

Topocentric ephemeris of the Moon

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
1	2027 01 01	00:00	13h 25m 32,8s	-14° 12' 39"	Vir	394084	22d 23h 08m	-10,84	1819	37,1	74,9° W	74,9°	02:12	07:31	12:41	33,2°	289,1°	68,0°
2	2027 01 02	00:00	14h 13m 18,2s	-18° 56' 31"	Vir	399764	23d 23h 08m	-10,49	1793	27,9	63,5° W	63,6°	03:17	08:17	13:09	28,5°	295,8°	61,9°
3	2027 01 03	00:00	15h 2m 29,0s	-22° 48' 17"	Lib	404427	24d 23h 08m	-10,11	1773	19,7	52,3° W	52,5°	04:22	09:04	13:42	24,8°	301,3°	57,0°
4	2027 01 04	00:00	15h 53m 17,4s	-25° 38' 54"	Sco	408027	25d 23h 08m	-9,70	1757	12,7	41,4° W	41,7°	05:24	09:54	14:21	22,3°	305,3°	53,7°
5	2027 01 05	00:00	16h 45m 27,4s	-27° 20' 44"	Sco	410581	26d 23h 08m	-9,26	1746	7,2	30,6° W	30,9°	06:22	10:45	15:07	21,0°	307,4°	52,3°
6	2027 01 06	00:00	17h 38m 16,5s	-27° 48' 52"	Oph	412139	27d 23h 08m	-8,79	1740	3,1	19,9° W	20,3°	07:14	11:36	16:00	21,2°	307,6°	52,9°
7	2027 01 07	00:00	18h 30m 46,2s	-27° 2' 25"	Sgr	412763	28d 23h 08m	-8,28	1737	0,8	9,2° W	9,9°	07:58	12:27	16:59	22,7°	305,7°	55,4°
8	2027 01 08	00:00	19h 22m 0,3s	-25° 5' 1"	Sgr	412504	0d 3h 36m	-7,93	1738	0,1	1,4° E	3,3°	08:35	13:15	18:00	25,4°	302,2°	59,6°
9	2027 01 09	00:00	20h 11m 20,7s	-22° 4' 6"	Cap	411392	1d 3h 36m	-8,41	1743	1,1	12,1° E	12,3°	09:06	14:01	19:03	29,2°	297,2°	65,1°
10	2027 01 10	00:00	20h 58m 35,6s	-18° 9' 24"	Cap	409429	2d 3h 36m	-8,92	1751	3,9	22,8° E	22,8°	09:33	14:45	20:05	33,8°	291,2°	71,7°
11	2027 01 11	00:00	21h 43m 59,0s	-13° 31' 31"	Cap	406600	3d 3h 36m	-9,40	1763	8,4	33,6° E	33,6°	09:56	15:27	21:07	39,1°	284,4°	78,9°
12	2027 01 12	00:00	22h 28m 4,6s	-8° 20' 58"	Aqr	402881	4d 3h 36m	-9,84	1780	14,4	44,5° E	44,5°	10:17	16:08	22:09	44,8°	277,1°	86,6°
13	2027 01 13	00:00	23h 11m 40,5s	-2° 47' 51"	Psc	398267	5d 3h 36m	-10,24	1800	21,9	55,6° E	55,7°	10:38	16:49	23:12	50,8°	269,4°	94,6°
14	2027 01 14	00:00	23h 55m 45,6s	+2° 57' 38"	Psc	392790	6d 3h 36m	-10,62	1825	30,6	67,0° E	67,0°	10:59	17:32		50,8°	261,7°	94,6°
15	2027 01 15	00:00	0h 41m 27,4s	+8° 44' 16"	Psc	386555	7d 3h 36m	-10,97	1855	40,4	78,7° E	78,8°	11:22	18:17	00:16	56,8°	254,0°	102,5°
16	2027 01 16	00:00	1h 30m 0,0s	+14° 18' 25"	Psc	379764	8d 3h 36m	-11,30	1888	50,9	90,9° E	90,9°	11:49	19:07	01:25	62,7°	246,7°	110,3°
17	2027 01 17	00:00	2h 22m 37,8s	+19° 22' 16"	Ari	372732	9d 3h 36m	-11,60	1923	61,7	103,5° E	103,4°	12:23	20:01	02:36	68,1°	240,2°	117,3°
18	2027 01 18	00:00	3h 20m 19,1s	+23° 32' 42"	Ari	365895	10d 3h 36m	-11,89	1959	72,4	116,5° E	116,4°	13:05	21:02	03:51	72,6°	235,3°	123,1°
19	2027 01 19	00:00	4h 23m 16,3s	+26° 22' 11"	Tau	359785	11d 3h 36m	-12,15	1993	82,2	130,1° E	129,9°	14:00	22:07	05:05	75,7°	232,7°	126,7°
20	2027 01 20	00:00	5h 30m 20,1s	+27° 23' 55"	Tau	354973	12d 3h 36m	-12,38	2020	90,4	144,1° E	143,9°	15:08	23:13	06:13	76,9°	233,1°	127,4°
21	2027 01 21	00:00	6h 38m 54,7s	+26° 21' 18"	Gem	351989	13d 3h 36m	-12,60	2037	96,4	158,4° E	158,2°	16:27		07:11	75,8°	236,8°	124,9°
22	2027 01 22	00:00	7h 45m 52,5s	+23° 16' 26"	Gem	351215	14d 3h 36m	-12,79	2041	99,6	172,8° E	172,6°	17:49	00:18	07:57	67,5°	243,2°	119,5°
23	2027 01 23	00:00	8h 48m 56,9s	+18° 30' 23"	Cnc	352797	15d 3h 36m	-12,80	2032	99,6	172,8° W	172,7°	19:10	01:19	08:34	61,3°	251,3°	112,2°
24	2027 01 24	00:00	9h 47m 22,0s	+12° 35' 16"	Leo	356604	16d 3h 36m	-12,59	2010	96,6	158,6° W	158,6°	20:27	02:14	09:04	54,5°	260,3°	103,8°
25	2027 01 25	00:00	10h 41m 35,9s	+6° 4' 25"	Sex	362256	17d 3h 36m	-12,37	1979	90,9	144,8° W	144,7°	21:40	03:05	09:30	47,6°	269,4°	95,0°
26	2027 01 26	00:00	11h 32m 44,1s	-0° 33' 26"	Leo	369198	18d 3h 36m	-12,13	1942	83,1	131,4° W	131,4°	22:51	03:53	09:54	41,1°	278,2°	86,3°
27	2027 01 27	00:00	12h 22m 1,5s	-6° 56' 0"	Vir	376808	19d 3h 36m	-11,88	1903	74,0	118,6° W	118,5°	23:59	04:40	10:18	35,1°	286,4°	78,0°
28	2027 01 28	00:00	13h 10m 38,3s	-12° 46' 42"	Vir	384483	20d 3h 36m	-11,61	1865	64,1	106,3° W	106,2°		05:26	10:43	30,0°	293,6°	70,4°
29	2027 01 29	00:00	13h 59m 32,5s	-17° 52' 56"	Vir	391711	21d 3h 36m	-11,33	1830	54,0	94,4° W	94,4°	01:07	06:12	11:10	30,0°	293,6°	63,8°
30	2027 01 30	00:00	14h 49m 24,8s	-22° 4' 38"	Lib	398099	22d 3h 36m	-11,02	1801	44,0	82,9° W	83,0°	02:13	07:00	11:42	25,8°	299,7°	58,4°
31	2027 01 31	00:00	15h 40m 33,9s	-25° 13' 21"	Lib	403383	23d 3h 36m	-10,71	1777	34,6	71,8° W	71,9°	03:16	07:50	12:19	22,9°	304,3°	54,5°
32	2027 02 01	00:00	16h 32m 52,3s	-27° 12' 22"	Sco	407423	24d 3h 36m	-10,36	1760	25,9	60,9° W	61,0°	04:16	08:41	13:03	21,2°	307,0°	52,4°
33	2027 02 02	00:00	17h 25m 47,1s	-27° 57' 21"	Oph	410180	25d 3h 36m	-10,00	1748	18,1	50,1° W	50,3°	05:10	09:32	13:54	20,9°	307,8°	52,4°
34	2027 02 03	00:00	18h 18m 28,6s	-27° 27' 19"	Sgr	411695	26d 3h 36m	-9,60	1741	11,5	39,4° W	39,6°	05:57	10:22	14:51	22,0°	306,6°	54,3°
35	2027 02 04	00:00	19h 10m 4,6s	-25° 45' 11"	Sgr	412064	27d 3h 36m	-9,16	1740	6,3	28,8° W	29,0°	06:36	11:12	15:52	24,3°	303,6°	58,0°
36	2027 02 05	00:00	19h 59m 56,6s	-22° 57' 23"	Sgr	411411	28d 3h 36m	-8,68	1743	2,5	18,1° W	18,3°	07:09	11:59	16:54	27,8°	299,0°	63,1°
37	2027 02 06	00:00	20h 47m 48,4s	-19° 12' 55"	Cap	409866	29d 3h 36m	-8,16	1749	0,4	7,4° W	7,5°	07:37	12:43	17:57	32,2°	293,3°	69,5°
38	2027 02 07	00:00	21h 33m 47,2s	-14° 42' 8"	Cap	407546	0d 8h 04m	-7,98	1759	0,1	3,4° E	3,4°	08:01	13:26	18:59	37,3°	286,6°	76,6°
39	2027 02 08	00:00	22h 18m 19,7s	-9° 35' 56"	Aqr	404545	1d 8h 04m	-8,55	1772	1,6	14,4° E	14,4°	08:23	14:08	20:02	43,0°	279,4°	84,2°
40	2027 02 09	00:00	23h 2m 6,9s	-4° 5' 18"	Aqr	400931	2d 8h 04m	-9,08	1788	4,9	25,5° E	25,5°	08:44	14:49	21:05	49,0°	271,8°	92,2°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
41	2027 02 10	00:00	23h 45m 59,8s	+1° 38' 37"	Psc	396748	3d 8h 04m	-9,58	1807	10,1	36,8° E	36,9°	09:05	15:31	22:09	55,0°	264,0°	100,2°
42	2027 02 11	00:00	0h 30m 56,8s	+7° 24' 1"	Psc	392035	4d 8h 04m	-10,03	1829	16,9	48,4° E	48,5°	09:27	16:15	23:15	61,0°	256,3°	107,9°
43	2027 02 12	00:00	1h 18m 1,8s	+12° 57' 37"	Psc	386850	5d 8h 04m	-10,44	1853	25,3	60,2° E	60,3°	09:52	17:02		61,0°	248,9°	107,9°
44	2027 02 13	00:00	2h 8m 19,6s	+18° 3' 37"	Ari	381290	6d 8h 04m	-10,82	1880	35,0	72,4° E	72,5°	10:22	17:54	00:24	66,4°	242,3°	115,1°
45	2027 02 14	00:00	3h 2m 45,8s	+22° 22' 49"	Ari	375526	7d 8h 04m	-11,17	1909	45,7	84,9° E	84,9°	10:59	18:50	01:36	71,2°	236,9°	121,3°
46	2027 02 15	00:00	4h 1m 46,8s	+25° 32' 50"	Tau	369813	8d 8h 04m	-11,49	1939	56,9	97,8° E	97,8°	11:48	19:51	02:48	74,7°	233,4°	125,6°
