

This document will be augmented and improved from time to time.

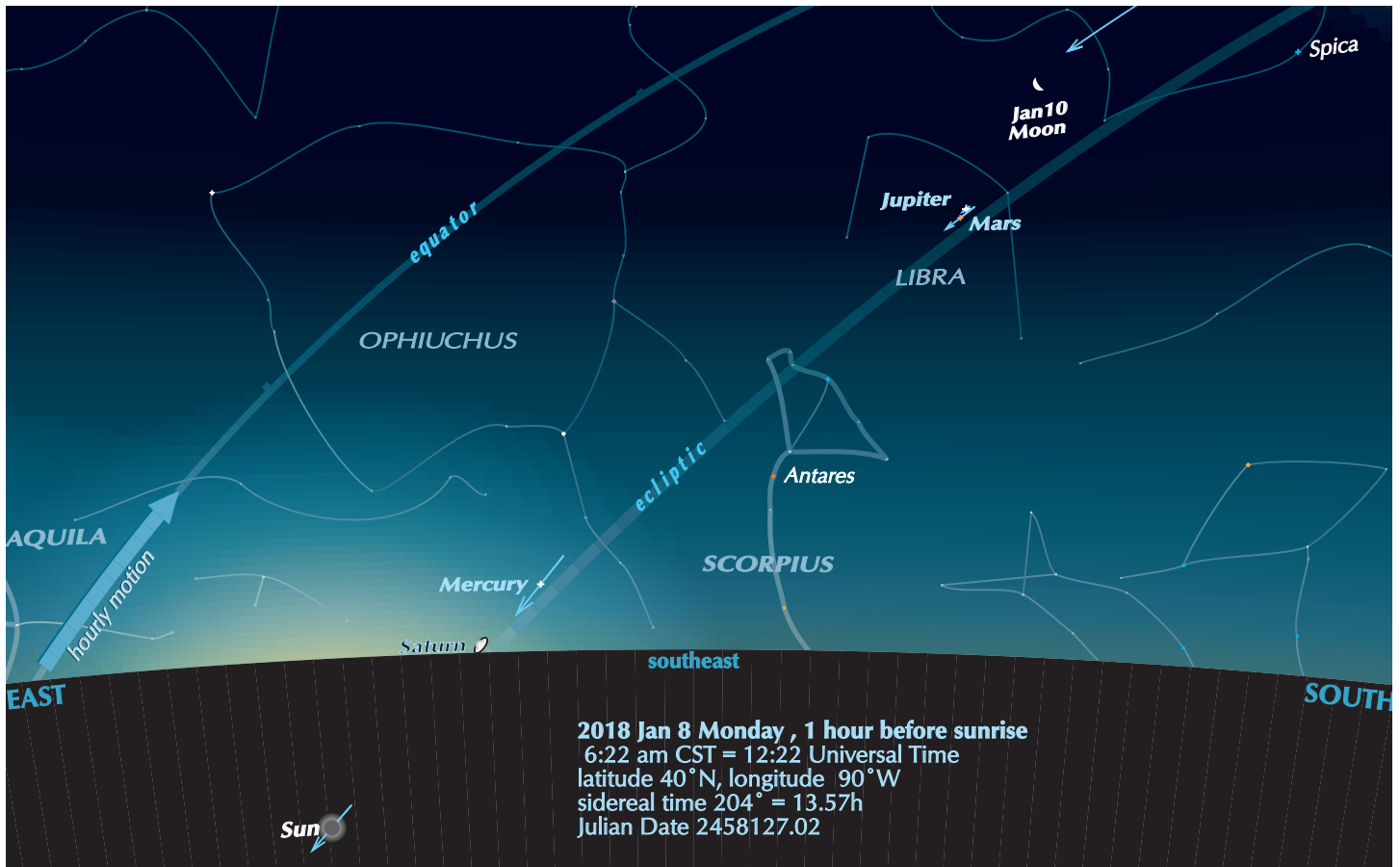
Hours and minutes are given in Universal Time.

The left column gives the Julian Date (number of days from 4713 B.C. Jan. 1 noon), a convenient system that allows finding the time span between events by subtraction. The first 4 digits of the Julian date (2458) are removed, to save space.

