**60 S**	4 30	5 19	6 00	4 12	57	8 00	49

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.4			Mag: −2.9			Mag: +0.4		
	0^{h} 12^{m}.4		PMG: 11^{h} 23^{m}			PMG: 5^{h} 07^{m}			PMG: 0^{h} 33^{m}			PMG: 21^{h} 38^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	356	53.7	189	19.5	+6 51.0	283	07.7	+21 37.1	351	47.4	+0 27.1	34	28.1	−16 12.0
1	11	56.2	204	19.1	49.8	298	09.0	37.2	6	50.2	26.9	49	30.6	12.1
2	26	58.6	219	18.7	48.6	313	10.3	37.4	21	52.9	26.8	64	33.2	12.1
3	42	01.1	234	18.3	47.4	328	11.6	37.6	36	55.7	26.7	79	35.8	12.1
4	57	03.6	249	17.8	46.3	343	12.9	37.8	51	58.5	26.5	94	38.4	12.2
5	72	06.0	264	17.4	+6 45.1	358	14.2	+21 38.0	67	01.2	+0 26.4	109	41.0	−16 12.2
6	87	08.5	279	17.0	+6 43.9	13	15.5	+21 38.1	82	04.0	+0 26.3	124	43.6	−16 12.3
7	102	11.0	294	16.6	42.7	28	16.8	38.3	97	06.7	26.1	139	46.2	12.3
8	117	13.4	309	16.1	41.5	43	18.0	38.5	112	09.5	26.0	154	48.8	12.4
9	132	15.9	324	15.7	40.3	58	19.3	38.7	127	12.3	25.9	169	51.4	12.4
10	147	18.4	339	15.3	39.1	73	20.6	38.8	142	15.0	25.8	184	54.0	12.4
11	162	20.8	354	14.9	+6 37.9	88	21.9	+21 39.0	157	17.8	+0 25.6	199	56.6	−16 12.5
12	177	23.3	9	14.4	+6 36.7	103	23.2	+21 39.2	172	20.5	+0 25.5	214	59.2	−16 12.5
13	192	25.8	24	14.0	35.5	118	24.5	39.4	187	23.3	25.4	230	01.8	12.6
14	207	28.2	39	13.6	34.4	133	25.8	39.6	202	26.1	25.2	245	04.4	12.6
15	222	30.7	54	13.2	33.2	148	27.1	39.7	217	28.8	25.1	260	07.0	12.6
16	237	33.1	69	12.7	32.0	163	28.4	39.9	232	31.6	25.0	275	09.6	12.7
17	252	35.6	84	12.3	+6 30.8	178	29.7	+21 40.1	247	34.4	+0 24.8	290	12.2	−16 12.7
18	267	38.1	99	11.9	+6 29.6	193	31.0	+21 40.3	262	37.1	+0 24.7	305	14.8	−16 12.8
19	282	40.5	114	11.5	28.4	208	32.3	40.4	277	39.9	24.6	320	17.4	12.8
20	297	43.0	129	11.1	27.2	223	33.6	40.6	292	42.7	24.4	335	20.0	12.8
21	312	45.5	144	10.6	26.0	238	34.9	40.8	307	45.4	24.3	350	22.5	12.9
22	327	47.9	159	10.2	24.8	253	36.2	41.0	322	48.2	24.2	5	25.1	12.9
23	342	50.4	174	09.8	23.6	268	37.5	41.1	337	50.9	24.0	20	27.7	13.0
24	357	52.9	189	09.4	+6 22.4	283	38.8	+21 41.3	352	53.7	+0 23.9	35	30.3	−16 13.0
Dif	—			−4	−12		+13	+2		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 22^{d}.7		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 53^{m}.8				SD: 14′.8			12^{h}: 54′.2									
					PMG: 6^{h} 58^{m}			20^{h}: 54′.2									
	hG ☉		Dec		hG ☾	Dif	Dec		Dif		Rº: 51^{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	181	30.5	+1	34.3	258	59.4	+27	18.9		**60 N**	18 09	18 51	19 42	21 27	81	17 24	23
1	196	30.8		33.3	273	28.6		18.6	3	**58**	08	48	35	21 56	75	16 55	29
2	211	31.0		32.4	287	57.8		18.1	5	**56**	07	44	29	22 18	71	33	32
3	226	31.2		31.4	302	26.9		17.6	5	**54**	06	42	24	36	69	16 14	35
4	241	31.4		30.4	316	56.1		16.9	7	**52**	06	39	20	22 52	66	15 59	36
5	256	31.7	+1	29.5	331	25.3	+27	16.0	9	**50**	18 05	18 37	19 16	23 05	65	15 45	38
6	271	31.9	+1	28.5	345	54.5	+27	15.1	9	**45**	18 04	18 33	19 07	23 33	61	15 17	41
7	286	32.1		27.5	0	23.8		14.0	11	**40**	02	29	19 01	23 54	59	14 55	43
8	301	32.3		26.5	14	53.0		12.8	12	**35**	01	27	18 56	** **	**	37	45
9	316	32.5		25.6	29	22.3		11.4	14	**30**	18 01	24	52	** **	**	14 22	45
10	331	32.8		24.6	43	51.5		09.9	15	**20**	17 59	21	47	0 01	52	13 55	47
11	346	33.0	+1	23.6	58	20.8	+27	08.3	16	**10 N**	17 58	18 19	18 43	0 24	52	13 32	49
12	1	33.2	+1	22.7	72	50.1	+27	06.6	17	**0**	17 57	18 18	18 42	0 46	51	13 11	50
13	16	33.4		21.7	87	19.4		04.7	19	**10 S**	56	17	42	1 08	50	12 49	52
14	31	33.7		20.7	101	48.8		02.7	20	**20**	55	17	43	31	49	12 26	53
15	46	33.9		19.8	116	18.1	+27	00.6	21	**30**	55	18	46	1 58	48	11 59	55
16	61	34.1		18.8	130	47.5	+26	58.3	23	**35**	54	19	49	2 14	47	44	55
17	76	34.3	+1	17.8	145	16.9	+26	55.9	24	**40**	17 54	18 21	18 52	2 32	47	11 25	57
18	91	34.5	+1	16.8	159	46.3	+26	53.4	25	**45**	17 53	18 23	18 57	2 55	45	11 03	58
19	106	34.8		15.9	174	15.7		50.7	27	**50**	53	25	19 03	3 24	43	10 34	61
20	121	35.0		14.9	188	45.2		48.0	27	**52**	53	26	06	38	42	20	62
21	136	35.2		13.9	203	14.7		45.1	29	**54**	52	28	09	3 54	41	10 04	63
22	151	35.4		13.0	217	44.2		42.0	31	**56**	52	29	13	4 13	39	9 45	65
23	166	35.7		12.0	232	13.7		38.9	31	**58**	52	31	17	4 37	37	9 21	68
24	181	35.9	+1	11.0	246	43.3	+26	35.6	33	**60 S**	17 51	18 33	19 22	5 09	32	8 49	73

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.4			Mag: −2.9			Mag: +0.4		
	0^{h} 08^{m}.5		PMG: 11^{h} 24^{m}			PMG: 5^{h} 05^{m}			PMG: 0^{h} 28^{m}			PMG: 21^{h} 34^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	357	52.9	189	09.4	+6 22.4	283	38.8	+21 41.3	352	53.7	+0 23.9	35	30.3	−16 13.0
1	12	55.3	204	08.9	21.2	298	40.1	41.5	7	56.5	23.8	50	32.9	13.1
2	27	57.8	219	08.5	20.0	313	41.4	41.7	22	59.2	23.6	65	35.5	13.1
3	43	00.2	234	08.1	18.8	328	42.7	41.8	38	02.0	23.5	80	38.1	13.1
4	58	02.7	249	07.7	17.6	343	44.0	42.0	53	04.8	23.4	95	40.7	13.2
5	73	05.2	264	07.3	+6 16.4	358	45.3	+21 42.2	68	07.5	+0 23.2	110	43.3	−16 13.2
6	88	07.6	279	06.8	+6 15.2	13	46.6	+21 42.4	83	10.3	+0 23.1	125	45.9	−16 13.3
7	103	10.1	294	06.4	14.1	28	47.9	42.5	98	13.0	23.0	140	48.5	13.3
8	118	12.6	309	06.0	12.9	43	49.3	42.7	113	15.8	22.8	155	51.1	13.3
9	133	15.0	324	05.6	11.7	58	50.6	42.9	128	18.6	22.7	170	53.7	13.4
10	148	17.5	339	05.2	10.5	73	51.9	43.1	143	21.3	22.6	185	56.3	13.4
11	163	20.0	354	04.7	+6 09.3	88	53.2	+21 43.2	158	24.1	+0 22.4	200	58.8	−16 13.5
12	178	22.4	9	04.3	+6 08.1	103	54.5	+21 43.4	173	26.9	+0 22.3	216	01.4	−16 13.5
13	193	24.9	24	03.9	06.9	118	55.8	43.6	188	29.6	22.2	231	04.0	13.5
14	208	27.4	39	03.5	05.7	133	57.1	43.8	203	32.4	22.0	246	06.6	13.6
15	223	29.8	54	03.1	04.5	148	58.4	43.9	218	35.2	21.9	261	09.2	13.6
16	238	32.3	69	02.7	03.3	163	59.7	44.1	233	37.9	21.8	276	11.8	13.7
17	253	34.7	84	02.2	+6 02.1	179	01.1	+21 44.3	248	40.7	+0 21.6	291	14.4	−16 13.7
18	268	37.2	99	01.8	+6 00.9	194	02.4	+21 44.4	263	43.5	+0 21.5	306	17.0	−16 13.7
19	283	39.7	114	01.4	+5 59.7	209	03.7	44.6	278	46.2	21.4	321	19.6	13.8
20	298	42.1	129	01.0	58.5	224	05.0	44.8	293	49.0	21.2	336	22.2	13.8
21	313	44.6	144	00.6	57.3	239	06.3	45.0	308	51.8	21.1	351	24.8	13.9
22	328	47.1	159	00.1	56.1	254	07.6	45.1	323	54.5	21.0	6	27.4	13.9
23	343	49.5	173	59.7	54.9	269	09.0	45.3	338	57.3	20.8	21	29.9	13.9
24	358	52.0	188	59.3	+5 53.7	284	10.3	+21 45.5	354	00.0	+0 20.7	36	32.5	−16 14.0
Dif	—			−4	−12		+13	+2		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 23^{d}.7		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 53^{m}.4				SD: 14′.8			12^{h}: 54′.3									
					PMG: 7^{h} 49^{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	181	35.9	+1	11.0	246	43.3	+26	35.6		**60 N**	4 07	4 57	5 39	22 48	88	17 47	11
1	196	36.1		10.1	261	12.9 106		32.2	34	**58**	13	5 01	40	23 11	82	24	17
2	211	36.3		09.1	275	42.5 106		28.6	36	**56**	19	04	41	29	78	17 05	21
3	226	36.6		08.1	290	12.1 106		25.0	36	**54**	24	06	42	45	74	16 49	25
4	241	36.8		07.1	304	41.8 107		21.2	38	**52**	29	09	43	23 58	72	35	27
5	256	37.0	+1	06.2	319	11.5 107	+26	17.3	39	**50**	4 32	5 11	5 43	** **	**	16 23	29
6	271	37.2	+1	05.2	333	41.2 107	+26	13.2	41	**45**	4 40	5 15	5 44	** **	**	15 58	34
7	286	37.4		04.2	348	11.0 108		09.1	41	**40**	47	18	46	** **	**	38	37
8	301	37.7		03.3	2	40.8 108		04.8	43	**35**	52	21	46	0 12	57	22	38
9	316	37.9		02.3	17	10.6 108	+26	00.4	44	**30**	4 55	23	47	27	56	15 07	41
10	331	38.1		01.3	31	40.5 109	+25	55.8	46	**20**	5 01	26	48	0 53	54	14 42	44
11	346	38.3	+1	00.4	46	10.4 109	+25	51.2	46	**10 N**	5 04	5 28	5 49	1 16	51	14 21	46
12	1	38.5	+0	59.4	60	40.3 109	+25	46.4	48	**0**	5 06	5 30	5 50	1 37	49	14 01	49
13	16	38.8		58.4	75	10.3 110		41.5	49	**10 S**	06	30	51	1 58	47	13 41	51
14	31	39.0		57.4	89	40.3 110		36.5	50	**20**	04	30	52	2 20	46	13 19	54
15	46	39.2		56.5	104	10.3 110		31.3	52	**30**	5 01	28	52	2 46	43	12 54	57
16	61	39.4		55.5	118	40.4 111		26.0	53	**35**	4 58	27	53	3 01	42	39	59
17	76	39.7	+0	54.5	133	10.5 111	+25	20.7	53	**40**	4 54	5 26	5 53	3 19	39	12 22	61
18	91	39.9	+0	53.6	147	40.6 111	+25	15.1	56	**45**	4 50	5 24	5 53	3 40	37	12 01	64
19	106	40.1		52.6	162	10.8 112		09.5	56	**50**	44	21	54	4 07	33	11 35	68
20	121	40.3		51.6	176	41.0 112	+25	03.8	57	**52**	41	20	54	20	31	22	70
21	136	40.5		50.6	191	11.3 113	+24	57.9	59	**54**	37	19	54	35	29	11 07	73
22	151	40.8		49.7	205	41.6 113		51.9	60	**56**	33	17	54	4 52	27	10 50	76
23	166	41.0		48.7	220	11.9 113		45.8	61	**58**	29	15	54	5 14	22	29	80
24	181	41.2	+0	47.7	234	42.3 114	+24	39.6	62	**60 S**	4 24	5 13	5 54	5 41	15	10 02	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.4			Mag: −2.9			Mag: +0.4		
	0^{h} 04^{m}.5		PMG: 11^{h} 24^{m}			PMG: 5^{h} 03^{m}			PMG: 0^{h} 24^{m}			PMG: 21^{h} 30^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	358	52.0	188	59.3	+5 53.7	284	10.3	+21 45.5	354	00.0	+0 20.7	36	32.5	−16 14.0
1	13	54.5	203	58.9	52.5	299	11.6	45.7	9	02.8	20.6	51	35.1	14.0
2	28	56.9	218	58.5	51.2	314	12.9	45.8	24	05.6	20.4	66	37.7	14.1
3	43	59.4	233	58.1	50.0	329	14.3	46.0	39	08.3	20.3	81	40.3	14.1
4	59	01.9	248	57.7	48.8	344	15.6	46.2	54	11.1	20.2	96	42.9	14.1
5	74	04.3	263	57.2	+5 47.6	359	16.9	+21 46.3	69	13.9	+0 20.0	111	45.5	−16 14.2
6	89	06.8	278	56.8	+5 46.4	14	18.2	+21 46.5	84	16.6	+0 19.9	126	48.1	−16 14.2
7	104	09.2	293	56.4	45.2	29	19.5	46.7	99	19.4	19.8	141	50.7	14.3
8	119	11.7	308	56.0	44.0	44	20.9	46.8	114	22.2	19.7	156	53.3	14.3
9	134	14.2	323	55.6	42.8	59	22.2	47.0	129	24.9	19.5	171	55.8	14.3
10	149	16.6	338	55.2	41.6	74	23.5	47.2	144	27.7	19.4	186	58.4	14.4
11	164	19.1	353	54.7	+5 40.4	89	24.9	+21 47.4	159	30.5	+0 19.3	202	01.0	−16 14.4
12	179	21.6	8	54.3	+5 39.2	104	26.2	+21 47.5	174	33.2	+0 19.1	217	03.6	−16 14.4
13	194	24.0	23	53.9	38.0	119	27.5	47.7	189	36.0	19.0	232	06.2	14.5
14	209	26.5	38	53.5	36.8	134	28.8	47.9	204	38.8	18.9	247	08.8	14.5
15	224	29.0	53	53.1	35.6	149	30.2	48.0	219	41.5	18.7	262	11.4	14.6
16	239	31.4	68	52.7	34.4	164	31.5	48.2	234	44.3	18.6	277	14.0	14.6
17	254	33.9	83	52.3	+5 33.2	179	32.8	+21 48.4	249	47.1	+0 18.5	292	16.5	−16 14.6
18	269	36.3	98	51.8	+5 32.0	194	34.2	+21 48.5	264	49.8	+0 18.3	307	19.1	−16 14.7
19	284	38.8	113	51.4	30.8	209	35.5	48.7	279	52.6	18.2	322	21.7	14.7
20	299	41.3	128	51.0	29.5	224	36.8	48.9	294	55.4	18.1	337	24.3	14.8
21	314	43.7	143	50.6	28.3	239	38.2	49.0	309	58.1	17.9	352	26.9	14.8
22	329	46.2	158	50.2	27.1	254	39.5	49.2	325	00.9	17.8	7	29.5	14.8
23	344	48.7	173	49.8	25.9	269	40.9	49.4	340	03.7	17.7	22	32.1	14.9
24	359	51.1	188	49.4	+5 24.7	284	42.2	+21 49.5	355	06.4	+0 17.5	37	34.7	−16 14.9
Dif	—			−4	−12		+13	+2		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 24^{d}.7		PHE	4^{h}: 54′.4									
	PMG: 11^{h} 53^{m}.1				SD: 14′.8			12^{h}: 54′.5									
					PMG: 8^{h} 38^{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	181	41.2	+0	47.7	234	42.3	+24	39.6		**60 N**	18 03	18 45	19 35	** **	**	17 58	6
1	196	41.4		46.8	249	12.7 114		33.3	63	**58**	03	42	29	** **	**	41	11
2	211	41.7		45.8	263	43.2 115		26.8	65	**56**	02	39	23	** **	**	26	15
3	226	41.9		44.8	278	13.7 115		20.3	65	**54**	01	37	19	** **	**	14	17
4	241	42.1		43.8	292	44.2 115		13.6	67	**52**	01	35	15	** **	**	17 02	21
5	256	42.3	+0	42.9	307	14.8 116	+24	06.8	68	**50**	18 01	18 33	19 11	0 10	69	16 52	23
6	271	42.5	+0	41.9	321	45.4 116	+23	59.9	69	**45**	18 00	18 29	19 03	0 34	65	16 32	27
7	286	42.8		40.9	336	16.1 117		52.9	70	**40**	17 59	26	18 58	0 53	62	15	30
8	301	43.0		40.0	350	46.8 117		45.8	71	**35**	58	24	53	1 09	60	16 00	34
9	316	43.2		39.0	5	17.6 118		38.5	73	**30**	58	22	50	23	58	15 48	36
10	331	43.4		38.0	19	48.4 118		31.2	73	**20**	57	19	45	1 47	54	26	40
11	346	43.6	+0	37.0	34	19.2 118	+23	23.7	75	**10 N**	17 57	18 18	18 42	2 07	51	15 07	44
12	1	43.9	+0	36.1	48	50.1 119	+23	16.1	76	**0**	17 56	18 17	18 41	2 26	48	14 50	47
13	16	44.1		35.1	63	21.0 119		08.5	76	**10 S**	56	17	41	2 45	45	32	50
14	31	44.3		34.1	77	52.0 120	+23	00.7	78	**20**	56	18	43	3 06	42	14 13	54
15	46	44.5		33.1	92	23.0 120	+22	52.8	79	**30**	56	20	47	29	38	13 51	58
16	61	44.7		32.2	106	54.1 121		44.8	80	**35**	56	21	50	43	36	38	60
17	76	45.0	+0	31.2	121	25.2 121	+22	36.7	81	**40**	17 56	18 23	18 54	3 58	34	13 23	63
18	91	45.2	+0	30.2	135	56.3 121	+22	28.4	83	**45**	17 56	18 25	18 59	4 17	30	13 05	67
19	106	45.4		29.3	150	27.5 122		20.1	83	**50**	56	28	19 06	40	26	12 43	71
20	121	45.6		28.3	164	58.8 123		11.7	84	**52**	56	30	09	4 51	24	32	74
21	136	45.9		27.3	179	30.1 123	+22	03.2	85	**54**	56	31	13	5 04	21	20	76
22	151	46.1		26.3	194	01.4 123	+21	54.5	87	**56**	56	33	17	19	17	12 06	80
23	166	46.3		25.4	208	32.8 124		45.8	87	**58**	56	35	22	36	13	11 49	85
24	181	46.5	+0	24.4	223	04.2 124	+21	36.9	89	**60 S**	17 56	18 38	19 28	5 56	8	11 29	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.4			Mag: −2.9			Mag: +0.4		
	0^{h} 00^{m}.6		PMG: 11^{h} 25^{m}			PMG: 5^{h} 01^{m}			PMG: 0^{h} 20^{m}			PMG: 21^{h} 26^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	359	51.1	188	49.4	+5 24.7	284	42.2	+21 49.5	355	06.4	+0 17.5	37	34.7	−16 14.9
1	14	53.6	203	49.0	23.5	299	43.5	49.7	10	09.2	17.4	52	37.3	15.0
2	29	56.1	218	48.5	22.3	314	44.9	49.9	25	12.0	17.3	67	39.8	15.0
3	44	58.5	233	48.1	21.1	329	46.2	50.0	40	14.7	17.1	82	42.4	15.0
4	60	01.0	248	47.7	19.9	344	47.5	50.2	55	17.5	17.0	97	45.0	15.1
5	75	03.5	263	47.3	+5 18.7	359	48.9	+21 50.4	70	20.3	+0 16.9	112	47.6	−16 15.1
6	90	05.9	278	46.9	+5 17.4	14	50.2	+21 50.5	85	23.0	+0 16.7	127	50.2	−16 15.1
7	105	08.4	293	46.5	16.2	29	51.6	50.7	100	25.8	16.6	142	52.8	15.2
8	120	10.8	308	46.1	15.0	44	52.9	50.9	115	28.6	16.5	157	55.4	15.2
9	135	13.3	323	45.7	13.8	59	54.3	51.0	130	31.3	16.3	172	57.9	15.3
10	150	15.8	338	45.3	12.6	74	55.6	51.2	145	34.1	16.2	188	00.5	15.3
11	165	18.2	353	44.8	+5 11.4	89	57.0	+21 51.4	160	36.9	+0 16.1	203	03.1	−16 15.3
12	180	20.7	8	44.4	+5 10.2	104	58.3	+21 51.5	175	39.6	+0 15.9	218	05.7	−16 15.4
13	195	23.2	23	44.0	09.0	119	59.6	51.7	190	42.4	15.8	233	08.3	15.4
14	210	25.6	38	43.6	07.7	135	01.0	51.9	205	45.2	15.6	248	10.9	15.5
15	225	28.1	53	43.2	06.5	150	02.3	52.0	220	47.9	15.5	263	13.5	15.5
16	240	30.6	68	42.8	05.3	165	03.7	52.2	235	50.7	15.4	278	16.0	15.5
17	255	33.0	83	42.4	+5 04.1	180	05.0	+21 52.4	250	53.5	+0 15.2	293	18.6	−16 15.6
18	270	35.5	98	42.0	+5 02.9	195	06.4	+21 52.5	265	56.2	+0 15.1	308	21.2	−16 15.6
19	285	38.0	113	41.6	01.7	210	07.8	52.7	280	59.0	15.0	323	23.8	15.6
20	300	40.4	128	41.2	+5 00.5	225	09.1	52.9	296	01.8	14.8	338	26.4	15.7
21	315	42.9	143	40.7	+4 59.2	240	10.5	53.0	311	04.6	14.7	353	29.0	15.7
22	330	45.3	158	40.3	58.0	255	11.8	53.2	326	07.3	14.6	8	31.6	15.8
23	345	47.8	173	39.9	56.8	270	13.2	53.4	341	10.1	14.4	23	34.1	15.8
24	0	50.3	188	39.5	+4 55.6	285	14.5	+21 53.5	356	12.9	+0 14.3	38	36.7	−16 15.8
Dif	—			−4	−12		+13	+2		+28	−1		+26	0

UT	SOL SD: 15′.9 PMG: 11h 52m.7				LUNA Edad: 25d.7 SD: 14′.9 PMG: 9h 26m PHE 4h: 54′.7; 12h: 54′.8; 20h: 55′.0 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	181	46.5	+0	24.4	223	04.2	+21	36.9	**60 N**	4 12	5 02	5 44	0 16	91	18 04	3
1	196	46.7		23.4	237	35.6 124		28.0 89	**58**	18	05	45	33	85	17 52	7
2	211	47.0		22.4	252	07.1 125		18.9 91	**56**	23	08	45	47	81	41	10
3	226	47.2		21.5	266	38.7 126		09.8 91	**54**	28	10	45	0 59	78	31	14
4	241	47.4		20.5	281	10.3 126	+21	00.6 92	**52**	32	12	46	1 10	75	23	16
5	256	47.6	+0	19.5	295	41.9 126	+20	51.2 94	**50**	4 36	5 14	5 46	1 19	73	17 15	19
6	271	47.8	+0	18.6	310	13.6 127	+20	41.8 94	**45**	4 43	5 18	5 47	1 39	68	16 59	23
7	286	48.1		17.6	324	45.3 127		32.2 96	**40**	49	20	47	1 55	64	45	27
8	301	48.3		16.6	339	17.1 128		22.6 96	**35**	53	23	48	2 09	60	34	30
9	316	48.5		15.6	353	48.9 128		12.9 97	**30**	4 56	24	48	21	58	24	33
10	331	48.7		14.7	8	20.8 129	+20	03.0 99	**20**	5 01	27	49	41	53	16 06	38
11	346	48.9	+0	13.7	22	52.7 129	+19	53.1 99	**10 N**	5 04	5 28	5 49	2 58	50	15 51	42
12	1	49.2	+0	12.7	37	24.6 129	+19	43.1 100	**0**	5 05	5 29	5 49	3 14	46	15 37	45
13	16	49.4		11.7	51	56.6 130		33.0 101	**10 S**	04	29	50	30	43	22	49
14	31	49.6		10.8	66	28.7 131		22.8 102	**20**	5 02	28	50	3 48	38	15 07	53
15	46	49.8		09.8	81	00.7 130		12.5 103	**30**	4 58	26	50	4 07	35	14 49	57
16	61	50.0		08.8	95	32.8 131	+19	02.1 104	**35**	55	24	50	19	31	38	61
17	76	50.3	+0	07.9	110	05.0 132	+18	51.6 105	**40**	4 51	5 23	5 50	4 32	28	14 26	64
18	91	50.5	+0	06.9	124	37.2 132	+18	41.1 105	**45**	4 46	5 20	5 49	4 47	25	14 12	67
19	106	50.7		05.9	139	09.4 132		30.4 107	**50**	39	17	49	5 06	20	13 54	73
20	121	50.9		04.9	153	41.7 133		19.7 107	**52**	36	15	49	15	18	46	75
21	136	51.1		04.0	168	14.0 133	+18	08.9 108	**54**	32	14	49	25	15	36	78
22	151	51.4		03.0	182	46.4 134	+17	58.0 109	**56**	28	12	49	36	12	26	81
23	166	51.6		02.0	197	18.8 134		47.0 110	**58**	23	09	49	5 49	8	13 14	85
24	181	51.8	+0	01.0	211	51.2 134	+17	35.9 111	**60 S**	4 17	5 07	5 48	6 04	4	12 59	90

UT	ARIES PMG 23h 52m.7		VENUS Mag: −3.9 PMG: 11h 26m				MARTE Mag: −0.4 PMG: 4h 59m				JÚPITER Mag: −2.9 PMG: 0h 15m				SATURNO Mag: +0.5 PMG: 21h 22m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	0	50.3	188	39.5	+4	55.6	285	14.5	+21	53.5	356	12.9	+0	14.3	38	36.7	−16	15.8
1	15	52.7	203	39.1		54.4	300	15.9		53.7	11	15.6		14.2	53	39.3		15.9
2	30	55.2	218	38.7		53.2	315	17.2		53.8	26	18.4		14.0	68	41.9		15.9
3	45	57.7	233	38.3		51.9	330	18.6		54.0	41	21.2		13.9	83	44.5		15.9
4	61	00.1	248	37.9		50.7	345	20.0		54.2	56	23.9		13.8	98	47.1		16.0
5	76	02.6	263	37.5	+4	49.5	0	21.3	+21	54.3	71	26.7	+0	13.6	113	49.6	−16	16.0
6	91	05.1	278	37.1	+4	48.3	15	22.7	+21	54.5	86	29.5	+0	13.5	128	52.2	−16	16.1
7	106	07.5	293	36.7		47.1	30	24.0		54.7	101	32.2		13.4	143	54.8		16.1
8	121	10.0	308	36.3		45.9	45	25.4		54.8	116	35.0		13.2	158	57.4		16.1
9	136	12.5	323	35.8		44.6	60	26.8		55.0	131	37.8		13.1	174	00.0		16.2
10	151	14.9	338	35.4		43.4	75	28.1		55.1	146	40.5		13.0	189	02.6		16.2
11	166	17.4	353	35.0	+4	42.2	90	29.5	+21	55.3	161	43.3	+0	12.8	204	05.1	−16	16.2
12	181	19.8	8	34.6	+4	41.0	105	30.9	+21	55.5	176	46.1	+0	12.7	219	07.7	−16	16.3
13	196	22.3	23	34.2		39.8	120	32.2		55.6	191	48.8		12.6	234	10.3		16.3
14	211	24.8	38	33.8		38.5	135	33.6		55.8	206	51.6		12.4	249	12.9		16.3
15	226	27.2	53	33.4		37.3	150	35.0		56.0	221	54.4		12.3	264	15.5		16.4
16	241	29.7	68	33.0		36.1	165	36.3		56.1	236	57.2		12.2	279	18.1		16.4
17	256	32.2	83	32.6	+4	34.9	180	37.7	+21	56.3	251	59.9	+0	12.0	294	20.6	−16	16.5
18	271	34.6	98	32.2	+4	33.7	195	39.1	+21	56.4	267	02.7	+0	11.9	309	23.2	−16	16.5
19	286	37.1	113	31.8		32.4	210	40.4		56.6	282	05.5		11.8	324	25.8		16.5
20	301	39.6	128	31.4		31.2	225	41.8		56.8	297	08.2		11.6	339	28.4		16.6
21	316	42.0	143	31.0		30.0	240	43.2		56.9	312	11.0		11.5	354	31.0		16.6
22	331	44.5	158	30.6		28.8	255	44.6		57.1	327	13.8		11.4	9	33.5		16.6
23	346	46.9	173	30.2		27.6	270	45.9		57.2	342	16.5		11.2	24	36.1		16.7
24	1	49.4	188	29.8	+4	26.3	285	47.3	+21	57.4	357	19.3	+0	11.1	39	38.7	−16	16.7
Dif	—			−4		−12		+14		+2		+28		−1		+26		0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 26.ᵈ7		PHE	4ʰ: 55′.1									
	PMG: 11ʰ 52.ᵐ4				SD: 15′.0			12ʰ: 55′.3									
					PMG: 10ʰ 11ᵐ			20ʰ: 55′.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	181	51.8	+0	01.0	211	51.2	+17	35.9		**60 N**	17 57	18 39	19 28	1 47	89	18 07	2
1	196	52.0	+0	00.1	226	23.7 135		24.7 112		**58**	57	36	23	1 58	85	17 59	5
2	211	52.2	−0	00.9	240	56.2 135		13.4 113		**56**	57	34	18	2 08	81	51	9
3	226	52.4		01.9	255	28.8 136	+17	02.1 113		**54**	56	32	13	17	78	45	11
4	241	52.7		02.8	270	01.4 136	+16	50.7 114		**52**	56	30	10	25	75	39	13
5	256	52.9	−0	03.8	284	34.0 136	+16	39.2 115		**50**	17 56	18 28	19 06	2 32	73	17 34	15
6	271	53.1	−0	04.8	299	06.7 137	+16	27.6 116		**45**	17 56	18 25	18 59	2 47	68	17 22	20
7	286	53.3		05.8	313	39.4 137		16.0 116		**40**	56	23	54	2 59	64	12	25
8	301	53.5		06.7	328	12.1 137	+16	04.2 118		**35**	56	21	50	3 09	61	17 04	27
9	316	53.8		07.7	342	44.9 138	+15	52.4 118		**30**	56	19	47	19	57	16 57	30
10	331	54.0		08.7	357	17.7 138		40.5 119		**20**	55	17	43	34	53	44	35
11	346	54.2	−0	09.7	11	50.6 139	+15	28.6 119		**10 N**	17 55	18 16	18 41	3 48	48	16 33	39
12	1	54.4	−0	10.6	26	23.4 138	+15	16.5 121		**0**	17 56	18 16	18 40	4 00	45	16 22	44
13	16	54.6		11.6	40	56.3 139	+15	04.4 121		**10 S**	56	17	41	13	41	11	48
14	31	54.9		12.6	55	29.3 140	+14	52.2 122		**20**	56	18	44	26	37	16 00	52
15	46	55.1		13.6	70	02.3 140		39.9 123		**30**	57	21	49	42	31	15 46	58
16	61	55.3		14.5	84	35.3 140		27.6 123		**35**	57	22	52	4 50	29	39	60
17	76	55.5	−0	15.5	99	08.3 140	+14	15.2 124		**40**	17 58	18 25	18 56	5 00	26	15 30	64
18	91	55.7	−0	16.5	113	41.4 141	+14	02.7 125		**45**	17 58	18 27	19 02	5 12	22	15 19	69
19	106	55.9		17.5	128	14.5 141	+13	50.2 125		**50**	59	31	09	26	17	07	73
20	121	56.2		18.4	142	47.6 141		37.6 126		**52**	59	33	13	33	14	15 01	76
21	136	56.4		19.4	157	20.7 141		24.9 127		**54**	17 59	35	17	40	12	14 54	79
22	151	56.6		20.4	171	53.9 142	+13	12.1 128		**56**	18 00	37	21	48	9	47	81
23	166	56.8		21.3	186	27.1 142	+12	59.3 128		**58**	00	40	27	5 57	6	39	85
24	181	57.0	−0	22.3	201	00.4 143	+12	46.4 129		**60 S**	18 01	18 43	19 33	6 08	2	14 29	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.5			Mag: −2.9			Mag: +0.5		
	23ʰ 48.ᵐ8		PMG: 11ʰ 26ᵐ			PMG: 4ʰ 56ᵐ			PMG: 0ʰ 11ᵐ			PMG: 21ʰ 18ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	1	49.4	188	29.8	+4 26.3	285	47.3	+21 57.4	357	19.3	+0 11.1	39	38.7	−16 16.7
1	16	51.9	203	29.3	25.1	300	48.7	57.6	12	22.1	11.0	54	41.3	16.8
2	31	54.3	218	28.9	23.9	315	50.1	57.7	27	24.8	10.8	69	43.9	16.8
3	46	56.8	233	28.5	22.7	330	51.4	57.9	42	27.6	10.7	84	46.4	16.8
4	61	59.3	248	28.1	21.4	345	52.8	58.0	57	30.4	10.6	99	49.0	16.9
5	77	01.7	263	27.7	+4 20.2	0	54.2	+21 58.2	72	33.2	+0 10.4	114	51.6	−16 16.9
6	92	04.2	278	27.3	+4 19.0	15	55.6	+21 58.4	87	35.9	+0 10.3	129	54.2	−16 16.9
7	107	06.7	293	26.9	17.8	30	56.9	58.5	102	38.7	10.2	144	56.8	17.0
8	122	09.1	308	26.5	16.5	45	58.3	58.7	117	41.5	10.0	159	59.3	17.0
9	137	11.6	323	26.1	15.3	60	59.7	58.8	132	44.2	09.9	175	01.9	17.0
10	152	14.1	338	25.7	14.1	76	01.1	59.0	147	47.0	09.8	190	04.5	17.1
11	167	16.5	353	25.3	+4 12.9	91	02.5	+21 59.1	162	49.8	+0 09.6	205	07.1	−16 17.1
12	182	19.0	8	24.9	+4 11.6	106	03.9	+21 59.3	177	52.5	+0 09.5	220	09.7	−16 17.1
13	197	21.4	23	24.5	10.4	121	05.2	59.5	192	55.3	09.4	235	12.2	17.2
14	212	23.9	38	24.1	09.2	136	06.6	59.6	207	58.1	09.2	250	14.8	17.2
15	227	26.4	53	23.7	08.0	151	08.0	59.8	223	00.9	09.1	265	17.4	17.3
16	242	28.8	68	23.3	06.7	166	09.4	+21 59.9	238	03.6	09.0	280	20.0	17.3
17	257	31.3	83	22.9	+4 05.5	181	10.8	+22 00.1	253	06.4	+0 08.8	295	22.6	−16 17.3
18	272	33.8	98	22.5	+4 04.3	196	12.2	+22 00.2	268	09.2	+0 08.7	310	25.1	−16 17.4
19	287	36.2	113	22.1	03.1	211	13.6	00.4	283	11.9	08.6	325	27.7	17.4
20	302	38.7	128	21.7	01.8	226	15.0	00.6	298	14.7	08.4	340	30.3	17.4
21	317	41.2	143	21.3	+4 00.6	241	16.4	00.7	313	17.5	08.3	355	32.9	17.5
22	332	43.6	158	20.9	+3 59.4	256	17.7	00.9	328	20.2	08.2	10	35.5	17.5
23	347	46.1	173	20.5	58.2	271	19.1	01.0	343	23.0	08.0	25	38.0	17.5
24	2	48.5	188	20.1	+3 56.9	286	20.5	+22 01.2	358	25.8	+0 07.9	40	40.6	−16 17.6
Dif	—			−4	−12		+14	+2		+28	−1		+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 27^{d}.7		PHE	4^{h}: 55′.6								
	PMG: 11^{h} 52^{m}.0				SD: 15′.1			12^{h}: 55′.8								
					PMG: 10^{h} 55^{m}			20^{h}: 56′.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	181	57.0	−0	22.3	201	00.4	+12	46.4	**60 N**	4 17	5 07	5 49	3 16	88	18 09	1
1	196	57.3		23.3	215	33.6^{142}		33.5^{129}	**58**	23	10	49	23	85	04	4
2	211	57.5		24.3	230	06.9^{143}		20.5^{130}	**56**	28	12	49	29	82	18 00	7
3	226	57.7		25.2	244	40.2^{143}	+12	07.4^{131}	**54**	32	14	49	35	79	17 56	10
4	241	57.9		26.2	259	13.5^{143}	+11	54.2^{132}	**52**	36	15	49	40	76	52	13
5	256	58.1	−0	27.2	273	46.9^{144}	+11	41.0^{132}	**50**	4 39	5 17	5 49	3 45	73	17 49	15
6	271	58.3	−0	28.2	288	20.3^{144}	+11	27.8^{132}	**45**	4 46	5 20	5 49	3 55	68	17 42	19
7	286	58.6		29.1	302	53.6^{143}		14.5^{133}	**40**	51	22	49	4 03	64	37	22
8	301	58.8		30.1	317	27.1^{145}	+11	01.1^{134}	**35**	55	24	49	10	61	31	27
9	316	59.0		31.1	332	00.5^{144}	+10	47.7^{134}	**30**	4 58	25	49	16	58	27	29
10	331	59.2		32.1	346	34.0^{145}		34.2^{135}	**20**	5 02	27	49	27	52	19	35
11	346	59.4	−0	33.0	1	07.4^{144}	+10	20.6^{136}	**10 N**	5 04	5 28	5 49	4 36	48	17 12	39
12	1	59.6	−0	34.0	15	40.9^{145}	+10	07.0^{136}	**0**	5 04	5 28	5 49	4 45	43	17 06	43
13	16	59.9		35.0	30	14.4^{145}	+9	53.4^{136}	**10 S**	03	27	48	4 54	39	16 59	48
14	32	00.1		36.0	44	47.9^{145}		39.6^{138}	**20**	5 00	26	48	5 03	35	52	53
15	47	00.3		36.9	59	21.5^{146}		25.9^{137}	**30**	4 55	23	47	13	30	44	58
16	62	00.5		37.9	73	55.0^{145}	+9	12.1^{138}	**35**	52	21	47	19	27	39	61
17	77	00.7	−0	38.9	88	28.6^{146}	+8	58.2^{139}	**40**	4 48	5 19	5 46	5 26	23	16 34	65
18	92	00.9	−0	39.8	103	02.2^{146}	+8	44.3^{139}	**45**	4 42	5 16	5 46	5 34	19	16 28	68
19	107	01.2		40.8	117	35.7^{145}		30.3^{140}	**50**	34	12	45	43	15	20	74
20	122	01.4		41.8	132	09.3^{146}		16.3^{140}	**52**	31	11	44	47	13	17	76
21	137	01.6		42.8	146	43.0^{147}	+8	02.3^{140}	**54**	27	09	44	52	10	13	78
22	152	01.8		43.7	161	16.6^{146}	+7	48.2^{141}	**56**	22	06	43	5 57	8	08	82
23	167	02.0		44.7	175	50.2^{146}		34.0^{142}	**58**	17	04	43	6 03	5	16 04	84
24	182	02.2	−0	45.7	190	23.8^{146}	+7	19.8^{142}	**60 S**	4 10	5 01	5 42	6 10	1	15 58	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.5			Mag: −2.9			Mag: +0.5		
	23^{h} 44^{m}.9		PMG: 11^{h} 27^{m}			PMG: 4^{h} 54^{m}			PMG: 0^{h} 06^{m}			PMG: 21^{h} 14^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	2	48.5	188	20.1	+3 56.9	286	20.5	+22 01.2	358	25.8	+0 07.9	40	40.6	−16 17.6
1	17	51.0	203	19.7	55.7	301	21.9	01.3	13	28.6	07.8	55	43.2	17.6
2	32	53.5	218	19.3	54.5	316	23.3	01.5	28	31.3	07.6	70	45.8	17.6
3	47	55.9	233	18.9	53.2	331	24.7	01.7	43	34.1	07.5	85	48.3	17.7
4	62	58.4	248	18.5	52.0	346	26.1	01.8	58	36.9	07.4	100	50.9	17.7
5	78	00.9	263	18.1	+3 50.8	1	27.5	+22 02.0	73	39.6	+0 07.2	115	53.5	−16 17.7
6	93	03.3	278	17.7	+3 49.6	16	28.9	+22 02.1	88	42.4	+0 07.1	130	56.1	−16 17.8
7	108	05.8	293	17.3	48.3	31	30.3	02.3	103	45.2	07.0	145	58.7	17.8
8	123	08.3	308	16.9	47.1	46	31.7	02.4	118	47.9	06.8	161	01.2	17.9
9	138	10.7	323	16.5	45.9	61	33.1	02.6	133	50.7	06.7	176	03.8	17.9
10	153	13.2	338	16.1	44.6	76	34.5	02.7	148	53.5	06.5	191	06.4	17.9
11	168	15.7	353	15.7	+3 43.4	91	35.9	+22 02.9	163	56.3	+0 06.4	206	09.0	−16 18.0
12	183	18.1	8	15.3	+3 42.2	106	37.3	+22 03.1	178	59.0	+0 06.3	221	11.5	−16 18.0
13	198	20.6	23	14.9	41.0	121	38.7	03.2	194	01.8	06.1	236	14.1	18.0
14	213	23.0	38	14.5	39.7	136	40.1	03.4	209	04.6	06.0	251	16.7	18.1
15	228	25.5	53	14.1	38.5	151	41.5	03.5	224	07.3	05.9	266	19.3	18.1
16	243	28.0	68	13.7	37.3	166	42.9	03.7	239	10.1	05.7	281	21.8	18.1
17	258	30.4	83	13.3	+3 36.0	181	44.4	+22 03.8	254	12.9	+0 05.6	296	24.4	−16 18.2
18	273	32.9	98	12.9	+3 34.8	196	45.8	+22 04.0	269	15.7	+0 05.5	311	27.0	−16 18.2
19	288	35.4	113	12.5	33.6	211	47.2	04.1	284	18.4	05.3	326	29.6	18.2
20	303	37.8	128	12.1	32.3	226	48.6	04.3	299	21.2	05.2	341	32.1	18.3
21	318	40.3	143	11.7	31.1	241	50.0	04.4	314	24.0	05.1	356	34.7	18.3
22	333	42.8	158	11.3	29.9	256	51.4	04.6	329	26.7	04.9	11	37.3	18.3
23	348	45.2	173	10.9	28.6	271	52.8	04.7	344	29.5	04.8	26	39.9	18.4
24	3	47.7	188	10.5	+3 27.4	286	54.2	+22 04.9	359	32.3	+0 04.7	41	42.4	−16 18.4
Dif	—			−4	−12		+14	+2		+28	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 15′.9		Edad: 28.d7		PHE	4h: 56′.2								
	PMG: 11h 51.m7		SD: 15′.3			12h: 56′.3								
			PMG: 11h 39m			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	182 02.2	−0 45.7	190 23.8		+7 19.8		**60 N**	17 51	18 32	19 22	4 44	89	18 10	1
1	197 02.5	46.7	204 57.5	147	+7 05.6	142	**58**	51	30	17	48	85	08	4
2	212 02.7	47.6	219 31.1	146	+6 51.3	143	**56**	51	28	12	51	82	07	7
3	227 02.9	48.6	234 04.8	147	37.0	143	**54**	51	27	08	54	79	06	9
4	242 03.1	49.6	248 38.4	146	22.6	144	**52**	52	25	05	56	77	05	11
5	257 03.3	−0 50.6	263 12.1	147	+6 08.2	144	**50**	17 52	18 24	19 02	4 58	75	18 04	14
6	272 03.5	−0 51.5	277 45.7	146	+5 53.8	144	**45**	17 52	18 21	18 56	5 03	70	18 01	19
7	287 03.8	52.5	292 19.4	147	39.3	145	**40**	52	19	51	07	65	17 59	23
8	302 04.0	53.5	306 53.0	146	24.8	145	**35**	53	18	47	11	61	58	26
9	317 04.2	54.5	321 26.7	147	+5 10.3	145	**30**	53	17	45	14	58	56	30
10	332 04.4	55.4	336 00.3	146	+4 55.7	146	**20**	54	16	41	19	53	54	34
11	347 04.6	−0 56.4	350 34.0	147	+4 41.1	146	**10 N**	17 54	18 15	18 40	5 24	48	17 51	40
12	2 04.8	−0 57.4	5 07.6	146	+4 26.5	146	**0**	17 55	18 16	18 40	5 28	44	17 49	44
13	17 05.0	58.4	19 41.3	147	+4 11.8	147	**10 S**	56	17	41	33	39	47	48
14	32 05.3	−0 59.3	34 14.9	146	+3 57.1	147	**20**	57	19	44	38	34	45	53
15	47 05.5	−1 00.3	48 48.5	146	42.3	148	**30**	58	22	50	43	29	42	59
16	62 05.7	01.3	63 22.1	146	27.6	147	**35**	59	24	54	46	26	40	62
17	77 05.9	−1 02.2	77 55.8	147	+3 12.8	148	**40**	17 59	18 27	18 58	5 49	23	17 39	65
18	92 06.1	−1 03.2	92 29.4	146	+2 58.0	148	**45**	18 01	18 30	19 04	5 53	19	17 36	70
19	107 06.3	04.2	107 02.9	145	43.1	149	**50**	02	34	13	5 58	14	34	75
20	122 06.6	05.2	121 36.5	146	28.3	148	**52**	02	36	16	6 00	12	33	77
21	137 06.8	06.1	136 10.1	146	+2 13.4	149	**54**	03	39	21	02	10	31	80
22	152 07.0	07.1	150 43.6	145	+1 58.5	149	**56**	04	41	26	05	7	30	83
23	167 07.2	08.1	165 17.2	146	43.6	149	**58**	05	44	32	08	4	28	86
24	182 07.4	−1 09.1	179 50.7	145	+1 28.6	150	**60 S**	18 06	18 47	19 38	6 11	1	17 27	89

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.5		Mag: −2.9		Mag: +0.5	
	23h 40.m9	PMG: 11h 28m		PMG: 4h 52m		PMG: 0h 02m		PMG: 21h 10m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	3 47.7	188 10.5	+3 27.4	286 54.2	+22 04.9	359 32.3	+0 04.7	41 42.4	−16 18.4
1	18 50.1	203 10.1	26.2	301 55.6	05.0	14 35.1	04.5	56 45.0	18.4
2	33 52.6	218 09.7	24.9	316 57.1	05.2	29 37.8	04.4	71 47.6	18.5
3	48 55.1	233 09.3	23.7	331 58.5	05.4	44 40.6	04.3	86 50.2	18.5
4	63 57.5	248 08.9	22.5	346 59.9	05.5	59 43.4	04.1	101 52.7	18.5
5	79 00.0	263 08.5	+3 21.2	2 01.3	+22 05.7	74 46.1	+0 04.0	116 55.3	−16 18.6
6	94 02.5	278 08.1	+3 20.0	17 02.7	+22 05.8	89 48.9	+0 03.9	131 57.9	−16 18.6
7	109 04.9	293 07.7	18.8	32 04.1	06.0	104 51.7	03.7	147 00.5	18.6
8	124 07.4	308 07.3	17.5	47 05.6	06.1	119 54.4	03.6	162 03.0	18.7
9	139 09.9	323 06.9	16.3	62 07.0	06.3	134 57.2	03.5	177 05.6	18.7
10	154 12.3	338 06.5	15.1	77 08.4	06.4	150 00.0	03.3	192 08.2	18.7
11	169 14.8	353 06.1	+3 13.8	92 09.8	+22 06.6	165 02.8	+0 03.2	207 10.7	−16 18.8
12	184 17.3	8 05.7	+3 12.6	107 11.3	+22 06.7	180 05.5	+0 03.1	222 13.3	−16 18.8
13	199 19.7	23 05.3	11.4	122 12.7	06.9	195 08.3	02.9	237 15.9	18.8
14	214 22.2	38 04.9	10.1	137 14.1	07.0	210 11.1	02.8	252 18.5	18.9
15	229 24.6	53 04.5	08.9	152 15.5	07.2	225 13.8	02.7	267 21.0	18.9
16	244 27.1	68 04.1	07.7	167 17.0	07.3	240 16.6	02.5	282 23.6	18.9
17	259 29.6	83 03.7	+3 06.4	182 18.4	+22 07.5	255 19.4	+0 02.4	297 26.2	−16 19.0
18	274 32.0	98 03.3	+3 05.2	197 19.8	+22 07.6	270 22.2	+0 02.3	312 28.8	−16 19.0
19	289 34.5	113 02.9	03.9	212 21.2	07.8	285 24.9	02.1	327 31.3	19.0
20	304 37.0	128 02.5	02.7	227 22.7	07.9	300 27.7	02.0	342 33.9	19.1
21	319 39.4	143 02.1	01.5	242 24.1	08.1	315 30.5	01.9	357 36.5	19.1
22	334 41.9	158 01.7	+3 00.2	257 25.5	08.2	330 33.2	01.7	12 39.0	19.1
23	349 44.4	173 01.3	+2 59.0	272 27.0	08.4	345 36.0	01.6	27 41.6	19.2
24	4 46.8	188 00.9	+2 57.8	287 28.4	+22 08.5	0 38.8	+0 01.5	42 44.2	−16 19.2
Dif	—	−4	−12	+14	+2	−8972	−1	+26	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 15′.9				Edad: 0ᵈ.1		PHE	4ʰ: 56′.7								
	PMG: 11ʰ 51ᵐ.3				SD: 15′.4			12ʰ: 56′.9								
					PMG: 12ʰ 23ᵐ			20ʰ: 57′.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	07.4	−1	09.1	179	50.7	+1	28.6	**60 N**	4 22	5 12	5 53	6 13	91	18 11	1
1	197	07.6		10.0	194	24.2 145	+1	13.6 150	**58**	27	14	53	13	87	12	5
2	212	07.8		11.0	208	57.7 145	+0	58.7 149	**56**	32	16	53	13	84	14	7
3	227	08.1		12.0	223	31.2 145		43.6 151	**54**	36	17	53	13	81	15	10
4	242	08.3		13.0	238	04.6 144		28.6 150	**52**	39	19	52	13	78	16	13
5	257	08.5	−1	13.9	252	38.0 144	+0	13.6 150	**50**	4 42	5 20	5 52	6 13	76	18 18	14
6	272	08.7	−1	14.9	267	11.4 144	−0	01.4 150	**45**	4 48	5 22	5 52	6 13	70	18 20	20
7	287	08.9		15.9	281	44.8 144		16.5 151	**40**	53	24	51	12	67	22	24
8	302	09.1		16.9	296	18.2 144		31.6 151	**35**	56	26	51	12	63	24	27
9	317	09.3		17.8	310	51.5 143	−0	46.6 150	**30**	4 59	27	50	12	60	26	30
10	332	09.5		18.8	325	24.8 143	−1	01.7 151	**20**	5 02	28	50	12	54	28	36
11	347	09.8	−1	19.8	339	58.1 143	−1	16.8 151	**10 N**	5 04	5 28	5 49	6 12	49	18 31	41
12	2	10.0	−1	20.8	354	31.3 142	−1	31.9 151	**0**	5 03	5 27	5 48	6 12	45	18 33	46
13	17	10.2		21.7	9	04.6 143	−1	47.0 151	**10 S**	5 02	26	47	12	40	35	50
14	32	10.4		22.7	23	37.8 142	−2	02.1 151	**20**	4 58	24	46	12	35	38	55
15	47	10.6		23.7	38	10.9 141		17.3 152	**30**	53	21	45	12	30	41	60
16	62	10.8		24.6	52	44.0 141		32.4 151	**35**	49	19	44	12	27	42	64
17	77	11.0	−1	25.6	67	17.1 141	−2	47.5 151	**40**	4 44	5 16	5 43	6 12	23	18 44	68
18	92	11.3	−1	26.6	81	50.2 141	−3	02.6 151	**45**	4 38	5 12	5 42	6 12	19	18 46	72
19	107	11.5		27.6	96	23.2 140		17.7 151	**50**	30	08	40	12	14	49	77
20	122	11.7		28.5	110	56.2 140		32.8 151	**52**	26	06	40	12	12	50	80
21	137	11.9		29.5	125	29.2 140	−3	47.9 151	**54**	21	04	39	12	10	51	83
22	152	12.1		30.5	140	02.1 139	−4	03.0 151	**56**	16	5 01	38	12	7	53	85
23	167	12.3		31.5	154	34.9 138		18.1 151	**58**	10	4 58	37	12	4	54	89
24	182	12.5	−1	32.4	169	07.8 139	−4	33.2 151	**60 S**	4 04	4 54	5 36	6 12	1	18 56	93

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.5			Mag: −2.9			Mag: +0.5		
	23ʰ 37ᵐ.0		PMG: 11ʰ 28ᵐ			PMG: 4ʰ 50ᵐ			PMG: 23ʰ 53ᵐ			PMG: 21ʰ 05ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	4	46.8	188	00.9	+2 57.8	287	28.4	+22 08.5	0	38.8	+0 01.5	42	44.2	−16 19.2
1	19	49.3	203	00.5	56.5	302	29.8	08.7	15	41.6	01.3	57	46.8	19.2
2	34	51.8	218	00.1	55.3	317	31.3	08.8	30	44.3	01.2	72	49.3	19.3
3	49	54.2	232	59.7	54.0	332	32.7	09.0	45	47.1	01.1	87	51.9	19.3
4	64	56.7	247	59.3	52.8	347	34.2	09.1	60	49.9	00.9	102	54.5	19.3
5	79	59.1	262	58.9	+2 51.6	2	35.6	+22 09.3	75	52.6	+0 00.8	117	57.0	−16 19.4
6	95	01.6	277	58.5	+2 50.3	17	37.0	+22 09.4	90	55.4	+0 00.7	132	59.6	−16 19.4
7	110	04.1	292	58.1	49.1	32	38.5	09.6	105	58.2	00.5	148	02.2	19.4
8	125	06.5	307	57.7	47.9	47	39.9	09.7	121	01.0	00.4	163	04.7	19.5
9	140	09.0	322	57.3	46.6	62	41.3	09.9	136	03.7	00.3	178	07.3	19.5
10	155	11.5	337	56.9	45.4	77	42.8	10.0	151	06.5	+0 00.1	193	09.9	19.5
11	170	13.9	352	56.5	+2 44.1	92	44.2	+22 10.2	166	09.3	+0 00.0	208	12.5	−16 19.6
12	185	16.4	7	56.2	+2 42.9	107	45.7	+22 10.3	181	12.0	−0 00.1	223	15.0	−16 19.6
13	200	18.9	22	55.8	41.7	122	47.1	10.4	196	14.8	00.3	238	17.6	19.6
14	215	21.3	37	55.4	40.4	137	48.6	10.6	211	17.6	00.4	253	20.2	19.7
15	230	23.8	52	55.0	39.2	152	50.0	10.7	226	20.4	00.5	268	22.7	19.7
16	245	26.2	67	54.6	37.9	167	51.5	10.9	241	23.1	00.7	283	25.3	19.7
17	260	28.7	82	54.2	+2 36.7	182	52.9	+22 11.0	256	25.9	−0 00.8	298	27.9	−16 19.8
18	275	31.2	97	53.8	+2 35.5	197	54.4	+22 11.2	271	28.7	−0 00.9	313	30.4	−16 19.8
19	290	33.6	112	53.4	34.2	212	55.8	11.3	286	31.4	01.1	328	33.0	19.8
20	305	36.1	127	53.0	33.0	227	57.3	11.5	301	34.2	01.2	343	35.6	19.9
21	320	38.6	142	52.6	31.7	242	58.7	11.6	316	37.0	01.3	358	38.1	19.9
22	335	41.0	157	52.2	30.5	258	00.2	11.8	331	39.8	01.5	13	40.7	19.9
23	350	43.5	172	51.8	29.3	273	01.6	11.9	346	42.5	01.6	28	43.3	20.0
24	5	46.0	187	51.4	+2 28.0	288	03.1	+22 12.1	1	45.3	−0 01.7	43	45.8	−16 20.0
Dif	—			−4	−12		+14	+1		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 1ᵈ.1		PHE	4ʰ: 57′.2									
	PMG: 11ʰ 51ᵐ.0				SD: 15′.6			12ʰ: 57′.4									
					PMG: 13ʰ 08ᵐ			20ʰ: 57′.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	182	12.5	−1	32.4	169	07.8	−4	33.2		**60 N**	17 45	18 26	19 15	7 44	95	18 12	2
1	197	12.7		33.4	183	40.5 137	−4	48.3	151	**58**	45	24	11	40	91	17	6
2	212	13.0		34.4	198	13.3 138	−5	03.4	151	**56**	46	23	07	37	87	21	9
3	227	13.2		35.4	212	46.0 137		18.4	150	**54**	47	22	03	34	84	25	13
4	242	13.4		36.3	227	18.6 136		33.5	151	**52**	47	21	19 00	31	82	29	15
5	257	13.6	−1	37.3	241	51.2 136	−5	48.5	150	**50**	17 47	18 20	18 57	7 29	79	18 32	18
6	272	13.8	−1	38.3	256	23.8 136	−6	03.5	150	**45**	17 48	18 18	18 52	7 23	74	18 40	22
7	287	14.0		39.3	270	56.3 135		18.5	150	**40**	49	16	48	19	69	46	27
8	302	14.2		40.2	285	28.8 135		33.5	150	**35**	50	15	44	15	65	51	31
9	317	14.4		41.2	300	01.2 134	−6	48.5	150	**30**	51	14	42	12	62	18 56	34
10	332	14.7		42.2	314	33.5 133	−7	03.4	149	**20**	52	14	39	06	56	19 04	39
11	347	14.9	−1	43.1	329	05.8 133	−7	18.3	149	**10 N**	17 53	18 14	18 38	7 01	52	19 12	43
12	2	15.1	−1	44.1	343	38.1 133	−7	33.2	149	**0**	17 54	18 15	18 39	6 57	46	19 19	48
13	17	15.3		45.1	358	10.3 132	−7	48.1	149	**10 S**	56	17	41	52	42	25	53
14	32	15.5		46.1	12	42.4 131	−8	02.9	148	**20**	57	19	45	47	38	33	57
15	47	15.7		47.0	27	14.5 131		17.8	149	**30**	17 59	23	51	42	32	41	63
16	62	15.9		48.0	41	46.5 130		32.5	147	**35**	18 00	25	18 55	39	28	46	66
17	77	16.1	−1	49.0	56	18.5 130	−8	47.3	148	**40**	18 01	18 29	19 00	6 35	25	19 52	70
18	92	16.3	−1	50.0	70	50.4 129	−9	02.0	147	**45**	18 03	18 32	19 07	6 31	21	19 58	75
19	107	16.6		50.9	85	22.2 128		16.7	147	**50**	05	37	16	26	16	20 06	80
20	122	16.8		51.9	99	54.0 128		31.4	147	**52**	06	40	20	24	14	10	82
21	137	17.0		52.9	114	25.7 127	−9	46.0	146	**54**	07	42	25	22	11	14	85
22	152	17.2		53.9	128	57.4 127	−10	00.6	146	**56**	08	45	30	19	9	18	89
23	167	17.4		54.8	143	29.0 126		15.2	146	**58**	09	49	36	16	6	23	93
24	182	17.6	−1	55.8	158	00.5 125	−10	29.7	145	**60 S**	18 10	18 52	19 44	6 13	2	20 29	97

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.5			Mag: −2.9			Mag: +0.5		
	23ʰ 33ᵐ.1		PMG: 11ʰ 29ᵐ			PMG: 4ʰ 47ᵐ			PMG: 23ʰ 49ᵐ			PMG: 21ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	5	46.0	187	51.4	+2 28.0	288	03.1	+22 12.1	1	45.3	−0 01.7	43	45.8	−16 20.0
1	20	48.4	202	51.0	26.8	303	04.5	12.2	16	48.1	01.9	58	48.4	20.0
2	35	50.9	217	50.6	25.5	318	06.0	12.4	31	50.8	02.0	73	51.0	20.0
3	50	53.4	232	50.2	24.3	333	07.4	12.5	46	53.6	02.1	88	53.5	20.1
4	65	55.8	247	49.8	23.0	348	08.9	12.6	61	56.4	02.3	103	56.1	20.1
5	80	58.3	262	49.4	+2 21.8	3	10.4	+22 12.8	76	59.2	−0 02.4	118	58.7	−16 20.1
6	96	00.7	277	49.0	+2 20.6	18	11.8	+22 12.9	92	01.9	−0 02.5	134	01.3	−16 20.2
7	111	03.2	292	48.6	19.3	33	13.3	13.1	107	04.7	02.7	149	03.8	20.2
8	126	05.7	307	48.3	18.1	48	14.7	13.2	122	07.5	02.8	164	06.4	20.2
9	141	08.1	322	47.9	16.8	63	16.2	13.4	137	10.2	02.9	179	09.0	20.3
10	156	10.6	337	47.5	15.6	78	17.7	13.5	152	13.0	03.1	194	11.5	20.3
11	171	13.1	352	47.1	+2 14.3	93	19.1	+22 13.7	167	15.8	−0 03.2	209	14.1	−16 20.3
12	186	15.5	7	46.7	+2 13.1	108	20.6	+22 13.8	182	18.6	−0 03.3	224	16.6	−16 20.4
13	201	18.0	22	46.3	11.9	123	22.1	13.9	197	21.3	03.5	239	19.2	20.4
14	216	20.5	37	45.9	10.6	138	23.5	14.1	212	24.1	03.6	254	21.8	20.4
15	231	22.9	52	45.5	09.4	153	25.0	14.2	227	26.9	03.7	269	24.3	20.5
16	246	25.4	67	45.1	08.1	168	26.5	14.4	242	29.6	03.9	284	26.9	20.5
17	261	27.8	82	44.7	+2 06.9	183	27.9	+22 14.5	257	32.4	−0 04.0	299	29.5	−16 20.5
18	276	30.3	97	44.3	+2 05.6	198	29.4	+22 14.7	272	35.2	−0 04.1	314	32.0	−16 20.5
19	291	32.8	112	43.9	04.4	213	30.9	14.8	287	38.0	04.3	329	34.6	20.6
20	306	35.2	127	43.5	03.2	228	32.3	15.0	302	40.7	04.4	344	37.2	20.6
21	321	37.7	142	43.1	01.9	243	33.8	15.1	317	43.5	04.5	359	39.7	20.6
22	336	40.2	157	42.7	+2 00.7	258	35.3	15.2	332	46.3	04.7	14	42.3	20.7
23	351	42.6	172	42.3	+1 59.4	273	36.8	15.4	347	49.0	04.8	29	44.9	20.7
24	6	45.1	187	41.9	+1 58.2	288	38.2	+22 15.5	2	51.8	−0 04.9	44	47.4	−16 20.7
Dif	—			−4	−12		+15	+1		+28	−1		+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 2ᵈ.1		PHE	4ʰ: 57′.7									
	PMG: 11ʰ 50ᵐ.7				SD: 15′.7			12ʰ: 57′.9									
					PMG: 13ʰ 55ᵐ			20ʰ: 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	182	17.6	−1	55.8	158	00.5	−10	29.7		**60 N**	4 27	5 17	5 58	9 19	100	18 14	3
1	197	17.8		56.8	172	31.9 124		44.2 145		**58**	32	18	57	11	96	23	8
2	212	18.0		57.7	187	03.3 124	−10	58.6 144		**56**	36	20	57	9 04	91	30	13
3	227	18.2		58.7	201	34.6 123	−11	13.0 144		**54**	40	21	56	8 58	88	38	16
4	242	18.4	−1	59.7	216	05.9 123		27.3 143		**52**	43	22	56	53	84	44	19
5	257	18.7	−2	00.7	230	37.0 121	−11	41.6 143		**50**	4 45	5 23	5 55	8 48	81	18 50	21
6	272	18.9	−2	01.6	245	08.1 121	−11	55.9 143		**45**	4 51	5 25	5 54	8 37	76	19 02	27
7	287	19.1		02.6	259	39.1 120	−12	10.1 142		**40**	55	26	53	28	71	13	31
8	302	19.3		03.6	274	10.1 120		24.2 141		**35**	4 58	27	52	20	68	22	35
9	317	19.5		04.6	288	41.0 119		38.3 141		**30**	5 00	28	52	14	64	30	37
10	332	19.7		05.5	303	11.8 118	−12	52.4 141		**20**	03	28	50	8 02	59	43	43
11	347	19.9	−2	06.5	317	42.5 117	−13	06.4 140		**10 N**	5 03	5 28	5 49	7 53	54	19 55	48
12	2	20.1	−2	07.5	332	13.1 116	−13	20.3 139		**0**	5 03	5 27	5 47	7 43	50	20 07	51
13	17	20.3		08.4	346	43.7 116		34.2 139		**10 S**	5 01	25	46	34	46	18	56
14	32	20.5		09.4	1	14.2 115	−13	48.0 138		**20**	4 57	22	44	25	40	30	61
15	47	20.7		10.4	15	44.6 114	−14	01.7 137		**30**	50	18	42	14	35	44	66
16	62	21.0		11.4	30	14.9 113		15.4 137		**35**	46	16	41	07	33	20 52	69
17	77	21.2	−2	12.3	44	45.1 112	−14	29.1 137		**40**	4 41	5 13	5 40	7 00	29	21 02	72
18	92	21.4	−2	13.3	59	15.3 112	−14	42.6 135		**45**	4 34	5 09	5 38	6 52	25	21 13	77
19	107	21.6		14.3	73	45.3 110	−14	56.1 135		**50**	25	04	36	42	20	26	83
20	122	21.8		15.3	88	15.3 110	−15	09.6 135		**52**	21	5 01	35	38	17	32	86
21	137	22.0		16.2	102	45.2 109		22.9 133		**54**	16	4 58	34	33	14	39	89
22	152	22.2		17.2	117	15.0 108		36.2 133		**56**	10	55	33	28	11	47	92
23	167	22.4		18.2	131	44.7 107	−15	49.4 132		**58**	4 04	52	31	22	7	21 56	97
24	182	22.6	−2	19.1	146	14.4 107	−16	02.5 131		**60 S**	3 57	4 48	5 30	6 15	3	22 06	102

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.5			Mag: −2.9			Mag: +0.5		
	23ʰ 29ᵐ.1		PMG: 11ʰ 30ᵐ			PMG: 4ʰ 45ᵐ			PMG: 23ʰ 44ᵐ			PMG: 20ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	6	45.1	187	41.9	+1 58.2	288	38.2	+22 15.5	2	51.8	−0 04.9	44	47.4	−16 20.7
1	21	47.6	202	41.6	56.9	303	39.7	15.7	17	54.6	05.1	59	50.0	20.8
2	36	50.0	217	41.2	55.7	318	41.2	15.8	32	57.4	05.2	74	52.6	20.8
3	51	52.5	232	40.8	54.4	333	42.7	16.0	48	00.1	05.3	89	55.1	20.8
4	66	55.0	247	40.4	53.2	348	44.2	16.1	63	02.9	05.5	104	57.7	20.9
5	81	57.4	262	40.0	+1 52.0	3	45.6	+22 16.2	78	05.7	−0 05.6	120	00.2	−16 20.9
6	96	59.9	277	39.6	+1 50.7	18	47.1	+22 16.4	93	08.4	−0 05.7	135	02.8	−16 20.9
7	112	02.3	292	39.2	49.5	33	48.6	16.5	108	11.2	05.9	150	05.4	20.9
8	127	04.8	307	38.8	48.2	48	50.1	16.7	123	14.0	06.0	165	07.9	21.0
9	142	07.3	322	38.4	47.0	63	51.6	16.8	138	16.8	06.1	180	10.5	21.0
10	157	09.7	337	38.0	45.7	78	53.0	17.0	153	19.5	06.3	195	13.1	21.0
11	172	12.2	352	37.6	+1 44.5	93	54.5	+22 17.1	168	22.3	−0 06.4	210	15.6	−16 21.1
12	187	14.7	7	37.2	+1 43.2	108	56.0	+22 17.2	183	25.1	−0 06.5	225	18.2	−16 21.1
13	202	17.1	22	36.8	42.0	123	57.5	17.4	198	27.8	06.7	240	20.8	21.1
14	217	19.6	37	36.4	40.7	138	59.0	17.5	213	30.6	06.8	255	23.3	21.2
15	232	22.1	52	36.1	39.5	154	00.5	17.7	228	33.4	06.9	270	25.9	21.2
16	247	24.5	67	35.7	38.2	169	02.0	17.8	243	36.2	07.1	285	28.4	21.2
17	262	27.0	82	35.3	+1 37.0	184	03.5	+22 17.9	258	38.9	−0 07.2	300	31.0	−16 21.2
18	277	29.4	97	34.9	+1 35.7	199	05.0	+22 18.1	273	41.7	−0 07.3	315	33.6	−16 21.3
19	292	31.9	112	34.5	34.5	214	06.4	18.2	288	44.5	07.5	330	36.1	21.3
20	307	34.4	127	34.1	33.3	229	07.9	18.4	303	47.2	07.6	345	38.7	21.3
21	322	36.8	142	33.7	32.0	244	09.4	18.5	318	50.0	07.7	0	41.2	21.4
22	337	39.3	157	33.3	30.8	259	10.9	18.6	333	52.8	07.9	15	43.8	21.4
23	352	41.8	172	32.9	29.5	274	12.4	18.8	348	55.6	08.0	30	46.4	21.4
24	7	44.2	187	32.5	+1 28.3	289	13.9	+22 18.9	3	58.3	−0 08.1	45	48.9	−16 21.4
Dif	—			−4	−12		+15	+1		+28	−1		+26	0

UT	SOL SD: 16′.0 PMG: 11h 50m.3		LUNA Edad: 3d.1 SD: 15′.8 PMG: 14h 46m PHE 4h: 58′.2; 12h: 58′.3; 20h: 58′.4 Rº: 54m				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 22.6	−2 19.1	146 14.4		−16 02.5		**60 N**	17 39	18 20	19 09	10 59	106	18 17	8
1	197 22.8	20.1	160 43.9	105	15.6	131	**58**	40	19	05	47	98	31	15
2	212 23.0	21.1	175 13.4	105	28.6	130	**56**	41	18	19 01	35	94	43	19
3	227 23.2	22.1	189 42.7	103	41.5	129	**54**	42	17	18 58	26	89	18 54	23
4	242 23.5	23.0	204 12.0	103	−16 54.3	128	**52**	42	16	55	17	86	19 03	26
5	257 23.7	−2 24.0	218 41.2	102	−17 07.0	127	**50**	17 43	18 15	18 53	10 09	83	19 11	29
6	272 23.9	−2 25.0	233 10.3	101	−17 19.7	127	**45**	17 45	18 14	18 48	9 53	77	19 29	35
7	287 24.1	26.0	247 39.3	100	32.3	126	**40**	46	13	44	39	74	44	38
8	302 24.3	26.9	262 08.2	99	44.7	124	**35**	47	12	42	28	70	19 57	41
9	317 24.5	27.9	276 37.0	98	−17 57.1	124	**30**	48	12	40	18	67	20 07	45
10	332 24.7	28.9	291 05.7	97	−18 09.4	123	**20**	50	12	38	9 01	62	26	49
11	347 24.9	−2 29.8	305 34.3	96	−18 21.6	122	**10 N**	17 52	18 13	18 37	8 47	57	20 43	52
12	2 25.1	−2 30.8	320 02.8	95	−18 33.8	122	**0**	17 54	18 14	18 38	8 33	54	20 58	56
13	17 25.3	31.8	334 31.3	95	45.8	120	**10 S**	55	16	41	20	50	21 14	59
14	32 25.5	32.8	348 59.6	93	−18 57.7	119	**20**	17 58	20	45	8 05	46	31	63
15	47 25.7	33.7	3 27.8	92	−19 09.5	118	**30**	18 00	24	52	7 49	41	21 50	67
16	62 25.9	34.7	17 56.0	92	21.2	117	**35**	02	27	18 57	40	38	22 01	70
17	77 26.1	−2 35.7	32 24.0	90	−19 32.9	117	**40**	18 03	18 31	19 03	7 29	35	22 14	73
18	92 26.4	−2 36.6	46 51.9	89	−19 44.4	115	**45**	18 05	18 35	19 10	7 17	30	22 30	77
19	107 26.6	37.6	61 19.8	89	−19 55.8	114	**50**	08	40	19	7 02	25	49	82
20	122 26.8	38.6	75 47.5	87	−20 07.1	113	**52**	09	43	24	6 55	22	22 58	85
21	137 27.0	39.6	90 15.2	87	18.3	112	**54**	10	46	29	47	20	23 08	88
22	152 27.2	40.5	104 42.7	85	29.4	111	**56**	12	49	35	39	15	19	93
23	167 27.4	41.5	119 10.2	85	40.3	109	**58**	13	53	41	29	11	33	97
24	182 27.6	−2 42.5	133 37.5	83	−20 51.2	109	**60 S**	18 15	18 57	19 49	6 18	6	23 48	105

UT	ARIES PMG 23h 25m.2	VENUS Mag: −3.9 PMG: 11h 30m		MARTE Mag: −0.6 PMG: 4h 43m		JÚPITER Mag: −2.9 PMG: 23h 40m		SATURNO Mag: +0.5 PMG: 20h 53m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	7 44.2	187 32.5	+1 28.3	289 13.9	+22 18.9	3 58.3	−0 08.1	45 48.9	−16 21.4
1	22 46.7	202 32.1	27.0	304 15.4	19.1	19 01.1	08.3	60 51.5	21.5
2	37 49.2	217 31.7	25.8	319 16.9	19.2	34 03.9	08.4	75 54.0	21.5
3	52 51.6	232 31.4	24.5	334 18.4	19.3	49 06.6	08.5	90 56.6	21.5
4	67 54.1	247 31.0	23.3	349 19.9	19.5	64 09.4	08.7	105 59.2	21.6
5	82 56.6	262 30.6	+1 22.0	4 21.4	+22 19.6	79 12.2	−0 08.8	121 01.7	−16 21.6
6	97 59.0	277 30.2	+1 20.8	19 22.9	+22 19.8	94 15.0	−0 08.9	136 04.3	−16 21.6
7	113 01.5	292 29.8	19.5	34 24.4	19.9	109 17.7	09.1	151 06.8	21.6
8	128 03.9	307 29.4	18.3	49 25.9	20.0	124 20.5	09.2	166 09.4	21.7
9	143 06.4	322 29.0	17.0	64 27.4	20.2	139 23.3	09.3	181 12.0	21.7
10	158 08.9	337 28.6	15.8	79 28.9	20.3	154 26.0	09.5	196 14.5	21.7
11	173 11.3	352 28.2	+1 14.5	94 30.5	+22 20.5	169 28.8	−0 09.6	211 17.1	−16 21.8
12	188 13.8	7 27.8	+1 13.3	109 32.0	+22 20.6	184 31.6	−0 09.7	226 19.6	−16 21.8
13	203 16.3	22 27.4	12.0	124 33.5	20.7	199 34.3	09.9	241 22.2	21.8
14	218 18.7	37 27.0	10.8	139 35.0	20.9	214 37.1	10.0	256 24.8	21.9
15	233 21.2	52 26.6	09.5	154 36.5	21.0	229 39.9	10.1	271 27.3	21.9
16	248 23.7	67 26.3	08.3	169 38.0	21.2	244 42.7	10.3	286 29.9	21.9
17	263 26.1	82 25.9	+1 07.0	184 39.5	+22 21.3	259 45.4	−0 10.4	301 32.4	−16 21.9
18	278 28.6	97 25.5	+1 05.8	199 41.0	+22 21.4	274 48.2	−0 10.5	316 35.0	−16 22.0
19	293 31.1	112 25.1	04.5	214 42.5	21.6	289 51.0	10.6	331 37.6	22.0
20	308 33.5	127 24.7	03.3	229 44.1	21.7	304 53.7	10.8	346 40.1	22.0
21	323 36.0	142 24.3	02.0	244 45.6	21.8	319 56.5	10.9	1 42.7	22.0
22	338 38.4	157 23.9	+1 00.8	259 47.1	22.0	334 59.3	11.0	16 45.2	22.1
23	353 40.9	172 23.5	+0 59.5	274 48.6	22.1	350 02.1	11.2	31 47.8	22.1
24	8 43.4	187 23.1	+0 58.3	289 50.1	+22 22.3	5 04.8	−0 11.3	46 50.3	−16 22.1
Dif	—	−4	−12	+15	+1	+28	−1	+26	0

UT	SOL SD: 16′.0 PMG: 11h 50m.0				LUNA Edad: 4d.1 SD: 15′.9 PMG: 15h 40m PHE: 4h: 58′.5; 12h: 58′.7; 20h: 58′.8 Rº: 59m				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	182	27.6	−2	42.5	133	37.5	−20 51.2		**60 N**	4 32	5 21	6 03	12 45	104	18 25	18
1	197	27.8		43.4	148	04.8 83	−21 01.9	107	**58**	37	23	02	25	96	18 46	26
2	212	28.0		44.4	162	31.9 81	12.6	107	**56**	40	24	01	12 09	91	19 02	32
3	227	28.2		45.4	176	59.0 81	23.1	105	**54**	43	25	6 00	11 55	87	17	35
4	242	28.4		46.4	191	25.9 79	33.5	104	**52**	46	25	5 59	43	84	29	38
5	257	28.6	−2	47.3	205	52.8 79	−21 43.8	103	**50**	4 48	5 26	5 58	11 32	81	19 40	41
6	272	28.8	−2	48.3	220	19.5 77	−21 53.9	101	**45**	4 53	5 27	5 57	11 10	77	20 04	44
7	287	29.0		49.3	234	46.2 77	−22 03.9	100	**40**	57	28	55	10 53	72	22	48
8	302	29.2		50.2	249	12.7 75	13.8	99	**35**	4 59	29	54	38	70	38	50
9	317	29.4		51.2	263	39.2 75	23.6	98	**30**	5 01	29	53	25	68	20 52	51
10	332	29.6		52.2	278	05.6 74	33.2	96	**20**	03	29	51	10 03	64	21 15	55
11	347	29.8	−2	53.1	292	31.8 72	−22 42.7	95	**10 N**	5 03	5 28	5 49	9 44	61	21 35	58
12	2	30.0	−2	54.1	306	58.0 72	−22 52.1	94	**0**	5 02	5 26	5 47	9 27	58	21 54	60
13	17	30.2		55.1	321	24.1 71	−23 01.4	93	**10 S**	4 59	24	45	9 10	55	22 13	62
14	32	30.5		56.1	335	50.0 69	10.5	91	**20**	55	20	42	8 51	52	34	64
15	47	30.7		57.0	350	15.9 69	19.4	89	**30**	48	16	40	30	48	22 57	67
16	62	30.9		58.0	4	41.7 68	28.3	89	**35**	43	13	38	18	45	23 11	69
17	77	31.1	−2	59.0	19	07.4 67	−23 37.0	87	**40**	4 37	5 09	5 36	8 04	43	23 27	71
18	92	31.3	−2	59.9	33	33.0 66	−23 45.5	85	**45**	4 30	5 05	5 34	7 47	39	23 47	73
19	107	31.5	−3	00.9	47	58.5 65	−23 53.9	84	**50**	20	4 59	32	27	34	** **	**
20	122	31.7		01.9	62	23.9 64	−24 02.2	83	**52**	16	56	30	17	32	** **	**
21	137	31.9		02.9	76	49.2 63	10.3	81	**54**	11	53	29	7 07	28	** **	**
22	152	32.1		03.8	91	14.4 62	18.3	80	**56**	4 05	50	27	6 54	25	** **	**
23	167	32.3		04.8	105	39.6 62	26.1	78	**58**	3 58	46	26	40	20	** **	**
24	182	32.5	−3	05.8	120	04.6 60	−24 33.8	77	**60 S**	3 50	4 42	5 24	6 24	13	** **	**

UT	ARIES PMG 23h 21m.3		VENUS Mag: −3.9 PMG: 11h 31m			MARTE Mag: −0.6 PMG: 4h 40m			JÚPITER Mag: −2.9 PMG: 23h 35m			SATURNO Mag: +0.5 PMG: 20h 49m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	8	43.4	187	23.1	+0 58.3	289	50.1	+22 22.3	5	04.8	−0 11.3	46	50.3	−16 22.1
1	23	45.8	202	22.7	57.0	304	51.7	22.4	20	07.6	11.4	61	52.9	22.2
2	38	48.3	217	22.3	55.8	319	53.2	22.5	35	10.4	11.6	76	55.5	22.2
3	53	50.8	232	22.0	54.5	334	54.7	22.7	50	13.1	11.7	91	58.0	22.2
4	68	53.2	247	21.6	53.3	349	56.2	22.8	65	15.9	11.8	107	00.6	22.2
5	83	55.7	262	21.2	+0 52.0	4	57.7	+22 22.9	80	18.7	−0 12.0	122	03.1	−16 22.3
6	98	58.2	277	20.8	+0 50.8	19	59.3	+22 23.1	95	21.4	−0 12.1	137	05.7	−16 22.3
7	114	00.6	292	20.4	49.5	35	00.8	23.2	110	24.2	12.2	152	08.2	22.3
8	129	03.1	307	20.0	48.3	50	02.3	23.4	125	27.0	12.4	167	10.8	22.4
9	144	05.5	322	19.6	47.0	65	03.9	23.5	140	29.8	12.5	182	13.3	22.4
10	159	08.0	337	19.2	45.8	80	05.4	23.6	155	32.5	12.6	197	15.9	22.4
11	174	10.5	352	18.8	+0 44.5	95	06.9	+22 23.8	170	35.3	−0 12.8	212	18.5	−16 22.4
12	189	12.9	7	18.4	+0 43.3	110	08.4	+22 23.9	185	38.1	−0 12.9	227	21.0	−16 22.5
13	204	15.4	22	18.0	42.0	125	10.0	24.0	200	40.8	13.0	242	23.6	22.5
14	219	17.9	37	17.7	40.8	140	11.5	24.2	215	43.6	13.2	257	26.1	22.5
15	234	20.3	52	17.3	39.5	155	13.0	24.3	230	46.4	13.3	272	28.7	22.5
16	249	22.8	67	16.9	38.3	170	14.6	24.4	245	49.2	13.4	287	31.2	22.6
17	264	25.3	82	16.5	+0 37.0	185	16.1	+22 24.6	260	51.9	−0 13.5	302	33.8	−16 22.6
18	279	27.7	97	16.1	+0 35.8	200	17.6	+22 24.7	275	54.7	−0 13.7	317	36.3	−16 22.6
19	294	30.2	112	15.7	34.5	215	19.2	24.8	290	57.5	13.8	332	38.9	22.7
20	309	32.7	127	15.3	33.3	230	20.7	25.0	306	00.2	13.9	347	41.4	22.7
21	324	35.1	142	14.9	32.0	245	22.3	25.1	321	03.0	14.1	2	44.0	22.7
22	339	37.6	157	14.5	30.8	260	23.8	25.3	336	05.8	14.2	17	46.6	22.7
23	354	40.0	172	14.1	29.5	275	25.3	25.4	351	08.5	14.3	32	49.1	22.8
24	9	42.5	187	13.7	+0 28.3	290	26.9	+22 25.5	6	11.3	−0 14.5	47	51.7	−16 22.8
Dif	—			−4	−13		+15	+1		+28	−1		+26	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 5^{d}.1		PHE	4^{h}: 58′.9								
	PMG: 11^{h} 49^{m}.7		SD: 16′.0			12^{h}: 58′.9								
			PMG: 16^{h} 39^{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	182 32.5	−3 05.8	120 04.6	60	−24 33.8	75	**60 N**	17 33	18 14	19 03	14 29	86	18 43	43
1	197 32.7	06.7	134 29.6	58	41.3	73	**58**	34	13	18 59	14 01	80	19 12	48
2	212 32.9	07.7	148 54.4	58	48.6	73	**56**	35	12	56	13 40	77	34	51
3	227 33.1	08.7	163 19.2	58	−24 55.9	73	**54**	37	12	53	22	75	19 52	53
4	242 33.3	09.6	177 43.9	57	−25 02.9	70	**52**	38	11	50	13 07	73	20 07	54
5	257 33.5	−3 10.6	192 08.5	56	−25 09.8	69	**50**	17 39	18 11	18 48	12 53	73	20 21	55
6	272 33.7	−3 11.6	206 33.1	56	−25 16.5	67	**45**	17 41	18 10	18 44	12 27	70	20 48	57
7	287 33.9	12.6	220 57.5	54	23.1	66	**40**	43	10	41	12 05	69	21 10	58
8	302 34.1	13.5	235 21.9	54	29.5	64	**35**	44	09	39	11 48	67	28	59
9	317 34.3	14.5	249 46.2	53	35.8	63	**30**	46	09	37	33	66	21 43	60
10	332 34.5	15.5	264 10.4	52	41.9	61	**20**	48	10	36	11 07	64	22 10	60
11	347 34.7	−3 16.4	278 34.5	51	−25 47.8	59	**10 N**	17 51	18 12	18 36	10 45	63	22 33	61
12	2 34.9	−3 17.4	292 58.6	51	−25 53.6	58	**0**	17 53	18 14	18 38	10 25	61	22 54	62
13	17 35.1	18.4	307 22.6	50	−25 59.2	56	**10 S**	55	16	41	10 05	59	23 15	63
14	32 35.3	19.3	321 46.5	49	−26 04.6	54	**20**	17 58	20	46	9 43	58	23 38	63
15	47 35.5	20.3	336 10.3	48	09.9	53	**30**	18 01	25	53	18	56	** **	**
16	62 35.7	21.3	350 34.1	48	15.0	51	**35**	03	29	18 58	9 03	55	** **	**
17	77 35.9	−3 22.2	4 57.8	47	−26 19.9	49	**40**	18 05	18 33	19 05	8 47	52	** **	**
18	92 36.1	−3 23.2	19 21.5	47	−26 24.6	47	**45**	18 08	18 37	19 13	8 26	51	** **	**
19	107 36.3	24.2	33 45.0	45	29.2	46	**50**	11	44	23	8 01	48	0 11	77
20	122 36.5	25.2	48 08.6	46	33.6	44	**52**	12	47	28	7 49	46	23	79
21	137 36.7	26.1	62 32.0	44	37.8	42	**54**	14	50	33	35	44	36	82
22	152 36.9	27.1	76 55.4	44	41.9	41	**56**	16	54	39	19	41	0 52	85
23	167 37.1	28.1	91 18.8	44	45.7	38	**58**	18	18 58	47	7 00	37	1 10	90
24	182 37.3	−3 29.0	105 42.0	42	−26 49.4	37	**60 S**	18 20	19 02	19 55	6 37	30	1 33	97

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −0.6		Mag: −2.9		Mag: +0.5	
	23^{h} 17^{m}.3	PMG: 11^{h} 31^{m}		PMG: 4^{h} 38^{m}		PMG: 23^{h} 31^{m}		PMG: 20^{h} 45^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	9 42.5	187 13.7	+0 28.3	290 26.9	+22 25.5	6 11.3	−0 14.5	47 51.7	−16 22.8
1	24 45.0	202 13.4	27.0	305 28.4	25.7	21 14.1	14.6	62 54.2	22.8
2	39 47.4	217 13.0	25.7	320 30.0	25.8	36 16.8	14.7	77 56.8	22.8
3	54 49.9	232 12.6	24.5	335 31.5	25.9	51 19.6	14.9	92 59.3	22.9
4	69 52.4	247 12.2	23.2	350 33.1	26.1	66 22.4	15.0	108 01.9	22.9
5	84 54.8	262 11.8	+0 22.0	5 34.6	+22 26.2	81 25.2	−0 15.1	123 04.4	−16 22.9
6	99 57.3	277 11.4	+0 20.7	20 36.1	+22 26.3	96 27.9	−0 15.3	138 07.0	−16 22.9
7	114 59.8	292 11.0	19.5	35 37.7	26.5	111 30.7	15.4	153 09.5	23.0
8	130 02.2	307 10.6	18.2	50 39.2	26.6	126 33.5	15.5	168 12.1	23.0
9	145 04.7	322 10.2	17.0	65 40.8	26.7	141 36.2	15.7	183 14.6	23.0
10	160 07.2	337 09.8	15.7	80 42.3	26.9	156 39.0	15.8	198 17.2	23.1
11	175 09.6	352 09.4	+0 14.5	95 43.9	+22 27.0	171 41.8	−0 15.9	213 19.7	−16 23.1
12	190 12.1	7 09.1	+0 13.2	110 45.5	+22 27.1	186 44.5	−0 16.0	228 22.3	−16 23.1
13	205 14.5	22 08.7	12.0	125 47.0	27.3	201 47.3	16.2	243 24.8	23.1
14	220 17.0	37 08.3	10.7	140 48.6	27.4	216 50.1	16.3	258 27.4	23.2
15	235 19.5	52 07.9	09.5	155 50.1	27.5	231 52.8	16.4	273 29.9	23.2
16	250 21.9	67 07.5	08.2	170 51.7	27.7	246 55.6	16.6	288 32.5	23.2
17	265 24.4	82 07.1	+0 07.0	185 53.2	+22 27.8	261 58.4	−0 16.7	303 35.0	−16 23.2
18	280 26.9	97 06.7	+0 05.7	200 54.8	+22 27.9	277 01.2	−0 16.8	318 37.6	−16 23.3
19	295 29.3	112 06.3	04.4	215 56.4	28.1	292 03.9	17.0	333 40.2	23.3
20	310 31.8	127 05.9	03.2	230 57.9	28.2	307 06.7	17.1	348 42.7	23.3
21	325 34.3	142 05.5	01.9	245 59.5	28.3	322 09.5	17.2	3 45.3	23.3
22	340 36.7	157 05.1	+0 00.7	261 01.0	28.5	337 12.2	17.4	18 47.8	23.4
23	355 39.2	172 04.8	−0 00.6	276 02.6	28.6	352 15.0	17.5	33 50.4	23.4
24	10 41.7	187 04.4	−0 01.8	291 04.2	+22 28.7	7 17.8	−0 17.6	48 52.9	−16 23.4
Dif	—	−4	−13	+16	+1	+28	−1	+26	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 6ᵈ.1		PHE	4ʰ: 59′.1									
	PMG: 11ʰ 49ᵐ.4				SD: 16′.1			12ʰ: 59′.2									
					PMG: 17ʰ 41ᵐ			20ʰ: 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	182	37.3	−3	29.0	105	42.0	−26	49.4		**60 N**	4 37	5 26	6 08	15 55	48	19 26	82
1	197	37.5		30.0	120	05.3 43		52.9	35	**58**	41	27	06	15 21	53	20 00	77
2	212	37.7		31.0	134	28.5 42		56.3	34	**56**	44	28	05	14 57	54	25	75
3	227	37.9		31.9	148	51.6 41	−26	59.4	31	**54**	47	28	04	37	56	20 45	73
4	242	38.1		32.9	163	14.7 41	−27	02.4	30	**52**	49	29	02	20	57	21 01	72
5	257	38.3	−3	33.9	177	37.7 40	−27	05.2	28	**50**	4 52	5 29	6 01	14 06	58	21 16	71
6	272	38.5	−3	34.8	192	00.8 41	−27	07.8	26	**45**	4 56	5 30	5 59	13 37	59	21 45	69
7	287	38.7		35.8	206	23.7 39		10.2	24	**40**	4 59	30	57	13 14	60	22 08	68
8	302	38.9		36.8	220	46.7 40		12.4	22	**35**	5 01	30	55	12 55	60	27	67
9	317	39.1		37.7	235	09.5 38		14.5	21	**30**	02	30	54	39	61	22 43	66
10	332	39.3		38.7	249	32.4 39		16.3	18	**20**	04	29	51	12 11	62	23 10	65
11	347	39.5	−3	39.7	263	55.2 38	−27	18.0	17	**10 N**	5 03	5 28	5 49	11 48	62	23 34	63
12	2	39.7	−3	40.6	278	18.0 38	−27	19.5	15	**0**	5 01	5 25	5 46	11 26	62	23 56	62
13	17	39.9		41.6	292	40.8 38		20.8	13	**10 S**	4 58	22	44	11 04	63	** **	**
14	32	40.1		42.6	307	03.6 38		22.0	12	**20**	53	19	41	10 41	63	** **	**
15	47	40.3		43.5	321	26.3 37		22.9	9	**30**	45	13	37	10 14	63	0 04	64
16	62	40.5		44.5	335	49.0 37		23.6	7	**35**	40	10	35	9 58	63	20	64
17	77	40.7	−3	45.5	350	11.7 37	−27	24.2	6	**40**	4 34	5 06	5 33	9 39	64	0 38	65
18	92	40.9	−3	46.4	4	34.4 37	−27	24.6	4	**45**	4 26	5 01	5 30	9 17	64	1 00	65
19	107	41.1		47.4	18	57.0 36		24.8	2	**50**	16	4 55	27	8 49	63	28	66
20	122	41.3		48.4	33	19.7 37		24.8	0	**52**	11	52	26	35	63	42	66
21	137	41.5		49.3	47	42.4 37		24.6	2	**54**	4 05	48	24	19	63	1 58	66
22	152	41.7		50.3	62	05.0 36		24.2	4	**56**	3 59	45	22	8 00	63	2 17	66
23	167	41.9		51.3	76	27.6 36		23.6	6	**58**	52	40	20	7 37	63	2 40	67
24	182	42.1	−3	52.2	90	50.3 37	−27	22.9	7	**60 S**	3 43	4 35	5 18	7 07	62	3 10	68

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.6			Mag: −2.9			Mag: +0.5		
	23ʰ 13ᵐ.4		PMG: 11ʰ 32ᵐ			PMG: 4ʰ 35ᵐ			PMG: 23ʰ 26ᵐ			PMG: 20ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	10	41.7	187	04.4	−0 01.8	291	04.2	+22 28.7	7	17.8	−0 17.6	48	52.9	−16 23.4
1	25	44.1	202	04.0	03.1	306	05.7	28.9	22	20.5	17.7	63	55.5	23.4
2	40	46.6	217	03.6	04.3	321	07.3	29.0	37	23.3	17.9	78	58.0	23.5
3	55	49.0	232	03.2	05.6	336	08.9	29.1	52	26.1	18.0	94	00.5	23.5
4	70	51.5	247	02.8	06.8	351	10.4	29.3	67	28.8	18.1	109	03.1	23.5
5	85	54.0	262	02.4	−0 08.1	6	12.0	+22 29.4	82	31.6	−0 18.3	124	05.6	−16 23.5
6	100	56.4	277	02.0	−0 09.3	21	13.6	+22 29.5	97	34.4	−0 18.4	139	08.2	−16 23.6
7	115	58.9	292	01.6	10.6	36	15.2	29.7	112	37.1	18.5	154	10.7	23.6
8	131	01.4	307	01.2	11.8	51	16.7	29.8	127	39.9	18.7	169	13.3	23.6
9	146	03.8	322	00.8	13.1	66	18.3	29.9	142	42.7	18.8	184	15.8	23.6
10	161	06.3	337	00.4	14.4	81	19.9	30.0	157	45.5	18.9	199	18.4	23.7
11	176	08.8	352	00.1	−0 15.6	96	21.4	+22 30.2	172	48.2	−0 19.0	214	20.9	−16 23.7
12	191	11.2	6	59.7	−0 16.9	111	23.0	+22 30.3	187	51.0	−0 19.2	229	23.5	−16 23.7
13	206	13.7	21	59.3	18.1	126	24.6	30.4	202	53.8	19.3	244	26.0	23.7
14	221	16.2	36	58.9	19.4	141	26.2	30.6	217	56.5	19.4	259	28.6	23.8
15	236	18.6	51	58.5	20.6	156	27.8	30.7	232	59.3	19.6	274	31.1	23.8
16	251	21.1	66	58.1	21.9	171	29.3	30.8	248	02.1	19.7	289	33.7	23.8
17	266	23.5	81	57.7	−0 23.1	186	30.9	+22 31.0	263	04.8	−0 19.8	304	36.2	−16 23.8
18	281	26.0	96	57.3	−0 24.4	201	32.5	+22 31.1	278	07.6	−0 20.0	319	38.8	−16 23.9
19	296	28.5	111	56.9	25.6	216	34.1	31.2	293	10.4	20.1	334	41.3	23.9
20	311	30.9	126	56.5	26.9	231	35.7	31.4	308	13.1	20.2	349	43.9	23.9
21	326	33.4	141	56.1	28.2	246	37.3	31.5	323	15.9	20.3	4	46.4	23.9
22	341	35.9	156	55.8	29.4	261	38.8	31.6	338	18.7	20.5	19	49.0	24.0
23	356	38.3	171	55.4	30.7	276	40.4	31.7	353	21.4	20.6	34	51.5	24.0
24	11	40.8	186	55.0	−0 31.9	291	42.0	+22 31.9	8	24.2	−0 20.7	49	54.0	−16 24.0
Dif	—			−4	−13		+16	+1		+28	−1		+25	0