47	2027 02 16	00:00	5h 4m 53,9s	+27° 10' 31"	Tau	364501	9d 8h 04m	-11,78	1967	68,0	111,0° E	111,0°	12:48	20:54	03:57	76,7°	232,5°	127,6°
48	2027 02 17	00:00	6h 10m 28,5s	+26° 57' 40"	Gem	360012	10d 8h 04m	-12,05	1991	78,4	124,6° E	124,6°	13:59	21:58	04:57	76,6°	234,6°	126,5°
49	2027 02 18	00:00	7h 16m 4,4s	+24° 48' 1"	Gem	356792	11d 8h 04m	-12,28	2009	87,5	138,5° E	138,4°	15:18	22:59	05:47	74,5°	239,6°	122,6°
50	2027 02 19	00:00	8h 19m 25,0s	+20° 50' 50"	Cnc	355240	12d 8h 04m	-12,49	2018	94,4	152,6° E	152,5°	16:38	23:56	06:27	70,4°	246,8°	116,3°
51	2027 02 20	00:00	9h 19m 13,6s	+15° 28' 42"	Cnc	355628	13d 8h 04m	-12,68	2016	98,7	166,7° E	166,7°	17:57		07:00	58,2°	255,3°	108,5°
52	2027 02 21	00:00	10h 15m 22,7s	+9° 11' 2"	Leo	358028	14d 8h 04m	-12,83	2002	100,0	179,3° W	178,3°	19:13	00:50	07:28	51,2°	264,5°	99,8°
53	2027 02 22	00:00	11h 8m 32,7s	+2° 27' 58"	Leo	362288	15d 8h 04m	-12,64	1979	98,4	165,5° W	165,3°	20:27	01:40	07:54	44,3°	273,7°	90,8°
54	2027 02 23	00:00	11h 59m 45,6s	-4° 13' 35"	Vir	368050	16d 8h 04m	-12,43	1948	94,1	152,1° W	151,9°	21:38	02:28	08:18	37,9°	282,5°	82,1°
55	2027 02 24	00:00	12h 50m 5,9s	-10° 31' 24"	Vir	374813	17d 8h 04m	-12,21	1913	87,7	139,1° W	138,9°	22:48	03:15	08:43	32,2°	290,5°	73,9°
56	2027 02 25	00:00	13h 40m 30,1s	-16° 7' 57"	Vir	382015	18d 8h 04m	-11,97	1877	79,8	126,6° W	126,4°	23:57	04:03	09:10	27,4°	297,3°	66,6°
57	2027 02 26	00:00	14h 31m 39,2s	-20° 49' 42"	Lib	389106	19d 8h 04m	-11,73	1843	70,8	114,6° W	114,5°		04:52	09:40	23,9°	302,6°	60,5°
58	2027 02 27	00:00	15h 23m 52,6s	-24° 26' 21"	Lib	395605	20d 8h 04m	-11,47	1812	61,3	103,0° W	102,9°	01:03	05:42	10:16	23,9°	302,6°	55,9°
59	2027 02 28	00:00	16h 17m 4,5s	-26° 50' 35"	Sco	401138	21d 8h 04m	-11,20	1787	51,6	91,7° W	91,7°	02:06	06:33	10:58	21,7°	306,2°	53,0°
60	2027 03 01	00:00	17h 10m 44,4s	-27° 58' 17"	Oph	405446	22d 8h 04m	-10,92	1768	42,1	80,7° W	80,7°	03:03	07:25	11:47	20,9°	307,8°	52,2°
61	2027 03 02	00:00	18h 4m 5,4s	-27° 48' 56"	Sgr	408390	23d 8h 04m	-10,61	1756	33,0	69,9° W	69,9°	03:53	08:16	12:42	21,4°	307,3°	53,4°
62	2027 03 03	00:00	18h 56m 18,3s	-26° 25' 42"	Sgr	409937	24d 8h 04m	-10,28	1749	24,5	59,2° W	59,3°	04:35	09:06	13:41	23,3°	304,9°	56,4°
63	2027 03 04	00:00	19h 46m 46,6s	-23° 54' 52"	Sgr	410148	25d 8h 04m	-9,92	1748	17,0	48,5° W	48,6°	05:10	09:54	14:44	26,4°	300,8°	61,1°
64	2027 03 05	00:00	20h 35m 14,7s	-20° 24' 53"	Cap	409151	26d 8h 04m	-9,52	1752	10,6	37,8° W	37,8°	05:40	10:39	15:47	30,5°	295,5°	67,0°
65	2027 03 06	00:00	21h 21m 49,5s	-16° 5' 25"	Cap	407127	27d 8h 04m	-9,08	1761	5,5	27,0° W	27,0°	06:05	11:23	16:50	35,4°	289,1°	73,9°
66	2027 03 07	00:00	22h 6m 56,2s	-11° 6' 44"	Aqr	404281	28d 8h 04m	-8,59	1773	2,0	16,0° W	16,0°	06:28	12:05	17:52	40,9°	282,1°	81,4°
67	2027 03 08	00:00	22h 51m 13,3s	-5° 39' 33"	Aqr	400818	29d 8h 04m	-8,06	1789	0,2	4,8° W	5,1°	06:49	12:47	18:56	46,9°	274,5°	89,4°
68	2027 03 09	00:00	23h 35m 28,5s	+0° 4' 46"	Psc	396930	0d 14h 31m	-8,22	1806	0,4	6,6° E	7,1°	07:10	13:30	20:00	53,0°	266,7°	97,5°
69	2027 03 10	00:00	0h 20m 35,8s	+5° 53' 50"	Psc	392774	1d 14h 31m	-8,80	1825	2,6	18,3° E	18,6°	07:32	14:14	21:07	59,1°	258,8°	105,5°
70	2027 03 11	00:00	1h 7m 32,9s	+11° 33' 34"	Psc	388472	2d 14h 31m	-9,34	1846	6,9	30,2° E	30,4°	07:57	15:00	22:16	64,8°	251,2°	112,9°
71	2027 03 12	00:00	1h 57m 17,1s	+16° 47' 42"	Ari	384115	3d 14h 31m	-9,84	1866	13,2	42,3° E	42,5°	08:26	15:50	23:27	69,8°	244,3°	119,5°
72	2027 03 13	00:00	2h 50m 36,1s	+21° 17' 27"	Ari	379777	4d 14h 31m	-10,29	1888	21,3	54,8° E	54,9°	09:01	16:45		69,8°	238,4°	119,5°
73	2027 03 14	00:00	3h 47m 52,8s	+24° 42' 8"	Tau	375536	5d 14h 31m	-10,70	1909	31,0	67,4° E	67,5°	09:45	17:44	00:39	73,7°	234,3°	124,4°
74	2027 03 15	00:00	4h 48m 44,9s	+26° 41' 11"	Tau	371504	6d 14h 31m	-11,06	1930	41,7	80,3° E	80,3°	10:39	18:45	01:48	76,1°	232,6°	127,1°
75	2027 03 16	00:00	5h 51m 54,4s	+26° 58' 29"	Tau	367836	7d 14h 31m	-11,39	1949	53,1	93,4° E	93,4°	11:45	19:47	02:49	76,8°	233,6°	127,1°
76	2027 03 17	00:00	6h 55m 22,8s	+25° 27' 8"	Gem	364746	8d 14h 31m	-11,68	1966	64,5	106,7° E	106,7°	12:59	20:47	03:41	75,4°	237,4°	124,3°
77	2027 03 18	00:00	7h 57m 13,2s	+22° 12' 17"	Gem	362488	9d 14h 31m	-11,94	1978	75,2	120,2° E	120,2°	14:16	21:44	04:24	72,2°	243,6°	119,1°
78	2027 03 19	00:00	8h 56m 12,0s	+17° 29' 58"	Cnc	361330	10d 14h 31m	-12,17	1984	84,6	133,8° E	133,8°	15:33	22:37	04:58	67,3°	251,3°	112,1°
79	2027 03 20	00:00	9h 52m 3,2s	+11° 43' 4"	Leo	361499	11d 14h 31m	-12,37	1983	92,1	147,4° E	147,4°	16:49	23:27	05:27	61,4°	260,0°	104,0°
80	2027 03 21	00:00	10h 45m 15,9s	+5° 17' 10"	Sex	363131	12d 14h 31m	-12,55	1974	97,2	161,0° E	160,8°	18:02		05:53	54,7°	269,1°	95,3°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
81	2027 03 22	00:00	11h 36m 43,5s	-1° 22' 26"	Leo	366226	13d 14h 31m	-12,70	1958	99,7	174,4° E	173,4°	19:14	00:16	06:18	41,1°	278,1°	86,5°
82	2027 03 23	00:00	12h 27m 26,6s	-7° 52' 15"	Vir	370631	14d 14h 31m	-12,66	1934	99,4	172,3° W	171,1°	20:25	01:04	06:42	34,9°	286,5°	78,0°
83	2027 03 24	00:00	13h 18m 21,0s	-13° 51' 32"	Vir	376046	15d 14h 31m	-12,46	1907	96,6	159,4° W	158,8°	21:36	01:52	07:09	29,6°	294,0°	70,1°
84	2027 03 25	00:00	14h 10m 9,2s	-19° 2' 39"	Vir	382071	16d 14h 31m	-12,26	1876	91,7	146,9° W	146,5°	22:45	02:41	07:38	25,5°	300,2°	63,3°
85	2027 03 26	00:00	15h 3m 12,2s	-23° 11' 19"	Lib	388250	17d 14h 31m	-12,05	1847	85,1	134,8° W	134,5°	23:51	03:31	08:12	22,6°	304,7°	57,9°
86	2027 03 27	00:00	15h 57m 24,2s	-26° 7' 2"	Sco	394131	18d 14h 31m	-11,83	1819	77,3	123,1° W	122,9°		04:23	08:52	21,2°	307,1°	54,2°
87	2027 03 28	00:00	16h 52m 11,6s	-27° 43' 44"	Sco	399305	19d 14h 31m	-11,61	1795	68,6	111,7° W	111,6°	00:52	05:16	09:39	21,2°	307,1°	52,5°
88	2027 03 29	00:00	17h 46m 41,8s	-28° 0' 5"	Sgr	403444	20d 14h 31m	-11,37	1777	59,3	100,6° W	100,6°	01:45	06:08	10:32	21,2°	307,5°	52,9°
89	2027 03 30	00:00	18h 39m 59,3s	-26° 59' 20"	Sgr	406315	21d 14h 31m	-11,11	1765	49,9	89,8° W	89,8°	02:31	06:59	11:30	22,6°	305,8°	55,2°
90	2027 03 31	00:00	19h 31m 22,5s	-24° 48' 21"	Sgr	407791	22d 14h 31m	-10,84	1758	40,6	79,0° W	79,0°	03:08	07:47	12:31	25,2°	302,4°	59,3°
91	2027 04 01	00:00	20h 20m 34,0s	-21° 36' 0"	Cap	407850	23d 14h 31m	-10,54	1758	31,6	68,3° W	68,3°	03:40	08:33	13:34	28,9°	297,6°	64,7°
92	2027 04 02	00:00	21h 7m 40,8s	-17° 32' 0"	Cap	406567	24d 14h 31m	-10,22	1763	23,2	57,5° W	57,5°	04:07	09:18	14:37	33,4°	291,7°	71,1°
93	2027 04 03	00:00	21h 53m 9,8s	-12° 46' 6"	Cap	404105	25d 14h 31m	-9,86	1774	15,7	46,6° W	46,6°	04:31	10:00	15:39	38,7°	284,9°	78,4°