Explanation of terms can be found in our glossary book *Albedo to Zodiac*, and there is more about each planet or other topic in *The Astronomical Companion*.

Meteor showers: only some are listed here, and they and others are more fully explained in the page for METEORS.

Julian date	-2,458,000	UT		
120.007	2018 Jan 1	Mon	12	Moon 4.4° S. of M35 cluster , about 171° from the Sun in the midnight sky.
120.325			20	Mercury at greatest elongation west , 22.6° from the Sun in the morning sky.
120.409			21:49	Moon at perigee; distance 55.91 Earth-radii. Nearest in year.
			21:49	Perigee only 4.6 hours before Full Moon.
120.600	2018 Jan 2	Tue	2:24	Full Moon.
121.030			13	Uranus stationary in longitude.
121.248			18	Moon 12.2° S. of Castor , 171° and 167° from the Sun in the morning sky.
121.298			19	Uranus stationary in right ascension; resumes direct (eastward) motion.
121.425			22	Moon 8.6° S. of Pollux , 168° and 167° from the Sun in the morning sky.
121.779	2018 Jan 3	Wed	7	Earth at perihelion, 0.98329 AU from Sun.
122.326			20	Moon 2.0° S. of Beehive Cluster , about 156° from the Sun in the morning sky. Quadrantid meteors. Unfavorable.
122.826	2018 Jan 4	Thu	7:50	Moon at ascending node (longitude 135.2°).
123.838	2018 Jan 5	Fri	8	Moon 0.88° N.N.E. of Regulus , about 135° from the Sun in the morning sky.
125.518	2018 Jan 7	SUN	0	Mars 0.20° S.S.W. of Jupiter , about 59° from the Sun in the morning sky; magnitudes 1.4 and -1.8.
127.434	2018 Jan 8	Mon	22:25	Last Quarter Moon.
127.651	2018 Jan 9	Tue	4	Pluto at conjunction with the Sun.
127.764			6	Venus at superior conjunction with the Sun, 1.711 AU from the Earth.
127.849			8	Moon 6.9° N.N.E. of Spica , about 85° from the Sun in the morning sky.
127.852			8	Venus 1.2° S. of Pluto , less than 1° from the Sun .
129.852	2018 Jan 11	Thu	8	Moon 4.2° N.N.E. of Jupiter, 63° and 62° from the Sun in the morning sky.
130.029			13	Moon 4.4° N.N.E. of Mars , about 61° from the Sun in the morning sky.
130.652	2018 Jan 12	Fri	3:39	Moon 0.38° S.S.W. of 4 Vesta , about 54° from the Sun in the morning sky .
131.665	2018 Jan 13	SAT	4	Moon 9.3° N. of Antares , about 43° from the Sun in the morning sky.



In pictures like this, planets are shown according to their brightness, like the stars, except for Venus and Saturn, whose disks are shown at 150 times true size, so that you can see Saturn's rings and Venus's changing shape.

The projection is based on altitude (height) and azimuth (horizontal distance) from a center. Far from the center, there has to be exaggeration. The center can be anywhere; if it is at altitude 0°, the horizon will appear straight; if at e.g. altitude +10°, the horizon will appear concave; if (as in this picture) -10°, below ground, the horizon appears convex, which helps to give a sense of our planet as a globe hurtling toward the stars.

Sun, Moon, and planets are shown even when they are somewhat below the horizon. The Sun and Moon are shown at twice their real size. The Moon, being so near, is shown at its position as shifted by parallax for the location on Earth's surface. (It appears farther south if seen from far-

ther north.) It is shown also at the same time on the two preceding and two following days. Arrows from each of these positions to the next are not shifted for parallax, so you can judge where the Moon would appear if seen from the center of the Earth.