UT	SOL SD: 16′.0 PMG: 11h 49m.0				LUNA Edad: 7d.1 SD: 16′.1 PMG: 18h 43m PHE 4h: 59′.3 12h: 59′.3 20h: 59′.3 Rº: 60m				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	42.1	−3	52.2	90	50.3	−27	22.9	**60 N**	17 27	18 08	18 56	16 43	21	20 48	105
1	197	42.3		53.2	105	12.9 36		21.9 10	**58**	29	08	53	16 14	29	21 17	97
2	212	42.5		54.2	119	35.6 37		20.8 11	**56**	30	07	50	15 51	34	40	91
3	227	42.7		55.1	133	58.2 36		19.5 13	**54**	32	07	48	33	38	21 58	87
4	242	42.9		56.1	148	20.9 37		17.9 16	**52**	33	07	46	17	41	22 13	85
5	257	43.1	−3	57.1	162	43.6 37	−27	16.2 17	**50**	17 34	18 06	18 44	15 04	42	22 27	82
6	272	43.3	−3	58.0	177	06.3 37	−27	14.4 18	**45**	17 37	18 06	18 40	14 36	46	22 54	77
7	287	43.5	−3	59.0	191	29.0 37		12.3 21	**40**	39	06	38	14 14	49	23 16	74
8	302	43.7	−4	00.0	205	51.7 37		10.0 23	**35**	41	07	36	13 55	52	34	71
9	317	43.8	−4	00.9	220	14.4 37		07.6 24	**30**	43	07	35	40	53	23 49	69
10	332	44.0		01.9	234	37.2 38		04.9 27	**20**	46	08	34	13 13	56	** **	**
11	347	44.2	−4	02.9	249	00.0 38	−27	02.1 28	**10 N**	17 49	18 10	18 35	12 50	59	** **	**
12	2	44.4	−4	03.8	263	22.8 38	−26	59.1 30	**0**	17 52	18 13	18 37	12 28	61	** **	**
13	17	44.6		04.8	277	45.7 39		55.9 32	**10 S**	55	16	41	12 07	63	0 18	60
14	32	44.8		05.8	292	08.5 38		52.5 34	**20**	17 59	21	46	11 44	65	0 41	59
15	47	45.0		06.7	306	31.5 40		49.0 35	**30**	18 02	27	18 55	17	68	1 08	58
16	62	45.2		07.7	320	54.4 39		45.2 38	**35**	05	30	19 00	11 01	70	24	56
17	77	45.4	−4	08.7	335	17.4 40	−26	41.3 39	**40**	18 07	18 35	19 07	10 43	71	1 43	55
18	92	45.6	−4	09.6	349	40.4 40	−26	37.2 41	**45**	18 10	18 40	19 15	10 21	73	2 05	53
19	107	45.8		10.6	4	03.5 41		32.9 43	**50**	14	47	26	9 52	77	34	50
20	122	46.0		11.6	18	26.6 41		28.4 45	**52**	16	50	31	38	79	2 48	48
21	137	46.2		12.5	32	49.8 42		23.8 46	**54**	18	54	37	22	82	3 04	47
22	152	46.4		13.5	47	13.0 42		18.9 49	**56**	20	18 58	44	9 03	84	23	44
23	167	46.6		14.5	61	36.3 43		13.9 50	**58**	22	19 02	19 52	8 40	88	3 47	40
24	182	46.8	−4	15.4	75	59.6 43	−26	08.7 52	**60 S**	18 25	19 08	20 01	8 09	95	4 18	33

UT	ARIES PMG 23h 09m.5		VENUS Mag: −3.9 PMG: 11h 33m			MARTE Mag: −0.6 PMG: 4h 33m			JÚPITER Mag: −2.9 PMG: 23h 22m			SATURNO Mag: +0.5 PMG: 20h 37m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	11	40.8	186	55.0	−0 31.9	291	42.0	+22 31.9	8	24.2	−0 20.7	49	54.0	−16 24.0
1	26	43.3	201	54.6	33.2	306	43.6	32.0	23	27.0	20.9	64	56.6	24.0
2	41	45.7	216	54.2	34.4	321	45.2	32.1	38	29.7	21.0	79	59.1	24.1
3	56	48.2	231	53.8	35.7	336	46.8	32.3	53	32.5	21.1	95	01.7	24.1
4	71	50.6	246	53.4	36.9	351	48.4	32.4	68	35.3	21.3	110	04.2	24.1
5	86	53.1	261	53.0	−0 38.2	6	50.0	+22 32.5	83	38.0	−0 21.4	125	06.8	−16 24.1
6	101	55.6	276	52.6	−0 39.4	21	51.6	+22 32.7	98	40.8	−0 21.5	140	09.3	−16 24.2
7	116	58.0	291	52.2	40.7	36	53.2	32.8	113	43.6	21.6	155	11.9	24.2
8	132	00.5	306	51.8	42.0	51	54.8	32.9	128	46.3	21.8	170	14.4	24.2
9	147	03.0	321	51.4	43.2	66	56.4	33.0	143	49.1	21.9	185	17.0	24.2
10	162	05.4	336	51.1	44.5	81	58.0	33.2	158	51.9	22.0	200	19.5	24.3
11	177	07.9	351	50.7	−0 45.7	96	59.6	+22 33.3	173	54.6	−0 22.2	215	22.0	−16 24.3
12	192	10.4	6	50.3	−0 47.0	112	01.2	+22 33.4	188	57.4	−0 22.3	230	24.6	−16 24.3
13	207	12.8	21	49.9	48.2	127	02.8	33.6	204	00.2	22.4	245	27.1	24.3
14	222	15.3	36	49.5	49.5	142	04.4	33.7	219	02.9	22.5	260	29.7	24.3
15	237	17.8	51	49.1	50.7	157	06.0	33.8	234	05.7	22.7	275	32.2	24.4
16	252	20.2	66	48.7	52.0	172	07.6	33.9	249	08.5	22.8	290	34.8	24.4
17	267	22.7	81	48.3	−0 53.2	187	09.2	+22 34.1	264	11.2	−0 22.9	305	37.3	−16 24.4
18	282	25.1	96	47.9	−0 54.5	202	10.8	+22 34.2	279	14.0	−0 23.1	320	39.9	−16 24.4
19	297	27.6	111	47.5	55.8	217	12.4	34.3	294	16.8	23.2	335	42.4	24.5
20	312	30.1	126	47.1	57.0	232	14.0	34.5	309	19.5	23.3	350	44.9	24.5
21	327	32.5	141	46.7	58.3	247	15.6	34.6	324	22.3	23.4	5	47.5	24.5
22	342	35.0	156	46.4	−0 59.5	262	17.2	34.7	339	25.1	23.6	20	50.0	24.5
23	357	37.5	171	46.0	−1 00.8	277	18.8	34.8	354	27.8	23.7	35	52.6	24.6
24	12	39.9	186	45.6	−1 02.0	292	20.4	+22 35.0	9	30.6	−0 23.8	50	55.1	−16 24.6
Dif	—			−4	−13		+16	+1		+28	−1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 8ᵈ.1		PHE	4ʰ: 59′.4									
	PMG: 11ʰ 48ᵐ.7				SD: 16′.2			12ʰ: 59′.4									
					PMG: 19ʰ 43ᵐ			20ʰ: 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	182	46.8	−4	15.4	75	59.6	−26	08.7		**60 N**	4 42	5 31	6 12	17 04	9	22 33	109
1	197	47.0		16.4	90	23.0 44	−26	03.4	53	**58**	46	31	10	16 43	16	22 54	102
2	212	47.2		17.3	104	46.4 44	−25	57.8	56	**56**	48	32	09	25	21	23 11	96
3	227	47.3		18.3	119	09.9 45		52.1	57	**54**	51	32	07	16 11	24	25	92
4	242	47.5		19.3	133	33.4 45		46.2	59	**52**	53	32	06	15 58	28	38	88
5	257	47.7	−4	20.2	147	57.0 46	−25	40.2	60	**50**	4 55	5 32	6 04	15 46	31	23 49	85
6	272	47.9	−4	21.2	162	20.7 47	−25	33.9	63	**45**	4 58	5 32	6 02	15 22	37	** **	**
7	287	48.1		22.2	176	44.4 47		27.5	64	**40**	5 01	32	5 59	15 03	40	** **	**
8	302	48.3		23.1	191	08.2 48		20.9	66	**35**	02	32	57	14 47	44	** **	**
9	317	48.5		24.1	205	32.1 49		14.2	67	**30**	03	31	55	33	46	** **	**
10	332	48.7		25.1	219	56.0 49		07.3	69	**20**	04	30	52	14 09	51	0 15	65
11	347	48.9	−4	26.0	234	20.0 50	−25	00.2	71	**10 N**	5 03	5 27	5 48	13 49	54	0 37	62
12	2	49.1	−4	27.0	248	44.1 51	−24	53.0	72	**0**	5 01	5 25	5 45	13 29	58	0 58	59
13	17	49.3		27.9	263	08.2 51		45.6	74	**10 S**	4 57	21	42	13 10	61	1 18	57
14	32	49.5		28.9	277	32.5 53		38.0	76	**20**	51	17	39	12 49	65	1 40	54
15	47	49.7		29.9	291	56.8 53		30.2	78	**30**	43	11	35	25	69	2 06	49
16	62	49.8		30.8	306	21.1 53		22.4	78	**35**	37	07	33	12 11	72	20	48
17	77	50.0	−4	31.8	320	45.6 55	−24	14.3	81	**40**	4 30	5 03	5 30	11 54	75	2 38	44
18	92	50.2	−4	32.8	335	10.1 55	−24	06.1	82	**45**	4 22	4 57	5 27	11 34	79	2 58	42
19	107	50.4		33.7	349	34.7 56	−23	57.7	84	**50**	11	50	23	11 09	85	3 24	36
20	122	50.6		34.7	3	59.4 57		49.2	85	**52**	06	47	21	10 57	87	36	34
21	137	50.8		35.6	18	24.2 58		40.5	87	**54**	4 00	43	19	44	90	3 51	30
22	152	51.0		36.6	32	49.1 59		31.7	88	**56**	3 53	39	17	27	95	4 07	27
23	167	51.2		37.6	47	14.0 59		22.7	90	**58**	45	34	15	10 08	100	27	22
24	182	51.4	−4	38.5	61	39.0 60	−23	13.6	91	**60 S**	3 36	4 29	5 12	9 44	108	4 51	15

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.6			Mag: −2.9			Mag: +0.5		
	23ʰ 05ᵐ.5		PMG: 11ʰ 33ᵐ			PMG: 4ʰ 30ᵐ			PMG: 23ʰ 18ᵐ			PMG: 20ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	12	39.9	186	45.6	−1 02.0	292	20.4	+22 35.0	9	30.6	−0 23.8	50	55.1	−16 24.6
1	27	42.4	201	45.2	03.3	307	22.1	35.1	24	33.4	24.0	65	57.6	24.6
2	42	44.9	216	44.8	04.5	322	23.7	35.2	39	36.1	24.1	81	00.2	24.6
3	57	47.3	231	44.4	05.8	337	25.3	35.4	54	38.9	24.2	96	02.7	24.6
4	72	49.8	246	44.0	07.1	352	26.9	35.5	69	41.7	24.3	111	05.3	24.7
5	87	52.3	261	43.6	−1 08.3	7	28.5	+22 35.6	84	44.4	−0 24.5	126	07.8	−16 24.7
6	102	54.7	276	43.2	−1 09.6	22	30.1	+22 35.7	99	47.2	−0 24.6	141	10.4	−16 24.7
7	117	57.2	291	42.8	10.8	37	31.8	35.9	114	50.0	24.7	156	12.9	24.7
8	132	59.6	306	42.4	12.1	52	33.4	36.0	129	52.7	24.9	171	15.4	24.8
9	148	02.1	321	42.0	13.3	67	35.0	36.1	144	55.5	25.0	186	18.0	24.8
10	163	04.6	336	41.6	14.6	82	36.6	36.3	159	58.2	25.1	201	20.5	24.8
11	178	07.0	351	41.3	−1 15.8	97	38.2	+22 36.4	175	01.0	−0 25.2	216	23.1	−16 24.8
12	193	09.5	6	40.9	−1 17.1	112	39.9	+22 36.5	190	03.8	−0 25.4	231	25.6	−16 24.9
13	208	12.0	21	40.5	18.3	127	41.5	36.6	205	06.5	25.5	246	28.1	24.9
14	223	14.4	36	40.1	19.6	142	43.1	36.8	220	09.3	25.6	261	30.7	24.9
15	238	16.9	51	39.7	20.9	157	44.7	36.9	235	12.1	25.8	276	33.2	24.9
16	253	19.4	66	39.3	22.1	172	46.4	37.0	250	14.8	25.9	291	35.8	24.9
17	268	21.8	81	38.9	−1 23.4	187	48.0	+22 37.1	265	17.6	−0 26.0	306	38.3	−16 25.0
18	283	24.3	96	38.5	−1 24.6	202	49.6	+22 37.3	280	20.4	−0 26.1	321	40.8	−16 25.0
19	298	26.8	111	38.1	25.9	217	51.3	37.4	295	23.1	26.3	336	43.4	25.0
20	313	29.2	126	37.7	27.1	232	52.9	37.5	310	25.9	26.4	351	45.9	25.0
21	328	31.7	141	37.3	28.4	247	54.5	37.6	325	28.7	26.5	6	48.5	25.1
22	343	34.1	156	36.9	29.6	262	56.2	37.8	340	31.4	26.7	21	51.0	25.1
23	358	36.6	171	36.5	30.9	277	57.8	37.9	355	34.2	26.8	36	53.5	25.1
24	13	39.1	186	36.1	−1 32.2	292	59.4	+22 38.0	10	37.0	−0 26.9	51	56.1	−16 25.1
Dif	—			−4	−13		+16	+1		+28	−1		+25	0

UT	SOL SD: 16′.0 PMG: 11h 48m.4				LUNA Edad: 9d.1 SD: 16′.2 PMG: 20h 40m PHE 4h: 59′.4; 12h: 59′.3; 20h: 59′.3 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	182	51.4	−4	38.5	61	39.0	−23	13.6	**60 N**	17 21	18 02	18 50	17 13	4	** **	**
1	197	51.6		39.5	76	04.1 61	−23	04.3 93	**58**	23	02	48	16 59	9	** **	**
2	212	51.8		40.5	90	29.3 62	−22	54.9 94	**56**	25	02	45	46	14	** **	**
3	227	51.9		41.4	104	54.6 63		45.4 95	**54**	27	02	43	35	18	** **	**
4	242	52.1		42.4	119	20.0 64		35.7 97	**52**	29	02	41	26	20	** **	**
5	257	52.3	−4	43.3	133	45.5 65	−22	25.8 99	**50**	17 30	18 02	18 40	16 17	23	** **	**
6	272	52.5	−4	44.3	148	11.0 65	−22	15.8 100	**45**	17 33	18 03	18 37	15 59	28	0 11	80
7	287	52.7		45.3	162	36.6 66	−22	05.7 101	**40**	36	03	34	43	33	30	75
8	302	52.9		46.2	177	02.4 68	−21	55.4 103	**35**	39	04	33	31	36	45	72
9	317	53.1		47.2	191	28.2 68		45.0 104	**30**	41	05	32	19	40	0 58	69
10	332	53.3		48.2	205	54.1 69		34.5 105	**20**	45	07	32	15 00	45	1 20	64
11	347	53.5	−4	49.1	220	20.1 70	−21	23.8 107	**10 N**	17 48	18 09	18 34	14 43	50	1 39	60
12	2	53.6	−4	50.1	234	46.2 71	−21	13.0 108	**0**	17 52	18 12	18 37	14 27	54	1 57	56
13	17	53.8		51.0	249	12.4 72	−21	02.1 109	**10 S**	55	16	41	14 11	58	2 15	52
14	32	54.0		52.0	263	38.6 72	−20	51.1 110	**20**	17 59	21	47	13 54	63	34	48
15	47	54.2		53.0	278	05.0 74		39.9 112	**30**	18 04	28	18 56	34	68	2 55	43
16	62	54.4		53.9	292	31.4 74		28.6 113	**35**	06	32	19 02	23	71	3 08	40
17	77	54.6	−4	54.9	306	58.0 76	−20	17.2 114	**40**	18 09	18 37	19 09	13 09	75	3 22	37
18	92	54.8	−4	55.8	321	24.6 76	−20	05.6 116	**45**	18 13	18 43	19 18	12 53	80	3 40	32
19	107	55.0		56.8	335	51.4 78	−19	53.9 117	**50**	17	50	30	34	85	4 00	27
20	122	55.1		57.8	350	18.2 78		42.2 117	**52**	19	54	35	24	89	10	24
21	137	55.3		58.7	4	45.1 79		30.3 119	**54**	21	18 58	42	14	92	21	21
22	152	55.5	−4	59.7	19	12.1 80		18.2 121	**56**	24	19 02	49	12 02	96	34	17
23	167	55.7	−5	00.6	33	39.2 81	−19	06.1 121	**58**	27	07	19 57	11 48	101	4 49	12
24	182	55.9	−5	01.6	48	06.4 82	−18	53.9 122	**60 S**	18 30	19 13	20 07	11 32	106	5 06	7

UT	ARIES PMG 23h 01m.6		VENUS Mag: −3.9 PMG: 11h 34m			MARTE Mag: −0.7 PMG: 4h 28m			JÚPITER Mag: −2.9 PMG: 23h 13m			SATURNO Mag: +0.5 PMG: 20h 29m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	13	39.1	186	36.1	−1 32.2	292	59.4	+22 38.0	10	37.0	−0 26.9	51	56.1	−16 25.1
1	28	41.5	201	35.7	33.4	308	01.1	38.1	25	39.7	27.0	66	58.6	25.1
2	43	44.0	216	35.4	34.7	323	02.7	38.3	40	42.5	27.2	82	01.2	25.2
3	58	46.5	231	35.0	35.9	338	04.4	38.4	55	45.2	27.3	97	03.7	25.2
4	73	48.9	246	34.6	37.2	353	06.0	38.5	70	48.0	27.4	112	06.2	25.2
5	88	51.4	261	34.2	−1 38.4	8	07.6	+22 38.7	85	50.8	−0 27.5	127	08.8	−16 25.2
6	103	53.9	276	33.8	−1 39.7	23	09.3	+22 38.8	100	53.5	−0 27.7	142	11.3	−16 25.2
7	118	56.3	291	33.4	40.9	38	10.9	38.9	115	56.3	27.8	157	13.8	25.3
8	133	58.8	306	33.0	42.2	53	12.6	39.0	130	59.1	27.9	172	16.4	25.3
9	149	01.2	321	32.6	43.4	68	14.2	39.2	146	01.8	28.1	187	18.9	25.3
10	164	03.7	336	32.2	44.7	83	15.9	39.3	161	04.6	28.2	202	21.4	25.3
11	179	06.2	351	31.8	−1 46.0	98	17.5	+22 39.4	176	07.3	−0 28.3	217	24.0	−16 25.4
12	194	08.6	6	31.4	−1 47.2	113	19.2	+22 39.5	191	10.1	−0 28.4	232	26.5	−16 25.4
13	209	11.1	21	31.0	48.5	128	20.8	39.7	206	12.9	28.6	247	29.1	25.4
14	224	13.6	36	30.6	49.7	143	22.5	39.8	221	15.6	28.7	262	31.6	25.4
15	239	16.0	51	30.2	51.0	158	24.1	39.9	236	18.4	28.8	277	34.1	25.4
16	254	18.5	66	29.8	52.2	173	25.8	40.0	251	21.2	28.9	292	36.7	25.5
17	269	21.0	81	29.4	−1 53.5	188	27.4	+22 40.2	266	23.9	−0 29.1	307	39.2	−16 25.5
18	284	23.4	96	29.0	−1 54.7	203	29.1	+22 40.3	281	26.7	−0 29.2	322	41.7	−16 25.5
19	299	25.9	111	28.6	56.0	218	30.7	40.4	296	29.5	29.3	337	44.3	25.5
20	314	28.4	126	28.3	57.2	233	32.4	40.5	311	32.2	29.4	352	46.8	25.5
21	329	30.8	141	27.9	58.5	248	34.1	40.7	326	35.0	29.6	7	49.3	25.6
22	344	33.3	156	27.5	−1 59.8	263	35.7	40.8	341	37.7	29.7	22	51.9	25.6
23	359	35.7	171	27.1	−2 01.0	278	37.4	40.9	356	40.5	29.8	37	54.4	25.6
24	14	38.2	186	26.7	−2 02.3	293	39.0	+22 41.0	11	43.3	−0 30.0	52	56.9	−16 25.6
Dif	—			−4	−13		+16	+1		+28	−1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 10^{d}.1		PHE	4^{h}: 59′.3									
	PMG: 11^{h} 48^{m}.1				SD: 16′.1			12^{h}: 59′.2									
					PMG: 21^{h} 33^{m}			20^{h}: 59′.1									
	hG ☉		Dec		hG ☾	Dif	Dec	R^{o}: 50^{m}	Dif		Náutico	Civil		Hora	R^{o}	Hora	R^{o}
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	182	55.9	−5	01.6	48	06.4	−18	53.9		**60 N**	4 47	5 36	6 17	17 17	3	0 22	105
1	197	56.1		02.6	62	33.7	83	41.5	124	**58**	50	36	15	08	6	36	99
2	212	56.3		03.5	77	01.0	83	29.1	124	**56**	52	36	13	17 00	10	47	95
3	227	56.5		04.5	91	28.5	85	16.5	126	**54**	55	36	11	16 53	13	0 57	92
4	242	56.6		05.4	105	56.0	85	−18 03.9	126	**52**	56	35	09	46	16	1 06	88
5	257	56.8	−5	06.4	120	23.7	87	−17 51.1	128	**50**	4 58	5 35	6 08	16 40	18	1 14	86
6	272	57.0	−5	07.4	134	51.4	87	−17 38.2	129	**45**	5 01	5 35	6 04	16 27	24	1 31	80
7	287	57.2		08.3	149	19.2	88	25.3	129	**40**	03	34	6 01	16	29	45	75
8	302	57.4		09.3	163	47.1	89	−17 12.2	131	**35**	04	33	5 59	16 07	32	1 57	70
9	317	57.6		10.2	178	15.1	90	−16 59.1	131	**30**	05	32	56	15 59	35	2 07	67
10	332	57.7		11.2	192	43.2	91	45.8	133	**20**	04	30	52	45	41	24	62
11	347	57.9	−5	12.1	207	11.4	92	−16 32.5	133	**10 N**	5 03	5 27	5 48	15 33	45	2 39	57
12	2	58.1	−5	13.1	221	39.6	92	−16 19.0	135	**0**	5 00	5 24	5 45	15 21	50	2 53	52
13	17	58.3		14.1	236	08.0	94	−16 05.5	135	**10 S**	4 56	20	41	15 09	55	3 07	48
14	32	58.5		15.0	250	36.4	94	−15 51.9	136	**20**	49	15	37	14 57	60	22	43
15	47	58.7		16.0	265	04.9	95	38.2	137	**30**	40	08	32	42	66	38	38
16	62	58.9		16.9	279	33.5	96	24.4	138	**35**	34	5 04	30	34	69	48	34
17	77	59.0	−5	17.9	294	02.2	97	−15 10.6	138	**40**	4 27	4 59	5 27	14 24	74	3 59	30
18	92	59.2	−5	18.8	308	30.9	97	−14 56.6	140	**45**	4 18	4 53	5 23	14 13	78	4 12	26
19	107	59.4		19.8	322	59.8	99	42.6	140	**50**	06	46	18	13 59	84	27	21
20	122	59.6		20.8	337	28.7	99	28.5	141	**52**	4 00	42	16	53	86	34	18
21	137	59.8		21.7	351	57.7	100	14.3	142	**54**	3 54	38	14	46	89	42	15
22	153	00.0		22.7	6	26.8	101	−14 00.1	142	**56**	47	34	12	38	93	4 51	12
23	168	00.1		23.6	20	56.0	102	−13 45.8	143	**58**	39	29	09	29	97	5 01	8
24	183	00.3	−5	24.6	35	25.2	102	−13 31.4	144	**60 S**	3 29	4 23	5 06	13 18	102	5 13	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −0.7			Mag: −2.9			Mag: +0.5		
	22^{h} 57^{m}.7		PMG: 11^{h} 35^{m}			PMG: 4^{h} 25^{m}			PMG: 23^{h} 09^{m}			PMG: 20^{h} 25^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	14	38.2	186	26.7	−2 02.3	293	39.0	+22 41.0	11	43.3	−0 30.0	52	56.9	−16 25.6
1	29	40.7	201	26.3	03.5	308	40.7	41.1	26	46.0	30.1	67	59.5	25.6
2	44	43.1	216	25.9	04.8	323	42.4	41.3	41	48.8	30.2	83	02.0	25.7
3	59	45.6	231	25.5	06.0	338	44.0	41.4	56	51.5	30.3	98	04.6	25.7
4	74	48.1	246	25.1	07.3	353	45.7	41.5	71	54.3	30.5	113	07.1	25.7
5	89	50.5	261	24.7	−2 08.5	8	47.4	+22 41.6	86	57.1	−0 30.6	128	09.6	−16 25.7
6	104	53.0	276	24.3	−2 09.8	23	49.0	+22 41.8	101	59.8	−0 30.7	143	12.2	−16 25.7
7	119	55.5	291	23.9	11.0	38	50.7	41.9	117	02.6	30.8	158	14.7	25.8
8	134	57.9	306	23.5	12.3	53	52.4	42.0	132	05.4	31.0	173	17.2	25.8
9	150	00.4	321	23.1	13.5	68	54.0	42.1	147	08.1	31.1	188	19.8	25.8
10	165	02.9	336	22.7	14.8	83	55.7	42.3	162	10.9	31.2	203	22.3	25.8
11	180	05.3	351	22.3	−2 16.1	98	57.4	+22 42.4	177	13.6	−0 31.3	218	24.8	−16 25.8
12	195	07.8	6	21.9	−2 17.3	113	59.1	+22 42.5	192	16.4	−0 31.5	233	27.4	−16 25.9
13	210	10.2	21	21.5	18.6	129	00.7	42.6	207	19.2	31.6	248	29.9	25.9
14	225	12.7	36	21.1	19.8	144	02.4	42.8	222	21.9	31.7	263	32.4	25.9
15	240	15.2	51	20.7	21.1	159	04.1	42.9	237	24.7	31.8	278	35.0	25.9
16	255	17.6	66	20.3	22.3	174	05.8	43.0	252	27.4	32.0	293	37.5	25.9
17	270	20.1	81	19.9	−2 23.6	189	07.4	+22 43.1	267	30.2	−0 32.1	308	40.0	−16 26.0
18	285	22.6	96	19.5	−2 24.8	204	09.1	+22 43.2	282	33.0	−0 32.2	323	42.5	−16 26.0
19	300	25.0	111	19.1	26.1	219	10.8	43.4	297	35.7	32.3	338	45.1	26.0
20	315	27.5	126	18.7	27.3	234	12.5	43.5	312	38.5	32.5	353	47.6	26.0
21	330	30.0	141	18.4	28.6	249	14.2	43.6	327	41.2	32.6	8	50.1	26.0
22	345	32.4	156	18.0	29.8	264	15.9	43.7	342	44.0	32.7	23	52.7	26.1
23	0	34.9	171	17.6	31.1	279	17.5	43.9	357	46.8	32.8	38	55.2	26.1
24	15	37.3	186	17.2	−2 32.3	294	19.2	+22 44.0	12	49.5	−0 33.0	53	57.7	−16 26.1
Dif	—			−4	−13		+17	+1		+28	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0 PMG: 11h 47m.8		Edad: 11d.1 SD: 16′.1 PMG: 22h 23m		PHE 4h: 59′.0 12h: 58′.9 20h: 58′.8 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	183 00.3	−5 24.6	35 25.2		−13 31.4		**60 N**	17 15	17 56	18 44	17 20	1	2 07	100
1	198 00.5	25.5	49 54.5	103	16.9	145	**58**	17	57	42	14	5	15	96
2	213 00.7	26.5	64 23.9	104	−13 02.4	145	**56**	20	57	40	10	8	22	92
3	228 00.9	27.5	78 53.4	105	−12 47.8	146	**54**	22	57	38	06	10	29	88
4	243 01.0	28.4	93 22.9	105	33.2	146	**52**	24	58	37	17 02	13	34	86
5	258 01.2	−5 29.4	107 52.6	107	−12 18.4	148	**50**	17 26	17 58	18 35	16 58	16	2 40	82
6	273 01.4	−5 30.3	122 22.3	107	−12 03.7	147	**45**	17 30	17 59	18 33	16 51	21	2 51	76
7	288 01.6	31.3	136 52.0	107	−11 48.8	149	**40**	33	18 00	31	45	25	3 00	72
8	303 01.8	32.2	151 21.9	109	33.9	149	**35**	36	01	30	39	29	07	69
9	318 02.0	33.2	165 51.8	109	19.0	149	**30**	38	02	30	34	32	14	65
10	333 02.1	34.2	180 21.8	110	−11 04.0	150	**20**	43	05	31	26	38	26	59
11	348 02.3	−5 35.1	194 51.8	110	−10 49.0	150	**10 N**	17 47	18 08	18 33	16 18	43	3 36	54
12	3 02.5	−5 36.1	209 21.9	111	−10 33.9	151	**0**	17 51	18 12	18 36	16 11	48	3 45	49
13	18 02.7	37.0	223 52.1	112	18.7	152	**10 S**	17 55	16	41	16 04	53	3 55	44
14	33 02.9	38.0	238 22.3	112	−10 03.5	152	**20**	18 00	22	48	15 57	58	4 05	39
15	48 03.0	38.9	252 52.6	113	−9 48.3	152	**30**	05	29	18 57	48	64	16	33
16	63 03.2	39.9	267 23.0	114	33.0	153	**35**	08	33	19 04	43	67	22	30
17	78 03.4	−5 40.8	281 53.5	115	−9 17.7	153	**40**	18 11	18 39	19 11	15 38	71	4 29	27
18	93 03.6	−5 41.8	296 23.9	114	−9 02.3	154	**45**	18 15	18 45	19 21	15 31	76	4 38	22
19	108 03.8	42.7	310 54.5	116	−8 46.9	154	**50**	20	53	33	23	81	48	17
20	123 03.9	43.7	325 25.1	116	31.4	155	**52**	23	18 57	39	19	84	52	15
21	138 04.1	44.7	339 55.8	117	16.0	154	**54**	25	19 02	46	15	87	4 57	12
22	153 04.3	45.6	354 26.5	117	−8 00.4	156	**56**	28	06	19 54	11	90	5 03	9
23	168 04.5	46.6	8 57.3	118	−7 44.9	155	**58**	31	12	20 03	06	93	09	6
24	183 04.6	−5 47.5	23 28.2	119	−7 29.3	156	**60 S**	18 34	19 18	20 13	15 00	97	5 16	2

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 22h 53m.7	Mag: −4.0 PMG: 11h 35m		Mag: −0.7 PMG: 4h 22m		Mag: −2.9 PMG: 23h 04m		Mag: +0.5 PMG: 20h 21m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	15 37.3	186 17.2	−2 32.3	294 19.2	+22 44.0	12 49.5	−0 33.0	53 57.7	−16 26.1
1	30 39.8	201 16.8	33.6	309 20.9	44.1	27 52.3	33.1	69 00.3	26.1
2	45 42.3	216 16.4	34.9	324 22.6	44.2	42 55.0	33.2	84 02.8	26.1
3	60 44.7	231 16.0	36.1	339 24.3	44.4	57 57.8	33.3	99 05.3	26.2
4	75 47.2	246 15.6	37.4	354 26.0	44.5	73 00.6	33.5	114 07.9	26.2
5	90 49.7	261 15.2	−2 38.6	9 27.7	+22 44.6	88 03.3	−0 33.6	129 10.4	−16 26.2
6	105 52.1	276 14.8	−2 39.9	24 29.4	+22 44.7	103 06.1	−0 33.7	144 12.9	−16 26.2
7	120 54.6	291 14.4	41.1	39 31.1	44.8	118 08.8	33.8	159 15.4	26.2
8	135 57.1	306 14.0	42.4	54 32.8	45.0	133 11.6	34.0	174 18.0	26.3
9	150 59.5	321 13.6	43.6	69 34.5	45.1	148 14.4	34.1	189 20.5	26.3
10	166 02.0	336 13.2	44.9	84 36.2	45.2	163 17.1	34.2	204 23.0	26.3
11	181 04.5	351 12.8	−2 46.1	99 37.9	+22 45.3	178 19.9	−0 34.3	219 25.6	−16 26.3
12	196 06.9	6 12.4	−2 47.4	114 39.6	+22 45.5	193 22.6	−0 34.5	234 28.1	−16 26.3
13	211 09.4	21 12.0	48.6	129 41.3	45.6	208 25.4	34.6	249 30.6	26.3
14	226 11.8	36 11.6	49.9	144 43.0	45.7	223 28.2	34.7	264 33.1	26.4
15	241 14.3	51 11.2	51.1	159 44.7	45.8	238 30.9	34.8	279 35.7	26.4
16	256 16.8	66 10.8	52.4	174 46.4	45.9	253 33.7	35.0	294 38.2	26.4
17	271 19.2	81 10.4	−2 53.6	189 48.1	+22 46.1	268 36.4	−0 35.1	309 40.7	−16 26.4
18	286 21.7	96 10.0	−2 54.9	204 49.8	+22 46.2	283 39.2	−0 35.2	324 43.3	−16 26.4
19	301 24.2	111 09.6	56.1	219 51.5	46.3	298 41.9	35.3	339 45.8	26.5
20	316 26.6	126 09.2	57.4	234 53.2	46.4	313 44.7	35.5	354 48.3	26.5
21	331 29.1	141 08.8	58.6	249 54.9	46.5	328 47.5	35.6	9 50.8	26.5
22	346 31.6	156 08.4	−2 59.9	264 56.6	46.7	343 50.2	35.7	24 53.4	26.5
23	1 34.0	171 08.0	−3 01.1	279 58.3	46.8	358 53.0	35.8	39 55.9	26.5
24	16 36.5	186 07.6	−3 02.4	295 00.0	+22 46.9	13 55.7	−0 36.0	54 58.4	−16 26.5
Dif	—	−4	−13	+17	+1	+28	−1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 12^{d}.1		PHE	4^{h}: 58′.7									
	PMG: 11^{h} 47^{m}.6				SD: 16′.0			12^{h}: 58′.5									
					PMG: 23^{h} 10^{m}			20^{h}: 58′.4									
	hG ☉		Dec		hG ☾	Dif	Dec	R^{o}: 46^{m}	Dif		Náutico	Civil		Hora	R^{o}	Hora	R^{o}
h	°	′	°	′	°	′	°	′		°	h m	h m	h m	h m	m	h m	m
0	183	04.6	−5	47.5	23	28.2	−7	29.3		**60 N**	4 52	5 40	6 22	17 21	1	3 47	96
1	198	04.8		48.5	37	59.1 119	−7	13.7 156		**58**	54	40	19	19	4	51	92
2	213	05.0		49.4	52	30.0 119	−6	58.1 156		**56**	56	40	17	18	7	54	88
3	228	05.2		50.4	67	01.0 120		42.4 157		**54**	4 58	39	15	16	10	3 57	85
4	243	05.4		51.3	81	32.1 121		26.7 157		**52**	5 00	39	12	15	13	4 00	82
5	258	05.5	−5	52.3	96	03.2 121	−6	11.0 157		**50**	5 01	5 38	6 11	17 14	15	4 02	80
6	273	05.7	−5	53.2	110	34.3 121	−5	55.3 157		**45**	5 03	5 37	6 07	17 12	20	4 07	75
7	288	05.9		54.2	125	05.5 122		39.5 158		**40**	05	36	03	10	24	12	70
8	303	06.1		55.1	139	36.8 123		23.7 158		**35**	05	35	6 00	08	28	16	66
9	318	06.2		56.1	154	08.0 122	−5	08.0 157		**30**	06	33	5 57	06	31	19	63
10	333	06.4		57.0	168	39.4 124	−4	52.2 158		**20**	05	31	53	04	36	25	57
11	348	06.6	−5	58.0	183	10.8 124	−4	36.3 159		**10 N**	5 03	5 27	5 48	17 01	42	4 30	52
12	3	06.8	−5	58.9	197	42.2 124	−4	20.5 158		**0**	4 59	5 23	5 44	16 59	47	4 34	47
13	18	06.9	−5	59.9	212	13.6 124	−4	04.6 159		**10 S**	54	19	40	57	51	39	42
14	33	07.1	−6	00.9	226	45.1 125	−3	48.8 158		**20**	47	13	35	55	56	44	37
15	48	07.3		01.8	241	16.7 126		32.9 159		**30**	38	06	30	52	62	49	32
16	63	07.5		02.8	255	48.3 126		17.1 158		**35**	31	5 01	27	50	66	52	28
17	78	07.6	−6	03.7	270	19.9 126	−3	01.2 159		**40**	4 23	4 56	5 23	16 49	69	4 56	24
18	93	07.8	−6	04.7	284	51.5 126	−2	45.3 159		**45**	4 14	4 49	5 19	16 47	73	5 00	20
19	108	08.0		05.6	299	23.2 127		29.4 159		**50**	4 01	41	14	44	79	05	15
20	123	08.2		06.6	313	54.9 127	−2	13.5 159		**52**	3 55	37	12	43	82	07	13
21	138	08.3		07.5	328	26.7 128	−1	57.6 159		**54**	49	33	09	42	84	09	11
22	153	08.5		08.5	342	58.4 127		41.7 159		**56**	41	28	06	41	87	12	7
23	168	08.7		09.4	357	30.2 128		25.9 158		**58**	32	23	03	39	91	15	4
24	183	08.9	−6	10.4	12	02.1 129	−1	10.0 159		**60 S**	3 22	4 16	5 00	16 37	95	5 18	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.7			Mag: −2.9			Mag: +0.5		
	22^{h} 49^{m}.8		PMG: 11^{h} 36^{m}			PMG: 4^{h} 20^{m}			PMG: 23^{h} 00^{m}			PMG: 20^{h} 17^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	16	36.5	186	07.6	−3 02.4	295	00.0	+22 46.9	13	55.7	−0 36.0	54	58.4	−16 26.5
1	31	39.0	201	07.2	03.6	310	01.8	47.0	28	58.5	36.1	70	01.0	26.6
2	46	41.4	216	06.8	04.9	325	03.5	47.1	44	01.2	36.2	85	03.5	26.6
3	61	43.9	231	06.4	06.2	340	05.2	47.3	59	04.0	36.3	100	06.0	26.6
4	76	46.3	246	06.0	07.4	355	06.9	47.4	74	06.8	36.5	115	08.5	26.6
5	91	48.8	261	05.6	−3 08.7	10	08.6	+22 47.5	89	09.5	−0 36.6	130	11.1	−16 26.6
6	106	51.3	276	05.2	−3 09.9	25	10.4	+22 47.6	104	12.3	−0 36.7	145	13.6	−16 26.7
7	121	53.7	291	04.8	11.2	40	12.1	47.8	119	15.0	36.8	160	16.1	26.7
8	136	56.2	306	04.4	12.4	55	13.8	47.9	134	17.8	36.9	175	18.6	26.7
9	151	58.7	321	04.0	13.7	70	15.5	48.0	149	20.5	37.1	190	21.2	26.7
10	167	01.1	336	03.6	14.9	85	17.2	48.1	164	23.3	37.2	205	23.7	26.7
11	182	03.6	351	03.2	−3 16.2	100	19.0	+22 48.2	179	26.1	−0 37.3	220	26.2	−16 26.7
12	197	06.1	6	02.8	−3 17.4	115	20.7	+22 48.4	194	28.8	−0 37.4	235	28.7	−16 26.8
13	212	08.5	21	02.4	18.7	130	22.4	48.5	209	31.6	37.6	250	31.3	26.8
14	227	11.0	36	02.0	19.9	145	24.2	48.6	224	34.3	37.7	265	33.8	26.8
15	242	13.4	51	01.6	21.2	160	25.9	48.7	239	37.1	37.8	280	36.3	26.8
16	257	15.9	66	01.2	22.4	175	27.6	48.8	254	39.8	37.9	295	38.8	26.8
17	272	18.4	81	00.8	−3 23.7	190	29.3	+22 49.0	269	42.6	−0 38.1	310	41.4	−16 26.8
18	287	20.8	96	00.4	−3 24.9	205	31.1	+22 49.1	284	45.3	−0 38.2	325	43.9	−16 26.9
19	302	23.3	111	00.0	26.2	220	32.8	49.2	299	48.1	38.3	340	46.4	26.9
20	317	25.8	125	59.6	27.4	235	34.5	49.3	314	50.9	38.4	355	48.9	26.9
21	332	28.2	140	59.2	28.7	250	36.3	49.4	329	53.6	38.5	10	51.5	26.9
22	347	30.7	155	58.8	29.9	265	38.0	49.6	344	56.4	38.7	25	54.0	26.9
23	2	33.2	170	58.3	31.2	280	39.8	49.7	359	59.1	38.8	40	56.5	26.9
24	17	35.6	185	57.9	−3 32.4	295	41.5	+22 49.8	15	01.9	−0 38.9	55	59.0	−16 27.0
Dif	—			−4	−13		+17	+1		+28	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 13^{d}.1		PHE	4^{h}: 58′.2								
	PMG: 11^{h} 47^{m}.3		SD: 15′.9			12^{h}: 58′.0								
			PMG: 23^{h} 56^{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	183 08.9	−6 10.4	12 02.1		−1 10.0		**60 N**	17 09	17 51	18 39	17 22	1	5 23	93
1	198 09.0	11.3	26 33.9	128	−0 54.1	159	**58**	12	51	36	23	5	23	90
2	213 09.2	12.3	41 05.8	129	38.2	159	**56**	15	52	35	25	8	22	87
3	228 09.4	13.2	55 37.8	130	22.4	158	**54**	17	53	33	26	11	22	84
4	243 09.6	14.2	70 09.7	129	−0 06.5	159	**52**	19	53	32	28	13	22	81
5	258 09.7	−6 15.1	84 41.7	130	+0 09.3	158	**50**	17 22	17 54	18 31	17 29	15	5 22	79
6	273 09.9	−6 16.1	99 13.7	130	+0 25.1	158	**45**	17 26	17 55	18 29	17 32	20	5 22	73
7	288 10.1	17.0	113 45.7	130	40.9	158	**40**	30	57	28	34	24	22	69
8	303 10.3	18.0	128 17.7	130	+0 56.7	158	**35**	33	17 58	28	36	27	22	65
9	318 10.4	18.9	142 49.7	130	+1 12.5	158	**30**	36	18 00	28	37	31	22	61
10	333 10.6	19.9	157 21.8	131	28.3	158	**20**	41	03	29	40	37	22	55
11	348 10.8	−6 20.8	171 53.9	131	+1 44.0	157	**10 N**	17 46	18 07	18 32	17 43	41	5 22	50
12	3 10.9	−6 21.8	186 26.0	131	+1 59.7	157	**0**	17 51	18 11	18 36	17 46	45	5 21	46
13	18 11.1	22.7	200 58.1	131	+2 15.4	157	**10 S**	17 55	16	41	48	51	21	41
14	33 11.3	23.7	215 30.2	131	31.1	157	**20**	18 00	22	48	51	55	21	36
15	48 11.5	24.6	230 02.4	132	+2 46.8	157	**30**	06	30	18 59	54	61	21	30
16	63 11.6	25.5	244 34.5	131	+3 02.4	156	**35**	10	35	19 05	56	64	20	28
17	78 11.8	−6 26.5	259 06.7	132	+3 18.0	156	**40**	18 13	18 41	19 14	17 58	68	5 20	24
18	93 12.0	−6 27.4	273 38.8	131	+3 33.6	156	**45**	18 18	18 48	19 24	18 00	73	5 20	20
19	108 12.1	28.4	288 11.0	132	+3 49.1	155	**50**	24	18 57	37	03	78	20	15
20	123 12.3	29.3	302 43.2	132	+4 04.6	155	**52**	26	19 01	43	05	80	20	12
21	138 12.5	30.3	317 15.4	132	20.1	155	**54**	29	06	51	06	84	20	10
22	153 12.6	31.2	331 47.6	132	35.5	154	**56**	32	11	19 59	08	86	19	8
23	168 12.8	32.2	346 19.8	132	+4 50.9	154	**58**	35	17	20 08	10	90	19	5
24	183 13.0	−6 33.1	0 52.0	132	+5 06.3	154	**60 S**	18 39	19 23	20 19	18 12	94	5 19	1

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: −0.7		Mag: −2.9		Mag: +0.5	
	22^{h} 45^{m}.9	PMG: 11^{h} 36^{m}		PMG: 4^{h} 17^{m}		PMG: 22^{h} 56^{m}		PMG: 20^{h} 13^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	17 35.6	185 57.9	−3 32.4	295 41.5	+22 49.8	15 01.9	−0 38.9	55 59.0	−16 27.0
1	32 38.1	200 57.5	33.7	310 43.2	49.9	30 04.6	39.0	71 01.5	27.0
2	47 40.6	215 57.1	34.9	325 45.0	50.0	45 07.4	39.2	86 04.1	27.0
3	62 43.0	230 56.7	36.2	340 46.7	50.2	60 10.1	39.3	101 06.6	27.0
4	77 45.5	245 56.3	37.4	355 48.5	50.3	75 12.9	39.4	116 09.1	27.0
5	92 47.9	260 55.9	−3 38.6	10 50.2	+22 50.4	90 15.6	−0 39.5	131 11.6	−16 27.0
6	107 50.4	275 55.5	−3 39.9	25 52.0	+22 50.5	105 18.4	−0 39.6	146 14.2	−16 27.1
7	122 52.9	290 55.1	41.1	40 53.7	50.6	120 21.2	39.8	161 16.7	27.1
8	137 55.3	305 54.7	42.4	55 55.5	50.7	135 23.9	39.9	176 19.2	27.1
9	152 57.8	320 54.3	43.6	70 57.2	50.9	150 26.7	40.0	191 21.7	27.1
10	168 00.3	335 53.9	44.9	85 59.0	51.0	165 29.4	40.1	206 24.2	27.1
11	183 02.7	350 53.5	−3 46.1	101 00.7	+22 51.1	180 32.2	−0 40.3	221 26.8	−16 27.1
12	198 05.2	5 53.1	−3 47.4	116 02.5	+22 51.2	195 34.9	−0 40.4	236 29.3	−16 27.2
13	213 07.7	20 52.7	48.6	131 04.2	51.3	210 37.7	40.5	251 31.8	27.2
14	228 10.1	35 52.3	49.9	146 06.0	51.5	225 40.4	40.6	266 34.3	27.2
15	243 12.6	50 51.9	51.1	161 07.7	51.6	240 43.2	40.7	281 36.8	27.2
16	258 15.0	65 51.5	52.4	176 09.5	51.7	255 45.9	40.9	296 39.4	27.2
17	273 17.5	80 51.1	−3 53.6	191 11.3	+22 51.8	270 48.7	−0 41.0	311 41.9	−16 27.2
18	288 20.0	95 50.7	−3 54.9	206 13.0	+22 51.9	285 51.4	−0 41.1	326 44.4	−16 27.2
19	303 22.4	110 50.3	56.1	221 14.8	52.1	300 54.2	41.2	341 46.9	27.3
20	318 24.9	125 49.8	57.4	236 16.5	52.2	315 56.9	41.3	356 49.4	27.3
21	333 27.4	140 49.4	58.6	251 18.3	52.3	330 59.7	41.5	11 52.0	27.3
22	348 29.8	155 49.0	−3 59.9	266 20.1	52.4	346 02.5	41.6	26 54.5	27.3
23	3 32.3	170 48.6	−4 01.1	281 21.8	52.5	1 05.2	41.7	41 57.0	27.3
24	18 34.8	185 48.2	−4 02.4	296 23.6	+22 52.6	16 08.0	−0 41.8	56 59.5	−16 27.3
Dif	—	−4	−12	+18	+1	+28	−1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 14ᵈ.1		PHE	4ʰ: 57′.6									
	PMG: 11ʰ 47ᵐ.0				SD: 15′.7			12ʰ: 57′.4									
					PMG: **ʰ **ᵐ			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	183	13.0	−6	33.1	0	52.0	+5	06.3		**60 N**	4 57	5 45	6 27	17 23	2	6 56	94
1	198	13.2		34.1	15	24.2 132		21.7	154	**58**	4 59	44	24	28	6	53	89
2	213	13.3		35.0	29	56.4 132		37.0	153	**56**	5 00	44	21	33	9	49	86
3	228	13.5		36.0	44	28.6 132	+5	52.2	152	**54**	02	43	18	37	12	46	83
4	243	13.7		36.9	59	00.9 133	+6	07.4	152	**52**	03	42	16	41	14	43	80
5	258	13.8	−6	37.9	73	33.1 132	+6	22.6	152	**50**	5 04	5 41	6 14	17 44	17	6 41	77
6	273	14.0	−6	38.8	88	05.3 132	+6	37.8	152	**45**	5 06	5 40	6 09	17 52	21	6 35	73
7	288	14.2		39.8	102	37.5 132	+6	52.9	151	**40**	07	38	05	17 58	26	31	68
8	303	14.3		40.7	117	09.7 132	+7	07.9	150	**35**	07	36	6 02	18 03	30	27	64
9	318	14.5		41.6	131	41.9 132		22.9	150	**30**	07	35	5 59	08	33	23	61
10	333	14.7		42.6	146	14.1 132		37.9	150	**20**	05	31	53	17	37	17	56
11	348	14.8	−6	43.5	160	46.3 132	+7	52.8	149	**10 N**	5 03	5 27	5 48	18 24	42	6 12	51
12	3	15.0	−6	44.5	175	18.4 131	+8	07.6	148	**0**	4 59	5 23	5 44	18 31	47	6 07	46
13	18	15.2		45.4	189	50.6 132		22.4	148	**10 S**	53	18	39	39	50	6 02	42
14	33	15.3		46.4	204	22.8 132		37.2	148	**20**	46	12	34	46	56	5 57	37
15	48	15.5		47.3	218	54.9 131	+8	51.9	147	**30**	35	5 04	28	18 55	61	51	32
16	63	15.7		48.3	233	27.0 131	+9	06.5	146	**35**	28	4 59	24	19 00	64	48	29
17	78	15.8	−6	49.2	247	59.2 132	+9	21.1	146	**40**	4 20	4 53	5 20	19 06	68	5 44	25
18	93	16.0	−6	50.1	262	31.3 131	+9	35.6	145	**45**	4 10	4 46	5 16	19 13	72	5 40	21
19	108	16.2		51.1	277	03.4 131	+9	50.1	145	**50**	3 57	37	10	21	78	35	16
20	123	16.3		52.0	291	35.5 131	+10	04.5	144	**52**	50	33	07	25	80	32	14
21	138	16.5		53.0	306	07.5 130		18.9	144	**54**	43	28	04	30	82	30	11
22	153	16.7		53.9	320	39.6 131		33.1	142	**56**	35	23	5 01	34	86	27	8
23	168	16.8		54.9	335	11.6 130	+10	47.4	143	**58**	25	17	4 58	40	89	24	5
24	183	17.0	−6	55.8	349	43.6 130	+11	01.5	141	**60 S**	3 14	4 10	4 54	19 46	94	5 20	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.8			Mag: −2.9			Mag: +0.6		
	22ʰ 42ᵐ.0		PMG: 11ʰ 37ᵐ			PMG: 4ʰ 14ᵐ			PMG: 22ʰ 51ᵐ			PMG: 20ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	18	34.8	185	48.2	−4 02.4	296	23.6	+22 52.6	16	08.0	−0 41.8	56	59.5	−16 27.3
1	33	37.2	200	47.8	03.6	311	25.4	52.8	31	10.7	41.9	72	02.0	27.4
2	48	39.7	215	47.4	04.8	326	27.1	52.9	46	13.5	42.1	87	04.6	27.4
3	63	42.2	230	47.0	06.1	341	28.9	53.0	61	16.2	42.2	102	07.1	27.4
4	78	44.6	245	46.6	07.3	356	30.7	53.1	76	19.0	42.3	117	09.6	27.4
5	93	47.1	260	46.2	−4 08.6	11	32.4	+22 53.2	91	21.7	−0 42.4	132	12.1	−16 27.4
6	108	49.5	275	45.8	−4 09.8	26	34.2	+22 53.4	106	24.5	−0 42.6	147	14.6	−16 27.4
7	123	52.0	290	45.4	11.1	41	36.0	53.5	121	27.2	42.7	162	17.2	27.4
8	138	54.5	305	45.0	12.3	56	37.8	53.6	136	30.0	42.8	177	19.7	27.5
9	153	56.9	320	44.6	13.6	71	39.6	53.7	151	32.7	42.9	192	22.2	27.5
10	168	59.4	335	44.1	14.8	86	41.3	53.8	166	35.5	43.0	207	24.7	27.5
11	184	01.9	350	43.7	−4 16.1	101	43.1	+22 53.9	181	38.2	−0 43.2	222	27.2	−16 27.5
12	199	04.3	5	43.3	−4 17.3	116	44.9	+22 54.1	196	41.0	−0 43.3	237	29.7	−16 27.5
13	214	06.8	20	42.9	18.5	131	46.7	54.2	211	43.7	43.4	252	32.3	27.5
14	229	09.3	35	42.5	19.8	146	48.5	54.3	226	46.5	43.5	267	34.8	27.5
15	244	11.7	50	42.1	21.0	161	50.2	54.4	241	49.2	43.6	282	37.3	27.6
16	259	14.2	65	41.7	22.3	176	52.0	54.5	256	52.0	43.8	297	39.8	27.6
17	274	16.6	80	41.3	−4 23.5	191	53.8	+22 54.6	271	54.7	−0 43.9	312	42.3	−16 27.6
18	289	19.1	95	40.9	−4 24.8	206	55.6	+22 54.8	286	57.5	−0 44.0	327	44.8	−16 27.6
19	304	21.6	110	40.5	26.0	221	57.4	54.9	302	00.2	44.1	342	47.4	27.6
20	319	24.0	125	40.1	27.3	236	59.2	55.0	317	03.0	44.2	357	49.9	27.6
21	334	26.5	140	39.6	28.5	252	01.0	55.1	332	05.7	44.3	12	52.4	27.6
22	349	29.0	155	39.2	29.7	267	02.8	55.2	347	08.5	44.5	27	54.9	27.7
23	4	31.4	170	38.8	31.0	282	04.6	55.4	2	11.2	44.6	42	57.4	27.7
24	19	33.9	185	38.4	−4 32.2	297	06.4	+22 55.5	17	14.0	−0 44.7	57	59.9	−16 27.7
Dif	—			−4	−12		+18	+1		+28	−1		+25	0

UT	SOL SD: 16′.0 PMG: 11h 46m.7		LUNA Edad: 15d.1 SD: 15′.5 PMG: 0h 42m PHE 4h: 57′.0; 12h: 56′.7; 20h: 56′.5 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 17.0	−6 55.8	349 43.6		+11 01.5		**60 N**	17 03	17 45	18 33	17 25	3	8 30	94
1	198 17.1	56.7	4 15.6	130	15.6	141	**58**	06	46	31	34	8	22	90
2	213 17.3	57.7	18 47.6	130	29.7	141	**56**	10	47	30	42	11	15	86
3	228 17.5	58.6	33 19.6	130	43.6	139	**54**	12	48	29	49	14	09	82
4	243 17.6	−6 59.6	47 51.5	129	+11 57.5	139	**52**	15	49	28	17 55	18	8 03	80
5	258 17.8	−7 00.5	62 23.4	129	+12 11.4	139	**50**	17 17	17 50	18 27	18 01	20	7 58	77
6	273 18.0	−7 01.5	76 55.3	129	+12 25.1	137	**45**	17 22	17 52	18 26	18 13	25	7 48	71
7	288 18.1	02.4	91 27.2	129	38.8	137	**40**	27	54	25	24	29	39	67
8	303 18.3	03.3	105 59.1	129	+12 52.4	136	**35**	30	56	25	33	32	31	64
9	318 18.5	04.3	120 30.9	128	+13 06.0	136	**30**	34	17 58	26	41	35	24	61
10	333 18.6	05.2	135 02.7	128	19.5	135	**20**	40	18 02	27	18 54	40	13	56
11	348 18.8	−7 06.2	149 34.5	128	+13 32.9	134	**10 N**	17 45	18 06	18 31	19 06	44	7 03	51
12	3 18.9	−7 07.1	164 06.2	127	+13 46.2	133	**0**	17 50	18 11	18 35	19 18	48	6 53	48
13	18 19.1	08.1	178 38.0	128	+13 59.4	132	**10 S**	17 55	16	41	29	52	44	43
14	33 19.3	09.0	193 09.7	127	+14 12.6	132	**20**	18 01	23	18 49	42	56	34	39
15	48 19.4	09.9	207 41.3	126	25.7	131	**30**	07	32	19 00	19 56	61	23	34
16	63 19.6	10.9	222 13.0	127	38.7	130	**35**	11	37	07	20 04	64	17	30
17	78 19.7	−7 11.8	236 44.6	126	+14 51.6	129	**40**	18 15	18 43	19 16	20 14	67	6 09	27
18	93 19.9	−7 12.8	251 16.2	126	+15 04.5	129	**45**	18 21	18 51	19 27	20 25	71	6 01	23
19	108 20.1	13.7	265 47.7	125	17.2	127	**50**	27	19 00	41	39	76	5 51	18
20	123 20.2	14.6	280 19.2	125	29.9	127	**52**	30	05	47	45	79	46	16
21	138 20.4	15.6	294 50.7	125	42.5	126	**54**	33	10	19 55	20 52	82	41	13
22	153 20.5	16.5	309 22.2	125	+15 55.0	125	**56**	36	15	20 04	21 00	86	35	10
23	168 20.7	17.5	323 53.6	124	+16 07.4	124	**58**	40	21	14	09	90	29	6
24	183 20.9	−7 18.4	338 25.0	124	+16 19.7	123	**60 S**	18 44	19 29	20 26	21 20	94	5 21	3

UT	ARIES PMG 22h 38m.0	VENUS Mag: −4.0 PMG: 11h 38m		MARTE Mag: −0.8 PMG: 4h 11m		JÚPITER Mag: −2.9 PMG: 22h 47m		SATURNO Mag: +0.6 PMG: 20h 05m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	19 33.9	185 38.4	−4 32.2	297 06.4	+22 55.5	17 14.0	−0 44.7	57 59.9	−16 27.7
1	34 36.4	200 38.0	33.5	312 08.1	55.6	32 16.7	44.8	73 02.4	27.7
2	49 38.8	215 37.6	34.7	327 09.9	55.7	47 19.5	44.9	88 05.0	27.7
3	64 41.3	230 37.2	36.0	342 11.7	55.8	62 22.2	45.1	103 07.5	27.7
4	79 43.8	245 36.8	37.2	357 13.5	55.9	77 25.0	45.2	118 10.0	27.7
5	94 46.2	260 36.4	−4 38.4	12 15.3	+22 56.1	92 27.7	−0 45.3	133 12.5	−16 27.8
6	109 48.7	275 35.9	−4 39.7	27 17.1	+22 56.2	107 30.5	−0 45.4	148 15.0	−16 27.8
7	124 51.1	290 35.5	40.9	42 19.0	56.3	122 33.2	45.5	163 17.5	27.8
8	139 53.6	305 35.1	42.2	57 20.8	56.4	137 36.0	45.7	178 20.0	27.8
9	154 56.1	320 34.7	43.4	72 22.6	56.5	152 38.7	45.8	193 22.6	27.8
10	169 58.5	335 34.3	44.7	87 24.4	56.6	167 41.4	45.9	208 25.1	27.8
11	185 01.0	350 33.9	−4 45.9	102 26.2	+22 56.8	182 44.2	−0 46.0	223 27.6	−16 27.8
12	200 03.5	5 33.5	−4 47.1	117 28.0	+22 56.9	197 46.9	−0 46.1	238 30.1	−16 27.9
13	215 05.9	20 33.1	48.4	132 29.8	57.0	212 49.7	46.2	253 32.6	27.9
14	230 08.4	35 32.6	49.6	147 31.6	57.1	227 52.4	46.4	268 35.1	27.9
15	245 10.9	50 32.2	50.9	162 33.4	57.2	242 55.2	46.5	283 37.6	27.9
16	260 13.3	65 31.8	52.1	177 35.2	57.3	257 57.9	46.6	298 40.2	27.9
17	275 15.8	80 31.4	−4 53.3	192 37.0	+22 57.5	273 00.7	−0 46.7	313 42.7	−16 27.9
18	290 18.2	95 31.0	−4 54.6	207 38.9	+22 57.6	288 03.4	−0 46.8	328 45.2	−16 27.9
19	305 20.7	110 30.6	55.8	222 40.7	57.7	303 06.2	47.0	343 47.7	27.9
20	320 23.2	125 30.2	57.1	237 42.5	57.8	318 08.9	47.1	358 50.2	28.0
21	335 25.6	140 29.7	58.3	252 44.3	57.9	333 11.7	47.2	13 52.7	28.0
22	350 28.1	155 29.3	−4 59.5	267 46.1	58.0	348 14.4	47.3	28 55.2	28.0
23	5 30.6	170 28.9	−5 00.8	282 48.0	58.1	3 17.2	47.4	43 57.7	28.0
24	20 33.0	185 28.5	−5 02.0	297 49.8	+22 58.3	18 19.9	−0 47.5	59 00.2	−16 28.0
Dif	—	−4	−12	+18	+1	+27	−1	+25	0

UT	SOL SD: 16′.0 PMG: 11h 46m.5				☾ LUNA Edad: 16d.1 SD: 15′.4 PMG: 1h 29m PHE 4h: 56′.3; 12h: 56′.1; 20h: 55′.9 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	183	20.9	−7	18.4	338	25.0	+16	19.7	**60 N**	5 02	5 50	6 32	17 28	7	10 04	95
1	198	21.0		19.3	352	56.4 124		32.0 123	**58**	03	49	28	42	12	9 52	89
2	213	21.2		20.3	7	27.7 123		44.1 121	**56**	04	47	25	17 53	17	41	84
3	228	21.3		21.2	21	59.0 123	+16	56.2 121	**54**	05	46	22	18 03	20	31	81
4	243	21.5		22.1	36	30.3 123	+17	08.2 120	**52**	06	45	19	13	22	23	78
5	258	21.7	−7	23.1	51	01.5 122	+17	20.1 119	**50**	5 07	5 44	6 17	18 21	25	9 15	76
6	273	21.8	−7	24.0	65	32.7 122	+17	31.9 118	**45**	5 08	5 42	6 12	18 38	30	8 59	70
7	288	22.0		25.0	80	03.9 122		43.6 117	**40**	09	40	07	18 53	33	46	66
8	303	22.1		25.9	94	35.0 121	+17	55.2 116	**35**	09	38	03	19 05	36	35	63
9	318	22.3		26.8	109	06.1 121	+18	06.7 115	**30**	08	36	6 00	16	38	25	61
10	333	22.4		27.8	123	37.1 120		18.1 114	**20**	06	32	5 54	34	43	8 09	55
11	348	22.6	−7	28.7	138	08.1 120	+18	29.4 113	**10 N**	5 03	5 27	5 48	19 50	46	7 54	52
12	3	22.8	−7	29.6	152	39.1 120	+18	40.6 112	**0**	4 58	5 22	5 43	20 06	49	7 41	48
13	18	22.9		30.6	167	10.1 120	+18	51.7 111	**10 S**	52	17	38	21	52	27	45
14	33	23.1		31.5	181	41.0 119	+19	02.7 110	**20**	44	10	32	38	55	7 13	41
15	48	23.2		32.5	196	11.8 118		13.6 109	**30**	33	5 01	25	20 57	60	6 57	36
16	63	23.4		33.4	210	42.7 119		24.5 109	**35**	25	4 56	22	21 08	62	47	34
17	78	23.5	−7	34.3	225	13.5 118	+19	35.2 107	**40**	4 17	4 50	5 17	21 21	65	6 36	31
18	93	23.7	−7	35.3	239	44.2 117	+19	45.8 106	**45**	4 06	4 42	5 12	21 36	69	6 24	27
19	108	23.8		36.2	254	14.9 117	+19	56.3 105	**50**	3 52	32	06	21 55	74	09	22
20	123	24.0		37.1	268	45.6 117	+20	06.7 104	**52**	45	28	03	22 04	76	6 02	19
21	138	24.2		38.1	283	16.3 117		17.0 103	**54**	37	23	5 00	14	79	5 54	17
22	153	24.3		39.0	297	46.9 116		27.2 102	**56**	29	17	4 56	26	82	45	14
23	168	24.5		39.9	312	17.4 115		37.2 100	**58**	18	11	52	39	87	35	10
24	183	24.6	−7	40.9	326	48.0 116	+20	47.2 100	**60 S**	3 07	4 03	4 48	22 54	94	5 24	4

UT	ARIES PMG 22h 34m.1		VENUS Mag: −4.0 PMG: 11h 38m			MARTE Mag: −0.8 PMG: 4h 08m			JÚPITER Mag: −2.9 PMG: 22h 43m			SATURNO Mag: +0.6 PMG: 20h 01m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	20	33.0	185	28.5	−5 02.0	297	49.8	+22 58.3	18	19.9	−0 47.5	59	00.2	−16 28.0
1	35	35.5	200	28.1	03.3	312	51.6	58.4	33	22.6	47.7	74	02.8	28.0
2	50	38.0	215	27.7	04.5	327	53.4	58.5	48	25.4	47.8	89	05.3	28.0
3	65	40.4	230	27.3	05.7	342	55.3	58.6	63	28.1	47.9	104	07.8	28.0
4	80	42.9	245	26.8	07.0	357	57.1	58.7	78	30.9	48.0	119	10.3	28.1
5	95	45.4	260	26.4	−5 08.2	12	58.9	+22 58.8	93	33.6	−0 48.1	134	12.8	−16 28.1
6	110	47.8	275	26.0	−5 09.5	28	00.8	+22 59.0	108	36.4	−0 48.2	149	15.3	−16 28.1
7	125	50.3	290	25.6	10.7	43	02.6	59.1	123	39.1	48.4	164	17.8	28.1
8	140	52.7	305	25.2	11.9	58	04.4	59.2	138	41.9	48.5	179	20.3	28.1
9	155	55.2	320	24.8	13.2	73	06.3	59.3	153	44.6	48.6	194	22.8	28.1
10	170	57.7	335	24.3	14.4	88	08.1	59.4	168	47.4	48.7	209	25.3	28.1
11	186	00.1	350	23.9	−5 15.7	103	09.9	+22 59.5	183	50.1	−0 48.8	224	27.9	−16 28.1
12	201	02.6	5	23.5	−5 16.9	118	11.8	+22 59.7	198	52.8	−0 48.9	239	30.4	−16 28.2
13	216	05.1	20	23.1	18.1	133	13.6	59.8	213	55.6	49.1	254	32.9	28.2
14	231	07.5	35	22.7	19.4	148	15.4	+22 59.9	228	58.3	49.2	269	35.4	28.2
15	246	10.0	50	22.2	20.6	163	17.3	+23 00.0	244	01.1	49.3	284	37.9	28.2
16	261	12.5	65	21.8	21.8	178	19.1	+23 00.1	259	03.8	49.4	299	40.4	28.2
17	276	14.9	80	21.4	−5 23.1	193	21.0	+23 00.2	274	06.6	−0 49.5	314	42.9	−16 28.2
18	291	17.4	95	21.0	−5 24.3	208	22.8	+23 00.3	289	09.3	−0 49.6	329	45.4	−16 28.2
19	306	19.9	110	20.6	25.5	223	24.7	00.5	304	12.0	49.8	344	47.9	28.2
20	321	22.3	125	20.2	26.8	238	26.5	00.6	319	14.8	49.9	359	50.4	28.3
21	336	24.8	140	19.7	28.0	253	28.4	00.7	334	17.5	50.0	14	52.9	28.3
22	351	27.2	155	19.3	29.3	268	30.2	00.8	349	20.3	50.1	29	55.4	28.3
23	6	29.7	170	18.9	30.5	283	32.1	00.9	4	23.0	50.2	44	58.0	28.3
24	21	32.2	185	18.5	−5 31.7	298	33.9	+23 01.0	19	25.8	−0 50.3	60	00.5	−16 28.3
Dif	—			−4	−12		+18	+1		+27	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0		Edad: 17ᵈ.1		PHE	4ʰ: 55′.7								
	PMG: 11ʰ 46ᵐ.2		SD: 15′.2			12ʰ: 55′.5								
			PMG: 2ʰ 17ᵐ			20ʰ: 55′.3								
						Rº: 50ᵐ								
	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 24.6	−7 40.9	326 48.0		+20 47.2		**60 N**	16 57	17 39	18 27	17 35	13	11 39	91
1	198 24.8	41.8	341 18.4	114	+20 57.1	99	**58**	17 01	41	26	17 54	20	21	84
2	213 24.9	42.7	355 48.9	115	+21 06.8	97	**56**	05	42	25	18 10	24	11 05	80
3	228 25.1	43.7	10 19.3	114	16.5	97	**54**	08	43	24	23	28	10 52	77
4	243 25.2	44.6	24 49.7	114	26.0	95	**52**	11	44	23	35	30	41	73
5	258 25.4	−7 45.6	39 20.0	113	+21 35.5	95	**50**	17 13	17 46	18 23	18 46	32	10 31	71
6	273 25.5	−7 46.5	53 50.3	113	+21 44.8	93	**45**	17 19	17 48	18 22	19 08	36	10 09	67
7	288 25.7	47.4	68 20.6	113	+21 54.0	92	**40**	24	51	22	26	39	9 52	64
8	303 25.8	48.4	82 50.8	112	+22 03.1	91	**35**	28	53	23	41	41	38	61
9	318 26.0	49.3	97 21.0	112	12.0	89	**30**	32	17 56	23	19 54	43	26	59
10	333 26.1	50.2	111 51.2	112	20.9	89	**20**	38	18 00	26	20 17	46	9 04	56
11	348 26.3	−7 51.2	126 21.3	111	+22 29.6	87	**10 N**	17 44	18 05	18 30	20 36	49	8 46	53
12	3 26.4	−7 52.1	140 51.3	110	+22 38.3	87	**0**	17 50	18 10	18 35	20 55	51	8 29	50
13	18 26.6	53.0	155 21.4	111	46.8	85	**10 S**	17 55	16	41	21 13	53	8 12	47
14	33 26.7	54.0	169 51.4	110	+22 55.2	84	**20**	18 01	24	18 50	33	56	7 54	44
15	48 26.9	54.9	184 21.4	110	+23 03.4	82	**30**	09	33	19 02	21 57	58	33	41
16	63 27.0	55.8	198 51.3	109	11.6	82	**35**	13	39	09	22 10	60	21	39
17	78 27.2	−7 56.7	213 21.2	109	+23 19.6	80	**40**	18 18	18 45	19 18	22 26	62	7 07	36
18	93 27.3	−7 57.7	227 51.0	108	+23 27.6	80	**45**	18 23	18 53	19 30	22 45	64	6 51	33
19	108 27.5	58.6	242 20.9	109	35.4	78	**50**	30	19 04	45	23 09	68	31	28
20	123 27.6	−7 59.5	256 50.7	108	43.0	76	**52**	33	08	19 52	20	70	21	26
21	138 27.8	−8 00.5	271 20.4	107	50.6	76	**54**	36	14	20 00	33	73	6 11	23
22	153 27.9	01.4	285 50.1	107	+23 58.0	74	**56**	40	20	09	23 48	76	5 59	19
23	168 28.1	02.3	300 19.8	107	+24 05.4	74	**58**	45	26	20	** **	**	45	15
24	183 28.2	−8 03.3	314 49.5	107	+24 12.5	71	**60 S**	18 49	19 34	20 32	** **	**	5 28	9

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: −0.8		Mag: −2.9		Mag: +0.6	
	22ʰ 30ᵐ.2	PMG: 11ʰ 39ᵐ		PMG: 4ʰ 05ᵐ		PMG: 22ʰ 38ᵐ		PMG: 19ʰ 57ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	21 32.2	185 18.5	−5 31.7	298 33.9	+23 01.0	19 25.8	−0 50.3	60 00.5	−16 28.3
1	36 34.6	200 18.1	33.0	313 35.8	01.2	34 28.5	50.5	75 03.0	28.3
2	51 37.1	215 17.6	34.2	328 37.6	01.3	49 31.2	50.6	90 05.5	28.3
3	66 39.6	230 17.2	35.4	343 39.5	01.4	64 34.0	50.7	105 08.0	28.3
4	81 42.0	245 16.8	36.7	358 41.3	01.5	79 36.7	50.8	120 10.5	28.3
5	96 44.5	260 16.4	−5 37.9	13 43.2	+23 01.6	94 39.5	−0 50.9	135 13.0	−16 28.4
6	111 47.0	275 15.9	−5 39.1	28 45.1	+23 01.7	109 42.2	−0 51.0	150 15.5	−16 28.4
7	126 49.4	290 15.5	40.4	43 46.9	01.8	124 44.9	51.1	165 18.0	28.4
8	141 51.9	305 15.1	41.6	58 48.8	02.0	139 47.7	51.3	180 20.5	28.4
9	156 54.4	320 14.7	42.8	73 50.6	02.1	154 50.4	51.4	195 23.0	28.4
10	171 56.8	335 14.3	44.1	88 52.5	02.2	169 53.2	51.5	210 25.5	28.4
11	186 59.3	350 13.8	−5 45.3	103 54.4	+23 02.3	184 55.9	−0 51.6	225 28.0	−16 28.4
12	202 01.7	5 13.4	−5 46.5	118 56.2	+23 02.4	199 58.7	−0 51.7	240 30.5	−16 28.4
13	217 04.2	20 13.0	47.8	133 58.1	02.5	215 01.4	51.8	255 33.0	28.4
14	232 06.7	35 12.6	49.0	149 00.0	02.6	230 04.1	52.0	270 35.5	28.4
15	247 09.1	50 12.1	50.2	164 01.9	02.8	245 06.9	52.1	285 38.0	28.5
16	262 11.6	65 11.7	51.5	179 03.7	02.9	260 09.6	52.2	300 40.6	28.5
17	277 14.1	80 11.3	−5 52.7	194 05.6	+23 03.0	275 12.4	−0 52.3	315 43.1	−16 28.5
18	292 16.5	95 10.9	−5 53.9	209 07.5	+23 03.1	290 15.1	−0 52.4	330 45.6	−16 28.5
19	307 19.0	110 10.4	55.2	224 09.3	03.2	305 17.8	52.5	345 48.1	28.5
20	322 21.5	125 10.0	56.4	239 11.2	03.3	320 20.6	52.6	0 50.6	28.5
21	337 23.9	140 09.6	57.6	254 13.1	03.4	335 23.3	52.8	15 53.1	28.5
22	352 26.4	155 09.2	−5 58.9	269 15.0	03.6	350 26.0	52.9	30 55.6	28.5
23	7 28.8	170 08.7	−6 00.1	284 16.9	03.7	5 28.8	53.0	45 58.1	28.5
24	22 31.3	185 08.3	−6 01.3	299 18.7	+23 03.8	20 31.5	−0 53.1	61 00.6	−16 28.6
Dif	—	−4	−12	+19	+1	+27	−1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 18^{d}.1		PHE	4^{h}: 55′.1									
	PMG: 11^{h} 46^{m}.0				SD: 15′.0			12^{h}: 54′.9									
					PMG: 3^{h} 07^{m}			20^{h}: 54′.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	183	28.2	−8	03.3	314	49.5	+24	12.5		**60 N**	5 06	5 54	6 37	17 48	28	13 10	79
1	198	28.4		04.2	329	19.1 106		19.6	71	**58**	07	53	33	18 14	33	12 45	73
2	213	28.5		05.1	343	48.7 106		26.6	70	**56**	08	51	29	34	37	25	70
3	228	28.7		06.1	358	18.3 106		33.4	68	**54**	09	50	26	18 51	39	12 09	67
4	243	28.8		07.0	12	47.8 105		40.1	67	**52**	10	49	23	19 05	41	11 54	66
5	258	29.0	−8	07.9	27	17.3 105	+24	46.6	65	**50**	5 10	5 47	6 20	19 18	42	11 42	64
6	273	29.1	−8	08.8	41	46.8 105	+24	53.1	65	**45**	5 11	5 45	6 14	19 44	44	11 16	62
7	288	29.3		09.8	56	16.2 104	+24	59.4	63	**40**	11	42	09	20 05	46	10 56	60
8	303	29.4		10.7	70	45.6 104	+25	05.6	62	**35**	10	39	05	22	47	39	58
9	318	29.6		11.6	85	15.0 104		11.7	61	**30**	09	37	6 01	20 37	48	25	56
10	333	29.7		12.6	99	44.4 104		17.6	59	**20**	07	32	5 54	21 03	49	10 00	55
11	348	29.8	−8	13.5	114	13.7 103	+25	23.4	58	**10 N**	5 03	5 27	5 48	21 25	50	9 39	53
12	3	30.0	−8	14.4	128	43.0 103	+25	29.1	57	**0**	4 58	5 22	5 43	21 46	51	9 19	51
13	18	30.1		15.3	143	12.3 103		34.6	55	**10 S**	51	16	37	22 06	53	8 59	50
14	33	30.3		16.3	157	41.5 102		40.1	55	**20**	42	5 08	31	29	53	38	48
15	48	30.4		17.2	172	10.7 102		45.4	53	**30**	30	4 59	23	22 55	54	14	46
16	63	30.6		18.1	186	40.0 103		50.5	51	**35**	23	53	19	23 10	56	8 00	44
17	78	30.7	−8	19.1	201	09.1 101	+25	55.6	51	**40**	4 13	4 46	5 14	23 28	56	7 43	43
18	93	30.9	−8	20.0	215	38.3 102	+26	00.5	49	**45**	4 02	4 38	5 08	23 49	58	7 24	40
19	108	31.0		20.9	230	07.4 101		05.2	47	**50**	3 47	28	5 02	** **	**	6 59	37
20	123	31.1		21.8	244	36.6 102		09.9	47	**52**	40	23	4 58	** **	**	47	35
21	138	31.3		22.8	259	05.6 100		14.4	45	**54**	32	18	55	** **	**	34	33
22	153	31.4		23.7	273	34.7 101		18.8	44	**56**	22	12	51	** **	**	18	30
23	168	31.6		24.6	288	03.8 101		23.0	42	**58**	3 12	4 05	47	0 06	80	6 00	25
24	183	31.7	−8	25.5	302	32.8 100	+26	27.1	41	**60 S**	2 59	3 57	4 42	0 28	88	5 37	19

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.8			Mag: −2.9			Mag: +0.6		
	22^{h} 26^{m}.2		PMG: 11^{h} 40^{m}			PMG: 4^{h} 02^{m}			PMG: 22^{h} 34^{m}			PMG: 19^{h} 53^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	22	31.3	185	08.3	−6 01.3	299	18.7	+23 03.8	20	31.5	−0 53.1	61	00.6	−16 28.6
1	37	33.8	200	07.9	02.5	314	20.6	03.9	35	34.3	53.2	76	03.1	28.6
2	52	36.2	215	07.5	03.8	329	22.5	04.0	50	37.0	53.3	91	05.6	28.6
3	67	38.7	230	07.0	05.0	344	24.4	04.1	65	39.7	53.4	106	08.1	28.6
4	82	41.2	245	06.6	06.2	359	26.3	04.2	80	42.5	53.5	121	10.6	28.6
5	97	43.6	260	06.2	−6 07.5	14	28.2	+23 04.4	95	45.2	−0 53.7	136	13.1	−16 28.6
6	112	46.1	275	05.8	−6 08.7	29	30.1	+23 04.5	110	48.0	−0 53.8	151	15.6	−16 28.6
7	127	48.6	290	05.3	09.9	44	32.0	04.6	125	50.7	53.9	166	18.1	28.6
8	142	51.0	305	04.9	11.2	59	33.9	04.7	140	53.4	54.0	181	20.6	28.6
9	157	53.5	320	04.5	12.4	74	35.7	04.8	155	56.2	54.1	196	23.1	28.6
10	172	56.0	335	04.1	13.6	89	37.6	04.9	170	58.9	54.2	211	25.6	28.6
11	187	58.4	350	03.6	−6 14.8	104	39.5	+23 05.0	186	01.6	−0 54.3	226	28.1	−16 28.7
12	203	00.9	5	03.2	−6 16.1	119	41.4	+23 05.2	201	04.4	−0 54.5	241	30.6	−16 28.7
13	218	03.3	20	02.8	17.3	134	43.3	05.3	216	07.1	54.6	256	33.1	28.7
14	233	05.8	35	02.3	18.5	149	45.2	05.4	231	09.8	54.7	271	35.6	28.7
15	248	08.3	50	01.9	19.8	164	47.1	05.5	246	12.6	54.8	286	38.1	28.7
16	263	10.7	65	01.5	21.0	179	49.0	05.6	261	15.3	54.9	301	40.6	28.7
17	278	13.2	80	01.1	−6 22.2	194	50.9	+23 05.7	276	18.1	−0 55.0	316	43.1	−16 28.7
18	293	15.7	95	00.6	−6 23.4	209	52.8	+23 05.8	291	20.8	−0 55.1	331	45.6	−16 28.7
19	308	18.1	110	00.2	24.7	224	54.8	06.0	306	23.5	55.2	346	48.1	28.7
20	323	20.6	124	59.8	25.9	239	56.7	06.1	321	26.3	55.3	1	50.6	28.7
21	338	23.1	139	59.3	27.1	254	58.6	06.2	336	29.0	55.5	16	53.1	28.7
22	353	25.5	154	58.9	28.3	270	00.5	06.3	351	31.7	55.6	31	55.6	28.8
23	8	28.0	169	58.5	29.6	285	02.4	06.4	6	34.5	55.7	46	58.1	28.8
24	23	30.5	184	58.0	−6 30.8	300	04.3	+23 06.5	21	37.2	−0 55.8	62	00.6	−16 28.8
Dif	—			−4	−12		+19	+1		+27	−1		+25	0

UT	SOL SD: 16′.0 PMG: 11h 45m.8				LUNA Edad: 19d.1 SD: 14′.9 PMG: 3h 58m PHE 4h: 54′.7; 12h: 54′.6; 20h: 54′.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	183	31.7	−8	25.5	302	32.8	+26	27.1	**60 N**	16 51	17 33	18 21	18 16	52	14 29	56
1	198	31.9		26.5	317	01.9 101		31.1 40	**58**	16 56	35	21	18 47	52	13 58	55
2	213	32.0		27.4	331	30.9 100		35.0 39	**56**	17 00	37	20	19 11	52	35	54
3	228	32.1		28.3	345	59.9 100		38.7 37	**54**	03	39	20	30	52	16	54
4	243	32.3		29.2	0	28.9 100		42.3 36	**52**	06	40	19	19 46	52	13 00	54
5	258	32.4	−8	30.2	14	57.8 99	+26	45.7 34	**50**	17 09	17 42	18 19	20 00	52	12 46	54
6	273	32.6	−8	31.1	29	26.8 100	+26	49.0 33	**45**	17 15	17 45	18 19	20 28	52	12 18	53
7	288	32.7		32.0	43	55.7 99		52.2 32	**40**	21	48	19	20 51	52	11 56	53
8	303	32.8		32.9	58	24.7 100		55.3 31	**35**	25	51	20	21 09	52	37	53
9	318	33.0		33.9	72	53.6 99	+26	58.2 29	**30**	29	53	21	25	52	11 21	53
10	333	33.1		34.8	87	22.5 99	+27	01.0 28	**20**	37	17 59	24	21 52	52	10 55	52
11	348	33.3	−8	35.7	101	51.4 99	+27	03.6 26	**10 N**	17 43	18 04	18 29	22 15	52	10 32	52
12	3	33.4	−8	36.6	116	20.3 99	+27	06.1 25	**0**	17 49	18 10	18 34	22 37	51	10 10	52
13	18	33.5		37.6	130	49.2 99		08.5 24	**10 S**	17 55	17	41	22 59	51	9 49	51
14	33	33.7		38.5	145	18.1 99		10.8 23	**20**	18 02	24	18 51	23 22	51	26	51
15	48	33.8		39.4	159	47.0 99		12.9 21	**30**	10	34	19 03	23 49	51	9 00	50
16	63	34.0		40.3	174	15.9 99		14.8 19	**35**	14	40	11	** **	**	8 44	49
17	78	34.1	−8	41.2	188	44.8 99	+27	16.7 19	**40**	18 20	18 48	19 21	** **	**	8 26	49
18	93	34.2	−8	42.2	203	13.7 99	+27	18.4 17	**45**	18 26	18 56	19 33	** **	**	8 04	48
19	108	34.4		43.1	217	42.6 99		20.0 16	**50**	33	19 07	48	0 17	59	7 36	47
20	123	34.5		44.0	232	11.5 99		21.4 14	**52**	37	12	19 56	30	60	22	47
21	138	34.6		44.9	246	40.4 99		22.7 13	**54**	40	18	20 05	0 46	61	7 07	45
22	153	34.8		45.9	261	09.3 99		23.9 12	**56**	44	24	14	1 04	63	6 48	44
23	168	34.9		46.8	275	38.2 99		24.9 10	**58**	49	31	26	26	65	6 25	43
24	183	35.1	−8	47.7	290	07.1 99	+27	25.8 9	**60 S**	18 54	19 40	20 39	1 56	69	5 56	38

UT	ARIES PMG 22h 22m.3		VENUS Mag: −4.0 PMG: 11h 40m			MARTE Mag: −0.9 PMG: 3h 59m			JÚPITER Mag: −2.9 PMG: 22h 29m			SATURNO Mag: +0.6 PMG: 19h 49m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	23	30.5	184	58.0	−6 30.8	300	04.3	+23 06.5	21	37.2	−0 55.8	62	00.6	−16 28.8
1	38	32.9	199	57.6	32.0	315	06.2	06.6	36	39.9	55.9	77	03.1	28.8
2	53	35.4	214	57.2	33.2	330	08.1	06.8	51	42.7	56.0	92	05.6	28.8
3	68	37.8	229	56.7	34.5	345	10.1	06.9	66	45.4	56.1	107	08.1	28.8
4	83	40.3	244	56.3	35.7	0	12.0	07.0	81	48.1	56.2	122	10.6	28.8
5	98	42.8	259	55.9	−6 36.9	15	13.9	+23 07.1	96	50.9	−0 56.4	137	13.1	−16 28.8
6	113	45.2	274	55.5	−6 38.1	30	15.8	+23 07.2	111	53.6	−0 56.5	152	15.6	−16 28.8
7	128	47.7	289	55.0	39.4	45	17.7	07.3	126	56.3	56.6	167	18.1	28.8
8	143	50.2	304	54.6	40.6	60	19.7	07.4	141	59.1	56.7	182	20.6	28.8
9	158	52.6	319	54.2	41.8	75	21.6	07.5	157	01.8	56.8	197	23.1	28.9
10	173	55.1	334	53.7	43.0	90	23.5	07.7	172	04.5	56.9	212	25.6	28.9
11	188	57.6	349	53.3	−6 44.3	105	25.4	+23 07.8	187	07.3	−0 57.0	227	28.1	−16 28.9
12	204	00.0	4	52.9	−6 45.5	120	27.4	+23 07.9	202	10.0	−0 57.1	242	30.6	−16 28.9
13	219	02.5	19	52.4	46.7	135	29.3	08.0	217	12.7	57.2	257	33.1	28.9
14	234	05.0	34	52.0	47.9	150	31.2	08.1	232	15.5	57.4	272	35.6	28.9
15	249	07.4	49	51.5	49.1	165	33.2	08.2	247	18.2	57.5	287	38.1	28.9
16	264	09.9	64	51.1	50.4	180	35.1	08.3	262	20.9	57.6	302	40.6	28.9
17	279	12.3	79	50.7	−6 51.6	195	37.0	+23 08.5	277	23.7	−0 57.7	317	43.1	−16 28.9
18	294	14.8	94	50.2	−6 52.8	210	39.0	+23 08.6	292	26.4	−0 57.8	332	45.6	−16 28.9
19	309	17.3	109	49.8	54.0	225	40.9	08.7	307	29.1	57.9	347	48.1	28.9
20	324	19.7	124	49.4	55.3	240	42.8	08.8	322	31.9	58.0	2	50.5	28.9
21	339	22.2	139	48.9	56.5	255	44.8	08.9	337	34.6	58.1	17	53.0	28.9
22	354	24.7	154	48.5	57.7	270	46.7	09.0	352	37.3	58.2	32	55.5	29.0
23	9	27.1	169	48.1	−6 58.9	285	48.7	09.1	7	40.1	58.3	47	58.0	29.0
24	24	29.6	184	47.6	−7 00.1	300	50.6	+23 09.2	22	42.8	−0 58.5	63	00.5	−16 29.0
Dif	—			−4	−12		+19	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 20^{d}.1		PHE	4^{h}: 54′.4									
	PMG: 11^{h} 45^{m}.6				SD: 14′.8			12^{h}: 54′.3									
					PMG: 4^{h} 50^{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	183	35.1	−8	47.7	290	07.1	+27	25.8		**60 N**	5 11	5 59	6 42	19 08	75	15 25	29
1	198	35.2		48.6	304	36.0 99		26.6	8	**58**	12	57	37	19 39	70	14 53	35
2	213	35.3		49.5	319	04.9 99		27.2	6	**56**	12	55	33	20 03	66	29	38
3	228	35.5		50.5	333	33.8 99		27.7	5	**54**	13	54	29	22	64	14 10	40
4	243	35.6		51.4	348	02.7 99		28.1	4	**52**	13	52	26	38	63	13 54	41
5	258	35.7	−8	52.3	2	31.7 100	+27	28.3	2	**50**	5 13	5 51	6 23	20 52	62	13 40	42
6	273	35.9	−8	53.2	17	00.6 99	+27	28.4	1	**45**	5 13	5 47	6 17	21 20	60	13 11	45
7	288	36.0		54.1	31	29.6 100		28.4	0	**40**	13	44	11	21 43	57	12 49	45
8	303	36.1		55.1	45	58.6 100		28.2	2	**35**	12	41	07	22 01	56	30	47
9	318	36.3		56.0	60	27.6 100		27.9	3	**30**	10	38	6 02	17	55	12 14	48
10	333	36.4		56.9	74	56.6 100		27.5	4	**20**	07	33	5 55	22 44	53	11 47	49
11	348	36.5	−8	57.8	89	25.6 100	+27	26.9	6	**10 N**	5 03	5 27	5 49	23 07	51	11 24	50
12	3	36.7	−8	58.7	103	54.6 100	+27	26.2	7	**0**	4 57	5 21	5 42	23 28	50	11 02	51
13	18	36.8	−8	59.6	118	23.7 101		25.4	8	**10 S**	50	15	36	23 50	48	10 40	52
14	33	36.9	−9	00.6	132	52.7 100		24.4	10	**20**	40	5 07	29	** **	**	10 17	52
15	48	37.1		01.5	147	21.8 101		23.3	11	**30**	28	4 57	21	** **	**	9 50	53
16	63	37.2		02.4	161	51.0 102		22.1	12	**35**	20	50	16	0 06	49	33	55
17	78	37.3	−9	03.3	176	20.1 101	+27	20.7	14	**40**	4 10	4 43	5 11	0 24	50	9 15	55
18	93	37.5	−9	04.2	190	49.2 101	+27	19.2	15	**45**	3 58	4 34	5 05	0 47	49	8 52	56
19	108	37.6		05.1	205	18.4 102		17.6	16	**50**	42	24	4 57	1 16	48	23	57
20	123	37.7		06.1	219	47.6 102		15.9	17	**52**	35	18	54	30	48	8 09	58
21	138	37.9		07.0	234	16.8 102		14.0	19	**54**	26	13	50	1 47	47	7 52	59
22	153	38.0		07.9	248	46.1 103		12.0	20	**56**	16	4 06	46	2 07	45	32	60
23	168	38.1		08.8	263	15.4 103		09.8	22	**58**	3 05	3 59	41	2 31	44	7 08	61
24	183	38.2	−9	09.7	277	44.7 103	+27	07.5	23	**60 S**	2 51	3 51	4 36	3 05	41	6 34	65

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.9			Mag: −2.9			Mag: +0.6		
	22^{h} 18^{m}.4		PMG: 11^{h} 41^{m}			PMG: 3^{h} 56^{m}			PMG: 22^{h} 25^{m}			PMG: 19^{h} 45^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	24	29.6	184	47.6	−7 00.1	300	50.6	+23 09.2	22	42.8	−0 58.5	63	00.5	−16 29.0
1	39	32.1	199	47.2	01.4	315	52.6	09.4	37	45.5	58.6	78	03.0	29.0
2	54	34.5	214	46.7	02.6	330	54.5	09.5	52	48.3	58.7	93	05.5	29.0
3	69	37.0	229	46.3	03.8	345	56.4	09.6	67	51.0	58.8	108	08.0	29.0
4	84	39.4	244	45.9	05.0	0	58.4	09.7	82	53.7	58.9	123	10.5	29.0
5	99	41.9	259	45.4	−7 06.2	16	00.3	+23 09.8	97	56.4	−0 59.0	138	13.0	−16 29.0
6	114	44.4	274	45.0	−7 07.4	31	02.3	+23 09.9	112	59.2	−0 59.1	153	15.5	−16 29.0
7	129	46.8	289	44.6	08.7	46	04.3	10.0	128	01.9	59.2	168	18.0	29.0
8	144	49.3	304	44.1	09.9	61	06.2	10.2	143	04.6	59.3	183	20.5	29.0
9	159	51.8	319	43.7	11.1	76	08.2	10.3	158	07.4	59.4	198	23.0	29.0
10	174	54.2	334	43.2	12.3	91	10.1	10.4	173	10.1	59.5	213	25.5	29.0
11	189	56.7	349	42.8	−7 13.5	106	12.1	+23 10.5	188	12.8	−0 59.7	228	28.0	−16 29.0
12	204	59.2	4	42.4	−7 14.7	121	14.0	+23 10.6	203	15.5	−0 59.8	243	30.5	−16 29.1
13	220	01.6	19	41.9	16.0	136	16.0	10.7	218	18.3	−0 59.9	258	32.9	29.1
14	235	04.1	34	41.5	17.2	151	18.0	10.8	233	21.0	−1 00.0	273	35.4	29.1
15	250	06.6	49	41.0	18.4	166	19.9	10.9	248	23.7	−1 00.1	288	37.9	29.1
16	265	09.0	64	40.6	19.6	181	21.9	11.1	263	26.5	00.2	303	40.4	29.1
17	280	11.5	79	40.1	−7 20.8	196	23.9	+23 11.2	278	29.2	−1 00.3	318	42.9	−16 29.1
18	295	13.9	94	39.7	−7 22.0	211	25.8	+23 11.3	293	31.9	−1 00.4	333	45.4	−16 29.1
19	310	16.4	109	39.3	23.3	226	27.8	11.4	308	34.6	00.5	348	47.9	29.1
20	325	18.9	124	38.8	24.5	241	29.8	11.5	323	37.4	00.6	3	50.4	29.1
21	340	21.3	139	38.4	25.7	256	31.7	11.6	338	40.1	00.7	18	52.9	29.1
22	355	23.8	154	37.9	26.9	271	33.7	11.7	353	42.8	00.8	33	55.4	29.1
23	10	26.3	169	37.5	28.1	286	35.7	11.8	8	45.5	01.0	48	57.9	29.1
24	25	28.7	184	37.0	−7 29.3	301	37.7	+23 12.0	23	48.3	−1 01.1	64	00.4	−16 29.1
Dif	—			−4	−12		+20	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 21^{d}.1		PHE	4^{h}: 54′.2									
	PMG: 11^{h} 45^{m}.3				SD: 14′.8			12^{h}: 54′.2									
					PMG: 5^{h} 41^{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	183	38.2	−9	09.7	277	44.7	+27	07.5		**60 N**	16 46	17 28	18 16	20 23	87	15 54	14
1	198	38.4		10.6	292	14.0 103		05.1	24	**58**	50	30	16	20 49	80	28	21
2	213	38.5		11.6	306	43.4 104	+27	02.6	25	**56**	55	32	15	21 09	76	15 07	25
3	228	38.6		12.5	321	12.8 104	+26	59.9	27	**54**	16 58	34	15	26	73	14 50	28
4	243	38.8		13.4	335	42.2 104		57.2	27	**52**	17 02	36	15	41	70	35	30
5	258	38.9	−9	14.3	350	11.6 104	+26	54.2	30	**50**	17 05	17 38	18 15	21 54	67	14 22	33
6	273	39.0	−9	15.2	4	41.1 105	+26	51.2	30	**45**	17 12	17 42	18 16	22 20	63	13 56	36
7	288	39.2		16.1	19	10.6 105		48.0	32	**40**	18	45	16	40	61	34	39
8	303	39.3		17.0	33	40.2 106		44.7	33	**35**	23	48	18	22 57	59	17	41
9	318	39.4		18.0	48	09.8 106		41.3	34	**30**	27	51	19	23 12	57	13 02	42
10	333	39.5		18.9	62	39.4 106		37.7	36	**20**	35	17 57	23	37	53	12 36	45
11	348	39.7	−9	19.8	77	09.0 106	+26	34.1	36	**10 N**	17 42	18 03	18 28	23 58	51	12 14	47
12	3	39.8	−9	20.7	91	38.7 107	+26	30.3	38	**0**	17 49	18 10	18 34	** **	**	11 53	49
13	18	39.9		21.6	106	08.4 107		26.3	40	**10 S**	17 55	17	42	** **	**	32	51
14	33	40.0		22.5	120	38.2 108		22.3	40	**20**	18 03	25	18 51	0 13	47	11 09	54
15	48	40.2		23.4	135	08.0 108		18.1	42	**30**	11	36	19 05	40	45	10 43	56
16	63	40.3		24.3	149	37.8 108		13.8	43	**35**	16	42	13	0 55	44	28	57
17	78	40.4	−9	25.3	164	07.7 109	+26	09.4	44	**40**	18 22	18 50	19 23	1 14	42	10 10	59
18	93	40.5	−9	26.2	178	37.6 109	+26	04.8	46	**45**	18 28	18 59	19 36	1 36	40	9 48	62
19	108	40.7		27.1	193	07.6 110	+26	00.2	46	**50**	36	19 11	19 52	2 04	37	20	65
20	123	40.8		28.0	207	37.6 110	+25	55.4	48	**52**	40	16	20 00	18	35	9 07	67
21	138	40.9		28.9	222	07.6 110		50.5	49	**54**	44	22	09	34	33	8 51	69
22	153	41.0		29.8	236	37.7 111		45.4	51	**56**	49	29	20	2 52	31	32	72
23	168	41.2		30.7	251	07.8 111		40.3	51	**58**	54	37	32	3 15	27	8 09	77
24	183	41.3	−9	31.6	265	38.0 112	+25	35.0	53	**60 S**	18 59	19 45	20 46	3 46	19	7 39	84