94	2027 04 04	00:00	22h 37m 41,7s	-7° 28' 7"	Aqr	400694	26d 14h 31m	-9,45	1789	9,3	35,4° W	35,4°	04:52	10:42	16:42	44,4°	277,6°	86,2°
95	2027 04 05	00:00	23h 22m 6,1s	-1° 48' 24"	Psc	396611	27d 14h 31m	-8,99	1808	4,4	24,0° W	24,1°	05:14	11:25	17:47	50,5°	269,8°	94,3°
96	2027 04 06	00:00	0h 7m 18,4s	+4° 1' 25"	Psc	392153	28d 14h 31m	-8,48	1828	1,2	12,3° W	12,7°	05:36	12:09	18:53	56,7°	261,9°	102,4°
97	2027 04 07	00:00	0h 54m 17,1s	+9° 47' 32"	Psc	387607	0d 0h 09m	-8,08	1850	0,1	0,3° W	3,7°	06:00	12:55	20:02	62,6°	254,1°	110,2°
98	2027 04 08	00:00	1h 43m 59,8s	+15° 13' 17"	Psc	383226	1d 0h 09m	-8,56	1871	1,2	12,0° E	12,7°	06:28	13:45	21:14	68,0°	246,8°	117,2°
99	2027 04 09	00:00	2h 37m 14,0s	+19° 58' 55"	Ari	379206	2d 0h 09m	-9,14	1891	4,7	24,6° E	25,0°	07:02	14:39	22:28	72,4°	240,4°	122,8°
100	2027 04 10	00:00	3h 34m 21,7s	+23° 42' 29"	Tau	375679	3d 0h 09m	-9,68	1908	10,5	37,4° E	37,7°	07:43	15:38	23:39	75,4°	235,6°	126,3°
101	2027 04 11	00:00	4h 34m 59,4s	+26° 2' 31"	Tau	372713	4d 0h 09m	-10,16	1924	18,3	50,4° E	50,6°	08:35	16:39		75,4°	233,1°	126,3°
102	2027 04 12	00:00	5h 37m 47,8s	+26° 42' 33"	Tau	370337	5d 0h 09m	-10,59	1936	27,9	63,5° E	63,6°	09:38	17:41	00:44	76,6°	233,3°	127,1°
103	2027 04 13	00:00	6h 40m 47,9s	+25° 35' 52"	Gem	368557	6d 0h 09m	-10,97	1945	38,6	76,7° E	76,7°	10:49	18:41	01:38	75,8°	236,3°	125,1°
104	2027 04 14	00:00	7h 42m 2,8s	+22° 47' 41"	Gem	367387	7d 0h 09m	-11,29	1951	50,1	89,9° E	89,9°	12:04	19:38	02:23	73,1°	241,6°	120,7°
105	2027 04 15	00:00	8h 40m 19,9s	+18° 33' 12"	Cnc	366862	8d 0h 09m	-11,58	1954	61,5	103,2° E	103,2°	13:20	20:31	02:59	68,9°	248,7°	114,3°
106	2027 04 16	00:00	9h 35m 23,9s	+13° 13' 12"	Leo	367046	9d 0h 09m	-11,83	1953	72,3	116,4° E	116,4°	14:33	21:21	03:29	63,4°	256,9°	106,8°
107	2027 04 17	00:00	10h 27m 44,6s	+7° 10' 9"	Leo	368015	10d 0h 09m	-12,05	1948	81,9	129,6° E	129,6°	15:45	22:08	03:55	57,1°	265,6°	98,5°
108	2027 04 18	00:00	11h 18m 16,8s	+0° 46' 2"	Leo	369835	11d 0h 09m	-12,24	1939	89,8	142,7° E	142,6°	16:56	22:55	04:20	50,5°	274,4°	90,0°
109	2027 04 19	00:00	12h 8m 3,9s	-5° 38' 18"	Vir	372531	12d 0h 09m	-12,40	1925	95,5	155,8° E	155,4°	18:06	23:42	04:44	43,9°	282,9°	81,6°
110	2027 04 20	00:00	12h 58m 6,5s	-11° 43' 14"	Vir	376057	13d 0h 09m	-12,55	1906	98,8	168,6° E	167,5°	19:16		05:09	32,0°	290,7°	73,6°
111	2027 04 21	00:00	13h 49m 14,0s	-17° 10' 25"	Vir	380282	14d 0h 09m	-12,63	1885	99,8	178,8° W	174,3°	20:25	00:30	05:37	27,3°	297,5°	66,3°
112	2027 04 22	00:00	14h 41m 56,0s	-21° 43' 17"	Lib	384987	15d 0h 09m	-12,49	1862	98,4	166,5° W	165,4°	21:33	01:20	06:09	23,9°	302,7°	60,3°
113	2027 04 23	00:00	15h 36m 14,4s	-25° 8' 0"	Lib	389885	16d 0h 09m	-12,31	1839	94,9	154,5° W	153,9°	22:37	02:12	06:46	21,8°	306,0°	55,8°
114	2027 04 24	00:00	16h 31m 38,3s	-27° 14' 51"	Sco	394646	17d 0h 09m	-12,12	1817	89,7	142,8° W	142,5°	23:34	03:05	07:31	21,2°	307,3°	53,3°
115	2027 04 25	00:00	17h 27m 10,0s	-27° 59' 32"	Oph	398931	18d 0h 09m	-11,93	1797	83,1	131,5° W	131,3°		03:58	08:22	22,1°	306,4°	52,8°
116	2027 04 26	00:00	18h 21m 42,0s	-27° 23' 41"	Sgr	402424	19d 0h 09m	-11,72	1782	75,3	120,3° W	120,3°	00:24	04:50	09:19	22,1°	306,4°	54,4°
117	2027 04 27	00:00	19h 14m 18,2s	-25° 33' 52"	Sgr	404859	20d 0h 09m	-11,51	1771	66,7	109,4° W	109,4°	01:05	05:40	10:19	24,2°	303,7°	57,8°
118	2027 04 28	00:00	20h 4m 29,7s	-22° 39' 41"	Sgr	406046	21d 0h 09m	-11,29	1766	57,6	98,6° W	98,6°	01:39	06:27	11:21	27,5°	299,4°	62,6°
119	2027 04 29	00:00	20h 52m 17,1s	-18° 51' 45"	Cap	405880	22d 0h 09m	-11,05	1766	48,2	87,8° W	87,8°	02:07	07:11	12:23	31,7°	293,9°	68,6°
120	2027 04 30	00:00	21h 38m 5,6s	-14° 20' 23"	Cap	404358	23d 0h 09m	-10,78	1773	38,9	77,0° W	77,0°	02:32	07:54	13:25	36,6°	287,6°	75,5°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
121	2027 05 01	00:00	22h 22m 37,2s	-9° 15' 12"	Aqr	401574	24d 0h 09m	-10,49	1785	29,8	66,0° W	66,0°	02:54	08:36	14:27	42,1°	280,6°	82,9°
122	2027 05 02	00:00	23h 6m 44,1s	-3° 45' 36"	Aqr	397723	25d 0h 09m	-10,15	1803	21,2	54,7° W	54,7°	03:16	09:18	15:30	48,0°	273,1°	90,8°
123	2027 05 03	00:00	23h 51m 25,3s	+1° 58' 24"	Psc	393081	26d 0h 09m	-9,77	1824	13,6	43,2° W	43,2°	03:37	10:01	16:35	54,0°	265,3°	98,9°
124	2027 05 04	00:00	0h 37m 44,1s	+7° 44' 48"	Psc	387996	27d 0h 09m	-9,33	1848	7,4	31,2° W	31,4°	04:01	10:46	17:43	60,1°	257,5°	106,8°
125	2027 05 05	00:00	1h 26m 44,4s	+13° 18' 28"	Psc	382849	28d 0h 09m	-8,83	1873	2,8	18,9° W	19,3°	04:27	11:35	18:55	65,8°	249,9°	114,3°
126	2027 05 06	00:00	2h 19m 23,5s	+18° 20' 13"	Ari	378017	29d 0h 09m	-8,29	1897	0,4	6,2° W	7,5°	04:59	12:28	20:09	70,7°	243,0°	120,6°
127	2027 05 07	00:00	3h 16m 15,6s	+22° 27' 5"	Ari	373835	0d 13h 02m	-8,36	1918	0,5	6,8° E	7,9°	05:38	13:27	21:24	74,3°	237,5°	125,0°
128	2027 05 08	00:00	4h 17m 9,3s	+25° 14' 45"	Tau	370553	1d 13h 02m	-8,97	1935	3,1	20,0° E	20,4°	06:28	14:29	22:33	76,2°	234,0°	126,9°
129	2027 05 09	00:00	5h 20m 48,9s	+26° 22' 46"	Tau	368311	2d 13h 02m	-9,54	1947	8,4	33,4° E	33,6°	07:29	15:33	23:33	76,1°	233,2°	125,8°
130	2027 05 10	00:00	6h 25m 4,4s	+25° 41' 0"	Gem	367133	3d 13h 02m	-10,05	1953	15,9	46,9° E	46,9°	08:39	16:35		76,1°	235,4°	125,8°
131	2027 05 11	00:00	7h 27m 37,7s	+23° 13' 15"	Gem	366947	4d 13h 02m	-10,49	1954	25,4	60,3° E	60,3°	09:55	17:34	00:21	73,9°	240,1°	121,9°
132	2027 05 12	00:00	8h 26m 55,3s	+19° 15' 29"	Cnc	367619	5d 13h 02m	-10,87	1950	36,1	73,7° E	73,7°	11:11	18:28	01:00	70,1°	246,8°	116,1°
133	2027 05 13	00:00	9h 22m 30,2s	+14° 10' 2"	Leo	368988	6d 13h 02m	-11,20	1943	47,4	86,9° E	86,9°	12:25	19:18	01:32	64,9°	254,7°	108,8°
134	2027 05 14	00:00	10h 14m 49,9s	+8° 20' 21"	Leo	370910	7d 13h 02m	-11,48	1933	58,8	100,0° E	100,0°	13:36	20:06	01:59	58,9°	263,1°	100,8°
135	2027 05 15	00:00	11h 4m 51,9s	+2° 8' 0"	Leo	373270	8d 13h 02m	-11,72	1921	69,5	112,9° E	112,9°	14:46	20:52	02:24	52,4°	271,8°	92,5°
136	2027 05 16	00:00	11h 53m 44,8s	-4° 7' 46"	Vir	375995	9d 13h 02m	-11,93	1907	79,1	125,7° E	125,5°	15:54	21:38	02:47	45,9°	280,2°	84,2°
137	2027 05 17	00:00	12h 42m 35,8s	-10° 9' 27"	Vir	379039	10d 13h 02m	-12,11	1891	87,2	138,3° E	138,0°	17:03	22:25	03:12	39,6°	288,1°	76,2°
138	2027 05 18	00:00	13h 32m 23,4s	-15° 40' 38"	Vir	382361	11d 13h 02m	-12,27	1875	93,4	150,7° E	150,2°	18:11	23:13	03:38	33,9°	295,1°	68,9°
139	2027 05 19	00:00	14h 23m 49,4s	-20° 25' 33"	Lib	385909	12d 13h 02m	-12,41	1858	97,5	162,9° E	161,9°	19:19		04:08	29,0°	300,8°	62,5°