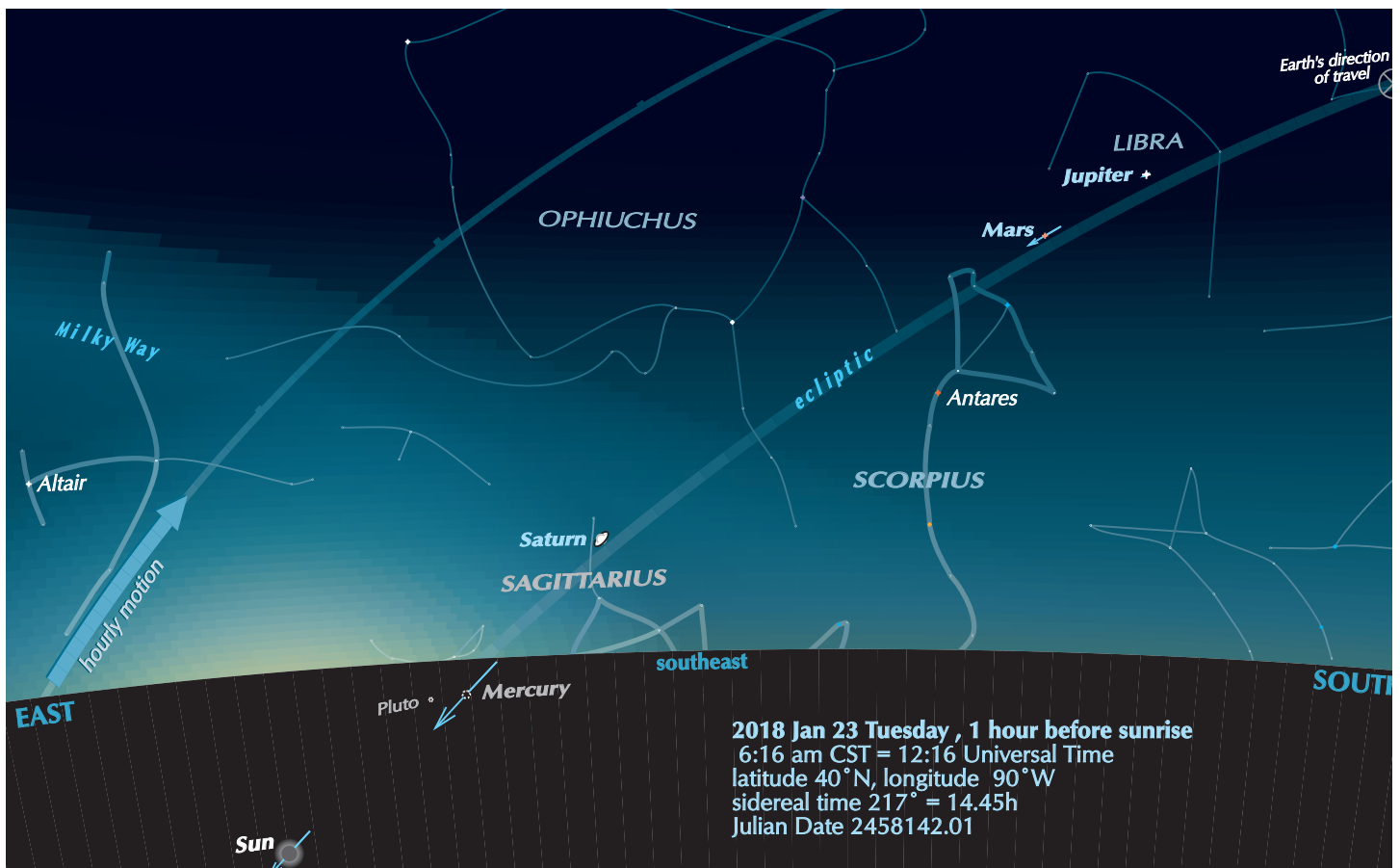
Arrows through other moving bodies show their motion (on the map of the sky) from 2 days before the date of the picture to 2 days after. If a planet's progress eastward is shorter than the Sun's, it will actually move westward from day to day.

The broad arrow on the celestial equator at the horizon shows how far the whole sky rotates in on hour. This shows, for instance, how soon something will set.

Constellation formlines are shown, and many stars that will not really be visible during twilight or at low altitudes. They help to give a sense of which way we are facing in the universe.

131.739		6	Mercury 0.64° S. of Saturn , about 20° from the Sun in the morning sky; magnitudes -0.3 and 0.5.
133.592	2018 Jan 15 Mon	2	Moon at apogee; distance 63.73 Earth-radii. Farthest in year.
133.593		2	Moon 2.6° N. of Saturn, about 22° from the Sun in the morning sky.
133.606		3	Mercury at descending node through the ecliptic plane.