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.9			Mag: −2.9			Mag: +0.6		
	22^{h} 14^{m}.4		PMG: 11^{h} 42^{m}			PMG: 3^{h} 53^{m}			PMG: 22^{h} 21^{m}			PMG: 19^{h} 41^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	25	28.7	184	37.0	−7 29.3	301	37.7	+23 12.0	23	48.3	−1 01.1	64	00.4	−16 29.1
1	40	31.2	199	36.6	30.5	316	39.6	12.1	38	51.0	01.2	79	02.8	29.1
2	55	33.7	214	36.2	31.8	331	41.6	12.2	53	53.7	01.3	94	05.3	29.1
3	70	36.1	229	35.7	33.0	346	43.6	12.3	68	56.5	01.4	109	07.8	29.1
4	85	38.6	244	35.3	34.2	1	45.6	12.4	83	59.2	01.5	124	10.3	29.1
5	100	41.1	259	34.8	−7 35.4	16	47.6	+23 12.5	99	01.9	−1 01.6	139	12.8	−16 29.2
6	115	43.5	274	34.4	−7 36.6	31	49.5	+23 12.6	114	04.6	−1 01.7	154	15.3	−16 29.2
7	130	46.0	289	33.9	37.8	46	51.5	12.7	129	07.4	01.8	169	17.8	29.2
8	145	48.4	304	33.5	39.0	61	53.5	12.9	144	10.1	01.9	184	20.3	29.2
9	160	50.9	319	33.0	40.2	76	55.5	13.0	159	12.8	02.0	199	22.8	29.2
10	175	53.4	334	32.6	41.4	91	57.5	13.1	174	15.5	02.1	214	25.3	29.2
11	190	55.8	349	32.1	−7 42.7	106	59.5	+23 13.2	189	18.3	−1 02.2	229	27.7	−16 29.2
12	205	58.3	4	31.7	−7 43.9	122	01.5	+23 13.3	204	21.0	−1 02.3	244	30.2	−16 29.2
13	221	00.8	19	31.3	45.1	137	03.5	13.4	219	23.7	02.5	259	32.7	29.2
14	236	03.2	34	30.8	46.3	152	05.5	13.5	234	26.4	02.6	274	35.2	29.2
15	251	05.7	49	30.4	47.5	167	07.5	13.6	249	29.2	02.7	289	37.7	29.2
16	266	08.2	64	29.9	48.7	182	09.5	13.8	264	31.9	02.8	304	40.2	29.2
17	281	10.6	79	29.5	−7 49.9	197	11.5	+23 13.9	279	34.6	−1 02.9	319	42.7	−16 29.2
18	296	13.1	94	29.0	−7 51.1	212	13.5	+23 14.0	294	37.3	−1 03.0	334	45.2	−16 29.2
19	311	15.6	109	28.6	52.3	227	15.5	14.1	309	40.0	03.1	349	47.6	29.2
20	326	18.0	124	28.1	53.5	242	17.5	14.2	324	42.8	03.2	4	50.1	29.2
21	341	20.5	139	27.7	54.7	257	19.5	14.3	339	45.5	03.3	19	52.6	29.2
22	356	22.9	154	27.2	55.9	272	21.5	14.4	354	48.2	03.4	34	55.1	29.2
23	11	25.4	169	26.8	57.2	287	23.5	14.5	9	50.9	03.5	49	57.6	29.2
24	26	27.9	184	26.3	−7 58.4	302	25.5	+23 14.7	24	53.7	−1 03.6	65	00.1	−16 29.3
Dif	—			−4	−12		+20	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.0				Edad: 22^{d}.1		PHE	4^{h}: 54′.3									
	PMG: 11^{h} 45^{m}.2				SD: 14′.8			12^{h}: 54′.3									
					PMG: 6^{h} 30^{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	183	41.3	−9	31.6	265	38.0	+25	35.0		**60 N**	5 16	6 04	6 47	21 50	90	16 08	7
1	198	41.4		32.5	280	08.2 112		29.6	54	**58**	16	6 02	42	22 09	84	15 49	12
2	213	41.5		33.5	294	38.4 112		24.1	55	**56**	16	5 59	37	25	80	32	17
3	228	41.7		34.4	309	08.7 113		18.5	56	**54**	16	57	33	39	76	18	20
4	243	41.8		35.3	323	39.0 113		12.8	57	**52**	16	55	30	22 51	73	15 05	23
5	258	41.9	−9	36.2	338	09.4 114	+25	06.9	59	**50**	5 16	5 54	6 26	23 01	72	14 55	24
6	273	42.0	−9	37.1	352	39.8 114	+25	00.9	60	**45**	5 16	5 50	6 19	23 23	67	14 32	29
7	288	42.1		38.0	7	10.3 115	+24	54.8	61	**40**	15	46	13	41	63	14 13	33
8	303	42.3		38.9	21	40.8 115		48.6	62	**35**	13	43	08	23 56	60	13 58	35
9	318	42.4		39.8	36	11.4 116		42.3	63	**30**	12	40	6 04	** **	**	44	38
10	333	42.5		40.7	50	42.0 116		35.9	64	**20**	08	33	5 56	** **	**	21	41
11	348	42.6	−9	41.6	65	12.6 116	+24	29.3	66	**10 N**	5 03	5 27	5 49	** **	**	13 01	44
12	3	42.8	−9	42.5	79	43.3 117	+24	22.7	66	**0**	4 57	5 21	5 42	0 18	49	12 42	47
13	18	42.9		43.4	94	14.0 117		15.9	68	**10 S**	49	14	35	0 38	46	23	50
14	33	43.0		44.3	108	44.8 118		09.0	69	**20**	39	5 05	27	1 00	43	12 03	53
15	48	43.1		45.3	123	15.7 119	+24	02.0	70	**30**	25	4 54	19	25	39	11 39	57
16	63	43.2		46.2	137	46.5 118	+23	54.9	71	**35**	17	48	14	39	38	25	60
17	78	43.4	−9	47.1	152	17.5 120	+23	47.7	72	**40**	4 07	4 40	5 08	1 56	35	11 09	62
18	93	43.5	−9	48.0	166	48.4 119	+23	40.4	73	**45**	3 54	4 31	5 01	2 16	32	10 50	65
19	108	43.6		48.9	181	19.5 121		32.9	75	**50**	37	19	4 53	41	28	25	70
20	123	43.7		49.8	195	50.5 120		25.4	75	**52**	29	14	50	2 53	26	14	72
21	138	43.8		50.7	210	21.7 122		17.7	77	**54**	20	08	45	3 07	23	10 00	75
22	153	43.9		51.6	224	52.8 121		10.0	77	**56**	3 10	4 01	41	23	20	9 44	79
23	168	44.1		52.5	239	24.0 122	+23	02.1	79	**58**	2 58	3 53	36	3 42	16	26	83
24	183	44.2	−9	53.4	253	55.3 123	+22	54.2	79	**60 S**	2 43	3 44	4 30	4 05	10	9 03	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −0.9			Mag: −2.9			Mag: +0.6		
	22^{h} 10^{m}.5		PMG: 11^{h} 43^{m}			PMG: 3^{h} 50^{m}			PMG: 22^{h} 16^{m}			PMG: 19^{h} 37^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	26	27.9	184	26.3	−7 58.4	302	25.5	+23 14.7	24	53.7	−1 03.6	65	00.1	−16 29.3
1	41	30.3	199	25.9	−7 59.6	317	27.5	14.8	39	56.4	03.7	80	02.6	29.3
2	56	32.8	214	25.4	−8 00.8	332	29.5	14.9	54	59.1	03.8	95	05.1	29.3
3	71	35.3	229	25.0	02.0	347	31.5	15.0	70	01.8	03.9	110	07.5	29.3
4	86	37.7	244	24.5	03.2	2	33.5	15.1	85	04.5	04.0	125	10.0	29.3
5	101	40.2	259	24.1	−8 04.4	17	35.6	+23 15.2	100	07.3	−1 04.1	140	12.5	−16 29.3
6	116	42.7	274	23.6	−8 05.6	32	37.6	+23 15.3	115	10.0	−1 04.2	155	15.0	−16 29.3
7	131	45.1	289	23.1	06.8	47	39.6	15.4	130	12.7	04.4	170	17.5	29.3
8	146	47.6	304	22.7	08.0	62	41.6	15.6	145	15.4	04.5	185	20.0	29.3
9	161	50.0	319	22.2	09.2	77	43.6	15.7	160	18.1	04.6	200	22.4	29.3
10	176	52.5	334	21.8	10.4	92	45.7	15.8	175	20.9	04.7	215	24.9	29.3
11	191	55.0	349	21.3	−8 11.6	107	47.7	+23 15.9	190	23.6	−1 04.8	230	27.4	−16 29.3
12	206	57.4	4	20.9	−8 12.8	122	49.7	+23 16.0	205	26.3	−1 04.9	245	29.9	−16 29.3
13	221	59.9	19	20.4	14.0	137	51.7	16.1	220	29.0	05.0	260	32.4	29.3
14	237	02.4	34	20.0	15.2	152	53.8	16.2	235	31.7	05.1	275	34.9	29.3
15	252	04.8	49	19.5	16.4	167	55.8	16.3	250	34.5	05.2	290	37.4	29.3
16	267	07.3	64	19.1	17.6	182	57.8	16.4	265	37.2	05.3	305	39.8	29.3
17	282	09.8	79	18.6	−8 18.8	197	59.9	+23 16.6	280	39.9	−1 05.4	320	42.3	−16 29.3
18	297	12.2	94	18.1	−8 20.0	213	01.9	+23 16.7	295	42.6	−1 05.5	335	44.8	−16 29.3
19	312	14.7	109	17.7	21.2	228	03.9	16.8	310	45.3	05.6	350	47.3	29.3
20	327	17.2	124	17.2	22.4	243	06.0	16.9	325	48.1	05.7	5	49.8	29.3
21	342	19.6	139	16.8	23.6	258	08.0	17.0	340	50.8	05.8	20	52.3	29.3
22	357	22.1	154	16.3	24.8	273	10.0	17.1	355	53.5	05.9	35	54.7	29.3
23	12	24.5	169	15.9	26.0	288	12.1	17.2	10	56.2	06.0	50	57.2	29.3
24	27	27.0	184	15.4	−8 27.2	303	14.1	+23 17.3	25	58.9	−1 06.1	65	59.7	−16 29.4
Dif	—			−5	−12		+20	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 23^{d}.1		PHE	4^{h}: 54′.5									
	PMG: 11^{h} 45^{m}.0				SD: 14′.8			12^{h}: 54′.6									
					PMG: 7^{h} 18^{m}			20^{h}: 54′.7									
	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	44.2	−9	53.4	253	55.3	+22	54.2		**60 N**	16 40	17 22	18 11	23 20	89	16 15	4
1	198	44.3		54.3	268	26.6	123	46.1	81	**58**	45	25	11	33	85	16 01	8
2	213	44.4		55.2	282	57.9	123	37.9	82	**56**	50	28	11	45	81	15 49	11
3	228	44.5		56.1	297	29.3	124	29.6	83	**54**	54	30	11	23 55	78	38	14
4	243	44.6		57.0	312	00.8	125	21.2	84	**52**	16 58	32	11	** **	**	28	17
5	258	44.8	−9	57.9	326	32.3	125	+22	12.7	85 **50**	17 01	17 34	18 11	** **	**	15 19	20
6	273	44.9	−9	58.8	341	03.8	125	+22	04.2	85 **45**	17 09	17 38	18 12	** **	**	15 01	24
7	288	45.0	−9	59.7	355	35.4	126	+21	55.5	87 **40**	15	42	14	** **	**	14 46	28
8	303	45.1	−10	00.6	10	07.0	126		46.7	88 **35**	20	46	15	** **	**	33	31
9	318	45.2		01.5	24	38.7	127		37.8	89 **30**	25	49	17	0 09	57	22	33
10	333	45.3		02.4	39	10.4	127		28.8	90 **20**	34	17 56	22	30	54	14 02	38
11	348	45.4	−10	03.3	53	42.2	128	+21	19.7	91 **10 N**	17 41	18 02	18 27	0 49	50	13 45	42
12	3	45.6	−10	04.2	68	14.0	128	+21	10.5	92 **0**	17 48	18 09	18 34	1 07	46	13 29	46
13	18	45.7		05.1	82	45.9	129	+21	01.2	93 **10 S**	17 56	17	42	24	44	13 13	49
14	33	45.8		06.0	97	17.8	129	+20	51.8	94 **20**	18 03	26	18 52	1 43	40	12 56	53
15	48	45.9		06.9	111	49.8	130		42.4	94 **30**	13	37	19 06	2 04	36	36	58
16	63	46.0		07.8	126	21.7	129		32.8	96 **35**	18	44	15	17	33	25	60
17	78	46.1	−10	08.7	140	53.8	131	+20	23.1	97 **40**	18 24	18 52	19 26	2 31	30	12 11	63
18	93	46.2	−10	09.6	155	25.9	131	+20	13.3	98 **45**	18 31	19 02	19 39	2 48	27	11 55	67
19	108	46.4		10.5	169	58.0	131	+20	03.5	98 **50**	40	14	19 56	3 09	22	35	72
20	123	46.5		11.4	184	30.2	132	+19	53.5	100 **52**	44	20	20 05	19	20	26	74
21	138	46.6		12.3	199	02.4	132		43.5	100 **54**	48	26	14	30	17	15	77
22	153	46.7		13.2	213	34.7	133		33.4	101 **56**	53	33	25	43	14	11 03	81
23	168	46.8		14.1	228	07.0	133		23.1	103 **58**	18 58	42	38	3 58	9	10 49	85
24	183	46.9	−10	15.0	242	39.3	133	+19	12.8	103 **60 S**	19 05	19 51	20 54	4 15	5	10 32	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.0			Mag: −2.9			Mag: +0.6		
	22^{h} 06^{m}.6		PMG: 11^{h} 43^{m}			PMG: 3^{h} 47^{m}			PMG: 22^{h} 12^{m}			PMG: 19^{h} 33^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	27	27.0	184	15.4	−8 27.2	303	14.1	+23 17.3	25	58.9	−1 06.1	65	59.7	−16 29.4
1	42	29.5	199	14.9	28.4	318	16.2	17.5	41	01.6	06.2	81	02.2	29.4
2	57	31.9	214	14.5	29.6	333	18.2	17.6	56	04.4	06.3	96	04.7	29.4
3	72	34.4	229	14.0	30.8	348	20.3	17.7	71	07.1	06.4	111	07.2	29.4
4	87	36.9	244	13.6	32.0	3	22.3	17.8	86	09.8	06.5	126	09.6	29.4
5	102	39.3	259	13.1	−8 33.2	18	24.3	+23 17.9	101	12.5	−1 06.6	141	12.1	−16 29.4
6	117	41.8	274	12.6	−8 34.4	33	26.4	+23 18.0	116	15.2	−1 06.7	156	14.6	−16 29.4
7	132	44.3	289	12.2	35.6	48	28.4	18.1	131	17.9	06.8	171	17.1	29.4
8	147	46.7	304	11.7	36.8	63	30.5	18.2	146	20.7	06.9	186	19.6	29.4
9	162	49.2	319	11.3	38.0	78	32.6	18.4	161	23.4	07.0	201	22.0	29.4
10	177	51.7	334	10.8	39.2	93	34.6	18.5	176	26.1	07.1	216	24.5	29.4
11	192	54.1	349	10.3	−8 40.4	108	36.7	+23 18.6	191	28.8	−1 07.2	231	27.0	−16 29.4
12	207	56.6	4	09.9	−8 41.6	123	38.7	+23 18.7	206	31.5	−1 07.3	246	29.5	−16 29.4
13	222	59.0	19	09.4	42.8	138	40.8	18.8	221	34.2	07.4	261	32.0	29.4
14	238	01.5	34	09.0	44.0	153	42.9	18.9	236	37.0	07.6	276	34.4	29.4
15	253	04.0	49	08.5	45.2	168	44.9	19.0	251	39.7	07.7	291	36.9	29.4
16	268	06.4	64	08.0	46.4	183	47.0	19.1	266	42.4	07.8	306	39.4	29.4
17	283	08.9	79	07.6	−8 47.6	198	49.0	+23 19.2	281	45.1	−1 07.9	321	41.9	−16 29.4
18	298	11.4	94	07.1	−8 48.8	213	51.1	+23 19.4	296	47.8	−1 08.0	336	44.4	−16 29.4
19	313	13.8	109	06.6	49.9	228	53.2	19.5	311	50.5	08.1	351	46.8	29.4
20	328	16.3	124	06.2	51.1	243	55.3	19.6	326	53.2	08.2	6	49.3	29.4
21	343	18.8	139	05.7	52.3	258	57.3	19.7	341	56.0	08.3	21	51.8	29.4
22	358	21.2	154	05.2	53.5	273	59.4	19.8	356	58.7	08.4	36	54.3	29.4
23	13	23.7	169	04.8	54.7	289	01.5	19.9	12	01.4	08.5	51	56.8	29.4
24	28	26.1	184	04.3	−8 55.9	304	03.5	+23 20.0	27	04.1	−1 08.6	66	59.2	−16 29.4
Dif	—			−5	−12		+21	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 24^{d}.1		PHE	4^{h}: 54′.9									
	PMG: 11^{h} 44^{m}.8				SD: 14′.9			12^{h}: 55′.0									
					PMG: 8^{h} 04^{m}			20^{h}: 55′.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	183	46.9	−10	15.0	242	39.3	+19	12.8		**60 N**	5 20	6 09	6 52	** **	**	16 19	2
1	198	47.0		15.9	257	11.7 134	+19	02.4 104		**58**	20	06	46	** **	**	09	6
2	213	47.1		16.8	271	44.1 134	+18	51.9 105		**56**	20	03	41	** **	**	16 00	9
3	228	47.2		17.7	286	16.6 135		41.3 106		**54**	20	6 01	37	** **	**	15 52	12
4	243	47.3		18.6	300	49.1 135		30.7 106		**52**	20	5 59	33	0 04	75	45	14
5	258	47.5	−10	19.5	315	21.6 135	+18	19.9 108		**50**	5 19	5 57	6 30	0 13	72	15 39	16
6	273	47.6	−10	20.4	329	54.2 136	+18	09.1 108		**45**	5 18	5 52	6 22	0 30	67	15 25	21
7	288	47.7		21.3	344	26.8 136	+17	58.2 109		**40**	17	48	16	44	63	14	25
8	303	47.8		22.2	358	59.5 137		47.1 111		**35**	15	44	10	0 56	60	15 04	28
9	318	47.9		23.1	13	32.2 137		36.0 111		**30**	13	41	6 05	1 06	57	14 55	31
10	333	48.0		24.0	28	04.9 137		24.9 111		**20**	08	34	5 56	24	52	40	36
11	348	48.1	−10	24.9	42	37.7 138	+17	13.6 113		**10 N**	5 03	5 27	5 49	1 39	49	14 27	40
12	3	48.2	−10	25.8	57	10.5 138	+17	02.3 113		**0**	4 56	5 20	5 41	1 53	45	14 15	44
13	18	48.3		26.7	71	43.4 139	+16	50.8 115		**10 S**	48	13	34	2 08	40	14 02	49
14	33	48.4		27.6	86	16.3 139		39.3 115		**20**	37	5 04	26	23	37	13 49	52
15	48	48.5		28.5	100	49.2 139		27.8 115		**30**	23	4 52	17	40	32	34	57
16	63	48.6		29.4	115	22.1 139		16.1 117		**35**	14	45	11	2 50	29	25	60
17	78	48.7	−10	30.3	129	55.1 140	+16	04.4 117		**40**	4 03	4 37	5 05	3 01	27	13 14	64
18	93	48.8	−10	31.2	144	28.1 140	+15	52.5 119		**45**	3 50	4 27	4 58	3 15	22	13 02	68
19	108	48.9		32.0	159	01.2 141		40.6 119		**50**	33	15	49	31	18	12 47	73
20	123	49.1		32.9	173	34.2 140		28.7 119		**52**	24	09	45	39	15	40	75
21	138	49.2		33.8	188	07.3 141		16.6 121		**54**	15	4 03	41	47	13	32	78
22	153	49.3		34.7	202	40.5 142	+15	04.5 121		**56**	3 04	3 55	36	3 57	10	24	81
23	168	49.4		35.6	217	13.6 141	+14	52.3 122		**58**	2 51	47	30	4 07	7	14	84
24	183	49.5	−10	36.5	231	46.8 142	+14	40.0 123		**60 S**	2 35	3 38	4 24	4 20	2	12 02	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.0			Mag: −2.9			Mag: +0.6		
	22^{h} 02^{m}.6		PMG: 11^{h} 44^{m}			PMG: 3^{h} 43^{m}			PMG: 22^{h} 08^{m}			PMG: 19^{h} 29^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	28	26.1	184	04.3	−8 55.9	304	03.5	+23 20.0	27	04.1	−1 08.6	66	59.2	−16 29.4
1	43	28.6	199	03.8	57.1	319	05.6	20.1	42	06.8	08.7	82	01.7	29.4
2	58	31.1	214	03.4	58.3	334	07.7	20.3	57	09.5	08.8	97	04.2	29.4
3	73	33.5	229	02.9	−8 59.5	349	09.8	20.4	72	12.2	08.9	112	06.7	29.4
4	88	36.0	244	02.4	−9 00.7	4	11.9	20.5	87	14.9	09.0	127	09.1	29.4
5	103	38.5	259	02.0	−9 01.9	19	13.9	+23 20.6	102	17.7	−1 09.1	142	11.6	−16 29.4
6	118	40.9	274	01.5	−9 03.0	34	16.0	+23 20.7	117	20.4	−1 09.2	157	14.1	−16 29.4
7	133	43.4	289	01.0	04.2	49	18.1	20.8	132	23.1	09.3	172	16.6	29.4
8	148	45.9	304	00.6	05.4	64	20.2	20.9	147	25.8	09.4	187	19.1	29.4
9	163	48.3	319	00.1	06.6	79	22.3	21.0	162	28.5	09.5	202	21.5	29.4
10	178	50.8	333	59.6	07.8	94	24.4	21.2	177	31.2	09.6	217	24.0	29.4
11	193	53.3	348	59.2	−9 09.0	109	26.5	+23 21.3	192	33.9	−1 09.7	232	26.5	−16 29.4
12	208	55.7	3	58.7	−9 10.2	124	28.6	+23 21.4	207	36.6	−1 09.8	247	29.0	−16 29.4
13	223	58.2	18	58.2	11.4	139	30.7	21.5	222	39.3	09.9	262	31.4	29.4
14	239	00.6	33	57.8	12.5	154	32.8	21.6	237	42.0	10.0	277	33.9	29.4
15	254	03.1	48	57.3	13.7	169	34.9	21.7	252	44.8	10.1	292	36.4	29.4
16	269	05.6	63	56.8	14.9	184	37.0	21.8	267	47.5	10.2	307	38.9	29.4
17	284	08.0	78	56.3	−9 16.1	199	39.1	+23 21.9	282	50.2	−1 10.3	322	41.3	−16 29.4
18	299	10.5	93	55.9	−9 17.3	214	41.2	+23 22.0	297	52.9	−1 10.4	337	43.8	−16 29.4
19	314	13.0	108	55.4	18.5	229	43.3	22.2	312	55.6	10.5	352	46.3	29.4
20	329	15.4	123	54.9	19.7	244	45.4	22.3	327	58.3	10.6	7	48.8	29.4
21	344	17.9	138	54.5	20.8	259	47.5	22.4	343	01.0	10.7	22	51.2	29.4
22	359	20.4	153	54.0	22.0	274	49.6	22.5	358	03.7	10.8	37	53.7	29.4
23	14	22.8	168	53.5	23.2	289	51.7	22.6	13	06.4	10.9	52	56.2	29.4
24	29	25.3	183	53.0	−9 24.4	304	53.8	+23 22.7	28	09.1	−1 11.0	67	58.7	−16 29.4
Dif	—			−5	−12		+21	+1		+27	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 25ᵈ.1		PHE	4ʰ: 55′.4								
	PMG: 11ʰ 44ᵐ.6		SD: 15′.1			12ʰ: 55′.6								
			PMG: 8ʰ 49ᵐ			20ʰ: 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	183 49.5	−10 36.5	231 46.8		+14 40.0		**60 N**	16 34	17 17	18 05	0 49	88	16 21	1
1	198 49.6	37.4	246 20.1	143	27.7	123	**58**	40	20	06	0 58	84	15	4
2	213 49.7	38.3	260 53.3	142	15.3	124	**56**	45	23	06	1 06	81	09	7
3	228 49.8	39.2	275 26.6	143	+14 02.8	125	**54**	49	26	07	13	78	16 04	10
4	243 49.9	40.1	289 59.9	143	+13 50.2	126	**52**	53	28	07	19	76	15 59	13
5	258 50.0	−10 41.0	304 33.2	143	+13 37.6	126	**50**	16 57	17 30	18 08	1 25	73	15 55	15
6	273 50.1	−10 41.9	319 06.6	144	+13 24.9	127	**45**	17 05	17 35	18 09	1 37	68	15 46	19
7	288 50.2	42.7	333 39.9	143	+13 12.2	127	**40**	12	40	11	47	64	39	23
8	303 50.3	43.6	348 13.3	144	+12 59.3	129	**35**	18	44	13	1 56	60	32	27
9	318 50.4	44.5	2 46.7	144	46.4	129	**30**	23	47	15	2 03	58	26	30
10	333 50.5	45.4	17 20.2	145	33.5	129	**20**	32	17 55	20	16	53	16	35
11	348 50.6	−10 46.3	31 53.6	144	+12 20.5	130	**10 N**	17 40	18 02	18 26	2 28	47	15 07	40
12	3 50.7	−10 47.2	46 27.1	145	+12 07.4	131	**0**	17 48	18 09	18 33	2 38	44	14 59	43
13	18 50.8	48.1	61 00.6	145	+11 54.2	132	**10 S**	17 56	17	42	2 48	40	51	47
14	33 50.9	49.0	75 34.1	145	41.0	132	**20**	18 04	27	18 53	3 00	35	41	53
15	48 51.0	49.9	90 07.6	145	27.7	133	**30**	14	39	19 08	12	30	31	58
16	63 51.1	50.7	104 41.2	146	14.4	133	**35**	20	46	17	19	28	25	61
17	78 51.2	−10 51.6	119 14.8	146	+11 01.0	134	**40**	18 26	18 54	19 28	3 28	24	14 18	64
18	93 51.3	−10 52.5	133 48.3	145	+10 47.5	135	**45**	18 34	19 05	19 42	3 37	20	14 10	68
19	108 51.4	53.4	148 21.9	146	34.0	135	**50**	43	18	20 01	49	15	14 00	73
20	123 51.5	54.3	162 55.5	146	20.4	136	**52**	47	24	09	3 54	13	13 55	76
21	138 51.6	55.2	177 29.1	146	+10 06.8	136	**54**	52	31	19	4 00	11	50	79
22	153 51.7	56.1	192 02.7	146	+9 53.1	137	**56**	18 57	38	31	07	7	45	81
23	168 51.8	56.9	206 36.4	147	39.4	137	**58**	19 03	47	20 45	14	5	38	85
24	183 51.9	−10 57.8	221 10.0	146	+9 25.6	138	**60 S**	19 10	19 57	21 02	4 22	1	13 31	89

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: −1.0		Mag: −2.9		Mag: +0.6	
	21ʰ 58ᵐ.7	PMG: 11ʰ 45ᵐ		PMG: 3ʰ 40ᵐ		PMG: 22ʰ 03ᵐ		PMG: 19ʰ 25ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	29 25.3	183 53.0	−9 24.4	304 53.8	+23 22.7	28 09.1	−1 11.0	67 58.7	−16 29.4
1	44 27.8	198 52.6	25.6	319 55.9	22.8	43 11.8	11.1	83 01.1	29.4
2	59 30.2	213 52.1	26.7	334 58.0	22.9	58 14.5	11.1	98 03.6	29.4
3	74 32.7	228 51.6	27.9	350 00.1	23.1	73 17.3	11.2	113 06.1	29.4
4	89 35.1	243 51.1	29.1	5 02.2	23.2	88 20.0	11.3	128 08.6	29.4
5	104 37.6	258 50.7	−9 30.3	20 04.4	+23 23.3	103 22.7	−1 11.4	143 11.0	−16 29.4
6	119 40.1	273 50.2	−9 31.5	35 06.5	+23 23.4	118 25.4	−1 11.5	158 13.5	−16 29.4
7	134 42.5	288 49.7	32.7	50 08.6	23.5	133 28.1	11.6	173 16.0	29.4
8	149 45.0	303 49.2	33.8	65 10.7	23.6	148 30.8	11.7	188 18.4	29.5
9	164 47.5	318 48.7	35.0	80 12.9	23.7	163 33.5	11.8	203 20.9	29.5
10	179 49.9	333 48.3	36.2	95 15.0	23.8	178 36.2	11.9	218 23.4	29.5
11	194 52.4	348 47.8	−9 37.4	110 17.1	+23 23.9	193 38.9	−1 12.0	233 25.9	−16 29.5
12	209 54.9	3 47.3	−9 38.5	125 19.2	+23 24.1	208 41.6	−1 12.1	248 28.3	−16 29.5
13	224 57.3	18 46.8	39.7	140 21.4	24.2	223 44.3	12.2	263 30.8	29.5
14	239 59.8	33 46.4	40.9	155 23.5	24.3	238 47.0	12.3	278 33.3	29.5
15	255 02.2	48 45.9	42.1	170 25.6	24.4	253 49.7	12.4	293 35.7	29.5
16	270 04.7	63 45.4	43.3	185 27.8	24.5	268 52.4	12.5	308 38.2	29.4
17	285 07.2	78 44.9	−9 44.4	200 29.9	+23 24.6	283 55.1	−1 12.6	323 40.7	−16 29.4
18	300 09.6	93 44.4	−9 45.6	215 32.0	+23 24.7	298 57.8	−1 12.7	338 43.2	−16 29.4
19	315 12.1	108 44.0	46.8	230 34.2	24.8	314 00.5	12.8	353 45.6	29.4
20	330 14.6	123 43.5	48.0	245 36.3	25.0	329 03.2	12.9	8 48.1	29.4
21	345 17.0	138 43.0	49.1	260 38.4	25.1	344 05.9	13.0	23 50.6	29.4
22	0 19.5	153 42.5	50.3	275 40.6	25.2	359 08.6	13.1	38 53.0	29.4
23	15 22.0	168 42.0	51.5	290 42.7	25.3	14 11.4	13.2	53 55.5	29.4
24	30 24.4	183 41.6	−9 52.7	305 44.9	+23 25.4	29 14.1	−1 13.3	68 58.0	−16 29.4
Dif	—	−5	−12	+21	+1	+27	−1	+25	0

UT	SOL SD: 16′.1 PMG: 11h 44m.5				LUNA Edad: 26d.1 SD: 15′.2 PMG: 9h 32m PHE 4h: 56′.0; 12h: 56′.2; 20h: 56′.5 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	183	51.9	−10	57.8	221	10.0	+9	25.6	**60 N**	5 25	6 13	6 57	2 17	89	16 22	0
1	198	52.0		58.7	235	43.7 147	+9	11.7 139	**58**	24	10	51	22	86	19	4
2	213	52.1	−10	59.6	250	17.3 146	+8	57.8 139	**56**	24	07	46	27	82	16	7
3	228	52.2	−11	00.5	264	51.0 147		43.8 140	**54**	23	05	41	31	79	14	9
4	243	52.2		01.4	279	24.6 146		29.8 140	**52**	23	02	37	35	76	12	11
5	258	52.3	−11	02.3	293	58.3 147	+8	15.8 140	**50**	5 22	6 00	6 33	2 38	74	16 10	14
6	273	52.4	−11	03.1	308	32.0 147	+8	01.7 141	**45**	5 21	5 55	6 25	2 45	69	16 05	19
7	288	52.5		04.0	323	05.7 147	+7	47.5 142	**40**	19	50	18	51	65	16 02	22
8	303	52.6		04.9	337	39.3 146		33.3 142	**35**	16	46	12	2 56	62	15 59	26
9	318	52.7		05.8	352	13.0 147		19.1 142	**30**	14	42	6 06	3 01	58	56	29
10	333	52.8		06.7	6	46.7 147	+7	04.8 143	**20**	09	35	5 57	09	52	51	34
11	348	52.9	−11	07.6	21	20.4 147	+6	50.4 144	**10 N**	5 03	5 28	5 49	3 15	48	15 47	39
12	3	53.0	−11	08.4	35	54.0 146	+6	36.0 144	**0**	4 56	5 20	5 41	3 22	43	15 42	44
13	18	53.1		09.3	50	27.7 147		21.6 144	**10 S**	47	12	33	28	39	38	49
14	33	53.2		10.2	65	01.4 147	+6	07.1 145	**20**	36	5 02	25	35	34	34	53
15	48	53.3		11.1	79	35.0 146	+5	52.6 145	**30**	21	4 50	15	42	30	29	58
16	63	53.4		12.0	94	08.7 147		38.0 146	**35**	11	43	09	47	26	26	61
17	78	53.5	−11	12.8	108	42.3 146	+5	23.4 146	**40**	4 00	4 34	5 02	3 52	22	15 22	66
18	93	53.6	−11	13.7	123	16.0 147	+5	08.8 146	**45**	3 46	4 24	4 55	3 57	19	15 18	70
19	108	53.6		14.6	137	49.6 146	+4	54.1 147	**50**	28	11	45	4 04	14	13	75
20	123	53.7		15.5	152	23.2 146		39.4 147	**52**	19	4 05	41	07	12	11	77
21	138	53.8		16.4	166	56.8 146		24.7 147	**54**	3 09	3 58	36	11	9	09	79
22	153	53.9		17.2	181	30.4 146	+4	09.9 148	**56**	2 57	50	31	14	7	06	83
23	168	54.0		18.1	196	04.0 146	+3	55.1 148	**58**	43	41	25	19	4	03	86
24	183	54.1	−11	19.0	210	37.5 145	+3	40.2 149	**60 S**	2 27	3 31	4 18	4 23	1	15 00	89

UT	ARIES PMG 21h 54m.8		VENUS Mag: −4.0 PMG: 11h 46m			MARTE Mag: −1.0 PMG: 3h 36m			JÚPITER Mag: −2.9 PMG: 21h 59m			SATURNO Mag: +0.6 PMG: 19h 21m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	30	24.4	183	41.6	−9 52.7	305	44.9	+23 25.4	29	14.1	−1 13.3	68	58.0	−16 29.4
1	45	26.9	198	41.1	53.8	320	47.0	25.5	44	16.8	13.4	84	00.5	29.4
2	60	29.4	213	40.6	55.0	335	49.2	25.6	59	19.5	13.5	99	02.9	29.4
3	75	31.8	228	40.1	56.2	350	51.3	25.7	74	22.2	13.6	114	05.4	29.4
4	90	34.3	243	39.6	57.3	5	53.5	25.8	89	24.9	13.7	129	07.9	29.4
5	105	36.7	258	39.1	−9 58.5	20	55.6	+23 26.0	104	27.6	−1 13.8	144	10.3	−16 29.4
6	120	39.2	273	38.6	−9 59.7	35	57.8	+23 26.1	119	30.3	−1 13.9	159	12.8	−16 29.4
7	135	41.7	288	38.2	−10 00.9	50	59.9	26.2	134	33.0	13.9	174	15.3	29.4
8	150	44.1	303	37.7	02.0	66	02.1	26.3	149	35.7	14.0	189	17.7	29.4
9	165	46.6	318	37.2	03.2	81	04.3	26.4	164	38.4	14.1	204	20.2	29.4
10	180	49.1	333	36.7	04.4	96	06.4	26.5	179	41.1	14.2	219	22.7	29.4
11	195	51.5	348	36.2	−10 05.5	111	08.6	+23 26.6	194	43.8	−1 14.3	234	25.1	−16 29.4
12	210	54.0	3	35.7	−10 06.7	126	10.7	+23 26.7	209	46.5	−1 14.4	249	27.6	−16 29.4
13	225	56.5	18	35.2	07.9	141	12.9	26.9	224	49.2	14.5	264	30.1	29.4
14	240	58.9	33	34.8	09.0	156	15.1	27.0	239	51.9	14.6	279	32.5	29.4
15	256	01.4	48	34.3	10.2	171	17.2	27.1	254	54.6	14.7	294	35.0	29.4
16	271	03.8	63	33.8	11.4	186	19.4	27.2	269	57.3	14.8	309	37.5	29.4
17	286	06.3	78	33.3	−10 12.5	201	21.6	+23 27.3	285	00.0	−1 14.9	324	39.9	−16 29.4
18	301	08.8	93	32.8	−10 13.7	216	23.8	+23 27.4	300	02.7	−1 15.0	339	42.4	−16 29.4
19	316	11.2	108	32.3	14.9	231	25.9	27.5	315	05.4	15.1	354	44.9	29.4
20	331	13.7	123	31.8	16.0	246	28.1	27.6	330	08.1	15.2	9	47.3	29.4
21	346	16.2	138	31.3	17.2	261	30.3	27.7	345	10.8	15.3	24	49.8	29.4
22	1	18.6	153	30.8	18.4	276	32.5	27.9	0	13.5	15.4	39	52.3	29.4
23	16	21.1	168	30.4	19.5	291	34.6	28.0	15	16.1	15.5	54	54.7	29.4
24	31	23.6	183	29.9	−10 20.7	306	36.8	+23 28.1	30	18.8	−1 15.6	69	57.2	−16 29.4
Dif	—			−5	−12		+22	+1		+27	−1		+25	0

UT	SOL SD: 16′.1 PMG: 11h 44m.3				LUNA Edad: 27d.1 SD: 15′.4 PMG: 10h 16m PHE 4h: 56′.7; 12h: 57′.0; 20h: 57′.2 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	183	54.1	−11	19.0	210	37.5	+3	40.2	**60 N**	16 29	17 12	18 00	3 46	91	16 22	1
1	198	54.2		19.9	225	11.1 146		25.3 149	**58**	35	15	01	48	87	23	4
2	213	54.3		20.8	239	44.6 145	+3	10.4 149	**56**	40	18	02	49	84	23	7
3	228	54.4		21.6	254	18.1 145	+2	55.5 149	**54**	45	21	02	50	81	23	10
4	243	54.4		22.5	268	51.6 145		40.5 150	**52**	49	24	03	51	79	23	13
5	258	54.5	−11	23.4	283	25.1 145	+2	25.5 150	**50**	16 53	17 26	18 04	3 52	76	16 24	14
6	273	54.6	−11	24.3	297	58.5 144	+2	10.5 150	**45**	17 02	17 32	18 06	3 54	71	16 24	19
7	288	54.7		25.1	312	31.9 144	+1	55.4 151	**40**	09	37	08	56	67	24	24
8	303	54.8		26.0	327	05.3 144		40.4 150	**35**	16	41	11	58	62	25	27
9	318	54.9		26.9	341	38.7 144		25.3 151	**30**	21	45	13	3 59	59	25	30
10	333	55.0		27.8	356	12.1 144	+1	10.1 152	**20**	31	17 53	19	4 01	54	25	36
11	348	55.1	−11	28.6	10	45.4 143	+0	55.0 151	**10 N**	17 39	18 01	18 26	4 03	49	16 26	40
12	3	55.1	−11	29.5	25	18.7 143	+0	39.8 152	**0**	17 48	18 09	18 33	4 05	45	16 26	45
13	18	55.2		30.4	39	51.9 142		24.6 152	**10 S**	17 56	18	43	07	40	27	49
14	33	55.3		31.3	54	25.2 143	+0	09.4 152	**20**	18 05	28	18 54	09	35	27	55
15	48	55.4		32.1	68	58.4 142	−0	05.8 152	**30**	15	40	19 10	12	29	27	61
16	63	55.5		33.0	83	31.6 142		21.0 152	**35**	22	48	19	13	26	27	64
17	78	55.6	−11	33.9	98	04.7 141	−0	36.3 153	**40**	18 28	18 57	19 31	4 14	23	16 28	67
18	93	55.6	−11	34.8	112	37.8 141	−0	51.6 153	**45**	18 37	19 08	19 46	4 16	19	16 28	72
19	108	55.7		35.6	127	10.9 141	−1	06.8 152	**50**	46	21	20 05	18	14	28	77
20	123	55.8		36.5	141	43.9 140		22.1 153	**52**	51	28	14	19	12	28	80
21	138	55.9		37.4	156	16.9 140		37.4 153	**54**	18 56	35	25	20	10	28	83
22	153	56.0		38.2	170	49.9 140	−1	52.8 154	**56**	19 02	43	37	21	7	29	85
23	168	56.1		39.1	185	22.8 139	−2	08.1 153	**58**	08	19 52	20 52	23	4	29	88
24	183	56.1	−11	40.0	199	55.6 138	−2	23.4 153	**60 S**	19 15	20 03	21 10	4 24	1	16 29	92

UT	ARIES PMG 21h 50m.8		VENUS Mag: −4.0 PMG: 11h 46m			MARTE Mag: −1.0 PMG: 3h 33m			JÚPITER Mag: −2.9 PMG: 21h 55m			SATURNO Mag: +0.6 PMG: 19h 17m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	31	23.6	183	29.9	−10 20.7	306	36.8	+23 28.1	30	18.8	−1 15.6	69	57.2	−16 29.4
1	46	26.0	198	29.4	21.9	321	39.0	28.2	45	21.5	15.6	84	59.7	29.4
2	61	28.5	213	28.9	23.0	336	41.2	28.3	60	24.2	15.7	100	02.1	29.4
3	76	31.0	228	28.4	24.2	351	43.4	28.4	75	26.9	15.8	115	04.6	29.4
4	91	33.4	243	27.9	25.4	6	45.6	28.5	90	29.6	15.9	130	07.1	29.4
5	106	35.9	258	27.4	−10 26.5	21	47.7	+23 28.6	105	32.3	−1 16.0	145	09.5	−16 29.4
6	121	38.3	273	26.9	−10 27.7	36	49.9	+23 28.8	120	35.0	−1 16.1	160	12.0	−16 29.4
7	136	40.8	288	26.4	28.8	51	52.1	28.9	135	37.7	16.2	175	14.5	29.4
8	151	43.3	303	25.9	30.0	66	54.3	29.0	150	40.4	16.3	190	16.9	29.4
9	166	45.7	318	25.4	31.2	81	56.5	29.1	165	43.1	16.4	205	19.4	29.4
10	181	48.2	333	24.9	32.3	96	58.7	29.2	180	45.8	16.5	220	21.9	29.4
11	196	50.7	348	24.4	−10 33.5	112	00.9	+23 29.3	195	48.5	−1 16.6	235	24.3	−16 29.4
12	211	53.1	3	23.9	−10 34.6	127	03.1	+23 29.4	210	51.2	−1 16.7	250	26.8	−16 29.4
13	226	55.6	18	23.4	35.8	142	05.3	29.5	225	53.9	16.8	265	29.2	29.4
14	241	58.1	33	22.9	37.0	157	07.5	29.6	240	56.6	16.8	280	31.7	29.4
15	257	00.5	48	22.5	38.1	172	09.7	29.8	255	59.3	16.9	295	34.2	29.4
16	272	03.0	63	22.0	39.3	187	11.9	29.9	271	02.0	17.0	310	36.6	29.4
17	287	05.4	78	21.5	−10 40.4	202	14.1	+23 30.0	286	04.7	−1 17.1	325	39.1	−16 29.4
18	302	07.9	93	21.0	−10 41.6	217	16.3	+23 30.1	301	07.4	−1 17.2	340	41.6	−16 29.4
19	317	10.4	108	20.5	42.7	232	18.5	30.2	316	10.0	17.3	355	44.0	29.4
20	332	12.8	123	20.0	43.9	247	20.8	30.3	331	12.7	17.4	10	46.5	29.4
21	347	15.3	138	19.5	45.1	262	23.0	30.4	346	15.4	17.5	25	48.9	29.4
22	2	17.8	153	19.0	46.2	277	25.2	30.5	1	18.1	17.6	40	51.4	29.4
23	17	20.2	168	18.5	47.4	292	27.4	30.7	16	20.8	17.7	55	53.9	29.4
24	32	22.7	183	18.0	−10 48.5	307	29.6	+23 30.8	31	23.5	−1 17.8	70	56.3	−16 29.3
Dif	—			−5	−12		+22	+1		+27	−1		+25	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 28^{d}.1		PHE	4^{h}: 57′.4								
	PMG: 11^{h} 44^{m}.2				SD: 15′.6			12^{h}: 57′.7								
					PMG: 11^{h} 00^{m}			20^{h}: 57′.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	56.1	−11	40.0	199	55.6	−2	23.4	**60 N**	5 29	6 18	7 02	5 17	95	16 23	2
1	198	56.2		40.9	214	28.5 139		38.7 153	**58**	29	14	6 55	15	91	27	5
2	213	56.3		41.7	229	01.3 138	−2	54.1 154	**56**	28	11	50	13	87	30	8
3	228	56.4		42.6	243	34.0 137	−3	09.4 153	**54**	27	08	45	11	84	33	11
4	243	56.5		43.5	258	06.7 137		24.8 154	**52**	26	06	40	10	81	36	14
5	258	56.6	−11	44.3	272	39.4 137	−3	40.1 153	**50**	5 25	6 03	6 36	5 08	79	16 38	16
6	273	56.6	−11	45.2	287	12.0 136	−3	55.5 154	**45**	5 23	5 57	6 27	5 05	74	16 43	22
7	288	56.7		46.1	301	44.5 135	−4	10.8 153	**40**	21	52	20	03	69	48	26
8	303	56.8		46.9	316	17.0 135		26.1 153	**35**	18	48	14	5 00	66	52	29
9	318	56.9		47.8	330	49.5 135		41.5 154	**30**	15	43	6 08	4 58	62	16 55	33
10	333	56.9		48.7	345	21.9 134	−4	56.8 153	**20**	10	36	5 58	55	56	17 01	38
11	348	57.0	−11	49.5	359	54.2 133	−5	12.1 153	**10 N**	5 03	5 28	5 49	4 52	51	17 06	44
12	3	57.1	−11	50.4	14	26.5 133	−5	27.4 153	**0**	4 55	5 20	5 41	4 50	46	17 11	48
13	18	57.2		51.3	28	58.7 132		42.8 154	**10 S**	46	11	32	47	42	16	53
14	33	57.3		52.2	43	30.9 132	−5	58.0 152	**20**	34	5 01	23	44	37	22	57
15	48	57.3		53.0	58	03.0 131	−6	13.3 153	**30**	19	4 48	13	41	31	28	63
16	63	57.4		53.9	72	35.1 131		28.6 153	**35**	4 09	40	07	39	28	31	67
17	78	57.5	−11	54.7	87	07.1 130	−6	43.9 153	**40**	3 57	4 31	5 00	4 37	25	17 35	71
18	93	57.6	−11	55.6	101	39.0 129	−6	59.1 152	**45**	3 42	4 20	4 51	4 35	20	17 40	75
19	108	57.6		56.5	116	10.9 129	−7	14.3 152	**50**	23	07	41	32	16	45	81
20	123	57.7		57.3	130	42.7 128		29.5 152	**52**	14	4 00	37	31	13	48	83
21	138	57.8		58.2	145	14.4 127		44.7 152	**54**	3 03	3 53	32	30	10	51	86
22	153	57.9		59.1	159	46.1 127	−7	59.9 152	**56**	2 51	45	26	28	8	54	89
23	168	57.9	−11	59.9	174	17.7 126	−8	15.0 151	**58**	36	35	20	27	4	17 57	93
24	183	58.0	−12	00.8	188	49.2 125	−8	30.1 151	**60 S**	2 18	3 24	4 13	4 25	1	18 01	98

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.1			Mag: −2.9			Mag: +0.6		
	21^{h} 46^{m}.9		PMG: 11^{h} 47^{m}			PMG: 3^{h} 30^{m}			PMG: 21^{h} 51^{m}			PMG: 19^{h} 13^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	32	22.7	183	18.0	−10 48.5	307	29.6	+23 30.8	31	23.5	−1 17.8	70	56.3	−16 29.3
1	47	25.2	198	17.5	49.7	322	31.8	30.9	46	26.2	17.8	85	58.8	29.3
2	62	27.6	213	17.0	50.8	337	34.1	31.0	61	28.9	17.9	101	01.2	29.3
3	77	30.1	228	16.5	52.0	352	36.3	31.1	76	31.6	18.0	116	03.7	29.3
4	92	32.6	243	16.0	53.1	7	38.5	31.2	91	34.3	18.1	131	06.2	29.3
5	107	35.0	258	15.5	−10 54.3	22	40.7	+23 31.3	106	37.0	−1 18.2	146	08.6	−16 29.3
6	122	37.5	273	15.0	−10 55.4	37	43.0	+23 31.4	121	39.7	−1 18.3	161	11.1	−16 29.3
7	137	39.9	288	14.4	56.6	52	45.2	31.5	136	42.3	18.4	176	13.6	29.3
8	152	42.4	303	13.9	57.7	67	47.4	31.7	151	45.0	18.5	191	16.0	29.3
9	167	44.9	318	13.4	−10 58.9	82	49.6	31.8	166	47.7	18.6	206	18.5	29.3
10	182	47.3	333	12.9	−11 00.0	97	51.9	31.9	181	50.4	18.7	221	20.9	29.3
11	197	49.8	348	12.4	−11 01.2	112	54.1	+23 32.0	196	53.1	−1 18.7	236	23.4	−16 29.3
12	212	52.3	3	11.9	−11 02.3	127	56.4	+23 32.1	211	55.8	−1 18.8	251	25.8	−16 29.3
13	227	54.7	18	11.4	03.5	142	58.6	32.2	226	58.5	18.9	266	28.3	29.3
14	242	57.2	33	10.9	04.6	158	00.8	32.3	242	01.2	19.0	281	30.8	29.3
15	257	59.7	48	10.4	05.8	173	03.1	32.4	257	03.9	19.1	296	33.2	29.3
16	273	02.1	63	09.9	06.9	188	05.3	32.6	272	06.5	19.2	311	35.7	29.3
17	288	04.6	78	09.4	−11 08.1	203	07.6	+23 32.7	287	09.2	−1 19.3	326	38.1	−16 29.3
18	303	07.1	93	08.9	−11 09.2	218	09.8	+23 32.8	302	11.9	−1 19.4	341	40.6	−16 29.3
19	318	09.5	108	08.4	10.4	233	12.0	32.9	317	14.6	19.5	356	43.1	29.3
20	333	12.0	123	07.9	11.5	248	14.3	33.0	332	17.3	19.5	11	45.5	29.3
21	348	14.4	138	07.4	12.6	263	16.5	33.1	347	20.0	19.6	26	48.0	29.3
22	3	16.9	153	06.9	13.8	278	18.8	33.2	2	22.7	19.7	41	50.4	29.3
23	18	19.4	168	06.3	14.9	293	21.1	33.3	17	25.4	19.8	56	52.9	29.3
24	33	21.8	183	05.8	−11 16.1	308	23.3	+23 33.5	32	28.0	−1 19.9	71	55.3	−16 29.2
Dif	—			−5	−11		+22	+1		+27	−1		+25	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 29^{d}.1		PHE	4^{h}: 58′.1								
	PMG: 11^{h} 44^{m}.1		SD: 15′.8			12^{h}: 58′.3								
			PMG: 11^{h} 47^{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	183 58.0	−12 00.8	188 49.2		−8 30.1		**60 N**	16 23	17 07	17 55	6 52	101	16 25	2
1	198 58.1	01.7	203 20.7	125	−8 45.2	151	**58**	30	10	56	46	96	32	7
2	213 58.2	02.5	217 52.1	124	−9 00.2	150	**56**	35	14	57	40	92	38	12
3	228 58.2	03.4	232 23.4	123	15.3	151	**54**	41	17	58	35	89	44	15
4	243 58.3	04.3	246 54.7	123	30.3	150	**52**	45	20	17 59	31	85	50	17
5	258 58.4	−12 05.1	261 25.8	121	−9 45.2	149	**50**	16 50	17 23	18 01	6 27	83	16 54	20
6	273 58.5	−12 06.0	275 57.0	122	−10 00.1	149	**45**	16 59	17 29	18 03	6 19	76	17 05	25
7	288 58.5	06.8	290 28.0	120	15.0	149	**40**	17 07	34	06	12	72	14	30
8	303 58.6	07.7	304 58.9	119	29.9	149	**35**	13	39	09	06	68	21	34
9	318 58.7	08.6	319 29.8	119	44.7	148	**30**	19	44	12	6 00	65	28	37
10	333 58.8	09.4	334 00.6	118	−10 59.5	148	**20**	30	17 52	18	5 51	59	39	43
11	348 58.8	−12 10.3	348 31.3	117	−11 14.2	147	**10 N**	17 39	18 00	18 25	5 43	55	17 50	47
12	3 58.9	−12 11.1	3 01.9	116	−11 28.9	147	**0**	17 47	18 09	18 33	5 36	50	17 59	52
13	18 59.0	12.0	17 32.5	116	43.6	147	**10 S**	17 56	18	43	29	45	18 09	56
14	33 59.0	12.9	32 03.0	115	−11 58.2	146	**20**	18 06	29	18 55	21	40	19	61
15	48 59.1	13.7	46 33.3	113	−12 12.7	145	**30**	17	42	19 11	12	35	31	66
16	63 59.2	14.6	61 03.6	113	27.2	145	**35**	23	50	21	07	32	38	69
17	78 59.2	−12 15.4	75 33.9	113	−12 41.7	145	**40**	18 31	18 59	19 34	5 02	28	18 46	73
18	93 59.3	−12 16.3	90 04.0	111	−12 56.1	144	**45**	18 39	19 11	19 49	4 55	24	18 55	78
19	108 59.4	17.2	104 34.0	110	−13 10.4	143	**50**	50	25	20 09	48	18	19 06	84
20	123 59.4	18.0	119 04.0	110	24.7	143	**52**	18 55	32	19	44	16	11	87
21	138 59.5	18.9	133 33.8	108	38.9	142	**54**	19 00	39	30	40	13	17	90
22	153 59.6	19.7	148 03.6	108	−13 53.1	142	**56**	06	48	43	36	10	23	94
23	168 59.7	20.6	162 33.3	107	−14 07.2	141	**58**	13	19 58	20 59	31	7	30	99
24	183 59.7	−12 21.4	177 02.8	105	−14 21.2	140	**60 S**	19 20	20 09	21 18	4 26	2	19 39	103

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: −1.1		Mag: −2.9		Mag: +0.6	
	21^{h} 43^{m}.0	PMG: 11^{h} 48^{m}		PMG: 3^{h} 26^{m}		PMG: 21^{h} 46^{m}		PMG: 19^{h} 09^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	33 21.8	183 05.8	−11 16.1	308 23.3	+23 33.5	32 28.0	−1 19.9	71 55.3	−16 29.2
1	48 24.3	198 05.3	17.2	323 25.6	33.6	47 30.7	20.0	86 57.8	29.2
2	63 26.8	213 04.8	18.4	338 27.8	33.7	62 33.4	20.1	102 00.3	29.2
3	78 29.2	228 04.3	19.5	353 30.1	33.8	77 36.1	20.2	117 02.7	29.2
4	93 31.7	243 03.8	20.6	8 32.3	33.9	92 38.8	20.2	132 05.2	29.2
5	108 34.2	258 03.3	−11 21.8	23 34.6	+23 34.0	107 41.5	−1 20.3	147 07.6	−16 29.2
6	123 36.6	273 02.8	−11 22.9	38 36.9	+23 34.1	122 44.1	−1 20.4	162 10.1	−16 29.2
7	138 39.1	288 02.3	24.1	53 39.1	34.2	137 46.8	20.5	177 12.5	29.2
8	153 41.5	303 01.7	25.2	68 41.4	34.3	152 49.5	20.6	192 15.0	29.2
9	168 44.0	318 01.2	26.3	83 43.7	34.5	167 52.2	20.7	207 17.5	29.2
10	183 46.5	333 00.7	27.5	98 45.9	34.6	182 54.9	20.8	222 19.9	29.2
11	198 48.9	348 00.2	−11 28.6	113 48.2	+23 34.7	197 57.6	−1 20.9	237 22.4	−16 29.2
12	213 51.4	2 59.7	−11 29.8	128 50.5	+23 34.8	213 00.2	−1 20.9	252 24.8	−16 29.2
13	228 53.9	17 59.2	30.9	143 52.8	34.9	228 02.9	21.0	267 27.3	29.2
14	243 56.3	32 58.7	32.0	158 55.0	35.0	243 05.6	21.1	282 29.7	29.2
15	258 58.8	47 58.1	33.2	173 57.3	35.1	258 08.3	21.2	297 32.2	29.2
16	274 01.3	62 57.6	34.3	188 59.6	35.2	273 11.0	21.3	312 34.6	29.2
17	289 03.7	77 57.1	−11 35.4	204 01.9	+23 35.4	288 13.7	−1 21.4	327 37.1	−16 29.2
18	304 06.2	92 56.6	−11 36.6	219 04.2	+23 35.5	303 16.3	−1 21.5	342 39.5	−16 29.2
19	319 08.7	107 56.1	37.7	234 06.4	35.6	318 19.0	21.5	357 42.0	29.1
20	334 11.1	122 55.6	38.8	249 08.7	35.7	333 21.7	21.6	12 44.5	29.1
21	349 13.6	137 55.0	40.0	264 11.0	35.8	348 24.4	21.7	27 46.9	29.1
22	4 16.0	152 54.5	41.1	279 13.3	35.9	3 27.1	21.8	42 49.4	29.1
23	19 18.5	167 54.0	42.2	294 15.6	36.0	18 29.7	21.9	57 51.8	29.1
24	34 21.0	182 53.5	−11 43.4	309 17.9	+23 36.1	33 32.4	−1 22.0	72 54.3	−16 29.1
Dif	—	−5	−11	+23	+1	+27	−1	+25	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 0ᵈ.5		PHE	4ʰ: 58′.7									
	PMG: 11ʰ 44ᵐ.0				SD: 16′.0			12ʰ: 58′.8									
					PMG: 12ʰ 38ᵐ			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	183	59.7	−12	21.4	177	02.8	−14	21.2		**60 N**	5 34	6 23	7 07	8 33	107	16 27	6
1	198	59.8		22.3	191	32.3 105		35.2	140	**58**	33	19	7 00	22	100	39	12
2	213	59.9		23.1	206	01.7 104	−14	49.1	139	**56**	32	15	6 54	12	96	50	16
3	228	59.9		24.0	220	31.0 103	−15	02.9	138	**54**	31	12	49	8 04	92	16 59	20
4	244	00.0		24.9	235	00.2 102		16.7	138	**52**	29	09	44	7 56	89	17 07	24
5	259	00.0	−12	25.7	249	29.4 102	−15	30.4	137	**50**	5 28	6 06	6 40	7 50	85	17 14	27
6	274	00.1	−12	26.6	263	58.4 100	−15	44.0	136	**45**	5 26	6 00	6 30	7 35	80	17 30	32
7	289	00.2		27.4	278	27.3 99	−15	57.6	136	**40**	23	5 54	22	24	75	44	36
8	304	00.2		28.3	292	56.1 98	−16	11.0	134	**35**	20	49	15	14	71	17 55	40
9	319	00.3		29.1	307	24.8 97		24.4	134	**30**	17	45	6 09	7 05	68	18 05	42
10	334	00.4		30.0	321	53.5 97		37.7	133	**20**	10	36	5 59	6 50	63	22	47
11	349	00.4	−12	30.8	336	22.0 95	−16	51.0	133	**10 N**	5 03	5 28	5 49	6 38	57	18 37	52
12	4	00.5	−12	31.7	350	50.4 94	−17	04.1	131	**0**	4 55	5 19	5 41	6 26	53	18 51	55
13	19	00.6		32.5	5	18.7 93		17.1	130	**10 S**	45	5 10	32	14	49	19 05	59
14	34	00.6		33.4	19	46.9 92		30.1	130	**20**	33	4 59	22	6 01	45	20	64
15	49	00.7		34.2	34	15.0 91		43.0	129	**30**	16	46	11	5 47	40	37	69
16	64	00.7		35.1	48	43.1 91	−17	55.8	128	**35**	4 06	38	5 04	39	36	47	72
17	79	00.8	−12	35.9	63	11.0 89	−18	08.5	127	**40**	3 54	4 28	4 57	5 30	33	19 59	76
18	94	00.9	−12	36.8	77	38.8 88	−18	21.0	125	**45**	3 38	4 17	4 48	5 19	28	20 13	80
19	109	00.9		37.6	92	06.5 87		33.5	125	**50**	18	4 02	38	06	23	30	85
20	124	01.0		38.5	106	34.1 86		45.9	124	**52**	3 09	3 56	33	5 00	20	38	88
21	139	01.1		39.3	121	01.6 85	−18	58.2	123	**54**	2 57	48	27	4 53	18	47	92
22	154	01.1		40.2	135	29.0 84	−19	10.4	122	**56**	44	39	21	46	14	20 57	96
23	169	01.2		41.0	149	56.2 82		22.5	121	**58**	28	29	15	38	9	21 09	101
24	184	01.2	−12	41.9	164	23.4 82	−19	34.5	120	**60 S**	2 09	3 18	4 07	4 28	5	21 22	108

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.1			Mag: −2.9			Mag: +0.6		
	21ʰ 39ᵐ.0		PMG: 11ʰ 49ᵐ			PMG: 3ʰ 22ᵐ			PMG: 21ʰ 42ᵐ			PMG: 19ʰ 05ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	34	21.0	182	53.5	−11 43.4	309	17.9	+23 36.1	33	32.4	−1 22.0	72	54.3	−16 29.1
1	49	23.4	197	53.0	44.5	324	20.2	36.3	48	35.1	22.1	87	56.7	29.1
2	64	25.9	212	52.4	45.6	339	22.5	36.4	63	37.8	22.1	102	59.2	29.1
3	79	28.4	227	51.9	46.8	354	24.8	36.5	78	40.5	22.2	118	01.6	29.1
4	94	30.8	242	51.4	47.9	9	27.1	36.6	93	43.1	22.3	133	04.1	29.1
5	109	33.3	257	50.9	−11 49.0	24	29.4	+23 36.7	108	45.8	−1 22.4	148	06.5	−16 29.1
6	124	35.8	272	50.4	−11 50.1	39	31.7	+23 36.8	123	48.5	−1 22.5	163	09.0	−16 29.1
7	139	38.2	287	49.8	51.3	54	34.0	36.9	138	51.2	22.6	178	11.4	29.1
8	154	40.7	302	49.3	52.4	69	36.3	37.0	153	53.9	22.6	193	13.9	29.1
9	169	43.1	317	48.8	53.5	84	38.6	37.2	168	56.5	22.7	208	16.3	29.1
10	184	45.6	332	48.3	54.7	99	40.9	37.3	183	59.2	22.8	223	18.8	29.1
11	199	48.1	347	47.7	−11 55.8	114	43.2	+23 37.4	199	01.9	−1 22.9	238	21.2	−16 29.0
12	214	50.5	2	47.2	−11 56.9	129	45.5	+23 37.5	214	04.6	−1 23.0	253	23.7	−16 29.0
13	229	53.0	17	46.7	58.0	144	47.8	37.6	229	07.2	23.1	268	26.1	29.0
14	244	55.5	32	46.2	−11 59.2	159	50.1	37.7	244	09.9	23.2	283	28.6	29.0
15	259	57.9	47	45.6	−12 00.3	174	52.4	37.8	259	12.6	23.2	298	31.0	29.0
16	275	00.4	62	45.1	01.4	189	54.8	37.9	274	15.3	23.3	313	33.5	29.0
17	290	02.9	77	44.6	−12 02.5	204	57.1	+23 38.1	289	17.9	−1 23.4	328	35.9	−16 29.0
18	305	05.3	92	44.1	−12 03.7	219	59.4	+23 38.2	304	20.6	−1 23.5	343	38.4	−16 29.0
19	320	07.8	107	43.5	04.8	235	01.7	38.3	319	23.3	23.6	358	40.8	29.0
20	335	10.3	122	43.0	05.9	250	04.0	38.4	334	26.0	23.7	13	43.3	29.0
21	350	12.7	137	42.5	07.0	265	06.4	38.5	349	28.6	23.7	28	45.7	29.0
22	5	15.2	152	41.9	08.1	280	08.7	38.6	4	31.3	23.8	43	48.2	29.0
23	20	17.6	167	41.4	09.3	295	11.0	38.7	19	34.0	23.9	58	50.6	29.0
24	35	20.1	182	40.9	−12 10.4	310	13.4	+23 38.8	34	36.7	−1 24.0	73	53.1	−16 29.0
Dif	—			−5	−11		+23	+1		+27	−1		+25	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 1ᵈ.5		PHE	4ʰ: 59′.1									
	PMG: 11ʰ 43ᵐ.9				SD: 16′.1			12ʰ: 59′.2									
					PMG: 13ʰ 33ᵐ			20ʰ: 59′.3									
	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	01.2	−12	41.9	164	23.4	−19	34.5		**60 N**	16 18	17 02	17 50	10 20	109	16 33	14
1	199	01.3		42.7	178	50.5 81		46.4	119	**58**	25	06	52	10 02	102	16 51	22
2	214	01.4		43.6	193	17.5 80	−19	58.1	117	**56**	31	10	53	9 48	95	17 06	27
3	229	01.4		44.4	207	44.3 78	−20	09.8	117	**54**	36	13	55	36	91	19	31
4	244	01.5		45.3	222	11.1 78		21.3	115	**52**	41	16	56	25	87	31	34
5	259	01.5	−12	46.1	236	37.8 77	−20	32.7	114	**50**	16 46	17 19	17 57	9 15	85	17 41	37
6	274	01.6	−12	47.0	251	04.3 75	−20	44.0	113	**45**	16 56	17 26	18 00	8 55	79	18 02	42
7	289	01.6		47.8	265	30.7 74	−20	55.2	112	**40**	17 04	32	03	39	75	20	45
8	304	01.7		48.6	279	57.1 74	−21	06.3	111	**35**	11	37	07	25	72	35	48
9	319	01.8		49.5	294	23.3 72		17.2	109	**30**	17	42	10	8 13	70	18 47	51
10	334	01.8		50.3	308	49.5 72		28.0	108	**20**	28	17 51	17	7 53	65	19 09	54
11	349	01.9	−12	51.2	323	15.5 70	−21	38.7	107	**10 N**	17 38	18 00	18 24	7 35	62	19 29	57
12	4	01.9	−12	52.0	337	41.4 69	−21	49.3	106	**0**	17 47	18 08	18 33	7 19	58	19 46	61
13	19	02.0		52.9	352	07.2 68	−21	59.7	104	**10 S**	17 57	18	43	7 03	55	20 04	63
14	34	02.0		53.7	6	32.9 67	−22	10.0	103	**20**	18 07	30	18 56	6 46	51	24	66
15	49	02.1		54.6	20	58.6 67		20.2	102	**30**	18	43	19 13	27	46	46	70
16	64	02.1		55.4	35	24.1 65		30.2	100	**35**	25	18 52	24	15	44	20 59	72
17	79	02.2	−12	56.2	49	49.5 64	−22	40.1	99	**40**	18 33	19 02	19 36	6 03	40	21 15	74
18	94	02.3	−12	57.1	64	14.8 63	−22	49.8	97	**45**	18 42	19 14	19 52	5 47	37	21 33	77
19	109	02.3		57.9	78	40.0 62	−22	59.4	96	**50**	53	29	20 13	29	31	21 55	82
20	124	02.4		58.8	93	05.1 61	−23	08.9	95	**52**	18 58	36	24	20	29	22 06	85
21	139	02.4	−12	59.6	107	30.1 60		18.2	93	**54**	19 04	44	35	11	25	19	87
22	154	02.5	−13	00.4	121	55.0 59		27.4	92	**56**	10	19 53	20 49	5 00	21	33	91
23	169	02.5		01.3	136	19.9 59		36.4	90	**58**	17	20 03	21 06	4 47	17	22 50	96
24	184	02.6	−13	02.1	150	44.6 57	−23	45.3	89	**60 S**	19 25	20 15	21 27	4 33	10	23 10	105

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.1			Mag: −2.9			Mag: +0.6		
	21ʰ 35ᵐ.1		PMG: 11ʰ 50ᵐ			PMG: 3ʰ 19ᵐ			PMG: 21ʰ 38ᵐ			PMG: 19ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	35	20.1	182	40.9	−12 10.4	310	13.4	+23 38.8	34	36.7	−1 24.0	73	53.1	−16 29.0
1	50	22.6	197	40.4	11.5	325	15.7	39.0	49	39.3	24.1	88	55.5	28.9
2	65	25.0	212	39.8	12.6	340	18.0	39.1	64	42.0	24.1	103	58.0	28.9
3	80	27.5	227	39.3	13.7	355	20.4	39.2	79	44.7	24.2	119	00.4	28.9
4	95	30.0	242	38.8	14.9	10	22.7	39.3	94	47.4	24.3	134	02.9	28.9
5	110	32.4	257	38.2	−12 16.0	25	25.0	+23 39.4	109	50.0	−1 24.4	149	05.3	−16 28.9
6	125	34.9	272	37.7	−12 17.1	40	27.4	+23 39.5	124	52.7	−1 24.5	164	07.8	−16 28.9
7	140	37.4	287	37.2	18.2	55	29.7	39.6	139	55.4	24.6	179	10.2	28.9
8	155	39.8	302	36.6	19.3	70	32.1	39.7	154	58.1	24.6	194	12.7	28.9
9	170	42.3	317	36.1	20.4	85	34.4	39.9	170	00.7	24.7	209	15.1	28.9
10	185	44.8	332	35.6	21.6	100	36.7	40.0	185	03.4	24.8	224	17.6	28.9
11	200	47.2	347	35.0	−12 22.7	115	39.1	+23 40.1	200	06.1	−1 24.9	239	20.0	−16 28.9
12	215	49.7	2	34.5	−12 23.8	130	41.4	+23 40.2	215	08.7	−1 25.0	254	22.5	−16 28.9
13	230	52.1	17	34.0	24.9	145	43.8	40.3	230	11.4	25.0	269	24.9	28.9
14	245	54.6	32	33.4	26.0	160	46.1	40.4	245	14.1	25.1	284	27.3	28.8
15	260	57.1	47	32.9	27.1	175	48.5	40.5	260	16.8	25.2	299	29.8	28.8
16	275	59.5	62	32.4	28.2	190	50.9	40.6	275	19.4	25.3	314	32.2	28.8
17	291	02.0	77	31.8	−12 29.3	205	53.2	+23 40.8	290	22.1	−1 25.4	329	34.7	−16 28.8
18	306	04.5	92	31.3	−12 30.5	220	55.6	+23 40.9	305	24.8	−1 25.4	344	37.1	−16 28.8
19	321	06.9	107	30.7	31.6	235	57.9	41.0	320	27.4	25.5	359	39.6	28.8
20	336	09.4	122	30.2	32.7	251	00.3	41.1	335	30.1	25.6	14	42.0	28.8
21	351	11.9	137	29.7	33.8	266	02.7	41.2	350	32.8	25.7	29	44.5	28.8
22	6	14.3	152	29.1	34.9	281	05.0	41.3	5	35.4	25.8	44	46.9	28.8
23	21	16.8	167	28.6	36.0	296	07.4	41.4	20	38.1	25.8	59	49.4	28.8
24	36	19.3	182	28.1	−12 37.1	311	09.8	+23 41.5	35	40.8	−1 25.9	74	51.8	−16 28.8
Dif	—			−5	−11		+23	+1		+27	−1		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 2ᵈ.5		PHE	4ʰ: 59′.4									
	PMG: 11ʰ 43ᵐ.8				SD: 16′.2			12ʰ: 59′.5									
					PMG: 14ʰ 32ᵐ			20ʰ: 59′.5									
	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	02.6	−13	02.1	150	44.6	−23	45.3		**60 N**	5 38	6 27	7 12	12 09	97	16 47	33
1	199	02.6		03.0	165	09.2 56	−23	54.0	87	**58**	37	23	7 05	11 44	89	17 13	40
2	214	02.7		03.8	179	33.7 55	−24	02.6	86	**56**	35	19	6 58	23	85	33	45
3	229	02.7		04.6	193	58.2 55		11.0	84	**54**	34	16	53	11 07	82	17 50	48
4	244	02.8		05.5	208	22.5 53		19.3	83	**52**	33	12	47	10 52	80	18 05	49
5	259	02.8	−13	06.3	222	46.8 53	−24	27.4	81	**50**	5 31	6 09	6 43	10 40	78	18 18	51
6	274	02.9	−13	07.2	237	10.9 51	−24	35.3	79	**45**	5 28	6 02	6 33	10 14	75	18 44	54
7	289	02.9		08.0	251	35.0 51		43.1	78	**40**	25	5 57	24	9 54	72	19 05	56
8	304	03.0		08.8	265	59.0 50		50.8	77	**35**	21	51	17	37	70	23	57
9	319	03.0		09.7	280	22.9 49	−24	58.2	74	**30**	18	46	11	9 23	68	19 38	58
10	334	03.1		10.5	294	46.7 48	−25	05.5	73	**20**	11	37	6 00	8 58	66	20 03	61
11	349	03.1	−13	11.3	309	10.5 48	−25	12.7	72	**10 N**	5 03	5 28	5 50	8 37	64	20 26	61
12	4	03.2	−13	12.2	323	34.1 46	−25	19.6	69	**0**	4 55	5 19	5 40	8 17	62	20 47	62
13	19	03.2		13.0	337	57.7 46		26.4	68	**10 S**	44	5 09	31	7 58	60	21 07	64
14	34	03.3		13.8	352	21.2 45		33.1	67	**20**	31	4 58	21	37	57	30	65
15	49	03.3		14.7	6	44.6 44		39.5	64	**30**	14	44	09	7 13	55	21 56	66
16	64	03.4		15.5	21	08.0 44		45.8	63	**35**	4 04	35	5 02	6 59	53	22 11	67
17	79	03.4	−13	16.3	35	31.3 43	−25	51.9	61	**40**	3 51	4 25	4 54	6 43	51	22 29	68
18	94	03.4	−13	17.2	49	54.5 42	−25	57.9	60	**45**	3 35	4 13	4 45	6 24	48	22 50	70
19	109	03.5		18.0	64	17.6 41	−26	03.6	57	**50**	14	3 58	34	6 00	44	23 17	72
20	124	03.5		18.8	78	40.7 41		09.2	56	**52**	3 03	51	29	5 49	41	31	72
21	139	03.6		19.7	93	03.7 40		14.6	54	**54**	2 52	43	23	36	39	23 46	73
22	154	03.6		20.5	107	26.6 39		19.8	52	**56**	38	34	17	21	36	** **	**
23	169	03.7		21.3	121	49.5 39		24.9	51	**58**	21	24	09	5 04	30	** **	**
24	184	03.7	−13	22.2	136	12.3 38	−26	29.7	48	**60 S**	2 00	3 11	4 01	4 43	22	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.2			Mag: −2.9			Mag: +0.6		
	21ʰ 31ᵐ.2		PMG: 11ʰ 51ᵐ			PMG: 3ʰ 15ᵐ			PMG: 21ʰ 33ᵐ			PMG: 18ʰ 57ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	36	19.3	182	28.1	−12 37.1	311	09.8	+23 41.5	35	40.8	−1 25.9	74	51.8	−16 28.8
1	51	21.7	197	27.5	38.2	326	12.1	41.7	50	43.4	26.0	89	54.2	28.7
2	66	24.2	212	27.0	39.3	341	14.5	41.8	65	46.1	26.1	104	56.7	28.7
3	81	26.6	227	26.4	40.4	356	16.9	41.9	80	48.8	26.2	119	59.1	28.7
4	96	29.1	242	25.9	41.5	11	19.2	42.0	95	51.4	26.2	135	01.6	28.7
5	111	31.6	257	25.3	−12 42.6	26	21.6	+23 42.1	110	54.1	−1 26.3	150	04.0	−16 28.7
6	126	34.0	272	24.8	−12 43.7	41	24.0	+23 42.2	125	56.8	−1 26.4	165	06.5	−16 28.7
7	141	36.5	287	24.3	44.8	56	26.4	42.3	140	59.4	26.5	180	08.9	28.7
8	156	39.0	302	23.7	46.0	71	28.8	42.4	156	02.1	26.5	195	11.3	28.7
9	171	41.4	317	23.2	47.1	86	31.1	42.6	171	04.8	26.6	210	13.8	28.7
10	186	43.9	332	22.6	48.2	101	33.5	42.7	186	07.4	26.7	225	16.2	28.7
11	201	46.4	347	22.1	−12 49.3	116	35.9	+23 42.8	201	10.1	−1 26.8	240	18.7	−16 28.7
12	216	48.8	2	21.5	−12 50.4	131	38.3	+23 42.9	216	12.8	−1 26.9	255	21.1	−16 28.6
13	231	51.3	17	21.0	51.5	146	40.7	43.0	231	15.4	26.9	270	23.6	28.6
14	246	53.8	32	20.4	52.6	161	43.1	43.1	246	18.1	27.0	285	26.0	28.6
15	261	56.2	47	19.9	53.7	176	45.5	43.2	261	20.8	27.1	300	28.4	28.6
16	276	58.7	62	19.4	54.8	191	47.9	43.3	276	23.4	27.2	315	30.9	28.6
17	292	01.1	77	18.8	−12 55.9	206	50.3	+23 43.5	291	26.1	−1 27.2	330	33.3	−16 28.6
18	307	03.6	92	18.3	−12 57.0	221	52.6	+23 43.6	306	28.7	−1 27.3	345	35.8	−16 28.6
19	322	06.1	107	17.7	58.1	236	55.0	43.7	321	31.4	27.4	0	38.2	28.6
20	337	08.5	122	17.2	−12 59.2	251	57.4	43.8	336	34.1	27.5	15	40.6	28.6
21	352	11.0	137	16.6	−13 00.2	266	59.9	43.9	351	36.7	27.6	30	43.1	28.6
22	7	13.5	152	16.1	01.3	282	02.3	44.0	6	39.4	27.6	45	45.5	28.5
23	22	15.9	167	15.5	02.4	297	04.7	44.1	21	42.1	27.7	60	48.0	28.5
24	37	18.4	182	15.0	−13 03.5	312	07.1	+23 44.3	36	44.7	−1 27.8	75	50.4	−16 28.5
Dif	—			−5	−11		+24	+1		+27	−1		+24	0

UT	SOL SD: 16′.1 PMG: 11h 43m.7				LUNA Edad: 3d.5 SD: 16′.2 PMG: 15h 34m PHE 4h: 59′.5 12h: 59′.5 20h: 59′.5 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	184	03.7	−13	22.2	136	12.3 38	−26	29.7 47	**60 N**	16 12	16 57	17 46	13 46	61	17 20	71
1	199	03.8		23.0	150	35.1 37		34.4 45	**58**	20	17 01	47	13 13	62	17 53	70
2	214	03.8		23.8	164	57.8 37		38.9 43	**56**	26	05	49	12 48	63	18 18	69
3	229	03.8		24.7	179	20.5 36		43.2 42	**54**	32	09	51	29	63	38	68
4	244	03.9		25.5	193	43.1 36		47.4 39	**52**	37	13	52	12 12	63	18 54	68
5	259	03.9	−13	26.3	208	05.7 35	−26	51.3 38	**50**	16 42	17 16	17 54	11 58	63	19 09	67
6	274	04.0	−13	27.1	222	28.2 35	−26	55.1 35	**45**	16 53	17 23	17 58	11 29	63	19 38	67
7	289	04.0		28.0	236	50.7 34	−26	58.6 34	**40**	17 01	29	18 01	11 06	64	20 01	66
8	304	04.1		28.8	251	13.1 34	−27	02.0 32	**35**	09	35	05	10 47	64	20	65
9	319	04.1		29.6	265	35.5 34		05.2 30	**30**	16	40	08	31	64	20 36	65
10	334	04.1		30.5	279	57.9 34		08.2 28	**20**	27	50	16	10 04	64	21 04	64
11	349	04.2	−13	31.3	294	20.2 33	−27	11.0 26	**10 N**	17 37	17 59	18 24	9 41	63	21 27	64
12	4	04.2	−13	32.1	308	42.5 33	−27	13.6 25	**0**	17 47	18 08	18 33	9 19	63	21 49	63
13	19	04.3		32.9	323	04.8 33		16.1 22	**10 S**	17 57	19	44	8 58	62	22 11	62
14	34	04.3		33.8	337	27.0 32		18.3 20	**20**	18 08	30	18 57	34	63	22 35	61
15	49	04.3		34.6	351	49.2 32		20.3 19	**30**	20	45	19 15	8 08	62	23 02	60
16	64	04.4		35.4	6	11.4 32		22.2 17	**35**	27	18 54	26	7 52	62	18	60
17	79	04.4	−13	36.2	20	33.6 32	−27	23.9 14	**40**	18 35	19 04	19 39	7 34	61	23 37	59
18	94	04.4	−13	37.1	34	55.8 32	−27	25.3 13	**45**	18 45	19 17	19 56	7 12	60	** **	**
19	109	04.5		37.9	49	17.9 31		26.6 11	**50**	18 56	32	20 18	6 44	59	** **	**
20	124	04.5		38.7	63	40.1 32		27.7 9	**52**	19 02	40	28	30	59	** **	**
21	139	04.6		39.5	78	02.2 31		28.6 7	**54**	08	48	41	6 15	58	** **	**
22	154	04.6		40.3	92	24.3 31		29.3 5	**56**	15	19 58	20 56	5 57	56	0 04	75
23	169	04.6		41.2	106	46.5 32		29.8 3	**58**	22	20 09	21 13	34	55	26	77
24	184	04.7	−13	42.0	121	08.6 31	−27	30.1	**60 S**	19 31	20 22	21 36	5 05	52	0 55	80

UT	ARIES PMG 21h 27m.2		VENUS Mag: −4.0 PMG: 11h 51m				MARTE Mag: −1.2 PMG: 3h 11m				JÚPITER Mag: −2.8 PMG: 21h 29m				SATURNO Mag: +0.6 PMG: 18h 54m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′	º	′
0	37	18.4	182	15.0	−13	03.5	312	07.1	+23	44.3	36	44.7	−1	27.8	75	50.4	−16	28.5
1	52	20.9	197	14.4		04.6	327	09.5		44.4	51	47.4		27.9	90	52.8		28.5
2	67	23.3	212	13.9		05.7	342	11.9		44.5	66	50.0		27.9	105	55.3		28.5
3	82	25.8	227	13.3		06.8	357	14.3		44.6	81	52.7		28.0	120	57.7		28.5
4	97	28.2	242	12.8		07.9	12	16.7		44.7	96	55.4		28.1	136	00.2		28.5
5	112	30.7	257	12.2	−13	09.0	27	19.1	+23	44.8	111	58.0	−1	28.2	151	02.6	−16	28.5
6	127	33.2	272	11.7	−13	10.1	42	21.5	+23	44.9	127	00.7	−1	28.2	166	05.0	−16	28.5
7	142	35.6	287	11.1		11.2	57	24.0		45.0	142	03.3		28.3	181	07.5		28.5
8	157	38.1	302	10.5		12.3	72	26.4		45.2	157	06.0		28.4	196	09.9		28.4
9	172	40.6	317	10.0		13.4	87	28.8		45.3	172	08.7		28.5	211	12.4		28.4
10	187	43.0	332	09.4		14.4	102	31.2		45.4	187	11.3		28.5	226	14.8		28.4
11	202	45.5	347	08.9	−13	15.5	117	33.6	+23	45.5	202	14.0	−1	28.6	241	17.2	−16	28.4
12	217	48.0	2	08.3	−13	16.6	132	36.1	+23	45.6	217	16.6	−1	28.7	256	19.7	−16	28.4
13	232	50.4	17	07.8		17.7	147	38.5		45.7	232	19.3		28.8	271	22.1		28.4
14	247	52.9	32	07.2		18.8	162	40.9		45.8	247	22.0		28.8	286	24.6		28.4
15	262	55.4	47	06.7		19.9	177	43.4		46.0	262	24.6		28.9	301	27.0		28.4
16	277	57.8	62	06.1		21.0	192	45.8		46.1	277	27.3		29.0	316	29.4		28.4
17	293	00.3	77	05.5	−13	22.1	207	48.2	+23	46.2	292	29.9	−1	29.1	331	31.9	−16	28.3
18	308	02.7	92	05.0	−13	23.1	222	50.7	+23	46.3	307	32.6	−1	29.1	346	34.3	−16	28.3
19	323	05.2	107	04.4		24.2	237	53.1		46.4	322	35.2		29.2	1	36.7		28.3
20	338	07.7	122	03.9		25.3	252	55.5		46.5	337	37.9		29.3	16	39.2		28.3
21	353	10.1	137	03.3		26.4	267	58.0		46.6	352	40.6		29.4	31	41.6		28.3
22	8	12.6	152	02.7		27.5	283	00.4		46.7	7	43.2		29.4	46	44.0		28.3
23	23	15.1	167	02.2		28.6	298	02.9		46.9	22	45.9		29.5	61	46.5		28.3
24	38	17.5	182	01.6	−13	29.6	313	05.3	+23	47.0	37	48.5	−1	29.6	76	48.9	−16	28.3
Dif	—			−6		−11		+24		+1		+27		−1		+24		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 4ᵈ.5		PHE	4ʰ: 59′.5									
	PMG: 11ʰ 43ᵐ.7				SD: 16′.2			12ʰ: 59′.5									
					PMG: 16ʰ 37ᵐ			20ʰ: 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	184	04.7	−13	42.0	121	08.6	−27	30.1		**60 N**	5 43	6 32	7 17	14 47	27	18 31	101
1	199	04.7		42.8	135	30.7 31		30.2	1	**58**	41	27	09	14 15	35	19 03	93
2	214	04.7		43.6	149	52.8 31		30.1	1	**56**	39	23	7 03	13 51	40	27	87
3	229	04.8		44.5	164	15.0 32		29.8	3	**54**	38	19	6 57	32	43	19 46	84
4	244	04.8		45.3	178	37.1 31		29.3	5	**52**	36	16	51	15	46	20 02	82
5	259	04.8	−13	46.1	192	59.3 32	−27	28.7	6	**50**	5 34	6 12	6 46	13 01	47	20 16	79
6	274	04.9	−13	46.9	207	21.5 32	−27	27.8	9	**45**	5 30	6 05	6 36	12 32	51	20 45	75
7	289	04.9		47.7	221	43.7 32		26.8	10	**40**	27	5 59	27	12 10	53	21 07	72
8	304	04.9		48.6	236	05.9 32		25.5	13	**35**	23	53	19	11 51	55	25	71
9	319	05.0		49.4	250	28.2 33		24.1	14	**30**	19	48	12	35	56	21 41	69
10	334	05.0		50.2	264	50.5 33		22.5	16	**20**	12	38	6 00	11 08	58	22 08	65
11	349	05.0	−13	51.0	279	12.8 33	−27	20.7	18	**10 N**	5 04	5 29	5 50	10 44	60	22 31	63
12	4	05.1	−13	51.8	293	35.1 33	−27	18.7	20	**0**	4 54	5 19	5 40	10 22	62	22 52	61
13	19	05.1		52.6	307	57.5 34		16.5	22	**10 S**	43	5 09	30	10 00	64	23 13	58
14	34	05.1		53.5	322	19.9 34		14.1	24	**20**	30	4 57	20	9 37	65	23 36	55
15	49	05.2		54.3	336	42.3 34		11.5	26	**30**	12	42	07	9 10	67	** **	**
16	64	05.2		55.1	351	04.8 35		08.7	28	**35**	4 01	33	5 00	8 54	68	** **	**
17	79	05.2	−13	55.9	5	27.3 35	−27	05.8	29	**40**	3 48	4 23	4 52	8 35	70	** **	**
18	94	05.3	−13	56.7	19	49.9 36	−27	02.6	32	**45**	3 31	4 10	4 42	8 12	72	0 00	57
19	109	05.3		57.5	34	12.5 36	−26	59.3	33	**50**	3 09	3 54	30	7 43	74	29	55
20	124	05.3		58.4	48	35.2 37		55.8	35	**52**	2 58	47	25	29	76	43	54
21	139	05.4	−13	59.2	62	57.9 37		52.1	37	**54**	46	38	19	7 13	77	0 59	53
22	154	05.4	−14	00.0	77	20.7 38		48.2	39	**56**	31	29	12	6 53	80	1 19	51
23	169	05.4	−14	00.8	91	43.5 38		44.1	41	**58**	2 13	18	4 04	6 29	83	1 43	48
24	184	05.4	−14	01.6	106	06.4 39	−26	39.9	42	**60 S**	1 50	3 05	3 56	5 57	88	2 15	43

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.2			Mag: −2.8			Mag: +0.7		
	21ʰ 23ᵐ.3		PMG: 11ʰ 52ᵐ			PMG: 3ʰ 07ᵐ			PMG: 21ʰ 25ᵐ			PMG: 18ʰ 50ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	38	17.5	182	01.6	−13 29.6	313	05.3	+23 47.0	37	48.5	−1 29.6	76	48.9	−16 28.3
1	53	20.0	197	01.1	30.7	328	07.8	47.1	52	51.2	29.7	91	51.4	28.3
2	68	22.5	212	00.5	31.8	343	10.2	47.2	67	53.8	29.7	106	53.8	28.2
3	83	24.9	226	59.9	32.9	358	12.7	47.3	82	56.5	29.8	121	56.2	28.2
4	98	27.4	241	59.4	34.0	13	15.1	47.4	97	59.1	29.9	136	58.7	28.2
5	113	29.9	256	58.8	−13 35.0	28	17.6	+23 47.5	113	01.8	−1 29.9	152	01.1	−16 28.2
6	128	32.3	271	58.2	−13 36.1	43	20.0	+23 47.7	128	04.4	−1 30.0	167	03.5	−16 28.2
7	143	34.8	286	57.7	37.2	58	22.5	47.8	143	07.1	30.1	182	06.0	28.2
8	158	37.2	301	57.1	38.3	73	24.9	47.9	158	09.7	30.2	197	08.4	28.2
9	173	39.7	316	56.5	39.3	88	27.4	48.0	173	12.4	30.2	212	10.8	28.2
10	188	42.2	331	56.0	40.4	103	29.9	48.1	188	15.1	30.3	227	13.3	28.1
11	203	44.6	346	55.4	−13 41.5	118	32.3	+23 48.2	203	17.7	−1 30.4	242	15.7	−16 28.1
12	218	47.1	1	54.8	−13 42.6	133	34.8	+23 48.3	218	20.4	−1 30.4	257	18.1	−16 28.1
13	233	49.6	16	54.3	43.6	148	37.3	48.4	233	23.0	30.5	272	20.6	28.1
14	248	52.0	31	53.7	44.7	163	39.7	48.6	248	25.7	30.6	287	23.0	28.1
15	263	54.5	46	53.1	45.8	178	42.2	48.7	263	28.3	30.7	302	25.4	28.1
16	278	57.0	61	52.6	46.9	193	44.7	48.8	278	31.0	30.7	317	27.9	28.1
17	293	59.4	76	52.0	−13 47.9	208	47.1	+23 48.9	293	33.6	−1 30.8	332	30.3	−16 28.1
18	309	01.9	91	51.4	−13 49.0	223	49.6	+23 49.0	308	36.3	−1 30.9	347	32.7	−16 28.0
19	324	04.4	106	50.9	50.1	238	52.1	49.1	323	38.9	30.9	2	35.2	28.0
20	339	06.8	121	50.3	51.1	253	54.6	49.2	338	41.6	31.0	17	37.6	28.0
21	354	09.3	136	49.7	52.2	268	57.0	49.4	353	44.2	31.1	32	40.0	28.0
22	9	11.7	151	49.2	53.3	283	59.5	49.5	8	46.9	31.2	47	42.5	28.0
23	24	14.2	166	48.6	54.3	299	02.0	49.6	23	49.5	31.2	62	44.9	28.0
24	39	16.7	181	48.0	−13 55.4	314	04.5	+23 49.7	38	52.2	−1 31.3	77	47.3	−16 28.0
Dif	—			−6	−11		+25	+1		+27	−1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1 PMG: 11h 43m.6		Edad: 5d.5 SD: 16′.2 PMG: 17h 38m		PHE: 4h: 59′.4; 12h: 59′.3; 20h: 59′.3 Rº: 58m				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	184 05.4	−14 01.6	106 06.4	39	−26 39.9	44	**60 N**	16 07	16 52	17 41	15 14	11	20 12	109
1	199 05.5	02.4	120 29.3	41	35.5	46	**58**	15	16 57	43	14 50	18	36	100
2	214 05.5	03.2	134 52.4	40	30.9	48	**56**	22	17 01	45	31	23	20 54	95
3	229 05.5	04.0	149 15.4	42	26.1	50	**54**	28	05	47	15	27	21 10	91
4	244 05.6	04.9	163 38.6	42	21.1	51	**52**	34	09	49	14 01	30	24	87
5	259 05.6	−14 05.7	178 01.8	42	−26 16.0	54	**50**	16 39	17 13	17 51	13 48	34	21 35	85
6	274 05.6	−14 06.5	192 25.1	43	−26 10.6	54	**45**	16 50	17 20	17 55	13 23	39	22 00	79
7	289 05.6	07.3	206 48.4	43	−26 05.2	57	**40**	16 59	27	17 59	13 03	42	19	75
8	304 05.7	08.1	221 11.9	45	−25 59.5	59	**35**	17 07	33	18 03	12 46	45	36	71
9	319 05.7	08.9	235 35.4	45	53.6	60	**30**	14	39	07	31	48	22 50	68
10	334 05.7	09.7	249 58.9	45	47.6	61	**20**	26	49	15	12 06	52	23 13	64
11	349 05.7	−14 10.5	264 22.6	47	−25 41.5	64	**10 N**	17 37	17 58	18 23	11 44	56	23 34	60
12	4 05.8	−14 11.3	278 46.3	47	−25 35.1	65	**0**	17 47	18 08	18 33	11 24	59	23 53	56
13	19 05.8	12.1	293 10.1	48	28.6	67	**10 S**	17 57	19	45	11 04	61	** **	**
14	34 05.8	12.9	307 34.1	50	21.9	69	**20**	18 09	31	18 58	10 42	65	** **	**
15	49 05.8	13.7	321 58.0	49	15.0	70	**30**	21	47	19 17	17	69	0 02	52
16	64 05.8	14.6	336 22.1	51	08.0	71	**35**	29	18 56	28	10 02	71	18	50
17	79 05.9	−14 15.4	350 46.3	52	−25 00.9	74	**40**	18 38	19 07	19 42	9 45	74	0 36	47
18	94 05.9	−14 16.2	5 10.5	52	−24 53.5	75	**45**	18 48	19 20	19 59	9 24	77	0 57	44
19	109 05.9	17.0	19 34.8	53	46.0	76	**50**	19 00	36	20 22	8 57	83	1 24	40
20	124 05.9	17.8	33 59.3	55	38.4	78	**52**	06	44	33	45	85	37	38
21	139 06.0	18.6	48 23.8	55	30.6	80	**54**	12	19 53	20 47	30	88	1 52	35
22	154 06.0	19.4	62 48.4	56	22.6	81	**56**	19	20 03	21 02	8 13	92	2 10	31
23	169 06.0	20.2	77 13.1	57	14.5	83	**58**	27	14	21	7 52	97	31	26
24	184 06.0	−14 21.0	91 37.9	58	−24 06.2		**60 S**	19 36	20 28	21 46	7 25	106	2 58	18