140	2027 05 20	00:00	15h 17m 9,9s	-24° 9' 38"	Lib	389596	13d 13h 02m	-12,53	1840	99,5	174,9° E	172,3°	20:24	00:04	04:43	22,6°	304,8°	57,5°
141	2027 05 21	00:00	16h 12m 7,8s	-26° 40' 52"	Sco	393291	14d 13h 02m	-12,51	1823	99,4	173,4° W	171,4°	21:24	00:56	05:25	21,4°	306,8°	54,2°
142	2027 05 22	00:00	17h 7m 52,0s	-27° 51' 42"	Oph	396817	15d 13h 02m	-12,35	1807	97,4	161,9° W	161,2°	22:16	01:49	06:13	21,7°	306,8°	52,9°
143	2027 05 23	00:00	18h 3m 10,1s	-27° 40' 38"	Sgr	399964	16d 13h 02m	-12,19	1793	93,5	150,6° W	150,3°	23:00	02:42	07:09	23,4°	304,7°	53,8°
144	2027 05 24	00:00	18h 56m 51,8s	-26° 12' 14"	Sgr	402503	17d 13h 02m	-12,01	1781	88,0	139,5° W	139,4°	23:37	03:32	08:08	26,3°	300,9°	56,5°
145	2027 05 25	00:00	19h 48m 10,5s	-23° 35' 39"	Sgr	404212	18d 13h 02m	-11,83	1774	81,2	128,6° W	128,5°	04:21	09:10	09:10	30,1°	295,9°	60,9°
146	2027 05 26	00:00	20h 36m 52,1s	-20° 2' 13"	Cap	404896	19d 13h 02m	-11,65	1771	73,4	117,7° W	117,7°	00:07	05:06	10:12	30,1°	295,9°	66,5°
147	2027 05 27	00:00	21h 23m 12,7s	-15° 43' 24"	Cap	404412	20d 13h 02m	-11,45	1773	64,6	106,9° W	106,9°	00:33	05:49	11:13	34,8°	289,9°	73,0°
148	2027 05 28	00:00	22h 7m 49,7s	-10° 49' 43"	Aqr	402690	21d 13h 02m	-11,23	1780	55,3	96,0° W	96,0°	00:56	06:31	12:14	40,0°	283,2°	80,1°
149	2027 05 29	00:00	22h 51m 34,2s	-5° 30' 43"	Aqr	399748	22d 13h 02m	-10,99	1793	45,7	84,9° W	84,9°	01:18	07:12	13:15	45,6°	276,0°	87,7°
150	2027 05 30	00:00	23h 35m 25,6s	+0° 4' 21"	Psc	395703	23d 13h 02m	-10,72	1812	36,0	73,6° W	73,6°	01:39	07:53	14:18	51,5°	268,5°	95,5°
151	2027 05 31	00:00	0h 20m 29,2s	+5° 45' 21"	Psc	390779	24d 13h 02m	-10,41	1835	26,7	62,0° W	62,0°	02:01	08:36	15:24	57,5°	260,8°	103,4°
152	2027 06 01	00:00	1h 7m 53,8s	+11° 19' 47"	Psc	385297	25d 13h 02m	-10,04	1861	18,0	50,0° W	50,1°	02:25	09:23	16:33	63,3°	253,2°	111,0°
153	2027 06 02	00:00	1h 58m 47,0s	+16° 31' 16"	Ari	379657	26d 13h 02m	-9,62	1888	10,5	37,5° W	37,7°	02:54	10:14	17:46	68,5°	246,1°	117,8°
154	2027 06 03	00:00	2h 54m 2,4s	+20° 58' 42"	Ari	374309	27d 13h 02m	-9,12	1915	4,7	24,6° W	24,9°	03:30	11:10	19:01	72,8°	239,9°	123,2°
155	2027 06 04	00:00	3h 53m 56,9s	+24° 17' 5"	Tau	369696	28d 13h 02m	-8,55	1939	1,1	11,3° W	12,0°	04:15	12:11	20:14	75,5°	235,3°	126,3°
156	2027 06 05	00:00	4h 57m 42,9s	+26° 1' 39"	Tau	366199	0d 4h 20m	-8,20	1958	0,1	2,3° E	4,0°	05:12	13:16	21:19	76,3°	233,3°	126,4°
157	2027 06 06	00:00	6h 3m 19,7s	+25° 55' 18"	Gem	364080	1d 4h 20m	-8,79	1969	2,0	16,0° E	16,2°	06:21	14:21	22:14	74,9°	234,3°	123,5°
158	2027 06 07	00:00	7h 8m 8,6s	+23° 55' 26"	Gem	363440	2d 4h 20m	-9,40	1973	6,7	29,9° E	29,9°	07:38	15:24	22:58	71,5°	238,2°	118,2°
159	2027 06 08	00:00	8h 9m 57,6s	+20° 15' 21"	Cnc	364215	3d 4h 20m	-9,93	1968	13,9	43,6° E	43,6°	08:56	16:21	23:33	66,6°	244,5°	111,1°
160	2027 06 09	00:00	9h 7m 45,9s	+15° 18' 45"	Cnc	366201	4d 4h 20m	-10,39	1958	23,0	57,2° E	57,2°	10:13	17:14		66,6°	252,3°	111,1°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
161	2027 06 10	00:00	10h 1m 42,3s	+9° 32' 21"	Leo	369108	5d 4h 20m	-10,77	1942	33,5	70,6° E	70,6°	11:27	18:04	00:02	60,7°	260,7°	103,1°
162	2027 06 11	00:00	10h 52m 39,3s	+3° 20' 46"	Leo	372621	6d 4h 20m	-11,09	1924	44,6	83,7° E	83,7°	12:38	18:51	00:28	54,2°	269,4°	94,8°
163	2027 06 12	00:00	11h 41m 47,0s	-2° 55' 10"	Vir	376445	7d 4h 20m	-11,37	1905	55,8	96,5° E	96,5°	13:47	19:36	00:52	47,6°	277,9°	86,4°
164	2027 06 13	00:00	12h 30m 17,5s	-8° 57' 59"	Vir	380347	8d 4h 20m	-11,60	1885	66,4	109,1° E	109,0°	14:55	20:23	01:16	41,3°	286,0°	78,3°
165	2027 06 14	00:00	13h 19m 16,2s	-14° 32' 28"	Vir	384161	9d 4h 20m	-11,80	1866	76,0	121,4° E	121,2°	16:02	21:10	01:41	35,4°	293,1°	70,8°
166	2027 06 15	00:00	14h 9m 34,4s	-19° 24' 29"	Vir	387787	10d 4h 20m	-11,98	1849	84,3	133,5° E	133,2°	17:10	21:59	02:10	30,3°	299,2°	64,3°
167	2027 06 16	00:00	15h 1m 41,9s	-23° 20' 45"	Lib	391170	11d 4h 20m	-12,14	1833	90,9	145,3° E	144,9°	18:15	22:50	02:43	26,2°	303,7°	58,9°
168	2027 06 17	00:00	15h 55m 38,2s	-26° 9' 21"	Sco	394278	12d 4h 20m	-12,28	1818	95,8	157,0° E	156,4°	19:16	23:43	03:22	23,3°	306,4°	55,1°
169	2027 06 18	00:00	16h 50m 47,9s	-27° 41' 19"	Sco	397082	13d 4h 20m	-12,42	1806	98,8	168,5° E	167,4°	20:11		04:08	21,5°	307,0°	53,2°
170	2027 06 19	00:00	17h 46m 7,2s	-27° 52' 33"	Sgr	399535	14d 4h 20m	-12,52	1794	99,8	179,8° E	175,5°	20:57	00:35	05:01	22,8°	305,5°	53,3°
171	2027 06 20	00:00	18h 40m 22,4s	-26° 44' 57"	Sgr	401561	15d 4h 20m	-12,41	1785	99,0	169,1° W	168,5°	21:36	01:27	05:59	25,3°	302,3°	55,5°
172	2027 06 21	00:00	19h 32m 33,9s	-24° 25' 49"	Sgr	403055	16d 4h 20m	-12,26	1779	96,3	158,1° W	157,9°	22:09	02:16	07:00	28,8°	297,6°	59,3°
173	2027 06 22	00:00	20h 22m 11,7s	-21° 5' 58"	Cap	403891	17d 4h 20m	-12,10	1775	92,0	147,1° W	147,1°	22:36	03:02	08:02	33,2°	291,9°	64,5°
174	2027 06 23	00:00	21h 9m 17,8s	-16° 57' 28"	Cap	403931	18d 4h 20m	-11,94	1775	86,2	136,3° W	136,3°	22:59	03:46	09:03	38,2°	285,5°	70,7°
175	2027 06 24	00:00	21h 54m 19,8s	-12° 12' 2"	Cap	403050	19d 4h 20m	-11,77	1779	79,0	125,4° W	125,4°	23:21	04:28	10:04	43,6°	278,5°	77,6°
176	2027 06 25	00:00	22h 38m 2,2s	-7° 0' 14"	Aqr	401158	20d 4h 20m	-11,59	1787	70,8	114,4° W	114,4°	23:42	05:08	11:04	49,4°	271,2°	85,0°
177	2027 06 26	00:00	23h 21m 20,1s	-1° 31' 48"	Psc	398217	21d 4h 20m	-11,39	1800	61,6	103,3° W	103,3°		05:48	12:05	55,2°	263,7°	92,6°
178	2027 06 27	00:00	0h 5m 15,6s	+4° 3' 39"	Psc	394271	22d 4h 20m	-11,17	1818	51,8	92,0° W	91,9°	00:03	06:30	13:08	55,2°	263,7°	100,3°
179	2027 06 28	00:00	0h 50m 56,2s	+9° 35' 20"	Psc	389457	23d 4h 20m	-10,92	1841	41,7	80,3° W	80,3°	00:26	07:14	14:14	60,9°	256,3°	107,9°
180	2027 06 29	00:00	1h 39m 31,8s	+14° 49' 53"	Psc	384018	24d 4h 20m	-10,62	1867	31,6	68,2° W	68,3°	00:52	08:01	15:23	66,3°	249,1°	114,9°
181	2027 06 30	00:00	2h 32m 7,2s	+19° 29' 48"	Ari	378299	25d 4h 20m	-10,27	1895	22,0	55,8° W	55,9°	01:23	08:54	16:36	71,0°	242,5°	121,0°
182	2027 07 01	00:00	3h 29m 24,9s	+23° 12' 58"	Tau	372733	26d 4h 20m	-9,86	1923	13,5	42,8° W	43,0°	02:03	09:52	17:49	74,4°	237,2°	125,2°
183	2027 07 02	00:00	4h 31m 18,7s	+25° 34' 29"	Tau	367795	27d 4h 20m	-9,36	1949	6,6	29,5° W	29,7°	02:53	10:55	18:59	76,2°	233,9°	126,8°
184	2027 07 03	00:00	5h 36m 28,5s	+26° 12' 1"	Tau	363949	28d 4h 20m	-8,77	1970	2,0	15,8° W	16,0°	03:57	12:01	19:59	75,9°	233,4°	125,3°
185	2027 07 04	00:00	6h 42m 29,0s	+24° 53' 56"	Gem	361569	29d 4h 20m	-8,13	1983	0,1	1,8° W	2,6°	05:11	13:06	20:50	73,4°	236,0°	120,9°