133.708		5	Moon, Mercury, and Saturn within circle of diameter 3.61°; 21° west of the Sun.
133.817		8	Moon 3.4° N. of Mercury, 20° and 19° from the Sun in the morning sky.
134.969	2018 Jan 16 Tue	11	Moon 1.8° N. of Pluto , only about 7d from the Sun .
135.595	2018 Jan 17 wed	2:17	New Moon. Beginning of lunation 1176.
135.795		7	Moon 2.5° N. of Venus , only about 2d from the Sun .
137.104	2018 Jan 18 Thu	14:30	Moon at descending node (longitude 314.9°).
137.499		24	Mercury at greatest declination south (-23.5°).
138.338	2018 Jan 19 Fri	20	Sun enters Capricornus, at longitude 299.71° on the ecliptic.
138.632	2018 Jan 20 SAT	3	Sun enters the astrological sign Aquarius, i.e. its longitude is 300°.
139.357		21	Moon 1.5° S.S.E. of Neptune, about 42° from the Sun in the evening sky.
142.102	2018 Jan 23 Tue	14	Venus at aphelion, 0.7283 AU from the Sun.
142.668	2018 Jan 24 wed	4	Moon 4.4° S.S.E. of Uranus , about 81° from the Sun in the evening sky.
143.302		19	Mercury 1.5° S. of Pluto , about 15° from the Sun in the morning sky; magnitudes -0.4 and 14.3.
143.430		22:19	First Quarter Moon.



143.973	2018 Jan 25 Thu	11	Mercury at aphelion, 0.4667 AU from the Sun.
145.269	2018 Jan 26 Fri	18	Moon 9.2° S.S.E. of Pleiades , 114° and 113° from the Sun in the evening sky.
145.928	2018 Jan 27 SAT	10	Moon 0.67° N.N.W. of Aldebaran , about 122° from the Sun in the evening sky.
147.462	2018 Jan 28 SUN	23	Moon 4.5° S. of M35 cluster , about 143° from the Sun in the evening sky.
148.726	2018 Jan 30 Tue	5	Moon 12.2° S. of Castor , 161° and 158° from the Sun in the evening sky.
148.878		9	Mars and Uranus at heliocentric opposition Their heliocentric longitudes are 207.6° and 27.6°.
148.903		10	Moon 8.6° S. of Pollux , 164° and 162° from the Sun in the evening sky.
148.908		9:48	Moon at perigee; distance 56.28 Earth-radii.
149.731	2018 Jan 31 wed	6	Dwarf planet or asteroid 1 Ceres at opposition. Magnitude 6.9.
149.803		7	Moon 2.0° S. of Beehive Cluster , about 176° from the Sun in the midnight sky.
150.060		13:27	Full Moon. Total eclipse of the Moon.
150.282		18:46	Moon at ascending node (longitude 134.9°).
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151.305	2018 Feb 1 Thu	19	Moon 0.92° N.N.E. of Regulus , about 163° from the Sun in the morning sky.
153.485	2018 Feb 3 SAT	24	Middle of eclipse season: Sun is at same longitude as Moon's descending node, 315.1°.
155.189	2018 Feb 5 Mon	17	Moon 7.0° N.N.E. of Spica , about 113° from the Sun in the morning sky.
157.163	2018 Feb 7 wed	15:55	Last Quarter Moon.
157.420		22	Moon 4.1° N.N.E. of Jupiter, about 87° from the Sun in the morning sky.
	2018 Feb 8 Thu		Alpha Centaurid meteors. Unfavorable.
158.793	2018 Feb 9 Fri	7	Moon 4.3° N. of Mars , about 72° from the Sun in the morning sky.
158.944		11	Moon 9.4° N. of Antares , 70° and 71° from the Sun in the morning sky.
159.024		12:35	Moon 0.93° S. of 4 Vesta , about 69° from the Sun in the morning sky .
160.471	2018 Feb 10 SAT	23	Jupiter at west quadrature.
160.909	2018 Feb 11 SUN	10	The equation of time is at minimum for the year, -14.24 minutes.
161.095		14	Moon at apogee; distance 63.61 Earth-radii.
161.112		15	Moon 2.5° N. of Saturn , about 47° from the Sun in the morning sky.
161.586	2018 Feb 12 Mon	2	Mars 5.1° N. of Antares , about 73° from the Sun in the morning sky; magnitudes 1.0 and 1.0.
162.322		20	Moon 1.8° N. of Pluto , about 34° from the Sun in the morning sky.
164.234	2018 Feb 14 wed	18	Mercury at greatest latitude south of the ecliptic plane (-7.0°).