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 21h 19m.4	Mag: −4.0 PMG: 11h 53m		Mag: −1.2 PMG: 3h 03m		Mag: −2.8 PMG: 21h 21m		Mag: +0.7 PMG: 18h 46m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	39 16.7	181 48.0	−13 55.4	314 04.5	+23 49.7	38 52.2	−1 31.3	77 47.3	−16 28.0
1	54 19.1	196 47.4	56.5	329 07.0	49.8	53 54.8	31.4	92 49.8	28.0
2	69 21.6	211 46.9	57.5	344 09.5	49.9	68 57.5	31.4	107 52.2	27.9
3	84 24.1	226 46.3	58.6	359 12.0	50.0	84 00.1	31.5	122 54.6	27.9
4	99 26.5	241 45.7	−13 59.7	14 14.5	50.1	99 02.7	31.6	137 57.0	27.9
5	114 29.0	256 45.1	−14 00.7	29 16.9	+23 50.3	114 05.4	−1 31.6	152 59.5	−16 27.9
6	129 31.5	271 44.6	−14 01.8	44 19.4	+23 50.4	129 08.0	−1 31.7	168 01.9	−16 27.9
7	144 33.9	286 44.0	02.9	59 21.9	50.5	144 10.7	31.8	183 04.3	27.9
8	159 36.4	301 43.4	03.9	74 24.4	50.6	159 13.3	31.9	198 06.8	27.9
9	174 38.9	316 42.8	05.0	89 26.9	50.7	174 16.0	31.9	213 09.2	27.9
10	189 41.3	331 42.3	06.0	104 29.4	50.8	189 18.6	32.0	228 11.6	27.8
11	204 43.8	346 41.7	−14 07.1	119 31.9	+23 50.9	204 21.3	−1 32.1	243 14.1	−16 27.8
12	219 46.2	1 41.1	−14 08.2	134 34.4	+23 51.1	219 23.9	−1 32.1	258 16.5	−16 27.8
13	234 48.7	16 40.5	09.2	149 36.9	51.2	234 26.6	32.2	273 18.9	27.8
14	249 51.2	31 39.9	10.3	164 39.5	51.3	249 29.2	32.3	288 21.3	27.8
15	264 53.6	46 39.4	11.3	179 42.0	51.4	264 31.9	32.3	303 23.8	27.8
16	279 56.1	61 38.8	12.4	194 44.5	51.5	279 34.5	32.4	318 26.2	27.8
17	294 58.6	76 38.2	−14 13.5	209 47.0	+23 51.6	294 37.1	−1 32.5	333 28.6	−16 27.7
18	310 01.0	91 37.6	−14 14.5	224 49.5	+23 51.7	309 39.8	−1 32.5	348 31.1	−16 27.7
19	325 03.5	106 37.0	15.6	239 52.0	51.9	324 42.4	32.6	3 33.5	27.7
20	340 06.0	121 36.5	16.6	254 54.5	52.0	339 45.1	32.7	18 35.9	27.7
21	355 08.4	136 35.9	17.7	269 57.1	52.1	354 47.7	32.7	33 38.3	27.7
22	10 10.9	151 35.3	18.7	284 59.6	52.2	9 50.4	32.8	48 40.8	27.7
23	25 13.4	166 34.7	19.8	300 02.1	52.3	24 53.0	32.9	63 43.2	27.7
24	40 15.8	181 34.1	−14 20.8	315 04.6	+23 52.4	39 55.6	−1 32.9	78 45.6	−16 27.6
Dif	—	−6	−11	+25	+1	+26	−1	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 6ᵈ.5		PHE	4ʰ: 59′.2									
	PMG: 11ʰ 43ᵐ.6				SD: 16′.1			12ʰ: 59′.1									
					PMG: 18ʰ 36ᵐ			20ʰ: 59′.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	184	06.0	−14	21.0	91	37.9	−24	06.2		**60 N**	5 47	6 37	7 22	15 25	5	22 01	104
1	199	06.0		21.8	106	02.8 59	−23	57.8	84	**58**	45	32	14	15 08	11	16	99
2	214	06.1		22.6	120	27.8 60		49.2	86	**56**	43	27	07	14 54	15	29	95
3	229	06.1		23.4	134	52.9 61		40.5	87	**54**	41	23	7 00	42	19	41	90
4	244	06.1		24.2	149	18.0 61		31.6	89	**52**	39	19	6 55	31	22	22 51	87
5	259	06.1	−14	25.0	163	43.3 63	−23	22.6	90	**50**	5 37	6 16	6 49	14 22	24	23 00	84
6	274	06.1	−14	25.8	178	08.7 64	−23	13.5	91	**45**	5 33	6 08	6 38	14 02	30	23 19	78
7	289	06.2		26.6	192	34.2 65	−23	04.2	93	**40**	29	6 01	29	13 45	34	34	74
8	304	06.2		27.4	206	59.7 65	−22	54.8	94	**35**	25	5 55	21	31	38	47	70
9	319	06.2		28.2	221	25.4 67		45.2	96	**30**	21	49	14	13 19	41	23 58	67
10	334	06.2		29.0	235	51.2 68		35.5	97	**20**	13	39	6 01	12 58	46	** **	**
11	349	06.2	−14	29.8	250	17.0 68	−22	25.6	99	**10 N**	5 04	5 29	5 50	12 40	50	** **	**
12	4	06.2	−14	30.6	264	43.0 70	−22	15.7	99	**0**	4 54	5 19	5 40	12 23	54	** **	**
13	19	06.3		31.4	279	09.1 71	−22	05.6	101	**10 S**	43	5 08	30	12 05	59	0 11	53
14	34	06.3		32.2	293	35.3 72	−21	55.3	103	**20**	28	4 55	18	11 47	63	31	49
15	49	06.3		33.0	308	01.5 72		45.0	103	**30**	4 10	40	5 05	26	67	0 54	45
16	64	06.3		33.8	322	27.9 74		34.5	105	**35**	3 59	31	4 58	11 13	71	1 08	41
17	79	06.3	−14	34.6	336	54.4 75	−21	23.8	107	**40**	3 45	4 20	4 49	10 59	74	1 23	38
18	94	06.3	−14	35.4	351	21.0 76	−21	13.1	107	**45**	3 27	4 07	4 39	10 41	79	1 41	35
19	109	06.3		36.2	5	47.7 77	−21	02.2	109	**50**	3 05	3 50	27	20	84	2 04	29
20	124	06.4		37.0	20	14.4 77	−20	51.3	109	**52**	2 53	43	21	10 10	87	15	26
21	139	06.4		37.8	34	41.3 79		40.2	111	**54**	40	34	14	9 58	91	27	23
22	154	06.4		38.6	49	08.3 80		28.9	113	**56**	24	24	4 07	45	95	41	19
23	169	06.4		39.4	63	35.4 81		17.6	113	**58**	2 05	3 12	3 59	29	100	2 57	14
24	184	06.4	−14	40.1	78	02.6 82	−20	06.2	114	**60 S**	1 40	2 58	3 50	9 11	106	3 16	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.2			Mag: −2.8			Mag: +0.7		
	21ʰ 15ᵐ.5		PMG: 11ʰ 54ᵐ			PMG: 2ʰ 59ᵐ			PMG: 21ʰ 17ᵐ			PMG: 18ʰ 42ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	40	15.8	181	34.1	−14 20.8	315	04.6	+23 52.4	39	55.6	−1 32.9	78	45.6	−16 27.6
1	55	18.3	196	33.5	21.9	330	07.2	52.5	54	58.3	33.0	93	48.1	27.6
2	70	20.7	211	33.0	22.9	345	09.7	52.7	70	00.9	33.1	108	50.5	27.6
3	85	23.2	226	32.4	24.0	0	12.2	52.8	85	03.6	33.1	123	52.9	27.6
4	100	25.7	241	31.8	25.0	15	14.7	52.9	100	06.2	33.2	138	55.3	27.6
5	115	28.1	256	31.2	−14 26.1	30	17.3	+23 53.0	115	08.8	−1 33.3	153	57.8	−16 27.6
6	130	30.6	271	30.6	−14 27.1	45	19.8	+23 53.1	130	11.5	−1 33.3	169	00.2	−16 27.6
7	145	33.1	286	30.0	28.2	60	22.3	53.2	145	14.1	33.4	184	02.6	27.5
8	160	35.5	301	29.4	29.2	75	24.9	53.3	160	16.8	33.5	199	05.0	27.5
9	175	38.0	316	28.9	30.3	90	27.4	53.4	175	19.4	33.5	214	07.5	27.5
10	190	40.5	331	28.3	31.3	105	30.0	53.6	190	22.0	33.6	229	09.9	27.5
11	205	42.9	346	27.7	−14 32.4	120	32.5	+23 53.7	205	24.7	−1 33.7	244	12.3	−16 27.5
12	220	45.4	1	27.1	−14 33.4	135	35.0	+23 53.8	220	27.3	−1 33.7	259	14.7	−16 27.5
13	235	47.8	16	26.5	34.5	150	37.6	53.9	235	30.0	33.8	274	17.2	27.5
14	250	50.3	31	25.9	35.5	165	40.1	54.0	250	32.6	33.9	289	19.6	27.4
15	265	52.8	46	25.3	36.5	180	42.7	54.1	265	35.2	33.9	304	22.0	27.4
16	280	55.2	61	24.7	37.6	195	45.2	54.2	280	37.9	34.0	319	24.4	27.4
17	295	57.7	76	24.1	−14 38.6	210	47.8	+23 54.4	295	40.5	−1 34.1	334	26.9	−16 27.4
18	311	00.2	91	23.5	−14 39.7	225	50.3	+23 54.5	310	43.1	−1 34.1	349	29.3	−16 27.4
19	326	02.6	106	23.0	40.7	240	52.9	54.6	325	45.8	34.2	4	31.7	27.4
20	341	05.1	121	22.4	41.7	255	55.5	54.7	340	48.4	34.3	19	34.1	27.3
21	356	07.6	136	21.8	42.8	270	58.0	54.8	355	51.1	34.3	34	36.6	27.3
22	11	10.0	151	21.2	43.8	286	00.6	54.9	10	53.7	34.4	49	39.0	27.3
23	26	12.5	166	20.6	44.9	301	03.1	55.0	25	56.3	34.5	64	41.4	27.3
24	41	15.0	181	20.0	−14 45.9	316	05.7	+23 55.2	40	59.0	−1 34.5	79	43.8	−16 27.3
Dif	—			−6	−10		+25	+1		+26	−1		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 7ᵈ.5		PHE	4ʰ: 58′.9								
	PMG: 11ʰ 43ᵐ.6		SD: 16′.1			12ʰ: 58′.8								
			PMG: 19ʰ 29ᵐ			20ʰ: 58′.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 06.4	−14 40.1	78 02.6	83	−20 06.2	116	**60 N**	16 02	16 47	17 37	15 30	2	23 45	99
1	199 06.4	40.9	92 29.9	84	−19 54.6	117	**58**	10	52	39	19	6	23 55	95
2	214 06.4	41.7	106 57.3	85	42.9	117	**56**	17	16 57	41	09	11	** **	**
3	229 06.4	42.5	121 24.8	85	31.2	117	**54**	24	17 02	44	15 01	13	** **	**
4	244 06.4	43.3	135 52.3	87	19.3	119	**52**	30	06	46	14 53	17	** **	**
5	259 06.5	−14 44.1	150 20.0	87	−19 07.3	120	**50**	16 35	17 09	17 48	14 46	19	** **	**
6	274 06.5	−14 44.9	164 47.8	88	−18 55.2	121	**45**	16 47	17 18	17 52	14 32	24	** **	**
7	289 06.5	45.7	179 15.7	89	43.0	122	**40**	16 57	25	17 57	19	29	** **	**
8	304 06.5	46.5	193 43.7	90	30.7	123	**35**	17 05	31	18 01	09	32	** **	**
9	319 06.5	47.3	208 11.8	91	18.3	124	**30**	12	37	05	14 00	35	** **	**
10	334 06.5	48.1	222 39.9	91	−18 05.8	125	**20**	25	48	14	13 44	41	0 17	61
11	349 06.5	−14 48.8	237 08.2	93	−17 53.2	126	**10 N**	17 36	17 58	18 23	13 30	46	0 34	56
12	4 06.5	−14 49.6	251 36.6	94	−17 40.6	126	**0**	17 47	18 08	18 33	13 17	50	0 49	52
13	19 06.5	50.4	266 05.0	94	27.8	128	**10 S**	17 58	20	18 45	13 04	54	1 04	48
14	34 06.5	51.2	280 33.6	96	14.9	129	**20**	18 09	33	19 00	12 50	59	20	44
15	49 06.5	52.0	295 02.2	96	−17 02.0	129	**30**	23	48	18	33	66	39	38
16	64 06.6	52.8	309 31.0	98	−16 48.9	131	**35**	31	18 58	30	24	68	1 49	35
17	79 06.6	−14 53.6	323 59.8	98	−16 35.8	131	**40**	18 40	19 09	19 45	12 13	72	2 01	32
18	94 06.6	−14 54.4	338 28.7	99	−16 22.6	132	**45**	18 50	19 23	20 03	12 00	77	2 16	27
19	109 06.6	55.1	352 57.7	100	−16 09.3	133	**50**	19 03	40	27	11 44	83	33	21
20	124 06.6	55.9	7 26.8	101	−15 55.9	134	**52**	09	48	38	37	86	41	19
21	139 06.6	56.7	21 56.0	102	42.5	134	**54**	16	19 57	20 52	29	88	2 50	16
22	154 06.6	57.5	36 25.3	103	29.0	135	**56**	23	20 08	21 09	20	92	3 00	12
23	169 06.6	58.3	50 54.7	104	15.4	136	**58**	32	20	29	11 09	96	11	9
24	184 06.6	−14 59.1	65 24.1	104	−15 01.7	137	**60 S**	19 41	20 34	21 57	10 57	101	3 24	4

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −4.0		Mag: −1.3		Mag: −2.8		Mag: +0.7	
	21ʰ 11ᵐ.5	PMG: 11ʰ 55ᵐ		PMG: 2ʰ 55ᵐ		PMG: 21ʰ 12ᵐ		PMG: 18ʰ 38ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	41 15.0	181 20.0	−14 45.9	316 05.7	+23 55.2	40 59.0	−1 34.5	79 43.8	−16 27.3
1	56 17.4	196 19.4	46.9	331 08.3	55.3	56 01.6	34.6	94 46.3	27.3
2	71 19.9	211 18.8	48.0	346 10.8	55.4	71 04.2	34.6	109 48.7	27.3
3	86 22.3	226 18.2	49.0	1 13.4	55.5	86 06.9	34.7	124 51.1	27.2
4	101 24.8	241 17.6	50.0	16 16.0	55.6	101 09.5	34.8	139 53.5	27.2
5	116 27.3	256 17.0	−14 51.1	31 18.5	+23 55.7	116 12.1	−1 34.8	154 55.9	−16 27.2
6	131 29.7	271 16.4	−14 52.1	46 21.1	+23 55.8	131 14.8	−1 34.9	169 58.4	−16 27.2
7	146 32.2	286 15.8	53.1	61 23.7	56.0	146 17.4	35.0	185 00.8	27.2
8	161 34.7	301 15.2	54.2	76 26.3	56.1	161 20.0	35.0	200 03.2	27.2
9	176 37.1	316 14.6	55.2	91 28.9	56.2	176 22.7	35.1	215 05.6	27.1
10	191 39.6	331 14.0	56.2	106 31.4	56.3	191 25.3	35.2	230 08.1	27.1
11	206 42.1	346 13.4	−14 57.3	121 34.0	+23 56.4	206 27.9	−1 35.2	245 10.5	−16 27.1
12	221 44.5	1 12.8	−14 58.3	136 36.6	+23 56.5	221 30.6	−1 35.3	260 12.9	−16 27.1
13	236 47.0	16 12.2	−14 59.3	151 39.2	56.6	236 33.2	35.3	275 15.3	27.1
14	251 49.5	31 11.6	−15 00.3	166 41.8	56.8	251 35.8	35.4	290 17.7	27.1
15	266 51.9	46 11.0	01.4	181 44.4	56.9	266 38.4	35.5	305 20.2	27.0
16	281 54.4	61 10.4	02.4	196 47.0	57.0	281 41.1	35.5	320 22.6	27.0
17	296 56.8	76 09.8	−15 03.4	211 49.5	+23 57.1	296 43.7	−1 35.6	335 25.0	−16 27.0
18	311 59.3	91 09.2	−15 04.5	226 52.1	+23 57.2	311 46.3	−1 35.7	350 27.4	−16 27.0
19	327 01.8	106 08.6	05.5	241 54.7	57.3	326 49.0	35.7	5 29.8	27.0
20	342 04.2	121 08.0	06.5	256 57.3	57.4	341 51.6	35.8	20 32.3	27.0
21	357 06.7	136 07.4	07.5	271 59.9	57.6	356 54.2	35.8	35 34.7	26.9
22	12 09.2	151 06.8	08.5	287 02.5	57.7	11 56.9	35.9	50 37.1	26.9
23	27 11.6	166 06.2	09.6	302 05.1	57.8	26 59.5	36.0	65 39.5	26.9
24	42 14.1	181 05.5	−15 10.6	317 07.7	+23 57.9	42 02.1	−1 36.0	80 41.9	−16 26.9
Dif	—	−6	−10	+26	+1	+26	−1	+24	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 8ᵈ.5		PHE	4ʰ: 58′.6								
	PMG: 11ʰ 43ᵐ.6				SD: 16′.0			12ʰ: 58′.4								
					PMG: 20ʰ 19ᵐ			20ʰ: 58′.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	184	06.6	−14	59.1	65	24.1	−15	01.7	**60 N**	5 52	6 41	7 27	15 32	1	** **	**
1	199	06.6	−14	59.8	79	53.7 106	−14	47.9 138	**58**	49	36	19	25	5	** **	**
2	214	06.6	−15	00.6	94	23.3 106		34.1 138	**56**	47	31	11	20	8	0 04	90
3	229	06.6		01.4	108	53.0 107		20.2 139	**54**	44	27	7 04	14	11	11	87
4	244	06.6		02.2	123	22.8 108	−14	06.2 140	**52**	42	22	6 58	10	13	18	84
5	259	06.6	−15	03.0	137	52.7 109	−13	52.2 140	**50**	5 40	6 19	6 53	15 05	16	0 24	82
6	274	06.6	−15	03.7	152	22.6 109	−13	38.1 141	**45**	5 35	6 10	6 41	14 56	21	0 37	76
7	289	06.6		04.5	166	52.7 111		24.0 141	**40**	31	6 03	31	48	25	48	71
8	304	06.6		05.3	181	22.8 111	−13	09.7 143	**35**	26	5 56	23	41	29	0 57	67
9	319	06.6		06.1	195	53.0 112	−12	55.4 143	**30**	22	51	15	35	32	1 05	64
10	334	06.6		06.9	210	23.2 112		41.1 143	**20**	13	40	6 02	25	38	18	59
11	349	06.6	−15	07.6	224	53.6 114	−12	26.7 144	**10 N**	5 04	5 29	5 51	14 16	42	1 30	54
12	4	06.6	−15	08.4	239	24.0 114	−12	12.3 144	**0**	4 54	5 19	5 40	14 07	47	1 41	49
13	19	06.6		09.2	253	54.5 115	−11	57.7 146	**10 S**	42	5 07	29	13 58	52	1 52	44
14	34	06.6		10.0	268	25.0 115		43.2 145	**20**	27	4 54	17	49	57	2 04	39
15	49	06.6		10.8	282	55.7 117		28.6 146	**30**	4 08	38	5 04	39	62	17	33
16	64	06.6		11.5	297	26.4 117	−11	13.9 147	**35**	3 56	29	4 56	32	67	24	31
17	79	06.6	−15	12.3	311	57.1 117	−10	59.2 147	**40**	3 42	4 17	4 47	13 25	70	2 33	26
18	94	06.6	−15	13.1	326	28.0 119	−10	44.4 148	**45**	3 24	4 04	4 36	13 17	75	2 43	22
19	109	06.6		13.9	340	58.9 119		29.6 148	**50**	3 00	3 47	23	07	80	2 54	18
20	124	06.6		14.6	355	29.8 119	−10	14.8 148	**52**	2 48	38	17	13 03	82	3 00	15
21	139	06.6		15.4	10	00.9 121	−9	59.9 149	**54**	34	29	10	12 57	86	06	12
22	154	06.6		16.2	24	32.0 121		44.9 150	**56**	2 18	18	4 03	52	88	12	10
23	169	06.6		17.0	39	03.1 121		29.9 150	**58**	1 57	3 06	3 54	45	93	20	6
24	184	06.6	−15	17.7	53	34.4 123	−9	14.9 150	**60 S**	1 30	2 52	3 45	12 38	96	3 28	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.3			Mag: −2.8			Mag: +0.7		
	21ʰ 07ᵐ.6		PMG: 11ʰ 56ᵐ			PMG: 2ʰ 51ᵐ			PMG: 21ʰ 08ᵐ			PMG: 18ʰ 34ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	42	14.1	181	05.5	−15 10.6	317	07.7	+23 57.9	42	02.1	−1 36.0	80	41.9	−16 26.9
1	57	16.6	196	04.9	11.6	332	10.3	58.0	57	04.7	36.1	95	44.4	26.9
2	72	19.0	211	04.3	12.6	347	13.0	58.1	72	07.4	36.1	110	46.8	26.9
3	87	21.5	226	03.7	13.6	2	15.6	58.2	87	10.0	36.2	125	49.2	26.8
4	102	23.9	241	03.1	14.7	17	18.2	58.3	102	12.6	36.3	140	51.6	26.8
5	117	26.4	256	02.5	−15 15.7	32	20.8	+23 58.5	117	15.2	−1 36.3	155	54.0	−16 26.8
6	132	28.9	271	01.9	−15 16.7	47	23.4	+23 58.6	132	17.9	−1 36.4	170	56.4	−16 26.8
7	147	31.3	286	01.3	17.7	62	26.0	58.7	147	20.5	36.4	185	58.9	26.8
8	162	33.8	301	00.7	18.7	77	28.6	58.8	162	23.1	36.5	201	01.3	26.8
9	177	36.3	316	00.1	19.7	92	31.2	58.9	177	25.8	36.6	216	03.7	26.7
10	192	38.7	330	59.4	20.8	107	33.9	59.0	192	28.4	36.6	231	06.1	26.7
11	207	41.2	345	58.8	−15 21.8	122	36.5	+23 59.1	207	31.0	−1 36.7	246	08.5	−16 26.7
12	222	43.7	0	58.2	−15 22.8	137	39.1	+23 59.3	222	33.6	−1 36.7	261	11.0	−16 26.7
13	237	46.1	15	57.6	23.8	152	41.7	59.4	237	36.3	36.8	276	13.4	26.7
14	252	48.6	30	57.0	24.8	167	44.4	59.5	252	38.9	36.9	291	15.8	26.7
15	267	51.1	45	56.4	25.8	182	47.0	59.6	267	41.5	36.9	306	18.2	26.6
16	282	53.5	60	55.8	26.8	197	49.6	59.7	282	44.1	37.0	321	20.6	26.6
17	297	56.0	75	55.2	−15 27.8	212	52.3	+23 59.8	297	46.7	−1 37.0	336	23.0	−16 26.6
18	312	58.4	90	54.5	−15 28.9	227	54.9	+23 59.9	312	49.4	−1 37.1	351	25.4	−16 26.6
19	328	00.9	105	53.9	29.9	242	57.5	+24 00.1	327	52.0	37.2	6	27.9	26.6
20	343	03.4	120	53.3	30.9	258	00.2	00.2	342	54.6	37.2	21	30.3	26.5
21	358	05.8	135	52.7	31.9	273	02.8	00.3	357	57.2	37.3	36	32.7	26.5
22	13	08.3	150	52.1	32.9	288	05.4	00.4	12	59.9	37.3	51	35.1	26.5
23	28	10.8	165	51.4	33.9	303	08.1	00.5	28	02.5	37.4	66	37.5	26.5
24	43	13.2	180	50.8	−15 34.9	318	10.7	+24 00.6	43	05.1	−1 37.4	81	39.9	−16 26.5
Dif	—			−6	−10		+26	+1		+26	−1		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1 PMG: 11h 43m.6				Edad: 9d.5 SD: 15′.9 PMG: 21h 05m		PHE	4h: 58′.2 12h: 58′.0 20h: 57′.9 Rº: 46m			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	184	06.6	−15	17.7	53	34.4	−9	14.9	**60 N**	15 57	16 42	17 32	15 33	1	1 24	95
1	199	06.6		18.5	68	05.6 122	−8	59.9 150	**58**	16 05	48	35	30	4	30	90
2	214	06.6		19.3	82	37.0 124		44.8 151	**56**	13	53	38	28	7	34	88
3	229	06.6		20.0	97	08.4 124		29.7 151	**54**	20	16 58	40	25	10	38	85
4	244	06.6		20.8	111	39.8 124	−8	14.5 152	**52**	26	17 02	42	23	12	42	82
5	259	06.6	−15	21.6	126	11.3 125	−7	59.3 152	**50**	16 32	17 06	17 45	15 21	15	1 46	79
6	274	06.5	−15	22.4	140	42.9 126	−7	44.1 152	**45**	16 44	17 15	17 50	15 17	19	1 53	73
7	289	06.5		23.1	155	14.5 126		28.8 153	**40**	16 54	23	55	13	24	1 59	69
8	304	06.5		23.9	169	46.2 127	−7	13.5 153	**35**	17 03	29	17 59	10	27	2 04	65
9	319	06.5		24.7	184	17.9 127	−6	58.2 153	**30**	11	36	18 04	07	31	09	62
10	334	06.5		25.4	198	49.7 128		42.9 153	**20**	24	47	13	15 03	36	17	56
11	349	06.5	−15	26.2	213	21.5 128	−6	27.6 153	**10 N**	17 36	17 58	18 23	14 58	41	2 24	51
12	4	06.5	−15	27.0	227	53.3 128	−6	12.2 154	**0**	17 47	18 08	18 33	14 54	46	2 30	46
13	19	06.5		27.7	242	25.2 129	−5	56.8 154	**10 S**	17 58	20	18 46	50	51	36	42
14	34	06.5		28.5	256	57.2 130		41.4 154	**20**	18 10	34	19 01	46	55	43	37
15	49	06.5		29.3	271	29.2 130		25.9 155	**30**	25	18 50	20	41	61	50	31
16	64	06.5		30.0	286	01.2 130	−5	10.5 154	**35**	33	19 00	33	39	64	55	28
17	79	06.5	−15	30.8	300	33.3 131	−4	55.0 155	**40**	18 42	19 12	19 48	14 35	68	2 59	25
18	94	06.4	−15	31.6	315	05.4 131	−4	39.5 155	**45**	18 53	19 26	20 06	14 32	72	3 05	20
19	109	06.4		32.3	329	37.6 132		24.0 155	**50**	19 07	44	31	27	78	12	15
20	124	06.4		33.1	344	09.8 132	−4	08.5 155	**52**	13	19 52	44	25	80	15	13
21	139	06.4		33.9	358	42.0 132	−3	53.0 155	**54**	20	20 02	20 58	23	83	18	10
22	154	06.4		34.6	13	14.3 133		37.4 156	**56**	28	13	21 16	20	86	22	7
23	169	06.4		35.4	27	46.6 133		21.9 155	**58**	37	26	21 38	18	89	26	4
24	184	06.4	−15	36.1	42	18.9 133	−3	06.4 155	**60 S**	19 47	20 41	22 08	14 14	94	3 30	1

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 21h 03m.7		Mag: −4.0 PMG: 11h 57m				Mag: −1.3 PMG: 2h 47m				Mag: −2.8 PMG: 21h 04m				Mag: +0.7 PMG: 18h 30m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	43	13.2	180	50.8	−15	34.9	318	10.7	+24	00.6	43	05.1	−1	37.4	81	39.9	−16	26.5
1	58	15.7	195	50.2		35.9	333	13.4		00.7	58	07.7		37.5	96	42.4		26.5
2	73	18.2	210	49.6		36.9	348	16.0		00.9	73	10.3		37.6	111	44.8		26.4
3	88	20.6	225	49.0		37.9	3	18.7		01.0	88	13.0		37.6	126	47.2		26.4
4	103	23.1	240	48.3		38.9	18	21.3		01.1	103	15.6		37.7	141	49.6		26.4
5	118	25.6	255	47.7	−15	39.9	33	24.0	+24	01.2	118	18.2	−1	37.7	156	52.0	−16	26.4
6	133	28.0	270	47.1	−15	40.9	48	26.6	+24	01.3	133	20.8	−1	37.8	171	54.4	−16	26.4
7	148	30.5	285	46.5		41.9	63	29.3		01.4	148	23.4		37.8	186	56.8		26.3
8	163	32.9	300	45.9		42.9	78	31.9		01.5	163	26.1		37.9	201	59.3		26.3
9	178	35.4	315	45.2		43.9	93	34.6		01.7	178	28.7		38.0	217	01.7		26.3
10	193	37.9	330	44.6		44.9	108	37.3		01.8	193	31.3		38.0	232	04.1		26.3
11	208	40.3	345	44.0	−15	45.9	123	39.9	+24	01.9	208	33.9	−1	38.1	247	06.5	−16	26.3
12	223	42.8	0	43.4	−15	46.9	138	42.6	+24	02.0	223	36.5	−1	38.1	262	08.9	−16	26.3
13	238	45.3	15	42.7		47.9	153	45.3		02.1	238	39.1		38.2	277	11.3		26.2
14	253	47.7	30	42.1		48.9	168	47.9		02.2	253	41.8		38.2	292	13.7		26.2
15	268	50.2	45	41.5		49.9	183	50.6		02.3	268	44.4		38.3	307	16.1		26.2
16	283	52.7	60	40.9		50.9	198	53.3		02.5	283	47.0		38.3	322	18.6		26.2
17	298	55.1	75	40.2	−15	51.9	213	55.9	+24	02.6	298	49.6	−1	38.4	337	21.0	−16	26.2
18	313	57.6	90	39.6	−15	52.9	228	58.6	+24	02.7	313	52.2	−1	38.5	352	23.4	−16	26.1
19	329	00.0	105	39.0		53.9	244	01.3		02.8	328	54.8		38.5	7	25.8		26.1
20	344	02.5	120	38.3		54.8	259	04.0		02.9	343	57.5		38.6	22	28.2		26.1
21	359	05.0	135	37.7		55.8	274	06.6		03.0	359	00.1		38.6	37	30.6		26.1
22	14	07.4	150	37.1		56.8	289	09.3		03.1	14	02.7		38.7	52	33.0		26.1
23	29	09.9	165	36.5		57.8	304	12.0		03.2	29	05.3		38.7	67	35.4		26.0
24	44	12.4	180	35.8	−15	58.8	319	14.7	+24	03.4	44	07.9	−1	38.8	82	37.8	−16	26.0
Dif	—			−6		−10		+27		+1		+26		−1		+24		0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1 PMG: 11h 43m.6				Edad: 10d.5 SD: 15′.7 PMG: 21h 51m		PHE	4h: 57′.8 12h: 57′.6 20h: 57′.5 Rº: 45m								
	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	36.1	42	18.9	−3	06.4	**60 N**	5 56	6 46	7 32	15 34	1	2 59	92
1	199	06.4		36.9	56	51.2 133	−2	50.8 156	**58**	53	40	23	34	4	3 00	89
2	214	06.3		37.7	71	23.6 134		35.2 156	**56**	50	35	15	35	7	02	85
3	229	06.3		38.4	85	56.1 135		19.7 155	**54**	48	30	08	35	10	03	82
4	244	06.3		39.2	100	28.5 134	−2	04.1 156	**52**	46	26	7 02	35	13	04	79
5	259	06.3	−15	39.9	115	01.0 135	−1	48.6 155	**50**	5 43	6 22	6 56	15 36	14	3 05	77
6	274	06.3	−15	40.7	129	33.5 135	−1	33.0 156	**45**	5 38	6 13	6 44	15 36	20	3 06	72
7	289	06.3		41.5	144	06.0 135		17.4 156	**40**	33	6 05	33	37	23	08	68
8	304	06.3		42.2	158	38.6 136	−1	01.9 155	**35**	28	5 58	25	37	27	09	64
9	319	06.2		43.0	173	11.1 135	−0	46.3 156	**30**	24	52	17	38	30	11	60
10	334	06.2		43.7	187	43.7 136		30.8 155	**20**	14	41	6 03	39	35	13	55
11	349	06.2	−15	44.5	202	16.3 136	−0	15.2 156	**10 N**	5 04	5 30	5 51	15 39	41	3 15	49
12	4	06.2	−15	45.3	216	49.0 137	+0	00.3 155	**0**	4 54	5 19	5 40	15 40	45	3 16	45
13	19	06.2		46.0	231	21.6 136		15.8 155	**10 S**	41	5 07	29	41	49	18	40
14	34	06.2		46.8	245	54.3 137		31.3 155	**20**	26	4 53	16	41	55	20	35
15	49	06.1		47.5	260	26.9 136	+0	46.8 155	**30**	4 06	37	5 02	42	60	21	31
16	64	06.1		48.3	274	59.6 137	+1	02.3 155	**35**	3 54	27	4 54	43	63	23	26
17	79	06.1	−15	49.0	289	32.3 137	+1	17.8 155	**40**	3 39	4 15	4 44	15 43	68	3 24	23
18	94	06.1	−15	49.8	304	05.1 138	+1	33.3 155	**45**	3 20	4 01	4 33	15 44	72	3 25	19
19	109	06.1		50.5	318	37.8 137	+1	48.7 154	**50**	2 55	3 43	20	45	77	27	14
20	124	06.0		51.3	333	10.5 137	+2	04.1 154	**52**	43	34	13	45	80	28	12
21	139	06.0		52.0	347	43.3 138		19.5 154	**54**	28	25	4 06	46	82	28	10
22	154	06.0		52.8	2	16.0 137		34.9 154	**56**	2 11	13	3 59	46	85	29	7
23	169	06.0		53.5	16	48.8 138	+2	50.3 154	**58**	1 49	3 01	50	47	88	30	4
24	184	06.0	−15	54.3	31	21.5 137	+3	05.6 153	**60 S**	1 18	2 45	3 39	15 48	91	3 31	1

UT	ARIES		VENUS			MARTE		JÚPITER		SATURNO	
	PMG 20h 59m.7		Mag: −4.0 PMG: 11h 58m			Mag: −1.3 PMG: 2h 43m		Mag: −2.8 PMG: 21h 00m		Mag: +0.7 PMG: 18h 27m	
	hG ♈		hG ♀		Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º	′	º	′	º ′	º	′ º ′	º	′ º ′	º	′ º ′
0	44	12.4	180	35.8	−15 58.8	319	14.7 +24 03.4	44	07.9 −1 38.8	82	37.8 −16 26.0
1	59	14.8	195	35.2	−15 59.8	334	17.4 03.5	59	10.5 38.8	97	40.3 26.0
2	74	17.3	210	34.6	−16 00.8	349	20.1 03.6	74	13.1 38.9	112	42.7 26.0
3	89	19.8	225	33.9	01.8	4	22.8 03.7	89	15.8 38.9	127	45.1 26.0
4	104	22.2	240	33.3	02.7	19	25.4 03.8	104	18.4 39.0	142	47.5 25.9
5	119	24.7	255	32.7	−16 03.7	34	28.1 +24 03.9	119	21.0 −1 39.1	157	49.9 −16 25.9
6	134	27.2	270	32.0	−16 04.7	49	30.8 +24 04.0	134	23.6 −1 39.1	172	52.3 −16 25.9
7	149	29.6	285	31.4	05.7	64	33.5 04.2	149	26.2 39.2	187	54.7 25.9
8	164	32.1	300	30.8	06.7	79	36.2 04.3	164	28.8 39.2	202	57.1 25.9
9	179	34.5	315	30.1	07.7	94	38.9 04.4	179	31.4 39.3	217	59.5 25.8
10	194	37.0	330	29.5	08.6	109	41.6 04.5	194	34.0 39.3	233	01.9 25.8
11	209	39.5	345	28.8	−16 09.6	124	44.3 +24 04.6	209	36.7 −1 39.4	248	04.3 −16 25.8
12	224	41.9	0	28.2	−16 10.6	139	47.0 +24 04.7	224	39.3 −1 39.4	263	06.8 −16 25.8
13	239	44.4	15	27.6	11.6	154	49.7 04.8	239	41.9 39.5	278	09.2 25.8
14	254	46.9	30	26.9	12.6	169	52.4 05.0	254	44.5 39.5	293	11.6 25.7
15	269	49.3	45	26.3	13.5	184	55.2 05.1	269	47.1 39.6	308	14.0 25.7
16	284	51.8	60	25.7	14.5	199	57.9 05.2	284	49.7 39.6	323	16.4 25.7
17	299	54.3	75	25.0	−16 15.5	215	00.6 +24 05.3	299	52.3 −1 39.7	338	18.8 −16 25.7
18	314	56.7	90	24.4	−16 16.5	230	03.3 +24 05.4	314	54.9 −1 39.7	353	21.2 −16 25.7
19	329	59.2	105	23.7	17.4	245	06.0 05.5	329	57.5 39.8	8	23.6 25.6
20	345	01.6	120	23.1	18.4	260	08.7 05.6	345	00.1 39.8	23	26.0 25.6
21	0	04.1	135	22.4	19.4	275	11.4 05.8	0	02.7 39.9	38	28.4 25.6
22	15	06.6	150	21.8	20.4	290	14.2 05.9	15	05.4 39.9	53	30.8 25.6
23	30	09.0	165	21.2	21.3	305	16.9 06.0	30	08.0 40.0	68	33.2 25.6
24	45	11.5	180	20.5	−16 22.3	320	19.6 +24 06.1	45	10.6 −1 40.1	83	35.6 −16 25.5
Dif	—			−6	−10		+27 +1		+26 −1		+24 0

UT	SOL				☾ LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 11^{d}.5		PHE	4^{h}: 57′.3								
	PMG: 11^{h} 43^{m}.6				SD: 15′.6			12^{h}: 57′.1								
					PMG: 22^{h} 36^{m}			20^{h}: 57′.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	06.0	−15	54.3	31	21.5	+3	05.6	**60 N**	15 52	16 38	17 28	15 35	1	4 31	92
1	199	05.9		55.0	45	54.3^{138}		21.0^{154}	**58**	16 01	44	31	38	5	29	88
2	214	05.9		55.8	60	27.1^{138}		36.3^{153}	**56**	09	50	34	42	8	27	85
3	229	05.9		56.5	74	59.9^{138}	+3	51.5^{152}	**54**	16	55	37	45	11	25	82
4	244	05.9		57.3	89	32.6^{137}	+4	06.8^{153}	**52**	23	16 59	39	48	13	23	79
5	259	05.8	−15	58.0	104	05.4^{138}	+4	22.0^{152}	**50**	16 29	17 03	17 42	15 50	16	4 22	76
6	274	05.8	−15	58.8	118	38.2^{138}	+4	37.2^{152}	**45**	16 42	17 13	17 48	15 56	20	4 18	72
7	289	05.8	−15	59.5	133	10.9^{137}	+4	52.3^{151}	**40**	16 52	21	53	16 00	25	16	67
8	304	05.8	−16	00.3	147	43.7^{138}	+5	07.5^{152}	**35**	17 01	28	17 58	04	28	13	64
9	319	05.7		01.0	162	16.5^{138}		22.6^{151}	**30**	09	34	18 03	08	31	11	60
10	334	05.7		01.8	176	49.2^{137}		37.6^{150}	**20**	23	46	12	14	36	08	54
11	349	05.7	−16	02.5	191	22.0^{138}	+5	52.6^{150}	**10 N**	17 35	17 57	18 23	16 20	41	4 04	50
12	4	05.7	−16	03.3	205	54.7^{137}	+6	07.6^{150}	**0**	17 47	18 09	18 34	16 25	45	4 01	45
13	19	05.6		04.0	220	27.5^{138}		22.6^{150}	**10 S**	17 59	21	18 46	30	50	3 58	41
14	34	05.6		04.8	235	00.2^{137}		37.5^{149}	**20**	18 12	35	19 02	36	54	55	36
15	49	05.6		05.5	249	32.9^{137}	+6	52.4^{149}	**30**	26	18 52	22	42	61	52	30
16	64	05.6		06.3	264	05.6^{137}	+7	07.2^{148}	**35**	35	19 02	35	46	64	49	28
17	79	05.5	−16	07.0	278	38.3^{137}	+7	22.0^{148}	**40**	18 45	19 14	19 50	16 51	67	3 47	24
18	94	05.5	−16	07.7	293	11.0^{137}	+7	36.7^{147}	**45**	18 56	19 29	20 10	16 56	71	3 44	20
19	109	05.5		08.5	307	43.7^{137}	+7	51.5^{148}	**50**	19 10	47	36	17 02	76	41	15
20	124	05.5		09.2	322	16.3^{136}	+8	06.1^{146}	**52**	17	19 56	20 49	05	79	40	12
21	139	05.4		10.0	336	48.9^{136}		20.7^{146}	**54**	24	20 07	21 04	08	82	38	10
22	154	05.4		10.7	351	21.6^{137}		35.3^{146}	**56**	32	18	23	11	85	36	8
23	169	05.4		11.4	5	54.2^{136}	+8	49.8^{145}	**58**	42	32	21 47	15	88	34	5
24	184	05.3	−16	12.2	20	26.7^{135}	+9	04.3^{145}	**60 S**	19 52	20 48	22 21	17 19	93	3 32	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −4.0			Mag: −1.4			Mag: −2.8			Mag: +0.7		
	20^{h} 55^{m}.8		PMG: 11^{h} 59^{m}			PMG: 2^{h} 38^{m}			PMG: 20^{h} 56^{m}			PMG: 18^{h} 23^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	45	11.5	180	20.5	−16 22.3	320	19.6	+24 06.1	45	10.6	−1 40.1	83	35.6	−16 25.5
1	60	14.0	195	19.9	23.3	335	22.3	06.2	60	13.2	40.1	98	38.1	25.5
2	75	16.4	210	19.2	24.2	350	25.1	06.3	75	15.8	40.2	113	40.5	25.5
3	90	18.9	225	18.6	25.2	5	27.8	06.4	90	18.4	40.2	128	42.9	25.5
4	105	21.4	240	17.9	26.2	20	30.5	06.5	105	21.0	40.3	143	45.3	25.5
5	120	23.8	255	17.3	−16 27.1	35	33.3	+24 06.7	120	23.6	−1 40.3	158	47.7	−16 25.4
6	135	26.3	270	16.6	−16 28.1	50	36.0	+24 06.8	135	26.2	−1 40.4	173	50.1	−16 25.4
7	150	28.8	285	16.0	29.1	65	38.7	06.9	150	28.8	40.4	188	52.5	25.4
8	165	31.2	300	15.4	30.0	80	41.5	07.0	165	31.4	40.5	203	54.9	25.4
9	180	33.7	315	14.7	31.0	95	44.2	07.1	180	34.0	40.5	218	57.3	25.3
10	195	36.1	330	14.1	32.0	110	46.9	07.2	195	36.6	40.6	233	59.7	25.3
11	210	38.6	345	13.4	−16 32.9	125	49.7	+24 07.3	210	39.2	−1 40.6	249	02.1	−16 25.3
12	225	41.1	0	12.8	−16 33.9	140	52.4	+24 07.5	225	41.8	−1 40.7	264	04.5	−16 25.3
13	240	43.5	15	12.1	34.8	155	55.2	07.6	240	44.4	40.7	279	06.9	25.3
14	255	46.0	30	11.5	35.8	170	57.9	07.7	255	47.0	40.8	294	09.3	25.2
15	270	48.5	45	10.8	36.8	186	00.7	07.8	270	49.6	40.8	309	11.7	25.2
16	285	50.9	60	10.2	37.7	201	03.4	07.9	285	52.2	40.9	324	14.1	25.2
17	300	53.4	75	09.5	−16 38.7	216	06.2	+24 08.0	300	54.8	−1 40.9	339	16.5	−16 25.2
18	315	55.9	90	08.8	−16 39.6	231	08.9	+24 08.1	315	57.4	−1 40.9	354	18.9	−16 25.2
19	330	58.3	105	08.2	40.6	246	11.7	08.2	331	00.0	41.0	9	21.3	25.1
20	346	00.8	120	07.5	41.5	261	14.4	08.4	346	02.6	41.0	24	23.7	25.1
21	1	03.3	135	06.9	42.5	276	17.2	08.5	1	05.2	41.1	39	26.1	25.1
22	16	05.7	150	06.2	43.5	291	20.0	08.6	16	07.8	41.1	54	28.5	25.1
23	31	08.2	165	05.6	44.4	306	22.7	08.7	31	10.4	41.2	69	30.9	25.0
24	46	10.6	180	04.9	−16 45.4	321	25.5	+24 08.8	46	13.0	−1 41.2	84	33.3	−16 25.0
Dif	—			−6	−10		+27	+1		+26	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 12^{d}.5		PHE	4^{h}: 56′.8									
	PMG: 11^{h} 43^{m}.7				SD: 15′.5			12^{h}: 56′.6									
					PMG: 23^{h} 21^{m}			20^{h}: 56′.5									
	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	05.3	−16	12.2	20	26.7	+9	04.3		**60 N**	6 00	6 51	7 37	15 36	2	6 03	93
1	199	05.3		12.9	34	59.3^{136}		18.7^{144}		**58**	5 57	44	28	43	7	5 57	89
2	214	05.3		13.7	49	31.8^{135}		33.1^{144}		**56**	54	39	20	50	10	52	85
3	229	05.2		14.4	64	04.4^{136}	+9	47.4^{143}		**54**	51	34	12	15 56	13	47	82
4	244	05.2		15.1	78	36.9^{135}	+10	01.6^{142}		**52**	49	29	7 05	16 01	16	42	79
5	259	05.2	−16	15.9	93	09.3^{134}	+10	15.9^{143}		**50**	5 46	6 25	6 59	16 06	18	5 38	77
6	274	05.1	−16	16.6	107	41.8^{135}	+10	30.0^{141}		**45**	5 40	6 15	6 46	16 16	23	5 30	71
7	289	05.1		17.4	122	14.2^{134}		44.1^{141}		**40**	35	07	36	25	27	23	67
8	304	05.1		18.1	136	46.6^{134}	+10	58.1^{140}		**35**	30	6 00	27	32	31	17	63
9	319	05.0		18.8	151	19.0^{134}	+11	12.1^{140}		**30**	25	5 53	18	39	33	11	60
10	334	05.0		19.6	165	51.4^{134}		26.0^{139}		**20**	15	41	6 04	16 50	39	5 02	55
11	349	05.0	−16	20.3	180	23.7^{133}	+11	39.9^{139}		**10 N**	5 05	5 30	5 52	17 01	42	4 54	50
12	4	04.9	−16	21.0	194	56.0^{133}	+11	53.7^{138}		**0**	4 54	5 19	5 40	17 10	47	4 46	47
13	19	04.9		21.8	209	28.2^{132}	+12	07.4^{137}		**10 S**	41	5 06	28	20	51	39	42
14	34	04.9		22.5	224	00.5^{133}		21.1^{137}		**20**	25	4 52	16	30	56	31	37
15	49	04.8		23.2	238	32.7^{132}		34.7^{136}		**30**	4 05	35	5 01	43	60	22	32
16	64	04.8		24.0	253	04.9^{132}	+12	48.2^{135}		**35**	3 52	25	4 52	50	63	17	29
17	79	04.8	−16	24.7	267	37.0^{131}	+13	01.7^{135}		**40**	3 36	4 13	4 42	17 58	66	4 11	26
18	94	04.7	−16	25.4	282	09.1^{131}	+13	15.1^{134}		**45**	3 17	3 58	4 31	18 07	71	4 04	22
19	109	04.7		26.2	296	41.2^{131}		28.4^{133}		**50**	2 51	39	17	18	77	3 56	17
20	124	04.7		26.9	311	13.2^{130}		41.6^{132}		**52**	38	30	10	24	79	52	15
21	139	04.6		27.6	325	45.2^{130}	+13	54.8^{132}		**54**	23	20	4 03	30	81	48	12
22	154	04.6		28.4	340	17.2^{130}	+14	07.9^{131}		**56**	2 04	3 08	3 54	36	85	44	9
23	169	04.5		29.1	354	49.2^{130}		21.0^{131}		**58**	1 40	2 55	45	43	90	39	5
24	184	04.5	−16	29.8	9	21.1^{129}	+14	33.9^{129}		**60 S**	1 06	2 39	3 34	18 52	94	3 33	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.4			Mag: −2.8			Mag: +0.7		
	20^{h} 51^{m}.9		PMG: 12^{h} 00^{m}			PMG: 2^{h} 34^{m}			PMG: 20^{h} 52^{m}			PMG: 18^{h} 19^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	46	10.6	180	04.9	−16 45.4	321	25.5	+24 08.8	46	13.0	−1 41.2	84	33.3	−16 25.0
1	61	13.1	195	04.3	46.3	336	28.3	08.9	61	15.6	41.3	99	35.7	25.0
2	76	15.6	210	03.6	47.3	351	31.0	09.0	76	18.2	41.3	114	38.2	25.0
3	91	18.0	225	02.9	48.2	6	33.8	09.1	91	20.8	41.4	129	40.6	25.0
4	106	20.5	240	02.3	49.2	21	36.6	09.3	106	23.4	41.4	144	43.0	24.9
5	121	23.0	255	01.6	−16 50.1	36	39.3	+24 09.4	121	26.0	−1 41.5	159	45.4	−16 24.9
6	136	25.4	270	01.0	−16 51.1	51	42.1	+24 09.5	136	28.6	−1 41.5	174	47.8	−16 24.9
7	151	27.9	285	00.3	52.0	66	44.9	09.6	151	31.2	41.6	189	50.2	24.9
8	166	30.4	299	59.7	53.0	81	47.7	09.7	166	33.8	41.6	204	52.6	24.8
9	181	32.8	314	59.0	53.9	96	50.5	09.8	181	36.4	41.7	219	55.0	24.8
10	196	35.3	329	58.3	54.8	111	53.2	09.9	196	39.0	41.7	234	57.4	24.8
11	211	37.7	344	57.7	−16 55.8	126	56.0	+24 10.1	211	41.6	−1 41.8	249	59.8	−16 24.8
12	226	40.2	359	57.0	−16 56.7	141	58.8	+24 10.2	226	44.2	−1 41.8	265	02.2	−16 24.7
13	241	42.7	14	56.3	57.7	157	01.6	10.3	241	46.8	41.8	280	04.6	24.7
14	256	45.1	29	55.7	58.6	172	04.4	10.4	256	49.4	41.9	295	07.0	24.7
15	271	47.6	44	55.0	−16 59.6	187	07.2	10.5	271	52.0	41.9	310	09.4	24.7
16	286	50.1	59	54.4	−17 00.5	202	10.0	10.6	286	54.6	42.0	325	11.8	24.7
17	301	52.5	74	53.7	−17 01.4	217	12.8	+24 10.7	301	57.2	−1 42.0	340	14.2	−16 24.6
18	316	55.0	89	53.0	−17 02.4	232	15.5	+24 10.8	316	59.8	−1 42.1	355	16.6	−16 24.6
19	331	57.5	104	52.4	03.3	247	18.3	11.0	332	02.4	42.1	10	19.0	24.6
20	346	59.9	119	51.7	04.3	262	21.1	11.1	347	05.0	42.2	25	21.4	24.6
21	2	02.4	134	51.0	05.2	277	23.9	11.2	2	07.6	42.2	40	23.8	24.5
22	17	04.9	149	50.4	06.1	292	26.7	11.3	17	10.2	42.3	55	26.2	24.5
23	32	07.3	164	49.7	07.1	307	29.5	11.4	32	12.8	42.3	70	28.6	24.5
24	47	09.8	179	49.0	−17 08.0	322	32.4	+24 11.5	47	15.3	−1 42.3	85	31.0	−16 24.5
Dif	—			−7	−9		+28	+1		+26	0		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 13^{d}.5		PHE	4^{h}: 56′.3								
	PMG: 11^{h} 43^{m}.7				SD: 15′.4			12^{h}: 56′.1								
					PMG: **^{h} **^{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	184	04.5	−16	29.8	9	21.1	+14	33.9	**60 N**	15 47	16 34	17 24	15 38	5	7 36	95
1	199	04.5		30.5	23	52.9 [128]		46.8 [129]	**58**	15 56	40	28	15 50	10	26	89
2	214	04.4		31.3	38	24.7 [128]	+14	59.6 [128]	**56**	16 05	46	31	16 00	14	17	85
3	229	04.4		32.0	52	56.5 [128]	+15	12.4 [128]	**54**	13	51	34	09	17	09	81
4	244	04.3		32.7	67	28.3 [128]		25.0 [126]	**52**	20	16 56	37	17	20	7 01	79
5	259	04.3	−16	33.4	82	00.0 [127]	+15	37.6 [126]	**50**	16 26	17 00	17 39	16 24	22	6 55	76
6	274	04.3	−16	34.2	96	31.7 [127]	+15	50.1 [125]	**45**	16 39	17 10	17 45	16 39	28	6 41	71
7	289	04.2		34.9	111	03.3 [126]	+16	02.5 [124]	**40**	16 50	19	51	16 52	31	30	66
8	304	04.2		35.6	125	34.9 [126]		14.8 [123]	**35**	17 00	26	17 56	17 03	34	20	63
9	319	04.1		36.3	140	06.5 [126]		27.0 [122]	**30**	08	33	18 01	12	37	6 11	61
10	334	04.1		37.1	154	38.0 [125]		39.2 [122]	**20**	22	45	12	29	41	5 57	56
11	349	04.1	−16	37.8	169	09.4 [124]	+16	51.3 [121]	**10 N**	17 35	17 57	18 22	17 43	46	5 44	52
12	4	04.0	−16	38.5	183	40.9 [125]	+17	03.3 [120]	**0**	17 47	18 09	18 34	17 57	49	5 33	47
13	19	04.0		39.2	198	12.3 [124]		15.1 [118]	**10 S**	17 59	21	18 47	18 11	52	21	44
14	34	03.9		40.0	212	43.6 [123]		27.0 [119]	**20**	18 13	36	19 03	26	56	5 08	40
15	49	03.9		40.7	227	14.9 [123]		38.7 [117]	**30**	28	18 53	24	43	60	4 54	35
16	64	03.8		41.4	241	46.2 [123]	+17	50.3 [116]	**35**	37	19 04	37	18 53	63	46	32
17	79	03.8	−16	42.1	256	17.4 [122]	+18	01.8 [115]	**40**	18 47	19 17	19 53	19 04	67	4 37	29
18	94	03.7	−16	42.8	270	48.6 [122]	+18	13.3 [115]	**45**	18 59	19 32	20 13	19 18	70	4 26	25
19	109	03.7		43.6	285	19.7 [121]		24.6 [113]	**50**	19 14	19 51	40	35	75	13	20
20	124	03.7		44.3	299	50.8 [121]		35.9 [113]	**52**	20	20 01	20 54	43	77	07	17
21	139	03.6		45.0	314	21.8 [120]		47.0 [111]	**54**	28	11	21 10	19 51	81	4 00	15
22	154	03.6		45.7	328	52.8 [120]	+18	58.1 [111]	**56**	37	23	30	20 01	85	3 53	11
23	169	03.5		46.4	343	23.7 [119]	+19	09.1 [110]	**58**	46	37	21 56	13	89	44	8
24	184	03.5	−16	47.2	357	54.7 [120]	+19	19.9 [108]	**60 S**	19 58	20 55	22 36	20 26	95	3 35	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.4			Mag: −2.8			Mag: +0.7		
	20^{h} 47^{m}.9		PMG: 12^{h} 01^{m}			PMG: 2^{h} 29^{m}			PMG: 20^{h} 47^{m}			PMG: 18^{h} 15^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	47	09.8	179	49.0	−17 08.0	322	32.4	+24 11.5	47	15.3	−1 42.3	85	31.0	−16 24.5
1	62	12.2	194	48.3	08.9	337	35.2	11.6	62	17.9	42.4	100	33.3	24.4
2	77	14.7	209	47.7	09.9	352	38.0	11.7	77	20.5	42.4	115	35.7	24.4
3	92	17.2	224	47.0	10.8	7	40.8	11.9	92	23.1	42.5	130	38.1	24.4
4	107	19.6	239	46.3	11.7	22	43.6	12.0	107	25.7	42.5	145	40.5	24.4
5	122	22.1	254	45.7	−17 12.7	37	46.4	+24 12.1	122	28.3	−1 42.6	160	42.9	−16 24.4
6	137	24.6	269	45.0	−17 13.6	52	49.2	+24 12.2	137	30.9	−1 42.6	175	45.3	−16 24.3
7	152	27.0	284	44.3	14.5	67	52.0	12.3	152	33.5	42.7	190	47.7	24.3
8	167	29.5	299	43.6	15.4	82	54.9	12.4	167	36.1	42.7	205	50.1	24.3
9	182	32.0	314	43.0	16.4	97	57.7	12.5	182	38.7	42.7	220	52.5	24.3
10	197	34.4	329	42.3	17.3	113	00.5	12.6	197	41.3	42.8	235	54.9	24.2
11	212	36.9	344	41.6	−17 18.2	128	03.3	+24 12.8	212	43.8	−1 42.8	250	57.3	−16 24.2
12	227	39.3	359	41.0	−17 19.1	143	06.1	+24 12.9	227	46.4	−1 42.9	265	59.7	−16 24.2
13	242	41.8	14	40.3	20.1	158	09.0	13.0	242	49.0	42.9	281	02.1	24.2
14	257	44.3	29	39.6	21.0	173	11.8	13.1	257	51.6	43.0	296	04.5	24.1
15	272	46.7	44	38.9	21.9	188	14.6	13.2	272	54.2	43.0	311	06.9	24.1
16	287	49.2	59	38.2	22.8	203	17.5	13.3	287	56.8	43.0	326	09.3	24.1
17	302	51.7	74	37.6	−17 23.8	218	20.3	+24 13.4	302	59.4	−1 43.1	341	11.7	−16 24.1
18	317	54.1	89	36.9	−17 24.7	233	23.1	+24 13.5	318	02.0	−1 43.1	356	14.1	−16 24.0
19	332	56.6	104	36.2	25.6	248	26.0	13.6	333	04.5	43.2	11	16.5	24.0
20	347	59.1	119	35.5	26.5	263	28.8	13.8	348	07.1	43.2	26	18.9	24.0
21	3	01.5	134	34.9	27.4	278	31.6	13.9	3	09.7	43.2	41	21.3	24.0
22	18	04.0	149	34.2	28.3	293	34.5	14.0	18	12.3	43.3	56	23.7	23.9
23	33	06.5	164	33.5	29.3	308	37.3	14.1	33	14.9	43.3	71	26.1	23.9
24	48	08.9	179	32.8	−17 30.2	323	40.2	+24 14.2	48	17.5	−1 43.4	86	28.5	−16 23.9
Dif	—			−7	−9		+28	+1		+26	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.1				Edad: 14ᵈ.5		PHE	4ʰ: 55′.8									
	PMG: 11ʰ 43ᵐ.8				SD: 15′.2			12ʰ: 55′.6									
					PMG: 0ʰ 09ᵐ			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	184	03.5	−16	47.2	357	54.7	+19	19.9		**60 N**	6 05	6 55	7 43	15 43	10	9 11	94
1	199	03.4		47.9	12	25.5 118		30.7	108	**58**	6 01	49	33	16 00	16	8 55	87
2	214	03.4		48.6	26	56.3 118		41.4	107	**56**	5 58	43	24	14	20	42	82
3	229	03.3		49.3	41	27.1 118	+19	51.9	105	**54**	55	37	16	26	24	30	79
4	244	03.3		50.0	55	57.8 117	+20	02.4	105	**52**	52	32	09	37	26	20	76
5	259	03.2	−16	50.7	70	28.5 117	+20	12.8	104	**50**	5 49	6 28	7 03	16 46	29	8 11	74
6	274	03.2	−16	51.4	84	59.1 116	+20	23.0	102	**45**	5 43	6 18	6 49	17 07	33	7 52	69
7	289	03.1		52.2	99	29.7 116		33.2	102	**40**	37	09	38	23	37	36	66
8	304	03.1		52.9	114	00.3 116		43.2	100	**35**	32	6 02	28	37	39	23	63
9	319	03.0		53.6	128	30.8 115	+20	53.2	100	**30**	26	5 55	20	17 49	42	7 12	60
10	334	03.0		54.3	143	01.2 114	+21	03.0	98	**20**	16	42	6 05	18 10	45	6 53	56
11	349	02.9	−16	55.0	157	31.6 114	+21	12.7	97	**10 N**	5 05	5 31	5 52	18 29	47	6 36	53
12	4	02.9	−16	55.7	172	02.0 114	+21	22.3	96	**0**	4 54	5 19	5 40	18 46	50	6 20	50
13	19	02.8		56.4	186	32.3 113		31.8	95	**10 S**	40	5 06	28	19 03	53	6 05	46
14	34	02.8		57.1	201	02.6 113		41.2	94	**20**	24	4 51	5 15	22	56	5 48	43
15	49	02.7		57.8	215	32.8 112		50.5	93	**30**	4 03	34	4 59	43	60	29	39
16	64	02.7		58.6	230	03.0 112	+21	59.7	92	**35**	3 50	23	50	19 56	61	18	37
17	79	02.6	−16	59.3	244	33.1 111	+22	08.8	91	**40**	3 34	4 10	4 40	20 11	64	5 06	33
18	94	02.5	−17	00.0	259	03.2 111	+22	17.7	89	**45**	3 14	3 55	4 28	20 28	67	4 51	30
19	109	02.5	−17	00.7	273	33.3 111		26.6	89	**50**	2 47	36	13	20 50	71	33	25
20	124	02.4		01.4	288	03.3 110		35.3	87	**52**	33	26	4 06	21 00	74	24	23
21	139	02.4		02.1	302	33.3 110		43.9	86	**54**	2 17	16	3 59	12	77	15	20
22	154	02.3		02.8	317	03.2 109	+22	52.4	85	**56**	1 57	3 04	50	26	80	4 04	17
23	169	02.3		03.5	331	33.1 109	+23	00.8	84	**58**	1 31	2 49	40	21 42	84	3 52	12
24	184	02.2	−17	04.2	346	02.9 108	+23	09.0	82	**60 S**	0 51	2 32	3 29	22 01	92	3 38	7

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.4			Mag: −2.8			Mag: +0.7		
	20ʰ 44ᵐ.0		PMG: 12ʰ 02ᵐ			PMG: 2ʰ 25ᵐ			PMG: 20ʰ 43ᵐ			PMG: 18ʰ 11ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	48	08.9	179	32.8	−17 30.2	323	40.2	+24 14.2	48	17.5	−1 43.4	86	28.5	−16 23.9
1	63	11.4	194	32.1	31.1	338	43.0	14.3	63	20.1	43.4	101	30.8	23.9
2	78	13.8	209	31.4	32.0	353	45.9	14.4	78	22.6	43.5	116	33.2	23.8
3	93	16.3	224	30.8	32.9	8	48.7	14.5	93	25.2	43.5	131	35.6	23.8
4	108	18.8	239	30.1	33.8	23	51.6	14.7	108	27.8	43.5	146	38.0	23.8
5	123	21.2	254	29.4	−17 34.7	38	54.4	+24 14.8	123	30.4	−1 43.6	161	40.4	−16 23.8
6	138	23.7	269	28.7	−17 35.6	53	57.3	+24 14.9	138	33.0	−1 43.6	176	42.8	−16 23.7
7	153	26.2	284	28.0	36.6	69	00.1	15.0	153	35.6	43.7	191	45.2	23.7
8	168	28.6	299	27.3	37.5	84	03.0	15.1	168	38.1	43.7	206	47.6	23.7
9	183	31.1	314	26.7	38.4	99	05.9	15.2	183	40.7	43.7	221	50.0	23.7
10	198	33.6	329	26.0	39.3	114	08.7	15.3	198	43.3	43.8	236	52.4	23.6
11	213	36.0	344	25.3	−17 40.2	129	11.6	+24 15.4	213	45.9	−1 43.8	251	54.8	−16 23.6
12	228	38.5	359	24.6	−17 41.1	144	14.5	+24 15.5	228	48.5	−1 43.9	266	57.2	−16 23.6
13	243	41.0	14	23.9	42.0	159	17.3	15.7	243	51.1	43.9	281	59.6	23.6
14	258	43.4	29	23.2	42.9	174	20.2	15.8	258	53.6	43.9	297	02.0	23.5
15	273	45.9	44	22.5	43.8	189	23.1	15.9	273	56.2	44.0	312	04.3	23.5
16	288	48.3	59	21.8	44.7	204	25.9	16.0	288	58.8	44.0	327	06.7	23.5
17	303	50.8	74	21.1	−17 45.6	219	28.8	+24 16.1	304	01.4	−1 44.1	342	09.1	−16 23.5
18	318	53.3	89	20.5	−17 46.5	234	31.7	+24 16.2	319	04.0	−1 44.1	357	11.5	−16 23.4
19	333	55.7	104	19.8	47.4	249	34.6	16.3	334	06.5	44.1	12	13.9	23.4
20	348	58.2	119	19.1	48.3	264	37.4	16.4	349	09.1	44.2	27	16.3	23.4
21	4	00.7	134	18.4	49.2	279	40.3	16.5	4	11.7	44.2	42	18.7	23.4
22	19	03.1	149	17.7	50.1	294	43.2	16.7	19	14.3	44.2	57	21.1	23.3
23	34	05.6	164	17.0	51.0	309	46.1	16.8	34	16.8	44.3	72	23.5	23.3
24	49	08.1	179	16.3	−17 51.9	324	49.0	+24 16.9	49	19.4	−1 44.3	87	25.9	−16 23.3
Dif	—				−7 −9			+29 +1			+26 0			+24 0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.1		Edad: 15ᵈ.5		PHE	4ʰ: 55′.3								
	PMG: 11ʰ 43ᵐ.9		SD: 15′.1			12ʰ: 55′.1								
			PMG: 0ʰ 58ᵐ			20ʰ: 55′.0								
						Rº: 51ᵐ								
	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 02.2	−17 04.2	346 02.9		+23 09.0		**60 N**	15 42	16 29	17 20	15 53	21	10 45	86
1	199 02.2	04.9	0 32.7	108	17.1	81	**58**	15 52	36	24	16 16	27	22	80
2	214 02.1	05.6	15 02.5	108	25.2	81	**56**	16 01	42	27	34	31	10 04	76
3	229 02.0	06.3	29 32.2	107	33.1	79	**54**	09	48	31	16 50	34	9 49	72
4	244 02.0	07.0	44 01.9	107	40.8	77	**52**	16	53	34	17 03	36	36	70
5	259 01.9	−17 07.7	58 31.5	106	+23 48.5	77	**50**	16 23	16 58	17 37	17 15	38	9 25	68
6	274 01.9	−17 08.4	73 01.1	106	+23 56.0	75	**45**	16 37	17 08	17 43	17 40	41	9 01	64
7	289 01.8	09.1	87 30.7	106	+24 03.4	74	**40**	48	17	49	18 00	43	8 42	62
8	304 01.8	09.8	102 00.2	105	10.7	73	**35**	16 58	25	17 55	16	45	26	60
9	319 01.7	10.5	116 29.7	105	17.9	72	**30**	17 07	32	18 00	31	46	8 12	58
10	334 01.6	11.2	130 59.1	104	24.9	70	**20**	22	45	11	18 55	48	7 49	55
11	349 01.6	−17 11.9	145 28.6	105	+24 31.9	70	**10 N**	17 35	17 57	18 22	19 16	50	7 29	53
12	4 01.5	−17 12.6	159 57.9	103	+24 38.6	67	**0**	17 47	18 09	18 34	19 36	52	7 10	51
13	19 01.4	13.3	174 27.3	104	45.3	67	**10 S**	18 00	22	18 48	19 56	53	6 51	49
14	34 01.4	14.0	188 56.6	103	51.9	66	**20**	14	37	19 05	20 18	54	31	47
15	49 01.3	14.7	203 25.9	103	+24 58.3	64	**30**	29	18 55	26	43	56	6 08	44
16	64 01.3	15.4	217 55.1	102	+25 04.6	63	**35**	39	19 06	40	20 57	58	5 55	42
17	79 01.2	−17 16.1	232 24.3	102	+25 10.7	61	**40**	18 49	19 19	19 56	21 15	59	5 39	40
18	94 01.1	−17 16.8	246 53.5	102	+25 16.7	60	**45**	19 02	19 35	20 17	21 35	61	5 21	37
19	109 01.1	17.5	261 22.7	102	22.6	59	**50**	17	19 55	45	22 01	64	4 58	33
20	124 01.0	18.2	275 51.8	101	28.4	58	**52**	24	20 05	20 59	14	65	47	31
21	139 00.9	18.9	290 20.9	101	34.0	56	**54**	32	16	21 16	29	67	35	28
22	154 00.9	19.6	304 49.9	100	39.6	56	**56**	41	28	21 38	22 46	69	21	25
23	169 00.8	20.3	319 19.0	101	44.9	53	**58**	19 51	20 43	22 06	23 06	73	4 04	21
24	184 00.8	−17 21.0	333 48.0	100	+25 50.2	53	**60 S**	20 03	21 01	22 54	23 33	79	3 45	13

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.4		Mag: −2.8		Mag: +0.7	
	20ʰ 40ᵐ.1	PMG: 12ʰ 03ᵐ		PMG: 2ʰ 20ᵐ		PMG: 20ʰ 39ᵐ		PMG: 18ʰ 07ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	49 08.1	179 16.3	−17 51.9	324 49.0	+24 16.9	49 19.4	−1 44.3	87 25.9	−16 23.3
1	64 10.5	194 15.6	52.8	339 51.9	17.0	64 22.0	44.4	102 28.3	23.2
2	79 13.0	209 14.9	53.7	354 54.7	17.1	79 24.6	44.4	117 30.6	23.2
3	94 15.5	224 14.2	54.6	9 57.6	17.2	94 27.2	44.4	132 33.0	23.2
4	109 17.9	239 13.5	55.5	25 00.5	17.3	109 29.7	44.5	147 35.4	23.2
5	124 20.4	254 12.8	−17 56.4	40 03.4	+24 17.4	124 32.3	−1 44.5	162 37.8	−16 23.1
6	139 22.8	269 12.1	−17 57.2	55 06.3	+24 17.5	139 34.9	−1 44.5	177 40.2	−16 23.1
7	154 25.3	284 11.4	58.1	70 09.2	17.6	154 37.5	44.6	192 42.6	23.1
8	169 27.8	299 10.7	59.0	85 12.1	17.8	169 40.0	44.6	207 45.0	23.1
9	184 30.2	314 10.0	−17 59.9	100 15.0	17.9	184 42.6	44.7	222 47.4	23.0
10	199 32.7	329 09.3	−18 00.8	115 17.9	18.0	199 45.2	44.7	237 49.8	23.0
11	214 35.2	344 08.6	−18 01.7	130 20.8	+24 18.1	214 47.8	−1 44.7	252 52.1	−16 23.0
12	229 37.6	359 07.9	−18 02.6	145 23.7	+24 18.2	229 50.3	−1 44.8	267 54.5	−16 23.0
13	244 40.1	14 07.2	03.5	160 26.6	18.3	244 52.9	44.8	282 56.9	22.9
14	259 42.6	29 06.5	04.3	175 29.5	18.4	259 55.5	44.8	297 59.3	22.9
15	274 45.0	44 05.8	05.2	190 32.4	18.5	274 58.1	44.9	313 01.7	22.9
16	289 47.5	59 05.1	06.1	205 35.4	18.6	290 00.6	44.9	328 04.1	22.9
17	304 49.9	74 04.4	−18 07.0	220 38.3	+24 18.7	305 03.2	−1 44.9	343 06.5	−16 22.8
18	319 52.4	89 03.7	−18 07.9	235 41.2	+24 18.9	320 05.8	−1 45.0	358 08.9	−16 22.8
19	334 54.9	104 03.0	08.7	250 44.1	19.0	335 08.3	45.0	13 11.2	22.8
20	349 57.3	119 02.3	09.6	265 47.0	19.1	350 10.9	45.0	28 13.6	22.7
21	4 59.8	134 01.6	10.5	280 49.9	19.2	5 13.5	45.1	43 16.0	22.7
22	20 02.3	149 00.9	11.4	295 52.9	19.3	20 16.1	45.1	58 18.4	22.7
23	35 04.7	164 00.2	12.3	310 55.8	19.4	35 18.6	45.2	73 20.8	22.7
24	50 07.2	178 59.5	−18 13.1	325 58.7	+24 19.5	50 21.2	−1 45.2	88 23.2	−16 22.6
Dif	—	−7	−9	+29	+1	+26	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 16ᵈ.5		PHE	4ʰ: 54′.8									
	PMG: 11ʰ 44ᵐ.0				SD: 15′.0			12ʰ: 54′.7									
					PMG: 1ʰ 49ᵐ			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	184	00.8	−17	21.0	333	48.0	+25	50.2		**60 N**	6 09	7 00	7 48	16 14	41	12 11	67
1	199	00.7		21.7	348	17.0 100	+25	55.3	51	**58**	05	6 53	37	16 43	44	11 42	64
2	214	00.6		22.4	2	45.9 99	+26	00.3	50	**56**	6 01	47	28	17 05	46	20	61
3	229	00.6		23.1	17	14.9 100		05.1	48	**54**	5 58	41	20	24	47	11 01	61
4	244	00.5		23.7	31	43.8 99		09.9	48	**52**	55	36	13	39	48	10 46	59
5	259	00.4	−17	24.4	46	12.7 99	+26	14.5	46	**50**	5 52	6 31	7 06	17 53	48	10 33	58
6	274	00.4	−17	25.1	60	41.5 98	+26	18.9	44	**45**	5 45	6 21	6 52	18 21	49	10 05	57
7	289	00.3		25.8	75	10.4 99		23.2	43	**40**	39	12	40	18 43	50	9 44	56
8	304	00.2		26.5	89	39.2 98		27.4	42	**35**	33	6 04	30	19 01	50	26	55
9	319	00.1		27.2	104	08.0 98		31.5	41	**30**	28	5 57	22	17	50	9 10	55
10	334	00.1		27.9	118	36.8 98		35.4	39	**20**	17	43	6 06	19 43	51	8 44	54
11	349	00.0	−17	28.6	133	05.6 98	+26	39.2	38	**10 N**	5 06	5 31	5 53	20 06	52	8 22	53
12	3	59.9	−17	29.3	147	34.4 98	+26	42.8	36	**0**	4 54	5 19	5 40	20 28	52	8 01	52
13	18	59.9		29.9	162	03.1 97		46.3	35	**10 S**	40	5 06	28	20 49	52	7 40	51
14	33	59.8		30.6	176	31.9 98		49.7	34	**20**	23	4 51	5 14	21 12	53	7 18	50
15	48	59.7		31.3	191	00.6 97		53.0	33	**30**	4 01	32	4 58	39	53	6 52	48
16	63	59.7		32.0	205	29.3 97		56.1	31	**35**	3 48	21	49	21 55	53	37	47
17	78	59.6	−17	32.7	219	58.0 97	+26	59.0	29	**40**	3 31	4 08	4 38	22 14	53	6 19	47
18	93	59.5	−17	33.4	234	26.8 98	+27	01.9	29	**45**	3 10	3 52	4 26	22 36	53	5 58	45
19	108	59.4		34.0	248	55.4 96		04.6	27	**50**	2 42	32	10	23 05	53	31	43
20	123	59.4		34.7	263	24.1 97		07.1	25	**52**	28	23	4 03	19	53	18	42
21	138	59.3		35.4	277	52.8 97		09.6	25	**54**	2 11	3 11	3 55	36	53	5 03	40
22	153	59.2		36.1	292	21.5 97		11.9	23	**56**	1 50	2 59	46	23 55	53	4 46	38
23	168	59.1		36.8	306	50.2 97		14.0	21	**58**	1 21	44	36	** **	**	4 25	35
24	183	59.1	−17	37.5	321	18.9 97	+27	16.0	20	**60 S**	0 33	2 26	3 24	** **	**	3 58	29

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.8			Mag: +0.7		
	20ʰ 36ᵐ.1		PMG: 12ʰ 05ᵐ			PMG: 2ʰ 16ᵐ			PMG: 20ʰ 35ᵐ			PMG: 18ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	50	07.2	178	59.5	−18 13.1	325	58.7	+24 19.5	50	21.2	−1 45.2	88	23.2	−16 22.6
1	65	09.7	193	58.8	14.0	341	01.6	19.6	65	23.8	45.2	103	25.6	22.6
2	80	12.1	208	58.1	14.9	356	04.6	19.7	80	26.3	45.3	118	27.9	22.6
3	95	14.6	223	57.4	15.8	11	07.5	19.8	95	28.9	45.3	133	30.3	22.6
4	110	17.1	238	56.6	16.6	26	10.4	20.0	110	31.5	45.3	148	32.7	22.5
5	125	19.5	253	55.9	−18 17.5	41	13.4	+24 20.1	125	34.0	−1 45.4	163	35.1	−16 22.5
6	140	22.0	268	55.2	−18 18.4	56	16.3	+24 20.2	140	36.6	−1 45.4	178	37.5	−16 22.5
7	155	24.4	283	54.5	19.2	71	19.2	20.3	155	39.2	45.4	193	39.9	22.4
8	170	26.9	298	53.8	20.1	86	22.2	20.4	170	41.7	45.5	208	42.2	22.4
9	185	29.4	313	53.1	21.0	101	25.1	20.5	185	44.3	45.5	223	44.6	22.4
10	200	31.8	328	52.4	21.8	116	28.1	20.6	200	46.9	45.5	238	47.0	22.4
11	215	34.3	343	51.7	−18 22.7	131	31.0	+24 20.7	215	49.4	−1 45.6	253	49.4	−16 22.3
12	230	36.8	358	51.0	−18 23.6	146	33.9	+24 20.8	230	52.0	−1 45.6	268	51.8	−16 22.3
13	245	39.2	13	50.2	24.4	161	36.9	20.9	245	54.6	45.6	283	54.2	22.3
14	260	41.7	28	49.5	25.3	176	39.8	21.0	260	57.1	45.7	298	56.6	22.2
15	275	44.2	43	48.8	26.2	191	42.8	21.2	275	59.7	45.7	313	58.9	22.2
16	290	46.6	58	48.1	27.0	206	45.7	21.3	291	02.3	45.7	329	01.3	22.2
17	305	49.1	73	47.4	−18 27.9	221	48.7	+24 21.4	306	04.8	−1 45.8	344	03.7	−16 22.2
18	320	51.6	88	46.7	−18 28.7	236	51.7	+24 21.5	321	07.4	−1 45.8	359	06.1	−16 22.1
19	335	54.0	103	45.9	29.6	251	54.6	21.6	336	10.0	45.8	14	08.5	22.1
20	350	56.5	118	45.2	30.5	266	57.6	21.7	351	12.5	45.8	29	10.9	22.1
21	5	58.9	133	44.5	31.3	282	00.5	21.8	6	15.1	45.9	44	13.2	22.0
22	21	01.4	148	43.8	32.2	297	03.5	21.9	21	17.7	45.9	59	15.6	22.0
23	36	03.9	163	43.1	33.0	312	06.5	22.0	36	20.2	45.9	74	18.0	22.0
24	51	06.3	178	42.4	−18 33.9	327	09.4	+24 22.1	51	22.8	−1 46.0	89	20.4	−16 22.0
Dif	—			−7	−9		+29	+1		+26	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 44m.1		Edad: 17d.5 SD: 14′.9 PMG: 2h 40m		PHE 4h: 54′.5 12h: 54′.4 20h: 54′.3 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	183 59.1	−17 37.5	321 18.9		+27 16.0		**60 N**	15 37	16 25	17 17	16 55	67	13 18	39
1	198 59.0	38.1	335 47.5	96	17.9	19	**58**	48	33	21	17 27	64	12 46	42
2	213 58.9	38.8	350 16.2	97	19.7	18	**56**	15 57	39	24	17 51	62	21	45
3	228 58.8	39.5	4 44.9	97	21.3	16	**54**	16 06	45	28	18 11	60	12 02	46
4	243 58.8	40.2	19 13.6	97	22.7	14	**52**	13	50	31	27	59	11 45	47
5	258 58.7	−17 40.8	33 42.3	97	+27 24.1	14	**50**	16 20	16 55	17 34	18 41	59	11 31	47
6	273 58.6	−17 41.5	48 11.0	97	+27 25.3	12	**45**	16 34	17 06	17 41	19 10	57	11 02	49
7	288 58.5	42.2	62 39.7	97	26.3	10	**40**	46	15	48	33	55	10 40	49
8	303 58.5	42.9	77 08.4	97	27.3	10	**35**	16 57	23	54	19 51	55	21	50
9	318 58.4	43.6	91 37.1	97	28.1	8	**30**	17 05	31	17 59	20 07	54	10 05	50
10	333 58.3	44.2	106 05.8	97	28.7	6	**20**	21	44	18 11	34	53	9 38	51
11	348 58.2	−17 44.9	120 34.5	97	+27 29.2	5	**10 N**	17 35	17 57	18 22	20 58	52	9 15	51
12	3 58.2	−17 45.6	135 03.3	98	+27 29.6	4	**0**	17 48	18 09	18 35	21 20	50	8 53	51
13	18 58.1	46.3	149 32.0	97	29.9	3	**10 S**	18 01	23	18 49	21 41	50	31	52
14	33 58.0	46.9	164 00.8	98	30.0	1	**20**	15	38	19 06	22 05	48	8 08	52
15	48 57.9	47.6	178 29.6	98	30.0	0	**30**	31	18 57	28	32	47	7 40	53
16	63 57.8	48.3	192 58.4	98	29.8	2	**35**	41	19 08	42	22 48	46	24	53
17	78 57.8	−17 48.9	207 27.2	98	+27 29.5	3	**40**	18 52	19 22	19 59	23 07	45	7 06	53
18	93 57.7	−17 49.6	221 56.1	99	+27 29.1	4	**45**	19 05	19 38	20 21	23 29	44	6 43	53
19	108 57.6	50.3	236 24.9	98	28.5	6	**50**	20	19 59	20 50	23 58	41	14	54
20	123 57.5	51.0	250 53.8	99	27.8	7	**52**	28	20 09	21 05	** **	**	6 00	54
21	138 57.4	51.6	265 22.7	99	27.0	8	**54**	36	20	23	** **	**	5 43	54
22	153 57.3	52.3	279 51.7	100	26.1	9	**56**	45	34	21 45	** **	**	24	54
23	168 57.3	53.0	294 20.6	99	25.0	11	**58**	19 56	20 49	22 17	0 19	53	5 00	54
24	183 57.2	−17 53.6	308 49.6	100	+27 23.7	13	**60 S**	20 08	21 08	23 24	0 52	53	4 27	54

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 20h 32m.2	Mag: −3.9 PMG: 12h 06m		Mag: −1.5 PMG: 2h 11m		Mag: −2.8 PMG: 20h 31m		Mag: +0.7 PMG: 18h 00m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	51 06.3	178 42.4	−18 33.9	327 09.4	+24 22.1	51 22.8	−1 46.0	89 20.4	−16 22.0
1	66 08.8	193 41.6	34.7	342 12.4	22.2	66 25.3	46.0	104 22.8	21.9
2	81 11.3	208 40.9	35.6	357 15.4	22.3	81 27.9	46.0	119 25.1	21.9
3	96 13.7	223 40.2	36.4	12 18.3	22.5	96 30.5	46.1	134 27.5	21.9
4	111 16.2	238 39.5	37.3	27 21.3	22.6	111 33.0	46.1	149 29.9	21.8
5	126 18.7	253 38.7	−18 38.1	42 24.3	+24 22.7	126 35.6	−1 46.1	164 32.3	−16 21.8
6	141 21.1	268 38.0	−18 39.0	57 27.2	+24 22.8	141 38.2	−1 46.2	179 34.7	−16 21.8
7	156 23.6	283 37.3	39.8	72 30.2	22.9	156 40.7	46.2	194 37.0	21.8
8	171 26.1	298 36.6	40.7	87 33.2	23.0	171 43.3	46.2	209 39.4	21.7
9	186 28.5	313 35.8	41.5	102 36.2	23.1	186 45.8	46.2	224 41.8	21.7
10	201 31.0	328 35.1	42.4	117 39.2	23.2	201 48.4	46.3	239 44.2	21.7
11	216 33.4	343 34.4	−18 43.2	132 42.1	+24 23.3	216 51.0	−1 46.3	254 46.6	−16 21.6
12	231 35.9	358 33.7	−18 44.1	147 45.1	+24 23.4	231 53.5	−1 46.3	269 48.9	−16 21.6
13	246 38.4	13 32.9	44.9	162 48.1	23.5	246 56.1	46.4	284 51.3	21.6
14	261 40.8	28 32.2	45.8	177 51.1	23.6	261 58.6	46.4	299 53.7	21.6
15	276 43.3	43 31.5	46.6	192 54.1	23.7	277 01.2	46.4	314 56.1	21.5
16	291 45.8	58 30.8	47.4	207 57.1	23.8	292 03.7	46.4	329 58.5	21.5
17	306 48.2	73 30.0	−18 48.3	223 00.1	+24 24.0	307 06.3	−1 46.5	345 00.8	−16 21.5
18	321 50.7	88 29.3	−18 49.1	238 03.1	+24 24.1	322 08.9	−1 46.5	0 03.2	−16 21.4
19	336 53.2	103 28.6	50.0	253 06.1	24.2	337 11.4	46.5	15 05.6	21.4
20	351 55.6	118 27.8	50.8	268 09.1	24.3	352 14.0	46.6	30 08.0	21.4
21	6 58.1	133 27.1	51.6	283 12.1	24.4	7 16.5	46.6	45 10.4	21.3
22	22 00.6	148 26.4	52.5	298 15.1	24.5	22 19.1	46.6	60 12.7	21.3
23	37 03.0	163 25.6	53.3	313 18.1	24.6	37 21.6	46.6	75 15.1	21.3
24	52 05.5	178 24.9	−18 54.1	328 21.1	+24 24.7	52 24.2	−1 46.7	90 17.5	−16 21.3
Dif	—	−7	−8	+30	+1	+26	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 18ᵈ.5		PHE	4ʰ: 54′.2									
	PMG: 11ʰ 44ᵐ.3				SD: 14′.8			12ʰ: 54′.2									
					PMG: 3ʰ 32ᵐ			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	183	57.2	−17	53.6	308	49.6	+27	23.7		**60 N**	6 13	7 04	7 53	18 02	83	13 57	19
1	198	57.1		54.3	323	18.6 100		22.4	13	**58**	09	6 57	42	31	76	28	26
2	213	57.0		55.0	337	47.6 100		20.9	15	**56**	05	50	32	18 53	72	13 06	29
3	228	56.9		55.6	352	16.7 101		19.3	16	**54**	6 01	44	24	19 11	69	12 48	32
4	243	56.8		56.3	6	45.8 101		17.5	18	**52**	5 58	39	16	26	68	32	35
5	258	56.8	−17	57.0	21	14.9 101	+27	15.6	19	**50**	5 55	6 34	7 09	19 40	65	12 18	37
6	273	56.7	−17	57.6	35	44.0 101	+27	13.6	20	**45**	5 48	6 23	6 55	20 07	62	11 51	39
7	288	56.6		58.3	50	13.2 102		11.4	22	**40**	41	14	43	28	60	29	41
8	303	56.5		58.9	64	42.4 102		09.2	22	**35**	35	6 06	32	20 46	58	11 11	43
9	318	56.4	−17	59.6	79	11.7 103		06.8	24	**30**	29	5 58	23	21 01	56	10 55	45
10	333	56.3	−18	00.3	93	40.9 102		04.2	26	**20**	18	44	6 08	27	54	29	46
11	348	56.2	−18	00.9	108	10.3 104	+27	01.5	27	**10 N**	5 06	5 32	5 54	21 50	51	10 06	48
12	3	56.2	−18	01.6	122	39.6 103	+26	58.7	28	**0**	4 54	5 19	5 41	22 10	49	9 44	50
13	18	56.1		02.3	137	09.0 104		55.8	29	**10 S**	39	5 05	28	31	47	23	51
14	33	56.0		02.9	151	38.4 104		52.8	30	**20**	22	4 50	5 13	22 53	45	9 00	53
15	48	55.9		03.6	166	07.9 105		49.6	32	**30**	4 00	31	4 57	23 19	42	8 33	55
16	63	55.8		04.2	180	37.4 105		46.3	33	**35**	3 46	20	47	34	40	8 17	57
17	78	55.7	−18	04.9	195	06.9 105	+26	42.9	34	**40**	3 29	4 06	4 36	23 52	38	7 59	57
18	93	55.6	−18	05.6	209	36.5 106	+26	39.3	36	**45**	3 07	3 50	4 23	** **	**	7 36	60
19	108	55.5		06.2	224	06.2 107		35.6	37	**50**	2 38	29	07	** **	**	7 08	62
20	123	55.4		06.9	238	35.8 106		31.8	38	**52**	23	19	4 00	0 12	40	6 54	63
21	138	55.3		07.5	253	05.5 107		27.9	39	**54**	2 05	3 07	3 52	29	38	37	66
22	153	55.3		08.2	267	35.3 108		23.8	41	**56**	1 42	2 54	42	0 48	36	6 18	68
23	168	55.2		08.8	282	05.1 108		19.6	42	**58**	1 11	38	32	1 12	33	5 54	71
24	183	55.1	−18	09.5	296	34.9 108	+26	15.3	43	**60 S**	0 04	2 19	3 19	1 45	27	5 21	78

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.8			Mag: +0.7		
	20ʰ 28ᵐ.3		PMG: 12ʰ 07ᵐ			PMG: 2ʰ 06ᵐ			PMG: 20ʰ 27ᵐ			PMG: 17ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	52	05.5	178	24.9	−18 54.1	328	21.1	+24 24.7	52	24.2	−1 46.7	90	17.5	−16 21.3
1	67	07.9	193	24.2	55.0	343	24.1	24.8	67	26.7	46.7	105	19.9	21.2
2	82	10.4	208	23.4	55.8	358	27.1	24.9	82	29.3	46.7	120	22.2	21.2
3	97	12.9	223	22.7	56.6	13	30.1	25.0	97	31.9	46.8	135	24.6	21.2
4	112	15.3	238	22.0	57.5	28	33.1	25.1	112	34.4	46.8	150	27.0	21.1
5	127	17.8	253	21.2	−18 58.3	43	36.1	+24 25.2	127	37.0	−1 46.8	165	29.4	−16 21.1
6	142	20.3	268	20.5	−18 59.1	58	39.1	+24 25.3	142	39.5	−1 46.8	180	31.8	−16 21.1
7	157	22.7	283	19.8	−18 59.9	73	42.1	25.4	157	42.1	46.9	195	34.1	21.0
8	172	25.2	298	19.0	−19 00.8	88	45.2	25.5	172	44.6	46.9	210	36.5	21.0
9	187	27.7	313	18.3	01.6	103	48.2	25.7	187	47.2	46.9	225	38.9	21.0
10	202	30.1	328	17.6	02.4	118	51.2	25.8	202	49.7	46.9	240	41.3	21.0
11	217	32.6	343	16.8	−19 03.2	133	54.2	+24 25.9	217	52.3	−1 47.0	255	43.6	−16 20.9
12	232	35.1	358	16.1	−19 04.1	148	57.2	+24 26.0	232	54.8	−1 47.0	270	46.0	−16 20.9
13	247	37.5	13	15.3	04.9	164	00.3	26.1	247	57.4	47.0	285	48.4	20.9
14	262	40.0	28	14.6	05.7	179	03.3	26.2	262	59.9	47.0	300	50.8	20.8
15	277	42.4	43	13.9	06.5	194	06.3	26.3	278	02.5	47.1	315	53.1	20.8
16	292	44.9	58	13.1	07.3	209	09.4	26.4	293	05.0	47.1	330	55.5	20.8
17	307	47.4	73	12.4	−19 08.2	224	12.4	+24 26.5	308	07.6	−1 47.1	345	57.9	−16 20.7
18	322	49.8	88	11.6	−19 09.0	239	15.4	+24 26.6	323	10.1	−1 47.1	1	00.3	−16 20.7
19	337	52.3	103	10.9	09.8	254	18.5	26.7	338	12.7	47.2	16	02.6	20.7
20	352	54.8	118	10.1	10.6	269	21.5	26.8	353	15.2	47.2	31	05.0	20.6
21	7	57.2	133	09.4	11.4	284	24.5	26.9	8	17.8	47.2	46	07.4	20.6
22	22	59.7	148	08.7	12.2	299	27.6	27.0	23	20.3	47.2	61	09.8	20.6
23	38	02.2	163	07.9	13.0	314	30.6	27.1	38	22.9	47.3	76	12.1	20.5
24	53	04.6	178	07.2	−19 13.9	329	33.7	+24 27.2	53	25.4	−1 47.3	91	14.5	−16 20.5
Dif	—			−7	−8		+30	+1		+26	0		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 44m.4				Edad: 19d.5 SD: 14′.7 PMG: 4h 22m		PHE	4h: 54′.2 12h: 54′.2 20h: 54′.2 Rº: 49m								
	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	55.1	−18	09.5	296	34.9	+26	15.3	**60 N**	15 33	16 22	17 13	19 25	89	14 16	10
1	198	55.0		10.1	311	04.8 109		10.9 44	**58**	44	29	17	19 47	83	13 54	15
2	213	54.9		10.8	325	34.8 110		06.4 45	**56**	15 54	36	22	20 05	78	35	20
3	228	54.8		11.4	340	04.7 109	+26	01.7 47	**54**	16 03	42	25	20	75	20	23
4	243	54.7		12.1	354	34.8 111	+25	56.9 48	**52**	10	48	29	34	71	13 07	25
5	258	54.6	−18	12.8	9	04.9 111	+25	52.0 49	**50**	16 17	16 53	17 32	20 45	70	12 55	27
6	273	54.5	−18	13.4	23	35.0 111	+25	47.0 50	**45**	16 32	17 04	17 39	21 09	65	12 30	32
7	288	54.4		14.1	38	05.2 112		41.8 52	**40**	45	14	46	28	61	12 10	35
8	303	54.3		14.7	52	35.4 112		36.6 52	**35**	16 55	22	53	44	59	11 54	37
9	318	54.2		15.4	67	05.7 113		31.2 54	**30**	17 04	30	17 59	21 57	57	40	39
10	333	54.1		16.0	81	36.0 113		25.7 55	**20**	20	44	18 10	22 21	53	11 15	43
11	348	54.0	−18	16.7	96	06.3 113	+25	20.1 56	**10 N**	17 35	17 57	18 22	22 41	49	10 54	45
12	3	53.9	−18	17.3	110	36.8 115	+25	14.4 57	**0**	17 48	18 10	18 35	22 59	47	10 34	48
13	18	53.8		17.9	125	07.2 114		08.5 59	**10 S**	18 01	24	18 50	23 18	44	10 14	51
14	33	53.7		18.6	139	37.8 116	+25	02.6 59	**20**	16	40	19 07	23 38	41	9 53	53
15	48	53.6		19.2	154	08.4 116	+24	56.5 61	**30**	33	18 59	30	** **	**	28	57
16	63	53.5		19.9	168	39.0 116		50.3 62	**35**	43	19 11	19 44	** **	**	9 14	58
17	78	53.4	−18	20.5	183	09.7 117	+24	44.0 63	**40**	18 54	19 24	20 02	** **	**	8 56	61
18	93	53.3	−18	21.2	197	40.4 117	+24	37.6 64	**45**	19 07	19 41	20 24	0 13	35	8 36	64
19	108	53.2		21.8	212	11.2 118		31.1 65	**50**	24	20 03	20 54	39	32	8 10	68
20	123	53.1		22.5	226	42.0 118		24.5 66	**52**	31	13	21 10	0 52	30	7 57	70
21	138	53.0		23.1	241	12.9 119		17.7 68	**54**	40	25	29	1 07	27	43	73
22	153	52.9		23.8	255	43.9 120		10.9 68	**56**	19 50	39	21 53	24	24	26	76
23	168	52.8		24.4	270	14.9 120	+24	03.9 70	**58**	20 01	20 55	22 29	1 45	19	7 05	81
24	183	52.7	−18	25.0	284	45.9 120	+23	56.9 70	**60 S**	20 14	21 15	** **	2 12	12	6 39	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 20h 24m.3		Mag: −3.9 PMG: 12h 08m			Mag: −1.5 PMG: 2h 01m			Mag: −2.8 PMG: 20h 23m			Mag: +0.7 PMG: 17h 52m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	53	04.6	178	07.2	−19 13.9	329	33.7	+24 27.2	53	25.4	−1 47.3	91	14.5	−16 20.5
1	68	07.1	193	06.4	14.7	344	36.7	27.3	68	28.0	47.3	106	16.9	20.5
2	83	09.5	208	05.7	15.5	359	39.7	27.4	83	30.5	47.3	121	19.3	20.5
3	98	12.0	223	04.9	16.3	14	42.8	27.5	98	33.1	47.4	136	21.6	20.4
4	113	14.5	238	04.2	17.1	29	45.8	27.6	113	35.6	47.4	151	24.0	20.4
5	128	16.9	253	03.4	−19 17.9	44	48.9	+24 27.8	128	38.1	−1 47.4	166	26.4	−16 20.4
6	143	19.4	268	02.7	−19 18.7	59	51.9	+24 27.9	143	40.7	−1 47.4	181	28.7	−16 20.3
7	158	21.9	283	01.9	19.5	74	55.0	28.0	158	43.2	47.5	196	31.1	20.3
8	173	24.3	298	01.2	20.3	89	58.1	28.1	173	45.8	47.5	211	33.5	20.3
9	188	26.8	313	00.4	21.1	105	01.1	28.2	188	48.3	47.5	226	35.9	20.2
10	203	29.3	327	59.7	21.9	120	04.2	28.3	203	50.9	47.5	241	38.2	20.2
11	218	31.7	342	58.9	−19 22.7	135	07.2	+24 28.4	218	53.4	−1 47.6	256	40.6	−16 20.2
12	233	34.2	357	58.2	−19 23.5	150	10.3	+24 28.5	233	56.0	−1 47.6	271	43.0	−16 20.1
13	248	36.7	12	57.4	24.3	165	13.4	28.6	248	58.5	47.6	286	45.3	20.1
14	263	39.1	27	56.7	25.1	180	16.4	28.7	264	01.0	47.6	301	47.7	20.1
15	278	41.6	42	55.9	25.9	195	19.5	28.8	279	03.6	47.6	316	50.1	20.0
16	293	44.0	57	55.2	26.7	210	22.6	28.9	294	06.1	47.7	331	52.5	20.0
17	308	46.5	72	54.4	−19 27.5	225	25.6	+24 29.0	309	08.7	−1 47.7	346	54.8	−16 20.0
18	323	49.0	87	53.7	−19 28.3	240	28.7	+24 29.1	324	11.2	−1 47.7	1	57.2	−16 19.9
19	338	51.4	102	52.9	29.1	255	31.8	29.2	339	13.8	47.7	16	59.6	19.9
20	353	53.9	117	52.1	29.9	270	34.8	29.3	354	16.3	47.8	32	01.9	19.9
21	8	56.4	132	51.4	30.7	285	37.9	29.4	9	18.8	47.8	47	04.3	19.8
22	23	58.8	147	50.6	31.5	300	41.0	29.5	24	21.4	47.8	62	06.7	19.8
23	39	01.3	162	49.9	32.3	315	44.1	29.6	39	23.9	47.8	77	09.1	19.8
24	54	03.8	177	49.1	−19 33.1	330	47.2	+24 29.7	54	26.5	−1 47.8	92	11.4	−16 19.8
Dif	—			−8	−8		+31	+1		+25	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 20ᵈ.5		PHE	4ʰ: 54′.2									
	PMG: 11ʰ 44ᵐ.6				SD: 14′.8			12ʰ: 54′.3									
					PMG: 5ʰ 11ᵐ			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	183	52.7	−18	25.0	284	45.9	+23	56.9		**60 N**	6 17	7 09	7 58	20 54	88	14 26	4
1	198	52.6		25.7	299	17.0 121		49.7	72	**58**	12	7 01	46	21 10	83	14 09	9
2	213	52.5		26.3	313	48.2 122		42.4	73	**56**	08	6 54	36	23	80	13 55	13
3	228	52.4		27.0	328	19.4 122		35.0	74	**54**	05	48	28	35	76	43	16
4	243	52.3		27.6	342	50.7 123		27.5	75	**52**	6 01	42	20	45	74	32	19
5	258	52.2	−18	28.2	357	22.0 123	+23	19.9	76	**50**	5 58	6 37	7 13	21 55	71	13 22	21
6	273	52.1	−18	28.9	11	53.4 124	+23	12.2	77	**45**	5 50	6 26	6 57	22 14	66	13 02	26
7	288	52.0		29.5	26	24.8 124	+23	04.4	78	**40**	43	16	45	29	63	12 45	30
8	303	51.9		30.1	40	56.3 125	+22	56.5	79	**35**	37	07	34	43	59	31	32
9	318	51.8		30.8	55	27.8 125		48.5	80	**30**	31	6 00	25	22 54	57	12 19	35
10	333	51.7		31.4	69	59.4 126		40.4	81	**20**	19	5 46	6 09	23 14	52	11 58	39
11	348	51.6	−18	32.1	84	31.1 127	+22	32.2	82	**10 N**	5 07	5 32	5 54	23 30	49	11 39	43
12	3	51.5	−18	32.7	99	02.8 127	+22	23.9	83	**0**	4 54	5 19	5 41	23 46	45	11 22	46
13	18	51.4		33.3	113	34.5 127		15.5	84	**10 S**	39	5 05	27	** **	**	11 05	49
14	33	51.3		34.0	128	06.3 128	+22	07.0	85	**20**	4 21	4 49	5 13	** **	**	10 46	53
15	48	51.2		34.6	142	38.2 129	+21	58.4	86	**30**	3 59	30	4 56	0 01	37	25	56
16	63	51.1		35.2	157	10.1 129		49.7	87	**35**	44	18	46	14	35	10 12	59
17	78	51.0	−18	35.9	171	42.0 129	+21	40.9	88	**40**	3 27	4 04	4 35	0 30	32	9 57	62
18	93	50.9	−18	36.5	186	14.1 131	+21	32.0	89	**45**	3 04	3 47	4 21	0 48	29	9 40	66
19	108	50.8		37.1	200	46.1 130		23.0	90	**50**	2 34	26	4 05	1 11	24	18	70
20	123	50.6		37.7	215	18.2 131		13.9	91	**52**	2 18	15	3 57	22	21	9 07	73
21	138	50.5		38.4	229	50.4 132	+21	04.7	92	**54**	1 59	3 03	48	34	19	8 56	75
22	153	50.4		39.0	244	22.6 132	+20	55.5	92	**56**	35	2 49	39	1 48	16	42	79
23	168	50.3		39.6	258	54.9 133		46.1	94	**58**	1 00	33	27	2 04	12	26	84
24	183	50.2	−18	40.3	273	27.2 133	+20	36.7	94	**60 S**	** **	2 13	3 15	2 24	6	8 07	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.7			Mag: +0.7		
	20ʰ 20ᵐ.4		PMG: 12ʰ 09ᵐ			PMG: 1ʰ 56ᵐ			PMG: 20ʰ 19ᵐ			PMG: 17ʰ 48ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	54	03.8	177	49.1	−19 33.1	330	47.2	+24 29.7	54	26.5	−1 47.8	92	11.4	−16 19.8
1	69	06.2	192	48.4	33.9	345	50.2	29.8	69	29.0	47.9	107	13.8	19.7
2	84	08.7	207	47.6	34.6	0	53.3	29.9	84	31.5	47.9	122	16.2	19.7
3	99	11.2	222	46.8	35.4	15	56.4	30.0	99	34.1	47.9	137	18.5	19.7
4	114	13.6	237	46.1	36.2	30	59.5	30.1	114	36.6	47.9	152	20.9	19.6
5	129	16.1	252	45.3	−19 37.0	46	02.6	+24 30.2	129	39.1	−1 47.9	167	23.3	−16 19.6
6	144	18.5	267	44.6	−19 37.8	61	05.7	+24 30.3	144	41.7	−1 48.0	182	25.6	−16 19.6
7	159	21.0	282	43.8	38.6	76	08.8	30.4	159	44.2	48.0	197	28.0	19.5
8	174	23.5	297	43.0	39.3	91	11.9	30.5	174	46.8	48.0	212	30.4	19.5
9	189	25.9	312	42.3	40.1	106	15.0	30.6	189	49.3	48.0	227	32.7	19.5
10	204	28.4	327	41.5	40.9	121	18.1	30.7	204	51.8	48.0	242	35.1	19.4
11	219	30.9	342	40.7	−19 41.7	136	21.2	+24 30.8	219	54.4	−1 48.1	257	37.5	−16 19.4
12	234	33.3	357	40.0	−19 42.5	151	24.3	+24 30.9	234	56.9	−1 48.1	272	39.8	−16 19.4
13	249	35.8	12	39.2	43.2	166	27.4	31.0	249	59.4	48.1	287	42.2	19.3
14	264	38.3	27	38.4	44.0	181	30.5	31.1	265	02.0	48.1	302	44.6	19.3
15	279	40.7	42	37.7	44.8	196	33.6	31.2	280	04.5	48.1	317	47.0	19.3
16	294	43.2	57	36.9	45.6	211	36.7	31.3	295	07.0	48.1	332	49.3	19.2
17	309	45.7	72	36.1	−19 46.3	226	39.8	+24 31.4	310	09.6	−1 48.2	347	51.7	−16 19.2
18	324	48.1	87	35.4	−19 47.1	241	42.9	+24 31.5	325	12.1	−1 48.2	2	54.1	−16 19.2
19	339	50.6	102	34.6	47.9	256	46.0	31.6	340	14.6	48.2	17	56.4	19.1
20	354	53.0	117	33.8	48.7	271	49.1	31.7	355	17.2	48.2	32	58.8	19.1
21	9	55.5	132	33.1	49.4	286	52.2	31.8	10	19.7	48.2	48	01.2	19.1
22	24	58.0	147	32.3	50.2	301	55.3	31.9	25	22.2	48.3	63	03.5	19.0
23	40	00.4	162	31.5	51.0	316	58.5	32.0	40	24.8	48.3	78	05.9	19.0
24	55	02.9	177	30.8	−19 51.7	332	01.6	+24 32.1	55	27.3	−1 48.3	93	08.2	−16 19.0
Dif	—			−8	−8		+31	+1		+25	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 21^{d}.5		PHE	4^{h}: 54′.5								
	PMG: 11^{h} 44^{m}.7		SD: 14′.8			12^{h}: 54′.6								
			PMG: 5^{h} 57^{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	183 50.2	−18 40.3	273 27.2		+20 36.7		**60 N**	15 29	16 18	17 10	22 22	88	14 30	2
1	198 50.1	40.9	287 59.6	134	27.1	96	**58**	40	26	14	33	83	18	7
2	213 50.0	41.5	302 32.0	134	17.5	96	**56**	50	33	19	43	79	14 08	10
3	228 49.9	42.1	317 04.4	134	+20 07.8	97	**54**	15 59	39	23	51	77	13 59	12
4	243 49.8	42.8	331 37.0	136	+19 57.9	99	**52**	16 08	45	26	22 59	74	51	15
5	258 49.7	−18 43.4	346 09.5	135	+19 48.0	99	**50**	16 15	16 50	17 30	23 06	71	13 43	18
6	273 49.5	−18 44.0	0 42.1	136	+19 38.0	100	**45**	16 30	17 02	17 38	23 20	67	13 28	21
7	288 49.4	44.6	15 14.8	137	28.0	100	**40**	43	12	45	32	62	15	25
8	303 49.3	45.3	29 47.5	137	17.8	102	**35**	16 54	21	51	42	59	13 03	29
9	318 49.2	45.9	44 20.2	137	+19 07.6	102	**30**	17 03	29	17 58	23 51	56	12 54	31
10	333 49.1	46.5	58 53.0	138	+18 57.2	104	**20**	20	43	18 10	** **	**	37	36
11	348 49.0	−18 47.1	73 25.9	139	+18 46.8	104	**10 N**	17 35	17 57	18 22	** **	**	12 22	40
12	3 48.9	−18 47.7	87 58.7	138	+18 36.3	105	**0**	17 48	18 10	18 36	** **	**	12 08	44
13	18 48.7	48.4	102 31.7	140	25.7	106	**10 S**	18 02	25	18 51	0 02	41	11 54	47
14	33 48.6	49.0	117 04.6	139	15.1	106	**20**	17	18 41	19 09	19	37	39	51
15	48 48.5	49.6	131 37.7	141	+18 04.3	108	**30**	34	19 01	32	38	33	21	57
16	63 48.4	50.2	146 10.7	140	+17 53.5	108	**35**	45	13	19 47	0 49	30	11 11	59
17	78 48.3	−18 50.8	160 43.8	141	+17 42.6	109	**40**	18 56	19 27	20 05	1 02	27	10 59	63
18	93 48.2	−18 51.5	175 16.9	141	+17 31.6	110	**45**	19 10	19 44	20 28	1 17	23	10 46	66
19	108 48.0	52.1	189 50.1	142	20.5	111	**50**	27	20 06	20 59	35	19	28	72
20	123 47.9	52.7	204 23.3	142	+17 09.4	111	**52**	35	17	21 15	43	17	20	74
21	138 47.8	53.3	218 56.6	143	+16 58.1	113	**54**	44	30	21 35	1 53	14	11	77
22	153 47.7	53.9	233 29.9	143	46.8	113	**56**	19 54	20 44	22 02	2 04	11	10 01	80
23	168 47.6	54.5	248 03.2	143	35.5	113	**58**	20 06	21 01	22 42	16	7	9 50	83
24	183 47.5	−18 55.2	262 36.6	144	+16 24.0	115	**60 S**	20 19	21 23	** **	2 30	3	9 36	88