186	2027 07 05	00:00	7h 46m 42,8s	+21° 45' 4"	Gem	360875	0d 20h 58m	-8,61	1987	1,1	12,2° E	12,3°	06:32	14:07	21:30	69,0°	241,5°	114,3°
187	2027 07 06	00:00	8h 47m 24,2s	+17° 5' 20"	Cnc	361890	1d 20h 58m	-9,25	1981	5,2	26,3° E	26,3°	07:53	15:04	22:02	63,2°	248,9°	106,4°
188	2027 07 07	00:00	9h 44m 4,0s	+11° 22' 45"	Leo	364442	2d 20h 58m	-9,80	1967	11,8	40,1° E	40,2°	09:10	15:57	22:30	56,6°	257,5°	97,8°
189	2027 07 08	00:00	10h 37m 13,7s	+5° 6' 2"	Sex	368205	3d 20h 58m	-10,26	1947	20,5	53,7° E	53,8°	10:25	16:46	22:55	49,9°	266,4°	89,1°
190	2027 07 09	00:00	11h 27m 55,6s	-1° 19' 40"	Leo	372766	4d 20h 58m	-10,65	1923	30,6	66,9° E	67,0°	11:36	17:33	23:20	43,2°	275,3°	80,7°
191	2027 07 10	00:00	12h 17m 21,6s	-7° 33' 49"	Vir	377704	5d 20h 58m	-10,97	1898	41,3	79,8° E	79,9°	12:46	18:20	23:45	37,1°	283,7°	72,9°
192	2027 07 11	00:00	13h 6m 39,4s	-13° 19' 49"	Vir	382642	6d 20h 58m	-11,24	1874	52,1	92,3° E	92,3°	13:55	19:07		37,1°	291,2°	72,9°
193	2027 07 12	00:00	13h 56m 45,6s	-18° 23' 41"	Vir	387284	7d 20h 58m	-11,48	1851	62,6	104,5° E	104,4°	15:02	19:56	00:12	31,7°	297,7°	66,0°
194	2027 07 13	00:00	14h 48m 18,2s	-22° 33' 6"	Lib	391431	8d 20h 58m	-11,68	1832	72,2	116,4° E	116,2°	16:08	20:47	00:44	27,2°	302,7°	60,2°
195	2027 07 14	00:00	15h 41m 29,0s	-25° 37' 11"	Lib	394970	9d 20h 58m	-11,86	1815	80,7	128,0° E	127,8°	17:10	21:38	01:21	23,9°	305,9°	55,9°
196	2027 07 15	00:00	16h 35m 57,8s	-27° 27' 20"	Sco	397860	10d 20h 58m	-12,02	1802	87,9	139,4° E	139,1°	18:07	22:31	02:05	21,9°	307,1°	53,5°
197	2027 07 16	00:00	17h 30m 55,0s	-27° 58' 37"	Oph	400107	11d 20h 58m	-12,17	1792	93,5	150,7° E	150,3°	18:55	23:22	02:55	21,4°	306,3°	53,0°
198	2027 07 17	00:00	18h 25m 14,5s	-27° 11' 6"	Sgr	401742	12d 20h 58m	-12,31	1785	97,4	161,8° E	161,4°	19:37		03:52	22,2°	303,5°	54,5°
199	2027 07 18	00:00	19h 17m 54,7s	-25° 10' 2"	Sgr	402797	13d 20h 58m	-12,45	1780	99,5	172,8° E	172,2°	20:11	00:12	04:52	27,5°	299,3°	57,9°
200	2027 07 19	00:00	20h 8m 16,3s	-22° 4' 47"	Cap	403287	14d 20h 58m	-12,50	1778	99,9	176,3° W	175,8°	20:39	00:59	05:54	31,7°	293,9°	62,7°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
201	2027 07 20	00:00	20h 56m 9,8s	-18° 6' 53"	Cap	403202	15d 20h 58m	-12,35	1778	98,4	165,4° W	165,3°	21:04	01:44	06:56	36,5°	287,6°	68,7°
202	2027 07 21	00:00	21h 41m 51,8s	-13° 28' 25"	Cap	402506	16d 20h 58m	-12,21	1781	95,1	154,4° W	154,4°	21:26	02:26	07:57	41,9°	280,8°	75,4°
203	2027 07 22	00:00	22h 25m 58,0s	-8° 20' 57"	Aqr	401146	17d 20h 58m	-12,06	1787	90,2	143,5° W	143,4°	21:47	03:07	08:57	47,5°	273,6°	82,6°
204	2027 07 23	00:00	23h 9m 16,5s	-2° 55' 14"	Psc	399062	18d 20h 58m	-11,90	1797	83,7	132,4° W	132,3°	22:07	03:47	09:57	53,3°	266,2°	90,1°
205	2027 07 24	00:00	23h 52m 43,0s	+2° 38' 27"	Psc	396210	19d 20h 58m	-11,73	1810	75,9	121,1° W	121,1°	22:29	04:28	10:58	59,0°	258,8°	97,7°
206	2027 07 25	00:00	0h 37m 19,1s	+8° 9' 27"	Psc	392587	20d 20h 58m	-11,54	1826	66,9	109,7° W	109,7°	22:53	05:10	12:01	64,4°	251,6°	105,2°
207	2027 07 26	00:00	1h 24m 9,7s	+13° 25' 42"	Psc	388253	21d 20h 58m	-11,33	1847	57,1	98,0° W	98,0°	23:21	05:54	13:08	69,2°	245,0°	112,3°
208	2027 07 27	00:00	2h 14m 18,8s	+18° 12' 27"	Ari	383351	22d 20h 58m	-11,09	1870	46,6	85,9° W	85,9°	23:56	06:43	14:17	73,1°	239,2°	118,7°
209	2027 07 28	00:00	3h 8m 38,4s	+22° 11' 17"	Ari	378124	23d 20h 58m	-10,80	1896	36,0	73,5° W	73,6°		07:37	15:28	75,7°	235,0°	123,6°
210	2027 07 29	00:00	4h 7m 28,7s	+25° 0' 28"	Tau	372910	24d 20h 58m	-10,46	1923	25,7	60,7° W	60,7°	00:39	08:36	16:38	75,7°	235,0°	126,5°
211	2027 07 30	00:00	5h 10m 13,2s	+26° 17' 50"	Tau	368124	25d 20h 58m	-10,05	1948	16,3	47,4° W	47,5°	01:35	09:39	17:42	76,4°	233,2°	126,5°
212	2027 07 31	00:00	6h 15m 8,8s	+25° 46' 43"	Gem	364215	26d 20h 58m	-9,56	1968	8,5	33,8° W	33,9°	02:43	10:44	18:37	74,9°	234,2°	123,5°
213	2027 08 01	00:00	7h 19m 52,0s	+23° 22' 48"	Gem	361602	27d 20h 58m	-8,98	1983	3,0	19,9° W	19,9°	04:01	11:47	19:22	71,5°	238,3°	118,0°
214	2027 08 02	00:00	8h 22m 15,7s	+19° 17' 3"	Cnc	360598	28d 20h 58m	-8,29	1988	0,3	5,8° W	5,8°	05:23	12:47	19:58	66,3°	244,9°	110,5°
215	2027 08 03	00:00	9h 21m 13,3s	+13° 52' 41"	Cnc	361343	0d 13h 55m	-8,40	1984	0,5	8,3° E	8,4°	06:44	13:43	20:28	59,9°	253,1°	102,0°
216	2027 08 04	00:00	10h 16m 44,0s	+7° 38' 37"	Leo	363773	1d 13h 55m	-9,07	1971	3,8	22,2° E	22,4°	08:02	14:35	20:55	53,0°	262,2°	93,0°
217	2027 08 05	00:00	11h 9m 31,0s	+1° 3' 35"	Leo	367628	2d 13h 55m	-9,63	1950	9,7	36,0° E	36,2°	09:17	15:25	21:21	46,0°	271,5°	84,2°
218	2027 08 06	00:00	12h 0m 37,2s	-5° 27' 18"	Vir	372508	3d 13h 55m	-10,10	1925	17,6	49,4° E	49,5°	10:30	16:13	21:47	39,4°	280,4°	75,8°
219	2027 08 07	00:00	12h 51m 7,8s	-11° 33' 22"	Vir	377946	4d 13h 55m	-10,49	1897	27,0	62,3° E	62,5°	11:41	17:02	22:14	33,5°	288,6°	68,3°
220	2027 08 08	00:00	13h 41m 59,7s	-16° 58' 2"	Vir	383478	5d 13h 55m	-10,82	1870	37,2	74,9° E	75,0°	12:51	17:52	22:45	28,6°	295,6°	62,0°
221	2027 08 09	00:00	14h 33m 53,3s	-21° 27' 52"	Lib	388702	6d 13h 55m	-11,10	1844	47,6	87,1° E	87,1°	13:59	18:42	23:20	24,8°	301,2°	57,1°
222	2027 08 10	00:00	15h 27m 6,1s	-24° 52' 2"	Lib	393311	7d 13h 55m	-11,34	1823	57,8	98,8° E	98,8°	15:03	19:34		24,8°	305,1°	57,1°
223	2027 08 11	00:00	16h 21m 26,7s	-27° 2' 23"	Sco	397102	8d 13h 55m	-11,55	1805	67,4	110,3° E	110,2°	16:02	20:27	00:02	22,4°	307,0°	54,0°
224	2027 08 12	00:00	17h 16m 15,8s	-27° 54' 15"	Oph	399973	9d 13h 55m	-11,73	1792	76,2	121,6° E	121,5°	16:53	21:18	00:51	21,4°	306,8°	52,9°
225	2027 08 13	00:00	18h 10m 36,8s	-27° 27' 18"	Sgr	401909	10d 13h 55m	-11,90	1784	83,9	132,7° E	132,6°	17:37	22:09	01:45	21,8°	304,6°	53,8°
226	2027 08 14	00:00	19h 3m 33,0s	-25° 45' 40"	Sgr	402959	11d 13h 55m	-12,06	1779	90,3	143,7° E	143,5°	18:13	22:57	02:45	23,5°	300,9°	56,6°
227	2027 08 15	00:00	19h 54m 24,3s	-22° 57' 24"	Sgr	403212	12d 13h 55m	-12,22	1778	95,2	154,6° E	154,5°	18:43	23:42	03:46	26,4°	295,8°	61,0°
228	2027 08 16	00:00	20h 42m 56,3s	-19° 12' 54"	Cap	402774	13d 13h 55m	-12,37	1780	98,4	165,5° E	165,5°	19:09		04:48	34,9°	289,8°	66,6°
229	2027 08 17	00:00	21h 29m 19,3s	-14° 43' 39"	Cap	401748	14d 13h 55m	-12,51	1785	99,9	176,4° E	176,4°	19:32	00:25	05:49	40,1°	283,1°	73,1°
230	2027 08 18	00:00	22h 14m 2,3s	-9° 41' 17"	Aqr	400216	15d 13h 55m	-12,46	1791	99,6	172,5° W	172,4°	19:53	01:07	06:50	45,7°	275,9°	80,2°
231	2027 08 19	00:00	22h 57m 47,3s	-4° 17' 5"	Aqr	398232	16d 13h 55m	-12,33	1800	97,4	161,4° W	161,3°	20:14	01:47	07:51	51,4°	268,6°	87,7°