164.348			20	Venus at greatest latitude south of the ecliptic plane (-3.4°).
164.383			21:12	Moon at descending node (longitude 315.0°).
165.270	2018 Feb 15	Thu	18	Moon 1.1° N.N.W. of Mercury, only about 2d from the Sun .
165.379			21:06	New Moon. Beginning of lunation 1177. Partial eclipse of the Sun.
166.115	2018 Feb 16	Fri	15	Sun enters Aquarius, at longitude 327.88° on the ecliptic.
166.194			17	Moon 0.53° S.S.E. of Venus , only about 9d from the Sun .
166.642	2018 Feb 17	SAT	3	Moon, Venus, and Neptune within circle of diameter 5.65° ; 13° east of the Sun.
166.678			4	Moon 1.6° S.S.E. of Neptune, about 15° from the Sun in the evening sky.
167.009			12	Mercury at superior conjunction with the Sun, 1.384 AU from the Earth.
168.221	2018 Feb 18	SUN	17	Sun enters the astrological sign Pisces, i.e. its longitude is 330° .
169.957	2018 Feb 20	Tue	11	Moon 4.4° S.S.E. of Uranus , about 54° from the Sun in the evening sky.
171.278	2018 Feb 21	wed	19	Venus 0.54° S.S.E. of Neptune, 11° and 10° from the Sun in the evening sky; magnitudes -3.9 and 8.0 .
172.540	2018 Feb 23	Fri	1	Moon 9.1° S.S.E. of Pleiades , about 86° from the Sun in the evening sky.
172.839			8:08	First Quarter Moon.
173.228			17	Moon 0.70° N. of Aldebaran , about 95° from the Sun in the evening sky.
174.807	2018 Feb 25	SUN	7	Moon 4.5° S. of M35 cluster , about 116° from the Sun in the evening sky.
175.000			12	Mercury, Venus, and Neptune within circle of diameter 4.54° ; 8° east of the Sun.
175.030			13	Mercury 0.43° S.S.E. of Neptune, only about 7d from the Sun.
176.116	2018 Feb 26	Mon	15	Moon 12.2° S. of Castor , 134° and 132° from the Sun in the evening sky.
176.300			19	Moon 8.6° S. of Pollux , 136° and 135° from the Sun in the evening sky.
177.108	2018 Feb 27	Tue	14:36	Moon at perigee; distance 57.06 Earth-radii.
177.228			17	Moon 2.0° S. of Beehive Cluster , about 149° from the Sun in the evening sky.
177.711	2018 Feb 28	wed	5:04	Moon at ascending node (longitude 134.9°).
178.745	2018 Mar 1	Thu	6	Moon 0.91° N.N.E. of Regulus , about 169° from the Sun in the evening sky.
179.535	2018 Mar 2	Fri	0:51	Full Moon.
181.408	2018 Mar 3	SAT	22	Mars and Jupiter at heliocentric conjunction. Their heliocentric longitude is 223.3° .