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.6		Mag: −2.7		Mag: +0.7	
	20^{h} 16^{m}.5	PMG: 12^{h} 11^{m}		PMG: 1^{h} 52^{m}		PMG: 20^{h} 15^{m}		PMG: 17^{h} 45^{m}	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	55 02.9	177 30.8	−19 51.7	332 01.6	+24 32.1	55 27.3	−1 48.3	93 08.2	−16 19.0
1	70 05.4	192 30.0	52.5	347 04.7	32.2	70 29.8	48.3	108 10.6	18.9
2	85 07.8	207 29.2	53.3	2 07.8	32.3	85 32.4	48.3	123 13.0	18.9
3	100 10.3	222 28.4	54.0	17 10.9	32.4	100 34.9	48.3	138 15.3	18.9
4	115 12.8	237 27.7	54.8	32 14.1	32.5	115 37.4	48.4	153 17.7	18.8
5	130 15.2	252 26.9	−19 55.5	47 17.2	+24 32.6	130 40.0	−1 48.4	168 20.1	−16 18.8
6	145 17.7	267 26.1	−19 56.3	62 20.3	+24 32.7	145 42.5	−1 48.4	183 22.4	−16 18.8
7	160 20.1	282 25.3	57.1	77 23.5	32.8	160 45.0	48.4	198 24.8	18.7
8	175 22.6	297 24.6	57.8	92 26.6	32.9	175 47.6	48.4	213 27.2	18.7
9	190 25.1	312 23.8	58.6	107 29.7	33.0	190 50.1	48.4	228 29.5	18.7
10	205 27.5	327 23.0	−19 59.3	122 32.9	33.1	205 52.6	48.5	243 31.9	18.6
11	220 30.0	342 22.2	−20 00.1	137 36.0	+24 33.2	220 55.1	−1 48.5	258 34.3	−16 18.6
12	235 32.5	357 21.5	−20 00.9	152 39.1	+24 33.3	235 57.7	−1 48.5	273 36.6	−16 18.5
13	250 34.9	12 20.7	01.6	167 42.3	33.4	251 00.2	48.5	288 39.0	18.5
14	265 37.4	27 19.9	02.4	182 45.4	33.5	266 02.7	48.5	303 41.4	18.5
15	280 39.9	42 19.1	03.1	197 48.5	33.6	281 05.2	48.5	318 43.7	18.4
16	295 42.3	57 18.3	03.9	212 51.7	33.7	296 07.8	48.5	333 46.1	18.4
17	310 44.8	72 17.6	−20 04.6	227 54.8	+24 33.8	311 10.3	−1 48.6	348 48.4	−16 18.4
18	325 47.3	87 16.8	−20 05.4	242 58.0	+24 33.9	326 12.8	−1 48.6	3 50.8	−16 18.3
19	340 49.7	102 16.0	06.1	258 01.1	34.0	341 15.4	48.6	18 53.2	18.3
20	355 52.2	117 15.2	06.9	273 04.3	34.1	356 17.9	48.6	33 55.5	18.3
21	10 54.6	132 14.4	07.6	288 07.4	34.2	11 20.4	48.6	48 57.9	18.2
22	25 57.1	147 13.7	08.4	303 10.6	34.3	26 22.9	48.6	64 00.3	18.2
23	40 59.6	162 12.9	09.1	318 13.7	34.4	41 25.5	48.7	79 02.6	18.2
24	56 02.0	177 12.1	−20 09.8	333 16.9	+24 34.5	56 28.0	−1 48.7	94 05.0	−16 18.1
Dif	—	−8	−8	+31	+1	+25	0	+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22^{d}.5		PHE	4^{h}: 54′.9									
	PMG: 11^{h} 44^{m}.9				SD: 14′.9			12^{h}: 55′.0									
					PMG: 6^{h} 41^{m}			20^{h}: 55′.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	183	47.5	−18	55.2	262	36.6	+16	24.0		**60 N**	6 21	7 13	8 03	23 50	86	14 32	2
1	198	47.3		55.8	277	10.0 144		12.5 115		**58**	16	7 05	7 51	23 56	84	25	4
2	213	47.2		56.4	291	43.4 144	+16	00.9 116		**56**	12	6 58	40	** **	**	18	7
3	228	47.1		57.0	306	16.9 145	+15	49.2 117		**54**	08	51	31	** **	**	11	11
4	243	47.0		57.6	320	50.4 145		37.4 118		**52**	04	45	23	** **	**	06	12
5	258	46.9	−18	58.2	335	24.0 146	+15	25.6 118		**50**	6 00	6 40	7 16	** **	**	14 01	14
6	273	46.7	−18	58.8	349	57.5 145	+15	13.7 119		**45**	5 52	6 28	7 00	** **	**	13 49	20
7	288	46.6	−18	59.4	4	31.1 146	+15	01.8 119		**40**	45	18	6 47	** **	**	40	23
8	303	46.5	−19	00.0	19	04.8 147	+14	49.7 121		**35**	39	09	36	** **	**	32	27
9	318	46.4	−19	00.7	33	38.4 146		37.6 121		**30**	32	6 01	27	** **	**	25	30
10	333	46.2		01.3	48	12.1 147		25.5 121		**20**	20	5 47	6 10	0 06	51	13	34
11	348	46.1	−19	01.9	62	45.9 148	+14	13.2 123		**10 N**	5 07	5 33	5 55	0 19	47	13 02	39
12	3	46.0	−19	02.5	77	19.6 147	+14	00.9 123		**0**	4 54	5 19	5 41	0 31	43	12 52	43
13	18	45.9		03.1	91	53.4 148	+13	48.5 124		**10 S**	39	5 05	27	43	39	41	47
14	33	45.7		03.7	106	27.2 148		36.1 124		**20**	4 21	4 49	5 12	0 56	35	30	52
15	48	45.6		04.3	121	01.0 148		23.6 125		**30**	3 57	29	4 55	1 11	30	18	56
16	63	45.5		04.9	135	34.9 149	+13	11.0 126		**35**	43	17	45	19	28	10	60
17	78	45.4	−19	05.5	150	08.8 149	+12	58.4 126		**40**	3 24	4 02	4 33	1 29	24	12 02	63
18	93	45.2	−19	06.1	164	42.7 149	+12	45.7 127		**45**	3 01	3 45	4 19	1 40	21	11 52	67
19	108	45.1		06.7	179	16.6 149		32.9 128		**50**	2 30	23	4 02	1 54	16	40	72
20	123	45.0		07.3	193	50.5 149		20.1 128		**52**	2 14	3 12	3 54	2 00	14	34	74
21	138	44.9		07.9	208	24.5 150	+12	07.2 129		**54**	1 54	2 59	45	07	11	28	77
22	153	44.7		08.5	222	58.5 150	+11	54.3 129		**56**	1 27	45	35	15	8	21	80
23	168	44.6		09.1	237	32.5 150		41.3 130		**58**	0 47	28	23	23	6	13	83
24	183	44.5	−19	09.7	252	06.5 150	+11	28.2 131		**60 S**	** **	2 06	3 10	2 33	2	11 04	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.7			Mag: +0.7		
	20^{h} 12^{m}.5		PMG: 12^{h} 12^{m}			PMG: 1^{h} 47^{m}			PMG: 20^{h} 11^{m}			PMG: 17^{h} 41^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	56	02.0	177	12.1	−20 09.8	333	16.9	+24 34.5	56	28.0	−1 48.7	94	05.0	−16 18.1
1	71	04.5	192	11.3	10.6	348	20.0	34.6	71	30.5	48.7	109	07.3	18.1
2	86	07.0	207	10.5	11.3	3	23.2	34.7	86	33.0	48.7	124	09.7	18.1
3	101	09.4	222	09.7	12.1	18	26.4	34.8	101	35.5	48.7	139	12.1	18.0
4	116	11.9	237	08.9	12.8	33	29.5	34.9	116	38.1	48.7	154	14.4	18.0
5	131	14.4	252	08.2	−20 13.5	48	32.7	+24 35.0	131	40.6	−1 48.7	169	16.8	−16 18.0
6	146	16.8	267	07.4	−20 14.3	63	35.8	+24 35.1	146	43.1	−1 48.7	184	19.1	−16 17.9
7	161	19.3	282	06.6	15.0	78	39.0	35.2	161	45.6	48.8	199	21.5	17.9
8	176	21.8	297	05.8	15.8	93	42.2	35.3	176	48.2	48.8	214	23.9	17.8
9	191	24.2	312	05.0	16.5	108	45.4	35.4	191	50.7	48.8	229	26.2	17.8
10	206	26.7	327	04.2	17.2	123	48.5	35.5	206	53.2	48.8	244	28.6	17.8
11	221	29.1	342	03.4	−20 18.0	138	51.7	+24 35.6	221	55.7	−1 48.8	259	30.9	−16 17.7
12	236	31.6	357	02.6	−20 18.7	153	54.9	+24 35.7	236	58.2	−1 48.8	274	33.3	−16 17.7
13	251	34.1	12	01.9	19.4	168	58.0	35.8	252	00.8	48.8	289	35.7	17.7
14	266	36.5	27	01.1	20.1	184	01.2	35.9	267	03.3	48.8	304	38.0	17.6
15	281	39.0	42	00.3	20.9	199	04.4	35.9	282	05.8	48.9	319	40.4	17.6
16	296	41.5	56	59.5	21.6	214	07.6	36.0	297	08.3	48.9	334	42.7	17.6
17	311	43.9	71	58.7	−20 22.3	229	10.8	+24 36.1	312	10.8	−1 48.9	349	45.1	−16 17.5
18	326	46.4	86	57.9	−20 23.1	244	13.9	+24 36.2	327	13.4	−1 48.9	4	47.5	−16 17.5
19	341	48.9	101	57.1	23.8	259	17.1	36.3	342	15.9	48.9	19	49.8	17.5
20	356	51.3	116	56.3	24.5	274	20.3	36.4	357	18.4	48.9	34	52.2	17.4
21	11	53.8	131	55.5	25.2	289	23.5	36.5	12	20.9	48.9	49	54.5	17.4
22	26	56.2	146	54.7	25.9	304	26.7	36.6	27	23.4	48.9	64	56.9	17.3
23	41	58.7	161	53.9	26.7	319	29.9	36.7	42	25.9	48.9	79	59.3	17.3
24	57	01.2	176	53.1	−20 27.4	334	33.1	+24 36.8	57	28.5	−1 49.0	95	01.6	−16 17.3
Dif	—			−8	−7		+32	+1		+25	0		+24	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 23ᵈ.5		PHE	4ʰ: 55′.4								
	PMG: 11ʰ 45ᵐ.1				SD: 15′.1			12ʰ: 55′.7								
					PMG: 7ʰ 24ᵐ			20ʰ: 55′.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	183	44.5	−19	09.7	252	06.5	+11	28.2	**60 N**	15 24	16 14	17 07	** **	**	14 34	0
1	198	44.4		10.3	266	40.5 150		15.1 131	**58**	37	23	12	** **	**	29	4
2	213	44.2		10.9	281	14.6 151	+11	01.9 132	**56**	47	30	16	0 02	80	25	7
3	228	44.1		11.5	295	48.6 150	+10	48.6 133	**54**	15 57	37	20	08	77	22	9
4	243	44.0		12.1	310	22.7 151		35.3 133	**52**	16 05	43	24	13	74	18	12
5	258	43.8	−19	12.7	324	56.8 151	+10	22.0 133	**50**	16 12	16 48	17 28	0 17	72	14 15	14
6	273	43.7	−19	13.3	339	30.9 151	+10	08.6 134	**45**	16 28	17 00	17 36	0 27	67	14 09	18
7	288	43.6		13.9	354	05.0 151	+9	55.1 135	**40**	42	11	44	34	64	14 03	23
8	303	43.4		14.5	8	39.1 151		41.6 135	**35**	16 53	20	51	41	60	13 59	25
9	318	43.3		15.1	23	13.2 151		28.0 136	**30**	17 03	28	17 57	47	57	55	28
10	333	43.2		15.7	37	47.3 151		14.4 136	**20**	20	43	18 10	0 57	51	47	34
11	348	43.1	−19	16.3	52	21.5 152	+9	00.7 137	**10 N**	17 35	17 57	18 22	1 06	47	13 41	38
12	3	42.9	−19	16.9	66	55.6 151	+8	47.0 137	**0**	17 49	18 11	18 36	1 14	43	13 35	42
13	18	42.8		17.5	81	29.7 151		33.2 138	**10 S**	18 03	25	18 52	22	39	28	47
14	33	42.7		18.1	96	03.9 152		19.4 138	**20**	18	18 42	19 10	31	34	22	51
15	48	42.5		18.6	110	38.0 151	+8	05.5 139	**30**	36	19 02	34	41	29	14	57
16	63	42.4		19.2	125	12.2 152	+7	51.6 139	**35**	47	15	19 49	47	26	10	60
17	78	42.3	−19	19.8	139	46.3 151	+7	37.6 140	**40**	18 59	19 29	20 08	1 53	23	13 05	63
18	93	42.1	−19	20.4	154	20.5 152	+7	23.6 140	**45**	19 13	19 47	20 31	2 01	18	12 59	68
19	108	42.0		21.0	168	54.6 151	+7	09.5 141	**50**	30	20 10	21 04	10	14	52	72
20	123	41.8		21.6	183	28.8 152	+6	55.4 141	**52**	39	21	21	14	12	48	75
21	138	41.7		22.2	198	02.9 151		41.3 141	**54**	48	34	21 42	18	10	45	77
22	153	41.6		22.8	212	37.0 151		27.1 142	**56**	19 58	20 49	22 10	23	7	41	80
23	168	41.4		23.3	227	11.2 152	+6	12.9 142	**58**	20 10	21 07	22 58	29	4	36	84
24	183	41.3	−19	23.9	241	45.3 151	+5	58.6 143	**60 S**	20 24	21 30	** **	2 35	1	12 31	87

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.7			Mag: +0.7		
	20ʰ 08ᵐ.6		PMG: 12ʰ 13ᵐ			PMG: 1ʰ 41ᵐ			PMG: 20ʰ 07ᵐ			PMG: 17ʰ 37ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	57	01.2	176	53.1	−20 27.4	334	33.1	+24 36.8	57	28.5	−1 49.0	95	01.6	−16 17.3
1	72	03.6	191	52.3	28.1	349	36.3	36.9	72	31.0	49.0	110	04.0	17.2
2	87	06.1	206	51.5	28.8	4	39.4	37.0	87	33.5	49.0	125	06.3	17.2
3	102	08.6	221	50.7	29.5	19	42.6	37.1	102	36.0	49.0	140	08.7	17.2
4	117	11.0	236	49.9	30.3	34	45.8	37.2	117	38.5	49.0	155	11.0	17.1
5	132	13.5	251	49.1	−20 31.0	49	49.0	+24 37.3	132	41.0	−1 49.0	170	13.4	−16 17.1
6	147	16.0	266	48.3	−20 31.7	64	52.2	+24 37.4	147	43.5	−1 49.0	185	15.8	−16 17.1
7	162	18.4	281	47.5	32.4	79	55.4	37.5	162	46.1	49.0	200	18.1	17.0
8	177	20.9	296	46.7	33.1	94	58.6	37.5	177	48.6	49.0	215	20.5	17.0
9	192	23.4	311	45.9	33.8	110	01.8	37.6	192	51.1	49.0	230	22.8	16.9
10	207	25.8	326	45.1	34.5	125	05.0	37.7	207	53.6	49.1	245	25.2	16.9
11	222	28.3	341	44.3	−20 35.2	140	08.3	+24 37.8	222	56.1	−1 49.1	260	27.5	−16 16.9
12	237	30.7	356	43.5	−20 35.9	155	11.5	+24 37.9	237	58.6	−1 49.1	275	29.9	−16 16.8
13	252	33.2	11	42.7	36.7	170	14.7	38.0	253	01.1	49.1	290	32.2	16.8
14	267	35.7	26	41.9	37.4	185	17.9	38.1	268	03.6	49.1	305	34.6	16.8
15	282	38.1	41	41.1	38.1	200	21.1	38.2	283	06.2	49.1	320	37.0	16.7
16	297	40.6	56	40.3	38.8	215	24.3	38.3	298	08.7	49.1	335	39.3	16.7
17	312	43.1	71	39.5	−20 39.5	230	27.5	+24 38.4	313	11.2	−1 49.1	350	41.7	−16 16.6
18	327	45.5	86	38.7	−20 40.2	245	30.7	+24 38.5	328	13.7	−1 49.1	5	44.0	−16 16.6
19	342	48.0	101	37.9	40.9	260	34.0	38.6	343	16.2	49.1	20	46.4	16.6
20	357	50.5	116	37.1	41.6	275	37.2	38.7	358	18.7	49.1	35	48.7	16.5
21	12	52.9	131	36.3	42.3	290	40.4	38.7	13	21.2	49.1	50	51.1	16.5
22	27	55.4	146	35.5	43.0	305	43.6	38.8	28	23.7	49.1	65	53.4	16.5
23	42	57.9	161	34.7	43.7	320	46.9	38.9	43	26.2	49.2	80	55.8	16.4
24	58	00.3	176	33.9	−20 44.4	335	50.1	+24 39.0	58	28.7	−1 49.2	95	58.1	−16 16.4
Dif	—			−8	−7		+32	+1		+25	0		+24	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 24ᵈ.5		PHE	4ʰ: 56′.2									
	PMG: 11ʰ 45ᵐ.4				SD: 15′.3			12ʰ: 56′.4									
					PMG: 8ʰ 07ᵐ			20ʰ: 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	41.3	−19	23.9	241	45.3	+5	58.6		**60 N**	6 25	7 17	8 08	1 16	89	14 34	1
1	198	41.2		24.5	256	19.4 151		44.3	143	**58**	20	09	7 55	20	84	33	4
2	213	41.0		25.1	270	53.5 151		29.9	144	**56**	15	7 01	44	22	82	32	6
3	228	40.9		25.7	285	27.5 150		15.5	144	**54**	11	6 55	35	25	79	31	9
4	243	40.8		26.3	300	01.6 151	+5	01.0	145	**52**	07	49	27	27	76	30	12
5	258	40.6	−19	26.9	314	35.7 151	+4	46.6	144	**50**	6 03	6 43	7 19	1 29	74	14 29	14
6	273	40.5	−19	27.4	329	09.7 150	+4	32.1	145	**45**	5 55	6 31	7 03	1 34	69	14 27	19
7	288	40.3		28.0	343	43.7 150		17.5	146	**40**	47	20	6 49	38	64	26	22
8	303	40.2		28.6	358	17.8 151	+4	02.9	146	**35**	40	11	38	41	61	24	26
9	318	40.1		29.2	12	51.7 149	+3	48.3	146	**30**	34	6 03	28	44	57	23	29
10	333	39.9		29.8	27	25.7 150		33.6	147	**20**	21	5 48	6 11	48	53	21	34
11	348	39.8	−19	30.3	41	59.7 150	+3	18.9	147	**10 N**	5 08	5 34	5 56	1 53	47	14 19	39
12	3	39.6	−19	30.9	56	33.6 149	+3	04.2	147	**0**	4 54	5 20	5 42	1 57	43	14 17	44
13	18	39.5		31.5	71	07.5 149	+2	49.5	147	**10 S**	39	5 05	27	2 01	39	15	49
14	33	39.4		32.1	85	41.4 149		34.7	148	**20**	4 20	4 48	5 12	05	34	13	54
15	48	39.2		32.6	100	15.2 148		19.9	148	**30**	3 56	28	4 54	10	29	11	59
16	63	39.1		33.2	114	49.1 149	+2	05.0	149	**35**	41	15	44	13	25	10	62
17	78	38.9	−19	33.8	129	22.9 148	+1	50.2	148	**40**	3 22	4 01	4 32	2 16	22	14 08	66
18	93	38.8	−19	34.4	143	56.6 147	+1	35.3	149	**45**	2 59	3 43	4 17	2 19	19	14 07	69
19	108	38.6		34.9	158	30.4 148		20.3	150	**50**	26	20	4 00	24	13	04	75
20	123	38.5		35.5	173	04.1 147	+1	05.4	149	**52**	2 09	3 09	3 51	26	11	03	78
21	138	38.3		36.1	187	37.8 147	+0	50.4	150	**54**	1 48	2 56	42	28	9	02	80
22	153	38.2		36.7	202	11.4 146		35.4	150	**56**	1 19	41	32	30	7	01	83
23	168	38.1		37.2	216	45.0 146		20.4	150	**58**	0 32	23	20	33	4	14 00	86
24	183	37.9	−19	37.8	231	18.6 146	+0	05.4	150	**60 S**	** **	2 00	3 06	2 36	0	13 58	90

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.7			Mag: +0.7		
	20ʰ 04ᵐ.7		PMG: 12ʰ 14ᵐ			PMG: 1ʰ 36ᵐ			PMG: 20ʰ 03ᵐ			PMG: 17ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	58	00.3	176	33.9	−20 44.4	335	50.1	+24 39.0	58	28.7	−1 49.2	95	58.1	−16 16.4
1	73	02.8	191	33.0	45.1	350	53.3	39.1	73	31.3	49.2	111	00.5	16.4
2	88	05.2	206	32.2	45.7	5	56.5	39.2	88	33.8	49.2	126	02.9	16.3
3	103	07.7	221	31.4	46.4	20	59.8	39.3	103	36.3	49.2	141	05.2	16.3
4	118	10.2	236	30.6	47.1	36	03.0	39.4	118	38.8	49.2	156	07.6	16.2
5	133	12.6	251	29.8	−20 47.8	51	06.2	+24 39.5	133	41.3	−1 49.2	171	09.9	−16 16.2
6	148	15.1	266	29.0	−20 48.5	66	09.5	+24 39.6	148	43.8	−1 49.2	186	12.3	−16 16.2
7	163	17.6	281	28.2	49.2	81	12.7	39.6	163	46.3	49.2	201	14.6	16.1
8	178	20.0	296	27.4	49.9	96	15.9	39.7	178	48.8	49.2	216	17.0	16.1
9	193	22.5	311	26.6	50.6	111	19.2	39.8	193	51.3	49.2	231	19.3	16.0
10	208	25.0	326	25.7	51.3	126	22.4	39.9	208	53.8	49.2	246	21.7	16.0
11	223	27.4	341	24.9	−20 51.9	141	25.7	+24 40.0	223	56.3	−1 49.2	261	24.0	−16 16.0
12	238	29.9	356	24.1	−20 52.6	156	28.9	+24 40.1	238	58.8	−1 49.2	276	26.4	−16 15.9
13	253	32.3	11	23.3	53.3	171	32.1	40.2	254	01.3	49.2	291	28.7	15.9
14	268	34.8	26	22.5	54.0	186	35.4	40.3	269	03.8	49.2	306	31.1	15.9
15	283	37.3	41	21.7	54.7	201	38.6	40.4	284	06.3	49.2	321	33.4	15.8
16	298	39.7	56	20.9	55.3	216	41.9	40.4	299	08.8	49.3	336	35.8	15.8
17	313	42.2	71	20.0	−20 56.0	231	45.1	+24 40.5	314	11.3	−1 49.3	351	38.1	−16 15.7
18	328	44.7	86	19.2	−20 56.7	246	48.4	+24 40.6	329	13.8	−1 49.3	6	40.5	−16 15.7
19	343	47.1	101	18.4	57.4	261	51.6	40.7	344	16.3	49.3	21	42.8	15.7
20	358	49.6	116	17.6	58.1	276	54.9	40.8	359	18.8	49.3	36	45.2	15.6
21	13	52.1	131	16.8	58.7	291	58.1	40.9	14	21.3	49.3	51	47.5	15.6
22	28	54.5	146	15.9	−20 59.4	307	01.4	41.0	29	23.8	49.3	66	49.9	15.5
23	43	57.0	161	15.1	−21 00.1	322	04.7	41.1	44	26.3	49.3	81	52.2	15.5
24	58	59.5	176	14.3	−21 00.7	337	07.9	+24 41.2	59	28.8	−1 49.3	96	54.6	−16 15.5
Dif	—			−8	−7		+32	+1		+25	0		+24	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 25ᵈ.5		PHE	4ʰ: 57′.0								
	PMG: 11ʰ 45ᵐ.6		SD: 15′.5			12ʰ: 57′.3								
			PMG: 8ʰ 50ᵐ			20ʰ: 57′.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 37.9	−19 37.8	231 18.6		+0 05.4		**60 N**	15 20	16 11	17 04	2 45	92	14 35	1
1	198 37.8	38.4	245 52.1	145	−0 09.7	151	**58**	33	20	09	44	89	37	4
2	213 37.6	38.9	260 25.6	145	24.8	151	**56**	44	27	14	44	85	38	8
3	228 37.5	39.5	274 59.1	145	39.9	151	**54**	15 54	34	18	44	82	40	10
4	243 37.3	40.1	289 32.5	144	−0 55.0	151	**52**	16 02	41	22	43	80	42	12
5	258 37.2	−19 40.6	304 05.8	143	−1 10.1	151	**50**	16 10	16 46	17 26	2 43	77	14 43	15
6	273 37.0	−19 41.2	318 39.2	144	−1 25.2	151	**45**	16 27	16 59	17 35	2 43	71	14 46	20
7	288 36.9	41.8	333 12.5	143	40.4	152	**40**	40	17 10	43	42	67	48	25
8	303 36.7	42.3	347 45.7	142	−1 55.6	152	**35**	16 52	19	50	42	63	50	28
9	318 36.6	42.9	2 18.9	142	−2 10.8	152	**30**	17 02	27	17 57	41	61	52	31
10	333 36.4	43.5	16 52.0	141	25.9	151	**20**	19	43	18 10	41	54	55	37
11	348 36.3	−19 44.0	31 25.1	141	−2 41.1	152	**10 N**	17 35	17 57	18 23	2 40	50	14 58	42
12	3 36.1	−19 44.6	45 58.1	140	−2 56.4	153	**0**	17 49	18 11	18 37	2 40	45	15 01	46
13	18 36.0	45.2	60 31.1	140	−3 11.6	152	**10 S**	18 04	26	18 53	40	40	04	51
14	33 35.8	45.7	75 04.0	139	26.8	152	**20**	20	18 43	19 12	39	36	07	55
15	48 35.7	46.3	89 36.9	139	42.0	152	**30**	38	19 04	36	39	30	10	61
16	63 35.5	46.9	104 09.7	138	−3 57.3	153	**35**	18 49	17	19 52	38	27	12	65
17	78 35.4	−19 47.4	118 42.5	138	−4 12.5	152	**40**	19 01	19 32	20 11	2 38	24	15 14	69
18	93 35.2	−19 48.0	133 15.2	137	−4 27.7	152	**45**	19 16	19 50	20 35	2 38	19	15 16	74
19	108 35.1	48.5	147 47.8	136	43.0	153	**50**	34	20 14	21 08	37	15	19	79
20	123 34.9	49.1	162 20.4	136	−4 58.2	152	**52**	42	25	26	37	13	21	81
21	138 34.8	49.7	176 52.9	135	−5 13.4	152	**54**	19 52	39	21 49	37	10	22	84
22	153 34.6	50.2	191 25.4	135	28.7	153	**56**	20 02	20 54	22 20	37	7	24	87
23	168 34.5	50.8	205 57.7	133	43.9	152	**58**	15	21 13	23 22	37	4	26	90
24	183 34.3	−19 51.3	220 30.1	134	−5 59.1	152	**60 S**	20 29	21 37	** **	2 36	1	15 28	94

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.7		Mag: −2.7		Mag: +0.7	
	20ʰ 00ᵐ.7	PMG: 12ʰ 16ᵐ		PMG: 1ʰ 31ᵐ		PMG: 19ʰ 59ᵐ		PMG: 17ʰ 30ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	58 59.5	176 14.3	−21 00.7	337 07.9	+24 41.2	59 28.8	−1 49.3	96 54.6	−16 15.5
1	74 01.9	191 13.5	01.4	352 11.2	41.2	74 31.3	49.3	111 56.9	15.4
2	89 04.4	206 12.7	02.1	7 14.4	41.3	89 33.8	49.3	126 59.3	15.4
3	104 06.8	221 11.8	02.7	22 17.7	41.4	104 36.3	49.3	142 01.6	15.4
4	119 09.3	236 11.0	03.4	37 21.0	41.5	119 38.8	49.3	157 04.0	15.3
5	134 11.8	251 10.2	−21 04.1	52 24.2	+24 41.6	134 41.3	−1 49.3	172 06.3	−16 15.3
6	149 14.2	266 09.4	−21 04.7	67 27.5	+24 41.7	149 43.8	−1 49.3	187 08.7	−16 15.2
7	164 16.7	281 08.5	05.4	82 30.8	41.8	164 46.3	49.3	202 11.0	15.2
8	179 19.2	296 07.7	06.1	97 34.0	41.8	179 48.8	49.3	217 13.4	15.2
9	194 21.6	311 06.9	06.7	112 37.3	41.9	194 51.3	49.3	232 15.7	15.1
10	209 24.1	326 06.1	07.4	127 40.6	42.0	209 53.8	49.3	247 18.1	15.1
11	224 26.6	341 05.2	−21 08.0	142 43.8	+24 42.1	224 56.3	−1 49.3	262 20.4	−16 15.0
12	239 29.0	356 04.4	−21 08.7	157 47.1	+24 42.2	239 58.8	−1 49.3	277 22.8	−16 15.0
13	254 31.5	11 03.6	09.4	172 50.4	42.3	255 01.3	49.3	292 25.1	15.0
14	269 33.9	26 02.8	10.0	187 53.7	42.4	270 03.8	49.3	307 27.5	14.9
15	284 36.4	41 01.9	10.7	202 57.0	42.4	285 06.3	49.3	322 29.8	14.9
16	299 38.9	56 01.1	11.3	218 00.2	42.5	300 08.8	49.3	337 32.2	14.8
17	314 41.3	71 00.3	−21 12.0	233 03.5	+24 42.6	315 11.3	−1 49.3	352 34.5	−16 14.8
18	329 43.8	85 59.4	−21 12.6	248 06.8	+24 42.7	330 13.8	−1 49.3	7 36.9	−16 14.8
19	344 46.3	100 58.6	13.3	263 10.1	42.8	345 16.3	49.3	22 39.2	14.7
20	359 48.7	115 57.8	13.9	278 13.4	42.9	0 18.8	49.3	37 41.6	14.7
21	14 51.2	130 57.0	14.6	293 16.7	42.9	15 21.3	49.3	52 43.9	14.6
22	29 53.7	145 56.1	15.2	308 19.9	43.0	30 23.8	49.3	67 46.2	14.6
23	44 56.1	160 55.3	15.9	323 23.2	43.1	45 26.3	49.3	82 48.6	14.6
24	59 58.6	175 54.5	−21 16.5	338 26.5	+24 43.2	60 28.8	−1 49.3	97 50.9	−16 14.5
Dif	—	−8	−7	+33	+1	+25	0	+23	0

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 45m.8				Edad: 26d.5 SD: 15′.7 PMG: 9h 36m		PHE	4h: 57′.8 12h: 58′.1 20h: 58′.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	183	34.3	−19	51.3	220	30.1	−5	59.1	**60 N**	6 28	7 21	8 12	4 17	98	14 36	2
1	198	34.2		51.9	235	02.3 132	−6	14.3 152	**58**	23	13	8 00	13	93	41	6
2	213	34.0		52.4	249	34.5 132		29.5 152	**56**	18	7 05	7 48	09	90	46	10
3	228	33.9		53.0	264	06.6 131		44.7 152	**54**	14	6 58	39	06	86	50	13
4	243	33.7		53.5	278	38.6 130	−6	59.9 152	**52**	10	52	30	03	83	54	16
5	258	33.5	−19	54.1	293	10.6 130	−7	15.1 152	**50**	6 06	6 46	7 22	4 00	81	14 58	18
6	273	33.4	−19	54.6	307	42.5 129	−7	30.2 151	**45**	5 57	6 33	7 05	3 54	75	15 06	23
7	288	33.2		55.2	322	14.3 128	−7	45.4 152	**40**	49	22	6 52	49	71	13	27
8	303	33.1		55.7	336	46.0 127	−8	00.5 151	**35**	42	13	40	45	67	18	32
9	318	32.9		56.3	351	17.7 127		15.6 151	**30**	35	6 04	30	42	63	23	35
10	333	32.8		56.8	5	49.3 126		30.7 151	**20**	22	5 49	6 12	35	58	32	41
11	348	32.6	−19	57.4	20	20.8 125	−8	45.8 151	**10 N**	5 09	5 35	5 57	3 30	53	15 40	45
12	3	32.4	−19	57.9	34	52.2 124	−9	00.8 150	**0**	4 55	5 20	5 42	3 25	48	15 47	50
13	18	32.3		58.5	49	23.5 123		15.8 150	**10 S**	39	5 05	28	20	43	15 55	54
14	33	32.1		59.0	63	54.7 122		30.8 150	**20**	4 20	4 48	5 12	15	38	16 02	60
15	48	32.0	−19	59.6	78	25.9 122	−9	45.8 150	**30**	3 55	27	4 53	09	33	11	66
16	63	31.8	−20	00.1	92	57.0 121	−10	00.7 149	**35**	40	4 14	43	05	30	17	68
17	78	31.6	−20	00.7	107	27.9 119	−10	15.6 149	**40**	3 21	3 59	4 30	3 02	25	16 23	72
18	93	31.5	−20	01.2	121	58.8 119	−10	30.5 149	**45**	2 56	3 41	4 15	2 57	22	16 30	77
19	108	31.3		01.8	136	29.6 118	−10	45.4 149	**50**	23	17	3 57	52	17	38	83
20	123	31.2		02.3	151	00.4 118	−11	00.2 148	**52**	2 05	3 06	49	50	14	42	85
21	138	31.0		02.9	165	31.0 116		14.9 147	**54**	1 42	2 52	39	47	12	46	89
22	153	30.8		03.4	180	01.5 115		29.7 148	**56**	1 11	37	28	44	9	51	92
23	168	30.7		03.9	194	31.9 114		44.4 147	**58**	0 08	2 18	16	41	5	16 56	96
24	183	30.5	−20	04.5	209	02.2 113	−11	59.0 146	**60 S**	** **	1 54	3 01	2 37	2	17 02	101

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 19h 56m.8		Mag: −3.9 PMG: 12h 17m			Mag: −1.7 PMG: 1h 26m			Mag: −2.7 PMG: 19h 55m			Mag: +0.7 PMG: 17h 26m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	59	58.6	175	54.5	−21 16.5	338	26.5	+24 43.2	60	28.8	−1 49.3	97	50.9	−16 14.5
1	75	01.1	190	53.6	17.2	353	29.8	43.3	75	31.3	49.3	112	53.3	14.5
2	90	03.5	205	52.8	17.8	8	33.1	43.4	90	33.7	49.3	127	55.6	14.4
3	105	06.0	220	52.0	18.5	23	36.4	43.4	105	36.2	49.3	142	58.0	14.4
4	120	08.4	235	51.1	19.1	38	39.7	43.5	120	38.7	49.3	158	00.3	14.4
5	135	10.9	250	50.3	−21 19.7	53	43.0	+24 43.6	135	41.2	−1 49.3	173	02.7	−16 14.3
6	150	13.4	265	49.5	−21 20.4	68	46.3	+24 43.7	150	43.7	−1 49.3	188	05.0	−16 14.3
7	165	15.8	280	48.6	21.0	83	49.6	43.8	165	46.2	49.3	203	07.4	14.2
8	180	18.3	295	47.8	21.6	98	52.9	43.9	180	48.7	49.3	218	09.7	14.2
9	195	20.8	310	46.9	22.3	113	56.2	43.9	195	51.2	49.3	233	12.0	14.2
10	210	23.2	325	46.1	22.9	128	59.5	44.0	210	53.7	49.3	248	14.4	14.1
11	225	25.7	340	45.3	−21 23.6	144	02.8	+24 44.1	225	56.2	−1 49.3	263	16.7	−16 14.1
12	240	28.2	355	44.4	−21 24.2	159	06.1	+24 44.2	240	58.6	−1 49.3	278	19.1	−16 14.0
13	255	30.6	10	43.6	24.8	174	09.4	44.3	256	01.1	49.3	293	21.4	14.0
14	270	33.1	25	42.8	25.4	189	12.7	44.3	271	03.6	49.3	308	23.8	14.0
15	285	35.6	40	41.9	26.1	204	16.0	44.4	286	06.1	49.3	323	26.1	13.9
16	300	38.0	55	41.1	26.7	219	19.4	44.5	301	08.6	49.3	338	28.5	13.9
17	315	40.5	70	40.2	−21 27.3	234	22.7	+24 44.6	316	11.1	−1 49.3	353	30.8	−16 13.8
18	330	42.9	85	39.4	−21 28.0	249	26.0	+24 44.7	331	13.6	−1 49.3	8	33.1	−16 13.8
19	345	45.4	100	38.6	28.6	264	29.3	44.7	346	16.1	49.3	23	35.5	13.8
20	0	47.9	115	37.7	29.2	279	32.6	44.8	1	18.5	49.3	38	37.8	13.7
21	15	50.3	130	36.9	29.8	294	35.9	44.9	16	21.0	49.3	53	40.2	13.7
22	30	52.8	145	36.0	30.5	309	39.3	45.0	31	23.5	49.3	68	42.5	13.6
23	45	55.3	160	35.2	31.1	324	42.6	45.1	46	26.0	49.3	83	44.9	13.6
24	60	57.7	175	34.3	−21 31.7	339	45.9	+24 45.1	61	28.5	−1 49.3	98	47.2	−16 13.5
Dif	—				−8 −6			+33 +1			+25 0			+23 0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 46m.1				Edad: 27d.5 SD: 15′.9 PMG: 10h 25m		PHE	4h: 58′.7 12h: 58′.9 20h: 59′.2 Rº: 53m			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	30.5	−20	04.5	209	02.2	−11	59.0	**60 N**	15 17	16 08	17 01	5 55	105	14 38	4
1	198	30.4		05.0	223	32.5 113	−12	13.6 146	**58**	30	17	07	46	100	47	10
2	213	30.2		05.6	238	02.6 111		28.2 146	**56**	41	25	12	39	95	14 56	14
3	228	30.0		06.1	252	32.6 110		42.7 145	**54**	15 51	32	16	32	92	15 03	18
4	243	29.9		06.6	267	02.6 110	−12	57.2 145	**52**	16 00	39	20	26	88	10	21
5	258	29.7	−20	07.2	281	32.4 108	−13	11.6 144	**50**	16 08	16 45	17 24	5 21	85	15 16	24
6	273	29.5	−20	07.7	296	02.1 107	−13	25.9 143	**45**	16 25	16 57	17 34	5 09	80	15 29	29
7	288	29.4		08.2	310	31.8 107		40.2 143	**40**	39	17 08	42	5 00	75	40	34
8	303	29.2		08.8	325	01.3 105	−13	54.5 143	**35**	16 51	18	49	4 52	71	50	37
9	318	29.0		09.3	339	30.7 104	−14	08.7 142	**30**	17 01	27	17 56	45	67	15 58	41
10	333	28.9		09.8	354	00.0 103		22.8 141	**20**	19	43	18 10	33	62	16 13	45
11	348	28.7	−20	10.4	8	29.2 102	−14	36.9 141	**10 N**	17 35	17 57	18 23	4 23	56	16 25	51
12	3	28.5	−20	10.9	22	58.3 101	−14	50.9 140	**0**	17 50	18 12	18 37	4 13	52	16 37	55
13	18	28.4		11.4	37	27.3 100	−15	04.9 140	**10 S**	18 05	27	18 54	4 03	48	16 49	59
14	33	28.2		12.0	51	56.1 98		18.8 139	**20**	21	18 45	19 13	3 53	43	17 02	64
15	48	28.0		12.5	66	24.9 98		32.6 138	**30**	40	19 06	38	42	37	17	69
16	63	27.9		13.0	80	53.5 96	−15	46.3 137	**35**	18 51	19	19 54	35	34	25	73
17	78	27.7	−20	13.6	95	22.0 95	−16	00.0 137	**40**	19 03	19 34	20 13	3 27	31	17 35	76
18	93	27.5	−20	14.1	109	50.5 95	−16	13.6 136	**45**	19 18	19 53	20 38	3 19	26	17 47	80
19	108	27.4		14.6	124	18.8 93		27.1 135	**50**	37	20 17	21 13	09	20	18 01	87
20	123	27.2		15.2	138	46.9 91		40.6 135	**52**	45	29	32	3 04	18	07	90
21	138	27.0		15.7	153	15.0 91	−16	53.9 133	**54**	19 55	43	21 55	2 59	15	15	93
22	153	26.8		16.2	167	43.0 90	−17	07.2 133	**56**	20 07	20 59	22 29	53	12	23	97
23	168	26.7		16.7	182	10.8 88		20.4 132	**58**	19	21 19	** **	46	8	32	102
24	183	26.5	−20	17.3	196	38.5 87	−17	33.5 131	**60 S**	20 35	21 45	** **	2 39	4	18 43	108

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 19h 52m.9		Mag: −3.9 PMG: 12h 18m				Mag: −1.7 PMG: 1h 21m				Mag: −2.7 PMG: 19h 51m				Mag: +0.7 PMG: 17h 22m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	60	57.7	175	34.3	−21	31.7	339	45.9	+24	45.1	61	28.5	−1	49.3	98	47.2	−16	13.5
1	76	00.2	190	33.5		32.3	354	49.2		45.2	76	31.0		49.3	113	49.5		13.5
2	91	02.7	205	32.6		32.9	9	52.5		45.3	91	33.5		49.3	128	51.9		13.5
3	106	05.1	220	31.8		33.5	24	55.9		45.4	106	35.9		49.3	143	54.2		13.4
4	121	07.6	235	31.0		34.2	39	59.2		45.5	121	38.4		49.3	158	56.6		13.4
5	136	10.0	250	30.1	−21	34.8	55	02.5	+24	45.5	136	40.9	−1	49.3	173	58.9	−16	13.3
6	151	12.5	265	29.3	−21	35.4	70	05.9	+24	45.6	151	43.4	−1	49.3	189	01.2	−16	13.3
7	166	15.0	280	28.4		36.0	85	09.2		45.7	166	45.9		49.3	204	03.6		13.3
8	181	17.4	295	27.6		36.6	100	12.5		45.8	181	48.3		49.2	219	05.9		13.2
9	196	19.9	310	26.7		37.2	115	15.8		45.9	196	50.8		49.2	234	08.3		13.2
10	211	22.4	325	25.9		37.8	130	19.2		45.9	211	53.3		49.2	249	10.6		13.1
11	226	24.8	340	25.0	−21	38.4	145	22.5	+24	46.0	226	55.8	−1	49.2	264	13.0	−16	13.1
12	241	27.3	355	24.2	−21	39.0	160	25.9	+24	46.1	241	58.3	−1	49.2	279	15.3	−16	13.0
13	256	29.8	10	23.3		39.7	175	29.2		46.2	257	00.8		49.2	294	17.6		13.0
14	271	32.2	25	22.5		40.3	190	32.5		46.2	272	03.2		49.2	309	20.0		13.0
15	286	34.7	40	21.6		40.9	205	35.9		46.3	287	05.7		49.2	324	22.3		12.9
16	301	37.2	55	20.8		41.5	220	39.2		46.4	302	08.2		49.2	339	24.7		12.9
17	316	39.6	70	19.9	−21	42.1	235	42.5	+24	46.5	317	10.7	−1	49.2	354	27.0	−16	12.8
18	331	42.1	85	19.1	−21	42.7	250	45.9	+24	46.5	332	13.1	−1	49.2	9	29.3	−16	12.8
19	346	44.5	100	18.2		43.3	265	49.2		46.6	347	15.6		49.2	24	31.7		12.8
20	1	47.0	115	17.4		43.9	280	52.6		46.7	2	18.1		49.2	39	34.0		12.7
21	16	49.5	130	16.5		44.5	295	55.9		46.8	17	20.6		49.2	54	36.3		12.7
22	31	51.9	145	15.7		45.1	310	59.3		46.8	32	23.1		49.2	69	38.7		12.6
23	46	54.4	160	14.8		45.7	326	02.6		46.9	47	25.5		49.2	84	41.0		12.6
24	61	56.9	175	13.9	−21	46.2	341	06.0	+24	47.0	62	28.0	−1	49.2	99	43.4	−16	12.5
Dif	—			−8		−6		+33		+1		+25		0		+23		0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 28ᵈ.5		PHE	4ʰ: 59′.4									
	PMG: 11ʰ 46ᵐ.4				SD: 16′.2			12ʰ: 59′.6									
					PMG: 11ʰ 18ᵐ			20ʰ: 59′.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	183	26.5	−20	17.3	196	38.5	−17	33.5		**60 N**	6 32	7 26	8 17	7 40	112	14 42	9
1	198	26.3		17.8	211	06.1 86		46.5	130	**58**	27	16	8 04	26	104	14 57	16
2	213	26.2		18.3	225	33.6 85	−17	59.5	130	**56**	22	08	7 52	14	99	15 10	22
3	228	26.0		18.8	240	00.9 83	−18	12.3	128	**54**	17	7 01	42	7 04	94	21	26
4	243	25.8		19.4	254	28.2 83		25.0	127	**52**	13	6 55	33	6 54	91	31	29
5	258	25.6	−20	19.9	268	55.3 81	−18	37.7	127	**50**	6 09	6 49	7 25	6 46	88	15 40	32
6	273	25.5	−20	20.4	283	22.3 80	−18	50.2	125	**45**	5 59	6 36	7 08	6 29	82	15 58	38
7	288	25.3		20.9	297	49.1 78	−19	02.7	125	**40**	51	24	6 54	15	77	16 14	42
8	303	25.1		21.4	312	15.9 78		15.0	123	**35**	44	15	42	6 03	74	27	45
9	318	25.0		22.0	326	42.5 76		27.3	123	**30**	37	6 06	32	5 52	71	39	48
10	333	24.8		22.5	341	09.0 75		39.4	121	**20**	23	5 50	6 14	35	65	16 58	53
11	348	24.6	−20	23.0	355	35.4 74	−19	51.4	120	**10 N**	5 10	5 35	5 58	5 19	62	17 16	56
12	3	24.4	−20	23.5	10	01.6 72	−20	03.3	119	**0**	4 55	5 21	5 43	5 05	58	17 32	60
13	18	24.3		24.0	24	27.8 72		15.1	118	**10 S**	39	5 05	28	4 51	53	17 48	63
14	33	24.1		24.6	38	53.8 70		26.8	117	**20**	4 19	4 48	5 11	36	49	18 06	67
15	48	23.9		25.1	53	19.7 69		38.4	116	**30**	3 54	26	4 53	19	44	26	71
16	63	23.7		25.6	67	45.4 67	−20	49.8	114	**35**	38	4 13	42	4 09	41	38	74
17	78	23.6	−20	26.1	82	11.1 67	−21	01.2	114	**40**	3 19	3 58	4 29	3 58	38	18 51	78
18	93	23.4	−20	26.6	96	36.6 65	−21	12.4	112	**45**	2 54	3 39	4 14	3 45	33	19 07	82
19	108	23.2		27.1	111	02.0 64		23.4	110	**50**	19	15	3 55	29	28	28	86
20	123	23.0		27.6	125	27.3 63		34.4	110	**52**	2 00	3 03	46	22	25	37	90
21	138	22.8		28.1	139	52.5 62		45.2	108	**54**	1 37	2 49	37	14	21	19 48	93
22	153	22.7		28.7	154	17.5 60	−21	55.9	107	**56**	1 03	33	25	3 05	17	20 00	97
23	168	22.5		29.2	168	42.4 59	−22	06.5	106	**58**	** **	2 13	3 12	2 54	13	14	103
24	183	22.3	−20	29.7	183	07.2 58	−22	16.9	104	**60 S**	** **	1 47	2 57	2 43	7	20 31	111

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.7			Mag: −2.7			Mag: +0.7		
	19ʰ 49ᵐ.0		PMG: 12ʰ 20ᵐ			PMG: 1ʰ 15ᵐ			PMG: 19ʰ 47ᵐ			PMG: 17ʰ 18ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	61	56.9	175	13.9	−21 46.2	341	06.0	+24 47.0	62	28.0	−1 49.2	99	43.4	−16 12.5
1	76	59.3	190	13.1	46.8	356	09.3	47.1	77	30.5	49.1	114	45.7	12.5
2	92	01.8	205	12.2	47.4	11	12.7	47.1	92	33.0	49.1	129	48.0	12.5
3	107	04.3	220	11.4	48.0	26	16.0	47.2	107	35.4	49.1	144	50.4	12.4
4	122	06.7	235	10.5	48.6	41	19.4	47.3	122	37.9	49.1	159	52.7	12.4
5	137	09.2	250	09.7	−21 49.2	56	22.7	+24 47.4	137	40.4	−1 49.1	174	55.1	−16 12.3
6	152	11.7	265	08.8	−21 49.8	71	26.1	+24 47.4	152	42.9	−1 49.1	189	57.4	−16 12.3
7	167	14.1	280	07.9	50.4	86	29.5	47.5	167	45.3	49.1	204	59.7	12.2
8	182	16.6	295	07.1	51.0	101	32.8	47.6	182	47.8	49.1	220	02.1	12.2
9	197	19.0	310	06.2	51.5	116	36.2	47.7	197	50.3	49.1	235	04.4	12.2
10	212	21.5	325	05.4	52.1	131	39.5	47.7	212	52.8	49.1	250	06.7	12.1
11	227	24.0	340	04.5	−21 52.7	146	42.9	+24 47.8	227	55.2	−1 49.1	265	09.1	−16 12.1
12	242	26.4	355	03.6	−21 53.3	161	46.3	+24 47.9	242	57.7	−1 49.1	280	11.4	−16 12.0
13	257	28.9	10	02.8	53.9	176	49.6	47.9	258	00.2	49.0	295	13.7	12.0
14	272	31.4	25	01.9	54.4	191	53.0	48.0	273	02.7	49.0	310	16.1	11.9
15	287	33.8	40	01.1	55.0	206	56.4	48.1	288	05.1	49.0	325	18.4	11.9
16	302	36.3	55	00.2	55.6	221	59.7	48.2	303	07.6	49.0	340	20.8	11.9
17	317	38.8	69	59.3	−21 56.2	237	03.1	+24 48.2	318	10.1	−1 49.0	355	23.1	−16 11.8
18	332	41.2	84	58.5	−21 56.7	252	06.5	+24 48.3	333	12.5	−1 49.0	10	25.4	−16 11.8
19	347	43.7	99	57.6	57.3	267	09.9	48.4	348	15.0	49.0	25	27.8	11.7
20	2	46.2	114	56.7	57.9	282	13.2	48.5	3	17.5	49.0	40	30.1	11.7
21	17	48.6	129	55.9	58.5	297	16.6	48.5	18	19.9	49.0	55	32.4	11.6
22	32	51.1	144	55.0	59.0	312	20.0	48.6	33	22.4	49.0	70	34.8	11.6
23	47	53.5	159	54.1	−21 59.6	327	23.4	48.7	48	24.9	48.9	85	37.1	11.6
24	62	56.0	174	53.3	−22 00.2	342	26.7	+24 48.7	63	27.4	−1 48.9	100	39.4	−16 11.5
Dif	—			−9	−6		+34	+1		+25	0		+23	0

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 29ᵈ.5		PHE	4ʰ: 60′.0								
	PMG: 11ʰ 46ᵐ.7		SD: 16′.3			12ʰ: 60′.1								
			PMG: 12ʰ 17ᵐ			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 22.3	−20 29.7	183 07.2	57	−22 16.9	103	**60 N**	15 13	16 05	16 59	9 32	108	14 51	24
1	198 22.1	30.2	197 31.9	55	27.2	101	**58**	27	14	17 04	9 10	100	15 13	33
2	213 21.9	30.7	211 56.4	55	37.3	100	**56**	39	23	10	8 53	94	32	37
3	228 21.8	31.2	226 20.9	53	47.3	98	**54**	49	30	14	38	90	15 47	41
4	243 21.6	31.7	240 45.2	52	−22 57.1	97	**52**	15 58	37	19	25	87	16 00	44
5	258 21.4	−20 32.2	255 09.4	51	−23 06.8	96	**50**	16 06	16 43	17 23	8 14	84	16 12	46
6	273 21.2	−20 32.7	269 33.5	50	−23 16.4	94	**45**	16 24	16 56	17 32	7 51	80	16 36	51
7	288 21.0	33.2	283 57.5	48	25.8	93	**40**	38	17 08	41	32	77	16 56	53
8	303 20.9	33.7	298 21.3	48	35.1	91	**35**	16 50	17	48	17	73	17 12	56
9	318 20.7	34.2	312 45.1	46	44.2	89	**30**	17 01	26	17 56	7 03	72	27	57
10	333 20.5	34.7	327 08.7	45	−23 53.1	88	**20**	19	43	18 10	6 40	68	17 51	60
11	348 20.3	−20 35.2	341 32.2	45	−24 01.9	86	**10 N**	17 35	17 58	18 23	6 21	65	18 12	62
12	3 20.1	−20 35.7	355 55.7	45	−24 10.5	85	**0**	17 50	18 12	18 38	6 03	62	18 32	64
13	18 19.9	36.2	10 19.0	43	19.0	83	**10 S**	18 06	28	18 55	5 44	60	18 51	66
14	33 19.8	36.7	24 42.2	42	27.3	81	**20**	22	18 46	19 15	25	57	19 13	68
15	48 19.6	37.2	39 05.3	41	35.4	80	**30**	41	19 08	40	5 03	53	37	71
16	63 19.4	37.7	53 28.3	40	43.4	78	**35**	18 52	21	19 56	4 50	51	19 52	72
17	78 19.2	−20 38.2	67 51.2	39	−24 51.2	76	**40**	19 05	19 37	20 16	4 36	47	20 09	73
18	93 19.0	−20 38.7	82 14.0	38	−24 58.8	75	**45**	19 21	19 56	20 42	4 18	44	20 29	76
19	108 18.8	39.2	96 36.6	36	−25 06.3	73	**50**	40	20 21	21 18	3 57	39	20 54	80
20	123 18.7	39.7	110 59.3	37	13.6	71	**52**	49	33	21 37	47	36	21 07	81
21	138 18.5	40.2	125 21.8	35	20.7	69	**54**	19 59	20 47	22 02	35	34	21	83
22	153 18.3	40.7	139 44.2	34	27.6	67	**56**	20 11	21 04	22 39	22	30	37	86
23	168 18.1	41.2	154 06.5	33	34.3	66	**58**	24	25	** **	3 07	24	21 57	90
24	183 17.9	−20 41.7	168 28.7	32	−25 40.9		**60 S**	20 40	21 52	** **	2 50	16	22 22	97

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.7		Mag: −2.7		Mag: +0.8	
	19ʰ 45ᵐ.0	PMG: 12ʰ 21ᵐ		PMG: 1ʰ 10ᵐ		PMG: 19ʰ 43ᵐ		PMG: 17ʰ 15ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	62 56.0	174 53.3	−22 00.2	342 26.7	+24 48.7	63 27.4	−1 48.9	100 39.4	−16 11.5
1	77 58.5	189 52.4	00.7	357 30.1	48.8	78 29.8	48.9	115 41.8	11.5
2	93 00.9	204 51.5	01.3	12 33.5	48.9	93 32.3	48.9	130 44.1	11.4
3	108 03.4	219 50.7	01.9	27 36.9	48.9	108 34.8	48.9	145 46.4	11.4
4	123 05.9	234 49.8	02.4	42 40.3	49.0	123 37.2	48.9	160 48.8	11.3
5	138 08.3	249 48.9	−22 03.0	57 43.6	+24 49.1	138 39.7	−1 48.9	175 51.1	−16 11.3
6	153 10.8	264 48.1	−22 03.5	72 47.0	+24 49.2	153 42.2	−1 48.9	190 53.4	−16 11.2
7	168 13.3	279 47.2	04.1	87 50.4	49.2	168 44.6	48.9	205 55.8	11.2
8	183 15.7	294 46.3	04.7	102 53.8	49.3	183 47.1	48.8	220 58.1	11.2
9	198 18.2	309 45.5	05.2	117 57.2	49.4	198 49.6	48.8	236 00.4	11.1
10	213 20.6	324 44.6	05.8	133 00.6	49.4	213 52.0	48.8	251 02.8	11.1
11	228 23.1	339 43.7	−22 06.3	148 04.0	+24 49.5	228 54.5	−1 48.8	266 05.1	−16 11.0
12	243 25.6	354 42.9	−22 06.9	163 07.3	+24 49.6	243 56.9	−1 48.8	281 07.4	−16 11.0
13	258 28.0	9 42.0	07.4	178 10.7	49.6	258 59.4	48.8	296 09.8	10.9
14	273 30.5	24 41.1	08.0	193 14.1	49.7	274 01.9	48.8	311 12.1	10.9
15	288 33.0	39 40.2	08.5	208 17.5	49.8	289 04.3	48.8	326 14.4	10.8
16	303 35.4	54 39.4	09.1	223 20.9	49.8	304 06.8	48.7	341 16.8	10.8
17	318 37.9	69 38.5	−22 09.6	238 24.3	+24 49.9	319 09.3	−1 48.7	356 19.1	−16 10.8
18	333 40.4	84 37.6	−22 10.2	253 27.7	+24 50.0	334 11.7	−1 48.7	11 21.4	−16 10.7
19	348 42.8	99 36.7	10.7	268 31.1	50.0	349 14.2	48.7	26 23.8	10.7
20	3 45.3	114 35.9	11.3	283 34.5	50.1	4 16.7	48.7	41 26.1	10.6
21	18 47.8	129 35.0	11.8	298 37.9	50.2	19 19.1	48.7	56 28.4	10.6
22	33 50.2	144 34.1	12.4	313 41.3	50.2	34 21.6	48.7	71 30.8	10.5
23	48 52.7	159 33.2	12.9	328 44.7	50.3	49 24.0	48.7	86 33.1	10.5
24	63 55.1	174 32.4	−22 13.4	343 48.1	+24 50.4	64 26.5	−1 48.6	101 35.4	−16 10.4
Dif	—	−9	−6	+34	+1	+25	0	+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 1^{d}.0		PHE	4^{h}: 60′.3									
	PMG: 11^{h} 47^{m}.0				SD: 16′.4			12^{h}: 60′.4									
					PMG: 13^{h} 20^{m}			20^{h}: 60′.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	17.9	−20	41.7	168	28.7	−25	40.9		**60 N**	6 36	7 30	8 22	11 20	81	15 15	57
1	198	17.7		42.2	182	50.9 32		47.3	64	**58**	30	20	8 08	10 50	77	15 46	59
2	213	17.5		42.7	197	12.9 30		53.5	62	**56**	25	12	7 56	27	75	16 09	61
3	228	17.3		43.2	211	34.9 30	−25	59.5	60	**54**	20	7 04	46	10 08	74	28	62
4	243	17.2		43.7	225	56.8 29	−26	05.3	58	**52**	15	6 58	36	9 52	73	44	63
5	258	17.0	−20	44.2	240	18.6 28	−26	11.0	57	**50**	6 11	6 51	7 28	9 38	73	16 58	63
6	273	16.8	−20	44.7	254	40.4 28	−26	16.4	54	**45**	6 02	6 38	7 11	9 11	70	17 27	64
7	288	16.6		45.2	269	02.1 27		21.7	53	**40**	5 53	26	6 56	8 49	69	17 49	64
8	303	16.4		45.6	283	23.7 26		26.8	51	**35**	45	16	44	30	69	18 08	64
9	318	16.2		46.1	297	45.2 25		31.7	49	**30**	38	6 07	33	8 15	68	24	65
10	333	16.0		46.6	312	06.7 25		36.3	46	**20**	24	5 51	6 15	7 48	68	18 51	65
11	348	15.8	−20	47.1	326	28.1 24	−26	40.8	45	**10 N**	5 10	5 36	5 59	7 26	66	19 14	65
12	3	15.6	−20	47.6	340	49.5 24	−26	45.1	43	**0**	4 55	5 21	5 43	7 05	65	19 36	65
13	18	15.4		48.1	355	10.8 23		49.2	41	**10 S**	39	5 05	28	6 44	64	19 57	66
14	33	15.3		48.6	9	32.0 22		53.1	39	**20**	4 19	4 47	5 11	6 22	62	20 21	65
15	48	15.1		49.0	23	53.2 22	−26	56.8	37	**30**	3 53	26	4 52	5 56	61	20 48	65
16	63	14.9		49.5	38	14.4 22	−27	00.3	35	**35**	37	4 12	41	41	60	21 04	65
17	78	14.7	−20	50.0	52	35.5 21	−27	03.6	33	**40**	3 17	3 56	4 28	5 23	59	21 22	65
18	93	14.5	−20	50.5	66	56.5 20	−27	06.7	31	**45**	2 51	3 37	4 12	5 02	57	21 45	64
19	108	14.3		51.0	81	17.5 20		09.6	29	**50**	2 16	12	3 53	4 36	55	22 14	63
20	123	14.1		51.5	95	38.5 20		12.3	27	**52**	1 56	3 00	44	23	54	28	63
21	138	13.9		51.9	109	59.5 20		14.7	24	**54**	1 31	2 46	34	4 09	51	22 44	63
22	153	13.7		52.4	124	20.4 19		17.0	23	**56**	0 54	29	23	3 52	49	23 03	63
23	168	13.5		52.9	138	41.3 19		19.1	21	**58**	** **	2 08	3 09	31	46	27	61
24	183	13.3	−20	53.4	153	02.2 19	−27	21.0	19	**60 S**	** **	1 41	2 54	3 06	39	23 59	59

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.7			Mag: −2.7			Mag: +0.8		
	19^{h} 41^{m}.1		PMG: 12^{h} 23^{m}			PMG: 1^{h} 05^{m}			PMG: 19^{h} 39^{m}			PMG: 17^{h} 11^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	63	55.1	174	32.4	−22 13.4	343	48.1	+24 50.4	64	26.5	−1 48.6	101	35.4	−16 10.4
1	78	57.6	189	31.5	14.0	358	51.5	50.4	79	29.0	48.6	116	37.8	10.4
2	94	00.1	204	30.6	14.5	13	54.9	50.5	94	31.4	48.6	131	40.1	10.4
3	109	02.5	219	29.7	15.1	28	58.3	50.6	109	33.9	48.6	146	42.4	10.3
4	124	05.0	234	28.9	15.6	44	01.7	50.6	124	36.3	48.6	161	44.7	10.3
5	139	07.5	249	28.0	−22 16.1	59	05.1	+24 50.7	139	38.8	−1 48.6	176	47.1	−16 10.2
6	154	09.9	264	27.1	−22 16.7	74	08.5	+24 50.7	154	41.3	−1 48.6	191	49.4	−16 10.2
7	169	12.4	279	26.2	17.2	89	12.0	50.8	169	43.7	48.5	206	51.7	10.1
8	184	14.9	294	25.3	17.7	104	15.4	50.9	184	46.2	48.5	221	54.1	10.1
9	199	17.3	309	24.5	18.2	119	18.8	50.9	199	48.6	48.5	236	56.4	10.0
10	214	19.8	324	23.6	18.8	134	22.2	51.0	214	51.1	48.5	251	58.7	10.0
11	229	22.3	339	22.7	−22 19.3	149	25.6	+24 51.1	229	53.5	−1 48.5	267	01.1	−16 09.9
12	244	24.7	354	21.8	−22 19.8	164	29.0	+24 51.1	244	56.0	−1 48.5	282	03.4	−16 09.9
13	259	27.2	9	20.9	20.4	179	32.4	51.2	259	58.5	48.4	297	05.7	09.9
14	274	29.6	24	20.0	20.9	194	35.9	51.3	275	00.9	48.4	312	08.0	09.8
15	289	32.1	39	19.2	21.4	209	39.3	51.3	290	03.4	48.4	327	10.4	09.8
16	304	34.6	54	18.3	21.9	224	42.7	51.4	305	05.8	48.4	342	12.7	09.7
17	319	37.0	69	17.4	−22 22.4	239	46.1	+24 51.4	320	08.3	−1 48.4	357	15.0	−16 09.7
18	334	39.5	84	16.5	−22 23.0	254	49.5	+24 51.5	335	10.7	−1 48.4	12	17.4	−16 09.6
19	349	42.0	99	15.6	23.5	269	53.0	51.6	350	13.2	48.3	27	19.7	09.6
20	4	44.4	114	14.7	24.0	284	56.4	51.6	5	15.6	48.3	42	22.0	09.5
21	19	46.9	129	13.9	24.5	299	59.8	51.7	20	18.1	48.3	57	24.3	09.5
22	34	49.4	144	13.0	25.0	315	03.2	51.7	35	20.5	48.3	72	26.7	09.4
23	49	51.8	159	12.1	25.5	330	06.6	51.8	50	23.0	48.3	87	29.0	09.4
24	64	54.3	174	11.2	−22 26.1	345	10.1	+24 51.9	65	25.5	−1 48.3	102	31.3	−16 09.3
Dif	—			−9	−5		+34	+1		+25	0		+23	0

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 47m.3				Edad: 2d.0 SD: 16′.5 PMG: 14h 26m		PHE	4h: 60′.4 12h: 60′.4 20h: 60′.4 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	183	13.3	−20	53.4	153	02.2	−27	21.0	**60 N**	15 10	16 03	16 56	12 41	38	16 12	96
1	198	13.1		53.8	167	23.0 18		22.6 16	**58**	24	12	17 02	12 07	45	16 45	90
2	213	12.9		54.3	181	43.8 18		24.1 15	**56**	36	21	08	11 42	49	17 10	85
3	228	12.7		54.8	196	04.7 19		25.3 12	**54**	47	28	13	22	52	30	83
4	243	12.5		55.3	210	25.5 18		26.4 11	**52**	15 56	35	17	11 05	54	17 47	80
5	258	12.3	−20	55.7	224	46.3 18	−27	27.2 8	**50**	16 05	16 41	17 22	10 51	55	18 01	79
6	273	12.2	−20	56.2	239	07.1 18	−27	27.8 6	**45**	16 22	16 55	17 31	10 21	58	18 31	75
7	288	12.0		56.7	253	27.9 18		28.3 5	**40**	37	17 07	40	9 58	59	18 53	74
8	303	11.8		57.2	267	48.7 18		28.5 2	**35**	16 49	17	48	39	61	19 12	72
9	318	11.6		57.6	282	09.5 18		28.5 0	**30**	17 00	26	17 55	9 23	61	29	69
10	333	11.4		58.1	296	30.3 18		28.3 2	**20**	19	43	18 10	8 56	62	19 56	67
11	348	11.2	−20	58.6	310	51.1 18	−27	27.9 4	**10 N**	17 35	17 58	18 24	8 32	64	20 19	66
12	3	11.0	−20	59.0	325	11.9 18	−27	27.3 6	**0**	17 51	18 13	18 39	8 10	65	20 41	64
13	18	10.8	−20	59.5	339	32.8 19		26.5 8	**10 S**	18 07	29	18 56	7 48	66	21 03	61
14	33	10.6	−21	00.0	353	53.7 19		25.5 10	**20**	23	18 47	19 16	7 24	67	26	60
15	48	10.4	−21	00.5	8	14.6 19		24.2 13	**30**	43	19 10	42	6 57	68	21 53	57
16	63	10.2		00.9	22	35.5 19		22.8 14	**35**	18 54	23	19 58	41	68	22 09	55
17	78	10.0	−21	01.4	36	56.4 19	−27	21.2 16	**40**	19 08	19 39	20 19	6 22	69	22 27	53
18	93	09.8	−21	01.8	51	17.4 20	−27	19.3 19	**45**	19 23	19 59	20 45	5 59	71	22 49	51
19	108	09.6		02.3	65	38.5 21		17.3 20	**50**	43	20 24	21 22	31	71	23 17	47
20	123	09.4		02.8	79	59.5 20		15.0 23	**52**	19 52	37	21 42	17	72	31	45
21	138	09.2		03.2	94	20.6 21		12.6 24	**54**	20 03	20 52	22 09	5 00	73	23 47	42
22	153	09.0		03.7	108	41.8 22		09.9 27	**56**	14	21 09	22 51	4 41	74	** **	**
23	168	08.8		04.2	123	03.0 22		07.1 28	**58**	28	31	** **	4 17	75	** **	**
24	183	08.6	−21	04.6	137	24.3 23	−27	04.0 31	**60 S**	20 44	21 59	** **	3 45	78	** **	**

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 19h 37m.2		Mag: −3.9 PMG: 12h 24m			Mag: −1.8 PMG: 0h 59m			Mag: −2.7 PMG: 19h 35m			Mag: +0.8 PMG: 17h 07m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	64	54.3	174	11.2	−22 26.1	345	10.1	+24 51.9	65	25.5	−1 48.3	102	31.3	−16 09.3
1	79	56.8	189	10.3	26.6	0	13.5	51.9	80	27.9	48.2	117	33.6	09.3
2	94	59.2	204	09.4	27.1	15	16.9	52.0	95	30.4	48.2	132	36.0	09.3
3	110	01.7	219	08.5	27.6	30	20.4	52.1	110	32.8	48.2	147	38.3	09.2
4	125	04.1	234	07.6	28.1	45	23.8	52.1	125	35.3	48.2	162	40.6	09.2
5	140	06.6	249	06.8	−22 28.6	60	27.2	+24 52.2	140	37.7	−1 48.2	177	42.9	−16 09.1
6	155	09.1	264	05.9	−22 29.1	75	30.6	+24 52.2	155	40.2	−1 48.1	192	45.3	−16 09.1
7	170	11.5	279	05.0	29.6	90	34.1	52.3	170	42.6	48.1	207	47.6	09.0
8	185	14.0	294	04.1	30.1	105	37.5	52.3	185	45.1	48.1	222	49.9	09.0
9	200	16.5	309	03.2	30.6	120	40.9	52.4	200	47.5	48.1	237	52.3	08.9
10	215	18.9	324	02.3	31.1	135	44.4	52.5	215	50.0	48.1	252	54.6	08.9
11	230	21.4	339	01.4	−22 31.6	150	47.8	+24 52.5	230	52.4	−1 48.1	267	56.9	−16 08.8
12	245	23.9	354	00.5	−22 32.1	165	51.3	+24 52.6	245	54.9	−1 48.0	282	59.2	−16 08.8
13	260	26.3	8	59.6	32.6	180	54.7	52.6	260	57.3	48.0	298	01.6	08.7
14	275	28.8	23	58.7	33.1	195	58.1	52.7	275	59.8	48.0	313	03.9	08.7
15	290	31.3	38	57.8	33.6	211	01.6	52.8	291	02.2	48.0	328	06.2	08.6
16	305	33.7	53	57.0	34.1	226	05.0	52.8	306	04.6	48.0	343	08.5	08.6
17	320	36.2	68	56.1	−22 34.6	241	08.5	+24 52.9	321	07.1	−1 47.9	358	10.9	−16 08.6
18	335	38.6	83	55.2	−22 35.1	256	11.9	+24 52.9	336	09.5	−1 47.9	13	13.2	−16 08.5
19	350	41.1	98	54.3	35.6	271	15.3	53.0	351	12.0	47.9	28	15.5	08.5
20	5	43.6	113	53.4	36.1	286	18.8	53.0	6	14.4	47.9	43	17.8	08.4
21	20	46.0	128	52.5	36.6	301	22.2	53.1	21	16.9	47.9	58	20.1	08.4
22	35	48.5	143	51.6	37.0	316	25.7	53.1	36	19.3	47.8	73	22.5	08.3
23	50	51.0	158	50.7	37.5	331	29.1	53.2	51	21.8	47.8	88	24.8	08.3
24	65	53.4	173	49.8	−22 38.0	346	32.6	+24 53.3	66	24.2	−1 47.8	103	27.1	−16 08.2
Dif	—			−9	−5		+34	+1		+24	0		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 3ᵈ.0		PHE	4ʰ: 60′.3									
	PMG: 11ʰ 47ᵐ.6				SD: 16′.4			12ʰ: 60′.2									
					PMG: 15ʰ 30ᵐ			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	183	08.6	−21	04.6	137	24.3	−27	04.0		**60 N**	6 39	7 33	8 26	13 19	15	17 48	111
1	198	08.4		05.1	151	45.6 23	−27	00.8	32	**58**	33	24	12	12 52	24	18 15	102
2	213	08.2		05.5	166	06.9 23	−26	57.3	35	**56**	28	15	8 00	31	29	35	97
3	228	07.9		06.0	180	28.3 24		53.7	36	**54**	23	07	7 49	12 14	33	18 53	92
4	243	07.7		06.5	194	49.8 25		49.8	39	**52**	18	7 00	40	11 59	36	19 07	89
5	258	07.5	−21	06.9	209	11.4 26	−26	45.8	40	**50**	6 14	6 54	7 31	11 46	38	19 20	86
6	273	07.3	−21	07.4	223	33.0 26	−26	41.6	42	**45**	6 04	6 40	7 13	11 19	43	19 46	80
7	288	07.1		07.8	237	54.7 27		37.2	44	**40**	5 55	29	6 58	10 57	48	20 07	76
8	303	06.9		08.3	252	16.4 27		32.5	47	**35**	47	18	46	40	50	24	73
9	318	06.7		08.7	266	38.3 29		27.7	48	**30**	40	6 09	35	10 24	53	20 38	71
10	333	06.5		09.2	281	00.2 29		22.8	49	**20**	25	5 52	16	9 58	56	21 03	67
11	348	06.3	−21	09.7	295	22.2 30	−26	17.6	52	**10 N**	5 11	5 37	6 00	9 36	59	21 25	63
12	3	06.1	−21	10.1	309	44.2 30	−26	12.2	54	**0**	4 56	5 22	5 44	9 15	61	21 45	59
13	18	05.9		10.6	324	06.4 32		06.7	55	**10 S**	39	5 06	28	8 54	64	22 04	56
14	33	05.7		11.0	338	28.6 32	−26	00.9	58	**20**	4 19	4 47	5 11	31	67	26	52
15	48	05.5		11.5	352	51.0 34	−25	55.0	59	**30**	3 53	25	4 52	8 05	71	22 50	48
16	63	05.3		11.9	7	13.4 34		48.9	61	**35**	36	4 11	40	7 49	73	23 04	45
17	78	05.1	−21	12.4	21	35.9 35	−25	42.6	63	**40**	3 16	3 55	4 27	7 31	76	23 20	42
18	93	04.9	−21	12.8	35	58.5 36	−25	36.2	64	**45**	2 49	3 36	4 11	7 10	78	23 40	38
19	108	04.7		13.3	50	21.2 37		29.5	67	**50**	2 12	3 10	3 52	6 42	83	** **	**
20	123	04.4		13.7	64	44.0 38		22.7	68	**52**	1 52	2 57	42	29	85	** **	**
21	138	04.2		14.2	79	06.9 39		15.8	69	**54**	1 25	43	32	6 13	88	** **	**
22	153	04.0		14.6	93	29.9 40		08.6	72	**56**	0 44	25	20	5 55	92	0 06	38
23	168	03.8		15.0	107	53.0 41	−25	01.3	73	**58**	** **	2 04	3 06	32	97	28	34
24	183	03.6	−21	15.5	122	16.2 42	−24	53.8	75	**60 S**	** **	1 35	2 50	5 03	105	0 58	25

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.7			Mag: +0.8		
	19ʰ 33ᵐ.2		PMG: 12ʰ 25ᵐ			PMG: 0ʰ 54ᵐ			PMG: 19ʰ 31ᵐ			PMG: 17ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	65	53.4	173	49.8	−22 38.0	346	32.6	+24 53.3	66	24.2	−1 47.8	103	27.1	−16 08.2
1	80	55.9	188	48.9	38.5	1	36.0	53.3	81	26.7	47.8	118	29.4	08.2
2	95	58.4	203	48.0	39.0	16	39.5	53.4	96	29.1	47.7	133	31.8	08.1
3	111	00.8	218	47.1	39.5	31	42.9	53.4	111	31.5	47.7	148	34.1	08.1
4	126	03.3	233	46.2	39.9	46	46.4	53.5	126	34.0	47.7	163	36.4	08.0
5	141	05.8	248	45.3	−22 40.4	61	49.8	+24 53.5	141	36.4	−1 47.7	178	38.7	−16 08.0
6	156	08.2	263	44.4	−22 40.9	76	53.3	+24 53.6	156	38.9	−1 47.7	193	41.1	−16 07.9
7	171	10.7	278	43.5	41.4	91	56.7	53.6	171	41.3	47.6	208	43.4	07.9
8	186	13.1	293	42.6	41.9	107	00.2	53.7	186	43.8	47.6	223	45.7	07.8
9	201	15.6	308	41.7	42.3	122	03.6	53.7	201	46.2	47.6	238	48.0	07.8
10	216	18.1	323	40.8	42.8	137	07.1	53.8	216	48.6	47.6	253	50.3	07.7
11	231	20.5	338	39.9	−22 43.3	152	10.5	+24 53.9	231	51.1	−1 47.5	268	52.7	−16 07.7
12	246	23.0	353	39.0	−22 43.7	167	14.0	+24 53.9	246	53.5	−1 47.5	283	55.0	−16 07.7
13	261	25.5	8	38.1	44.2	182	17.5	54.0	261	56.0	47.5	298	57.3	07.6
14	276	27.9	23	37.2	44.7	197	20.9	54.0	276	58.4	47.5	313	59.6	07.6
15	291	30.4	38	36.3	45.2	212	24.4	54.1	292	00.8	47.5	329	02.0	07.5
16	306	32.9	53	35.4	45.6	227	27.8	54.1	307	03.3	47.4	344	04.3	07.5
17	321	35.3	68	34.5	−22 46.1	242	31.3	+24 54.2	322	05.7	−1 47.4	359	06.6	−16 07.4
18	336	37.8	83	33.6	−22 46.6	257	34.8	+24 54.2	337	08.2	−1 47.4	14	08.9	−16 07.4
19	351	40.3	98	32.7	47.0	272	38.2	54.3	352	10.6	47.4	29	11.2	07.3
20	6	42.7	113	31.8	47.5	287	41.7	54.3	7	13.0	47.3	44	13.6	07.3
21	21	45.2	128	30.9	47.9	302	45.1	54.4	22	15.5	47.3	59	15.9	07.2
22	36	47.6	143	30.0	48.4	317	48.6	54.4	37	17.9	47.3	74	18.2	07.2
23	51	50.1	158	29.1	48.9	332	52.1	54.5	52	20.4	47.3	89	20.5	07.1
24	66	52.6	173	28.2	−22 49.3	347	55.5	+24 54.5	67	22.8	−1 47.2	104	22.8	−16 07.1
Dif	—			−9	−5		+35	+1		+24	0		+23	0

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 4ᵈ.0		PHE	4ʰ: 60′.0									
	PMG: 11ʰ 47ᵐ.9				SD: 16′.3			12ʰ: 59′.8									
					PMG: 16ʰ 30ᵐ			20ʰ: 59′.6									
	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	03.6	−21	15.5	122	16.2	−24	53.8		**60 N**	15 07	16 00	16 54	13 34	7	19 39	108
1	198	03.4		15.9	136	39.5 43		46.1	77	**58**	21	10	17 01	16	12	19 57	101
2	213	03.2		16.4	151	02.9 44		38.3	78	**56**	34	19	06	13 00	18	20 12	96
3	228	03.0		16.8	165	26.4 45		30.4	79	**54**	45	27	11	12 47	21	25	92
4	243	02.8		17.3	179	50.0 46		22.2	82	**52**	15 54	34	16	35	25	36	89
5	258	02.6	−21	17.7	194	13.7 47	−24	13.9	83	**50**	16 03	16 40	17 21	12 24	28	20 46	86
6	273	02.3	−21	18.1	208	37.6 49	−24	05.4	85	**45**	16 21	16 54	17 31	12 02	33	21 06	80
7	288	02.1		18.6	223	01.5 49	−23	56.8	86	**40**	36	17 06	39	11 45	37	23	75
8	303	01.9		19.0	237	25.6 51		48.1	87	**35**	16 49	16	48	30	40	37	72
9	318	01.7		19.5	251	49.8 52		39.1	90	**30**	17 00	26	17 55	11 17	43	21 49	69
10	333	01.5		19.9	266	14.1 53		30.1	90	**20**	19	43	18 10	10 54	49	22 10	63
11	348	01.3	−21	20.3	280	38.5 54	−23	20.9	92	**10 N**	17 36	17 58	18 24	10 35	53	22 28	58
12	3	01.1	−21	20.8	295	03.0 55	−23	11.5	94	**0**	17 52	18 14	18 40	10 16	57	22 44	54
13	18	00.9		21.2	309	27.7 57	−23	02.0	95	**10 S**	18 08	30	18 57	9 58	61	23 00	51
14	33	00.6		21.6	323	52.4 57	−22	52.3	97	**20**	25	18 49	19 17	38	65	18	45
15	48	00.4		22.1	338	17.3 59		42.5	98	**30**	45	19 11	19 44	16	69	38	40
16	63	00.2		22.5	352	42.3 60		32.6	99	**35**	18 56	25	20 01	9 02	73	23 49	38
17	78	00.0	−21	22.9	7	07.4 61	−22	22.5	101	**40**	19 10	19 42	20 21	8 47	76	** **	**
18	92	59.8	−21	23.4	21	32.6 62	−22	12.3	102	**45**	19 26	20 02	20 48	8 28	81	** **	**
19	107	59.6		23.8	35	58.0 64	−22	02.0	103	**50**	46	28	21 26	8 05	86	0 04	33
20	122	59.4		24.2	50	23.4 64	−21	51.5	105	**52**	19 55	41	21 48	7 54	89	16	30
21	137	59.1		24.7	64	49.0 66		40.9	106	**54**	20 06	20 56	22 16	41	93	29	27
22	152	58.9		25.1	79	14.7 67		30.2	107	**56**	18	21 14	23 04	27	96	0 44	23
23	167	58.7		25.5	93	40.5 68		19.4	108	**58**	32	21 36	** **	7 09	102	1 02	18
24	182	58.5	−21	26.0	108	06.5 70	−21	08.4	110	**60 S**	20 49	22 07	** **	6 48	109	1 23	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.7			Mag: +0.8		
	19ʰ 29ᵐ.3		PMG: 12ʰ 27ᵐ			PMG: 0ʰ 48ᵐ			PMG: 19ʰ 27ᵐ			PMG: 17ʰ 00ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	66	52.6	173	28.2	−22 49.3	347	55.5	+24 54.5	67	22.8	−1 47.2	104	22.8	−16 07.1
1	81	55.0	188	27.3	49.8	2	59.0	54.6	82	25.2	47.2	119	25.2	07.0
2	96	57.5	203	26.4	50.2	18	02.5	54.6	97	27.7	47.2	134	27.5	07.0
3	112	00.0	218	25.5	50.7	33	05.9	54.7	112	30.1	47.2	149	29.8	06.9
4	127	02.4	233	24.5	51.1	48	09.4	54.7	127	32.5	47.1	164	32.1	06.9
5	142	04.9	248	23.6	−22 51.6	63	12.9	+24 54.8	142	35.0	−1 47.1	179	34.4	−16 06.8
6	157	07.4	263	22.7	−22 52.0	78	16.4	+24 54.8	157	37.4	−1 47.1	194	36.7	−16 06.8
7	172	09.8	278	21.8	52.5	93	19.8	54.9	172	39.8	47.1	209	39.1	06.7
8	187	12.3	293	20.9	52.9	108	23.3	54.9	187	42.3	47.0	224	41.4	06.7
9	202	14.8	308	20.0	53.4	123	26.8	55.0	202	44.7	47.0	239	43.7	06.6
10	217	17.2	323	19.1	53.8	138	30.2	55.0	217	47.1	47.0	254	46.0	06.6
11	232	19.7	338	18.2	−22 54.3	153	33.7	+24 55.1	232	49.6	−1 47.0	269	48.3	−16 06.5
12	247	22.1	353	17.3	−22 54.7	168	37.2	+24 55.1	247	52.0	−1 46.9	284	50.7	−16 06.5
13	262	24.6	8	16.4	55.1	183	40.7	55.2	262	54.4	46.9	299	53.0	06.4
14	277	27.1	23	15.5	55.6	198	44.1	55.2	277	56.9	46.9	314	55.3	06.4
15	292	29.5	38	14.5	56.0	213	47.6	55.2	292	59.3	46.9	329	57.6	06.3
16	307	32.0	53	13.6	56.5	228	51.1	55.3	308	01.7	46.8	344	59.9	06.3
17	322	34.5	68	12.7	−22 56.9	243	54.6	+24 55.3	323	04.2	−1 46.8	0	02.2	−16 06.2
18	337	36.9	83	11.8	−22 57.3	258	58.1	+24 55.4	338	06.6	−1 46.8	15	04.6	−16 06.2
19	352	39.4	98	10.9	57.8	274	01.5	55.4	353	09.0	46.7	30	06.9	06.1
20	7	41.9	113	10.0	58.2	289	05.0	55.5	8	11.5	46.7	45	09.2	06.1
21	22	44.3	128	09.1	58.6	304	08.5	55.5	23	13.9	46.7	60	11.5	06.0
22	37	46.8	143	08.2	59.1	319	12.0	55.6	38	16.3	46.7	75	13.8	06.0
23	52	49.2	158	07.2	59.5	334	15.5	55.6	53	18.7	46.6	90	16.1	05.9
24	67	51.7	173	06.3	−22 59.9	349	18.9	+24 55.7	68	21.2	−1 46.6	105	18.5	−16 05.9
Dif	—			−9	−4		+35	0		+24	0		+23	0

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 5ᵈ.0		PHE	4ʰ: 59′.5									
	PMG: 11ʰ 48ᵐ.3				SD: 16′.2			12ʰ: 59′.3									
					PMG: 17ʰ 26ᵐ			20ʰ: 59′.1									
	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	58.5	−21	26.0	108	06.5	−21	08.4		**60 N**	6 42	7 37	8 31	13 41	3	21 27	101
1	197	58.3		26.4	122	32.6 71	−20	57.3	111	**58**	36	27	16	28	8	38	97
2	212	58.1		26.8	136	58.7 71		46.1	112	**56**	31	18	8 03	18	11	48	92
3	227	57.8		27.2	151	25.0 73		34.8	113	**54**	25	10	7 52	08	15	21 57	89
4	242	57.6		27.7	165	51.5 75		23.3	115	**52**	21	7 03	43	13 00	17	22 05	85
5	257	57.4	−21	28.1	180	18.0 75	−20	11.8	115	**50**	6 16	6 57	7 34	12 52	20	22 12	82
6	272	57.2	−21	28.5	194	44.6 76	−20	00.1	117	**45**	6 06	6 42	7 15	12 35	26	22 26	77
7	287	57.0		28.9	209	11.4 78	−19	48.3	118	**40**	5 57	30	7 00	22	30	38	73
8	302	56.7		29.3	223	38.3 79		36.4	119	**35**	49	20	6 48	10	35	49	68
9	317	56.5		29.8	238	05.3 80		24.4	120	**30**	41	6 11	36	12 00	38	22 58	65
10	332	56.3		30.2	252	32.4 81		12.3	121	**20**	26	5 54	17	11 43	43	23 13	59
11	347	56.1	−21	30.6	266	59.7 83	−19	00.1	122	**10 N**	5 12	5 38	6 00	11 28	47	23 26	55
12	2	55.9	−21	31.0	281	27.0 83	−18	47.8	123	**0**	4 57	5 22	5 45	11 13	52	23 38	50
13	17	55.6		31.4	295	54.5 85		35.4	124	**10 S**	39	5 06	29	10 59	56	23 51	45
14	32	55.4		31.9	310	22.1 86		22.9	125	**20**	4 19	4 47	5 11	43	61	** **	**
15	47	55.2		32.3	324	49.8 87	−18	10.3	126	**30**	3 52	25	4 51	25	67	** **	**
16	62	55.0		32.7	339	17.6 88	−17	57.6	127	**35**	35	4 11	40	15	70	** **	**
17	77	54.8	−21	33.1	353	45.5 89	−17	44.8	128	**40**	3 14	3 54	4 26	10 03	74	0 02	34
18	92	54.5	−21	33.5	8	13.5 90	−17	32.0	128	**45**	2 48	3 34	4 10	9 49	78	0 18	29
19	107	54.3		33.9	22	41.7 92		19.0	130	**50**	2 10	3 08	3 50	31	85	37	24
20	122	54.1		34.4	37	09.9 92	−17	06.0	130	**52**	1 48	2 55	41	23	87	46	21
21	137	53.9		34.8	51	38.3 94	−16	52.8	132	**54**	1 20	40	30	14	90	0 56	18
22	152	53.7		35.2	66	06.8 95		39.6	132	**56**	0 32	2 22	18	9 03	94	1 07	14
23	167	53.4		35.6	80	35.3 95		26.3	133	**58**	** **	1 59	3 03	8 51	99	20	10
24	182	53.2	−21	36.0	95	04.0 97	−16	13.0	133	**60 S**	** **	1 29	2 47	8 37	104	1 34	6