232	2027 08 20	00:00	23h 41m 24,2s	+1° 17' 47"	Psc	395821	17d 13h 55m	-12,18	1811	93,3	150,1° W	150,0°	20:35	02:27	08:51	57,2°	261,1°	95,3°
233	2027 08 21	00:00	0h 25m 48,0s	+6° 51' 55"	Psc	392989	18d 13h 55m	-12,03	1824	87,6	138,7° W	138,6°	20:58	03:09	09:54	62,7°	253,9°	102,8°
234	2027 08 22	00:00	1h 11m 56,9s	+12° 12' 56"	Psc	389736	19d 13h 55m	-11,87	1840	80,2	127,1° W	127,0°	21:24	03:52	10:58	67,7°	247,1°	110,1°
235	2027 08 23	00:00	2h 0m 48,5s	+17° 6' 47"	Ari	386081	20d 13h 55m	-11,69	1857	71,4	115,2° W	115,2°	21:55	04:39	12:05	71,9°	241,1°	116,6°
236	2027 08 24	00:00	2h 53m 11,9s	+21° 16' 55"	Ari	382085	21d 13h 55m	-11,48	1876	61,4	103,1° W	103,1°	22:34	05:30	13:14	74,9°	236,4°	122,0°
237	2027 08 25	00:00	3h 49m 33,5s	+24° 24' 28"	Tau	377874	22d 13h 55m	-11,24	1897	50,7	90,7° W	90,7°	23:23	06:25	14:23	76,3°	233,7°	125,6°
238	2027 08 26	00:00	4h 49m 37,8s	+26° 9' 53"	Tau	373650	23d 13h 55m	-10,96	1919	39,7	77,9° W	78,0°		07:25	15:28	75,8°	233,4°	126,8°
239	2027 08 27	00:00	5h 52m 15,2s	+26° 16' 43"	Tau	369694	24d 13h 55m	-10,62	1939	28,9	64,9° W	64,9°	00:24	08:27	16:25	75,8°	233,4°	125,3°
240	2027 08 28	00:00	6h 55m 33,4s	+24° 36' 49"	Gem	366349	25d 13h 55m	-10,22	1957	19,0	51,5° W	51,5°	01:35	09:29	17:13	73,4°	236,0°	121,0°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
241	2027 08 29	00:00	7h 57m 35,9s	+21° 14' 4"	Gem	363973	26d 13h 55m	-9,74	1970	10,6	37,8° W	37,8°	02:53	10:29	17:52	69,1°	241,3°	114,5°
242	2027 08 30	00:00	8h 57m 4,7s	+16° 24' 3"	Cnc	362888	27d 13h 55m	-9,17	1976	4,3	24,0° W	24,0°	04:14	11:26	18:25	63,3°	248,7°	106,6°
243	2027 08 31	00:00	9h 53m 37,6s	+10° 30' 30"	Leo	363305	28d 13h 55m	-8,52	1973	0,8	10,1° W	10,3°	05:33	12:20	18:54	56,7°	257,4°	97,8°
244	2027 09 01	00:00	10h 47m 38,7s	+4° 0' 34"	Sex	365279	0d 6h 19m	-8,20	1963	0,2	3,8° E	5,1°	06:50	13:12	19:20	49,6°	266,7°	88,7°
245	2027 09 02	00:00	11h 39m 58,6s	-2° 38' 55"	Vir	368682	1d 6h 19m	-8,85	1945	2,5	17,5° E	18,0°	08:06	14:02	19:46	42,6°	276,0°	79,9°
246	2027 09 03	00:00	12h 31m 35,9s	-9° 3' 43"	Vir	373223	2d 6h 19m	-9,42	1921	7,3	30,9° E	31,3°	09:20	14:52	20:13	36,2°	284,8°	71,7°
247	2027 09 04	00:00	13h 23m 25,1s	-14° 53' 4"	Vir	378491	3d 6h 19m	-9,90	1894	14,2	43,9° E	44,2°	10:33	15:42	20:44	30,7°	292,6°	64,6°
248	2027 09 05	00:00	14h 16m 6,4s	-19° 50' 3"	Vir	384029	4d 6h 19m	-10,30	1867	22,7	56,6° E	56,7°	11:44	16:34	21:18	26,3°	299,0°	59,0°
249	2027 09 06	00:00	15h 9m 57,9s	-23° 41' 24"	Lib	389388	5d 6h 19m	-10,64	1841	32,1	68,7° E	68,8°	12:51	17:27	21:58	23,2°	303,7°	55,1°
250	2027 09 07	00:00	16h 4m 50,3s	-26° 17' 48"	Sco	394183	6d 6h 19m	-10,93	1819	41,9	80,5° E	80,6°	13:53	18:20	22:45	21,7°	306,4°	53,2°
251	2027 09 08	00:00	17h 0m 7,0s	-27° 34' 10"	Oph	398120	7d 6h 19m	-11,18	1801	51,8	92,0° E	92,0°	14:48	19:13	23:38	21,5°	307,0°	53,4°
252	2027 09 09	00:00	17h 54m 54,2s	-27° 30' 10"	Sgr	401009	8d 6h 19m	-11,40	1788	61,5	103,1° E	103,1°	15:35	20:04		21,5°	305,5°	53,4°
253	2027 09 10	00:00	18h 48m 17,2s	-26° 9' 55"	Sgr	402768	9d 6h 19m	-11,60	1780	70,5	114,1° E	114,1°	16:13	20:53	00:37	22,8°	302,2°	55,5°
254	2027 09 11	00:00	19h 39m 37,4s	-23° 41' 6"	Sgr	403406	10d 6h 19m	-11,79	1777	78,8	125,0° E	125,0°	16:45	21:39	01:37	25,3°	297,6°	59,4°
255	2027 09 12	00:00	20h 28m 39,9s	-20° 13' 29"	Cap	403012	11d 6h 19m	-11,96	1779	86,0	135,9° E	135,9°	17:13	22:23	02:39	28,8°	291,9°	64,6°
256	2027 09 13	00:00	21h 15m 34,2s	-15° 57' 46"	Cap	401733	12d 6h 19m	-12,13	1785	91,9	146,8° E	146,8°	17:37	23:05	03:41	33,2°	285,4°	70,8°
257	2027 09 14	00:00	22h 0m 47,9s	-11° 4' 47"	Aqr	399748	13d 6h 19m	-12,29	1793	96,3	157,8° E	157,8°	17:58	23:46	04:42	38,2°	278,4°	77,7°
258	2027 09 15	00:00	22h 45m 1,0s	-5° 45' 25"	Aqr	397247	14d 6h 19m	-12,45	1805	99,0	169,0° E	168,8°	18:19		05:43	49,5°	271,1°	85,1°
259	2027 09 16	00:00	23h 29m 1,1s	-0° 10' 44"	Psc	394411	15d 6h 19m	-12,56	1818	99,9	179,7° W	177,1°	18:41	00:27	06:44	55,3°	263,6°	92,7°
260	2027 09 17	00:00	0h 13m 40,6s	+5° 27' 27"	Psc	391388	16d 6h 19m	-12,46	1832	98,9	168,2° W	167,7°	19:03	01:08	07:46	60,9°	256,2°	100,4°
261	2027 09 18	00:00	0h 59m 53,9s	+10° 56' 4"	Psc	388290	17d 6h 19m	-12,32	1846	95,7	156,5° W	156,1°	19:28	01:51	08:51	66,1°	249,3°	107,8°
262	2027 09 19	00:00	1h 48m 33,9s	+16° 0' 20"	Ari	385185	18d 6h 19m	-12,17	1861	90,7	144,6° W	144,3°	19:58	02:37	09:57	70,6°	243,0°	114,6°
263	2027 09 20	00:00	2h 40m 24,8s	+20° 23' 26"	Ari	382113	19d 6h 19m	-12,01	1876	83,7	132,4° W	132,3°	20:35	03:27	11:06	73,9°	237,9°	120,3°
264	2027 09 21	00:00	3h 35m 49,9s	+23° 46' 59"	Tau	379098	20d 6h 19m	-11,83	1891	75,1	120,1° W	120,0°	21:20	04:20	12:14	75,9°	234,5°	124,5°
265	2027 09 22	00:00	4h 34m 35,8s	+25° 52' 37"	Tau	376174	21d 6h 19m	-11,62	1906	65,2	107,6° W	107,5°	22:15	05:18	13:19	76,1°	233,4°	126,5°
266	2027 09 23	00:00	5h 35m 42,5s	+26° 25' 17"	Tau	373407	22d 6h 19m	-11,38	1920	54,3	94,8° W	94,8°	23:21	06:17	14:17	74,4°	234,9°	125,9°
267	2027 09 24	00:00	6h 37m 33,1s	+25° 17' 2"	Gem	370912	23d 6h 19m	-11,09	1933	43,0	81,9° W	81,9°		07:18	15:07	70,9°	239,1°	122,8°
268	2027 09 25	00:00	7h 38m 24,5s	+22° 29' 49"	Gem	368857	24d 6h 19m	-10,76	1944	32,0	68,7° W	68,7°	00:34	08:17	15:48	70,9°	239,1°	117,4°
269	2027 09 26	00:00	8h 37m 4,2s	+18° 15' 19"	Cnc	367455	25d 6h 19m	-10,36	1951	21,7	55,4° W	55,4°	01:51	09:13	16:22	66,0°	245,4°	110,2°
270	2027 09 27	00:00	9h 33m 7,5s	+12° 52' 16"	Leo	366928	26d 6h 19m	-9,90	1954	12,8	41,9° W	41,9°	03:08	10:07	16:52	59,9°	253,3°	102,0°
271	2027 09 28	00:00	10h 26m 52,6s	+6° 43' 15"	Leo	367466	27d 6h 19m	-9,36	1951	6,1	28,3° W	28,4°	04:24	10:58	17:19	53,1°	262,1°	93,2°
272	2027 09 29	00:00	11h 19m 4,8s	+0° 12' 15"	Leo	369178	28d 6h 19m	-8,75	1942	1,8	14,7° W	15,2°	05:40	11:48	17:45	46,1°	271,3°	84,3°
273	2027 09 30	00:00	12h 10m 40,2s	-6° 17' 6"	Vir	372053	29d 6h 19m	-8,18	1927	0,2	1,3° W	4,9°	06:54	12:38	18:12	39,4°	280,3°	75,8°
274	2027 10 01	00:00	13h 2m 33,4s	-12° 22' 30"	Vir	375943	0d 21h 24m	-8,59	1907	1,3	11,9° E	13,0°	08:08	13:29	18:41	33,4°	288,7°	68,1°
275	2027 10 02	00:00	13h 55m 26,8s	-17° 43' 54"	Vir	380578	1d 21h 24m	-9,15	1884	4,9	24,9° E	25,4°	09:21	14:21	19:14	28,3°	295,9°	61,6°
276	2027 10 03	00:00	14h 49m 41,5s	-22° 4' 23"	Lib	385597	2d 21h 24m	-9,63	1859	10,5	37,4° E	37,8°	10:32	15:15	19:52	24,6°	301,6°	56,8°
277	2027 10 04	00:00	15h 45m 9,8s	-25° 11' 12"	Lib	390598	3d 21h 24m	-10,05	1836	17,8	49,5° E	49,8°	11:39	16:09	20:38	22,3°	305,2°	54,0°