181.735	2018 Mar	4 SUN	6	Mercury 1.1° N.W. of Venus , about 13° from the Sun in the evening sky; magnitudes -1.2 and -3.9.
182.081			14	Neptune at conjunction with the Sun.
182.595	2018 Mar	5 Mon	2	Moon 6.9° N.N.E. of Spica , about 140° from the Sun in the morning sky.
183.290			19	Mercury at ascending node through the ecliptic plane.
183.699	2018 Mar	6 Tue	5	Mercury crosses equator into north hemisphere of sky.
184.877	2018 Mar	7 Wed	9	Moon 4.0° N.N.E. of Jupiter, 113° and 114° from the Sun in the morning sky.
186.270	2018 Mar	8 Thu	18	Moon 9.3° N. of Antares , about 98° from the Sun in the morning sky.
186.671	2018 Mar	9 Fri	4	Jupiter stationary in longitude.
186.735			6	Venus crosses equator into north hemisphere of sky.
186.877			9	Jupiter stationary in right ascension; begins retrograde (westward) motion.
186.973			11:22	Last Quarter Moon.
187.280			18:44	Moon 1.8° S. of 4 Vesta , about 87° from the Sun in the morning sky .
187.560	2018 Mar	10 SAT	1	Moon 3.8° N. of Mars , about 84° from the Sun in the morning sky.
187.958			11	Mercury at perihelion, 0.3075 AU from the Sun. Magnitude -0.8.
188.602	2018 Mar	11 SUN	2	Moon 2.2° N. of Saturn , about 72° from the Sun in the morning sky.
188.888			9	Moon at apogee; distance 63.45 Earth-radii.
189.690	2018 Mar	12 Mon	5	Moon 1.7° N. of Pluto , about 61° from the Sun in the morning sky.
189.706			5	Sun enters Pisces, at longitude 351.57° on the ecliptic.
191.658	2018 Mar	14 Wed	3:48	Moon at descending node (longitude 314.5°).
193.126	2018 Mar	15 Thu	15	Mercury at greatest elongation east , 18.4° from the Sun in the evening sky.
194.066	2018 Mar	16 Fri	14	Moon 1.7° S.S.E. of Neptune, only about 12d from the Sun .
194.287			19	Mars at descending node through the ecliptic plane.
195.051	2018 Mar	17 SAT	13:13	New Moon. Beginning of lunation 1178.
196.402	2018 Mar	18 SUN	22	Moon 3.5° S.S.E. of Venus , about 17° from the Sun in the evening sky.
196.459			23	Moon 7.3° S.S.E. of Mercury, about 18° from the Sun in the evening sky.
196.831	2018 Mar	19 Mon	8	Mercury 3.8° N.N.W. of Venus , 18° and 17° from the Sun in the evening sky; magnitudes 0.5 and -3.9.
197.304			19	Moon 4.4° S.S.E. of Uranus , about 28° from the Sun in the evening sky.

198.170	2018 Mar 20 Tue	16	Mercury at greatest latitude north of the ecliptic plane (7.0°).
198.177		16:15	March or spring or vernal equinox. Sun enters (at the equinox) the astrological sign Aries, i.e. its longitude is 0°.
199.764	2018 Mar 22 Thu	6	Moon 9.0° S.S.E. of Pleiades , about 59° from the Sun in the evening sky.
199.823		8	Mercury 10.8° W. of Uranus , 16° and 25° from the Sun in the evening sky; magnitudes 1.3 and 5.9.
200.210		17	Mercury stationary in right ascension; begins retrograde (westward) motion.
200.449		23	Moon 0.85° N. of Aldebaran , about 68° from the Sun in the evening sky.
200.509	2018 Mar 23 Fri	0	Mercury stationary in longitude.
202.051	2018 Mar 24 SAT	13	Moon 4.3° S. of M35 cluster , 89° and 88° from the Sun in the evening sky.
202.149		15:35	First Quarter Moon.
202.167		16	Mars at west quadrature.
203.391	2018 Mar 25 SUN	21	Moon 12.1° S. of Castor , 106° and 105° from the Sun in the evening sky.
203.580	2018 Mar 26 Mon	2	Moon 8.4° S. of Pollux , 109° and 108° from the Sun in the evening sky.
204.230		17:32	Moon at perigee; distance 57.87 Earth-radii.
204.536	2018 Mar 27 Tue	1	Moon 1.8° S. of Beehive Cluster , about 121° from the Sun in the evening sky.
204.957		10:59	Moon at ascending node (longitude 133.7°).
205.947	2018 Mar 28 Wed	10:44	Asteroid 3 Juno 3.2° N.N.W. of Neptune, about 23° from the Sun in the morning sky; magnitudes 10.3 and 8.0.
206.108		15	Moon 0.98° N.N.E. of Regulus , about 142° from the Sun in the evening sky.
206.530	2018 Mar 29 Thu	1	Venus 0.07° S.S.E. of Uranus , about 19° from the Sun in the evening sky; magnitudes -3.9 and 5.9.
207.091		14	Saturn at west quadrature.
209.025	2018 Mar 31 SAT	12:37	Full Moon.
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209.998	2018 Apr 1 SUN	12	Moon 6.9° N.N.E. of Spica , about 167° from the Sun in the morning sky.
210.241		18	Mercury at inferior conjunction with the Sun, 0.597 AU from the Earth and 2.84° north of the Sun.
211.032	2018 Apr 2 Mon	13	Mars 1.3° S. of Saturn , about 94° from the Sun in the morning sky; magnitudes 0.3 and 0.6.
212.176	2018 Apr 3 Tue	16	Moon 3.8° N.N.E. of Jupiter, 141° and 142° from the Sun in the morning sky.
213.628	2018 Apr 5 Thu	3	Moon 9.1° N. of Antares , about 125° from the Sun in the morning sky.