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.7			Mag: +0.8		
	19ʰ 25ᵐ.4		PMG: 12ʰ 28ᵐ			PMG: 0ʰ 43ᵐ			PMG: 19ʰ 23ᵐ			PMG: 16ʰ 56ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	67	51.7	173	06.3	−22 59.9	349	18.9	+24 55.7	68	21.2	−1 46.6	105	18.5	−16 05.9
1	82	54.2	188	05.4	−23 00.3	4	22.4	55.7	83	23.6	46.6	120	20.8	05.8
2	97	56.6	203	04.5	00.8	19	25.9	55.7	98	26.0	46.5	135	23.1	05.8
3	112	59.1	218	03.6	01.2	34	29.4	55.8	113	28.5	46.5	150	25.4	05.7
4	128	01.6	233	02.7	01.6	49	32.9	55.8	128	30.9	46.5	165	27.7	05.7
5	143	04.0	248	01.8	−23 02.0	64	36.4	+24 55.9	143	33.3	−1 46.5	180	30.0	−16 05.6
6	158	06.5	263	00.8	−23 02.5	79	39.8	+24 55.9	158	35.7	−1 46.4	195	32.4	−16 05.6
7	173	09.0	277	59.9	02.9	94	43.3	56.0	173	38.2	46.4	210	34.7	05.5
8	188	11.4	292	59.0	03.3	109	46.8	56.0	188	40.6	46.4	225	37.0	05.5
9	203	13.9	307	58.1	03.7	124	50.3	56.0	203	43.0	46.3	240	39.3	05.4
10	218	16.4	322	57.2	04.1	139	53.8	56.1	218	45.4	46.3	255	41.6	05.4
11	233	18.8	337	56.3	−23 04.6	154	57.3	+24 56.1	233	47.9	−1 46.3	270	43.9	−16 05.3
12	248	21.3	352	55.3	−23 05.0	170	00.8	+24 56.2	248	50.3	−1 46.3	285	46.2	−16 05.3
13	263	23.7	7	54.4	05.4	185	04.3	56.2	263	52.7	46.2	300	48.6	05.2
14	278	26.2	22	53.5	05.8	200	07.8	56.3	278	55.1	46.2	315	50.9	05.2
15	293	28.7	37	52.6	06.2	215	11.3	56.3	293	57.6	46.2	330	53.2	05.1
16	308	31.1	52	51.7	06.6	230	14.7	56.3	309	00.0	46.1	345	55.5	05.1
17	323	33.6	67	50.7	−23 07.0	245	18.2	+24 56.4	324	02.4	−1 46.1	0	57.8	−16 05.0
18	338	36.1	82	49.8	−23 07.4	260	21.7	+24 56.4	339	04.8	−1 46.1	16	00.1	−16 05.0
19	353	38.5	97	48.9	07.8	275	25.2	56.5	354	07.3	46.0	31	02.4	04.9
20	8	41.0	112	48.0	08.2	290	28.7	56.5	9	09.7	46.0	46	04.8	04.9
21	23	43.5	127	47.1	08.6	305	32.2	56.5	24	12.1	46.0	61	07.1	04.8
22	38	45.9	142	46.1	09.0	320	35.7	56.6	39	14.5	45.9	76	09.4	04.8
23	53	48.4	157	45.2	09.4	335	39.2	56.6	54	16.9	45.9	91	11.7	04.7
24	68	50.9	172	44.3	−23 09.8	350	42.7	+24 56.7	69	19.4	−1 45.9	106	14.0	−16 04.7
Dif	—			−9	−4		+35	0		+24	0		+23	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 6ᵈ.0		PHE	4ʰ: 58′.9									
	PMG: 11ʰ 48ᵐ.6				SD: 16′.1			12ʰ: 58′.7									
					PMG: 18ʰ 17ᵐ			20ʰ: 58′.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	53.2	−21	36.0	95	04.0	−16	13.0		**60 N**	15 04	15 58	16 53	13 44	1	23 08	95
1	197	53.0		36.4	109	32.8 98	−15	59.5 135		**58**	19	16 08	16 59	36	5	15	91
2	212	52.8		36.8	124	01.7 99		46.0 135		**56**	32	17	17 05	29	9	20	88
3	227	52.5		37.2	138	30.7 100		32.4 136		**54**	43	25	10	23	11	26	84
4	242	52.3		37.6	152	59.8 101		18.7 137		**52**	15 53	32	15	17	15	30	82
5	257	52.1	−21	38.0	167	29.0 102	−15	05.0 137		**50**	16 02	16 39	17 20	13 12	17	23 34	80
6	272	51.9	−21	38.5	181	58.3 103	−14	51.2 138		**45**	16 20	16 53	17 30	13 01	22	23 43	74
7	287	51.6		38.9	196	27.7 104		37.3 139		**40**	36	17 06	39	12 52	26	51	69
8	302	51.4		39.3	210	57.2 105		23.4 139		**35**	16 48	16	47	45	29	23 57	65
9	317	51.2		39.7	225	26.8 106	−14	09.4 140		**30**	17 00	26	17 55	38	32	** **	**
10	332	51.0		40.1	239	56.5 107	−13	55.3 141		**20**	19	43	18 10	26	38	** **	**
11	347	50.7	−21	40.5	254	26.3 108	−13	41.2 141		**10 N**	17 36	17 59	18 25	12 15	43	** **	**
12	2	50.5	−21	40.9	268	56.1 108	−13	27.0 142		**0**	17 52	18 15	18 40	12 05	48	** **	**
13	17	50.3		41.3	283	26.1 110	−13	12.7 143		**10 S**	18 08	31	18 58	11 55	53	** **	**
14	32	50.0		41.7	297	56.2 111	−12	58.4 143		**20**	26	18 50	19 19	44	58	0 03	41
15	47	49.8		42.1	312	26.3 111		44.1 143		**30**	46	19 13	19 46	32	63	18	35
16	62	49.6		42.5	326	56.6 113		29.7 144		**35**	18 58	27	20 03	25	67	27	31
17	77	49.4	−21	42.9	341	26.9 113	−12	15.2 145		**40**	19 12	19 44	20 24	11 17	70	0 36	28
18	92	49.1	−21	43.3	355	57.3 114	−12	00.7 145		**45**	19 28	20 04	20 51	11 07	75	0 47	24
19	107	48.9		43.7	10	27.8 115	−11	46.1 146		**50**	49	31	21 31	10 56	80	1 01	18
20	122	48.7		44.1	24	58.4 116		31.5 146		**52**	19 58	20 44	21 53	50	83	07	16
21	137	48.4		44.5	39	29.1 117		16.9 146		**54**	20 09	21 00	22 23	44	86	14	13
22	152	48.2		44.9	53	59.8 117	−11	02.2 147		**56**	22	18	23 20	37	90	21	10
23	167	48.0		45.3	68	30.6 118	−10	47.5 147		**58**	36	21 42	** **	30	93	30	6
24	182	47.8	−21	45.6	83	01.6 120	−10	32.7 148		**60 S**	20 54	22 14	** **	10 21	98	1 40	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.6			Mag: +0.8		
	19ʰ 21ᵐ.4		PMG: 12ʰ 30ᵐ			PMG: 0ʰ 37ᵐ			PMG: 19ʰ 20ᵐ			PMG: 16ʰ 52ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	68	50.9	172	44.3	−23 09.8	350	42.7	+24 56.7	69	19.4	−1 45.9	106	14.0	−16 04.7
1	83	53.3	187	43.4	10.2	5	46.2	56.7	84	21.8	45.9	121	16.3	04.6
2	98	55.8	202	42.4	10.6	20	49.7	56.7	99	24.2	45.8	136	18.6	04.6
3	113	58.2	217	41.5	11.0	35	53.2	56.8	114	26.6	45.8	151	20.9	04.5
4	129	00.7	232	40.6	11.4	50	56.7	56.8	129	29.0	45.8	166	23.3	04.5
5	144	03.2	247	39.7	−23 11.8	66	00.2	+24 56.8	144	31.5	−1 45.7	181	25.6	−16 04.4
6	159	05.6	262	38.7	−23 12.2	81	03.7	+24 56.9	159	33.9	−1 45.7	196	27.9	−16 04.4
7	174	08.1	277	37.8	12.6	96	07.2	56.9	174	36.3	45.7	211	30.2	04.3
8	189	10.6	292	36.9	13.0	111	10.7	57.0	189	38.7	45.6	226	32.5	04.3
9	204	13.0	307	36.0	13.4	126	14.2	57.0	204	41.1	45.6	241	34.8	04.2
10	219	15.5	322	35.0	13.8	141	17.7	57.0	219	43.5	45.6	256	37.1	04.2
11	234	18.0	337	34.1	−23 14.2	156	21.2	+24 57.1	234	46.0	−1 45.5	271	39.4	−16 04.1
12	249	20.4	352	33.2	−23 14.5	171	24.7	+24 57.1	249	48.4	−1 45.5	286	41.7	−16 04.1
13	264	22.9	7	32.3	14.9	186	28.2	57.1	264	50.8	45.5	301	44.1	04.0
14	279	25.4	22	31.3	15.3	201	31.7	57.2	279	53.2	45.4	316	46.4	04.0
15	294	27.8	37	30.4	15.7	216	35.2	57.2	294	55.6	45.4	331	48.7	03.9
16	309	30.3	52	29.5	16.1	231	38.7	57.2	309	58.0	45.4	346	51.0	03.9
17	324	32.7	67	28.6	−23 16.4	246	42.2	+24 57.3	325	00.5	−1 45.3	1	53.3	−16 03.8
18	339	35.2	82	27.6	−23 16.8	261	45.7	+24 57.3	340	02.9	−1 45.3	16	55.6	−16 03.8
19	354	37.7	97	26.7	17.2	276	49.3	57.3	355	05.3	45.3	31	57.9	03.7
20	9	40.1	112	25.8	17.6	291	52.8	57.4	10	07.7	45.2	47	00.2	03.7
21	24	42.6	127	24.8	18.0	306	56.3	57.4	25	10.1	45.2	62	02.5	03.6
22	39	45.1	142	23.9	18.3	321	59.8	57.4	40	12.5	45.2	77	04.8	03.6
23	54	47.5	157	23.0	18.7	337	03.3	57.5	55	14.9	45.1	92	07.2	03.5
24	69	50.0	172	22.1	−23 19.1	352	06.8	+24 57.5	70	17.4	−1 45.1	107	09.5	−16 03.5
Dif	—			−9	−4		+35	0		+24	0		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 7ᵈ.0		PHE	4ʰ: 58′.3									
	PMG: 11ʰ 49ᵐ.0				SD: 15′.9			12ʰ: 58′.1									
					PMG: 19ʰ 04ᵐ			20ʰ: 57′.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	182	47.8	−21	45.6	83	01.6	−10	32.7		**60 N**	6 46	7 41	8 35	13 45	1	** **	**
1	197	47.5		46.0	97	32.5 119		17.9	148	**58**	39	30	20	41	4	** **	**
2	212	47.3		46.4	112	03.6 121	−10	03.0	149	**56**	33	21	8 07	38	7	** **	**
3	227	47.1		46.8	126	34.7 121	−9	48.1	149	**54**	28	13	7 55	34	10	** **	**
4	242	46.8		47.2	141	05.9 122		33.2	149	**52**	23	7 06	45	32	12	** **	**
5	257	46.6	−21	47.6	155	37.2 123	−9	18.2	150	**50**	6 18	6 59	7 37	13 29	15	** **	**
6	272	46.4	−21	48.0	170	08.6 124	−9	03.3	149	**45**	6 08	6 45	7 18	13 23	20	** **	**
7	287	46.1		48.4	184	40.0 124	−8	48.2	151	**40**	5 59	32	7 02	18	24	** **	**
8	302	45.9		48.8	199	11.5 125		33.2	150	**35**	50	22	6 49	14	27	** **	**
9	317	45.7		49.2	213	43.1 126		18.1	151	**30**	43	6 12	38	10	31	0 03	62
10	332	45.4		49.5	228	14.7 126	−8	03.0	151	**20**	28	5 55	19	13 04	36	12	56
11	347	45.2	−21	49.9	242	46.4 127	−7	47.9	151	**10 N**	5 13	5 39	6 01	12 58	41	0 21	51
12	2	45.0	−21	50.3	257	18.1 127	−7	32.7	152	**0**	4 57	5 23	5 45	12 53	45	0 28	47
13	17	44.7		50.7	271	49.9 128		17.5	152	**10 S**	40	5 06	29	48	50	36	42
14	32	44.5		51.1	286	21.8 129	−7	02.3	152	**20**	4 19	4 47	5 12	42	55	44	37
15	47	44.3		51.5	300	53.7 129	−6	47.1	152	**30**	3 52	24	4 51	35	61	53	32
16	62	44.0		51.8	315	25.7 130		31.9	152	**35**	35	4 10	39	32	64	0 58	29
17	77	43.8	−21	52.2	329	57.8 131	−6	16.6	153	**40**	3 13	3 54	4 25	12 27	68	1 04	25
18	92	43.6	−21	52.6	344	29.9 131	−6	01.4	152	**45**	2 46	3 33	4 09	12 22	72	1 11	21
19	107	43.3		53.0	359	02.0 131	−5	46.1	153	**50**	2 07	3 06	3 49	16	78	19	16
20	122	43.1		53.4	13	34.2 132		30.8	153	**52**	1 45	2 53	39	13	80	23	13
21	137	42.9		53.7	28	06.5 133		15.5	153	**54**	1 15	37	28	10	83	27	11
22	152	42.6		54.1	42	38.8 133	−5	00.1	154	**56**	0 17	2 19	15	07	86	31	8
23	167	42.4		54.5	57	11.2 134	−4	44.8	153	**58**	** **	1 55	3 01	12 03	89	36	5
24	182	42.2	−21	54.9	71	43.6 134	−4	29.5	153	**60 S**	** **	1 23	2 44	11 59	93	1 42	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.6			Mag: +0.8		
	19ʰ 17ᵐ.5		PMG: 12ʰ 31ᵐ			PMG: 0ʰ 31ᵐ			PMG: 19ʰ 16ᵐ			PMG: 16ʰ 49ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	69	50.0	172	22.1	−23 19.1	352	06.8	+24 57.5	70	17.4	−1 45.1	107	09.5	−16 03.5
1	84	52.5	187	21.1	19.4	7	10.3	57.5	85	19.8	45.1	122	11.8	03.4
2	99	54.9	202	20.2	19.8	22	13.8	57.6	100	22.2	45.0	137	14.1	03.4
3	114	57.4	217	19.3	20.2	37	17.3	57.6	115	24.6	45.0	152	16.4	03.3
4	129	59.8	232	18.3	20.5	52	20.8	57.6	130	27.0	44.9	167	18.7	03.2
5	145	02.3	247	17.4	−23 20.9	67	24.3	+24 57.7	145	29.4	−1 44.9	182	21.0	−16 03.2
6	160	04.8	262	16.5	−23 21.3	82	27.9	+24 57.7	160	31.8	−1 44.9	197	23.3	−16 03.1
7	175	07.2	277	15.5	21.6	97	31.4	57.7	175	34.2	44.8	212	25.6	03.1
8	190	09.7	292	14.6	22.0	112	34.9	57.8	190	36.7	44.8	227	27.9	03.0
9	205	12.2	307	13.7	22.3	127	38.4	57.8	205	39.1	44.8	242	30.2	03.0
10	220	14.6	322	12.7	22.7	142	41.9	57.8	220	41.5	44.7	257	32.5	02.9
11	235	17.1	337	11.8	−23 23.1	157	45.4	+24 57.9	235	43.9	−1 44.7	272	34.9	−16 02.9
12	250	19.6	352	10.9	−23 23.4	172	48.9	+24 57.9	250	46.3	−1 44.7	287	37.2	−16 02.8
13	265	22.0	7	09.9	23.8	187	52.5	57.9	265	48.7	44.6	302	39.5	02.8
14	280	24.5	22	09.0	24.1	202	56.0	58.0	280	51.1	44.6	317	41.8	02.7
15	295	27.0	37	08.1	24.5	217	59.5	58.0	295	53.5	44.5	332	44.1	02.7
16	310	29.4	52	07.1	24.8	233	03.0	58.0	310	55.9	44.5	347	46.4	02.6
17	325	31.9	67	06.2	−23 25.2	248	06.5	+24 58.0	325	58.3	−1 44.5	2	48.7	−16 02.6
18	340	34.3	82	05.3	−23 25.5	263	10.0	+24 58.1	341	00.7	−1 44.4	17	51.0	−16 02.5
19	355	36.8	97	04.3	25.9	278	13.6	58.1	356	03.1	44.4	32	53.3	02.5
20	10	39.3	112	03.4	26.2	293	17.1	58.1	11	05.5	44.4	47	55.6	02.4
21	25	41.7	127	02.5	26.6	308	20.6	58.2	26	08.0	44.3	62	57.9	02.4
22	40	44.2	142	01.5	26.9	323	24.1	58.2	41	10.4	44.3	78	00.2	02.3
23	55	46.7	157	00.6	27.2	338	27.6	58.2	56	12.8	44.2	93	02.5	02.2
24	70	49.1	171	59.6	−23 27.6	353	31.1	+24 58.2	71	15.2	−1 44.2	108	04.8	−16 02.2
Dif	—			−9	−4		+35	0		+24	0		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 8ᵈ.0		PHE	4ʰ: 57′.7								
	PMG: 11ʰ 49ᵐ.4		SD: 15′.7			12ʰ: 57′.5								
			PMG: 19ʰ 49ᵐ			20ʰ: 57′.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	182 42.2	−21 54.9	71 43.6		−4 29.5		**60 N**	15 02	15 56	16 51	13 46	1	0 43	92
1	197 41.9	55.2	86 16.0	134	−4 14.1	154	**58**	17	16 06	16 58	45	4	46	88
2	212 41.7	55.6	100 48.5	135	−3 58.7	154	**56**	30	16	17 04	45	7	48	85
3	227 41.4	56.0	115 21.0	135	43.4	153	**54**	41	24	09	44	10	50	82
4	242 41.2	56.4	129 53.6	136	28.0	154	**52**	15 52	31	14	44	12	52	79
5	257 41.0	−21 56.7	144 26.2	136	−3 12.6	154	**50**	16 01	16 38	17 19	13 44	14	0 54	76
6	272 40.7	−21 57.1	158 58.9	137	−2 57.3	153	**45**	16 20	16 53	17 29	13 43	19	0 57	71
7	287 40.5	57.5	173 31.6	137	41.9	154	**40**	35	17 05	39	42	23	1 00	67
8	302 40.2	57.9	188 04.3	137	26.5	154	**35**	16 48	16	47	41	27	02	64
9	317 40.0	58.2	202 37.1	138	−2 11.1	154	**30**	17 00	26	17 55	41	29	05	60
10	332 39.8	58.6	217 09.9	138	−1 55.8	153	**20**	19	43	18 10	40	35	08	55
11	347 39.5	−21 59.0	231 42.7	138	−1 40.4	154	**10 N**	17 37	17 59	18 25	13 39	40	1 12	49
12	2 39.3	−21 59.3	246 15.6	139	−1 25.0	154	**0**	17 53	18 15	18 41	13 38	45	1 15	45
13	17 39.1	−21 59.7	260 48.5	139	−1 09.7	153	**10 S**	18 10	32	18 59	38	49	18	40
14	32 38.8	−22 00.1	275 21.4	139	−0 54.3	154	**20**	27	18 52	19 20	37	54	21	35
15	47 38.6	00.4	289 54.4	140	39.0	153	**30**	18 48	19 15	19 48	36	59	25	29
16	62 38.3	00.8	304 27.3	139	23.7	153	**35**	19 00	29	20 05	36	62	27	26
17	77 38.1	−22 01.2	319 00.3	140	−0 08.3	154	**40**	19 14	19 46	20 26	13 35	66	1 29	23
18	92 37.8	−22 01.5	333 33.3	140	+0 07.0	153	**45**	19 31	20 07	20 54	13 34	71	1 32	19
19	107 37.6	01.9	348 06.4	141	22.3	153	**50**	19 51	34	21 35	34	75	35	14
20	122 37.4	02.2	2 39.5	141	37.5	152	**52**	20 01	20 48	21 57	33	78	36	12
21	137 37.1	02.6	17 12.5	140	+0 52.8	153	**54**	12	21 04	22 29	33	81	38	9
22	152 36.9	03.0	31 45.7	142	+1 08.1	153	**56**	25	23	** **	33	83	39	7
23	167 36.6	03.3	46 18.8	141	23.3	152	**58**	40	21 47	** **	32	87	41	4
24	182 36.4	−22 03.7	60 51.9	141	+1 38.5	152	**60 S**	20 58	22 22	** **	13 32	90	1 43	1

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.8		Mag: −2.6		Mag: +0.8	
	19ʰ 13ᵐ.6	PMG: 12ʰ 33ᵐ		PMG: 0ʰ 26ᵐ		PMG: 19ʰ 12ᵐ		PMG: 16ʰ 45ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	70 49.1	171 59.6	−23 27.6	353 31.1	+24 58.2	71 15.2	−1 44.2	108 04.8	−16 02.2
1	85 51.6	186 58.7	27.9	8 34.7	58.3	86 17.6	44.2	123 07.1	02.1
2	100 54.1	201 57.8	28.3	23 38.2	58.3	101 20.0	44.1	138 09.4	02.1
3	115 56.5	216 56.8	28.6	38 41.7	58.3	116 22.4	44.1	153 11.8	02.0
4	130 59.0	231 55.9	28.9	53 45.2	58.3	131 24.8	44.1	168 14.1	02.0
5	146 01.5	246 55.0	−23 29.3	68 48.7	+24 58.4	146 27.2	−1 44.0	183 16.4	−16 01.9
6	161 03.9	261 54.0	−23 29.6	83 52.3	+24 58.4	161 29.6	−1 44.0	198 18.7	−16 01.9
7	176 06.4	276 53.1	29.9	98 55.8	58.4	176 32.0	43.9	213 21.0	01.8
8	191 08.8	291 52.1	30.3	113 59.3	58.5	191 34.4	43.9	228 23.3	01.8
9	206 11.3	306 51.2	30.6	129 02.8	58.5	206 36.8	43.9	243 25.6	01.7
10	221 13.8	321 50.3	30.9	144 06.4	58.5	221 39.2	43.8	258 27.9	01.7
11	236 16.2	336 49.3	−23 31.3	159 09.9	+24 58.5	236 41.6	−1 43.8	273 30.2	−16 01.6
12	251 18.7	351 48.4	−23 31.6	174 13.4	+24 58.6	251 44.0	−1 43.7	288 32.5	−16 01.6
13	266 21.2	6 47.4	31.9	189 16.9	58.6	266 46.4	43.7	303 34.8	01.5
14	281 23.6	21 46.5	32.2	204 20.4	58.6	281 48.8	43.7	318 37.1	01.4
15	296 26.1	36 45.6	32.6	219 24.0	58.6	296 51.2	43.6	333 39.4	01.4
16	311 28.6	51 44.6	32.9	234 27.5	58.6	311 53.6	43.6	348 41.7	01.3
17	326 31.0	66 43.7	−23 33.2	249 31.0	+24 58.7	326 56.0	−1 43.5	3 44.0	−16 01.3
18	341 33.5	81 42.7	−23 33.5	264 34.5	+24 58.7	341 58.4	−1 43.5	18 46.3	−16 01.2
19	356 35.9	96 41.8	33.8	279 38.1	58.7	357 00.8	43.5	33 48.6	01.2
20	11 38.4	111 40.8	34.1	294 41.6	58.7	12 03.2	43.4	48 50.9	01.1
21	26 40.9	126 39.9	34.5	309 45.1	58.8	27 05.6	43.4	63 53.2	01.1
22	41 43.3	141 39.0	34.8	324 48.6	58.8	42 08.0	43.3	78 55.5	01.0
23	56 45.8	156 38.0	35.1	339 52.2	58.8	57 10.4	43.3	93 57.8	01.0
24	71 48.3	171 37.1	−23 35.4	354 55.7	+24 58.8	72 12.8	−1 43.2	109 00.1	−16 00.9
Dif	—	−9	−3	+35	0	+24	0	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 9ᵈ.0		PHE	4ʰ: 57′.1									
	PMG: 11ʰ 49ᵐ.8				SD: 15′.6			12ʰ: 56′.9									
					PMG: 20ʰ 33ᵐ			20ʰ: 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	182	36.4	−22	03.7	60	51.9	+1	38.5		**60 N**	6 49	7 44	8 39	13 47	1	2 15	90
1	197	36.1		04.0	75	25.1 142	+1	53.7	152	**58**	42	33	23	49	5	14	86
2	212	35.9		04.4	89	58.2 141	+2	08.9	152	**56**	36	24	8 10	52	7	13	83
3	227	35.7		04.7	104	31.4 142		24.1	152	**54**	30	16	7 58	54	10	12	80
4	242	35.4		05.1	119	04.6 142		39.2	151	**52**	25	08	48	56	12	11	78
5	257	35.2	−22	05.5	133	37.8 142	+2	54.3	151	**50**	6 21	7 02	7 39	13 58	14	2 10	75
6	272	34.9	−22	05.8	148	11.0 142	+3	09.4	151	**45**	6 10	6 47	7 20	14 02	19	2 08	71
7	287	34.7		06.2	162	44.2 142		24.5	151	**40**	6 01	34	7 04	05	23	07	66
8	302	34.4		06.5	177	17.5 143		39.5	150	**35**	5 52	23	6 51	08	27	06	62
9	317	34.2		06.9	191	50.7 142	+3	54.5	150	**30**	44	6 14	40	10	30	05	59
10	332	33.9		07.2	206	23.9 142	+4	09.5	150	**20**	29	5 56	20	15	35	03	53
11	347	33.7	−22	07.6	220	57.1 142	+4	24.5	150	**10 N**	5 14	5 40	6 02	14 19	40	2 01	49
12	2	33.5	−22	07.9	235	30.4 143	+4	39.4	149	**0**	4 58	5 24	5 46	14 23	44	2 00	44
13	17	33.2		08.3	250	03.6 142	+4	54.3	149	**10 S**	40	5 07	30	27	48	1 58	40
14	32	33.0		08.6	264	36.9 143	+5	09.1	148	**20**	4 19	4 48	5 12	31	53	56	35
15	47	32.7		09.0	279	10.1 142		24.0	149	**30**	3 51	24	4 51	35	59	54	30
16	62	32.5		09.3	293	43.3 142		38.8	148	**35**	34	4 10	39	38	62	53	27
17	77	32.2	−22	09.7	308	16.6 143	+5	53.5	147	**40**	3 12	3 53	4 25	14 41	66	1 52	23
18	92	32.0	−22	10.0	322	49.8 142	+6	08.3	148	**45**	2 44	3 32	4 08	14 45	70	1 51	19
19	107	31.7		10.3	337	23.0 142		22.9	146	**50**	2 04	3 05	3 48	49	76	49	14
20	122	31.5		10.7	351	56.2 142		37.6	147	**52**	1 41	2 51	38	51	78	48	12
21	137	31.2		11.0	6	29.4 142	+6	52.2	146	**54**	1 10	35	26	54	80	47	10
22	152	31.0		11.4	21	02.6 142	+7	06.8	146	**56**	** **	2 16	3 14	56	83	46	7
23	167	30.7		11.7	35	35.8 142		21.3	145	**58**	** **	1 52	2 59	14 59	87	45	5
24	182	30.5	−22	12.1	50	09.0 142	+7	35.8	145	**60 S**	** **	1 17	2 41	15 02	91	1 44	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.6			Mag: +0.8		
	19ʰ 09ᵐ.6		PMG: 12ʰ 34ᵐ			PMG: 0ʰ 20ᵐ			PMG: 19ʰ 08ᵐ			PMG: 16ʰ 41ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	71	48.3	171	37.1	−23 35.4	354	55.7	+24 58.8	72	12.8	−1 43.2	109	00.1	−16 00.9
1	86	50.7	186	36.1	35.7	9	59.2	58.9	87	15.2	43.2	124	02.4	00.9
2	101	53.2	201	35.2	36.0	25	02.8	58.9	102	17.6	43.2	139	04.7	00.8
3	116	55.7	216	34.2	36.3	40	06.3	58.9	117	20.0	43.1	154	07.0	00.7
4	131	58.1	231	33.3	36.6	55	09.8	58.9	132	22.4	43.1	169	09.3	00.7
5	147	00.6	246	32.4	−23 36.9	70	13.3	+24 58.9	147	24.8	−1 43.0	184	11.6	−16 00.6
6	162	03.1	261	31.4	−23 37.2	85	16.9	+24 59.0	162	27.2	−1 43.0	199	13.9	−16 00.6
7	177	05.5	276	30.5	37.5	100	20.4	59.0	177	29.6	42.9	214	16.2	00.5
8	192	08.0	291	29.5	37.8	115	23.9	59.0	192	32.0	42.9	229	18.5	00.5
9	207	10.4	306	28.6	38.1	130	27.4	59.0	207	34.4	42.9	244	20.8	00.4
10	222	12.9	321	27.6	38.4	145	31.0	59.0	222	36.7	42.8	259	23.1	00.4
11	237	15.4	336	26.7	−23 38.7	160	34.5	+24 59.1	237	39.1	−1 42.8	274	25.4	−16 00.3
12	252	17.8	351	25.7	−23 39.0	175	38.0	+24 59.1	252	41.5	−1 42.7	289	27.7	−16 00.3
13	267	20.3	6	24.8	39.3	190	41.6	59.1	267	43.9	42.7	304	30.0	00.2
14	282	22.8	21	23.8	39.6	205	45.1	59.1	282	46.3	42.6	319	32.3	00.1
15	297	25.2	36	22.9	39.9	220	48.6	59.1	297	48.7	42.6	334	34.6	−16 00.1
16	312	27.7	51	21.9	40.2	235	52.2	59.1	312	51.1	42.6	349	36.9	−16 00.0
17	327	30.2	66	21.0	−23 40.5	250	55.7	+24 59.2	327	53.5	−1 42.5	4	39.2	−16 00.0
18	342	32.6	81	20.0	−23 40.8	265	59.2	+24 59.2	342	55.9	−1 42.5	19	41.5	−15 59.9
19	357	35.1	96	19.1	41.1	281	02.7	59.2	357	58.3	42.4	34	43.8	59.9
20	12	37.5	111	18.2	41.4	296	06.3	59.2	13	00.7	42.4	49	46.1	59.8
21	27	40.0	126	17.2	41.6	311	09.8	59.2	28	03.1	42.3	64	48.4	59.8
22	42	42.5	141	16.3	41.9	326	13.3	59.2	43	05.5	42.3	79	50.7	59.7
23	57	44.9	156	15.3	42.2	341	16.9	59.3	58	07.8	42.2	94	53.0	59.6
24	72	47.4	171	14.4	−23 42.5	356	20.4	+24 59.3	73	10.2	−1 42.2	109	55.3	−15 59.6
Dif	—			−9	−3		+35	0		+24	0		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 50m.2				Edad: 10d.0 SD: 15′.4 PMG: 21h 18m		PHE	4h: 56′.6 12h: 56′.4 20h: 56′.2 Rº: 46m			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	30.5	−22	12.1	50	09.0	+7	35.8	**60 N**	14 59	15 54	16 50	13 48	2	3 45	91
1	197	30.2		12.4	64	42.1 141	+7	50.2 144	**58**	15 15	16 05	16 57	54	6	40	87
2	212	30.0		12.7	79	15.3 142	+8	04.6 144	**56**	29	14	17 03	13 59	9	36	83
3	227	29.7		13.1	93	48.4 141		19.0 144	**54**	40	23	08	14 04	12	32	80
4	242	29.5		13.4	108	21.5 141		33.3 143	**52**	15 50	30	13	08	15	29	77
5	257	29.2	−22	13.7	122	54.6 141	+8	47.6 143	**50**	16 00	16 37	17 18	14 12	17	3 25	75
6	272	29.0	−22	14.1	137	27.7 141	+9	01.8 142	**45**	16 19	16 52	17 29	14 21	22	3 19	69
7	287	28.7		14.4	152	00.7 140		15.9 141	**40**	35	17 05	39	28	26	13	66
8	302	28.5		14.7	166	33.8 141		30.0 141	**35**	16 48	16	47	35	29	08	62
9	317	28.2		15.1	181	06.8 140		44.1 141	**30**	17 00	26	17 55	40	32	3 04	59
10	332	28.0		15.4	195	39.8 140	+9	58.1 140	**20**	20	17 44	18 11	50	37	2 56	54
11	347	27.7	−22	15.7	210	12.8 140	+10	12.1 140	**10 N**	17 37	18 00	18 26	14 59	41	2 50	49
12	2	27.5	−22	16.1	224	45.7 139	+10	26.0 139	**0**	17 54	18 16	18 42	15 07	46	2 44	45
13	17	27.2		16.4	239	18.7 140		39.8 138	**10 S**	18 11	33	19 00	15	50	38	40
14	32	27.0		16.7	253	51.6 139	+10	53.6 138	**20**	29	18 53	22	24	54	31	36
15	47	26.7		17.1	268	24.5 139	+11	07.4 138	**30**	18 49	19 17	19 49	34	60	24	31
16	62	26.5		17.4	282	57.3 138		21.1 137	**35**	19 02	31	20 07	40	62	20	28
17	77	26.2	−22	17.7	297	30.2 139	+11	34.7 136	**40**	19 16	19 48	20 29	15 47	66	2 15	25
18	92	26.0	−22	18.1	312	02.9 137	+11	48.2 135	**45**	19 33	20 09	20 57	15 55	70	2 10	20
19	107	25.7		18.4	326	35.7 138	+12	01.7 135	**50**	19 54	37	21 38	16 05	75	03	16
20	122	25.5		18.7	341	08.5 138		15.2 135	**52**	20 04	20 51	22 02	09	78	2 00	14
21	137	25.2		19.0	355	41.2 137		28.6 134	**54**	15	21 07	22 36	14	80	1 57	11
22	152	24.9		19.4	10	13.8 136		41.9 133	**56**	28	27	** **	19	84	53	9
23	167	24.7		19.7	24	46.5 137	+12	55.1 132	**58**	20 44	21 52	** **	26	87	50	4
24	182	24.4	−22	20.0	39	19.1 136	+13	08.3 132	**60 S**	21 02	22 29	** **	16 33	91	1 45	1

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 19h 05m.7		Mag: −3.9 PMG: 12h 36m				Mag: −1.9 PMG: 0h 15m				Mag: −2.6 PMG: 19h 04m				Mag: +0.8 PMG: 16h 38m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	72	47.4	171	14.4	−23	42.5	356	20.4	+24	59.3	73	10.2	−1	42.2	109	55.3	−15	59.6
1	87	49.9	186	13.4		42.8	11	23.9		59.3	88	12.6		42.2	124	57.6		59.5
2	102	52.3	201	12.5		43.0	26	27.5		59.3	103	15.0		42.1	139	59.9		59.5
3	117	54.8	216	11.5		43.3	41	31.0		59.3	118	17.4		42.1	155	02.2		59.4
4	132	57.3	231	10.6		43.6	56	34.5		59.3	133	19.8		42.0	170	04.5		59.4
5	147	59.7	246	09.6	−23	43.9	71	38.1	+24	59.4	148	22.2	−1	42.0	185	06.8	−15	59.3
6	163	02.2	261	08.7	−23	44.2	86	41.6	+24	59.4	163	24.6	−1	41.9	200	09.1	−15	59.3
7	178	04.7	276	07.7		44.4	101	45.1		59.4	178	26.9		41.9	215	11.4		59.2
8	193	07.1	291	06.7		44.7	116	48.7		59.4	193	29.3		41.8	230	13.7		59.1
9	208	09.6	306	05.8		45.0	131	52.2		59.4	208	31.7		41.8	245	16.0		59.1
10	223	12.0	321	04.8		45.2	146	55.7		59.4	223	34.1		41.7	260	18.3		59.0
11	238	14.5	336	03.9	−23	45.5	161	59.3	+24	59.4	238	36.5	−1	41.7	275	20.6	−15	59.0
12	253	17.0	351	02.9	−23	45.8	177	02.8	+24	59.5	253	38.9	−1	41.7	290	22.9	−15	58.9
13	268	19.4	6	02.0		46.0	192	06.3		59.5	268	41.3		41.6	305	25.2		58.9
14	283	21.9	21	01.0		46.3	207	09.9		59.5	283	43.6		41.6	320	27.5		58.8
15	298	24.4	36	00.1		46.6	222	13.4		59.5	298	46.0		41.5	335	29.8		58.8
16	313	26.8	50	59.1		46.8	237	16.9		59.5	313	48.4		41.5	350	32.1		58.7
17	328	29.3	65	58.2	−23	47.1	252	20.5	+24	59.5	328	50.8	−1	41.4	5	34.4	−15	58.6
18	343	31.8	80	57.2	−23	47.3	267	24.0	+24	59.5	343	53.2	−1	41.4	20	36.7	−15	58.6
19	358	34.2	95	56.3		47.6	282	27.5		59.5	358	55.6		41.3	35	39.0		58.5
20	13	36.7	110	55.3		47.9	297	31.1		59.5	13	58.0		41.3	50	41.3		58.5
21	28	39.2	125	54.4		48.1	312	34.6		59.6	29	00.3		41.2	65	43.6		58.4
22	43	41.6	140	53.4		48.4	327	38.1		59.6	44	02.7		41.2	80	45.9		58.4
23	58	44.1	155	52.4		48.6	342	41.7		59.6	59	05.1		41.1	95	48.2		58.3
24	73	46.5	170	51.5	−23	48.9	357	45.2	+24	59.6	74	07.5	−1	41.1	110	50.5	−15	58.2
Dif	—			−10		−3		+35		0		+24		0		+23		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 11^{d}.0		PHE	4^{h}: 56′.1									
	PMG: 11^{h} 50^{m}.6				SD: 15′.3			12^{h}: 55′.9									
					PMG: 22^{h} 04^{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	182	24.4	−22	20.0	39	19.1	+13	08.3		**60 N**	6 52	7 47	8 42	13 50	4	5 16	92
1	197	24.2		20.3	53	51.7 136		21.4	131	**58**	45	36	26	14 00	8	5 07	88
2	212	23.9		20.6	68	24.2 135		34.5	131	**56**	39	27	13	08	12	4 59	84
3	227	23.7		21.0	82	56.7 135	+13	47.5	130	**54**	33	18	8 01	16	15	52	81
4	242	23.4		21.3	97	29.2 135	+14	00.4	129	**52**	28	11	7 51	23	18	46	78
5	257	23.2	−22	21.6	112	01.6 134	+14	13.2	128	**50**	6 23	7 04	7 42	14 29	21	4 40	76
6	272	22.9	−22	21.9	126	34.0 134	+14	26.0	128	**45**	6 12	6 49	7 22	14 43	25	4 28	70
7	287	22.6		22.2	141	06.4 134		38.7	127	**40**	6 02	36	7 06	14 54	29	19	65
8	302	22.4		22.6	155	38.7 133	+14	51.4	127	**35**	5 54	25	6 53	15 04	32	10	62
9	317	22.1		22.9	170	11.0 133	+15	03.9	125	**30**	45	6 15	41	12	35	4 03	59
10	332	21.9		23.2	184	43.2 132		16.4	125	**20**	30	5 57	21	27	40	3 50	55
11	347	21.6	−22	23.5	199	15.4 132	+15	28.8	124	**10 N**	5 15	5 41	6 03	15 40	44	3 39	50
12	2	21.4	−22	23.8	213	47.6 132	+15	41.1	123	**0**	4 58	5 25	5 47	15 53	47	3 29	46
13	17	21.1		24.1	228	19.7 131	+15	53.4	123	**10 S**	40	5 07	30	16 05	51	18	43
14	32	20.8		24.4	242	51.8 131	+16	05.6	122	**20**	4 19	4 48	5 12	18	55	3 07	39
15	47	20.6		24.7	257	23.8 130		17.7	121	**30**	3 51	24	4 51	34	59	2 55	33
16	62	20.3		25.1	271	55.8 130		29.7	120	**35**	34	4 10	39	42	63	48	30
17	77	20.1	−22	25.4	286	27.7 129	+16	41.6	119	**40**	3 12	3 52	4 25	16 53	65	2 40	27
18	92	19.8	−22	25.7	300	59.6 129	+16	53.4	118	**45**	2 43	3 31	4 08	17 05	69	2 30	24
19	107	19.6		26.0	315	31.5 129	+17	05.2	118	**50**	2 02	3 03	3 47	20	74	19	18
20	122	19.3		26.3	330	03.3 128		16.9	117	**52**	1 38	2 50	36	27	77	14	16
21	137	19.0		26.6	344	35.0 127		28.5	116	**54**	1 05	33	25	34	81	08	13
22	152	18.8		26.9	359	06.7 127		40.0	115	**56**	** **	2 13	3 12	43	84	2 02	10
23	167	18.5		27.2	13	38.4 127	+17	51.4	114	**58**	** **	1 48	2 57	17 53	88	1 54	7
24	182	18.3	−22	27.5	28	10.0 126	+18	02.8	114	**60 S**	** **	1 12	2 38	18 04	94	1 46	3

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.9			Mag: −2.6			Mag: +0.8		
	19^{h} 01^{m}.8		PMG: 12^{h} 37^{m}			PMG: 0^{h} 09^{m}			PMG: 19^{h} 00^{m}			PMG: 16^{h} 34^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	73	46.5	170	51.5	−23 48.9	357	45.2	+24 59.6	74	07.5	−1 41.1	110	50.5	−15 58.2
1	88	49.0	185	50.5	49.1	12	48.7	59.6	89	09.9	41.0	125	52.8	58.2
2	103	51.5	200	49.6	49.4	27	52.3	59.6	104	12.2	41.0	140	55.1	58.1
3	118	53.9	215	48.6	49.6	42	55.8	59.6	119	14.6	40.9	155	57.3	58.1
4	133	56.4	230	47.7	49.9	57	59.3	59.6	134	17.0	40.9	170	59.6	58.0
5	148	58.9	245	46.7	−23 50.1	73	02.9	+24 59.6	149	19.4	−1 40.8	186	01.9	−15 58.0
6	164	01.3	260	45.8	−23 50.3	88	06.4	+24 59.6	164	21.8	−1 40.8	201	04.2	−15 57.9
7	179	03.8	275	44.8	50.6	103	09.9	59.7	179	24.1	40.7	216	06.5	57.9
8	194	06.3	290	43.8	50.8	118	13.5	59.7	194	26.5	40.7	231	08.8	57.8
9	209	08.7	305	42.9	51.1	133	17.0	59.7	209	28.9	40.6	246	11.1	57.7
10	224	11.2	320	41.9	51.3	148	20.5	59.7	224	31.3	40.6	261	13.4	57.7
11	239	13.6	335	41.0	−23 51.5	163	24.1	+24 59.7	239	33.7	−1 40.5	276	15.7	−15 57.6
12	254	16.1	350	40.0	−23 51.8	178	27.6	+24 59.7	254	36.0	−1 40.5	291	18.0	−15 57.6
13	269	18.6	5	39.1	52.0	193	31.2	59.7	269	38.4	40.4	306	20.3	57.5
14	284	21.0	20	38.1	52.2	208	34.7	59.7	284	40.8	40.4	321	22.6	57.5
15	299	23.5	35	37.1	52.5	223	38.2	59.7	299	43.2	40.3	336	24.9	57.4
16	314	26.0	50	36.2	52.7	238	41.8	59.7	314	45.5	40.3	351	27.2	57.3
17	329	28.4	65	35.2	−23 52.9	253	45.3	+24 59.7	329	47.9	−1 40.2	6	29.5	−15 57.3
18	344	30.9	80	34.3	−23 53.2	268	48.8	+24 59.7	344	50.3	−1 40.2	21	31.8	−15 57.2
19	359	33.4	95	33.3	53.4	283	52.4	59.7	359	52.7	40.1	36	34.0	57.2
20	14	35.8	110	32.4	53.6	298	55.9	59.7	14	55.0	40.1	51	36.3	57.1
21	29	38.3	125	31.4	53.8	313	59.4	59.8	29	57.4	40.0	66	38.6	57.1
22	44	40.8	140	30.4	54.1	329	03.0	59.8	44	59.8	40.0	81	40.9	57.0
23	59	43.2	155	29.5	54.3	344	06.5	59.8	60	02.2	39.9	96	43.2	56.9
24	74	45.7	170	28.5	−23 54.5	359	10.0	+24 59.8	75	04.5	−1 39.9	111	45.5	−15 56.9
Dif	—			−10	−2		+35	0		+24	+1		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 51m.0				Edad: 12d.0 SD: 15′.2 PMG: 22h 51m		PHE 4h: 55′.6 12h: 55′.4 20h: 55′.3 Rº: 50m				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	18.3	−22	27.5	28	10.0	+18	02.8	**60 N**	14 57	15 53	16 49	13 54	7	6 48	94
1	197	18.0		27.8	42	41.6 126		14.0 112	**58**	15 14	16 04	16 56	14 08	13	35	87
2	212	17.7		28.1	57	13.1 125		25.2 112	**56**	27	14	17 02	20	18	23	83
3	227	17.5		28.4	71	44.6 125		36.2 110	**54**	39	22	08	31	21	13	79
4	242	17.2		28.7	86	16.0 124		47.2 110	**52**	50	30	13	41	24	6 04	76
5	257	16.9	−22	29.0	100	47.4 124	+18	58.1 109	**50**	15 59	16 37	17 18	14 50	26	5 56	73
6	272	16.7	−22	29.3	115	18.8 124	+19	08.9 108	**45**	16 19	16 52	17 29	15 08	31	5 38	69
7	287	16.4		29.6	129	50.0 122		19.6 107	**40**	35	17 05	39	23	34	24	66
8	302	16.2		29.9	144	21.3 123		30.2 106	**35**	16 48	16	47	36	37	12	63
9	317	15.9		30.2	158	52.5 122		40.7 105	**30**	17 00	26	17 56	15 47	40	5 02	60
10	332	15.6		30.5	173	23.6 121	+19	51.1 104	**20**	20	17 44	18 11	16 07	43	4 45	55
11	347	15.4	−22	30.8	187	54.7 121	+20	01.4 103	**10 N**	17 38	18 01	18 27	16 24	46	4 29	52
12	2	15.1	−22	31.1	202	25.7 120	+20	11.6 102	**0**	17 55	18 17	18 43	16 40	49	4 15	48
13	17	14.8		31.4	216	56.7 120		21.7 101	**10 S**	18 12	34	19 01	16 56	52	4 01	45
14	32	14.6		31.7	231	27.6 119		31.8 101	**20**	30	18 54	23	17 13	56	3 46	41
15	47	14.3		32.0	245	58.5 119		41.7 99	**30**	18 51	19 18	19 51	33	59	28	37
16	62	14.1		32.3	260	29.4 119	+20	51.5 98	**35**	19 03	33	20 09	45	61	18	35
17	77	13.8	−22	32.6	275	00.2 118	+21	01.2 97	**40**	19 18	19 50	20 31	17 58	65	3 07	31
18	92	13.5	−22	32.9	289	30.9 117	+21	10.8 96	**45**	19 35	20 12	21 00	18 14	68	2 54	27
19	107	13.3		33.1	304	01.6 117		20.3 95	**50**	19 56	40	21 42	34	73	37	23
20	122	13.0		33.4	318	32.2 116		29.7 94	**52**	20 07	20 54	22 07	44	75	30	20
21	137	12.7		33.7	333	02.8 116		39.0 93	**54**	18	21 11	22 42	18 55	77	21	18
22	152	12.5		34.0	347	33.3 115		48.1 91	**56**	32	31	** **	19 07	81	12	14
23	167	12.2		34.3	2	03.8 115	+21	57.2 91	**58**	20 47	21 57	** **	21	86	2 01	11
24	182	11.9	−22	34.6	16	34.3 115	+22	06.2 90	**60 S**	21 06	22 36	** **	19 38	93	1 49	5

UT	ARIES		VENUS				MARTE				JÚPITER				SATURNO			
	PMG 18h 57m.8		Mag: −3.9 PMG: 12h 39m				Mag: −1.9 PMG: 0h 03m				Mag: −2.6 PMG: 18h 57m				Mag: +0.8 PMG: 16h 30m			
	hG ♈		hG ♀		Dec		hG ♂		Dec		hG ♃		Dec		hG ♄		Dec	
h	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′	°	′
0	74	45.7	170	28.5	−23	54.5	359	10.0	+24	59.8	75	04.5	−1	39.9	111	45.5	−15	56.9
1	89	48.1	185	27.6		54.7	14	13.6		59.8	90	06.9		39.8	126	47.8		56.8
2	104	50.6	200	26.6		54.9	29	17.1		59.8	105	09.3		39.8	141	50.1		56.8
3	119	53.1	215	25.6		55.2	44	20.6		59.8	120	11.7		39.7	156	52.4		56.7
4	134	55.5	230	24.7		55.4	59	24.2		59.8	135	14.0		39.7	171	54.7		56.6
5	149	58.0	245	23.7	−23	55.6	74	27.7	+24	59.8	150	16.4	−1	39.6	186	57.0	−15	56.6
6	165	00.5	260	22.8	−23	55.8	89	31.2	+24	59.8	165	18.8	−1	39.6	201	59.3	−15	56.5
7	180	02.9	275	21.8		56.0	104	34.8		59.8	180	21.2		39.5	217	01.5		56.5
8	195	05.4	290	20.8		56.2	119	38.3		59.8	195	23.5		39.5	232	03.8		56.4
9	210	07.9	305	19.9		56.4	134	41.8		59.8	210	25.9		39.4	247	06.1		56.4
10	225	10.3	320	18.9		56.6	149	45.4		59.8	225	28.3		39.3	262	08.4		56.3
11	240	12.8	335	17.9	−23	56.8	164	48.9	+24	59.8	240	30.6	−1	39.3	277	10.7	−15	56.2
12	255	15.3	350	17.0	−23	57.1	179	52.4	+24	59.8	255	33.0	−1	39.2	292	13.0	−15	56.2
13	270	17.7	5	16.0		57.3	194	56.0		59.8	270	35.4		39.2	307	15.3		56.1
14	285	20.2	20	15.1		57.5	209	59.5		59.8	285	37.7		39.1	322	17.6		56.1
15	300	22.6	35	14.1		57.7	225	03.1		59.8	300	40.1		39.1	337	19.9		56.0
16	315	25.1	50	13.1		57.9	240	06.6		59.8	315	42.5		39.0	352	22.2		56.0
17	330	27.6	65	12.2	−23	58.1	255	10.1	+24	59.8	330	44.9	−1	39.0	7	24.5	−15	55.9
18	345	30.0	80	11.2	−23	58.3	270	13.7	+24	59.8	345	47.2	−1	38.9	22	26.7	−15	55.8
19	0	32.5	95	10.2		58.5	285	17.2		59.8	0	49.6		38.9	37	29.0		55.8
20	15	35.0	110	09.3		58.7	300	20.7		59.8	15	52.0		38.8	52	31.3		55.7
21	30	37.4	125	08.3		58.8	315	24.3		59.8	30	54.3		38.8	67	33.6		55.7
22	45	39.9	140	07.4		59.0	330	27.8		59.8	45	56.7		38.7	82	35.9		55.6
23	60	42.4	155	06.4		59.2	345	31.3		59.8	60	59.1		38.6	97	38.2		55.5
24	75	44.8	170	05.4	−23	59.4	0	34.9	+24	59.8	76	01.4	−1	38.6	112	40.5	−15	55.5
Dif	—			−10		−2		−8965		0		+24		+1		+23		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 13^{d}.0		PHE	4^{h}: 55′.2									
	PMG: 11^{h} 51^{m}.4				SD: 15′.0			12^{h}: 55′.0									
					PMG: 23^{h} 41^{m}			20^{h}: 54′.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	11.9	−22	34.6	16	34.3	+22	06.2		**60 N**	6 54	7 50	8 46	14 01	16	8 22	89
1	197	11.7		34.9	31	04.7 114		15.0	88	**58**	47	39	30	21	23	8 02	83
2	212	11.4		35.2	45	35.0 113		23.8	88	**56**	41	29	16	38	27	7 46	78
3	227	11.1		35.4	60	05.3 113		32.4	86	**54**	35	21	8 04	14 52	30	32	75
4	242	10.9		35.7	74	35.5 112		40.9	85	**52**	30	13	7 53	15 05	32	20	72
5	257	10.6	−22	36.0	89	05.7 112	+22	49.3	84	**50**	6 25	7 06	7 44	15 16	34	7 09	70
6	272	10.3	−22	36.3	103	35.9 112	+22	57.6	83	**45**	6 14	6 51	7 24	15 39	38	6 47	66
7	287	10.1		36.6	118	06.0 111	+23	05.8	82	**40**	6 04	38	7 08	15 57	41	30	63
8	302	09.8		36.8	132	36.1 111		13.9	81	**35**	5 55	27	6 55	16 13	43	15	60
9	317	09.5		37.1	147	06.1 110		21.8	79	**30**	47	6 16	43	27	44	6 02	59
10	332	09.3		37.4	161	36.0 109		29.7	79	**20**	31	5 58	22	16 50	47	5 40	55
11	347	09.0	−22	37.7	176	05.9 109	+23	37.4	77	**10 N**	5 16	5 42	6 04	17 10	49	5 21	53
12	2	08.7	−22	38.0	190	35.8 109	+23	45.0	76	**0**	4 59	5 25	5 48	17 29	51	5 03	51
13	17	08.5		38.2	205	05.6 108		52.4	74	**10 S**	41	5 08	31	17 48	53	4 46	47
14	32	08.2		38.5	219	35.4 108	+23	59.8	74	**20**	4 19	4 48	5 13	18 09	55	27	45
15	47	07.9		38.8	234	05.2 108	+24	07.0	72	**30**	3 51	24	4 51	32	58	4 05	42
16	62	07.7		39.1	248	34.9 107		14.2	72	**35**	33	4 10	39	18 46	60	3 53	39
17	77	07.4	−22	39.3	263	04.5 106	+24	21.2	70	**40**	3 11	3 52	4 24	19 03	61	3 38	38
18	92	07.1	−22	39.6	277	34.1 106	+24	28.0	68	**45**	2 42	3 31	4 07	19 22	64	3 21	34
19	107	06.8		39.9	292	03.7 106		34.8	68	**50**	2 00	3 02	3 46	47	67	3 00	30
20	122	06.6		40.1	306	33.2 105		41.4	66	**52**	1 36	2 48	36	19 59	68	2 50	28
21	137	06.3		40.4	321	02.7 105		47.9	65	**54**	1 00	32	24	20 12	71	39	25
22	152	06.0		40.7	335	32.2 105	+24	54.3	64	**56**	** **	2 11	3 11	28	74	26	22
23	167	05.8		41.0	350	01.6 104	+25	00.6	63	**58**	** **	1 45	2 55	20 47	78	2 12	16
24	182	05.5	−22	41.2	4	30.9 103	+25	06.7	61	**60 S**	** **	1 06	2 36	21 11	84	1 54	11

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.9			Mag: −2.6			Mag: +0.8		
	18^{h} 53^{m}.9		PMG: 12^{h} 40^{m}			PMG: 23^{h} 52^{m}			PMG: 18^{h} 53^{m}			PMG: 16^{h} 27^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	75	44.8	170	05.4	−23 59.4	0	34.9	+24 59.8	76	01.4	−1 38.6	112	40.5	−15 55.5
1	90	47.3	185	04.5	59.6	15	38.4	59.8	91	03.8	38.5	127	42.8	55.4
2	105	49.8	200	03.5	−23 59.8	30	41.9	59.8	106	06.2	38.5	142	45.1	55.4
3	120	52.2	215	02.5	−24 00.0	45	45.4	59.8	121	08.5	38.4	157	47.3	55.3
4	135	54.7	230	01.6	−24 00.2	60	49.0	59.8	136	10.9	38.4	172	49.6	55.3
5	150	57.1	245	00.6	−24 00.4	75	52.5	+24 59.8	151	13.3	−1 38.3	187	51.9	−15 55.2
6	165	59.6	259	59.6	−24 00.5	90	56.0	+24 59.8	166	15.6	−1 38.3	202	54.2	−15 55.1
7	181	02.1	274	58.7	00.7	105	59.6	59.8	181	18.0	38.2	217	56.5	55.1
8	196	04.5	289	57.7	00.9	121	03.1	59.8	196	20.3	38.1	232	58.8	55.0
9	211	07.0	304	56.7	01.1	136	06.6	59.8	211	22.7	38.1	248	01.1	55.0
10	226	09.5	319	55.8	01.2	151	10.2	59.8	226	25.1	38.0	263	03.4	54.9
11	241	11.9	334	54.8	−24 01.4	166	13.7	+24 59.8	241	27.4	−1 38.0	278	05.6	−15 54.8
12	256	14.4	349	53.8	−24 01.6	181	17.2	+24 59.8	256	29.8	−1 37.9	293	07.9	−15 54.8
13	271	16.9	4	52.9	01.8	196	20.8	59.8	271	32.2	37.9	308	10.2	54.7
14	286	19.3	19	51.9	01.9	211	24.3	59.8	286	34.5	37.8	323	12.5	54.7
15	301	21.8	34	50.9	02.1	226	27.8	59.8	301	36.9	37.7	338	14.8	54.6
16	316	24.3	49	50.0	02.3	241	31.4	59.8	316	39.2	37.7	353	17.1	54.5
17	331	26.7	64	49.0	−24 02.5	256	34.9	+24 59.8	331	41.6	−1 37.6	8	19.4	−15 54.5
18	346	29.2	79	48.0	−24 02.6	271	38.4	+24 59.8	346	44.0	−1 37.6	23	21.7	−15 54.4
19	1	31.6	94	47.1	02.8	286	41.9	59.7	1	46.3	37.5	38	23.9	54.4
20	16	34.1	109	46.1	03.0	301	45.5	59.7	16	48.7	37.5	53	26.2	54.3
21	31	36.6	124	45.1	03.1	316	49.0	59.7	31	51.0	37.4	68	28.5	54.2
22	46	39.0	139	44.2	03.3	331	52.5	59.7	46	53.4	37.3	83	30.8	54.2
23	61	41.5	154	43.2	03.4	346	56.1	59.7	61	55.8	37.3	98	33.1	54.1
24	76	44.0	169	42.2	−24 03.6	1	59.6	+24 59.7	76	58.1	−1 37.2	113	35.4	−15 54.1
Dif	—			−10	−2		+35	0		+24	+1		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2		Edad: 14ᵈ.0		PHE	4ʰ: 54′.8								
	PMG: 11ʰ 51ᵐ.8		SD: 14′.9			12ʰ: 54′.7								
			PMG: **ʰ **ᵐ			20ʰ: 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	182 05.5	−22 41.2	4 30.9	104	+25 06.7	60	**60 N**	14 56	15 52	16 48	14 17	32	9 51	76
1	197 05.2	41.5	19 00.3	103	12.7	59	**58**	15 12	16 03	16 55	14 44	37	25	70
2	212 04.9	41.8	33 29.6	103	18.6	57	**56**	26	13	17 01	15 05	40	9 04	67
3	227 04.7	42.0	47 58.9	102	24.3	57	**54**	38	21	07	22	42	8 47	65
4	242 04.4	42.3	62 28.1	102	30.0	55	**52**	49	29	13	37	43	32	64
5	257 04.1	−22 42.5	76 57.3	102	+25 35.5	53	**50**	15 58	16 36	17 18	15 50	44	8 19	63
6	272 03.9	−22 42.8	91 26.4	101	+25 40.8	53	**45**	16 18	16 52	17 29	16 17	46	7 53	60
7	287 03.6	43.1	105 55.6	102	46.1	53	**40**	35	17 05	39	38	47	33	58
8	302 03.3	43.3	120 24.7	101	51.2	51	**35**	16 48	16	48	16 56	48	15	58
9	317 03.0	43.6	134 53.7	100	+25 56.1	49	**30**	17 00	26	17 56	17 11	49	7 01	56
10	332 02.8	43.9	149 22.8	101	+26 01.0	49	**20**	21	17 45	18 12	37	50	6 35	55
11	347 02.5	−22 44.1	163 51.8	100	+26 05.7	47	**10 N**	17 39	18 01	18 28	17 59	51	6 14	53
12	2 02.2	−22 44.4	178 20.8	100	+26 10.3	46	**0**	17 56	18 18	18 44	18 20	52	5 54	51
13	17 01.9	44.6	192 49.8	100	14.8	45	**10 S**	18 13	36	19 03	18 41	53	33	51
14	32 01.7	44.9	207 18.7	99	19.1	43	**20**	31	18 55	24	19 04	53	5 12	49
15	47 01.4	45.1	221 47.6	99	23.3	42	**30**	18 52	19 20	19 53	30	54	4 47	47
16	62 01.1	45.4	236 16.5	99	27.3	40	**35**	19 05	34	20 11	19 46	55	32	46
17	77 00.9	−22 45.7	250 45.4	99	+26 31.2	39	**40**	19 20	19 52	20 33	20 04	55	4 16	43
18	92 00.6	−22 45.9	265 14.2	98	+26 35.0	38	**45**	19 37	20 14	21 03	20 26	56	3 55	42
19	107 00.3	46.2	279 43.0	98	38.7	37	**50**	19 59	42	21 45	20 54	57	30	39
20	122 00.0	46.4	294 11.8	98	42.2	35	**52**	20 09	20 57	22 11	21 07	58	18	37
21	136 59.8	46.7	308 40.6	98	45.6	34	**54**	21	21 14	22 49	23	59	3 04	35
22	151 59.5	46.9	323 09.4	98	48.9	33	**56**	34	21 35	** **	21 42	59	2 48	32
23	166 59.2	47.2	337 38.2	98	52.0	31	**58**	20 50	22 02	** **	22 05	61	28	29
24	181 58.9	−22 47.4	352 06.9	97	+26 55.0	30	**60 S**	21 09	22 42	** **	22 35	64	2 05	21

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.9		Mag: −2.6		Mag: +0.8	
	18ʰ 50ᵐ.0	PMG: 12ʰ 42ᵐ		PMG: 23ʰ 46ᵐ		PMG: 18ʰ 49ᵐ		PMG: 16ʰ 23ᵐ	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′	º ′
0	76 44.0	169 42.2	−24 03.6	1 59.6	+24 59.7	76 58.1	−1 37.2	113 35.4	−15 54.1
1	91 46.4	184 41.3	03.8	17 03.1	59.7	92 00.5	37.2	128 37.7	54.0
2	106 48.9	199 40.3	03.9	32 06.7	59.7	107 02.8	37.1	143 39.9	53.9
3	121 51.4	214 39.3	04.1	47 10.2	59.7	122 05.2	37.1	158 42.2	53.9
4	136 53.8	229 38.4	04.2	62 13.7	59.7	137 07.6	37.0	173 44.5	53.8
5	151 56.3	244 37.4	−24 04.4	77 17.2	+24 59.7	152 09.9	−1 36.9	188 46.8	−15 53.8
6	166 58.7	259 36.4	−24 04.5	92 20.8	+24 59.7	167 12.3	−1 36.9	203 49.1	−15 53.7
7	182 01.2	274 35.5	04.7	107 24.3	59.7	182 14.6	36.8	218 51.4	53.6
8	197 03.7	289 34.5	04.8	122 27.8	59.7	197 17.0	36.8	233 53.6	53.6
9	212 06.1	304 33.5	05.0	137 31.3	59.6	212 19.3	36.7	248 55.9	53.5
10	227 08.6	319 32.6	05.1	152 34.9	59.6	227 21.7	36.6	263 58.2	53.5
11	242 11.1	334 31.6	−24 05.3	167 38.4	+24 59.6	242 24.0	−1 36.6	279 00.5	−15 53.4
12	257 13.5	349 30.6	−24 05.4	182 41.9	+24 59.6	257 26.4	−1 36.5	294 02.8	−15 53.3
13	272 16.0	4 29.7	05.6	197 45.4	59.6	272 28.8	36.5	309 05.1	53.3
14	287 18.5	19 28.7	05.7	212 49.0	59.6	287 31.1	36.4	324 07.3	53.2
15	302 20.9	34 27.7	05.8	227 52.5	59.6	302 33.5	36.3	339 09.6	53.2
16	317 23.4	49 26.7	06.0	242 56.0	59.6	317 35.8	36.3	354 11.9	53.1
17	332 25.9	64 25.8	−24 06.1	257 59.5	+24 59.6	332 38.2	−1 36.2	9 14.2	−15 53.0
18	347 28.3	79 24.8	−24 06.2	273 03.1	+24 59.6	347 40.5	−1 36.2	24 16.5	−15 53.0
19	2 30.8	94 23.8	06.4	288 06.6	59.6	2 42.9	36.1	39 18.8	52.9
20	17 33.2	109 22.9	06.5	303 10.1	59.5	17 45.2	36.0	54 21.0	52.9
21	32 35.7	124 21.9	06.6	318 13.6	59.5	32 47.6	36.0	69 23.3	52.8
22	47 38.2	139 20.9	06.8	333 17.2	59.5	47 49.9	35.9	84 25.6	52.7
23	62 40.6	154 20.0	06.9	348 20.7	59.5	62 52.3	35.8	99 27.9	52.7
24	77 43.1	169 19.0	−24 07.0	3 24.2	+24 59.5	77 54.6	−1 35.8	114 30.2	−15 52.6
Dif	—	−10	−1	+35	0	+24	+1	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 15ᵈ0 PHE: 4ʰ: 54′.5, 12ʰ: 54′.4, 20ʰ: 54′.3												
	PMG: 11ʰ 52ᵐ3				SD: 14′.8												
					PMG: 0ʰ 33ᵐ												
	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	58.9	−22	47.4	352	06.9	97 +26	55.0		**60 N**	6 57	7 53	8 49	14 49	58	11 07	49
1	196	58.7		47.7	6	35.6	97 +26	57.8	28	**58**	50	42	33	15 21	57	10 35	51
2	211	58.4		47.9	21	04.4	98 +27	00.5	27	**56**	43	32	18	15 45	56	10 11	51
3	226	58.1		48.2	35	33.1	97	03.1	26	**54**	37	23	8 06	16 04	56	9 52	51
4	241	57.8		48.4	50	01.8	97	05.5	24	**52**	32	15	7 56	20	55	36	51
5	256	57.5	−22	48.6	64	30.5	97 +27	07.8	23	**50**	6 27	7 08	7 46	16 34	55	9 22	52
6	271	57.3	−22	48.9	78	59.1	96 +27	10.0	22	**45**	6 16	6 53	7 26	17 03	54	8 53	52
7	286	57.0		49.1	93	27.8	97	12.0	20	**40**	6 06	40	7 10	25	54	31	52
8	301	56.7		49.4	107	56.5	97	13.9	19	**35**	5 57	28	6 56	17 44	53	8 13	52
9	316	56.4		49.6	122	25.2	97	15.7	18	**30**	48	18	44	18 00	53	7 57	52
10	331	56.2		49.9	136	53.8	96	17.3	16	**20**	32	6 00	24	27	52	30	52
11	346	55.9	−22	50.1	151	22.5	97 +27	18.8	15	**10 N**	5 17	5 43	6 06	18 50	52	7 07	52
12	1	55.6	−22	50.3	165	51.2	97 +27	20.2	14	**0**	5 00	5 26	5 49	19 12	51	6 45	52
13	16	55.3		50.6	180	19.9	97	21.4	12	**10 S**	4 42	5 09	31	34	51	24	51
14	31	55.0		50.8	194	48.5	96	22.5	11	**20**	4 20	4 49	5 13	19 57	50	6 01	51
15	46	54.8		51.1	209	17.2	97	23.4	9	**30**	3 51	24	4 52	20 24	50	5 34	51
16	61	54.5		51.3	223	45.9	97	24.2	8	**35**	33	4 10	39	41	48	5 18	51
17	76	54.2	−22	51.5	238	14.6	97 +27	24.9	7	**40**	3 11	3 52	4 24	20 59	48	4 59	51
18	91	53.9	−22	51.8	252	43.3	97 +27	25.4	5	**45**	2 41	3 30	4 07	21 22	47	4 37	51
19	106	53.6		52.0	267	12.0	97	25.8	4	**50**	1 58	3 02	3 45	21 51	46	4 09	50
20	121	53.4		52.2	281	40.7	97	26.1	3	**52**	1 33	2 47	35	22 05	45	3 55	50
21	136	53.1		52.5	296	09.5	98	26.2	1	**54**	0 55	30	23	22	43	39	49
22	151	52.8		52.7	310	38.2	97	26.2	0	**56**	** **	2 09	3 10	22 41	43	3 20	48
23	166	52.5		52.9	325	07.0	98	26.1	1	**58**	** **	1 42	2 54	23 06	40	2 57	47
24	181	52.2	−22	53.2	339	35.7	97 +27	25.8	3	**60 S**	** **	1 01	2 34	23 39	36	2 26	45

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.9			Mag: −2.6			Mag: +0.8		
	18ʰ 46ᵐ0		PMG: 12ʰ 44ᵐ			PMG: 23ʰ 41ᵐ			PMG: 18ʰ 45ᵐ			PMG: 16ʰ 20ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	77	43.1	169	19.0	−24 07.0	3	24.2	+24 59.5	77	54.6	−1 35.8	114	30.2	−15 52.6
1	92	45.6	184	18.0	07.2	18	27.7	59.5	92	57.0	35.7	129	32.5	52.6
2	107	48.0	199	17.0	07.3	33	31.3	59.5	107	59.3	35.7	144	34.7	52.5
3	122	50.5	214	16.1	07.4	48	34.8	59.5	123	01.7	35.6	159	37.0	52.4
4	137	53.0	229	15.1	07.5	63	38.3	59.4	138	04.0	35.5	174	39.3	52.4
5	152	55.4	244	14.1	−24 07.7	78	41.8	+24 59.4	153	06.4	−1 35.5	189	41.6	−15 52.3
6	167	57.9	259	13.2	−24 07.8	93	45.3	+24 59.4	168	08.7	−1 35.4	204	43.9	−15 52.3
7	183	00.4	274	12.2	07.9	108	48.9	59.4	183	11.1	35.3	219	46.1	52.2
8	198	02.8	289	11.2	08.0	123	52.4	59.4	198	13.4	35.3	234	48.4	52.1
9	213	05.3	304	10.2	08.1	138	55.9	59.4	213	15.8	35.2	249	50.7	52.1
10	228	07.7	319	09.3	08.2	153	59.4	59.4	228	18.1	35.2	264	53.0	52.0
11	243	10.2	334	08.3	−24 08.4	169	02.9	+24 59.4	243	20.5	−1 35.1	279	55.3	−15 51.9
12	258	12.7	349	07.3	−24 08.5	184	06.5	+24 59.3	258	22.8	−1 35.0	294	57.6	−15 51.9
13	273	15.1	4	06.4	08.6	199	10.0	59.3	273	25.2	35.0	309	59.8	51.8
14	288	17.6	19	05.4	08.7	214	13.5	59.3	288	27.5	34.9	325	02.1	51.8
15	303	20.1	34	04.4	08.8	229	17.0	59.3	303	29.9	34.8	340	04.4	51.7
16	318	22.5	49	03.4	08.9	244	20.5	59.3	318	32.2	34.8	355	06.7	51.6
17	333	25.0	64	02.5	−24 09.0	259	24.0	+24 59.3	333	34.6	−1 34.7	10	09.0	−15 51.6
18	348	27.5	79	01.5	−24 09.1	274	27.6	+24 59.3	348	36.9	−1 34.7	25	11.2	−15 51.5
19	3	29.9	94	00.5	09.2	289	31.1	59.2	3	39.3	34.6	40	13.5	51.5
20	18	32.4	108	59.6	09.3	304	34.6	59.2	18	41.6	34.5	55	15.8	51.4
21	33	34.9	123	58.6	09.4	319	38.1	59.2	33	43.9	34.5	70	18.1	51.3
22	48	37.3	138	57.6	09.5	334	41.6	59.2	48	46.3	34.4	85	20.4	51.3
23	63	39.8	153	56.6	09.6	349	45.1	59.2	63	48.6	34.3	100	22.6	51.2
24	78	42.2	168	55.7	−24 09.7	4	48.6	+24 59.2	78	51.0	−1 34.3	115	24.9	−15 51.1
Dif	—			−10	−1		+35	0		+23	+1		+23	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 52m.7		Edad: 16d.0 SD: 14′.8 PMG: 1h 25m		PHE	4h: 54′.2 12h: 54′.2 20h: 54′.1 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 52.2	−22 53.2	339 35.7	98	+27 25.8	4	**60 N**	14 55	15 51	16 47	15 47	79	11 56	26
1	196 52.0	53.4	354 04.5	98	25.4	6	**58**	15 11	16 02	16 55	16 18	72	26	31
2	211 51.7	53.6	8 33.3	99	24.8	7	**56**	26	12	17 01	16 41	69	11 02	35
3	226 51.4	53.8	23 02.2	98	24.1	8	**54**	38	21	07	17 00	66	10 43	37
4	241 51.1	54.1	37 31.0	99	23.3	9	**52**	49	29	12	15	65	27	39
5	256 50.8	−22 54.3	51 59.9	99	+27 22.4	11	**50**	15 58	16 36	17 18	17 29	63	10 14	40
6	271 50.6	−22 54.5	66 28.8	99	+27 21.3	12	**45**	16 18	16 52	17 29	17 57	60	9 45	43
7	286 50.3	54.7	80 57.7	99	20.1	14	**40**	35	17 05	39	18 19	58	23	44
8	301 50.0	55.0	95 26.7	100	18.7	15	**35**	16 48	16	48	37	57	9 05	45
9	316 49.7	55.2	109 55.6	99	17.2	16	**30**	17 01	27	17 57	18 53	55	8 49	46
10	331 49.4	55.4	124 24.6	100	15.6	18	**20**	21	17 45	18 13	19 19	54	8 22	48
11	346 49.2	−22 55.6	138 53.6	100	+27 13.8	18	**10 N**	17 39	18 02	18 28	19 42	52	7 59	49
12	1 48.9	−22 55.9	153 22.7	101	+27 12.0	18	**0**	17 56	18 19	18 45	20 03	50	7 37	51
13	16 48.6	56.1	167 51.8	101	09.9	21	**10 S**	18 14	37	19 04	25	48	7 15	52
14	31 48.3	56.3	182 20.9	101	07.8	21	**20**	32	18 57	26	20 47	47	6 52	53
15	46 48.0	56.5	196 50.1	102	05.5	23	**30**	18 54	19 21	19 54	21 14	44	25	54
16	61 47.7	56.7	211 19.2	101	03.1	24	**35**	19 07	36	20 13	29	43	6 09	55
17	76 47.5	−22 57.0	225 48.5	103	+27 00.6	25	**40**	19 21	19 54	20 35	21 47	41	5 50	57
18	91 47.2	−22 57.2	240 17.7	102	+26 57.9	27	**45**	19 39	20 16	21 05	22 09	38	5 28	57
19	106 46.9	57.4	254 47.0	103	55.1	28	**50**	20 01	45	21 49	37	34	4 59	59
20	121 46.6	57.6	269 16.3	103	52.2	29	**52**	11	20 59	22 15	22 50	33	45	60
21	136 46.3	57.8	283 45.7	104	49.2	30	**54**	23	21 17	22 54	23 05	31	28	62
22	151 46.0	58.0	298 15.1	104	46.0	32	**56**	37	21 38	** **	24	27	4 08	64
23	166 45.7	58.2	312 44.6	105	42.7	33	**58**	20 53	22 06	** **	23 46	23	3 44	66
24	181 45.5	−22 58.5	327 14.1	105	+26 39.2	35	**60 S**	21 13	22 49	** **	** **	**	3 11	71

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG 18h 42m.1	Mag: −3.9 PMG: 12h 45m		Mag: −1.8 PMG: 23h 35m		Mag: −2.6 PMG: 18h 42m		Mag: +0.8 PMG: 16h 16m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	78 42.2	168 55.7	−24 09.7	4 48.6	+24 59.2	78 51.0	−1 34.3	115 24.9	−15 51.1
1	93 44.7	183 54.7	09.8	19 52.2	59.1	93 53.3	34.2	130 27.2	51.1
2	108 47.2	198 53.7	09.9	34 55.7	59.1	108 55.7	34.1	145 29.5	51.0
3	123 49.6	213 52.7	10.0	49 59.2	59.1	123 58.0	34.1	160 31.7	51.0
4	138 52.1	228 51.8	10.1	65 02.7	59.1	139 00.3	34.0	175 34.0	50.9
5	153 54.6	243 50.8	−24 10.2	80 06.2	+24 59.1	154 02.7	−1 33.9	190 36.3	−15 50.8
6	168 57.0	258 49.8	−24 10.3	95 09.7	+24 59.0	169 05.0	−1 33.9	205 38.6	−15 50.8
7	183 59.5	273 48.8	10.4	110 13.2	59.0	184 07.4	33.8	220 40.9	50.7
8	199 02.0	288 47.9	10.5	125 16.7	59.0	199 09.7	33.7	235 43.1	50.6
9	214 04.4	303 46.9	10.5	140 20.2	59.0	214 12.1	33.7	250 45.4	50.6
10	229 06.9	318 45.9	10.6	155 23.8	59.0	229 14.4	33.6	265 47.7	50.5
11	244 09.4	333 45.0	−24 10.7	170 27.3	+24 59.0	244 16.7	−1 33.5	280 50.0	−15 50.5
12	259 11.8	348 44.0	−24 10.8	185 30.8	+24 58.9	259 19.1	−1 33.5	295 52.3	−15 50.4
13	274 14.3	3 43.0	10.9	200 34.3	58.9	274 21.4	33.4	310 54.5	50.3
14	289 16.7	18 42.0	11.0	215 37.8	58.9	289 23.8	33.3	325 56.8	50.3
15	304 19.2	33 41.1	11.0	230 41.3	58.9	304 26.1	33.3	340 59.1	50.2
16	319 21.7	48 40.1	11.1	245 44.8	58.9	319 28.4	33.2	356 01.4	50.2
17	334 24.1	63 39.1	−24 11.2	260 48.3	+24 58.8	334 30.8	−1 33.1	11 03.6	−15 50.1
18	349 26.6	78 38.1	−24 11.3	275 51.8	+24 58.8	349 33.1	−1 33.1	26 05.9	−15 50.0
19	4 29.1	93 37.2	11.3	290 55.3	58.8	4 35.4	33.0	41 08.2	50.0
20	19 31.5	108 36.2	11.4	305 58.8	58.8	19 37.8	32.9	56 10.5	49.9
21	34 34.0	123 35.2	11.5	321 02.3	58.8	34 40.1	32.9	71 12.7	49.8
22	49 36.5	138 34.2	11.5	336 05.8	58.7	49 42.5	32.8	86 15.0	49.8
23	64 38.9	153 33.3	11.6	351 09.3	58.7	64 44.8	32.7	101 17.3	49.7
24	79 41.4	168 32.3	−24 11.7	6 12.8	+24 58.7	79 47.1	−1 32.7	116 19.6	−15 49.6
Dif	—	−10	−1	+35	0	+23	+1	+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 17^{d}.0		PHE	4^{h}: 54′.1									
	PMG: 11^{h} 53^{m}.2				SD: 14′.7			12^{h}: 54′.0									
					PMG: 2^{h} 16^{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	181	45.5	−22	58.5	327	14.1	+26	39.2		**60 N**	6 59	7 55	8 52	17 06	87	12 22	12
1	196	45.2		58.7	341	43.6 105		35.7	35	**58**	52	44	35	30	81	11 57	18
2	211	44.9		58.9	356	13.2 106		32.0	37	**56**	45	34	21	17 50	76	37	23
3	226	44.6		59.1	10	42.8 106		28.2	38	**54**	39	25	8 09	18 06	73	20	26
4	241	44.3		59.3	25	12.5 107		24.3	39	**52**	34	17	7 58	20	70	11 06	29
5	256	44.0	−22	59.5	39	42.2 107	+26	20.2	41	**50**	6 29	7 10	7 48	18 32	69	10 54	30
6	271	43.8	−22	59.7	54	11.9 107	+26	16.0	42	**45**	6 17	6 54	7 28	18 57	64	10 28	34
7	286	43.5	−22	59.9	68	41.7 108		11.7	43	**40**	6 07	41	7 12	19 17	61	10 07	37
8	301	43.2	−23	00.1	83	11.6 109		07.3	44	**35**	5 58	30	6 58	34	58	9 50	39
9	316	42.9		00.3	97	41.5 109	+26	02.8	45	**30**	49	19	46	19 48	57	35	41
10	331	42.6		00.5	112	11.5 110	+25	58.1	47	**20**	33	6 01	25	20 13	53	9 10	44
11	346	42.3	−23	00.7	126	41.5 110	+25	53.3	48	**10 N**	5 18	5 44	6 07	20 34	50	8 48	47
12	1	42.0	−23	00.9	141	11.5 110	+25	48.4	49	**0**	5 01	5 27	5 49	20 53	48	8 28	48
13	16	41.7		01.1	155	41.6 111		43.4	50	**10 S**	4 42	5 09	32	21 13	44	8 07	51
14	31	41.5		01.3	170	11.8 112		38.2	52	**20**	4 20	4 49	5 14	34	41	7 45	53
15	46	41.2		01.5	184	42.0 112		33.0	52	**30**	3 52	25	4 52	21 58	38	19	57
16	61	40.9		01.7	199	12.3 113		27.6	54	**35**	33	4 10	39	22 12	36	7 04	58
17	76	40.6	−23	01.9	213	42.6 113	+25	22.1	55	**40**	3 11	3 52	4 25	22 28	34	6 47	60
18	91	40.3	−23	02.1	228	12.9 113	+25	16.5	56	**45**	2 41	3 30	4 07	22 47	31	6 25	63
19	106	40.0		02.3	242	43.4 115		10.8	57	**50**	1 57	3 01	3 45	23 11	27	5 58	67
20	121	39.7		02.5	257	13.8 114	+25	04.9	59	**52**	1 31	2 46	34	23	24	45	68
21	136	39.4		02.7	271	44.4 116	+24	59.0	59	**54**	0 51	29	22	36	22	30	70
22	151	39.2		02.9	286	15.0 116		52.9	61	**56**	** **	2 08	3 09	23 51	19	5 12	74
23	166	38.9		03.1	300	45.6 116		46.8	61	**58**	** **	1 40	2 53	** **	**	4 50	78
24	181	38.6	−23	03.3	315	16.3 117	+24	40.5	63	**60 S**	** **	0 57	2 33	0 14	17	4 22	85

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.6			Mag: +0.8		
	18^{h} 38^{m}.2		PMG: 12^{h} 47^{m}			PMG: 23^{h} 30^{m}			PMG: 18^{h} 38^{m}			PMG: 16^{h} 12^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	79	41.4	168	32.3	−24 11.7	6	12.8	+24 58.7	79	47.1	−1 32.7	116	19.6	−15 49.6
1	94	43.9	183	31.3	11.7	21	16.3	58.7	94	49.5	32.6	131	21.8	49.6
2	109	46.3	198	30.3	11.8	36	19.8	58.6	109	51.8	32.5	146	24.1	49.5
3	124	48.8	213	29.4	11.9	51	23.3	58.6	124	54.1	32.5	161	26.4	49.5
4	139	51.2	228	28.4	11.9	66	26.8	58.6	139	56.5	32.4	176	28.7	49.4
5	154	53.7	243	27.4	−24 12.0	81	30.3	+24 58.6	154	58.8	−1 32.3	191	31.0	−15 49.3
6	169	56.2	258	26.4	−24 12.1	96	33.8	+24 58.6	170	01.1	−1 32.3	206	33.2	−15 49.3
7	184	58.6	273	25.5	12.1	111	37.3	58.5	185	03.5	32.2	221	35.5	49.2
8	200	01.1	288	24.5	12.2	126	40.8	58.5	200	05.8	32.1	236	37.8	49.1
9	215	03.6	303	23.5	12.2	141	44.3	58.5	215	08.1	32.1	251	40.1	49.1
10	230	06.0	318	22.5	12.3	156	47.8	58.5	230	10.5	32.0	266	42.3	49.0
11	245	08.5	333	21.6	−24 12.3	171	51.3	+24 58.4	245	12.8	−1 31.9	281	44.6	−15 49.0
12	260	11.0	348	20.6	−24 12.4	186	54.8	+24 58.4	260	15.1	−1 31.8	296	46.9	−15 48.9
13	275	13.4	3	19.6	12.4	201	58.3	58.4	275	17.5	31.8	311	49.1	48.8
14	290	15.9	18	18.6	12.5	217	01.8	58.4	290	19.8	31.7	326	51.4	48.8
15	305	18.3	33	17.7	12.5	232	05.3	58.3	305	22.1	31.6	341	53.7	48.7
16	320	20.8	48	16.7	12.6	247	08.8	58.3	320	24.5	31.6	356	56.0	48.6
17	335	23.3	63	15.7	−24 12.6	262	12.3	+24 58.3	335	26.8	−1 31.5	11	58.2	−15 48.6
18	350	25.7	78	14.7	−24 12.7	277	15.8	+24 58.3	350	29.1	−1 31.4	27	00.5	−15 48.5
19	5	28.2	93	13.8	12.7	292	19.3	58.2	5	31.5	31.4	42	02.8	48.4
20	20	30.7	108	12.8	12.7	307	22.8	58.2	20	33.8	31.3	57	05.1	48.4
21	35	33.1	123	11.8	12.8	322	26.3	58.2	35	36.1	31.2	72	07.3	48.3
22	50	35.6	138	10.8	12.8	337	29.8	58.2	50	38.4	31.1	87	09.6	48.3
23	65	38.1	153	09.9	12.9	352	33.3	58.1	65	40.8	31.1	102	11.9	48.2
24	80	40.5	168	08.9	−24 12.9	7	36.8	+24 58.1	80	43.1	−1 31.0	117	14.2	−15 48.1
Dif	—			−10	−1		+35	0		+23	+1		+23	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 18ᵈ.0		PHE	4ʰ: 54′.0									
	PMG: 11ʰ 53ᵐ.7				SD: 14′.7			12ʰ: 54′.0									
					PMG: 3ʰ 05ᵐ			20ʰ: 54′.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	181	38.6	−23	03.3	315	16.3	+24	40.5		**60 N**	14 54	15 51	16 47	18 33	88	12 34	6
1	196	38.3		03.5	329	47.1 118		34.1	64	**58**	15 11	16 02	16 54	18 51	83	15	11
2	211	38.0		03.7	344	17.9 118		27.6	65	**56**	25	12	17 01	19 06	79	12 00	15
3	226	37.7		03.9	358	48.8 119		20.9	67	**54**	37	21	07	19	75	11 46	19
4	241	37.4		04.1	13	19.7 119		14.2	67	**52**	48	29	13	30	73	35	20
5	256	37.1	−23	04.2	27	50.7 120	+24	07.4	68	**50**	15 58	16 36	17 18	19 41	70	11 24	23
6	271	36.8	−23	04.4	42	21.8 121	+24	00.4	70	**45**	16 18	16 52	17 29	20 01	66	11 02	28
7	286	36.6		04.6	56	52.9 121	+23	53.4	70	**40**	35	17 05	39	18	62	10 44	31
8	301	36.3		04.8	71	24.0 121		46.2	72	**35**	16 49	17	49	32	59	29	34
9	316	36.0		05.0	85	55.3 123		39.0	72	**30**	17 01	27	17 57	20 45	56	10 16	37
10	331	35.7		05.2	100	26.5 122		31.6	74	**20**	22	17 46	18 13	21 06	52	9 54	40
11	346	35.4	−23	05.4	114	57.9 124	+23	24.2	74	**10 N**	17 40	18 03	18 29	21 24	48	9 35	43
12	1	35.1	−23	05.5	129	29.3 124	+23	16.6	76	**0**	17 57	18 20	18 46	21 41	45	9 16	47
13	16	34.8		05.7	144	00.7 124		08.9	77	**10 S**	18 15	38	19 05	21 57	42	8 58	49
14	31	34.5		05.9	158	32.3 126	+23	01.2	77	**20**	33	18 58	27	22 15	39	38	53
15	46	34.2		06.1	173	03.8 125	+22	53.3	79	**30**	18 55	19 23	19 56	36	34	16	56
16	61	33.9		06.3	187	35.5 127		45.3	80	**35**	19 08	38	20 14	22 48	31	8 02	59
17	76	33.6	−23	06.4	202	07.2 127	+22	37.2	81	**40**	19 23	19 56	20 37	23 02	28	7 47	61
18	91	33.4	−23	06.6	216	38.9 127	+22	29.1	81	**45**	19 41	20 18	21 07	23 18	25	7 28	65
19	106	33.1		06.8	231	10.8 129		20.8	83	**50**	20 03	20 47	21 51	38	20	7 05	69
20	121	32.8		07.0	245	42.6 128		12.4	84	**52**	13	21 02	22 18	47	18	6 53	72
21	136	32.5		07.2	260	14.6 130	+22	04.0	84	**54**	25	19	23 00	23 58	15	40	75
22	151	32.2		07.3	274	46.6 130	+21	55.4	86	**56**	39	21 41	** **	** **	**	26	78
23	166	31.9		07.5	289	18.6 130		46.8	86	**58**	20 56	22 09	** **	0 09	14	6 08	83
24	181	31.6	−23	07.7	303	50.7 131	+21	38.0	88	**60 S**	21 16	22 55	** **	0 31	8	5 47	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.8			Mag: −2.6			Mag: +0.8		
	18ʰ 34ᵐ.2		PMG: 12ʰ 48ᵐ			PMG: 23ʰ 24ᵐ			PMG: 18ʰ 34ᵐ			PMG: 16ʰ 09ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	80	40.5	168	08.9	−24 12.9	7	36.8	+24 58.1	80	43.1	−1 31.0	117	14.2	−15 48.1
1	95	43.0	183	07.9	12.9	22	40.2	58.1	95	45.4	30.9	132	16.4	48.1
2	110	45.5	198	06.9	13.0	37	43.7	58.1	110	47.8	30.9	147	18.7	48.0
3	125	47.9	213	06.0	13.0	52	47.2	58.0	125	50.1	30.8	162	21.0	47.9
4	140	50.4	228	05.0	13.0	67	50.7	58.0	140	52.4	30.7	177	23.2	47.9
5	155	52.8	243	04.0	−24 13.0	82	54.2	+24 58.0	155	54.7	−1 30.6	192	25.5	−15 47.8
6	170	55.3	258	03.0	−24 13.1	97	57.7	+24 58.0	170	57.1	−1 30.6	207	27.8	−15 47.7
7	185	57.8	273	02.1	13.1	113	01.2	57.9	185	59.4	30.5	222	30.1	47.7
8	201	00.2	288	01.1	13.1	128	04.7	57.9	201	01.7	30.4	237	32.3	47.6
9	216	02.7	303	00.1	13.1	143	08.1	57.9	216	04.0	30.3	252	34.6	47.6
10	231	05.2	317	59.1	13.2	158	11.6	57.8	231	06.4	30.3	267	36.9	47.5
11	246	07.6	332	58.2	−24 13.2	173	15.1	+24 57.8	246	08.7	−1 30.2	282	39.2	−15 47.4
12	261	10.1	347	57.2	−24 13.2	188	18.6	+24 57.8	261	11.0	−1 30.1	297	41.4	−15 47.4
13	276	12.6	2	56.2	13.2	203	22.1	57.8	276	13.3	30.1	312	43.7	47.3
14	291	15.0	17	55.2	13.2	218	25.6	57.7	291	15.7	30.0	327	46.0	47.2
15	306	17.5	32	54.3	13.3	233	29.0	57.7	306	18.0	29.9	342	48.2	47.2
16	321	20.0	47	53.3	13.3	248	32.5	57.7	321	20.3	29.8	357	50.5	47.1
17	336	22.4	62	52.3	−24 13.3	263	36.0	+24 57.6	336	22.6	−1 29.8	12	52.8	−15 47.0
18	351	24.9	77	51.3	−24 13.3	278	39.5	+24 57.6	351	25.0	−1 29.7	27	55.0	−15 47.0
19	6	27.3	92	50.4	13.3	293	42.9	57.6	6	27.3	29.6	42	57.3	46.9
20	21	29.8	107	49.4	13.3	308	46.4	57.6	21	29.6	29.5	57	59.6	46.8
21	36	32.3	122	48.4	13.3	323	49.9	57.5	36	31.9	29.5	73	01.9	46.8
22	51	34.7	137	47.4	13.3	338	53.4	57.5	51	34.3	29.4	88	04.1	46.7
23	66	37.2	152	46.5	13.3	353	56.9	57.5	66	36.6	29.3	103	06.4	46.6
24	81	39.7	167	45.5	−24 13.3	9	00.3	+24 57.4	81	38.9	−1 29.2	118	08.7	−15 46.6
Dif	—			−10	0		+35	0		+23	+1		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 19ᵈ0 SD: 14′.7 PMG: 3ʰ 52ᵐ				PHE 4ʰ: 54′.1 12ʰ: 54′.2 20ʰ: 54′.3 Rº: 44ᵐ								
	PMG: 11ʰ 54ᵐ.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	181	31.6	−23	07.7	303	50.7	+21	38.0		**60 N**	7 01	7 58	8 55	20 01	87	12 40	3
1	196	31.3		07.9	318	22.9	132	29.2	88	**58**	6 54	46	38	14	82	26	8
2	211	31.0		08.0	332	55.1	132	20.3	89	**56**	47	36	23	25	78	15	10
3	226	30.7		08.2	347	27.4	133	11.3	90	**54**	41	27	11	34	76	12 05	13
4	241	30.4		08.4	1	59.7	133	+21 02.2	91	**52**	35	19	8 00	43	73	11 55	17
5	256	30.1	−23	08.5	16	32.1	134	+20 53.0	92	**50**	6 30	7 12	7 50	20 51	70	11 47	19
6	271	29.8	−23	08.7	31	04.6	135	+20 43.7	93	**45**	6 19	6 56	7 30	21 07	65	11 30	23
7	286	29.5		08.9	45	37.1	135	34.3	94	**40**	6 09	43	7 13	20	62	15	27
8	301	29.3		09.0	60	09.6	135	24.8	95	**35**	5 59	31	6 59	31	58	11 03	30
9	316	29.0		09.2	74	42.3	137	15.3	95	**30**	51	21	47	41	55	10 53	32
10	331	28.7		09.4	89	14.9	136	+20 05.6	97	**20**	34	6 02	26	21 58	51	34	37
11	346	28.4	−23	09.5	103	47.7	138	+19 55.9	97	**10 N**	5 19	5 45	6 08	22 12	47	10 18	40
12	1	28.1	−23	09.7	118	20.4	137	+19 46.1	98	**0**	5 02	5 28	5 50	22 26	43	10 03	44
13	16	27.8		09.9	132	53.3	139	36.2	99	**10 S**	4 43	5 10	33	39	40	9 47	48
14	31	27.5		10.0	147	26.2	139	26.3	99	**20**	4 21	4 50	5 14	22 54	35	31	51
15	46	27.2		10.2	161	59.1	139	16.2	101	**30**	3 52	25	4 53	23 10	31	12	56
16	61	26.9		10.3	176	32.1	140	+19 06.1	101	**35**	33	4 10	40	19	28	9 01	58
17	76	26.6	−23	10.5	191	05.2	141	+18 55.8	103	**40**	3 11	3 52	4 25	23 30	25	8 48	62
18	91	26.3	−23	10.7	205	38.3	141	+18 45.5	103	**45**	2 41	3 30	4 07	23 43	21	8 33	65
19	106	26.0		10.8	220	11.4	141	35.2	103	**50**	1 56	3 01	3 45	23 58	17	14	70
20	121	25.7		11.0	234	44.6	142	24.7	105	**52**	1 30	2 46	34	** **	**	8 05	73
21	136	25.4		11.1	249	17.9	143	14.2	105	**54**	0 48	28	22	** **	**	7 55	76
22	151	25.1		11.3	263	51.2	143	+18 03.6	106	**56**	** **	2 07	3 08	0 10	12	44	78
23	166	24.8		11.5	278	24.5	143	+17 52.9	107	**58**	** **	1 38	2 52	23	9	31	82
24	181	24.5	−23	11.6	292	57.9	144	+17 42.1	108	**60 S**	** **	0 53	2 32	0 39	4	7 15	88