278	2027 10 05	00:00	16h 41m 13,5s	-26° 56' 47"	Sco	395187	4d 21h 24m	-10,41	1814	26,2	61,3° E	61,4°	12:38	17:04	21:29	21,6°	306,7°	53,3°
279	2027 10 06	00:00	17h 36m 53,9s	-27° 19' 25"	Oph	399019	5d 21h 24m	-10,72	1797	35,3	72,7° E	72,8°	13:29	17:56	22:27	22,3°	306,0°	54,7°
280	2027 10 07	00:00	18h 31m 9,5s	-26° 22' 53"	Sgr	401827	6d 21h 24m	-10,99	1784	44,8	83,9° E	83,9°	14:11	18:47	23:27	24,4°	303,4°	58,0°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
281	2027 10 08	00:00	19h 23m 15,6s	-24° 15' 11"	Sgr	403442	7d 21h 24m	-11,23	1777	54,3	94,8° E	94,8°	14:45	19:34		24,4°	299,2°	58,0°
282	2027 10 09	00:00	20h 12m 54,3s	-21° 6' 27"	Cap	403794	8d 21h 24m	-11,45	1776	63,6	105,7° E	105,7°	15:14	20:19	00:29	27,6°	293,9°	62,7°
283	2027 10 10	00:00	21h 0m 13,9s	-17° 7' 25"	Cap	402915	9d 21h 24m	-11,66	1779	72,4	116,5° E	116,5°	15:40	21:01	01:30	31,6°	287,8°	68,6°
284	2027 10 11	00:00	21h 45m 43,7s	-12° 28' 28"	Cap	400928	10d 21h 24m	-11,85	1788	80,4	127,4° E	127,4°	16:02	21:42	02:31	36,4°	281,0°	75,2°
285	2027 10 12	00:00	22h 30m 5,4s	-7° 19' 34"	Aqr	398032	11d 21h 24m	-12,04	1801	87,4	138,4° E	138,4°	16:23	22:23	03:32	41,7°	273,8°	82,4°
286	2027 10 13	00:00	23h 14m 9,1s	-1° 50' 44"	Psc	394479	12d 21h 24m	-12,22	1817	93,1	149,7° E	149,6°	16:45	23:05	04:33	47,3°	266,4°	89,9°
287	2027 10 14	00:00	23h 58m 49,1s	+3° 47' 10"	Psc	390554	13d 21h 24m	-12,39	1836	97,3	161,2° E	160,9°	17:07	23:48	05:35	53,1°	258,9°	97,5°
288	2027 10 15	00:00	0h 45m 2,1s	+9° 21' 33"	Psc	386543	14d 21h 24m	-12,56	1855	99,5	173,0° E	171,8°	17:32		06:39	64,3°	251,8°	105,1°
289	2027 10 16	00:00	1h 33m 43,2s	+14° 37' 24"	Psc	382702	15d 21h 24m	-12,59	1873	99,7	175,0° W	173,2°	18:01	00:33	07:46	69,1°	245,1°	112,2°
290	2027 10 17	00:00	2h 25m 38,7s	+19° 16' 56"	Ari	379237	16d 21h 24m	-12,47	1890	97,6	162,7° W	162,1°	18:35	01:22	08:55	72,8°	239,6°	118,4°
291	2027 10 18	00:00	3h 21m 13,1s	+23° 0' 15"	Ari	376286	17d 21h 24m	-12,32	1905	93,3	150,1° W	149,8°	19:18	02:16	10:05	75,2°	235,6°	123,2°
292	2027 10 19	00:00	4h 20m 12,4s	+25° 27' 23"	Tau	373915	18d 21h 24m	-12,15	1917	86,8	137,4° W	137,3°	20:11	03:13	11:12	76,0°	233,8°	125,9°
293	2027 10 20	00:00	5h 21m 33,1s	+26° 22' 6"	Tau	372130	19d 21h 24m	-11,96	1927	78,4	124,6° W	124,5°	21:14	04:12	12:12	74,8°	234,5°	126,0°
294	2027 10 21	00:00	6h 23m 32,0s	+25° 36' 11"	Gem	370897	20d 21h 24m	-11,75	1933	68,6	111,7° W	111,7°	22:24	05:12	13:04	72,0°	237,9°	123,7°
295	2027 10 22	00:00	7h 24m 20,0s	+23° 11' 54"	Gem	370176	21d 21h 24m	-11,50	1937	57,7	98,7° W	98,7°	23:38	06:11	13:47	67,6°	243,4°	119,0°
296	2027 10 23	00:00	8h 22m 41,3s	+19° 21' 7"	Cnc	369943	22d 21h 24m	-11,21	1938	46,3	85,6° W	85,6°		07:07	14:22	62,0°	250,6°	112,6°
297	2027 10 24	00:00	9h 18m 10,8s	+14° 21' 51"	Cnc	370207	23d 21h 24m	-10,88	1937	35,1	72,5° W	72,5°	00:53	07:59	14:53	62,0°	250,6°	105,0°
298	2027 10 25	00:00	10h 11m 8,6s	+8° 34' 41"	Leo	371013	24d 21h 24m	-10,49	1932	24,6	59,3° W	59,3°	02:07	08:50	15:20	55,7°	258,8°	96,7°
299	2027 10 26	00:00	11h 2m 22,9s	+2° 20' 37"	Leo	372428	25d 21h 24m	-10,05	1925	15,5	46,1° W	46,2°	03:21	09:39	15:45	49,0°	267,6°	88,1°
300	2027 10 27	00:00	11h 52m 53,8s	-3° 59' 40"	Vir	374516	26d 21h 24m	-9,54	1914	8,2	33,0° W	33,2°	04:33	10:27	16:11	42,4°	276,4°	79,6°
301	2027 10 28	00:00	12h 43m 41,1s	-10° 6' 1"	Vir	377300	27d 21h 24m	-8,97	1900	3,2	20,0° W	20,5°	05:46	11:17	16:39	36,1°	284,9°	71,6°
302	2027 10 29	00:00	13h 35m 35,3s	-15° 38' 52"	Vir	380736	28d 21h 24m	-8,38	1883	0,6	7,1° W	8,8°	06:58	12:08	17:10	30,7°	292,6°	64,6°
303	2027 10 30	00:00	14h 29m 7,4s	-20° 19' 57"	Lib	384698	0d 10h 24m	-8,28	1864	0,4	5,5° E	7,7°	08:11	13:01	17:46	26,3°	299,0°	59,0°
304	2027 10 31	00:00	15h 24m 19,3s	-23° 53' 38"	Lib	388973	1d 10h 24m	-8,81	1843	2,6	17,8° E	18,5°	09:20	13:56	18:29	23,4°	303,6°	55,3°
305	2027 11 01	00:00	16h 20m 38,4s	-26° 8' 37"	Sco	393284	2d 10h 24m	-9,30	1823	6,8	29,8° E	30,1°	10:23	14:51	19:18	22,0°	306,0°	53,7°
306	2027 11 02	00:00	17h 17m 3,0s	-26° 59' 51"	Oph	397314	3d 10h 24m	-9,74	1804	12,7	41,5° E	41,6°	11:18	15:46	20:14	22,1°	306,2°	54,2°
307	2027 11 03	00:00	18h 12m 20,4s	-26° 28' 56"	Sgr	400745	4d 10h 24m	-10,12	1789	19,9	52,8° E	52,9°	12:05	16:38	21:15	23,6°	304,4°	56,8°
308	2027 11 04	00:00	19h 5m 30,6s	-24° 43' 13"	Sgr	403286	5d 10h 24m	-10,46	1778	28,1	63,9° E	63,9°	12:43	17:27	22:16	26,4°	300,8°	61,0°
309	2027 11 05	00:00	19h 56m 2,6s	-21° 53' 23"	Sgr	404707	6d 10h 24m	-10,76	1772	37,0	74,8° E	74,8°	13:14	18:13	23:18	30,1°	295,9°	66,4°
310	2027 11 06	00:00	20h 43m 57,1s	-18° 11' 6"	Cap	404856	7d 10h 24m	-11,03	1771	46,3	85,6° E	85,6°	13:41	18:56		30,1°	290,1°	66,4°
311	2027 11 07	00:00	21h 29m 40,3s	-13° 47' 22"	Cap	403677	8d 10h 24m	-11,28	1776	55,7	96,4° E	96,4°	14:04	19:37	00:19	34,6°	283,6°	72,7°
312	2027 11 08	00:00	22h 13m 54,8s	-8° 52' 6"	Aqr	401214	9d 10h 24m	-11,51	1787	64,9	107,2° E	107,2°	14:26	20:18	01:19	39,7°	276,6°	79,6°
313	2027 11 09	00:00	22h 57m 33,0s	-3° 34' 27"	Aqr	397615	10d 10h 24m	-11,73	1803	73,8	118,3° E	118,2°	14:47	20:59	02:20	45,1°	269,3°	86,9°
314	2027 11 10	00:00	23h 41m 33,0s	+1° 56' 17"	Psc	393122	11d 10h 24m	-11,94	1824	81,9	129,6° E	129,5°	15:09	21:41	03:21	50,8°	262,0°	94,5°
315	2027 11 11	00:00	0h 26m 56,6s	+7° 29' 30"	Psc	388057	12d 10h 24m	-12,14	1848	88,9	141,2° E	141,0°	15:33	22:25	04:24	56,5°	254,7°	102,0°
316	2027 11 12	00:00	1h 14m 46,5s	+12° 51' 57"	Psc	382799	13d 10h 24m	-12,34	1873	94,5	153,1° E	152,8°	16:00	23:14	05:30	62,1°	247,8°	109,3°
317	2027 11 13	00:00	2h 6m 0,1s	+17° 46' 48"	Ari	377748	14d 10h 24m	-12,53	1898	98,2	165,5° E	164,7°	16:33		06:39	67,2°	241,7°	115,9°
318	2027 11 14	00:00	3h 1m 16,8s	+21° 53' 27"	Ari	373280	15d 10h 24m	-12,68	1921	99,8	178,1° E	175,1°	17:14	00:06	07:49	74,4°	237,0°	121,4°
319	2027 11 15	00:00	4h 0m 37,4s	+24° 49' 7"	Tau	369704	16d 10h 24m	-12,62	1939	98,9	168,9° W	168,2°	18:04	01:03	08:59	75,7°	234,4°	124,9°
320	2027 11 16	00:00	5h 3m 5,2s	+26° 13' 9"	Tau	367228	17d 10h 24m	-12,47	1952	95,5	155,8° W	155,5°	19:05	02:03	10:04	75,2°	234,3°	126,0°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
321	2027 11 17	00:00	6h 6m 46,9s	+25° 52' 55"	Gem	365931	18d 10h 24m	-12,29	1959	89,7	142,5° W	142,4°	20:15	03:05	10:59	72,8°	236,9°	124,4°
322	2027 11 18	00:00	7h 9m 28,8s	+23° 48' 21"	Gem	365770	19d 10h 24m	-12,10	1960	81,6	129,2° W	129,1°	21:29	04:05	11:46	68,8°	241,9°	120,3°
323	2027 11 19	00:00	8h 9m 27,7s	+20° 11' 50"	Cnc	366609	20d 10h 24m	-11,87	1956	71,9	115,9° W	115,9°	22:45	05:03	12:24	63,5°	248,6°	114,3°