216.026	2018 Apr 7 SAT	13	Moon 1.9° N. of Saturn , 98° and 99° from the Sun in the morning sky.
216.150		16	Moon, Mars, and Saturn within circle of diameter 3.46°; 97° west of the Sun.
216.260		18	Moon 3.1° N. of Mars , about 96° from the Sun in the morning sky.
216.731	2018 Apr 8 SUN	6	Moon at apogee; distance 63.36 Earth-radii.
216.805		7:20	Last Quarter Moon.
217.056		13	Moon 1.5° N. of Pluto , 87° and 88° from the Sun in the morning sky.
218.840	2018 Apr 10 Tue	8:10	Moon at descending node (longitude 312.6°).
220.638	2018 Apr 12 Thu	3	Venus at ascending node through the ecliptic plane.
221.496		24	Moon 1.8° S.S.E. of Neptune, about 38° from the Sun in the morning sky.
221.575	2018 Apr 13 Fri	2	Mercury at descending node through the ecliptic plane.
222.657	2018 Apr 14 SAT	4	Mercury stationary in right ascension; resumes direct (eastward) motion.
223.000		12	Moon 3.6° S.S.E. of Mercury, about 20° from the Sun in the morning sky.
223.886	2018 Apr 15 SUN	9	Mercury stationary in longitude.
224.156		16	The equation of time is 0.
224.582	2018 Apr 16 Mon	1:59	New Moon. Beginning of lunation 1179.
224.661		4	Saturn 12.1° W. of Pluto , ***° and -95° from the Sun in the morning sky; magnitudes 0.5 and 14.2.
224.744		6	Moon 4.4° S.S.E. of Uranus , only about 3d from the Sun .
226.427	2018 Apr 17 Tue	22	Moon 5.2° S.S.E. of Venus , about 24° from the Sun in the evening sky.
226.496		24	Saturn at aphelion, 10.0657 AU from the Sun.
226.513	2018 Apr 18 Wed	0	Saturn stationary in right ascension; begins retrograde (westward) motion.
226.521		1	Saturn stationary in longitude.
227.037		13	Moon 8.8° S.S.E. of Pleiades , about 32° from the Sun in the evening sky.
227.085		14	Uranus at conjunction with the Sun.
227.686	2018 Apr 19 Thu	4	Sun enters Aries, at longitude 29.08° on the ecliptic.
227.699		5	Moon 1.0° N.N.W. of Aldebaran , about 41° from the Sun in the evening sky.
228.633	2018 Apr 20 Fri	3	Sun enters the astrological sign Taurus, i.e. its longitude is 30°.
229.109		14:36	Moon at perigee; distance 57.81 Earth-radii.
229.280		19	Moon 4.1° S. of M35 cluster , about 62° from the Sun in the evening sky.
230.582	2018 Apr 22 SUN	2	Pluto stationary in longitude.
230.612		3	Moon 11.8° S. of Castor , 80° and 79° from the Sun in the evening sky.