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 18ʰ 30ᵐ.3		Mag: −3.9 PMG: 12ʰ 50ᵐ			Mag: −1.8 PMG: 23ʰ 19ᵐ			Mag: −2.6 PMG: 18ʰ 31ᵐ			Mag: +0.8 PMG: 16ʰ 05ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	81	39.7	167	45.5	−24 13.3	9	00.3	+24 57.4	81	38.9	−1 29.2	118	08.7	−15 46.6
1	96	42.1	182	44.5	13.3	24	03.8	57.4	96	41.2	29.2	133	10.9	46.5
2	111	44.6	197	43.5	13.3	39	07.3	57.4	111	43.5	29.1	148	13.2	46.5
3	126	47.1	212	42.6	13.3	54	10.7	57.3	126	45.9	29.0	163	15.5	46.4
4	141	49.5	227	41.6	13.3	69	14.2	57.3	141	48.2	28.9	178	17.7	46.3
5	156	52.0	242	40.6	−24 13.3	84	17.7	+24 57.3	156	50.5	−1 28.9	193	20.0	−15 46.3
6	171	54.5	257	39.6	−24 13.3	99	21.2	+24 57.2	171	52.8	−1 28.8	208	22.3	−15 46.2
7	186	56.9	272	38.7	13.3	114	24.6	57.2	186	55.1	28.7	223	24.6	46.1
8	201	59.4	287	37.7	13.3	129	28.1	57.2	201	57.5	28.6	238	26.8	46.1
9	217	01.8	302	36.7	13.3	144	31.6	57.2	216	59.8	28.6	253	29.1	46.0
10	232	04.3	317	35.7	13.3	159	35.0	57.1	232	02.1	28.5	268	31.4	45.9
11	247	06.8	332	34.7	−24 13.3	174	38.5	+24 57.1	247	04.4	−1 28.4	283	33.6	−15 45.9
12	262	09.2	347	33.8	−24 13.3	189	42.0	+24 57.1	262	06.7	−1 28.3	298	35.9	−15 45.8
13	277	11.7	2	32.8	13.3	204	45.4	57.0	277	09.1	28.3	313	38.2	45.7
14	292	14.2	17	31.8	13.3	219	48.9	57.0	292	11.4	28.2	328	40.4	45.7
15	307	16.6	32	30.8	13.2	234	52.4	57.0	307	13.7	28.1	343	42.7	45.6
16	322	19.1	47	29.9	13.2	249	55.8	56.9	322	16.0	28.0	358	45.0	45.5
17	337	21.6	62	28.9	−24 13.2	264	59.3	+24 56.9	337	18.3	−1 28.0	13	47.2	−15 45.5
18	352	24.0	77	27.9	−24 13.2	280	02.8	+24 56.9	352	20.6	−1 27.9	28	49.5	−15 45.4
19	7	26.5	92	26.9	13.2	295	06.2	56.8	7	22.9	27.8	43	51.8	45.3
20	22	29.0	107	26.0	13.2	310	09.7	56.8	22	25.3	27.7	58	54.0	45.3
21	37	31.4	122	25.0	13.1	325	13.1	56.8	37	27.6	27.7	73	56.3	45.2
22	52	33.9	137	24.0	13.1	340	16.6	56.7	52	29.9	27.6	88	58.6	45.1
23	67	36.3	152	23.0	13.1	355	20.1	56.7	67	32.2	27.5	104	00.8	45.1
24	82	38.8	167	22.1	−24 13.0	10	23.5	+24 56.7	82	34.5	−1 27.4	119	03.1	−15 45.0
Dif	—			−10	0		+35	0		+23	+1		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2 PMG: 11h 54m.6				Edad: 20d.0 SD: 14′.8 PMG: 4h 36m		PHE	4h: 54′.4 12h: 54′.5 20h: 54′.6 Rº: 43m			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	24.5	−23	11.6	292	57.9	+17	42.1	**60 N**	14 53	15 50	16 47	21 28	84	12 43	1
1	196	24.2		11.8	307	31.4 145		31.3 108	**58**	15 10	16 02	16 54	36	81	34	5
2	211	23.9		11.9	322	04.9 145		20.3 110	**56**	25	12	17 01	43	78	25	8
3	226	23.6		12.1	336	38.4 145	+17	09.4 109	**54**	37	21	07	50	75	18	11
4	241	23.3		12.2	351	12.0 146	+16	58.3 111	**52**	48	29	13	21 56	72	12	13
5	256	23.1	−23	12.4	5	45.6 146	+16	47.2 111	**50**	15 58	16 36	17 18	22 01	70	12 06	15
6	271	22.8	−23	12.5	20	19.3 147	+16	36.0 112	**45**	16 19	16 52	17 30	22 12	66	11 53	20
7	286	22.5		12.7	34	53.0 147		24.7 113	**40**	35	17 06	40	22	61	42	24
8	301	22.2		12.8	49	26.8 148		13.3 114	**35**	16 49	17	49	29	59	33	27
9	316	21.9		13.0	64	00.6 148	+16	01.9 114	**30**	17 02	28	17 58	36	56	25	29
10	331	21.6		13.1	78	34.5 149	+15	50.4 115	**20**	23	17 47	18 14	49	50	11 11	34
11	346	21.3	−23	13.3	93	08.3 148	+15	38.9 115	**10 N**	17 41	18 04	18 30	22 59	46	10 58	39
12	1	21.0	−23	13.4	107	42.3 150	+15	27.3 116	**0**	17 58	18 21	18 47	23 09	42	10 47	42
13	16	20.7		13.5	122	16.2 149		15.6 117	**10 S**	18 16	39	19 06	19	37	35	46
14	31	20.4		13.7	136	50.2 150	+15	03.8 118	**20**	35	18 59	28	29	33	22	51
15	46	20.1		13.8	151	24.3 151	+14	52.0 118	**30**	18 56	19 24	19 57	41	28	10 08	55
16	61	19.8		14.0	165	58.4 151		40.1 119	**35**	19 09	39	20 16	47	26	9 59	59
17	76	19.5	−23	14.1	180	32.5 151	+14	28.2 119	**40**	19 24	19 57	20 39	23 55	23	9 50	61
18	91	19.2	−23	14.3	195	06.6 151	+14	16.2 120	**45**	19 42	20 20	21 09	** **	**	9 38	66
19	106	18.9		14.4	209	40.8 152	+14	04.1 121	**50**	20 05	20 49	21 54	** **	**	24	71
20	121	18.6		14.5	224	15.0 152	+13	52.0 121	**52**	15	21 04	22 21	0 05	15	18	72
21	136	18.3		14.7	238	49.3 153		39.8 122	**54**	27	22	23 05	13	12	11	75
22	151	18.0		14.8	253	23.6 153		27.5 123	**56**	42	21 43	** **	22	9	9 02	79
23	166	17.7		14.9	267	57.9 153		15.2 123	**58**	20 58	22 13	** **	32	6	8 53	82
24	181	17.4	−23	15.1	282	32.2 153	+13	02.8 124	**60 S**	21 18	23 00	** **	0 43	2	8 43	85

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG 18h 26m.4		Mag: −3.9 PMG: 12h 51m			Mag: −1.7 PMG: 23h 13m			Mag: −2.5 PMG: 18h 27m			Mag: +0.8 PMG: 16h 01m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	82	38.8	167	22.1	−24 13.0	10	23.5	+24 56.7	82	34.5	−1 27.4	119	03.1	−15 45.0
1	97	41.3	182	21.1	13.0	25	27.0	56.6	97	36.8	27.3	134	05.4	44.9
2	112	43.7	197	20.1	13.0	40	30.4	56.6	112	39.1	27.3	149	07.6	44.9
3	127	46.2	212	19.1	13.0	55	33.9	56.5	127	41.5	27.2	164	09.9	44.8
4	142	48.7	227	18.2	12.9	70	37.3	56.5	142	43.8	27.1	179	12.2	44.7
5	157	51.1	242	17.2	−24 12.9	85	40.8	+24 56.5	157	46.1	−1 27.0	194	14.4	−15 44.7
6	172	53.6	257	16.2	−24 12.9	100	44.2	+24 56.4	172	48.4	−1 27.0	209	16.7	−15 44.6
7	187	56.1	272	15.2	12.8	115	47.7	56.4	187	50.7	26.9	224	19.0	44.6
8	202	58.5	287	14.3	12.8	130	51.2	56.4	202	53.0	26.8	239	21.2	44.5
9	218	01.0	302	13.3	12.7	145	54.6	56.3	217	55.3	26.7	254	23.5	44.4
10	233	03.4	317	12.3	12.7	160	58.1	56.3	232	57.6	26.6	269	25.8	44.4
11	248	05.9	332	11.3	−24 12.7	176	01.5	+24 56.3	248	00.0	−1 26.6	284	28.0	−15 44.3
12	263	08.4	347	10.4	−24 12.6	191	04.9	+24 56.2	263	02.3	−1 26.5	299	30.3	−15 44.2
13	278	10.8	2	09.4	12.6	206	08.4	56.2	278	04.6	26.4	314	32.6	44.2
14	293	13.3	17	08.4	12.5	221	11.8	56.2	293	06.9	26.3	329	34.8	44.1
15	308	15.8	32	07.4	12.5	236	15.3	56.1	308	09.2	26.2	344	37.1	44.0
16	323	18.2	47	06.5	12.4	251	18.7	56.1	323	11.5	26.2	359	39.4	44.0
17	338	20.7	62	05.5	−24 12.4	266	22.2	+24 56.0	338	13.8	−1 26.1	14	41.6	−15 43.9
18	353	23.2	77	04.5	−24 12.3	281	25.6	+24 56.0	353	16.1	−1 26.0	29	43.9	−15 43.8
19	8	25.6	92	03.5	12.3	296	29.1	56.0	8	18.4	25.9	44	46.2	43.8
20	23	28.1	107	02.6	12.2	311	32.5	55.9	23	20.7	25.8	59	48.4	43.7
21	38	30.6	122	01.6	12.2	326	35.9	55.9	38	23.0	25.8	74	50.7	43.6
22	53	33.0	137	00.6	12.1	341	39.4	55.9	53	25.4	25.7	89	52.9	43.6
23	68	35.5	151	59.6	12.1	356	42.8	55.8	68	27.7	25.6	104	55.2	43.5
24	83	37.9	166	58.7	−24 12.0	11	46.3	+24 55.8	83	30.0	−1 25.5	119	57.5	−15 43.4
Dif	—			−10	0		+34	0		+23	+1		+23	+1

UT	SOL SD: 16′.2 PMG: 11h 55m.1				LUNA Edad: 21d.0 SD: 14′.9 PMG: 5h 19m PHE: 4h: 54′.7; 12h: 54′.9; 20h: 55′.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	17.4	−23	15.1	282	32.2	+13	02.8	**60 N**	7 03	8 00	8 57	22 52	86	12 44	1
1	196	17.1		15.2	297	06.6 154	+12	50.4 124	**58**	6 56	7 48	40	22 57	82	39	4
2	211	16.8		15.3	311	41.0 154		37.9 125	**56**	49	38	25	23 01	79	33	7
3	226	16.5		15.5	326	15.4 154		25.3 126	**54**	43	29	13	05	76	29	9
4	241	16.2		15.6	340	49.9 155		12.7 126	**52**	37	21	8 02	08	73	25	11
5	256	15.9	−23	15.7	355	24.3 154	+12	00.1 126	**50**	6 32	7 13	7 52	23 11	71	12 21	14
6	271	15.6	−23	15.9	9	58.8 155	+11	47.3 128	**45**	6 20	6 57	7 31	23 18	66	12 13	18
7	286	15.3		16.0	24	33.4 156		34.6 127	**40**	10	44	15	23	62	06	22
8	301	15.0		16.1	39	07.9 155		21.7 129	**35**	6 01	32	7 00	28	58	12 00	25
9	316	14.7		16.3	53	42.5 156	+11	08.9 128	**30**	5 52	22	6 48	32	55	11 54	28
10	331	14.4		16.4	68	17.1 156	+10	55.9 130	**20**	36	6 03	27	39	50	45	33
11	346	14.1	−23	16.5	82	51.7 156	+10	43.0 129	**10 N**	5 20	5 46	6 09	23 45	46	11 37	37
12	1	13.8	−23	16.6	97	26.3 156	+10	29.9 131	**0**	5 03	5 29	5 51	23 51	41	11 29	42
13	16	13.5		16.8	112	01.0 157		16.8 131	**10 S**	4 44	5 11	34	23 56	38	21	46
14	31	13.2		16.9	126	35.6 156	+10	03.7 131	**20**	4 21	4 50	5 15	** **	**	13	50
15	46	12.9		17.0	141	10.3 157	+9	50.5 132	**30**	3 52	26	4 53	** **	**	11 03	55
16	61	12.6		17.1	155	45.0 157		37.3 132	**35**	34	4 11	40	** **	**	10 58	58
17	76	12.3	−23	17.2	170	19.7 157	+9	24.0 133	**40**	3 11	3 52	4 25	** **	**	10 51	62
18	91	12.0	−23	17.4	184	54.4 157	+9	10.7 133	**45**	2 41	3 30	4 07	0 04	19	10 44	65
19	106	11.7		17.5	199	29.1 157	+8	57.3 134	**50**	1 56	3 01	3 45	15	14	35	70
20	121	11.4		17.6	214	03.9 158		43.9 134	**52**	1 29	2 46	34	20	12	30	73
21	136	11.1		17.7	228	38.6 157		30.4 135	**54**	0 45	28	22	25	10	26	75
22	151	10.8		17.8	243	13.4 158		16.9 135	**56**	** **	2 06	3 08	31	7	21	78
23	166	10.5		18.0	257	48.2 158	+8	03.3 136	**58**	** **	1 37	2 51	38	4	15	81
24	181	10.2	−23	18.1	272	22.9 157	+7	49.7 136	**60 S**	** **	0 49	2 31	0 45	1	10 08	85

UT	ARIES PMG 18h 22m.5		VENUS Mag: −3.9 PMG: 12h 53m			MARTE Mag: −1.7 PMG: 23h 08m			JÚPITER Mag: −2.5 PMG: 18h 23m			SATURNO Mag: +0.8 PMG: 15h 58m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	83	37.9	166	58.7	−24 12.0	11	46.3	+24 55.8	83	30.0	−1 25.5	119	57.5	−15 43.4
1	98	40.4	181	57.7	11.9	26	49.7	55.7	98	32.3	25.4	134	59.7	43.4
2	113	42.9	196	56.7	11.9	41	53.1	55.7	113	34.6	25.4	150	02.0	43.3
3	128	45.3	211	55.8	11.8	56	56.6	55.7	128	36.9	25.3	165	04.3	43.2
4	143	47.8	226	54.8	11.8	72	00.0	55.6	143	39.2	25.2	180	06.5	43.2
5	158	50.3	241	53.8	−24 11.7	87	03.4	+24 55.6	158	41.5	−1 25.1	195	08.8	−15 43.1
6	173	52.7	256	52.8	−24 11.6	102	06.9	+24 55.5	173	43.8	−1 25.0	210	11.1	−15 43.0
7	188	55.2	271	51.9	11.6	117	10.3	55.5	188	46.1	25.0	225	13.3	43.0
8	203	57.7	286	50.9	11.5	132	13.7	55.5	203	48.4	24.9	240	15.6	42.9
9	219	00.1	301	49.9	11.4	147	17.2	55.4	218	50.7	24.8	255	17.8	42.8
10	234	02.6	316	48.9	11.4	162	20.6	55.4	233	53.0	24.7	270	20.1	42.7
11	249	05.1	331	48.0	−24 11.3	177	24.0	+24 55.3	248	55.3	−1 24.6	285	22.4	−15 42.7
12	264	07.5	346	47.0	−24 11.2	192	27.5	+24 55.3	263	57.6	−1 24.5	300	24.6	−15 42.6
13	279	10.0	1	46.0	11.1	207	30.9	55.3	278	59.9	24.5	315	26.9	42.5
14	294	12.4	16	45.0	11.1	222	34.3	55.2	294	02.2	24.4	330	29.2	42.5
15	309	14.9	31	44.1	11.0	237	37.7	55.2	309	04.5	24.3	345	31.4	42.4
16	324	17.4	46	43.1	10.9	252	41.2	55.1	324	06.8	24.2	0	33.7	42.3
17	339	19.8	61	42.1	−24 10.8	267	44.6	+24 55.1	339	09.1	−1 24.1	15	35.9	−15 42.3
18	354	22.3	76	41.2	−24 10.7	282	48.0	+24 55.1	354	11.4	−1 24.1	30	38.2	−15 42.2
19	9	24.8	91	40.2	10.7	297	51.4	55.0	9	13.7	24.0	45	40.5	42.1
20	24	27.2	106	39.2	10.6	312	54.9	55.0	24	16.0	23.9	60	42.7	42.1
21	39	29.7	121	38.2	10.5	327	58.3	54.9	39	18.3	23.8	75	45.0	42.0
22	54	32.2	136	37.3	10.4	343	01.7	54.9	54	20.6	23.7	90	47.2	41.9
23	69	34.6	151	36.3	10.3	358	05.1	54.9	69	22.9	23.6	105	49.5	41.9
24	84	37.1	166	35.3	−24 10.2	13	08.5	+24 54.8	84	25.2	−1 23.6	120	51.8	−15 41.8
Dif	—			−10	+1		+34	0		+23	+1		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.2				Edad: 22ᵈ.0		PHE	4ʰ: 55′.3								
	PMG: 11ʰ 55ᵐ.6				SD: 15′.0			12ʰ: 55′.5								
					PMG: 6ʰ 01ᵐ			20ʰ: 55′.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	181	10.2	−23	18.1	272	22.9	+7	49.7	**60 N**	14 53	15 50	16 47	** **	**	12 45	1
1	196	09.9		18.2	286	57.7 158		36.1 136	**58**	15 10	16 02	16 55	** **	**	43	3
2	211	09.6		18.3	301	32.5 158		22.4 137	**56**	25	12	17 01	** **	**	40	7
3	226	09.3		18.4	316	07.3 158	+7	08.7 137	**54**	38	21	08	** **	**	38	9
4	241	09.0		18.5	330	42.0 157	+6	54.9 138	**52**	49	29	13	** **	**	36	11
5	256	08.7	−23	18.6	345	16.8 158	+6	41.1 138	**50**	15 58	16 37	17 18	** **	**	12 35	13
6	271	08.4	−23	18.8	359	51.6 158	+6	27.3 138	**45**	16 19	16 53	17 30	** **	**	12 31	18
7	286	08.1		18.9	14	26.4 158	+6	13.4 139	**40**	36	17 06	40	** **	**	28	21
8	301	07.8		19.0	29	01.2 158	+5	59.5 139	**35**	16 50	18	50	** **	**	25	25
9	316	07.4		19.1	43	35.9 157		45.5 140	**30**	17 02	29	17 59	** **	**	22	28
10	331	07.1		19.2	58	10.7 158		31.5 140	**20**	23	17 47	18 15	** **	**	18	33
11	346	06.8	−23	19.3	72	45.5 158	+5	17.5 140	**10 N**	17 42	18 05	18 31	** **	**	12 14	38
12	1	06.5	−23	19.4	87	20.2 157	+5	03.4 141	**0**	17 59	18 22	18 48	** **	**	12 11	41
13	16	06.2		19.5	101	55.0 158	+4	49.3 141	**10 S**	18 17	18 40	19 07	** **	**	07	46
14	31	05.9		19.6	116	29.7 157		35.2 141	**20**	36	19 00	30	0 02	33	12 03	51
15	46	05.6		19.7	131	04.4 157		21.0 142	**30**	18 58	25	19 59	09	28	11 58	57
16	61	05.3		19.8	145	39.1 157	+4	06.8 142	**35**	19 11	40	20 17	13	25	56	59
17	76	05.0	−23	19.9	160	13.8 157	+3	52.6 142	**40**	19 26	19 59	20 40	0 18	21	11 53	63
18	91	04.7	−23	20.0	174	48.5 157	+3	38.4 142	**45**	19 44	20 21	21 11	0 23	18	11 49	67
19	106	04.4		20.1	189	23.2 157		24.1 143	**50**	20 06	20 51	21 56	29	14	45	72
20	121	04.1		20.2	203	57.8 156	+3	09.8 143	**52**	17	21 06	22 24	32	11	43	74
21	136	03.8		20.3	218	32.5 157	+2	55.4 144	**54**	29	24	23 09	35	9	41	76
22	151	03.5		20.4	233	07.1 156		41.0 144	**56**	20 43	21 46	** **	38	7	39	79
23	166	03.2		20.5	247	41.7 156		26.6 144	**58**	21 00	22 15	** **	42	4	36	82
24	181	02.9	−23	20.6	262	16.2 155	+2	12.2 144	**60 S**	21 20	23 05	** **	0 46	1	11 33	86

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.7			Mag: −2.5			Mag: +0.8		
	18ʰ 18ᵐ.5		PMG: 12ʰ 54ᵐ			PMG: 23ʰ 02ᵐ			PMG: 18ʰ 20ᵐ			PMG: 15ʰ 54ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	84	37.1	166	35.3	−24 10.2	13	08.5	+24 54.8	84	25.2	−1 23.6	120	51.8	−15 41.8
1	99	39.5	181	34.3	10.1	28	12.0	54.8	99	27.5	23.5	135	54.0	41.7
2	114	42.0	196	33.4	10.0	43	15.4	54.7	114	29.8	23.4	150	56.3	41.7
3	129	44.5	211	32.4	09.9	58	18.8	54.7	129	32.1	23.3	165	58.6	41.6
4	144	46.9	226	31.4	09.8	73	22.2	54.6	144	34.4	23.2	181	00.8	41.5
5	159	49.4	241	30.5	−24 09.8	88	25.6	+24 54.6	159	36.7	−1 23.1	196	03.1	−15 41.5
6	174	51.9	256	29.5	−24 09.7	103	29.0	+24 54.6	174	39.0	−1 23.0	211	05.3	−15 41.4
7	189	54.3	271	28.5	09.6	118	32.4	54.5	189	41.3	23.0	226	07.6	41.3
8	204	56.8	286	27.5	09.5	133	35.8	54.5	204	43.6	22.9	241	09.9	41.3
9	219	59.3	301	26.6	09.4	148	39.3	54.4	219	45.9	22.8	256	12.1	41.2
10	235	01.7	316	25.6	09.3	163	42.7	54.4	234	48.2	22.7	271	14.4	41.1
11	250	04.2	331	24.6	−24 09.1	178	46.1	+24 54.3	249	50.5	−1 22.6	286	16.6	−15 41.1
12	265	06.7	346	23.7	−24 09.0	193	49.5	+24 54.3	264	52.8	−1 22.5	301	18.9	−15 41.0
13	280	09.1	1	22.7	08.9	208	52.9	54.3	279	55.1	22.5	316	21.1	40.9
14	295	11.6	16	21.7	08.8	223	56.3	54.2	294	57.4	22.4	331	23.4	40.8
15	310	14.0	31	20.7	08.7	238	59.7	54.2	309	59.7	22.3	346	25.7	40.8
16	325	16.5	46	19.8	08.6	254	03.1	54.1	325	02.0	22.2	1	27.9	40.7
17	340	19.0	61	18.8	−24 08.5	269	06.5	+24 54.1	340	04.3	−1 22.1	16	30.2	−15 40.6
18	355	21.4	76	17.8	−24 08.4	284	09.9	+24 54.0	355	06.6	−1 22.0	31	32.4	−15 40.6
19	10	23.9	91	16.9	08.3	299	13.3	54.0	10	08.9	21.9	46	34.7	40.5
20	25	26.4	106	15.9	08.2	314	16.7	54.0	25	11.2	21.9	61	37.0	40.4
21	40	28.8	121	14.9	08.0	329	20.1	53.9	40	13.5	21.8	76	39.2	40.4
22	55	31.3	136	13.9	07.9	344	23.5	53.9	55	15.8	21.7	91	41.5	40.3
23	70	33.8	151	13.0	07.8	359	26.9	53.8	70	18.0	21.6	106	43.7	40.2
24	85	36.2	166	12.0	−24 07.7	14	30.3	+24 53.8	85	20.3	−1 21.5	121	46.0	−15 40.2
Dif	—			−10	+1		+34	0		+23	+1		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 23^{d}0		PHE	4^{h}: 56′.0									
	PMG: 11^{h} 56^{m}.1				SD: 15′.2			12^{h}: 56′.3									
					PMG: 6^{h} 42^{m}			20^{h}: 56′.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	181	02.9	−23	20.6	262	16.2	+2	12.2		**60 N**	7 05	8 01	8 59	0 18	87	12 46	0
1	196	02.6		20.7	276	50.8 156	+1	57.7 145		**58**	6 57	7 50	42	19	83	46	4
2	211	02.3		20.8	291	25.3 155		43.3 144		**56**	50	40	27	20	80	47	6
3	226	02.0		20.9	305	59.8 155		28.8 145		**54**	44	30	14	21	77	47	9
4	241	01.7		21.0	320	34.3 155	+1	14.2 146		**52**	39	22	8 03	21	76	47	12
5	256	01.4	−23	21.1	335	08.7 154	+0	59.7 145		**50**	6 33	7 15	7 53	0 22	73	12 48	14
6	271	01.1	−23	21.2	349	43.1 154	+0	45.1 146		**45**	6 22	6 59	7 33	0 24	68	12 49	18
7	286	00.8		21.3	4	17.5 154		30.5 146		**40**	11	45	16	25	64	49	23
8	301	00.5		21.4	18	51.8 153		15.9 146		**35**	6 02	34	7 02	26	61	50	26
9	316	00.1		21.4	33	26.1 153	+0	01.3 146		**30**	5 53	23	6 49	27	58	50	29
10	330	59.8		21.5	48	00.4 153	−0	13.3 146		**20**	37	6 04	28	29	52	51	34
11	345	59.5	−23	21.6	62	34.7 153	−0	28.0 147		**10 N**	5 21	5 47	6 10	0 31	47	12 52	39
12	0	59.2	−23	21.7	77	08.9 152	−0	42.7 147		**0**	5 04	5 30	5 52	0 32	43	12 52	44
13	15	58.9		21.8	91	43.0 151	−0	57.4 147		**10 S**	4 45	5 12	35	34	38	53	48
14	30	58.6		21.9	106	17.2 152	−1	12.1 147		**20**	4 22	4 51	5 16	35	34	54	53
15	45	58.3		22.0	120	51.2 150		26.8 147		**30**	3 53	26	4 54	37	29	55	58
16	60	58.0		22.1	135	25.3 151		41.6 148		**35**	34	4 11	41	38	26	55	62
17	75	57.7	−23	22.1	149	59.3 150	−1	56.3 147		**40**	3 11	3 53	4 26	0 39	23	12 56	65
18	90	57.4	−23	22.2	164	33.2 149	−2	11.1 148		**45**	2 41	3 30	4 08	0 41	18	12 56	70
19	105	57.1		22.3	179	07.1 149		25.8 147		**50**	1 56	3 01	3 45	43	13	57	74
20	120	56.8		22.4	193	41.0 149		40.6 148		**52**	1 28	2 46	35	43	12	57	77
21	135	56.5		22.5	208	14.8 148	−2	55.4 148		**54**	0 43	28	22	44	9	57	80
22	150	56.2		22.5	222	48.5 147	−3	10.2 148		**56**	** **	2 06	3 08	45	7	58	82
23	165	55.9		22.6	237	22.2 147		25.0 148		**58**	** **	1 36	2 51	46	4	58	86
24	180	55.6	−23	22.7	251	55.9 147	−3	39.8 148		**60 S**	** **	0 47	2 31	0 47	1	12 59	89

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.7			Mag: −2.5			Mag: +0.8		
	18^{h} 14^{m}.6		PMG: 12^{h} 56^{m}			PMG: 22^{h} 57^{m}			PMG: 18^{h} 16^{m}			PMG: 15^{h} 51^{m}		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	85	36.2	166	12.0	−24 07.7	14	30.3	+24 53.8	85	20.3	−1 21.5	121	46.0	−15 40.2
1	100	38.7	181	11.0	07.6	29	33.7	53.7	100	22.6	21.4	136	48.3	40.1
2	115	41.2	196	10.1	07.4	44	37.1	53.7	115	24.9	21.3	151	50.5	40.0
3	130	43.6	211	09.1	07.3	59	40.5	53.6	130	27.2	21.2	166	52.8	40.0
4	145	46.1	226	08.1	07.2	74	43.9	53.6	145	29.5	21.2	181	55.0	39.9
5	160	48.5	241	07.2	−24 07.1	89	47.2	+24 53.6	160	31.8	−1 21.1	196	57.3	−15 39.8
6	175	51.0	256	06.2	−24 06.9	104	50.6	+24 53.5	175	34.1	−1 21.0	211	59.5	−15 39.7
7	190	53.5	271	05.2	06.8	119	54.0	53.5	190	36.4	20.9	227	01.8	39.7
8	205	55.9	286	04.3	06.7	134	57.4	53.4	205	38.7	20.8	242	04.1	39.6
9	220	58.4	301	03.3	06.5	150	00.8	53.4	220	41.0	20.7	257	06.3	39.5
10	236	00.9	316	02.3	06.4	165	04.2	53.3	235	43.2	20.6	272	08.6	39.5
11	251	03.3	331	01.3	−24 06.3	180	07.6	+24 53.3	250	45.5	−1 20.5	287	10.8	−15 39.4
12	266	05.8	346	00.4	−24 06.1	195	10.9	+24 53.2	265	47.8	−1 20.5	302	13.1	−15 39.3
13	281	08.3	0	59.4	06.0	210	14.3	53.2	280	50.1	20.4	317	15.3	39.3
14	296	10.7	15	58.4	05.9	225	17.7	53.1	295	52.4	20.3	332	17.6	39.2
15	311	13.2	30	57.5	05.7	240	21.1	53.1	310	54.7	20.2	347	19.8	39.1
16	326	15.6	45	56.5	05.6	255	24.5	53.0	325	57.0	20.1	2	22.1	39.1
17	341	18.1	60	55.5	−24 05.4	270	27.8	+24 53.0	340	59.3	−1 20.0	17	24.4	−15 39.0
18	356	20.6	75	54.6	−24 05.3	285	31.2	+24 53.0	356	01.5	−1 19.9	32	26.6	−15 38.9
19	11	23.0	90	53.6	05.1	300	34.6	52.9	11	03.8	19.8	47	28.9	38.8
20	26	25.5	105	52.6	05.0	315	38.0	52.9	26	06.1	19.7	62	31.1	38.8
21	41	28.0	120	51.7	04.8	330	41.3	52.8	41	08.4	19.7	77	33.4	38.7
22	56	30.4	135	50.7	04.7	345	44.7	52.8	56	10.7	19.6	92	35.6	38.6
23	71	32.9	150	49.7	04.5	0	48.1	52.7	71	13.0	19.5	107	37.9	38.6
24	86	35.4	165	48.8	−24 04.4	15	51.5	+24 52.7	86	15.3	−1 19.4	122	40.2	−15 38.5
Dif	—			−10	+1		+34	0		+23	+1		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 24ᵈ.0		PHE	4ʰ: 56′.9								
	PMG: 11ʰ 56ᵐ.5				SD: 15′.4			12ʰ: 57′.2								
					PMG: 7ʰ 25ᵐ			20ʰ: 57′.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	55.6	−23	22.7	251	55.9	−3	39.8	**60 N**	14 53	15 51	16 48	1 45	92	12 46	2
1	195	55.2		22.8	266	29.5 146	−3	54.6 148	**58**	15 11	16 03	16 55	42	89	50	5
2	210	54.9		22.8	281	03.0 145	−4	09.5 149	**56**	25	13	17 02	40	85	53	9
3	225	54.6		22.9	295	36.5 145		24.3 148	**54**	38	22	08	38	82	56	11
4	240	54.3		23.0	310	09.9 144		39.1 148	**52**	49	30	14	37	79	12 59	14
5	255	54.0	−23	23.1	324	43.3 144	−4	53.9 148	**50**	15 59	16 38	17 19	1 35	77	13 02	16
6	270	53.7	−23	23.1	339	16.5 142	−5	08.7 148	**45**	16 20	16 54	17 31	1 32	71	13 07	21
7	285	53.4		23.2	353	49.8 143		23.6 149	**40**	37	17 07	41	29	67	12	25
8	300	53.1		23.3	8	22.9 141		38.4 148	**35**	16 51	19	51	27	63	16	29
9	315	52.8		23.3	22	56.0 141	−5	53.2 148	**30**	17 03	29	17 59	25	60	19	32
10	330	52.5		23.4	37	29.1 141	−6	08.0 148	**20**	24	17 48	18 16	21	54	25	38
11	345	52.2	−23	23.5	52	02.0 139	−6	22.8 148	**10 N**	17 43	18 06	18 32	1 18	49	13 31	42
12	0	51.9	−23	23.5	66	34.9 139	−6	37.6 148	**0**	18 00	18 23	18 49	1 15	45	13 36	47
13	15	51.6		23.6	81	07.8 139	−6	52.4 148	**10 S**	18	18 41	19 08	12	41	41	51
14	30	51.3		23.7	95	40.5 137	−7	07.2 148	**20**	37	19 01	19 31	09	36	47	56
15	45	50.9		23.7	110	13.2 137		21.9 147	**30**	18 59	26	20 00	06	30	53	62
16	60	50.6		23.8	124	45.8 136		36.7 148	**35**	19 12	19 42	18	04	27	13 57	65
17	75	50.3	−23	23.9	139	18.3 135	−7	51.4 147	**40**	19 27	20 00	20 42	1 02	23	14 01	69
18	90	50.0	−23	23.9	153	50.7 134	−8	06.2 148	**45**	19 45	20 22	21 12	0 59	20	14 06	73
19	105	49.7		24.0	168	23.1 134		20.9 147	**50**	20 08	20 52	21 58	56	15	11	79
20	120	49.4		24.1	182	55.4 133		35.6 147	**52**	18	21 07	22 26	55	12	14	81
21	135	49.1		24.1	197	27.6 132	−8	50.2 146	**54**	31	25	23 12	53	11	17	84
22	150	48.8		24.2	211	59.7 131	−9	04.9 147	**56**	20 45	21 48	** **	52	7	20	87
23	165	48.5		24.2	226	31.7 130		19.5 146	**58**	21 02	22 17	** **	50	4	24	91
24	180	48.2	−23	24.3	241	03.7 130	−9	34.2 147	**60 S**	21 22	23 08	** **	0 48	1	14 28	95

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.5			Mag: +0.8		
	18ʰ 10ᵐ.7		PMG: 12ʰ 58ᵐ			PMG: 22ʰ 51ᵐ			PMG: 18ʰ 12ᵐ			PMG: 15ʰ 47ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	°	′	°	′	° ′	°	′	° ′	°	′	° ′	°	′	° ′
0	86	35.4	165	48.8	−24 04.4	15	51.5	+24 52.7	86	15.3	−1 19.4	122	40.2	−15 38.5
1	101	37.8	180	47.8	04.2	30	54.8	52.6	101	17.5	19.3	137	42.4	38.4
2	116	40.3	195	46.8	04.1	45	58.2	52.6	116	19.8	19.2	152	44.7	38.4
3	131	42.8	210	45.9	03.9	61	01.6	52.5	131	22.1	19.1	167	46.9	38.3
4	146	45.2	225	44.9	03.8	76	04.9	52.5	146	24.4	19.0	182	49.2	38.2
5	161	47.7	240	43.9	−24 03.6	91	08.3	+24 52.4	161	26.7	−1 18.9	197	51.4	−15 38.1
6	176	50.1	255	43.0	−24 03.5	106	11.7	+24 52.4	176	29.0	−1 18.8	212	53.7	−15 38.1
7	191	52.6	270	42.0	03.3	121	15.0	52.3	191	31.2	18.8	227	55.9	38.0
8	206	55.1	285	41.0	03.1	136	18.4	52.3	206	33.5	18.7	242	58.2	37.9
9	221	57.5	300	40.1	03.0	151	21.7	52.2	221	35.8	18.6	258	00.4	37.9
10	237	00.0	315	39.1	02.8	166	25.1	52.2	236	38.1	18.5	273	02.7	37.8
11	252	02.5	330	38.1	−24 02.6	181	28.5	+24 52.1	251	40.4	−1 18.4	288	04.9	−15 37.7
12	267	04.9	345	37.2	−24 02.5	196	31.8	+24 52.1	266	42.7	−1 18.3	303	07.2	−15 37.7
13	282	07.4	0	36.2	02.3	211	35.2	52.0	281	44.9	18.2	318	09.5	37.6
14	297	09.9	15	35.2	02.1	226	38.5	52.0	296	47.2	18.1	333	11.7	37.5
15	312	12.3	30	34.3	02.0	241	41.9	52.0	311	49.5	18.0	348	14.0	37.4
16	327	14.8	45	33.3	01.8	256	45.2	51.9	326	51.8	17.9	3	16.2	37.4
17	342	17.2	60	32.4	−24 01.6	271	48.6	+24 51.9	341	54.1	−1 17.8	18	18.5	−15 37.3
18	357	19.7	75	31.4	−24 01.4	286	51.9	+24 51.8	356	56.3	−1 17.7	33	20.7	−15 37.2
19	12	22.2	90	30.4	01.3	301	55.3	51.8	11	58.6	17.7	48	23.0	37.2
20	27	24.6	105	29.5	01.1	316	58.6	51.7	27	00.9	17.6	63	25.2	37.1
21	42	27.1	120	28.5	00.9	332	02.0	51.7	42	03.2	17.5	78	27.5	37.0
22	57	29.6	135	27.5	00.7	347	05.3	51.6	57	05.5	17.4	93	29.7	37.0
23	72	32.0	150	26.6	00.5	2	08.7	51.6	72	07.7	17.3	108	32.0	36.9
24	87	34.5	165	25.6	−24 00.4	17	12.0	+24 51.5	87	10.0	−1 17.2	123	34.2	−15 36.8
Dif	—			−10	+2		+34	0		+23	+1		+23	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 25ᵈ0	PHE	4ʰ: 57′.8										
	PMG: 11ʰ 57ᵐ0				SD: 15′.7		12ʰ: 58′.1										
					PMG: 8ʰ 11ᵐ		20ʰ: 58′.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	48.2	−23	24.3	241	03.7	−9	34.2		**60 N**	7 06	8 03	9 01	3 17	99	12 48	2
1	195	47.9		24.3	255	35.5 128	−9	48.7 145		**58**	6 58	7 51	8 43	11	94	12 55	7
2	210	47.6		24.4	270	07.3 128	−10	03.3 146		**56**	52	41	28	05	91	13 02	11
3	225	47.2		24.5	284	38.9 126		17.9 146		**54**	46	32	16	3 00	88	07	15
4	240	46.9		24.5	299	10.5 126		32.4 145		**52**	40	24	8 05	2 56	84	13	17
5	255	46.6	−23	24.6	313	42.0 125	−10	46.9 145		**50**	6 35	7 16	7 55	2 52	81	13 18	20
6	270	46.3	−23	24.6	328	13.4 124	−11	01.3 144		**45**	6 23	7 00	7 34	2 43	76	13 28	26
7	285	46.0		24.7	342	44.7 123		15.7 144		**40**	12	6 46	17	36	71	37	30
8	300	45.7		24.7	357	15.9 122		30.1 144		**35**	6 03	35	7 03	30	67	45	33
9	315	45.4		24.8	11	47.0 121		44.5 144		**30**	5 54	24	6 51	25	64	13 51	37
10	330	45.1		24.8	26	18.0 120	−11	58.8 143		**20**	38	6 05	29	15	59	14 03	42
11	345	44.8	−23	24.9	40	48.9 119	−12	13.1 143		**10 N**	5 22	5 48	6 11	2 07	54	14 13	47
12	0	44.5	−23	24.9	55	19.6 117	−12	27.3 142		**0**	5 05	5 31	5 53	2 00	49	14 23	51
13	15	44.2		25.0	69	50.3 117		41.5 142		**10 S**	4 46	5 13	36	1 53	44	32	56
14	30	43.8		25.0	84	20.9 116	−12	55.7 142		**20**	4 23	4 52	5 17	45	40	43	60
15	45	43.5		25.1	98	51.4 115	−13	09.8 141		**30**	3 54	27	4 55	36	34	14 55	66
16	60	43.2		25.1	113	21.7 113		23.8 140		**35**	35	4 12	42	31	31	15 02	69
17	75	42.9	−23	25.1	127	52.0 113	−13	37.9 141		**40**	3 12	3 54	4 27	1 25	28	15 10	73
18	90	42.6	−23	25.2	142	22.1 111	−13	51.8 139		**45**	2 41	3 31	4 09	1 19	23	15 19	78
19	105	42.3		25.2	156	52.2 111	−14	05.8 140		**50**	1 56	3 01	3 46	11	18	30	84
20	120	42.0		25.3	171	22.1 109		19.6 138		**52**	1 28	2 46	35	07	16	35	87
21	135	41.7		25.3	185	51.9 108		33.4 138		**54**	0 41	28	23	1 04	12	41	90
22	150	41.4		25.4	200	21.5 106	−14	47.2 138		**56**	** **	2 06	3 09	0 59	10	47	94
23	165	41.1		25.4	214	51.1 106	−15	00.9 137		**58**	** **	1 36	2 52	54	7	15 55	97
24	180	40.7	−23	25.4	229	20.6 105	−15	14.5 136		**60 S**	** **	0 45	2 31	0 49	2	16 03	103

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.5			Mag: +0.8		
	18ʰ 06ᵐ7		PMG: 12ʰ 59ᵐ			PMG: 22ʰ 46ᵐ			PMG: 18ʰ 09ᵐ			PMG: 15ʰ 43ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	87	34.5	165	25.6	−24 00.4	17	12.0	+24 51.5	87	10.0	−1 17.2	123	34.2	−15 36.8
1	102	37.0	180	24.6	−24 00.2	32	15.4	51.5	102	12.3	17.1	138	36.5	36.7
2	117	39.4	195	23.7	−24 00.0	47	18.7	51.4	117	14.6	17.0	153	38.7	36.7
3	132	41.9	210	22.7	−23 59.8	62	22.1	51.4	132	16.8	16.9	168	41.0	36.6
4	147	44.4	225	21.8	59.6	77	25.4	51.3	147	19.1	16.8	183	43.2	36.5
5	162	46.8	240	20.8	−23 59.4	92	28.7	+24 51.3	162	21.4	−1 16.7	198	45.5	−15 36.5
6	177	49.3	255	19.8	−23 59.2	107	32.1	+24 51.2	177	23.7	−1 16.6	213	47.8	−15 36.4
7	192	51.7	270	18.9	59.0	122	35.4	51.2	192	26.0	16.5	228	50.0	36.3
8	207	54.2	285	17.9	58.9	137	38.7	51.1	207	28.2	16.4	243	52.3	36.2
9	222	56.7	300	16.9	58.7	152	42.1	51.1	222	30.5	16.4	258	54.5	36.2
10	237	59.1	315	16.0	58.5	167	45.4	51.0	237	32.8	16.3	273	56.8	36.1
11	253	01.6	330	15.0	−23 58.3	182	48.7	+24 51.0	252	35.1	−1 16.2	288	59.0	−15 36.0
12	268	04.1	345	14.1	−23 58.1	197	52.1	+24 50.9	267	37.3	−1 16.1	304	01.3	−15 36.0
13	283	06.5	0	13.1	57.9	212	55.4	50.9	282	39.6	16.0	319	03.5	35.9
14	298	09.0	15	12.1	57.7	227	58.7	50.8	297	41.9	15.9	334	05.8	35.8
15	313	11.5	30	11.2	57.5	243	02.1	50.8	312	44.2	15.8	349	08.0	35.7
16	328	13.9	45	10.2	57.3	258	05.4	50.7	327	46.4	15.7	4	10.3	35.7
17	343	16.4	60	09.3	−23 57.1	273	08.7	+24 50.7	342	48.7	−1 15.6	19	12.5	−15 35.6
18	358	18.9	75	08.3	−23 56.9	288	12.0	+24 50.6	357	51.0	−1 15.5	34	14.8	−15 35.5
19	13	21.3	90	07.3	56.6	303	15.4	50.5	12	53.2	15.4	49	17.0	35.5
20	28	23.8	105	06.4	56.4	318	18.7	50.5	27	55.5	15.3	64	19.3	35.4
21	43	26.2	120	05.4	56.2	333	22.0	50.4	42	57.8	15.2	79	21.5	35.3
22	58	28.7	135	04.5	56.0	348	25.3	50.4	58	00.1	15.1	94	23.8	35.2
23	73	31.2	150	03.5	55.8	3	28.6	50.3	73	02.3	15.0	109	26.0	35.2
24	88	33.6	165	02.5	−23 55.6	18	31.9	+24 50.3	88	04.6	−1 14.9	124	28.3	−15 35.1
Dif	—			−10	+2		+33	−1		+23	+1		+23	+1

UT	SOL				LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 26ᵈ.0		PHE	4ʰ: 58′.8								
	PMG: 11ʰ 57ᵐ.5				SD: 16′.0			12ʰ: 59′.1								
					PMG: 9ʰ 01ᵐ			20ʰ: 59′.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	40.7	−23	25.4	229	20.6	−15	14.5	**60 N**	14 54	15 52	16 48	4 56	108	12 50	7
1	195	40.4		25.5	243	49.9 103		28.1 136	**58**	15 11	16 03	16 56	45	102	13 02	13
2	210	40.1		25.5	258	19.1 102		41.6 135	**56**	26	14	17 03	36	96	13	17
3	225	39.8		25.5	272	48.2 101	−15	55.1 135	**54**	39	23	09	28	92	22	21
4	240	39.5		25.6	287	17.2 100	−16	08.5 134	**52**	15 50	31	15	20	89	30	25
5	255	39.2	−23	25.6	301	46.0 98	−16	21.8 133	**50**	16 00	16 38	17 20	4 13	86	13 38	27
6	270	38.9	−23	25.6	316	14.7 97	−16	35.0 132	**45**	16 21	16 54	17 32	3 59	80	13 54	32
7	285	38.6		25.7	330	43.3 96	−16	48.2 132	**40**	37	17 08	42	47	76	14 07	37
8	300	38.3		25.7	345	11.8 95	−17	01.3 131	**35**	16 52	20	17 51	37	72	18	41
9	315	38.0		25.7	359	40.1 93		14.3 130	**30**	17 04	30	18 00	29	68	28	44
10	330	37.6		25.8	14	08.3 92		27.3 130	**20**	25	17 49	17	14	63	14 45	49
11	345	37.3	−23	25.8	28	36.4 91	−17	40.1 128	**10 N**	17 44	18 07	18 33	3 01	58	15 00	53
12	0	37.0	−23	25.8	43	04.3 89	−17	52.9 128	**0**	18 01	18 24	18 50	2 49	54	15 14	57
13	15	36.7		25.8	57	32.2 89	−18	05.6 127	**10 S**	19	18 42	19 09	37	50	28	61
14	30	36.4		25.9	71	59.8 86		18.2 126	**20**	18 38	19 02	19 32	25	45	15 43	65
15	45	36.1		25.9	86	27.4 86		30.7 125	**30**	19 00	27	20 01	10	40	16 01	70
16	60	35.8		25.9	100	54.8 84		43.2 125	**35**	13	19 43	20	2 02	37	11	73
17	75	35.5	−23	25.9	115	22.1 83	−18	55.5 123	**40**	19 28	20 01	20 43	1 53	33	16 23	76
18	90	35.2	−23	26.0	129	49.3 82	−19	07.8 123	**45**	19 46	20 24	21 13	1 42	29	16 37	81
19	105	34.8		26.0	144	16.3 80		19.9 121	**50**	20 09	20 53	21 59	29	23	16 54	86
20	120	34.5		26.0	158	43.2 79		32.0 121	**52**	20	21 09	22 27	23	21	17 02	89
21	135	34.2		26.0	173	09.9 77		43.9 119	**54**	32	27	23 14	16	18	11	93
22	150	33.9		26.1	187	36.5 76	−19	55.8 119	**56**	20 46	21 49	** **	09	14	21	97
23	165	33.6		26.1	202	03.0 75	−20	07.5 117	**58**	21 03	22 19	** **	1 01	10	32	103
24	180	33.3	−23	26.1	216	29.3 73	−20	19.1 116	**60 S**	21 24	23 10	** **	0 51	5	17 46	110

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.6			Mag: −2.5			Mag: +0.8		
	18ʰ 02ᵐ.8		PMG: 13ʰ 01ᵐ			PMG: 22ʰ 41ᵐ			PMG: 18ʰ 05ᵐ			PMG: 15ʰ 40ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	88	33.6	165	02.5	−23 55.6	18	31.9	+24 50.3	88	04.6	−1 14.9	124	28.3	−15 35.1
1	103	36.1	180	01.6	55.4	33	35.3	50.2	103	06.9	14.8	139	30.5	35.0
2	118	38.6	195	00.6	55.2	48	38.6	50.2	118	09.1	14.7	154	32.8	35.0
3	133	41.0	209	59.7	54.9	63	41.9	50.1	133	11.4	14.6	169	35.0	34.9
4	148	43.5	224	58.7	54.7	78	45.2	50.1	148	13.7	14.5	184	37.3	34.8
5	163	46.0	239	57.8	−23 54.5	93	48.5	+24 50.0	163	16.0	−1 14.4	199	39.5	−15 34.7
6	178	48.4	254	56.8	−23 54.3	108	51.8	+24 50.0	178	18.2	−1 14.3	214	41.8	−15 34.7
7	193	50.9	269	55.8	54.1	123	55.1	49.9	193	20.5	14.3	229	44.0	34.6
8	208	53.4	284	54.9	53.8	138	58.4	49.9	208	22.8	14.2	244	46.3	34.5
9	223	55.8	299	53.9	53.6	154	01.7	49.8	223	25.0	14.1	259	48.5	34.4
10	238	58.3	314	53.0	53.4	169	05.0	49.8	238	27.3	14.0	274	50.8	34.4
11	254	00.7	329	52.0	−23 53.2	184	08.3	+24 49.7	253	29.6	−1 13.9	289	53.0	−15 34.3
12	269	03.2	344	51.1	−23 52.9	199	11.7	+24 49.7	268	31.8	−1 13.8	304	55.2	−15 34.2
13	284	05.7	359	50.1	52.7	214	15.0	49.6	283	34.1	13.7	319	57.5	34.2
14	299	08.1	14	49.1	52.5	229	18.3	49.6	298	36.4	13.6	334	59.7	34.1
15	314	10.6	29	48.2	52.2	244	21.5	49.5	313	38.6	13.5	350	02.0	34.0
16	329	13.1	44	47.2	52.0	259	24.8	49.5	328	40.9	13.4	5	04.2	33.9
17	344	15.5	59	46.3	−23 51.8	274	28.1	+24 49.4	343	43.2	−1 13.3	20	06.5	−15 33.9
18	359	18.0	74	45.3	−23 51.5	289	31.4	+24 49.4	358	45.4	−1 13.2	35	08.7	−15 33.8
19	14	20.5	89	44.4	51.3	304	34.7	49.3	13	47.7	13.1	50	11.0	33.7
20	29	22.9	104	43.4	51.0	319	38.0	49.3	28	50.0	13.0	65	13.2	33.7
21	44	25.4	119	42.5	50.8	334	41.3	49.2	43	52.2	12.9	80	15.5	33.6
22	59	27.8	134	41.5	50.6	349	44.6	49.1	58	54.5	12.8	95	17.7	33.5
23	74	30.3	149	40.6	50.3	4	47.9	49.1	73	56.8	12.7	110	20.0	33.4
24	89	32.8	164	39.6	−23 50.1	19	51.2	+24 49.0	88	59.0	−1 12.6	125	22.2	−15 33.4
Dif	—			−10	+2		+33	−1		+23	+1		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 27ᵈ0		PHE	4ʰ: 59′.7								
	PMG: 11ʰ 58ᵐ0				SD: 16′.2			12ʰ: 60′.0								
					PMG: 9ʰ 57ᵐ			20ʰ: 60′.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	180	33.3	−23	26.1	216	29.3	−20	19.1	**60 N**	7 07	8 04	9 02	6 44	113	12 57	15
1	195	33.0		26.1	230	55.5 72		30.7 116	**58**	7 00	7 52	8 44	27	104	13 15	23
2	210	32.7		26.1	245	21.6 71		42.1 114	**56**	6 53	42	30	12	98	30	29
3	225	32.4		26.1	259	47.5 69	−20	53.4 113	**54**	47	33	17	6 00	94	43	33
4	240	32.1		26.2	274	13.3 68	−21	04.6 112	**52**	41	25	8 06	5 49	90	13 55	36
5	255	31.7	−23	26.2	288	38.9 66	−21	15.6 110	**50**	6 36	7 17	7 56	5 39	88	14 05	39
6	270	31.4	−23	26.2	303	04.5 66	−21	26.6 110	**45**	6 24	7 01	7 35	5 19	82	14 26	44
7	285	31.1		26.2	317	29.8 63		37.4 108	**40**	13	6 48	18	5 03	77	44	47
8	300	30.8		26.2	331	55.1 63		48.1 107	**35**	6 04	36	7 04	4 49	74	14 59	50
9	315	30.5		26.2	346	20.2 61	−21	58.7 106	**30**	5 55	25	6 52	37	72	15 12	52
10	330	30.2		26.2	0	45.1 59	−22	09.1 104	**20**	39	6 06	30	4 17	67	34	56
11	345	29.9	−23	26.2	15	09.9 58	−22	19.4 103	**10 N**	5 23	5 49	6 12	3 59	64	15 53	60
12	0	29.6	−23	26.2	29	34.6 57	−22	29.6 102	**0**	5 05	5 32	5 54	3 43	60	16 11	62
13	15	29.2		26.3	43	59.2 56		39.6 100	**10 S**	4 46	5 14	37	27	56	29	65
14	30	28.9		26.3	58	23.6 54		49.5 99	**20**	4 24	4 53	5 18	3 10	53	16 48	69
15	45	28.6		26.3	72	47.9 53	−22	59.3 98	**30**	3 55	28	4 56	2 50	49	17 11	72
16	60	28.3		26.3	87	12.0 51	−23	08.9 96	**35**	36	4 13	43	39	46	24	74
17	75	28.0	−23	26.3	101	36.0 50	−23	18.4 95	**40**	3 13	3 55	4 27	2 26	42	17 39	77
18	90	27.7	−23	26.3	115	59.9 49	−23	27.7 93	**45**	2 42	3 32	4 09	2 11	38	17 58	80
19	105	27.4		26.3	130	23.6 47		36.9 92	**50**	1 56	3 02	3 47	1 52	33	18 20	85
20	120	27.1		26.3	144	47.3 47		45.9 90	**52**	1 28	2 47	36	44	30	31	88
21	135	26.8		26.3	159	10.7 44	−23	54.8 89	**54**	0 41	29	24	34	27	44	90
22	150	26.4		26.3	173	34.1 44	−24	03.5 87	**56**	** **	2 07	3 09	23	23	18 58	94
23	165	26.1		26.3	187	57.3 42		12.1 86	**58**	** **	1 37	2 52	1 11	17	19 15	99
24	180	25.8	−23	26.3	202	20.4 41	−24	20.5 84	**60 S**	** **	0 45	2 32	0 56	11	19 36	107

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.5			Mag: +0.8		
	17ʰ 58ᵐ9		PMG: 13ʰ 02ᵐ			PMG: 22ʰ 36ᵐ			PMG: 18ʰ 01ᵐ			PMG: 15ʰ 36ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	89	32.8	164	39.6	−23 50.1	19	51.2	+24 49.0	88	59.0	−1 12.6	125	22.2	−15 33.4
1	104	35.2	179	38.6	49.8	34	54.5	49.0	104	01.3	12.5	140	24.5	33.3
2	119	37.7	194	37.7	49.6	49	57.8	48.9	119	03.5	12.4	155	26.7	33.2
3	134	40.2	209	36.7	49.3	65	01.0	48.9	134	05.8	12.3	170	29.0	33.1
4	149	42.6	224	35.8	49.1	80	04.3	48.8	149	08.1	12.2	185	31.2	33.1
5	164	45.1	239	34.8	−23 48.8	95	07.6	+24 48.8	164	10.3	−1 12.1	200	33.5	−15 33.0
6	179	47.6	254	33.9	−23 48.6	110	10.9	+24 48.7	179	12.6	−1 12.0	215	35.7	−15 32.9
7	194	50.0	269	32.9	48.3	125	14.2	48.7	194	14.9	11.9	230	37.9	32.9
8	209	52.5	284	32.0	48.1	140	17.4	48.6	209	17.1	11.8	245	40.2	32.8
9	224	55.0	299	31.0	47.8	155	20.7	48.6	224	19.4	11.7	260	42.4	32.7
10	239	57.4	314	30.1	47.6	170	24.0	48.5	239	21.6	11.6	275	44.7	32.6
11	254	59.9	329	29.1	−23 47.3	185	27.3	+24 48.5	254	23.9	−1 11.5	290	46.9	−15 32.6
12	270	02.3	344	28.2	−23 47.0	200	30.5	+24 48.4	269	26.2	−1 11.4	305	49.2	−15 32.5
13	285	04.8	359	27.2	46.8	215	33.8	48.3	284	28.4	11.3	320	51.4	32.4
14	300	07.3	14	26.3	46.5	230	37.1	48.3	299	30.7	11.2	335	53.7	32.3
15	315	09.7	29	25.3	46.3	245	40.3	48.2	314	32.9	11.1	350	55.9	32.3
16	330	12.2	44	24.4	46.0	260	43.6	48.2	329	35.2	11.0	5	58.2	32.2
17	345	14.7	59	23.4	−23 45.7	275	46.9	+24 48.1	344	37.5	−1 10.9	21	00.4	−15 32.1
18	0	17.1	74	22.5	−23 45.5	290	50.1	+24 48.1	359	39.7	−1 10.8	36	02.6	−15 32.0
19	15	19.6	89	21.5	45.2	305	53.4	48.0	14	42.0	10.7	51	04.9	32.0
20	30	22.1	104	20.6	44.9	320	56.7	48.0	29	44.2	10.6	66	07.1	31.9
21	45	24.5	119	19.6	44.7	335	59.9	47.9	44	46.5	10.5	81	09.4	31.8
22	60	27.0	134	18.7	44.4	351	03.2	47.9	59	48.8	10.4	96	11.6	31.8
23	75	29.5	149	17.7	44.1	6	06.4	47.8	74	51.0	10.3	111	13.9	31.7
24	90	31.9	164	16.8	−23 43.8	21	09.7	+24 47.8	89	53.3	−1 10.2	126	16.1	−15 31.6
Dif	—			−10	+3		+33	−1		+23	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 28ᵈ.0		PHE	4ʰ: 60′.5									
	PMG: 11ʰ 58ᵐ.5				SD: 16′.4			12ʰ: 60′.7									
					PMG: 10ʰ 58ᵐ			20ʰ: 60′.8									
	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	h m m
0	180	25.8	−23	26.3	202	20.4	40	−24	20.5	82	**60 N**	14 55	15 52	16 49	8 37 99	13 12	38
1	195	25.5		26.3	216	43.4			28.7		**58**	15 12	16 04	16 57	8 11 92	38	45
2	210	25.2		26.3	231	06.2	38		36.8	81	**56**	27	14	17 04	7 50 88	13 59	49
3	225	24.9		26.3	245	28.9	37		44.7	79	**54**	40	24	10	34 84	14 16	52
4	240	24.6		26.3	259	51.5	36	−24	52.5	78	**52**	15 51	32	16	19 83	31	54
5	255	24.3	−23	26.3	274	14.0	35	−25	00.0	75	**50**	16 01	16 39	17 21	7 07 80	14 44	55
6	270	24.0	−23	26.3	288	36.4	34	−25	07.4	74	**45**	16 22	16 55	17 33	6 41 77	15 10	59
7	285	23.6		26.3	302	58.6	32		14.7	73	**40**	38	17 09	43	20 75	31	61
8	300	23.3		26.2	317	20.7	31		21.7	70	**35**	16 53	21	17 52	6 03 74	15 49	62
9	315	23.0		26.2	331	42.8	31		28.6	69	**30**	17 05	31	18 01	5 49 71	16 04	63
10	330	22.7		26.2	346	04.7	29		35.3	67	**20**	26	17 50	18	24 69	30	64
11	345	22.4	−23	26.2	0	26.5	28	−25	41.8	65	**10 N**	17 45	18 08	18 34	5 03 67	16 53	65
12	0	22.1	−23	26.2	14	48.1	26	−25	48.1	63	**0**	18 02	18 25	18 51	4 43 65	17 13	67
13	15	21.8		26.2	29	09.7	26	−25	54.3	62	**10 S**	20	18 43	19 10	23 63	34	68
14	30	21.5		26.2	43	31.2	25	−26	00.2	59	**20**	18 39	19 03	19 33	4 03 60	17 57	68
15	45	21.1		26.2	57	52.6	24		06.0	58	**30**	19 01	28	20 02	3 39 57	18 23	70
16	60	20.8		26.2	72	13.9	23		11.6	56	**35**	14	19 44	21	25 56	38	71
17	75	20.5	−23	26.1	86	35.1	22	−26	17.0	54	**40**	19 29	20 02	20 44	3 08 54	18 56	72
18	90	20.2	−23	26.1	100	56.2	21	−26	22.1	51	**45**	19 47	20 25	21 14	2 49 51	19 18	72
19	105	19.9		26.1	115	17.2	20		27.1	50	**50**	20 10	20 54	22 00	25 47	45	74
20	120	19.6		26.1	129	38.1	19		31.9	48	**52**	21	21 10	22 28	14 45	19 59	74
21	135	19.3		26.1	143	58.9	18		36.5	46	**54**	33	28	23 15	2 01 42	20 14	75
22	150	19.0		26.1	158	19.6	17		40.9	44	**56**	20 47	21 50	** **	1 46 39	32	77
23	165	18.6		26.0	172	40.3	17		45.1	42	**58**	21 04	22 20	** **	28 34	20 54	79
24	180	18.3	−23	26.0	187	00.9	16	−26	49.1	40	**60 S**	21 25	23 11	** **	1 07 26	21 23	81

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.5			Mag: +0.8		
	17ʰ 54ᵐ.9		PMG: 13ʰ 04ᵐ			PMG: 22ʰ 30ᵐ			PMG: 17ʰ 58ᵐ			PMG: 15ʰ 33ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	90	31.9	164	16.8	−23 43.8	21	09.7	+24 47.8	89	53.3	−1 10.2	126	16.1	−15 31.6
1	105	34.4	179	15.8	43.6	36	13.0	47.7	104	55.5	10.1	141	18.4	31.5
2	120	36.8	194	14.9	43.3	51	16.2	47.6	119	57.8	10.0	156	20.6	31.5
3	135	39.3	209	13.9	43.0	66	19.5	47.6	135	00.0	09.9	171	22.8	31.4
4	150	41.8	224	13.0	42.7	81	22.7	47.5	150	02.3	09.8	186	25.1	31.3
5	165	44.2	239	12.0	−23 42.4	96	26.0	+24 47.5	165	04.5	−1 09.7	201	27.3	−15 31.2
6	180	46.7	254	11.1	−23 42.2	111	29.2	+24 47.4	180	06.8	−1 09.6	216	29.6	−15 31.2
7	195	49.2	269	10.2	41.9	126	32.5	47.4	195	09.1	09.5	231	31.8	31.1
8	210	51.6	284	09.2	41.6	141	35.7	47.3	210	11.3	09.4	246	34.1	31.0
9	225	54.1	299	08.3	41.3	156	38.9	47.3	225	13.6	09.3	261	36.3	30.9
10	240	56.6	314	07.3	41.0	171	42.2	47.2	240	15.8	09.2	276	38.5	30.9
11	255	59.0	329	06.4	−23 40.7	186	45.4	+24 47.2	255	18.1	−1 09.1	291	40.8	−15 30.8
12	271	01.5	344	05.4	−23 40.4	201	48.7	+24 47.1	270	20.3	−1 09.0	306	43.0	−15 30.7
13	286	04.0	359	04.5	40.1	216	51.9	47.1	285	22.6	08.8	321	45.3	30.6
14	301	06.4	14	03.5	39.9	231	55.2	47.0	300	24.8	08.7	336	47.5	30.6
15	316	08.9	29	02.6	39.6	246	58.4	46.9	315	27.1	08.6	351	49.8	30.5
16	331	11.3	44	01.7	39.3	262	01.6	46.9	330	29.3	08.5	6	52.0	30.4
17	346	13.8	59	00.7	−23 39.0	277	04.9	+24 46.8	345	31.6	−1 08.4	21	54.2	−15 30.3
18	1	16.3	73	59.8	−23 38.7	292	08.1	+24 46.8	0	33.8	−1 08.3	36	56.5	−15 30.3
19	16	18.7	88	58.8	38.4	307	11.3	46.7	15	36.1	08.2	51	58.7	30.2
20	31	21.2	103	57.9	38.1	322	14.6	46.7	30	38.3	08.1	67	01.0	30.1
21	46	23.7	118	56.9	37.8	337	17.8	46.6	45	40.6	08.0	82	03.2	30.1
22	61	26.1	133	56.0	37.5	352	21.0	46.6	60	42.9	07.9	97	05.5	30.0
23	76	28.6	148	55.1	37.2	7	24.2	46.5	75	45.1	07.8	112	07.7	29.9
24	91	31.1	163	54.1	−23 36.9	22	27.5	+24 46.5	90	47.4	−1 07.7	127	09.9	−15 29.8
Dif	—		−9		+3	+32		−1	+23		+1	+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 29ᵈ0		PHE	4ʰ: 61′.0									
	PMG: 11ʰ 59ᵐ0				SD: 16′.6			12ʰ: 61′.1									
					PMG: 12ʰ 04ᵐ			20ʰ: 61′.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	180	18.3	−23	26.0	187	00.9	−26	49.1		**60 N**	7 08	8 05	9 03	10 16	59	13 50	82
1	195	18.0		26.0	201	21.4 15		52.9	38	**58**	7 01	7 53	8 45	9 43	62	14 23	79
2	210	17.7		26.0	215	41.9 15		56.5	36	**56**	6 54	43	31	9 18	64	14 48	77
3	225	17.4		25.9	230	02.3 14	−26	59.9	34	**54**	48	34	18	8 58	65	15 08	76
4	240	17.1		25.9	244	22.6 13	−27	03.1	32	**52**	42	26	8 07	42	65	25	75
5	255	16.8	−23	25.9	258	42.8 12	−27	06.0	29	**50**	6 37	7 18	7 57	8 27	66	15 39	75
6	270	16.5	−23	25.9	273	03.0 12	−27	08.8	28	**45**	6 25	7 02	7 36	7 58	66	16 09	72
7	285	16.2		25.8	287	23.2 12		11.3	25	**40**	14	6 49	19	35	67	32	71
8	300	15.8		25.8	301	43.3 11		13.7	24	**35**	6 05	37	7 05	17	66	16 51	71
9	315	15.5		25.8	316	03.3 10		15.8	21	**30**	5 56	26	6 53	7 00	67	17 07	70
10	330	15.2		25.8	330	23.3 10		17.7	19	**20**	40	6 07	31	6 33	67	34	69
11	345	14.9	−23	25.7	344	43.3 10	−27	19.4	17	**10 N**	5 24	5 50	6 13	6 10	67	17 58	68
12	0	14.6	−23	25.7	359	03.2 9	−27	20.9	15	**0**	5 06	5 33	5 55	5 48	67	18 20	67
13	15	14.3		25.7	13	23.1 9		22.2	13	**10 S**	4 47	5 15	38	26	68	18 42	66
14	30	14.0		25.6	27	43.0 9		23.2	10	**20**	4 25	4 54	5 19	5 03	67	19 05	65
15	45	13.7		25.6	42	02.8 8		24.1	9	**30**	3 56	29	4 57	4 36	67	33	63
16	60	13.3		25.6	56	22.6 8		24.7	6	**35**	37	4 14	44	21	66	19 49	62
17	75	13.0	−23	25.5	70	42.4 8	−27	25.1	4	**40**	3 14	3 56	4 28	4 02	67	20 08	60
18	90	12.7	−23	25.5	85	02.2 8	−27	25.3	2	**45**	2 43	3 33	4 10	3 40	66	20 30	59
19	105	12.4		25.5	99	22.0 8		25.2	1	**50**	1 57	3 03	3 48	3 12	66	20 59	56
20	120	12.1		25.4	113	41.7 7		25.0	2	**52**	1 29	2 48	37	2 59	65	21 13	55
21	135	11.8		25.4	128	01.5 8		24.5	5	**54**	0 42	30	25	43	64	29	53
22	150	11.5		25.3	142	21.2 7		23.8	7	**56**	** **	2 08	3 10	25	63	21 49	50
23	165	11.2		25.3	156	41.0 8		22.9	9	**58**	** **	1 38	2 53	2 02	62	22 13	46
24	180	10.9	−23	25.3	171	00.7 7	−27	21.8	11	**60 S**	** **	0 46	2 33	1 33	60	22 44	40

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.5			Mag: +0.8		
	17ʰ 51ᵐ0		PMG: 13ʰ 05ᵐ			PMG: 22ʰ 25ᵐ			PMG: 17ʰ 54ᵐ			PMG: 15ʰ 29ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	91	31.1	163	54.1	−23 36.9	22	27.5	+24 46.5	90	47.4	−1 07.7	127	09.9	−15 29.8
1	106	33.5	178	53.2	36.5	37	30.7	46.4	105	49.6	07.6	142	12.2	29.8
2	121	36.0	193	52.2	36.2	52	33.9	46.3	120	51.9	07.5	157	14.4	29.7
3	136	38.5	208	51.3	35.9	67	37.1	46.3	135	54.1	07.4	172	16.7	29.6
4	151	40.9	223	50.4	35.6	82	40.3	46.2	150	56.3	07.3	187	18.9	29.5
5	166	43.4	238	49.4	−23 35.3	97	43.6	+24 46.2	165	58.6	−1 07.2	202	21.1	−15 29.5
6	181	45.8	253	48.5	−23 35.0	112	46.8	+24 46.1	181	00.8	−1 07.1	217	23.4	−15 29.4
7	196	48.3	268	47.5	34.7	127	50.0	46.1	196	03.1	07.0	232	25.6	29.3
8	211	50.8	283	46.6	34.4	142	53.2	46.0	211	05.3	06.9	247	27.9	29.2
9	226	53.2	298	45.7	34.1	157	56.4	46.0	226	07.6	06.8	262	30.1	29.2
10	241	55.7	313	44.7	33.7	172	59.6	45.9	241	09.8	06.6	277	32.3	29.1
11	256	58.2	328	43.8	−23 33.4	188	02.8	+24 45.9	256	12.1	−1 06.5	292	34.6	−15 29.0
12	272	00.6	343	42.8	−23 33.1	203	06.1	+24 45.8	271	14.3	−1 06.4	307	36.8	−15 28.9
13	287	03.1	358	41.9	32.8	218	09.3	45.7	286	16.6	06.3	322	39.1	28.9
14	302	05.6	13	41.0	32.5	233	12.5	45.7	301	18.8	06.2	337	41.3	28.8
15	317	08.0	28	40.0	32.1	248	15.7	45.6	316	21.1	06.1	352	43.5	28.7
16	332	10.5	43	39.1	31.8	263	18.9	45.6	331	23.3	06.0	7	45.8	28.6
17	347	13.0	58	38.2	−23 31.5	278	22.1	+24 45.5	346	25.6	−1 05.9	22	48.0	−15 28.6
18	2	15.4	73	37.2	−23 31.1	293	25.3	+24 45.5	1	27.8	−1 05.8	37	50.3	−15 28.5
19	17	17.9	88	36.3	30.8	308	28.5	45.4	16	30.1	05.7	52	52.5	28.4
20	32	20.3	103	35.3	30.5	323	31.7	45.4	31	32.3	05.6	67	54.7	28.3
21	47	22.8	118	34.4	30.2	338	34.9	45.3	46	34.5	05.5	82	57.0	28.3
22	62	25.3	133	33.5	29.8	353	38.1	45.2	61	36.8	05.4	97	59.2	28.2
23	77	27.7	148	32.5	29.5	8	41.3	45.2	76	39.0	05.3	113	01.5	28.1
24	92	30.2	163	31.6	−23 29.2	23	44.4	+24 45.1	91	41.3	−1 05.2	128	03.7	−15 28.0
Dif	—			−9	+3		+32	−1		+22	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 30ᵈ.0		PHE	4ʰ: 61′.2									
	PMG: 11ʰ 59ᵐ.5				SD: 16′.7			12ʰ: 61′.2									
					PMG: 13ʰ 11ᵐ			20ʰ: 61′.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	10.9	−23	25.3	171	00.7	−27	21.8		**60 N**	14 56	15 54	16 51	11 15	25	15 12	112
1	195	10.5		25.2	185	20.5	8	20.5	13	**58**	15 14	16 05	16 58	10 45	33	15 42	103
2	210	10.2		25.2	199	40.3	8	18.9	16	**56**	28	16	17 05	22	38	16 05	97
3	225	09.9		25.1	214	00.1	8	17.2	17	**54**	41	25	11	10 03	42	24	93
4	240	09.6		25.1	228	19.9	8	15.2	20	**52**	15 52	33	17	9 47	45	40	89
5	255	09.3	−23	25.0	242	39.8	9	−27 13.0	22	**50**	16 02	16 40	17 22	9 33	47	16 54	86
6	270	09.0	−23	25.0	256	59.7	9	−27 10.6	24	**45**	16 23	16 57	17 34	9 04	52	17 21	83
7	285	08.7		25.0	271	19.6	9	08.0	26	**40**	39	17 10	44	8 42	54	17 43	79
8	300	08.4		24.9	285	39.5	9	05.1	29	**35**	16 54	22	17 54	23	57	18 02	75
9	315	08.0		24.9	299	59.5	10	−27 02.1	30	**30**	17 06	32	18 02	8 07	59	17	74
10	330	07.7		24.8	314	19.5	10	−26 58.8	33	**20**	27	17 51	19	7 40	62	18 43	70
11	345	07.4	−23	24.8	328	39.6	11	−26 55.3	35	**10 N**	17 46	18 09	18 35	7 17	64	19 06	67
12	0	07.1	−23	24.7	342	59.7	11	−26 51.6	37	**0**	18 03	18 26	18 52	6 55	66	19 27	64
13	15	06.8		24.7	357	19.9	12	47.7	39	**10 S**	21	18 44	19 11	34	67	19 48	61
14	30	06.5		24.6	11	40.1	12	43.6	41	**20**	18 40	19 04	19 34	6 10	70	20 10	58
15	45	06.2		24.6	26	00.4	13	39.3	43	**30**	19 02	29	20 03	5 43	73	36	54
16	60	05.9		24.5	40	20.7	13	34.8	45	**35**	15	19 45	21	27	74	20 51	51
17	75	05.6	−23	24.4	54	41.1	14	−26 30.0	48	**40**	19 30	20 03	20 45	5 09	76	21 08	49
18	90	05.2	−23	24.4	69	01.6	15	−26 25.1	49	**45**	19 48	20 25	21 15	4 46	78	21 29	45
19	105	04.9		24.3	83	22.1	15	20.0	51	**50**	20 11	20 55	22 01	18	81	21 55	40
20	120	04.6		24.3	97	42.8	17	14.6	54	**52**	21	21 10	22 29	4 04	83	22 08	37
21	135	04.3		24.2	112	03.5	17	09.1	55	**54**	34	28	23 15	3 47	86	22	34
22	150	04.0		24.2	126	24.2	17	−26 03.4	57	**56**	20 48	21 51	** **	28	88	39	30
23	165	03.7		24.1	140	45.1	19	−25 57.4	60	**58**	21 05	22 20	** **	3 04	93	22 59	25
24	180	03.4	−23	24.0	155	06.0	19	−25 51.3	61	**60 S**	21 25	23 11	** **	2 33	99	23 24	17

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.5			Mag: −2.5			Mag: +0.8		
	17ʰ 47ᵐ.1		PMG: 13ʰ 07ᵐ			PMG: 22ʰ 20ᵐ			PMG: 17ʰ 51ᵐ			PMG: 15ʰ 25ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	92	30.2	163	31.6	−23 29.2	23	44.4	+24 45.1	91	41.3	−1 05.2	128	03.7	−15 28.0
1	107	32.7	178	30.7	28.8	38	47.6	45.1	106	43.5	05.0	143	05.9	28.0
2	122	35.1	193	29.7	28.5	53	50.8	45.0	121	45.8	04.9	158	08.2	27.9
3	137	37.6	208	28.8	28.1	68	54.0	45.0	136	48.0	04.8	173	10.4	27.8
4	152	40.1	223	27.9	27.8	83	57.2	44.9	151	50.2	04.7	188	12.7	27.7
5	167	42.5	238	26.9	−23 27.5	99	00.4	+24 44.9	166	52.5	−1 04.6	203	14.9	−15 27.6
6	182	45.0	253	26.0	−23 27.1	114	03.6	+24 44.8	181	54.7	−1 04.5	218	17.1	−15 27.6
7	197	47.5	268	25.1	26.8	129	06.7	44.8	196	57.0	04.4	233	19.4	27.5
8	212	49.9	283	24.1	26.4	144	09.9	44.7	211	59.2	04.3	248	21.6	27.4
9	227	52.4	298	23.2	26.1	159	13.1	44.6	227	01.5	04.2	263	23.8	27.3
10	242	54.8	313	22.3	25.7	174	16.3	44.6	242	03.7	04.1	278	26.1	27.3
11	257	57.3	328	21.3	−23 25.4	189	19.5	+24 44.5	257	05.9	−1 04.0	293	28.3	−15 27.2
12	272	59.8	343	20.4	−23 25.0	204	22.6	+24 44.5	272	08.2	−1 03.9	308	30.6	−15 27.1
13	288	02.2	358	19.5	24.7	219	25.8	44.4	287	10.4	03.7	323	32.8	27.0
14	303	04.7	13	18.6	24.3	234	29.0	44.4	302	12.7	03.6	338	35.0	27.0
15	318	07.2	28	17.6	24.0	249	32.2	44.3	317	14.9	03.5	353	37.3	26.9
16	333	09.6	43	16.7	23.6	264	35.3	44.3	332	17.1	03.4	8	39.5	26.8
17	348	12.1	58	15.8	−23 23.3	279	38.5	+24 44.2	347	19.4	−1 03.3	23	41.7	−15 26.7
18	3	14.6	73	14.8	−23 22.9	294	41.7	+24 44.2	2	21.6	−1 03.2	38	44.0	−15 26.7
19	18	17.0	88	13.9	22.5	309	44.8	44.1	17	23.8	03.1	53	46.2	26.6
20	33	19.5	103	13.0	22.2	324	48.0	44.0	32	26.1	03.0	68	48.5	26.5
21	48	22.0	118	12.1	21.8	339	51.1	44.0	47	28.3	02.9	83	50.7	26.4
22	63	24.4	133	11.1	21.5	354	54.3	43.9	62	30.6	02.8	98	52.9	26.4
23	78	26.9	148	10.2	21.1	9	57.5	43.9	77	32.8	02.6	113	55.2	26.3
24	93	29.3	163	09.3	−23 20.7	25	00.6	+24 43.8	92	35.0	−1 02.5	128	57.4	−15 26.2
Dif	—		−9		+4	+32		−1	+22		+1	+22		+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 1ᵈ.6		PHE	4ʰ: 61′.1									
	PMG: 12ʰ 00ᵐ.0				SD: 16′.6			12ʰ: 61′.0									
					PMG: 14ʰ 16ᵐ			20ʰ: 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	03.4	−23	24.0	155	06.0	−25	51.3		**60 N**	7 09	8 06	9 03	11 40	9	17 04	114
1	195	03.1		24.0	169	27.0 20		45.0	63	**58**	7 01	7 54	8 46	18	17	25	107
2	210	02.8		23.9	183	48.2 22		38.4	66	**56**	6 55	44	31	11 00	22	42	101
3	225	02.4		23.9	198	09.4 22		31.7	67	**54**	48	35	19	10 45	26	17 57	97
4	240	02.1		23.8	212	30.7 23		24.8	69	**52**	43	26	8 07	32	30	18 09	94
5	255	01.8	−23	23.7	226	52.1 24	−25	17.7	71	**50**	6 37	7 19	7 58	10 20	33	18 20	91
6	270	01.5	−23	23.7	241	13.5 24	−25	10.4	73	**45**	6 26	7 03	7 37	9 56	38	18 44	84
7	285	01.2		23.6	255	35.1 26	−25	03.0	74	**40**	15	6 49	20	36	43	19 02	79
8	300	00.9		23.5	269	56.8 27	−24	55.3	77	**35**	6 06	38	7 06	20	46	17	76
9	315	00.6		23.5	284	18.6 28		47.5	78	**30**	5 57	27	6 53	9 06	49	31	72
10	330	00.3		23.4	298	40.5 29		39.5	80	**20**	41	6 08	32	8 42	53	19 53	68
11	345	00.0	−23	23.3	313	02.6 31	−24	31.3	82	**10 N**	5 25	5 51	6 14	8 21	57	20 13	63
12	359	59.6	−23	23.3	327	24.7 31	−24	23.0	83	**0**	5 08	5 34	5 56	8 01	61	20 31	59
13	14	59.3		23.2	341	46.9 32		14.4	86	**10 S**	4 49	5 16	39	7 41	65	20 49	54
14	29	59.0		23.1	356	09.3 34	−24	05.7	87	**20**	4 26	4 55	5 20	7 20	69	21 08	50
15	44	58.7		23.0	10	31.7 34	−23	56.9	88	**30**	3 57	30	4 58	6 56	73	30	45
16	59	58.4		23.0	24	54.3 36		47.8	91	**35**	38	4 15	45	41	76	42	42
17	74	58.1	−23	22.9	39	17.0 37	−23	38.6	92	**40**	3 15	3 57	4 30	6 25	79	21 57	38
18	89	57.8	−23	22.8	53	39.8 38	−23	29.3	93	**45**	2 44	3 34	4 12	6 04	84	22 14	34
19	104	57.5		22.7	68	02.8 40		19.7	96	**50**	1 59	3 04	3 49	5 39	89	35	28
20	119	57.2		22.7	82	25.8 40		10.0	97	**52**	1 31	2 49	38	27	92	45	25
21	134	56.9		22.6	96	49.0 42	−23	00.2	98	**54**	0 45	31	26	5 13	95	22 56	22
22	149	56.5		22.5	111	12.3 43	−22	50.2	100	**56**	** **	2 09	3 12	4 56	100	23 09	18
23	164	56.2		22.4	125	35.8 45		40.1	101	**58**	** **	1 39	2 55	37	105	24	13
24	179	55.9	−23	22.4	139	59.3 45	−22	29.8	103	**60 S**	** **	0 49	2 34	4 12	114	23 41	8

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.4			Mag: −2.5			Mag: +0.8		
	17ʰ 43ᵐ.1		PMG: 13ʰ 08ᵐ			PMG: 22ʰ 15ᵐ			PMG: 17ʰ 47ᵐ			PMG: 15ʰ 22ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	93	29.3	163	09.3	−23 20.7	25	00.6	+24 43.8	92	35.0	−1 02.5	128	57.4	−15 26.2
1	108	31.8	178	08.3	20.4	40	03.8	43.8	107	37.3	02.4	143	59.6	26.1
2	123	34.3	193	07.4	20.0	55	06.9	43.7	122	39.5	02.3	159	01.9	26.1
3	138	36.7	208	06.5	19.6	70	10.1	43.7	137	41.7	02.2	174	04.1	26.0
4	153	39.2	223	05.6	19.3	85	13.2	43.6	152	44.0	02.1	189	06.3	25.9
5	168	41.7	238	04.6	−23 18.9	100	16.4	+24 43.6	167	46.2	−1 02.0	204	08.6	−15 25.8
6	183	44.1	253	03.7	−23 18.5	115	19.5	+24 43.5	182	48.4	−1 01.9	219	10.8	−15 25.7
7	198	46.6	268	02.8	18.1	130	22.7	43.4	197	50.7	01.8	234	13.1	25.7
8	213	49.1	283	01.9	17.8	145	25.8	43.4	212	52.9	01.7	249	15.3	25.6
9	228	51.5	298	00.9	17.4	160	29.0	43.3	227	55.1	01.5	264	17.5	25.5
10	243	54.0	313	00.0	17.0	175	32.1	43.3	242	57.4	01.4	279	19.8	25.4
11	258	56.5	327	59.1	−23 16.6	190	35.3	+24 43.2	257	59.6	−1 01.3	294	22.0	−15 25.4
12	273	58.9	342	58.2	−23 16.3	205	38.4	+24 43.2	273	01.8	−1 01.2	309	24.2	−15 25.3
13	289	01.4	357	57.3	15.9	220	41.5	43.1	288	04.1	01.1	324	26.5	25.2
14	304	03.8	12	56.3	15.5	235	44.7	43.1	303	06.3	01.0	339	28.7	25.1
15	319	06.3	27	55.4	15.1	250	47.8	43.0	318	08.5	00.9	354	30.9	25.1
16	334	08.8	42	54.5	14.7	265	51.0	43.0	333	10.8	00.8	9	33.2	25.0
17	349	11.2	57	53.6	−23 14.3	280	54.1	+24 42.9	348	13.0	−1 00.6	24	35.4	−15 24.9
18	4	13.7	72	52.6	−23 14.0	295	57.2	+24 42.8	3	15.2	−1 00.5	39	37.6	−15 24.8
19	19	16.2	87	51.7	13.6	311	00.3	42.8	18	17.5	00.4	54	39.9	24.7
20	34	18.6	102	50.8	13.2	326	03.5	42.7	33	19.7	00.3	69	42.1	24.7
21	49	21.1	117	49.9	12.8	341	06.6	42.7	48	21.9	00.2	84	44.3	24.6
22	64	23.6	132	49.0	12.4	356	09.7	42.6	63	24.2	−1 00.1	99	46.6	24.5
23	79	26.0	147	48.0	12.0	11	12.9	42.6	78	26.4	−1 00.0	114	48.8	24.4
24	94	28.5	162	47.1	−23 11.6	26	16.0	+24 42.5	93	28.6	−0 59.9	129	51.0	−15 24.4
Dif	—			−9	+4		+31	−1		+22	+1		+22	+1

UT	SOL		LUNA				Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3		Edad: 2^d.6		PHE	4^h: 60′.7								
	PMG: 12^h 00^m.5		SD: 16′.6			12^h: 60′.5								
			PMG: 15^h 16^m			20^h: 60′.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	179 55.9	−23 22.4	139 59.3	47	−22 29.8	105	**60 N**	14 58	15 55	16 52	11 49	5	18 58	108
1	194 55.6	22.3	154 23.0	48	19.3	106	**58**	15 15	16 07	17 00	35	9	19 12	102
2	209 55.3	22.2	168 46.8	49	−22 08.7	107	**56**	30	17	06	22	14	23	98
3	224 55.0	22.1	183 10.7	51	−21 58.0	109	**54**	42	26	12	11	18	34	93
4	239 54.7	22.0	197 34.8	52	47.1	110	**52**	15 53	34	18	11 02	21	43	90
5	254 54.4	−23 21.9	211 59.0	53	−21 36.1	112	**50**	16 03	16 42	17 23	10 53	24	19 51	87
6	269 54.1	−23 21.9	226 23.3	54	−21 24.9	113	**45**	16 24	16 58	17 35	10 34	30	20 08	81
7	284 53.8	21.8	240 47.7	56	13.6	114	**40**	41	17 11	45	19	34	21	77
8	299 53.4	21.7	255 12.3	57	−21 02.2	115	**35**	16 55	23	17 55	10 06	38	33	72
9	314 53.1	21.6	269 37.0	58	−20 50.7	117	**30**	17 07	34	18 03	9 55	41	20 43	69
10	329 52.8	21.5	284 01.8	60	39.0	118	**20**	28	17 52	20	35	47	21 01	63
11	344 52.5	−23 21.4	298 26.8	61	−20 27.2	119	**10 N**	17 47	18 10	18 36	9 18	52	21 16	58
12	359 52.2	−23 21.3	312 51.9	62	−20 15.3	121	**0**	18 04	18 27	18 53	9 02	56	21 30	53
13	14 51.9	21.2	327 17.1	64	−20 03.2	121	**10 S**	22	18 45	19 12	8 46	61	43	49
14	29 51.6	21.1	341 42.5	64	−19 51.1	123	**20**	18 41	19 05	19 35	29	65	21 58	44
15	44 51.3	21.1	356 07.9	67	38.8	124	**30**	19 03	30	20 04	8 09	71	22 15	38
16	59 51.0	21.0	10 33.6	67	26.4	125	**35**	16	19 45	22	7 57	75	24	35
17	74 50.7	−23 20.9	24 59.3	69	−19 13.9	127	**40**	19 31	20 04	20 45	7 44	78	22 35	31
18	89 50.4	−23 20.8	39 25.2	69	−19 01.2	127	**45**	19 49	20 26	21 16	7 28	83	22 48	26
19	104 50.0	20.7	53 51.1	72	−18 48.5	128	**50**	20 11	20 56	22 01	7 08	89	23 03	21
20	119 49.7	20.6	68 17.3	72	35.7	130	**52**	22	21 11	22 28	6 59	92	10	19
21	134 49.4	20.5	82 43.5	74	22.7	130	**54**	34	29	23 14	48	96	18	16
22	149 49.1	20.4	97 09.9	75	−18 09.7	131	**56**	20 48	21 51	** **	36	100	27	12
23	164 48.8	20.3	111 36.4	76	−17 56.6	133	**58**	21 05	22 20	** **	22	105	37	8
24	179 48.5	−23 20.2	126 03.0		−17 43.3		**60 S**	21 25	23 09	** **	6 06	110	23 49	3

UT	ARIES	VENUS		MARTE		JÚPITER		SATURNO	
	PMG	Mag: −3.9		Mag: −1.4		Mag: −2.5		Mag: +0.8	
	17^h 39^m.2	PMG: 13^h 10^m		PMG: 22^h 10^m		PMG: 17^h 43^m		PMG: 15^h 18^m	
	hG ♈	hG ♀	Dec	hG ♂	Dec	hG ♃	Dec	hG ♄	Dec
h	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
0	94 28.5	162 47.1	−23 11.6	26 16.0	+24 42.5	93 28.6	−0 59.9	129 51.0	−15 24.4
1	109 31.0	177 46.2	11.2	41 19.1	42.5	108 30.9	59.7	144 53.3	24.3
2	124 33.4	192 45.3	10.8	56 22.2	42.4	123 33.1	59.6	159 55.5	24.2
3	139 35.9	207 44.4	10.4	71 25.3	42.4	138 35.3	59.5	174 57.7	24.1
4	154 38.3	222 43.5	10.0	86 28.5	42.3	153 37.5	59.4	190 00.0	24.1
5	169 40.8	237 42.5	−23 09.6	101 31.6	+24 42.2	168 39.8	−0 59.3	205 02.2	−15 24.0
6	184 43.3	252 41.6	−23 09.2	116 34.7	+24 42.2	183 42.0	−0 59.2	220 04.4	−15 23.9
7	199 45.7	267 40.7	08.8	131 37.8	42.1	198 44.2	59.1	235 06.7	23.8
8	214 48.2	282 39.8	08.4	146 40.9	42.1	213 46.5	58.9	250 08.9	23.7
9	229 50.7	297 38.9	08.0	161 44.0	42.0	228 48.7	58.8	265 11.1	23.7
10	244 53.1	312 38.0	07.6	176 47.1	42.0	243 50.9	58.7	280 13.4	23.6
11	259 55.6	327 37.0	−23 07.2	191 50.2	+24 41.9	258 53.1	−0 58.6	295 15.6	−15 23.5
12	274 58.1	342 36.1	−23 06.8	206 53.3	+24 41.9	273 55.4	−0 58.5	310 17.8	−15 23.4
13	290 00.5	357 35.2	06.4	221 56.4	41.8	288 57.6	58.4	325 20.1	23.4
14	305 03.0	12 34.3	05.9	236 59.5	41.8	303 59.8	58.3	340 22.3	23.3
15	320 05.4	27 33.4	05.5	252 02.6	41.7	319 02.0	58.1	355 24.5	23.2
16	335 07.9	42 32.5	05.1	267 05.7	41.7	334 04.3	58.0	10 26.8	23.1
17	350 10.4	57 31.6	−23 04.7	282 08.8	+24 41.6	349 06.5	−0 57.9	25 29.0	−15 23.0
18	5 12.8	72 30.7	−23 04.3	297 11.9	+24 41.6	4 08.7	−0 57.8	40 31.2	−15 23.0
19	20 15.3	87 29.7	03.9	312 15.0	41.5	19 10.9	57.7	55 33.5	22.9
20	35 17.8	102 28.8	03.4	327 18.1	41.4	34 13.2	57.6	70 35.7	22.8
21	50 20.2	117 27.9	03.0	342 21.2	41.4	49 15.4	57.4	85 37.9	22.7
22	65 22.7	132 27.0	02.6	357 24.3	41.3	64 17.6	57.3	100 40.2	22.7
23	80 25.2	147 26.1	02.2	12 27.4	41.3	79 19.8	57.2	115 42.4	22.6
24	95 27.6	162 25.2	−23 01.8	27 30.5	+24 41.2	94 22.1	−0 57.1	130 44.6	−15 22.5
Dif	—	−9	+4	+31	−1	+22	+1	+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 3ᵈ.6		PHE	4ʰ: 60′.1									
	PMG: 12ʰ 01ᵐ.0				SD: 16′.4			12ʰ: 59′.8									
					PMG: 16ʰ 11ᵐ			20ʰ: 59′.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	48.5	−23	20.2	126	03.0	−17	43.3		**60 N**	7 09	8 06	9 04	11 54	2	20 46	100
1	194	48.2		20.1	140	29.8 78		30.0	133	**58**	7 02	7 54	8 46	44	7	20 54	95
2	209	47.9		20.0	154	56.7 79		16.6	134	**56**	6 55	44	32	36	10	21 01	92
3	224	47.6		19.9	169	23.7 80	−17	03.1	135	**54**	49	35	19	29	13	07	89
4	239	47.3		19.8	183	50.8 81	−16	49.5	136	**52**	43	27	8 08	23	15	13	85
5	254	47.0	−23	19.7	198	18.0 82	−16	35.8	137	**50**	6 38	7 20	7 58	11 17	18	21 18	83
6	269	46.6	−23	19.6	212	45.4 84	−16	22.0	138	**45**	6 26	7 04	7 37	11 04	24	21 29	77
7	284	46.3		19.5	227	12.9 85	−16	08.2	138	**40**	16	6 50	21	10 53	28	38	72
8	299	46.0		19.4	241	40.5 86	−15	54.3	139	**35**	6 07	38	7 07	44	32	45	69
9	314	45.7		19.3	256	08.2 87		40.2	141	**30**	5 58	28	6 54	36	35	21 52	65
10	329	45.4		19.2	270	36.1 89		26.2	140	**20**	42	6 09	33	22	41	22 04	59
11	344	45.1	−23	19.0	285	04.0 89	−15	12.0	142	**10 N**	5 25	5 52	6 15	10 10	46	22 14	53
12	359	44.8	−23	18.9	299	32.1 91	−14	57.8	142	**0**	5 09	5 35	5 57	9 58	51	22 23	49
13	14	44.5		18.8	314	00.3 92		43.5	143	**10 S**	4 50	5 17	40	47	55	32	44
14	29	44.2		18.7	328	28.6 93		29.1	144	**20**	4 27	4 56	5 21	34	61	42	39
15	44	43.9		18.6	342	57.0 94		14.7	144	**30**	3 58	31	4 59	20	67	53	33
16	59	43.6		18.5	357	25.5 95	−14	00.2	145	**35**	39	4 16	46	12	70	22 59	30
17	74	43.3	−23	18.4	11	54.2 97	−13	45.6	146	**40**	3 16	3 58	4 31	9 02	74	23 06	27
18	89	43.0	−23	18.3	26	22.9 97	−13	31.0	146	**45**	2 46	3 36	4 13	8 51	79	23 14	23
19	104	42.6		18.1	40	51.8 99		16.3	147	**50**	2 01	3 06	3 50	37	85	24	17
20	119	42.3		18.0	55	20.7 99	−13	01.6	147	**52**	1 33	2 51	40	31	87	29	14
21	134	42.0		17.9	69	49.8 101	−12	46.8	148	**54**	0 48	33	27	24	90	34	12
22	149	41.7		17.8	84	19.0 102		32.0	148	**56**	** **	2 11	3 13	16	94	39	9
23	164	41.4		17.7	98	48.3 103		17.1	149	**58**	** **	1 41	2 57	8 07	98	45	6
24	179	41.1	−23	17.6	113	17.6 103	−12	02.1	150	**60 S**	** **	0 52	2 36	7 56	103	23 52	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.4			Mag: −2.5			Mag: +0.8		
	17ʰ 35ᵐ.3		PMG: 13ʰ 11ᵐ			PMG: 22ʰ 05ᵐ			PMG: 17ʰ 40ᵐ			PMG: 15ʰ 15ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	95	27.6	162	25.2	−23 01.8	27	30.5	+24 41.2	94	22.1	−0 57.1	130	44.6	−15 22.5
1	110	30.1	177	24.3	01.3	42	33.6	41.2	109	24.3	57.0	145	46.9	22.4
2	125	32.6	192	23.4	00.9	57	36.6	41.1	124	26.5	56.9	160	49.1	22.3
3	140	35.0	207	22.5	00.5	72	39.7	41.1	139	28.7	56.8	175	51.3	22.3
4	155	37.5	222	21.6	−23 00.1	87	42.8	41.0	154	31.0	56.6	190	53.6	22.2
5	170	39.9	237	20.7	−22 59.6	102	45.9	+24 41.0	169	33.2	−0 56.5	205	55.8	−15 22.1
6	185	42.4	252	19.7	−22 59.2	117	49.0	+24 40.9	184	35.4	−0 56.4	220	58.0	−15 22.0
7	200	44.9	267	18.8	58.8	132	52.0	40.9	199	37.6	56.3	236	00.2	22.0
8	215	47.3	282	17.9	58.3	147	55.1	40.8	214	39.8	56.2	251	02.5	21.9
9	230	49.8	297	17.0	57.9	162	58.2	40.8	229	42.1	56.1	266	04.7	21.8
10	245	52.3	312	16.1	57.5	178	01.3	40.7	244	44.3	55.9	281	06.9	21.7
11	260	54.7	327	15.2	−22 57.0	193	04.3	+24 40.6	259	46.5	−0 55.8	296	09.2	−15 21.6
12	275	57.2	342	14.3	−22 56.6	208	07.4	+24 40.6	274	48.7	−0 55.7	311	11.4	−15 21.6
13	290	59.7	357	13.4	56.1	223	10.5	40.5	289	50.9	55.6	326	13.6	21.5
14	306	02.1	12	12.5	55.7	238	13.5	40.5	304	53.2	55.5	341	15.9	21.4
15	321	04.6	27	11.6	55.3	253	16.6	40.4	319	55.4	55.3	356	18.1	21.3
16	336	07.1	42	10.7	54.8	268	19.7	40.4	334	57.6	55.2	11	20.3	21.2
17	351	09.5	57	09.8	−22 54.4	283	22.7	+24 40.3	349	59.8	−0 55.1	26	22.5	−15 21.2
18	6	12.0	72	08.9	−22 53.9	298	25.8	+24 40.3	5	02.0	−0 55.0	41	24.8	−15 21.1
19	21	14.4	87	08.0	53.5	313	28.8	40.2	20	04.3	54.9	56	27.0	21.0
20	36	16.9	102	07.1	53.0	328	31.9	40.2	35	06.5	54.8	71	29.2	20.9
21	51	19.4	117	06.2	52.6	343	35.0	40.1	50	08.7	54.6	86	31.5	20.9
22	66	21.8	132	05.3	52.1	358	38.0	40.1	65	10.9	54.5	101	33.7	20.8
23	81	24.3	147	04.4	51.7	13	41.1	40.0	80	13.1	54.4	116	35.9	20.7
24	96	26.8	162	03.5	−22 51.2	28	44.1	+24 40.0	95	15.3	−0 54.3	131	38.2	−15 20.6
Dif	—		−9		+4	+31		−1	+22		+1	+22		+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 4ᵈ.6		PHE	4ʰ: 59′.3									
	PMG: 12ʰ 01ᵐ.5				SD: 16′.2			12ʰ: 59′.0									
					PMG: 17ʰ 01ᵐ			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	179	41.1	−23	17.6	113	17.6	−12	02.1		**60 N**	15 00	15 57	16 54	11 56	1	22 26	94
1	194	40.8		17.4	127	47.1 105	−11	47.2	149	**58**	17	16 09	17 01	51	4	29	91
2	209	40.5		17.3	142	16.7 106		32.1	151	**56**	32	19	08	46	8	33	87
3	224	40.2		17.2	156	46.4 107		17.1	150	**54**	44	28	14	42	11	36	84
4	239	39.9		17.1	171	16.1 107	−11	01.9	152	**52**	15 55	36	20	38	14	38	82
5	254	39.6	−23	17.0	185	46.0 109	−10	46.8	151	**50**	16 05	16 43	17 25	11 35	16	22 41	78
6	269	39.3	−23	16.8	200	16.0 110	−10	31.6	152	**45**	16 25	16 59	17 36	11 28	20	22 46	73
7	284	39.0		16.7	214	46.0 110		16.4	152	**40**	42	17 13	47	21	25	50	69
8	299	38.7		16.6	229	16.2 112	−10	01.1	153	**35**	16 56	24	17 56	16	29	54	65
9	314	38.4		16.5	243	46.4 112	−9	45.8	153	**30**	17 08	35	18 05	11	32	22 57	62
10	329	38.1		16.3	258	16.7 113		30.5	153	**20**	30	17 54	21	11 03	38	23 03	56
11	344	37.7	−23	16.2	272	47.2 115	−9	15.1	154	**10 N**	17 48	18 11	18 37	10 56	42	23 07	51
12	359	37.4	−23	16.1	287	17.7 115	−8	59.7	154	**0**	18 05	18 28	18 54	10 49	47	23 12	46
13	14	37.1		15.9	301	48.2 115		44.3	154	**10 S**	23	18 46	19 13	42	52	16	42
14	29	36.8		15.8	316	18.9 117		28.8	155	**20**	18 42	19 06	19 35	35	57	21	36
15	44	36.5		15.7	330	49.6 117	−8	13.4	154	**30**	19 03	31	20 04	27	63	26	31
16	59	36.2		15.5	345	20.5 119	−7	57.9	155	**35**	16	19 46	23	22	66	29	28
17	74	35.9	−23	15.4	359	51.4 119	−7	42.4	155	**40**	19 31	20 04	20 46	10 16	70	23 33	24
18	89	35.6	−23	15.3	14	22.4 120	−7	26.8	156	**45**	19 49	20 26	21 16	10 10	75	23 37	19
19	104	35.3		15.1	28	53.4 120	−7	11.3	155	**50**	20 11	20 56	22 01	10 02	80	41	15
20	119	35.0		15.0	43	24.6 122	−6	55.7	156	**52**	22	21 11	22 28	9 58	83	43	13
21	134	34.7		14.9	57	55.8 122		40.1	156	**54**	34	29	23 12	54	86	46	10
22	149	34.4		14.7	72	27.0 122		24.5	156	**56**	20 48	21 50	** **	50	89	48	8
23	164	34.1		14.6	86	58.4 124	−6	08.9	156	**58**	21 05	22 19	** **	45	92	51	4
24	179	33.8	−23	14.5	101	29.8 124	−5	53.3	156	**60 S**	21 25	23 07	** **	9 39	97	23 54	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.3			Mag: −2.4			Mag: +0.8		
	17ʰ 31ᵐ.3		PMG: 13ʰ 13ᵐ			PMG: 22ʰ 01ᵐ			PMG: 17ʰ 36ᵐ			PMG: 15ʰ 11ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	96	26.8	162	03.5	−22 51.2	28	44.1	+24 40.0	95	15.3	−0 54.3	131	38.2	−15 20.6
1	111	29.2	177	02.6	50.8	43	47.2	39.9	110	17.6	54.2	146	40.4	20.5
2	126	31.7	192	01.7	50.3	58	50.2	39.9	125	19.8	54.0	161	42.6	20.5
3	141	34.2	207	00.8	49.9	73	53.2	39.8	140	22.0	53.9	176	44.8	20.4
4	156	36.6	221	59.9	49.4	88	56.3	39.8	155	24.2	53.8	191	47.1	20.3
5	171	39.1	236	59.0	−22 48.9	103	59.3	+24 39.7	170	26.4	−0 53.7	206	49.3	−15 20.2
6	186	41.5	251	58.1	−22 48.5	119	02.4	+24 39.7	185	28.6	−0 53.6	221	51.5	−15 20.1
7	201	44.0	266	57.2	48.0	134	05.4	39.6	200	30.9	53.5	236	53.8	20.1
8	216	46.5	281	56.3	47.6	149	08.5	39.6	215	33.1	53.3	251	56.0	20.0
9	231	48.9	296	55.4	47.1	164	11.5	39.5	230	35.3	53.2	266	58.2	19.9
10	246	51.4	311	54.5	46.6	179	14.5	39.4	245	37.5	53.1	282	00.4	19.8
11	261	53.9	326	53.6	−22 46.2	194	17.6	+24 39.4	260	39.7	−0 53.0	297	02.7	−15 19.7
12	276	56.3	341	52.7	−22 45.7	209	20.6	+24 39.3	275	41.9	−0 52.9	312	04.9	−15 19.7
13	291	58.8	356	51.8	45.2	224	23.6	39.3	290	44.1	52.7	327	07.1	19.6
14	307	01.3	11	50.9	44.8	239	26.7	39.2	305	46.4	52.6	342	09.4	19.5
15	322	03.7	26	50.0	44.3	254	29.7	39.2	320	48.6	52.5	357	11.6	19.4
16	337	06.2	41	49.1	43.8	269	32.7	39.1	335	50.8	52.4	12	13.8	19.4
17	352	08.7	56	48.2	−22 43.3	284	35.7	+24 39.1	350	53.0	−0 52.2	27	16.0	−15 19.3
18	7	11.1	71	47.3	−22 42.9	299	38.8	+24 39.0	5	55.2	−0 52.1	42	18.3	−15 19.2
19	22	13.6	86	46.4	42.4	314	41.8	39.0	20	57.4	52.0	57	20.5	19.1
20	37	16.0	101	45.6	41.9	329	44.8	38.9	35	59.6	51.9	72	22.7	19.0
21	52	18.5	116	44.7	41.4	344	47.8	38.9	51	01.8	51.8	87	24.9	19.0
22	67	21.0	131	43.8	40.9	359	50.8	38.8	66	04.1	51.6	102	27.2	18.9
23	82	23.4	146	42.9	40.5	14	53.8	38.8	81	06.3	51.5	117	29.4	18.8
24	97	25.9	161	42.0	−22 40.0	29	56.9	+24 38.7	96	08.5	−0 51.4	132	31.6	−15 18.7
Dif	—			−9	+5		+30	−1		+22	+1		+22	+1