324	2027 11 20	00:00	9h 6m 1,2s	+15° 23' 33"	Cnc	368255	21d 10h 24m	-11,61	1947	61,1	102,6° W	102,6°	23:58	05:56	12:55	57,5°	256,5°	107,0°
325	2027 11 21	00:00	9h 59m 23,6s	+9° 46' 12"	Leo	370508	22d 10h 24m	-11,32	1935	49,7	89,5° W	89,5°		06:47	13:23	51,0°	265,0°	99,0°
326	2027 11 22	00:00	10h 50m 24,8s	+3° 41' 30"	Sex	373195	23d 10h 24m	-10,99	1921	38,5	76,5° W	76,5°	01:10	07:35	13:48	51,0°	265,0°	90,7°
327	2027 11 23	00:00	11h 40m 10,3s	-2° 30' 47"	Vir	376192	24d 10h 24m	-10,61	1906	27,9	63,6° W	63,7°	02:21	08:23	14:13	44,5°	273,6°	82,4°
328	2027 11 24	00:00	12h 29m 47,1s	-8° 32' 32"	Vir	379422	25d 10h 24m	-10,19	1890	18,6	50,9° W	51,0°	03:32	09:10	14:40	38,3°	282,0°	74,4°
329	2027 11 25	00:00	13h 20m 14,9s	-14° 6' 36"	Vir	382846	26d 10h 24m	-9,72	1873	11,0	38,3° W	38,6°	04:42	09:59	15:09	32,6°	289,8°	67,2°
330	2027 11 26	00:00	14h 12m 17,2s	-18° 56' 24"	Vir	386430	27d 10h 24m	-9,19	1855	5,2	25,8° W	26,4°	05:53	10:51	15:42	28,0°	296,6°	61,2°
331	2027 11 27	00:00	15h 6m 12,0s	-22° 46' 27"	Lib	390129	28d 10h 24m	-8,63	1838	1,6	13,6° W	14,6°	07:03	11:45	16:22	24,5°	301,8°	56,7°
332	2027 11 28	00:00	16h 1m 42,9s	-25° 23' 50"	Sco	393857	29d 10h 24m	-8,11	1820	0,2	1,7° W	4,9°	08:08	12:39	17:08	22,5°	305,1°	54,2°
333	2027 11 29	00:00	16h 57m 58,1s	-26° 40' 22"	Oph	397480	0d 20h 36m	-8,40	1804	0,9	10,0° E	10,8°	09:07	13:34	18:02	22,0°	306,2°	53,9°
334	2027 11 30	00:00	17h 53m 43,4s	-26° 34' 18"	Sgr	400814	1d 20h 36m	-8,91	1789	3,6	21,4° E	21,7°	09:57	14:28	19:01	23,0°	305,2°	55,7°
335	2027 12 01	00:00	18h 47m 45,9s	-25° 10' 33"	Sgr	403641	2d 20h 36m	-9,37	1776	8,0	32,6° E	32,7°	10:38	15:18	20:03	25,3°	302,2°	59,4°
336	2027 12 02	00:00	19h 39m 16,2s	-22° 38' 58"	Sgr	405726	3d 20h 36m	-9,78	1767	13,9	43,6° E	43,6°	11:13	16:06	21:05	28,7°	297,7°	64,4°
337	2027 12 03	00:00	20h 27m 59,2s	-19° 11' 44"	Cap	406846	4d 20h 36m	-10,15	1762	21,0	54,4° E	54,4°	11:41	16:50	22:07	32,9°	292,2°	70,4°
338	2027 12 04	00:00	21h 14m 9,7s	-15° 1' 2"	Cap	406812	5d 20h 36m	-10,49	1762	29,1	65,2° E	65,2°	12:06	17:32	23:07	37,8°	286,0°	77,0°
339	2027 12 05	00:00	21h 58m 24,6s	-10° 17' 49"	Cap	405495	6d 20h 36m	-10,79	1768	38,0	75,9° E	75,9°	12:28	18:13		37,8°	279,3°	77,0°
340	2027 12 06	00:00	22h 41m 33,5s	-5° 11' 35"	Aqr	402849	7d 20h 36m	-11,08	1780	47,3	86,7° E	86,7°	12:49	18:53	00:07	43,0°	272,2°	84,1°
341	2027 12 07	00:00	23h 24m 34,1s	+0° 8' 57"	Psc	398924	8d 20h 36m	-11,34	1797	56,8	97,7° E	97,7°	13:10	19:33	01:06	48,5°	265,0°	91,4°
342	2027 12 08	00:00	0h 8m 29,3s	+5° 34' 55"	Psc	393880	9d 20h 36m	-11,59	1820	66,3	108,9° E	108,9°	13:32	20:16	02:07	54,2°	257,8°	98,9°
343	2027 12 09	00:00	0h 54m 25,9s	+10° 55' 46"	Psc	387989	10d 20h 36m	-11,83	1848	75,4	120,5° E	120,4°	13:58	21:02	03:11	59,7°	250,8°	106,2°
344	2027 12 10	00:00	1h 43m 31,2s	+15° 57' 55"	Psc	381628	11d 20h 36m	-12,06	1879	83,7	132,5° E	132,3°	14:28	21:52	04:18	65,0°	244,4°	113,1°
345	2027 12 11	00:00	2h 36m 43,9s	+20° 23' 22"	Ari	375259	12d 20h 36m	-12,28	1911	90,8	144,9° E	144,6°	15:05	22:47	05:27	69,6°	239,0°	119,1°
346	2027 12 12	00:00	3h 34m 36,2s	+23° 49' 45"	Tau	369388	13d 20h 36m	-12,49	1941	96,1	157,7° E	157,3°	15:51	23:47	06:38	73,2°	235,3°	123,5°
347	2027 12 13	00:00	4h 36m 46,9s	+25° 52' 54"	Tau	364506	14d 20h 36m	-12,68	1967	99,3	171,0° E	170,2°	16:49		07:47	75,6°	234,1°	125,8°
348	2027 12 14	00:00	5h 41m 43,6s	+26° 12' 44"	Tau	361028	15d 20h 36m	-12,76	1986	99,8	175,5° W	174,6°	17:57	00:50	08:48	73,9°	235,6°	125,3°
349	2027 12 15	00:00	6h 46m 59,8s	+24° 40' 53"	Gem	359220	16d 20h 36m	-12,61	1996	97,5	161,7° W	161,6°	19:13	01:53	09:40	70,3°	239,9°	122,0°
350	2027 12 16	00:00	7h 50m 11,2s	+21° 24' 42"	Gem	359160	17d 20h 36m	-12,42	1996	92,4	147,9° W	147,9°	20:31	02:53	10:22	65,3°	246,3°	116,5°
351	2027 12 17	00:00	8h 49m 50,7s	+16° 44' 30"	Cnc	360738	18d 20h 36m	-12,22	1987	84,9	134,1° W	134,1°	21:47	03:50	10:57	59,3°	254,1°	109,4°
352	2027 12 18	00:00	9h 45m 43,7s	+11° 6' 41"	Leo	363683	19d 20h 36m	-11,98	1971	75,5	120,5° W	120,5°	23:01	04:43	11:26	52,8°	262,6°	101,3°
353	2027 12 19	00:00	10h 38m 28,3s	+4° 57' 32"	Sex	367638	20d 20h 36m	-11,72	1950	64,8	107,1° W	107,1°	05:33	05:33	11:52	46,2°	271,3°	92,9°
354	2027 12 20	00:00	11h 29m 9,0s	-1° 19' 56"	Leo	372220	21d 20h 36m	-11,43	1926	53,6	94,0° W	94,0°	00:13	06:21	12:18	46,2°	271,3°	84,6°
355	2027 12 21	00:00	12h 18m 56,9s	-7° 26' 19"	Vir	377087	22d 20h 36m	-11,10	1901	42,5	81,2° W	81,2°	01:23	07:08	12:43	39,9°	279,8°	76,5°
356	2027 12 22	00:00	13h 8m 57,9s	-13° 5' 2"	Vir	381968	23d 20h 36m	-10,74	1877	32,0	68,6° W	68,7°	02:33	07:57	13:11	34,2°	287,7°	69,2°
357	2027 12 23	00:00	14h 0m 4,5s	-18° 1' 11"	Vir	386675	24d 20h 36m	-10,34	1854	22,5	56,3° W	56,5°	03:43	08:46	13:42	29,3°	294,7°	62,9°
358	2027 12 24	00:00	14h 52m 47,6s	-22° 1' 7"	Lib	391094	25d 20h 36m	-9,90	1833	14,4	44,3° W	44,5°	04:52	09:38	14:19	25,5°	300,3°	58,0°
359	2027 12 25	00:00	15h 47m 7,6s	-24° 52' 59"	Lib	395166	26d 20h 36m	-9,42	1814	8,0	32,5° W	32,8°	05:58	10:32	15:03	23,0°	304,2°	54,8°
360	2027 12 26	00:00	16h 42m 30,7s	-26° 28' 2"	Sco	398855	27d 20h 36m	-8,90	1798	3,4	20,9° W	21,3°	06:58	11:26	15:53	22,0°	306,1°	53,8°

Topocentric ephemeris of the Moon (following)

Times are given in UT for Aveiro (8° 37' 48" W, 40° 36' 7" N, zone Z).

	Date	Hour	R. A. (2000.0)	Decl. (2000.0)	Const.	Dist. E.	Age	Magn.	Diam.	Illum.	Elong.	Separ.	Rise	Transit	Set	Elevation	Azimuth	Azimuth
	yyyy mm dd	hh:mm	topocentric	topocentric		km	days	mV	"	%	°	°	hh:mm	hh:mm	hh:mm	(max.)	at rise	at set
361	2027 12 27	00:00	17h 37m 54,8s	-26° 42' 35"	Oph	402126	28d 20h 36m	-8,34	1783	0,8	9,5° W	10,1°	07:51	12:19	16:50	22,5°	305,8°	54,8°
362	2027 12 28	00:00	18h 32m 8,2s	-25° 38' 57"	Sgr	404920	0d 3h 48m	-7,95	1771	0,1	1,6° E	2,9°	08:35	13:11	17:51	24,3°	303,5°	57,8°
363	2027 12 29	00:00	19h 24m 12,3s	-23° 24' 57"	Sgr	407149	1d 3h 48m	-8,46	1761	1,2	12,6° E	12,7°	09:12	13:59	18:54	27,3°	299,5°	62,4°
364	2027 12 30	00:00	20h 13m 37,3s	-20° 11' 52"	Cap	408692	2d 3h 48m	-8,96	1754	4,2	23,5° E	23,5°	09:42	14:45	19:56	31,3°	294,3°	68,1°
365	2027 12 31	00:00	21h 0m 23,9s	-16° 12' 11"	Cap	409402	3d 3h 48m	-9,41	1751	8,7	34,2° E	34,2°	10:08	15:28	20:56	36,0°	288,3°	74,5°
366	2028 01 01	00:00	21h 44m 57,6s	-11° 37' 53"	Cap	409129	4d 3h 48m	-9,82	1752	14,7	44,9° E	44,9°	10:31	16:09	21:56	41,1°	281,7°	81,5°
367	2028 01 02	00:00	22h 28m 0,0s	-6° 39' 34"	Aqr	407734	5d 3h 48m	-10,19	1758	21,8	55,5° E	55,6°	10:52	16:49	22:55	46,5°	274,8°	88,7°