UT	SOL				LUNA					Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 5ᵈ.6		PHE	4ʰ: 58′.5									
	PMG: 12ʰ 02ᵐ.0				SD: 16′.0			12ʰ: 58′.2									
					PMG: 17ʰ 47ᵐ			20ʰ: 57′.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	33.8	−23	14.5	101	29.8	−5	53.3		**60 N**	7 10	8 06	9 03	11 57	1	** **	**
1	194	33.5		14.3	116	01.3 125		37.7	156	**58**	7 02	7 55	8 46	55	4	** **	**
2	209	33.2		14.2	130	32.9 126		22.1	156	**56**	6 55	44	32	54	7	** **	**
3	224	32.9		14.0	145	04.5 126	−5	06.4	157	**54**	49	35	19	53	9	** **	**
4	239	32.6		13.9	159	36.1 126	−4	50.8	156	**52**	44	27	8 08	52	12	** **	**
5	254	32.3	−23	13.8	174	07.9 128	−4	35.1	157	**50**	6 39	7 20	7 58	11 51	14	23 59	77
6	269	32.0	−23	13.6	188	39.7 128	−4	19.5	156	**45**	6 27	7 04	7 38	11 48	19	23 59	71
7	284	31.6		13.5	203	11.6 129	−4	03.8	157	**40**	17	6 51	21	46	24	59	67
8	299	31.3		13.3	217	43.5 129	−3	48.2	156	**35**	6 07	39	7 07	45	27	59	63
9	314	31.0		13.2	232	15.4 129		32.5	157	**30**	5 59	29	6 55	43	30	59	60
10	329	30.7		13.0	246	47.5 131		16.9	156	**20**	42	6 10	34	41	35	59	54
11	344	30.4	−23	12.9	261	19.5 130	−3	01.2	157	**10 N**	5 26	5 53	6 16	11 38	41	23 58	50
12	359	30.1	−23	12.7	275	51.7 132	−2	45.6	156	**0**	5 10	5 36	5 58	11 36	46	23 58	45
13	14	29.8		12.6	290	23.9 132		29.9	157	**10 S**	4 51	5 18	41	34	50	58	40
14	29	29.5		12.4	304	56.1 132	−2	14.3	156	**20**	4 28	4 57	22	32	55	57	36
15	44	29.2		12.3	319	28.4 133	−1	58.7	156	**30**	3 59	33	5 00	30	60	57	30
16	59	28.9		12.1	334	00.7 133		43.1	156	**35**	41	18	4 47	28	64	57	27
17	74	28.6	−23	12.0	348	33.1 134	−1	27.5	156	**40**	3 18	4 00	4 32	11 26	68	23 57	23
18	89	28.3	−23	11.8	3	05.5 134	−1	11.9	156	**45**	2 48	3 37	4 14	11 25	72	23 56	20
19	104	28.0		11.7	17	37.9 134	−0	56.3	156	**50**	2 03	3 08	3 52	22	77	56	14
20	119	27.7		11.5	32	10.4 135		40.8	155	**52**	1 36	2 53	41	21	80	56	12
21	134	27.4		11.4	46	43.0 136		25.2	156	**54**	0 52	35	29	20	82	56	9
22	149	27.1		11.2	61	15.5 135	−0	09.7	155	**56**	** **	2 13	3 15	19	85	56	7
23	164	26.8		11.1	75	48.1 136	+0	05.8	155	**58**	** **	1 44	2 59	17	89	55	5
24	179	26.5	−23	10.9	90	20.8 137	+0	21.3	155	**60 S**	** **	0 57	2 38	11 16	92	23 55	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.3			Mag: −2.4			Mag: +0.8		
	17ʰ 27ᵐ.4		PMG: 13ʰ 14ᵐ			PMG: 21ʰ 56ᵐ			PMG: 17ʰ 33ᵐ			PMG: 15ʰ 08ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	97	25.9	161	42.0	−22 40.0	29	56.9	+24 38.7	96	08.5	−0 51.4	132	31.6	−15 18.7
1	112	28.4	176	41.1	39.5	44	59.9	38.7	111	10.7	51.3	147	33.9	18.6
2	127	30.8	191	40.2	39.0	60	02.9	38.6	126	12.9	51.2	162	36.1	18.6
3	142	33.3	206	39.3	38.5	75	05.9	38.6	141	15.1	51.0	177	38.3	18.5
4	157	35.8	221	38.4	38.0	90	08.9	38.5	156	17.3	50.9	192	40.5	18.4
5	172	38.2	236	37.5	−22 37.6	105	11.9	+24 38.5	171	19.5	−0 50.8	207	42.8	−15 18.3
6	187	40.7	251	36.7	−22 37.1	120	14.9	+24 38.4	186	21.7	−0 50.7	222	45.0	−15 18.2
7	202	43.2	266	35.8	36.6	135	17.9	38.4	201	23.9	50.6	237	47.2	18.2
8	217	45.6	281	34.9	36.1	150	20.9	38.3	216	26.1	50.4	252	49.4	18.1
9	232	48.1	296	34.0	35.6	165	23.9	38.3	231	28.4	50.3	267	51.7	18.0
10	247	50.5	311	33.1	35.1	180	26.9	38.2	246	30.6	50.2	282	53.9	17.9
11	262	53.0	326	32.2	−22 34.6	195	29.9	+24 38.2	261	32.8	−0 50.1	297	56.1	−15 17.8
12	277	55.5	341	31.3	−22 34.1	210	32.9	+24 38.1	276	35.0	−0 49.9	312	58.3	−15 17.8
13	292	57.9	356	30.5	33.6	225	35.9	38.1	291	37.2	49.8	328	00.6	17.7
14	308	00.4	11	29.6	33.1	240	38.9	38.0	306	39.4	49.7	343	02.8	17.6
15	323	02.9	26	28.7	32.6	255	41.9	38.0	321	41.6	49.6	358	05.0	17.5
16	338	05.3	41	27.8	32.1	270	44.9	37.9	336	43.8	49.4	13	07.2	17.4
17	353	07.8	56	26.9	−22 31.6	285	47.9	+24 37.9	351	46.0	−0 49.3	28	09.5	−15 17.4
18	8	10.3	71	26.0	−22 31.1	300	50.8	+24 37.8	6	48.2	−0 49.2	43	11.7	−15 17.3
19	23	12.7	86	25.2	30.6	315	53.8	37.8	21	50.4	49.1	58	13.9	17.2
20	38	15.2	101	24.3	30.1	330	56.8	37.7	36	52.6	49.0	73	16.1	17.1
21	53	17.6	116	23.4	29.6	345	59.8	37.7	51	54.8	48.8	88	18.4	17.0
22	68	20.1	131	22.5	29.1	1	02.8	37.6	66	57.0	48.7	103	20.6	17.0
23	83	22.6	146	21.6	28.6	16	05.7	37.6	81	59.2	48.6	118	22.8	16.9
24	98	25.0	161	20.7	−22 28.1	31	08.7	+24 37.5	97	01.4	−0 48.5	133	25.0	−15 16.8
Dif	—			−9	+5		+30	0		+22	+1		+22	+1

UT	SOL				LUNA					Latitud	Puesta de Sol	Final del crepúsculo		Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 6ᵈ.6		PHE	4ʰ: 57′.6									
	PMG: 12ʰ 02ᵐ.5				SD: 15′.7			12ʰ: 57′.4									
					PMG: 18ʰ 32ᵐ			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	179	26.5	−23	10.9	90	20.8	+0	21.3		**60 N**	15 02	15 59	16 56	11 58	1	0 00	91
1	194	26.2		10.7	104	53.5 137		36.8	155	**58**	19	16 11	17 03	11 59	5	00	87
2	209	25.9		10.6	119	26.2 137	+0	52.2	154	**56**	34	21	10	12 01	7	00	84
3	224	25.6		10.4	133	58.9 137	+1	07.6	154	**54**	46	30	16	02	10	00	81
4	239	25.3		10.3	148	31.7 138		23.1	155	**52**	15 57	38	21	04	12	0 00	78
5	254	25.0	−23	10.1	163	04.5 138	+1	38.4	153	**50**	16 07	16 45	17 26	12 05	14	** **	**
6	269	24.7	−23	09.9	177	37.3 138	+1	53.8	154	**45**	16 27	17 01	17 38	12 07	20	** **	**
7	284	24.4		09.8	192	10.1 138	+2	09.1	153	**40**	44	14	48	10	23	** **	**
8	299	24.1		09.6	206	43.0 139		24.4	153	**35**	16 58	26	17 57	12	26	** **	**
9	314	23.8		09.4	221	15.9 139		39.7	153	**30**	17 10	36	18 06	13	30	** **	**
10	329	23.5		09.3	235	48.8 139	+2	54.9	152	**20**	31	17 55	22	16	36	** **	**
11	344	23.2	−23	09.1	250	21.8 140	+3	10.2	153	**10 N**	17 49	18 12	18 38	12 19	40	** **	**
12	359	22.9	−23	08.9	264	54.7 139	+3	25.3	151	**0**	18 06	18 29	18 55	12 22	44	** **	**
13	14	22.6		08.8	279	27.7 140		40.5	152	**10 S**	24	18 47	19 14	24	49	** **	**
14	29	22.3		08.6	294	00.7 140	+3	55.6	151	**20**	18 42	19 07	19 36	27	54	** **	**
15	44	22.0		08.4	308	33.7 140	+4	10.7	151	**30**	19 04	31	20 05	30	59	** **	**
16	59	21.7		08.3	323	06.7 140		25.7	150	**35**	17	19 46	23	32	62	** **	**
17	74	21.4	−23	08.1	337	39.7 140	+4	40.7	150	**40**	19 32	20 04	20 46	12 34	66	** **	**
18	89	21.1	−23	07.9	352	12.8 141	+4	55.7	150	**45**	19 49	20 27	21 16	12 37	70	** **	**
19	104	20.8		07.8	6	45.8 140	+5	10.7	150	**50**	20 12	20 56	22 00	39	76	** **	**
20	119	20.5		07.6	21	18.9 141		25.6	149	**52**	22	21 11	22 27	41	78	** **	**
21	134	20.2		07.4	35	52.0 141		40.4	148	**54**	34	28	23 08	42	81	** **	**
22	149	19.9		07.2	50	25.0 140	+5	55.2	148	**56**	20 48	21 50	** **	44	84	** **	**
23	164	19.6		07.1	64	58.1 141	+6	10.0	148	**58**	21 05	22 18	** **	46	87	** **	**
24	179	19.3	−23	06.9	79	31.2 141	+6	24.7	147	**60 S**	21 25	23 03	** **	12 48	91	23 56	1

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.3			Mag: −2.4			Mag: +0.8		
	17ʰ 23ᵐ.5		PMG: 13ʰ 15ᵐ			PMG: 21ʰ 51ᵐ			PMG: 17ʰ 29ᵐ			PMG: 15ʰ 04ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	98	25.0	161	20.7	−22 28.1	31	08.7	+24 37.5	97	01.4	−0 48.5	133	25.0	−15 16.8
1	113	27.5	176	19.9	27.6	46	11.7	37.5	112	03.6	48.3	148	27.3	16.7
2	128	30.0	191	19.0	27.0	61	14.7	37.4	127	05.9	48.2	163	29.5	16.6
3	143	32.4	206	18.1	26.5	76	17.6	37.4	142	08.1	48.1	178	31.7	16.6
4	158	34.9	221	17.2	26.0	91	20.6	37.3	157	10.3	48.0	193	33.9	16.5
5	173	37.4	236	16.4	−22 25.5	106	23.6	+24 37.3	172	12.5	−0 47.8	208	36.2	−15 16.4
6	188	39.8	251	15.5	−22 25.0	121	26.5	+24 37.3	187	14.7	−0 47.7	223	38.4	−15 16.3
7	203	42.3	266	14.6	24.5	136	29.5	37.2	202	16.9	47.6	238	40.6	16.2
8	218	44.8	281	13.7	23.9	151	32.5	37.2	217	19.1	47.5	253	42.8	16.1
9	233	47.2	296	12.8	23.4	166	35.4	37.1	232	21.3	47.3	268	45.1	16.1
10	248	49.7	311	12.0	22.9	181	38.4	37.1	247	23.5	47.2	283	47.3	16.0
11	263	52.1	326	11.1	−22 22.4	196	41.4	+24 37.0	262	25.7	−0 47.1	298	49.5	−15 15.9
12	278	54.6	341	10.2	−22 21.9	211	44.3	+24 37.0	277	27.9	−0 47.0	313	51.7	−15 15.8
13	293	57.1	356	09.3	21.3	226	47.3	36.9	292	30.1	46.8	328	54.0	15.7
14	308	59.5	11	08.5	20.8	241	50.2	36.9	307	32.3	46.7	343	56.2	15.7
15	324	02.0	26	07.6	20.3	256	53.2	36.8	322	34.5	46.6	358	58.4	15.6
16	339	04.5	41	06.7	19.7	271	56.1	36.8	337	36.7	46.5	14	00.6	15.5
17	354	06.9	56	05.9	−22 19.2	286	59.1	+24 36.7	352	38.9	−0 46.3	29	02.8	−15 15.4
18	9	09.4	71	05.0	−22 18.7	302	02.0	+24 36.7	7	41.1	−0 46.2	44	05.1	−15 15.3
19	24	11.9	86	04.1	18.2	317	05.0	36.6	22	43.3	46.1	59	07.3	15.3
20	39	14.3	101	03.2	17.6	332	07.9	36.6	37	45.5	46.0	74	09.5	15.2
21	54	16.8	116	02.4	17.1	347	10.9	36.5	52	47.7	45.8	89	11.7	15.1
22	69	19.3	131	01.5	16.6	2	13.8	36.5	67	49.9	45.7	104	14.0	15.0
23	84	21.7	146	00.6	16.0	17	16.7	36.4	82	52.1	45.6	119	16.2	14.9
24	99	24.2	160	59.8	−22 15.5	32	19.7	+24 36.4	97	54.3	−0 45.4	134	18.4	−15 14.9
Dif	—			−9	+5		+30	0		+22	+1		+22	+1

UT	SOL				LUNA				Latitud	Principio del crepúsculo		Salida de Sol	Salida de Luna		Puesta de Luna	
	SD: 16′.3				Edad: 7ᵈ.6		PHE	4ʰ: 56′.9								
	PMG: 12ʰ 03ᵐ.0				SD: 15′.5			12ʰ: 56′.6								
					PMG: 19ʰ 17ᵐ			20ʰ: 56′.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	179	19.3	−23	06.9	79	31.2	+6	24.7	**60 N**	7 09	8 06	9 03	11 59	1	1 31	91
1	194	19.0		06.7	94	04.3 141		39.4 147	**58**	7 02	7 54	8 46	12 04	5	27	87
2	209	18.7		06.5	108	37.4 141	+6	54.1 147	**56**	6 56	44	31	08	9	24	83
3	224	18.4		06.3	123	10.5 141	+7	08.7 146	**54**	50	36	19	12	12	21	80
4	239	18.1		06.2	137	43.6 141		23.2 145	**52**	44	28	8 08	16	14	18	78
5	254	17.8	−23	06.0	152	16.7 141	+7	37.7 145	**50**	6 39	7 20	7 59	12 19	16	1 16	75
6	269	17.5	−23	05.8	166	49.7 140	+7	52.2 145	**45**	6 27	7 04	7 38	12 27	21	1 10	70
7	284	17.2		05.6	181	22.8 141	+8	06.6 144	**40**	17	6 51	22	33	25	06	65
8	299	16.9		05.4	195	55.9 141		21.0 144	**35**	6 08	40	7 08	38	29	1 02	62
9	314	16.6		05.2	210	29.0 141		35.3 143	**30**	5 59	29	6 56	43	31	0 59	58
10	329	16.3		05.1	225	02.0 140	+8	49.5 142	**20**	43	6 11	35	52	36	53	53
11	344	16.0	−23	04.9	239	35.1 141	+9	03.7 142	**10 N**	5 27	5 54	6 16	12 59	41	0 48	48
12	359	15.7	−23	04.7	254	08.1 140	+9	17.9 142	**0**	5 11	5 37	5 59	13 06	45	0 43	44
13	14	15.4		04.5	268	41.2 141		32.0 141	**10 S**	4 52	5 19	42	13	49	38	40
14	29	15.1		04.3	283	14.2 140	+9	46.0 140	**20**	30	4 59	23	21	53	33	35
15	44	14.8		04.1	297	47.2 140	+10	00.0 140	**30**	4 01	34	5 01	29	59	27	30
16	59	14.5		03.9	312	20.2 140	+10	13.9 139	**35**	3 42	19	4 49	34	62	24	27
17	74	14.2	−23	03.7	326	53.2 140	+10	27.8 139	**40**	3 20	4 01	4 34	13 40	65	0 20	24
18	89	13.9	−23	03.5	341	26.2 140	+10	41.6 138	**45**	2 50	3 39	4 16	13 47	69	0 16	20
19	104	13.6		03.4	355	59.1 139	+10	55.4 138	**50**	2 05	3 10	3 54	55	75	10	16
20	119	13.3		03.2	10	32.0 139	+11	09.1 137	**52**	1 39	2 55	43	13 59	77	08	13
21	134	13.0		03.0	25	05.0 140		22.7 136	**54**	0 57	37	31	14 03	80	05	11
22	149	12.7		02.8	39	37.9 139		36.3 136	**56**	** **	2 16	17	08	83	03	7
23	164	12.4		02.6	54	10.7 138	+11	49.8 135	**58**	** **	1 47	3 01	13	86	0 00	4
24	179	12.1	−23	02.4	68	43.6 139	+12	03.2 134	**60 S**	** **	1 02	2 41	14 19	90	23 57	2

UT	ARIES		VENUS			MARTE			JÚPITER			SATURNO		
	PMG		Mag: −3.9			Mag: −1.2			Mag: −2.4			Mag: +0.8		
	17ʰ 19ᵐ.5		PMG: 13ʰ 17ᵐ			PMG: 21ʰ 46ᵐ			PMG: 17ʰ 26ᵐ			PMG: 15ʰ 01ᵐ		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	99	24.2	160	59.8	−22 15.5	32	19.7	+24 36.4	97	54.3	−0 45.4	134	18.4	−15 14.9
1	114	26.6	175	58.9	14.9	47	22.6	36.3	112	56.5	45.3	149	20.6	14.8
2	129	29.1	190	58.0	14.4	62	25.6	36.3	127	58.7	45.2	164	22.8	14.7
3	144	31.6	205	57.2	13.9	77	28.5	36.3	143	00.9	45.1	179	25.1	14.6
4	159	34.0	220	56.3	13.3	92	31.4	36.2	158	03.1	44.9	194	27.3	14.5
5	174	36.5	235	55.4	−22 12.8	107	34.4	+24 36.2	173	05.3	−0 44.8	209	29.5	−15 14.4
6	189	39.0	250	54.6	−22 12.2	122	37.3	+24 36.1	188	07.4	−0 44.7	224	31.7	−15 14.4
7	204	41.4	265	53.7	11.7	137	40.2	36.1	203	09.6	44.6	239	34.0	14.3
8	219	43.9	280	52.8	11.1	152	43.1	36.0	218	11.8	44.4	254	36.2	14.2
9	234	46.4	295	52.0	10.6	167	46.1	36.0	233	14.0	44.3	269	38.4	14.1
10	249	48.8	310	51.1	10.0	182	49.0	35.9	248	16.2	44.2	284	40.6	14.0
11	264	51.3	325	50.2	−22 09.5	197	51.9	+24 35.9	263	18.4	−0 44.0	299	42.8	−15 14.0
12	279	53.7	340	49.4	−22 08.9	212	54.8	+24 35.8	278	20.6	−0 43.9	314	45.1	−15 13.9
13	294	56.2	355	48.5	08.4	227	57.7	35.8	293	22.8	43.8	329	47.3	13.8
14	309	58.7	10	47.6	07.8	243	00.7	35.7	308	25.0	43.7	344	49.5	13.7
15	325	01.1	25	46.8	07.3	258	03.6	35.7	323	27.2	43.5	359	51.7	13.6
16	340	03.6	40	45.9	06.7	273	06.5	35.7	338	29.4	43.4	14	53.9	13.5
17	355	06.1	55	45.0	−22 06.2	288	09.4	+24 35.6	353	31.6	−0 43.3	29	56.2	−15 13.5
18	10	08.5	70	44.2	−22 05.6	303	12.3	+24 35.6	8	33.8	−0 43.1	44	58.4	−15 13.4
19	25	11.0	85	43.3	05.0	318	15.2	35.5	23	36.0	43.0	60	00.6	13.3
20	40	13.5	100	42.5	04.5	333	18.1	35.5	38	38.2	42.9	75	02.8	13.2
21	55	15.9	115	41.6	03.9	348	21.0	35.4	53	40.4	42.8	90	05.1	13.1
22	70	18.4	130	40.7	03.3	3	23.9	35.4	68	42.6	42.6	105	07.3	13.1
23	85	20.9	145	39.9	02.8	18	26.8	35.3	83	44.7	42.5	120	09.5	13.0
24	100	23.3	160	39.0	−22 02.2	33	29.7	+24 35.3	98	46.9	−0 42.4	135	11.7	−15 12.9
Dif	—			−9	+6		+29	0		+22	+1		+22	+1

UT	SOL SD: 16′.3 PMG: 12h 03m.4				LUNA Edad: 8d.6 SD: 15′.3 PMG: 20h 02m PHE 4h: 56′.2; 12h: 56′.0; 20h: 55′.8 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	179	12.1	−23	02.4	68	43.6	+12	03.2	**60 N**	15 05	16 01	16 58	12 00	3	3 02	91
1	194	11.8		02.2	83	16.4 138		16.6 134	**58**	22	13	17 05	09	7	2 54	87
2	209	11.5		02.0	97	49.2 138		29.9 133	**56**	36	23	12	17	11	47	83
3	224	11.3		01.8	112	22.0 138		43.2 133	**54**	48	32	18	24	14	41	80
4	239	11.0		01.6	126	54.8 138	+12	56.3 131	**52**	15 59	39	23	30	17	36	77
5	254	10.7	−23	01.4	141	27.5 137	+13	09.4 131	**50**	16 09	16 47	17 28	12 35	20	2 31	74
6	269	10.4	−23	01.2	156	00.2 137	+13	22.5 131	**45**	16 29	17 02	17 40	12 48	24	2 20	70
7	284	10.1		01.0	170	32.9 137		35.5 130	**40**	45	16	50	12 58	28	11	66
8	299	09.8		00.8	185	05.5 136	+13	48.4 129	**35**	16 59	27	17 59	13 07	31	2 04	62
9	314	09.5		00.6	199	38.2 137	+14	01.2 128	**30**	17 11	37	18 07	14	34	1 57	59
10	329	09.2		00.4	214	10.7 135		14.0 128	**20**	32	17 56	23	28	38	46	54
11	344	08.9	−23	00.2	228	43.3 136	+14	26.6 126	**10 N**	17 50	18 13	18 39	13 40	42	1 36	50
12	359	08.6	−23	00.0	243	15.8 135	+14	39.3 127	**0**	18 07	18 30	18 56	13 51	46	1 27	46
13	14	08.3	−22	59.8	257	48.3 135	+14	51.8 125	**10 S**	24	18 47	19 14	14 02	50	18	42
14	29	08.0		59.6	272	20.8 135	+15	04.3 125	**20**	18 43	19 07	19 37	14	54	1 08	38
15	44	07.7		59.3	286	53.2 134		16.7 124	**30**	19 05	32	20 05	28	59	0 57	33
16	59	07.4		59.1	301	25.6 134		29.0 123	**35**	17	19 47	23	36	62	51	30
17	74	07.1	−22	58.9	315	58.0 134	+15	41.2 122	**40**	19 32	20 05	20 46	14 45	66	0 44	26
18	89	06.8	−22	58.7	330	30.3 133	+15	53.3 121	**45**	19 50	20 27	21 16	14 56	69	0 36	22
19	104	06.5		58.5	345	02.6 133	+16	05.4 121	**50**	20 12	20 56	21 59	15 10	74	26	17
20	119	06.2		58.3	359	34.8 132		17.4 120	**52**	22	21 10	22 25	16	77	21	15
21	134	06.0		58.1	14	07.0 132		29.3 119	**54**	34	27	23 05	23	80	16	12
22	149	05.7		57.9	28	39.2 132		41.2 119	**56**	20 48	21 49	** **	31	83	10	10
23	164	05.4		57.6	43	11.3 131	+16	52.9 117	**58**	21 04	22 16	** **	39	87	0 04	6
24	179	05.1	−22	57.4	57	43.4 131	+17	04.6 117	**60 S**	21 23	22 59	** **	15 49	93	23 59	5

UT	ARIES PMG 17h 15m.6		VENUS Mag: −3.9 PMG: 13h 18m			MARTE Mag: −1.2 PMG: 21h 42m			JÚPITER Mag: −2.4 PMG: 17h 22m			SATURNO Mag: +0.8 PMG: 14h 57m		
	hG ♈		hG ♀		Dec	hG ♂		Dec	hG ♃		Dec	hG ♄		Dec
h	º	′	º	′	º ′	º	′	º ′	º	′	º ′	º	′	º ′
0	100	23.3	160	39.0	−22 02.2	33	29.7	+24 35.3	98	46.9	−0 42.4	135	11.7	−15 12.9
1	115	25.8	175	38.2	01.6	48	32.6	35.3	113	49.1	42.2	150	13.9	12.8
2	130	28.2	190	37.3	01.1	63	35.5	35.2	128	51.3	42.1	165	16.2	12.7
3	145	30.7	205	36.5	−22 00.5	78	38.4	35.2	143	53.5	42.0	180	18.4	12.6
4	160	33.2	220	35.6	−21 59.9	93	41.3	35.1	158	55.7	41.9	195	20.6	12.6
5	175	35.6	235	34.7	−21 59.4	108	44.2	+24 35.1	173	57.9	−0 41.7	210	22.8	−15 12.5
6	190	38.1	250	33.9	−21 58.8	123	47.1	+24 35.0	189	00.1	−0 41.6	225	25.0	−15 12.4
7	205	40.6	265	33.0	58.2	138	50.0	35.0	204	02.3	41.5	240	27.3	12.3
8	220	43.0	280	32.2	57.6	153	52.9	34.9	219	04.5	41.3	255	29.5	12.2
9	235	45.5	295	31.3	57.1	168	55.8	34.9	234	06.7	41.2	270	31.7	12.1
10	250	48.0	310	30.5	56.5	183	58.7	34.9	249	08.8	41.1	285	33.9	12.1
11	265	50.4	325	29.6	−21 55.9	199	01.6	+24 34.8	264	11.0	−0 40.9	300	36.1	−15 12.0
12	280	52.9	340	28.8	−21 55.3	214	04.4	+24 34.8	279	13.2	−0 40.8	315	38.3	−15 11.9
13	295	55.4	355	27.9	54.8	229	07.3	34.7	294	15.4	40.7	330	40.6	11.8
14	310	57.8	10	27.1	54.2	244	10.2	34.7	309	17.6	40.6	345	42.8	11.7
15	326	00.3	25	26.2	53.6	259	13.1	34.6	324	19.8	40.4	0	45.0	11.7
16	341	02.7	40	25.4	53.0	274	16.0	34.6	339	22.0	40.3	15	47.2	11.6
17	356	05.2	55	24.5	−21 52.4	289	18.8	+24 34.6	354	24.2	−0 40.2	30	49.4	−15 11.5
18	11	07.7	70	23.7	−21 51.8	304	21.7	+24 34.5	9	26.3	−0 40.0	45	51.7	−15 11.4
19	26	10.1	85	22.8	51.3	319	24.6	34.5	24	28.5	39.9	60	53.9	11.3
20	41	12.6	100	22.0	50.7	334	27.4	34.4	39	30.7	39.8	75	56.1	11.2
21	56	15.1	115	21.1	50.1	349	30.3	34.4	54	32.9	39.6	90	58.3	11.2
22	71	17.5	130	20.3	49.5	4	33.2	34.3	69	35.1	39.5	106	00.5	11.1
23	86	20.0	145	19.4	48.9	19	36.0	34.3	84	37.3	39.4	121	02.8	11.0
24	101	22.5	160	18.6	−21 48.3	34	38.9	+24 34.3	99	39.5	−0 39.2	136	05.0	−15 10.9
Dif	—			−9	+6		+29	0		+22	+1		+22	+1

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
1 - α And	*Alpheratz*	2.1	**357**	37.4	37.5	37.5	37.4	37.3	37.0	36.7	36.5	36.4	36.4	36.4	36.5
2 - β Cas	*Caph*	2.3	**357**	25.1	25.3	25.3	25.2	25.0	24.6	24.2	23.9	23.7	23.7	23.8	24.0
3 - γ Peg	*Algenib*	2.8	**356**	24.7	24.8	24.8	24.8	24.6	24.4	24.1	23.9	23.8	23.7	23.8	23.8
4 - α Phe	*Ankaa*	2.4	**353**	9.7	9.8	9.9	9.8	9.7	9.4	9.1	8.8	8.7	8.6	8.7	8.8
5 - α Cas	*Schedar*	2.2	**349**	33.9	34.1	34.2	34.2	33.9	33.6	33.2	32.9	32.7	32.6	32.6	32.8
6 - β Cet	*Diphda*	2.0	**348**	49.8	49.9	49.9	49.9	49.8	49.5	49.3	49.1	48.9	48.8	48.9	48.9
7 - γ Cas	*Navi*	1.6	**345**	29.6	29.9	30.0	30.0	29.8	29.4	29.0	28.6	28.4	28.3	28.3	28.4
8 - β And	*Mirach*	2.1	**342**	15.7	15.8	15.9	15.9	15.8	15.5	15.2	15.0	14.8	14.7	14.7	14.7
9 - α Eri	*Achernar*	0.5	**335**	22.0	22.3	22.4	22.5	22.4	22.1	21.8	21.4	21.1	21.0	21.0	21.2
10 - γ And	*Almak*	2.3	**328**	41.3	41.5	41.6	41.6	41.5	41.3	41.0	40.7	40.4	40.3	40.2	40.2
12 - α Ari	*Hamal*	2.0	**327**	53.9	54.0	54.1	54.1	54.0	53.8	53.6	53.3	53.1	53.0	52.9	52.9
11 - α UMi	*Polaris*	2.0	**314**	58.5	73.1	85.4	93.6	93.3	84.9	71.7	56.0	40.8	29.6	24.2	26.9
13 - θ Eri	*Acamar*	3.3	**315**	13.5	13.6	13.8	13.9	13.9	13.7	13.5	13.2	13.0	12.8	12.7	12.7
14 - α Cet	*Menkar*	2.5	**314**	8.6	8.7	8.8	8.8	8.8	8.6	8.4	8.2	8.0	7.8	7.7	7.7
15 - β Per	*Algol*	2.1	**312**	35.9	36.1	36.2	36.3	36.3	36.1	35.8	35.5	35.2	35.0	34.9	34.8
16 - α Per	*Mirfak*	1.8	**308**	31.5	31.6	31.8	31.9	31.9	31.7	31.4	31.1	30.8	30.5	30.3	30.3
17 - η Tau	*Alcyone*	2.9	**302**	48.1	48.2	48.3	48.4	48.4	48.2	48.0	47.8	47.5	47.3	47.2	47.1
18 - γ Eri	*Zaurak*	3.0	**300**	14.1	14.2	14.3	14.4	14.4	14.3	14.1	13.9	13.7	13.5	13.4	13.3
19 - α Tau	*Aldebaran*	0.9	**290**	42.2	42.2	42.4	42.5	42.5	42.4	42.2	42.0	41.8	41.5	41.4	41.3
20 - β Ori	*Rigel*	0.1	**281**	5.9	6.0	6.1	6.3	6.3	6.3	6.1	5.9	5.7	5.5	5.3	5.2
21 - α Aur	*Capella*	0.1	**280**	25.1	25.2	25.3	25.5	25.6	25.5	25.3	25.0	24.7	24.4	24.1	23.9
22 - γ Ori	*Bellatrix*	1.6	**278**	25.2	25.3	25.4	25.5	25.6	25.5	25.4	25.2	24.9	24.7	24.5	24.4
23 - β Tau	*Elnath*	1.7	**278**	4.6	4.7	4.8	4.9	5.0	4.9	4.8	4.6	4.3	4.0	3.8	3.7
24 - δ Ori	*Mintaka*	2.2	**276**	42.9	43.0	43.1	43.2	43.3	43.2	43.1	42.9	42.7	42.5	42.3	42.1
25 - ε Ori	*Alnilam*	1.7	**275**	39.9	40.0	40.1	40.2	40.3	40.2	40.1	39.9	39.7	39.5	39.3	39.1
26 - ζ Ori	*Alnitak*	1.9	**274**	31.8	31.9	32.0	32.1	32.2	32.1	32.0	31.8	31.6	31.4	31.2	31.1
27 - κ Ori	*Saiph*	2.1	**272**	47.8	47.9	48.0	48.1	48.2	48.2	48.1	47.9	47.7	47.5	47.3	47.1
28 - α Ori	*Betelgeuse*	0.4	**270**	54.4	54.5	54.6	54.7	54.8	54.7	54.6	54.4	54.2	54.0	53.8	53.6
29 - β Aur	*Menkalinan*	1.9	**269**	42.7	42.7	42.9	43.1	43.2	43.1	43.0	42.7	42.4	42.1	41.8	41.6
30 - β CMa	*Mirzam*	2.0	**264**	4.8	4.8	4.9	5.1	5.2	5.2	5.1	4.9	4.7	4.5	4.3	4.1
31 - α Car	*Canopus*	–0.7	**263**	52.9	53.1	53.3	53.6	53.8	53.9	53.8	53.6	53.4	53.1	52.8	52.6
32 - γ Gem	*Alhena*	1.9	**260**	15.1	15.1	15.2	15.4	15.4	15.4	15.3	15.2	14.9	14.7	14.5	14.3
33 - α CMa	*Sirius*	–1.5	**258**	28.1	28.1	28.2	28.3	28.5	28.5	28.4	28.3	28.1	27.8	27.6	27.4
34 - ε CMa	*Adhara*	1.5	**255**	7.4	7.4	7.6	7.7	7.9	7.9	7.8	7.7	7.5	7.3	7.0	6.9
35 - δ CMa	*Wezen*	1.9	**252**	40.5	40.5	40.6	40.8	40.9	40.9	40.9	40.8	40.6	40.4	40.1	39.9
36 - η CMa	*Aludra*	2.5	**248**	45.3	45.3	45.4	45.6	45.7	45.8	45.7	45.6	45.4	45.2	45.0	44.8
37 - α Gem	*Castor*	2.0	**245**	59.8	59.8	59.8	60.0	60.1	60.1	60.1	59.9	59.7	59.4	59.2	58.9
38 - α CMi	*Procyon*	0.4	**244**	53.1	53.0	53.1	53.2	53.3	53.4	53.3	53.2	53.0	52.8	52.6	52.3
39 - β Gem	*Pollux*	1.1	**243**	19.9	19.9	20.0	20.1	20.2	20.2	20.2	20.1	19.9	19.6	19.3	19.1
40 - ζ Pup	*Naos*	2.3	**238**	54.3	54.3	54.5	54.6	54.8	54.9	54.9	54.9	54.7	54.4	54.2	53.9
41 - γ Vel	*Regor*	1.8	**237**	26.5	26.5	26.6	26.8	27.0	27.2	27.2	27.2	27.0	26.7	26.4	26.2
42 - ε Car	*Avior*	1.9	**234**	15.0	15.1	15.2	15.5	15.8	16.1	16.2	16.1	15.9	15.6	15.2	14.9
43 - δ Velorum		2.0	**228**	39.9	39.9	40.0	40.3	40.5	40.7	40.8	40.8	40.7	40.4	40.0	39.7
44 - ζ Hydrae		3.1	**225**	51.5	51.4	51.5	51.6	51.7	51.7	51.7	51.7	51.5	51.4	51.1	50.9
45 - λ Vel	*Suhail*	2.2	**222**	47.6	47.6	47.6	47.8	48.0	48.1	48.2	48.2	48.1	47.9	47.6	47.3
46 - β Car	*Miaplacidus*	1.7	**221**	37.8	37.8	38.0	38.4	38.8	39.2	39.5	39.6	39.4	39.0	38.5	38.0
47 - ι Car	*Aspidiske*	2.3	**220**	34.4	34.3	34.5	34.7	35.0	35.2	35.4	35.4	35.3	35.0	34.6	34.3
48 - α Lyn	*Elvashak*	3.1	**219**	24.0	23.8	23.9	24.0	24.1	24.2	24.2	24.1	24.0	23.8	23.5	23.2
49 - α Hyd	*Alphard*	2.0	**217**	49.9	49.7	49.8	49.8	50.0	50.0	50.0	50.0	49.9	49.7	49.5	49.3
50 - α Leo	*Regulus*	1.4	**207**	36.8	36.6	36.6	36.7	36.8	36.8	36.9	36.9	36.8	36.6	36.4	36.2

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
1 - α And	*Alpheratz*	2.1	**+29**	12.7	12.7	12.6	12.5	12.5	12.6	12.7	12.8	13.0	13.1	13.1	13.1
2 - β Cas	*Caph*	2.3	**+59**	16.4	16.3	16.2	16.1	16.0	16.0	16.1	16.3	16.4	16.6	16.7	16.8
3 - γ Peg	*Algenib*	2.8	**+15**	18.3	18.3	18.2	18.2	18.2	18.3	18.4	18.5	18.6	18.7	18.7	18.7
4 - α Phe	*Ankaa*	2.4	**–42**	11.5	11.5	11.4	11.2	11.1	10.9	10.8	10.8	10.9	11.0	11.1	11.2
5 - α Cas	*Schedar*	2.2	**+56**	39.6	39.6	39.5	39.3	39.3	39.3	39.3	39.5	39.6	39.8	39.9	40.0
6 - β Cet	*Diphda*	2.0	**–17**	52.2	52.2	52.1	52.0	51.9	51.8	51.7	51.6	51.6	51.7	51.7	51.8
7 - γ Cas	*Navi*	1.6	**+60**	50.3	50.3	50.2	50.0	49.9	49.9	50.0	50.1	50.3	50.4	50.6	50.7
8 - β And	*Mirach*	2.1	**+35**	44.3	44.2	44.2	44.1	44.1	44.1	44.2	44.3	44.4	44.5	44.6	44.7
9 - α Eri	*Achernar*	0.5	**–57**	7.9	7.8	7.7	7.6	7.4	7.2	7.1	7.1	7.1	7.3	7.4	7.5
10 - γ And	*Almak*	2.3	**+42**	26.2	26.2	26.1	26.0	26.0	26.0	26.0	26.1	26.2	26.3	26.4	26.5
12 - α Ari	*Hamal*	2.0	**+23**	34.0	34.0	33.9	33.9	33.9	33.9	34.0	34.1	34.2	34.2	34.3	34.3
11 - α UMi	*Polaris*	2.0	**+89**	21.7	21.7	21.7	21.5	21.4	21.2	21.2	21.2	21.3	21.4	21.6	21.8
13 - θ Eri	*Acamar*	3.3	**–40**	13.3	13.3	13.3	13.1	13.0	12.8	12.7	12.6	12.6	12.7	12.8	12.9
14 - α Cet	*Menkar*	2.5	**+4**	10.4	10.4	10.4	10.4	10.5	10.6	10.7	10.7	10.8	10.8	10.8	10.8
15 - β Per	*Algol*	2.1	**+41**	2.5	2.5	2.5	2.4	2.3	2.3	2.3	2.4	2.5	2.5	2.6	2.7
16 - α Per	*Mirfak*	1.8	**+49**	56.5	56.5	56.4	56.4	56.3	56.2	56.2	56.2	56.3	56.4	56.5	56.6
17 - η Tau	*Alcyone*	2.9	**+24**	10.4	10.4	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.5	10.6	10.6
18 - γ Eri	*Zaurak*	3.0	**–13**	26.9	27.0	27.0	26.9	26.8	26.7	26.6	26.5	26.5	26.5	26.6	26.6
19 - α Tau	*Aldebaran*	0.9	**+16**	33.2	33.1	33.1	33.1	33.1	33.2	33.2	33.3	33.3	33.3	33.3	33.3
20 - β Ori	*Rigel*	0.1	**–8**	10.7	10.7	10.8	10.7	10.7	10.6	10.5	10.4	10.3	10.4	10.4	10.5
21 - α Aur	*Capella*	0.1	**+46**	1.2	1.3	1.3	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.3
22 - γ Ori	*Bellatrix*	1.6	**+6**	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.3	22.3	22.3	22.3	22.2
23 - β Tau	*Elnath*	1.7	**+28**	37.5	37.6	37.6	37.5	37.5	37.5	37.5	37.5	37.5	37.6	37.6	37.6
24 - δ Ori	*Mintaka*	2.2	**–0**	17.1	17.1	17.1	17.1	17.1	17.0	16.9	16.8	16.8	16.8	16.9	16.9
25 - ε Ori	*Alnilam*	1.7	**–1**	11.4	11.4	11.4	11.4	11.4	11.3	11.2	11.1	11.1	11.1	11.2	11.2
26 - ζ Ori	*Alnitak*	1.9	**–1**	56.0	56.0	56.0	56.0	55.9	55.9	55.8	55.7	55.7	55.7	55.7	55.8
27 - κ Ori	*Saiph*	2.1	**–9**	39.8	39.9	39.9	39.9	39.8	39.7	39.6	39.5	39.5	39.5	39.6	39.7
28 - α Ori	*Betelgeuse*	0.4	**+7**	24.6	24.6	24.6	24.6	24.6	24.6	24.7	24.7	24.8	24.8	24.7	24.7
29 - β Aur	*Menkalinan*	1.9	**+44**	57.0	57.0	57.1	57.0	57.0	56.9	56.9	56.8	56.8	56.8	56.9	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**	42.5	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	22.8	22.9	22.8	22.8	22.8
33 - α CMa	*Sirius*	–1.5	**–16**	44.9	44.9	45.0	45.0	44.9	44.8	44.7	44.6	44.6	44.6	44.7	44.8
34 - ε CMa	*Adhara*	1.5	**–28**	60.2	60.3	60.4	60.4	60.3	60.2	60.1	59.9	59.9	59.9	59.9	60.1
35 - δ CMa	*Wezen*	1.9	**–26**	25.7	25.9	25.9	25.9	25.9	25.8	25.7	25.5	25.5	25.5	25.5	25.7
36 - η CMa	*Aludra*	2.5	**–29**	20.8	20.9	21.0	21.0	21.0	20.9	20.7	20.6	20.5	20.5	20.6	20.7
37 - α Gem	*Castor*	2.0	**+31**	50.3	50.4	50.4	50.5	50.5	50.4	50.4	50.4	50.3	50.3	50.2	50.2
38 - α CMi	*Procyon*	0.4	**+5**	10.1	10.0	10.0	10.0	10.0	10.1	10.1	10.2	10.2	10.1	10.1	10.0
39 - β Gem	*Pollux*	1.1	**+27**	58.3	58.3	58.4	58.4	58.4	58.4	58.4	58.3	58.3	58.3	58.2	58.2
40 - ζ Pup	*Naos*	2.3	**–40**	3.9	4.0	4.1	4.2	4.2	4.1	3.9	3.8	3.7	3.7	3.7	3.9
41 - γ Vel	*Regor*	1.8	**–47**	24.0	24.2	24.3	24.4	24.4	24.3	24.1	24.0	23.9	23.8	23.9	24.0
42 - ε Car	*Avior*	1.9	**–59**	34.7	34.9	35.0	35.1	35.1	35.0	34.9	34.7	34.6	34.5	34.6	34.7
43 - δ Velorum		2.0	**–54**	47.3	47.4	47.6	47.7	47.7	47.6	47.5	47.3	47.2	47.1	47.2	47.3
44 - ζ Hydrae		3.1	**+5**	51.7	51.6	51.6	51.6	51.6	51.7	51.7	51.7	51.7	51.7	51.6	51.5
45 - λ Vel	*Suhail*	2.2	**–43**	31.2	31.4	31.5	31.6	31.6	31.5	31.4	31.3	31.1	31.1	31.1	31.2
46 - β Car	*Miaplacidus*	1.7	**–69**	48.3	48.5	48.6	48.7	48.8	48.7	48.6	48.5	48.3	48.2	48.2	48.3
47 - ι Car	*Aspidiske*	2.3	**–59**	21.9	22.1	22.2	22.3	22.4	22.3	22.2	22.1	21.9	21.8	21.8	21.9
48 - α Lyn	*Elvashak*	3.1	**+34**	17.9	17.9	18.0	18.0	18.1	18.0	18.0	18.0	17.9	17.8	17.7	17.6
49 - α Hyd	*Alphard*	2.0	**–8**	45.2	45.3	45.4	45.4	45.4	45.4	45.3	45.2	45.2	45.2	45.3	45.4
50 - α Leo	*Regulus*	1.4	**+11**	51.5	51.5	51.5	51.5	51.5	51.6	51.6	51.6	51.6	51.5	51.4	51.3

Nº NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
		°	′	′	′	′	′	′	′	′	′	′	′	′
51 - μ Velorum	2.7	**198**	4.1	3.9	3.9	4.0	4.1	4.3	4.4	4.5	4.5	4.3	4.1	3.7
52 - ν Hydrae	3.1	**197**	19.3	19.1	19.1	19.1	19.2	19.3	19.3	19.4	19.3	19.2	19.0	18.7
53 - β UMa *Merak*	2.4	**194**	12.4	12.1	12.0	12.1	12.3	12.5	12.6	12.7	12.7	12.5	12.2	11.8
54 - α UMa *Dubhe*	1.8	**193**	43.6	43.3	43.2	43.3	43.5	43.8	43.9	44.0	44.0	43.8	43.5	43.0
55 - β Leo *Denebola*	2.1	**182**	27.3	27.1	27.0	27.0	27.0	27.1	27.2	27.2	27.2	27.2	27.0	26.7
56 - γ Crv *Gienah*	2.6	**175**	46.0	45.8	45.6	45.6	45.7	45.7	45.8	45.9	45.9	45.8	45.7	45.4
57 - α Cru *Acrux*	1.4	**173**	2.6	2.2	2.0	2.0	2.1	2.3	2.5	2.8	2.9	2.9	2.6	2.2
58 - γ Cru *Gacrux*	1.6	**171**	54.2	53.8	53.7	53.6	53.7	53.8	54.0	54.2	54.4	54.3	54.1	53.7
59 - γ Cen *Muhlifain*	2.2	**169**	19.1	18.8	18.6	18.5	18.6	18.7	18.8	19.0	19.1	19.0	18.9	18.6
60 - β Cru *Mimosa*	1.3	**167**	44.9	44.5	44.3	44.2	44.3	44.4	44.7	44.9	45.0	45.0	44.8	44.4
61 - ε UMa *Alioth*	1.8	**166**	15.1	14.7	14.5	14.4	14.5	14.7	14.9	15.1	15.2	15.2	15.0	14.7
62 - α^2 CVn *Cor Caroli*	2.9	**165**	44.2	44.0	43.8	43.7	43.8	43.9	44.0	44.1	44.2	44.1	44.0	43.8
63 - ε Vir *Vindemiatrix*	2.8	**164**	11.0	10.8	10.7	10.6	10.6	10.6	10.7	10.8	10.8	10.8	10.7	10.5
64 - ζ UMa *Mizar*	2.3	**158**	47.9	47.5	47.3	47.2	47.3	47.4	47.6	47.8	47.9	48.0	47.8	47.6
65 - α Vir *Spica*	1.0	**158**	24.9	24.6	24.5	24.4	24.4	24.4	24.4	24.5	24.6	24.6	24.5	24.3
66 - η UMa *Alkaid*	1.9	**152**	54.0	53.7	53.5	53.3	53.3	53.4	53.6	53.8	53.9	54.0	53.9	53.7
67 - β Cen *Hadar*	0.6	**148**	39.5	39.1	38.8	38.6	38.5	38.6	38.8	39.0	39.2	39.3	39.2	38.9
68 - θ Cen *Menkent*	2.1	**147**	60.5	60.3	60.0	59.9	59.8	59.9	59.9	60.1	60.2	60.2	60.1	59.9
69 - α Boo *Arcturus*	0.0	**145**	50.2	50.0	49.8	49.7	49.6	49.6	49.7	49.8	49.9	50.0	49.9	49.7
70 - α^1 Cen *Rigil Kentaurus*	0.0	**139**	43.9	43.5	43.1	42.9	42.8	42.8	43.0	43.3	43.5	43.6	43.6	43.3
71 - α^2 Lib *Zubenelgenubi*	2.8	**136**	58.8	58.6	58.4	58.2	58.1	58.1	58.1	58.2	58.4	58.4	58.4	58.2
72 - β UMi *Kochab*	2.1	**137**	20.3	19.6	19.0	18.7	18.6	18.9	19.4	19.9	20.5	20.9	21.0	20.7
73 - β Lib *Zubeneschamali*	2.6	**130**	27.4	27.2	27.0	26.8	26.7	26.7	26.7	26.8	26.9	27.0	26.9	26.8
74 - α CrB *Alphecca*	2.2	**126**	6.0	5.8	5.5	5.4	5.3	5.2	5.3	5.4	5.5	5.6	5.6	5.5
75 - α Ser *Unukalhai*	2.7	**123**	40.1	39.8	39.6	39.4	39.3	39.3	39.3	39.4	39.5	39.6	39.6	39.5
76 - α Sco *Antares*	0.9	**112**	19.1	18.8	18.6	18.4	18.2	18.1	18.1	18.2	18.3	18.4	18.4	18.3
77 - α TrA *Atria*	1.9	**107**	16.0	15.4	14.8	14.3	13.9	13.7	13.7	13.9	14.3	14.6	14.8	14.7
78 - ε Scorpii	2.3	**107**	6.7	6.4	6.1	5.9	5.7	5.6	5.5	5.6	5.8	5.9	5.9	5.8
79 - η Oph *Sabik*	2.4	**102**	5.9	5.6	5.4	5.2	5.0	4.9	4.8	4.9	5.0	5.1	5.2	5.1
80 - α Her *Rasalgethi*	3.1	**101**	5.7	5.5	5.2	5.0	4.9	4.7	4.7	4.8	4.9	5.0	5.1	5.1
81 - λ Sco *Shaula*	1.6	**96**	14.0	13.8	13.5	13.2	13.0	12.8	12.8	12.8	13.0	13.1	13.2	13.1
82 - α Oph *Rasalhague*	2.1	**96**	1.1	0.9	0.7	0.5	0.3	0.2	0.1	0.2	0.3	0.4	0.5	0.5
83 - θ Sco *Sargas*	1.9	**95**	17.1	16.9	16.6	16.3	16.0	15.8	15.7	15.8	16.0	16.1	16.2	16.2
84 - γ Dra *Eltanin*	2.2	**90**	43.8	43.6	43.3	43.0	42.8	42.6	42.6	42.8	43.0	43.3	43.5	43.5
85 - ε Sgr *Kaus Australis*	1.9	**83**	36.1	35.9	35.7	35.4	35.1	34.9	34.8	34.8	35.0	35.1	35.2	35.2
86 - α Lyr *Vega*	0.0	**80**	35.3	35.1	34.9	34.6	34.4	34.2	34.2	34.2	34.4	34.6	34.7	34.8
87 - σ Sgr *Nunki*	2.0	**75**	51.2	51.0	50.8	50.5	50.3	50.0	49.9	49.9	50.0	50.1	50.2	50.3
88 - α Aql *Altair*	0.8	**62**	2.7	2.6	2.4	2.2	1.9	1.7	1.6	1.6	1.6	1.8	1.9	1.9
89 - γ Cyg *Sadr*	2.2	**54**	15.3	15.2	15.1	14.8	14.6	14.3	14.2	14.2	14.2	14.4	14.6	14.7
90 - α Pav *Peacock*	1.9	**53**	10.2	10.0	9.8	9.4	9.0	8.6	8.4	8.3	8.3	8.5	8.8	8.9
91 - α Cyg *Deneb*	1.3	**49**	27.9	27.8	27.7	27.4	27.2	26.9	26.7	26.7	26.8	26.9	27.1	27.3
92 - α Cep *Alderamin*	2.4	**40**	14.3	14.3	14.2	13.9	13.5	13.1	12.8	12.8	12.9	13.1	13.5	13.8
93 - ε Peg *Enif*	0.7	**33**	41.5	41.4	41.4	41.2	41.0	40.7	40.5	40.4	40.4	40.5	40.6	40.6
94 - δ Cap *Deneb Algedi*	2.9	**32**	56.7	56.6	56.5	56.4	56.1	55.9	55.7	55.5	55.5	55.6	55.7	55.8
95 - α Gru *Al Na'ir*	1.7	**27**	36.4	36.4	36.3	36.0	35.8	35.4	35.1	34.9	34.9	35.0	35.1	35.3
96 - β Gruis	2.1	**18**	60.9	60.9	60.8	60.7	60.4	60.1	59.8	59.5	59.5	59.5	59.6	59.8
97 - α PsA *Fomalhaut*	1.2	**15**	17.5	17.5	17.4	17.3	17.1	16.8	16.5	16.4	16.3	16.3	16.4	16.5
98 - β Peg *Scheat*	2.4	**13**	47.8	47.8	47.8	47.7	47.5	47.2	47.0	46.8	46.7	46.7	46.8	46.9
99 - α Peg *Markab*	2.5	**13**	32.5	32.6	32.5	32.4	32.2	32.0	31.7	31.6	31.5	31.5	31.6	31.7

Nº	NOMBRE	Mag		Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
			°	′	′	′	′	′	′	′	′	′	′	′	′
51 -	μ Velorum	2.7	**–49**	32.0	32.1	32.3	32.4	32.5	32.5	32.4	32.3	32.2	32.1	32.1	32.1
52 -	ν Hydrae	3.1	**–16**	18.4	18.6	18.7	18.7	18.7	18.7	18.6	18.6	18.5	18.5	18.6	18.6
53 -	β UMa *Merak*	2.4	**+56**	15.7	15.7	15.8	16.0	16.1	16.1	16.0	15.9	15.8	15.6	15.4	15.4
54 -	α UMa *Dubhe*	1.8	**+61**	37.7	37.8	37.9	38.0	38.1	38.1	38.1	38.0	37.8	37.6	37.5	37.4
55 -	β Leo *Denebola*	2.1	**+14**	26.9	26.8	26.8	26.9	26.9	27.0	27.0	27.0	26.9	26.9	26.7	26.6
56 -	γ Crv *Gienah*	2.6	**–17**	39.7	39.8	39.9	40.0	40.0	40.0	40.0	39.9	39.9	39.9	39.9	40.0
57 -	α Cru *Acrux*	1.4	**–63**	12.9	13.1	13.2	13.4	13.5	13.6	13.6	13.5	13.4	13.3	13.2	13.2
58 -	γ Cru *Gacrux*	1.6	**–57**	13.9	14.0	14.2	14.3	14.5	14.5	14.5	14.5	14.3	14.2	14.1	14.1
59 -	γ Cen *Muhlifain*	2.2	**–49**	4.5	4.7	4.8	5.0	5.1	5.1	5.1	5.1	5.0	4.9	4.8	4.8
60 -	β Cru *Mimosa*	1.3	**–59**	48.2	48.3	48.5	48.7	48.8	48.9	48.9	48.8	48.7	48.6	48.5	48.5
61 -	ε UMa *Alioth*	1.8	**+55**	50.2	50.2	50.3	50.4	50.5	50.6	50.6	50.6	50.4	50.3	50.1	49.9
62 -	α^2 CVn *Cor Caroli*	2.9	**+38**	11.8	11.8	11.8	11.9	12.0	12.1	12.1	12.1	12.0	11.9	11.7	11.5
63 -	ε Vir *Vindemiatrix*	2.8	**+10**	50.4	50.3	50.3	50.3	50.4	50.4	50.5	50.5	50.5	50.4	50.3	50.2
64 -	ζ UMa *Mizar*	2.3	**+54**	48.4	48.4	48.4	48.6	48.7	48.8	48.8	48.8	48.7	48.5	48.3	48.2
65 -	α Vir *Spica*	1.0	**–11**	16.5	16.6	16.6	16.7	16.7	16.7	16.7	16.6	16.6	16.6	16.6	16.7
66 -	η UMa *Alkaid*	1.9	**+49**	12.0	12.0	12.0	12.1	12.3	12.4	12.4	12.4	12.3	12.1	11.9	11.8
67 -	β Cen *Hadar*	0.6	**–60**	28.4	28.5	28.6	28.8	28.9	29.0	29.1	29.1	29.0	28.9	28.7	28.7
68 -	θ Cen *Menkent*	2.1	**–36**	28.5	28.6	28.7	28.8	28.8	28.9	28.9	28.9	28.8	28.8	28.7	28.7
69 -	α Boo *Arcturus*	0.0	**+19**	4.0	3.9	3.9	3.9	4.0	4.1	4.1	4.1	4.1	4.0	3.9	3.8
70 -	α^1 Cen *Rigil Kentaurus*	0.0	**–60**	55.2	55.3	55.4	55.6	55.7	55.8	55.9	55.9	55.8	55.7	55.6	55.5
71 -	α^2 Lib *Zubenelgenubi*	2.8	**–16**	7.9	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.0	8.1
72 -	β UMi *Kochab*	2.1	**+74**	3.6	3.6	3.6	3.7	3.9	4.0	4.1	4.1	4.0	3.9	3.7	3.5
73 -	β Lib *Zubeneschamali*	2.6	**–9**	27.8	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	28.0
74 -	α CrB *Alphecca*	2.2	**+26**	38.3	38.2	38.2	38.3	38.4	38.5	38.5	38.6	38.6	38.5	38.4	38.2
75 -	α Ser *Unukalhai*	2.7	**+6**	21.4	21.3	21.2	21.2	21.3	21.4	21.4	21.4	21.5	21.4	21.3	21.2
76 -	α Sco *Antares*	0.9	**–26**	28.7	28.8	28.8	28.8	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
77 -	α TrA *Atria*	1.9	**–69**	3.8	3.7	3.7	3.8	3.9	4.1	4.2	4.3	4.3	4.2	4.1	4.0
78 -	ε Scorpii	2.3	**–34**	19.8	19.9	19.9	19.9	20.0	20.0	20.1	20.1	20.1	20.1	20.0	20.0
79 -	η Oph *Sabik*	2.4	**–15**	45.1	45.1	45.2	45.2	45.2	45.1	45.1	45.1	45.1	45.1	45.1	45.1
80 -	α Her *Rasalgethi*	3.1	**+14**	21.8	21.7	21.7	21.7	21.8	21.9	22.0	22.0	22.1	22.0	22.0	21.9
81 -	λ Sco *Shaula*	1.6	**–37**	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.3	7.3	7.3	7.2	7.2
82 -	α Oph *Rasalhague*	2.1	**+12**	32.6	32.5	32.4	32.5	32.5	32.6	32.7	32.8	32.8	32.8	32.7	32.6
83 -	θ Sco *Sargas*	1.9	**–43**	0.6	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.7
84 -	γ Dra *Eltanin*	2.2	**+51**	29.0	28.9	28.8	28.8	28.9	29.1	29.3	29.4	29.4	29.4	29.3	29.2
85 -	ε Sgr *Kaus Australis*	1.9	**–34**	22.4	22.4	22.4	22.4	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	48.5	48.5	48.5	48.5	48.3
87 -	σ Sgr *Nunki*	2.0	**–26**	16.2	16.2	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
88 -	α Aql *Altair*	0.8	**+8**	55.5	55.4	55.4	55.4	55.5	55.6	55.7	55.8	55.8	55.8	55.8	55.7
89 -	γ Cyg *Sadr*	2.2	**+40**	19.6	19.4	19.3	19.3	19.4	19.5	19.7	19.8	19.9	20.0	20.0	19.9
90 -	α Pav *Peacock*	1.9	**–56**	40.0	39.8	39.7	39.6	39.6	39.6	39.7	39.8	39.9	39.9	39.9	39.9
91 -	α Cyg *Deneb*	1.3	**+45**	21.5	21.4	21.3	21.2	21.3	21.4	21.5	21.7	21.8	21.9	21.9	21.9
92 -	α Cep *Alderamin*	2.4	**+62**	40.8	40.6	40.5	40.4	40.4	40.5	40.7	40.8	41.0	41.1	41.2	41.1
93 -	ε Peg *Enif*	0.7	**+9**	58.5	58.4	58.4	58.4	58.4	58.5	58.7	58.8	58.8	58.9	58.9	58.8
94 -	δ Cap *Deneb Algedi*	2.9	**–16**	1.8	1.8	1.8	1.7	1.6	1.5	1.5	1.4	1.4	1.5	1.5	1.5
95 -	α Gru *Al Na'ir*	1.7	**–46**	51.5	51.4	51.3	51.2	51.1	51.0	51.0	51.0	51.1	51.2	51.3	51.3
96 -	β Gruis	2.1	**–46**	46.5	46.4	46.2	46.1	46.0	45.9	45.9	45.9	46.0	46.1	46.2	46.2
97 -	α PsA *Fomalhaut*	1.2	**–29**	30.6	30.5	30.5	30.3	30.2	30.1	30.1	30.1	30.1	30.2	30.2	30.3
98 -	β Peg *Scheat*	2.4	**+28**	12.1	12.0	12.0	11.9	11.9	12.0	12.1	12.3	12.4	12.5	12.5	12.5
99 -	α Peg *Markab*	2.5	**+15**	19.4	19.3	19.3	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.8	19.8

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 24	15 22	13 32	11 30	9 32	7 30	5 33
2 - β	Cassiopeae	*Caph*	2.3	17 25	15 23	13 33	11 31	9 33	7 31	5 33
6 - β	Ceti	*Diphda*	2.0	17 59	15 57	14 07	12 05	10 07	8 06	6 08
9 - α	Eridani	*Achernar*	0.5	18 53	16 51	15 01	12 59	11 01	8 59	7 01
12 - α	Arietis	*Hamal*	2.0	19 23	17 21	15 31	13 29	11 31	9 29	7 31
13 - θ	Eridani	*Acamar*	3.3	20 13	18 11	16 21	14 19	12 21	10 20	8 22
16 - α	Persei	*Mirfak*	1.8	20 40	18 38	16 48	14 46	12 48	10 46	8 48
19 - α	Tauri	*Aldebaran*	0.9	21 51	19 49	17 59	15 57	13 59	11 57	9 59
20 - β	Orionis	*Rigel*	0.1	22 29	20 28	18 37	16 36	14 38	12 36	10 38
21 - α	Aurigae	*Capella*	0.1	22 32	20 30	18 40	16 38	14 40	12 38	10 40
22 - γ	Orionis	*Bellatrix*	1.6	22 40	20 38	18 48	16 46	14 48	12 46	10 48
28 - α	Orionis	*Betelgeuse*	0.4	23 10	21 08	19 18	17 16	15 18	13 16	11 18
31 - α	Carinae	*Canopus*	–0.7	23 38	21 36	19 46	17 44	15 46	13 44	11 46
33 - α	Canis Majoris	*Sirius*	–1.5	0 04	21 58	20 08	18 06	16 08	14 06	12 08
34 - ε	Canis Majoris	*Adhara*	1.5	0 17	22 11	20 21	18 19	16 21	14 19	12 21
38 - α	Canis Minoris	*Procyon*	0.4	0 58	22 52	21 02	19 00	17 02	15 00	13 02
39 - β	Geminorum	*Pollux*	1.1	1 04	22 58	21 08	19 06	17 08	15 06	13 08
42 - ε	Carinae	*Avior*	1.9	1 40	23 34	21 44	19 42	17 44	15 43	13 45
45 - λ	Velorum	*Suhail*	2.2	2 26	0 24	22 30	20 28	18 30	16 28	14 30
46 - β	Carinae	*Miaplacidus*	1.7	2 31	0 29	22 35	20 33	18 35	16 33	14 35
49 - α	Hydrae	*Alphard*	2.0	2 46	0 44	22 50	20 48	18 50	16 48	14 50
50 - α	Leonis	*Regulus*	1.4	3 26	1 25	23 31	21 29	19 31	17 29	15 31
54 - α	Ursae Majoris	*Dubhe*	1.8	4 22	2 20	0 30	22 24	20 26	18 24	16 26
55 - β	Leonis	*Denebola*	2.1	5 07	3 05	1 15	23 09	21 11	19 09	17 11
57 - α	Crucis	*Acrux*	1.4	5 44	3 43	1 52	23 47	21 49	19 47	17 49
58 - γ	Crucis	*Gacrux*	1.6	5 49	3 47	1 57	23 51	21 53	19 51	17 53
60 - β	Crucis	*Mimosa*	1.3	6 05	4 04	2 14	0 12	22 10	20 08	18 10
61 - ε	Ursae Majoris	*Alioth*	1.8	6 11	4 10	2 20	0 18	22 16	20 14	18 16
64 - ζ	Ursae Majoris	*Mizar*	2.3	6 41	4 39	2 49	0 47	22 45	20 44	18 46
65 - α	Virginis	*Spica*	1.0	6 43	4 41	2 51	0 49	22 47	20 45	18 47
68 - θ	Centauri	*Menkent*	2.1	7 24	5 22	3 32	1 30	23 29	21 27	19 29
69 - α	Bootis	*Arcturus*	0.0	7 33	5 31	3 41	1 39	23 37	21 35	19 37
70 - α^1	Centauri	*Rigil Kentaurus*	0.0	7 57	5 55	4 05	2 03	0 06	22 00	20 02
72 - β	Ursae Minoris	*Kochab*	2.1	8 07	6 05	4 15	2 13	0 15	22 09	20 11
74 - α	Coronae Borealis	*Alphecca*	2.2	8 52	6 50	5 00	2 58	1 00	22 54	20 56
76 - α	Scorpii	*Antares*	0.9	9 47	7 45	5 55	3 53	1 55	23 49	21 51
77 - α	Trianguli Aust.	*Atria*	1.9	10 07	8 05	6 15	4 13	2 15	0 13	22 11
81 - λ	Scorpii	*Shaula*	1.6	10 51	8 49	6 59	4 57	2 59	0 57	22 55
82 - α	Ophiuchi	*Rasalhague*	2.1	10 52	8 50	7 00	4 58	3 00	0 58	22 56
84 - γ	Draconis	*Eltanin*	2.2	11 13	9 11	7 21	5 19	3 21	1 19	23 17
85 - ε	Sagitarii	*Kaus Australis*	1.9	11 41	9 39	7 49	5 47	3 49	1 48	23 46
86 - α	Lyrae	*Vega*	0.0	11 53	9 51	8 01	5 59	4 01	2 00	0 02
87 - σ	Sagitarii	*Nunki*	2.0	12 12	10 10	8 20	6 18	4 20	2 18	0 20
88 - α	Aquilae	*Altair*	0.8	13 07	11 05	9 15	7 13	5 15	3 14	1 16
90 - α	Pavonis	*Peacock*	1.9	13 43	11 41	9 51	7 49	5 51	3 49	1 51
91 - α	Cygni	*Deneb*	1.3	13 57	11 55	10 05	8 03	6 06	4 04	2 06
93 - ε	Pegasi	*Enif*	0.7	15 00	12 58	11 08	9 06	7 08	5 07	3 09
95 - α	Gruis	*Al Na'ir*	1.7	15 25	13 23	11 33	9 31	7 33	5 31	3 33
97 - α	Piscis Austrini	*Fomalhaut*	1.2	16 14	14 12	12 22	10 20	8 22	6 20	4 22
99 - α	Pegasi	*Markab*	2.5	16 21	14 19	12 29	10 27	8 29	6 27	4 29

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 31	1 29	23 27	21 25	19 27
2 - β	Cassiopeae	*Caph*	2.3	3 31	1 30	23 28	21 26	19 28
6 - β	Ceti	*Diphda*	2.0	4 06	2 04	0 06	22 00	20 02
9 - α	Eridani	*Achernar*	0.5	4 59	2 58	1 00	22 54	20 56
12 - α	Arietis	*Hamal*	2.0	5 29	3 27	1 29	23 24	21 26
13 - θ	Eridani	*Acamar*	3.3	6 20	4 18	2 20	0 18	22 16
16 - α	Persei	*Mirfak*	1.8	6 46	4 45	2 47	0 45	22 43
19 - α	Tauri	*Aldebaran*	0.9	7 58	5 56	3 58	1 56	23 54
20 - β	Orionis	*Rigel*	0.1	8 36	6 34	4 36	2 34	0 36
21 - α	Aurigae	*Capella*	0.1	8 39	6 37	4 39	2 37	0 39
22 - γ	Orionis	*Bellatrix*	1.6	8 47	6 45	4 47	2 45	0 47
28 - α	Orionis	*Betelgeuse*	0.4	9 17	7 15	5 17	3 15	1 17
31 - α	Carinae	*Canopus*	–0.7	9 44	7 43	5 45	3 43	1 45
33 - α	Canis Majoris	*Sirius*	–1.5	10 06	8 04	6 06	4 04	2 06
34 - ε	Canis Majoris	*Adhara*	1.5	10 19	8 18	6 20	4 18	2 20
38 - α	Canis Minoris	*Procyon*	0.4	11 00	8 58	7 00	4 59	3 01
39 - β	Geminorum	*Pollux*	1.1	11 06	9 05	7 07	5 05	3 07
42 - ε	Carinae	*Avior*	1.9	11 43	9 41	7 43	5 41	3 43
45 - λ	Velorum	*Suhail*	2.2	12 28	10 27	8 29	6 27	4 29
46 - β	Carinae	*Miaplacidus*	1.7	12 33	10 31	8 33	6 31	4 33
49 - α	Hydrae	*Alphard*	2.0	12 48	10 46	8 48	6 47	4 49
50 - α	Leonis	*Regulus*	1.4	13 29	11 27	9 29	7 27	5 29
54 - α	Ursae Majoris	*Dubhe*	1.8	14 24	12 22	10 25	8 23	6 25
55 - β	Leonis	*Denebola*	2.1	15 09	13 07	11 10	9 08	7 10
57 - α	Crucis	*Acrux*	1.4	15 47	13 45	11 47	9 45	7 47
58 - γ	Crucis	*Gacrux*	1.6	15 51	13 50	11 52	9 50	7 52
60 - β	Crucis	*Mimosa*	1.3	16 08	14 06	12 08	10 06	8 08
61 - ε	Ursae Majoris	*Alioth*	1.8	16 14	14 12	12 14	10 12	8 14
64 - ζ	Ursae Majoris	*Mizar*	2.3	16 44	14 42	12 44	10 42	8 44
65 - α	Virginis	*Spica*	1.0	16 45	14 43	12 45	10 44	8 46
68 - θ	Centauri	*Menkent*	2.1	17 27	15 25	13 27	11 25	9 27
69 - α	Bootis	*Arcturus*	0.0	17 35	15 34	13 36	11 34	9 36
70 - α^1	Centauri	*Rigil Kentaurus*	0.0	18 00	15 58	14 00	11 58	10 00
72 - β	Ursae Minoris	*Kochab*	2.1	18 09	16 07	14 09	12 08	10 10
74 - α	Coronae Borealis	*Alphecca*	2.2	18 54	16 52	14 54	12 52	10 55
76 - α	Scorpii	*Antares*	0.9	19 49	17 47	15 49	13 47	11 49
77 - α	Trianguli Aust.	*Atria*	1.9	20 09	18 08	16 10	14 08	12 10
81 - λ	Scorpii	*Shaula*	1.6	20 53	18 51	16 54	14 52	12 54
82 - α	Ophiuchi	*Rasalhague*	2.1	20 54	18 52	16 54	14 52	12 55
84 - γ	Draconis	*Eltanin*	2.2	21 15	19 13	17 15	15 14	13 16
85 - ε	Sagitarii	*Kaus Australis*	1.9	21 44	19 42	17 44	15 42	13 44
86 - α	Lyrae	*Vega*	0.0	21 56	19 54	17 56	15 54	13 56
87 - σ	Sagitarii	*Nunki*	2.0	22 15	20 13	18 15	16 13	14 15
88 - α	Aquilae	*Altair*	0.8	23 10	21 08	19 10	17 08	15 10
90 - α	Pavonis	*Peacock*	1.9	23 45	21 43	19 45	17 43	15 45
91 - α	Cygni	*Deneb*	1.3	0 04	21 58	20 00	17 58	16 00
93 - ε	Pegasi	*Enif*	0.7	1 07	23 01	21 03	19 01	17 03
95 - α	Gruis	*Al Na'ir*	1.7	1 31	23 25	21 27	19 25	17 27
97 - α	Piscis Austrini	*Fomalhaut*	1.2	2 20	0 18	22 16	20 15	18 17
99 - α	Pegasi	*Markab*	2.5	2 27	0 25	22 23	20 21	18 24

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	–27.2	26 00	–36.4	52 00	–38.2	78 00	–32.3	104 00	–19.8	130 00	–3.4	156 00	+13.8
0 30	–27.5	26 30	–36.5	52 30	–38.2	78 30	–32.1	104 30	–19.5	130 30	–3.0	156 30	+14.1
1 00	–27.7	27 00	–36.6	53 00	–38.1	79 00	–31.9	105 00	–19.2	131 00	–2.7	157 00	+14.4
1 30	–27.9	27 30	–36.7	53 30	–38.1	79 30	–31.7	105 30	–19.0	131 30	–2.4	157 30	+14.7
2 00	–28.2	28 00	–36.8	54 00	–38.0	80 00	–31.5	106 00	–18.7	132 00	–2.0	158 00	+15.0
2 30	–28.4	28 30	–36.9	54 30	–38.0	80 30	–31.3	106 30	–18.4	132 30	–1.7	158 30	+15.4
3 00	–28.6	29 00	–37.0	55 00	–37.9	81 00	–31.1	107 00	–18.1	133 00	–1.3	159 00	+15.7
3 30	–28.8	29 30	–37.1	55 30	–37.9	81 30	–30.9	107 30	–17.8	133 30	–1.0	159 30	+16.0
4 00	–29.1	30 00	–37.2	56 00	–37.8	82 00	–30.7	108 00	–17.5	134 00	–0.7	160 00	+16.3
4 30	–29.3	30 30	–37.3	56 30	–37.7	82 30	–30.5	108 30	–17.2	134 30	–0.3	160 30	+16.6
5 00	–29.5	31 00	–37.4	57 00	–37.7	83 00	–30.3	109 00	–16.9	135 00	0.0	161 00	+16.9
5 30	–29.7	31 30	–37.4	57 30	–37.6	83 30	–30.1	109 30	–16.6	135 30	+ 0.3	161 30	+17.2
6 00	–29.9	32 00	–37.5	58 00	–37.5	84 00	–29.9	110 00	–16.3	136 00	+ 0.7	162 00	+17.5
6 30	–30.1	32 30	–37.6	58 30	–37.4	84 30	–29.7	110 30	–16.0	136 30	+ 1.0	162 30	+17.8
7 00	–30.3	33 00	–37.7	59 00	–37.4	85 00	–29.5	111 00	–15.7	137 00	+ 1.3	163 00	+18.1
7 30	–30.5	33 30	–37.7	59 30	–37.3	85 30	–29.3	111 30	–15.4	137 30	+ 1.7	163 30	+18.4
8 00	–30.7	34 00	–37.8	60 00	–37.2	86 00	–29.1	112 00	–15.0	138 00	+ 2.0	164 00	+18.7
8 30	–30.9	34 30	–37.9	60 30	–37.1	86 30	–28.8	112 30	–14.7	138 30	+ 2.3	164 30	+19.0
9 00	–31.1	35 00	–37.9	61 00	–37.0	87 00	–28.6	113 00	–14.4	139 00	+ 2.7	165 00	+19.2
9 30	–31.3	35 30	–38.0	61 30	–36.9	87 30	–28.4	113 30	–14.1	139 30	+ 3.0	165 30	+19.5
10 00	–31.5	36 00	–38.0	62 00	–36.8	88 00	–28.2	114 00	–13.8	140 00	+ 3.4	166 00	+19.8
10 30	–31.7	36 30	–38.1	62 30	–36.7	88 30	–27.9	114 30	–13.5	140 30	+ 3.7	166 30	+20.1
11 00	–31.9	37 00	–38.1	63 00	–36.6	89 00	–27.7	115 00	–13.2	141 00	+ 4.0	167 00	+20.4
11 30	–32.1	37 30	–38.2	63 30	–36.5	89 30	–27.5	115 30	–12.9	141 30	+ 4.4	167 30	+20.7
12 00	–32.3	38 00	–38.2	64 00	–36.4	90 00	–27.2	116 00	–12.5	142 00	+ 4.7	168 00	+21.0
12 30	–32.5	38 30	–38.2	64 30	–36.3	90 30	–27.0	116 30	–12.2	142 30	+ 5.0	168 30	+21.2
13 00	–32.6	39 00	–38.3	65 00	–36.2	91 00	–26.7	117 00	–11.9	143 00	+ 5.4	169 00	+21.5
13 30	–32.8	39 30	–38.3	65 30	–36.1	91 30	–26.5	117 30	–11.6	143 30	+ 5.7	169 30	+21.8
14 00	–33.0	40 00	–38.4	66 00	–35.9	92 00	–26.3	118 00	–11.3	144 00	+ 6.0	170 00	+22.1
14 30	–33.2	40 30	–38.4	66 30	–35.8	92 30	–26.0	118 30	–10.9	144 30	+ 6.4	170 30	+22.4
15 00	–33.3	41 00	–38.4	67 00	–35.7	93 00	–25.8	119 00	–10.6	145 00	+ 6.7	171 00	+22.6
15 30	–33.5	41 30	–38.4	67 30	–35.6	93 30	–25.5	119 30	–10.3	145 30	+ 7.0	171 30	+22.9
16 00	–33.7	42 00	–38.4	68 00	–35.4	94 00	–25.3	120 00	–10.0	146 00	+ 7.3	172 00	+23.2
16 30	–33.8	42 30	–38.5	68 30	–35.3	94 30	–25.0	120 30	–9.6	146 30	+ 7.7	172 30	+23.4
17 00	–34.0	43 00	–38.5	69 00	–35.2	95 00	–24.7	121 00	–9.3	147 00	+ 8.0	173 00	+23.7
17 30	–34.1	43 30	–38.5	69 30	–35.0	95 30	–24.5	121 30	–9.0	147 30	+ 8.3	173 30	+24.0
18 00	–34.3	44 00	–38.5	70 00	–34.9	96 00	–24.2	122 00	–8.7	148 00	+ 8.7	174 00	+24.2
18 30	–34.5	44 30	–38.5	70 30	–34.7	96 30	–24.0	122 30	–8.3	148 30	+ 9.0	174 30	+24.5
19 00	–34.6	45 00	–38.5	71 00	–34.6	97 00	–23.7	123 00	–8.0	149 00	+ 9.3	175 00	+24.7
19 30	–34.7	45 30	–38.5	71 30	–34.5	97 30	–23.4	123 30	–7.7	149 30	+ 9.6	175 30	+25.0
20 00	–34.9	46 00	–38.5	72 00	–34.3	98 00	–23.2	124 00	–7.3	150 00	+10.0	176 00	+25.3
20 30	–35.0	46 30	–38.5	72 30	–34.1	98 30	–22.9	124 30	–7.0	150 30	+10.3	176 30	+25.5
21 00	–35.2	47 00	–38.5	73 00	–34.0	99 00	–22.6	125 00	–6.7	151 00	+10.6	177 00	+25.8
21 30	–35.3	47 30	–38.5	73 30	–33.8	99 30	–22.4	125 30	–6.4	151 30	+10.9	177 30	+26.0
22 00	–35.4	48 00	–38.4	74 00	–33.7	100 00	–22.1	126 00	–6.0	152 00	+11.3	178 00	+26.3
22 30	–35.6	48 30	–38.4	74 30	–33.5	100 30	–21.8	126 30	–5.7	152 30	+11.6	178 30	+26.5
23 00	–35.7	49 00	–38.4	75 00	–33.3	101 00	–21.5	127 00	–5.4	153 00	+11.9	179 00	+26.7
23 30	–35.8	49 30	–38.4	75 30	–33.2	101 30	–21.2	127 30	–5.0	153 30	+12.2	179 30	+27.0
24 00	–35.9	50 00	–38.4	76 00	–33.0	102 00	–21.0	128 00	–4.7	154 00	+12.5	180 00	+27.2
24 30	–36.1	50 30	–38.3	76 30	–32.8	102 30	–20.7	128 30	–4.4	154 30	+12.8	180 30	+27.5
25 00	–36.2	51 00	–38.3	77 00	–32.6	103 00	–20.4	129 00	–4.0	155 00	+13.2	181 00	+27.7
25 30	–36.3	51 30	–38.2	77 30	–32.5	103 30	–20.1	129 30	–3.7	155 30	+13.5	181 30	+27.9
26 00	–36.4	52 00	–38.2	78 00	–32.3	104 00	–19.8	130 00	–3.4	156 00	+13.8	182 00	+28.2

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	+28.2	208 00	+36.8	234 00	+38.0	260 00	+31.5	286 00	+18.7	312 00	+ 2.0	338 00	–15.0
182 30	+28.4	208 30	+36.9	234 30	+38.0	260 30	+31.3	286 30	+18.4	312 30	+ 1.7	338 30	–15.4
183 00	+28.6	209 00	+37.0	235 00	+37.9	261 00	+31.1	287 00	+18.1	313 00	+ 1.3	339 00	–15.7
183 30	+28.8	209 30	+37.1	235 30	+37.9	261 30	+30.9	287 30	+17.8	313 30	+ 1.0	339 30	–16.0
184 00	+29.1	210 00	+37.2	236 00	+37.8	262 00	+30.7	288 00	+17.5	314 00	+ 0.7	340 00	–16.3
184 30	+29.3	210 30	+37.3	236 30	+37.7	262 30	+30.5	288 30	+17.2	314 30	+ 0.3	340 30	–16.6
185 00	+29.5	211 00	+37.4	237 00	+37.7	263 00	+30.3	289 00	+16.9	315 00	0.0	341 00	–16.9
185 30	+29.7	211 30	+37.4	237 30	+37.6	263 30	+30.1	289 30	+16.6	315 30	–0.3	341 30	–17.2
186 00	+29.9	212 00	+37.5	238 00	+37.5	264 00	+29.9	290 00	+16.3	316 00	–0.7	342 00	–17.5
186 30	+30.1	212 30	+37.6	238 30	+37.4	264 30	+29.7	290 30	+16.0	316 30	–1.0	342 30	–17.8
187 00	+30.3	213 00	+37.7	239 00	+37.4	265 00	+29.5	291 00	+15.7	317 00	–1.3	343 00	–18.1
187 30	+30.5	213 30	+37.7	239 30	+37.3	265 30	+29.3	291 30	+15.4	317 30	–1.7	343 30	–18.4
188 00	+30.7	214 00	+37.8	240 00	+37.2	266 00	+29.1	292 00	+15.0	318 00	–2.0	344 00	–18.7
188 30	+30.9	214 30	+37.9	240 30	+37.1	266 30	+28.8	292 30	+14.7	318 30	–2.3	344 30	–19.0
189 00	+31.1	215 00	+37.9	241 00	+37.0	267 00	+28.6	293 00	+14.4	319 00	–2.7	345 00	–19.2
189 30	+31.3	215 30	+38.0	241 30	+36.9	267 30	+28.4	293 30	+14.1	319 30	–3.0	345 30	–19.5
190 00	+31.5	216 00	+38.0	242 00	+36.8	268 00	+28.2	294 00	+13.8	320 00	–3.4	346 00	–19.8
190 30	+31.7	216 30	+38.1	242 30	+36.7	268 30	+27.9	294 30	+13.5	320 30	–3.7	346 30	–20.1
191 00	+31.9	217 00	+38.1	243 00	+36.6	269 00	+27.7	295 00	+13.2	321 00	–4.0	347 00	–20.4
191 30	+32.1	217 30	+38.2	243 30	+36.5	269 30	+27.5	295 30	+12.9	321 30	–4.4	347 30	–20.7
192 00	+32.3	218 00	+38.2	244 00	+36.4	270 00	+27.2	296 00	+12.5	322 00	–4.7	348 00	–21.0
192 30	+32.5	218 30	+38.2	244 30	+36.3	270 30	+27.0	296 30	+12.2	322 30	–5.0	348 30	–21.2
193 00	+32.6	219 00	+38.3	245 00	+36.2	271 00	+26.7	297 00	+11.9	323 00	–5.4	349 00	–21.5
193 30	+32.8	219 30	+38.3	245 30	+36.1	271 30	+26.5	297 30	+11.6	323 30	–5.7	349 30	–21.8
194 00	+33.0	220 00	+38.4	246 00	+35.9	272 00	+26.3	298 00	+11.3	324 00	–6.0	350 00	–22.1
194 30	+33.2	220 30	+38.4	246 30	+35.8	272 30	+26.0	298 30	+10.9	324 30	–6.4	350 30	–22.4
195 00	+33.3	221 00	+38.4	247 00	+35.7	273 00	+25.8	299 00	+10.6	325 00	–6.7	351 00	–22.6
195 30	+33.5	221 30	+38.4	247 30	+35.6	273 30	+25.5	299 30	+10.3	325 30	–7.0	351 30	–22.9
196 00	+33.7	222 00	+38.4	248 00	+35.4	274 00	+25.3	300 00	+10.0	326 00	–7.3	352 00	–23.2
196 30	+33.8	222 30	+38.5	248 30	+35.3	274 30	+25.0	300 30	+ 9.6	326 30	–7.7	352 30	–23.4
197 00	+34.0	223 00	+38.5	249 00	+35.2	275 00	+24.7	301 00	+ 9.3	327 00	–8.0	353 00	–23.7
197 30	+34.1	223 30	+38.5	249 30	+35.0	275 30	+24.5	301 30	+ 9.0	327 30	–8.3	353 30	–24.0
198 00	+34.3	224 00	+38.5	250 00	+34.9	276 00	+24.2	302 00	+ 8.7	328 00	–8.7	354 00	–24.2
198 30	+34.5	224 30	+38.5	250 30	+34.7	276 30	+24.0	302 30	+ 8.3	328 30	–9.0	354 30	–24.5
199 00	+34.6	225 00	+38.5	251 00	+34.6	277 00	+23.7	303 00	+ 8.0	329 00	–9.3	355 00	–24.7
199 30	+34.7	225 30	+38.5	251 30	+34.5	277 30	+23.4	303 30	+ 7.7	329 30	–9.6	355 30	–25.0
200 00	+34.9	226 00	+38.5	252 00	+34.3	278 00	+23.2	304 00	+ 7.3	330 00	–10.0	356 00	–25.3
200 30	+35.0	226 30	+38.5	252 30	+34.1	278 30	+22.9	304 30	+ 7.0	330 30	–10.3	356 30	–25.5
201 00	+35.2	227 00	+38.5	253 00	+34.0	279 00	+22.6	305 00	+ 6.7	331 00	–10.6	357 00	–25.8
201 30	+35.3	227 30	+38.5	253 30	+33.8	279 30	+22.4	305 30	+ 6.4	331 30	–10.9	357 30	–26.0
202 00	+35.4	228 00	+38.4	254 00	+33.7	280 00	+22.1	306 00	+ 6.0	332 00	–11.3	358 00	–26.3
202 30	+35.6	228 30	+38.4	254 30	+33.5	280 30	+21.8	306 30	+ 5.7	332 30	–11.6	358 30	–26.5
203 00	+35.7	229 00	+38.4	255 00	+33.3	281 00	+21.5	307 00	+ 5.4	333 00	–11.9	359 00	–26.7
203 30	+35.8	229 30	+38.4	255 30	+33.2	281 30	+21.2	307 30	+ 5.0	333 30	–12.2	359 30	–27.0
204 00	+35.9	230 00	+38.4	256 00	+33.0	282 00	+21.0	308 00	+ 4.7	334 00	–12.5	360 00	–27.2
204 30	+36.1	230 30	+38.3	256 30	+32.8	282 30	+20.7	308 30	+ 4.4	334 30	–12.8		
205 00	+36.2	231 00	+38.3	257 00	+32.6	283 00	+20.4	309 00	+ 4.0	335 00	–13.2		
205 30	+36.3	231 30	+38.2	257 30	+32.5	283 30	+20.1	309 30	+ 3.7	335 30	–13.5		
206 00	+36.4	232 00	+38.2	258 00	+32.3	284 00	+19.8	310 00	+ 3.4	336 00	–13.8		
206 30	+36.5	232 30	+38.2	258 30	+32.1	284 30	+19.5	310 30	+ 3.0	336 30	–14.1		
207 00	+36.6	233 00	+38.1	259 00	+31.9	285 00	+19.2	311 00	+ 2.7	337 00	–14.4		
207 30	+36.7	233 30	+38.1	259 30	+31.7	285 30	+19.0	311 30	+ 2.4	337 30	–14.7		
208 00	+36.8	234 00	+38.0	260 00	+31.5	286 00	+18.7	312 00	+ 2.0	338 00	–15.0		

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	0.0	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	0.3	0.4
140	0.0	0.1	0.1	0.1	0.1	0.1	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	0.0	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	0.3	0.4
320	0.0	0.1	0.1	0.1	0.1	0.1	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	–0.2	–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	–0.1	+0.1	+0.3
80	+0.1	+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	0.0	+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	–0.5	–0.5
180	–0.1	–0.1	0.0	+0.2	+0.3	+0.4	+0.4	+0.2	+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	+0.1	–0.1	–0.3
260	–0.1	–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	0.0	–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	+0.5	+0.5
360	+0.1	+0.1	0.0	–0.2	–0.3	–0.4	–0.4	–0.2	–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	+0.7	+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	+0.6	+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	–0.7	–0.9	**80**
90	–0.5	–0.5	–0.5	–0.5	–0.5	–0.6	–0.6	–0.6	–0.7	–0.8	–0.9	–1.1	**90**
100	–0.5	–0.5	–0.6	–0.6	–0.6	–0.6	–0.7	–0.7	–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	–1.2	–1.5	**120**
130	–0.6	–0.7	–0.7	–0.7	–0.7	–0.8	–0.8	–0.9	–1.0	–1.1	–1.3	–1.5	**130**
140	–0.6	–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	–0.4	–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	+0.4	+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	+1.0	+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	+0.6	+0.7	+0.7	+0.7	+0.7	+0.8	+0.8	+0.9	+1.0	+1.1	+1.3	+1.5	**310**
320	+0.6	+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	+1.2	+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	+0.7	+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 (2022)

Ene 1	+0′.3
Ene 23	+0′.2
Feb 27	+0′.1
Mar 23	0′.0
Abr 13	–0′.1
May 7	–0′.2
Jun 12	–0′.3
Jul 28	–0′.2
Sep 2	–0′.1
Sep 26	0′.0
Oct 18	+0′.1
Nov 10	+0′.2
Dic 16	+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 (2022)

Fechas	Venus para cualquier altura	Marte Altura aparente < 30°	> 30° < 60°	> 60°
Ene 1	+0′.5	+0′.1	0′.0	0′.0
Ene 22	+0′.4	+0′.1	0′.0	0′.0
Feb 7	+0′.3	+0′.1	0′.0	0′.0
Feb 16	+0′.3	+0′.1	+0′.1	0′.0
Mar 1	+0′.2	+0′.1	+0′.1	0′.0
Abr 16	+0′.1	+0′.1	+0′.1	0′.0
Ago 24	+0′.1	+0′.1	+0′.1	+0′.1
Sep 8	+0′.1	+0′.2	+0′.1	+0′.1
Oct 17	+0′.1	+0′.2	+0′.2	+0′.1
Nov 22	+0′.1	+0′.3	+0′.2	+0′.1
Dic 9	+0′.1	+0′.2	+0′.2	+0′.1
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)