230.802			7	Moon 8.2° S. of Pollux , 82° and 81° from the Sun in the evening sky.
231.116			15	Pluto stationary in right ascension; begins retrograde (westward) motion. Lyrid meteors. Very favorable.
231.407			21:46	First Quarter Moon.
231.763	2018 Apr 23	Mon	6	Moon 1.6° S. of Beehive Cluster , about 95° from the Sun in the evening sky.
231.942			11	Mercury at aphelion, 0.4667 AU from the Sun.
232.015			12:21	Moon at ascending node (longitude 131.2°).
	2018 Apr 24	Tue		Pi Puppis meteors.
233.363			21	Moon 1.2° N.N.E. of Regulus , about 115° from the Sun in the evening sky.
233.490			24	Venus 3.5° S.S.E. of Pleiades , about 26° from the Sun in the evening sky; magnitudes -3.9 and 2.9.
234.732	2018 Apr 26	Thu	6	Mars 1.4° S. of Pluto , about 105° from the Sun in the morning sky; magnitudes -0.3 and 14.2.
236.972	2018 Apr 28	SAT	11	Dwarf planet or asteroid 1 Ceres at perihelion, 2.5595 AU from the Sun. Magnitude 8.4.
237.338			20	Moon 6.9° N.N.E. of Spica , about 165° from the Sun in the evening sky.
238.261	2018 Apr 29	SUN	18	Mercury at greatest elongation west , 27.0° from the Sun in the morning sky.
238.540	2018 Apr 30	Mon	0:58	Full Moon.
239.304			19	Moon 3.7° N.N.E. of Jupiter, 170° and 171° from the Sun in the midnight sky.
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240.976	2018 May 2	Wed	11	Moon 8.9° N. of Antares , 151° and 152° from the Sun in the morning sky.
241.268			18	Venus 6.4° N. of Aldebaran , about 28° from the Sun in the evening sky; magnitudes -3.9 and 0.9.
243.347	2018 May 4	Fri	20	Moon 1.7° N. of Saturn , about 125° from the Sun in the morning sky.
244.386	2018 May 5	SAT	21	Moon 1.3° N. of Pluto , about 114° from the Sun in the morning sky.
244.458			23	Moon, Mars, and Pluto within circle of diameter 4.81°; 112° west of the Sun.
	2018 May 6	SUN		Eta Aquarid meteors. Unfavorable.
244.517			0	Moon at apogee; distance 63.41 Earth-radii.
244.785			7	Moon 2.7° N. of Mars , about 110° from the Sun in the morning sky.
245.932	2018 May 7	Mon	10:22	Moon at descending node (longitude 309.6°).
246.591	2018 May 8	Tue	2:10	Last Quarter Moon.
247.502	2018 May 9	Wed	0	Asteroid 4 Vesta at perihelion, 2.1517 AU from the Sun. Magnitude 6.3.
247.520			0	Jupiter at opposition. Magnitude -2.5.
248.924	2018 May 10	Thu	10	Moon 2.1° S.S.E. of Neptune, about 64° from the Sun in the morning sky.
248.998			12	Jupiter nearest to Earth (4.400 AU).

252.024	2018 May 13	SUN	13	Mercury 2.2° S.S.E. of Uranus , about 23° from the Sun in the morning sky; magnitudes -0.2 and 5.9.
252.203			17	Mercury at greatest latitude south of the ecliptic plane (-7.0°).
252.250			18	Moon 4.4° S.S.E. of Uranus , 24° and 23° from the Sun in the morning sky.
			18	Moon, Mercury, and Uranus within circle of diameter 4.44°; 23° west of the Sun.
252.287			19	Moon 2.3° S.S.E. of Mercury, about 23° from the Sun in the morning sky.
252.638	2018 May 14	Mon	3	The equation of time reaches a shallow maximum of 3.65 minutes.
252.803			7	Sun enters Taurus, at longitude 53.46° on the ecliptic.
253.992	2018 May 15	Tue	11:49	New Moon. Beginning of lunation 1180.
254.400			22	Moon 8.7° S.S.E. of Pleiades , only about 7d from the Sun .
254.463			23	Venus at perihelion, 0.7184 AU from the Sun. Magnitude -4.0.
255.049	2018 May 16	wed	13	Moon 1.2° N. of Aldebaran , about 15° from the Sun in the evening sky.
256.289	2018 May 17	Thu	19	Moon 4.8° S. of Venus , 32° and 31° from the Sun in the evening sky.
256.379			21:05	Moon at perigee; distance 57.04 Earth-radii.
256.580	2018 May 18	Fri	2	Moon 3.9° S. of M35 cluster , 36° and 35° from the Sun in the evening sky.
257.877	2018 May 19	SAT	9	Moon 11.6° S. of Castor , about 53° from the Sun in the evening sky.
258.061			13	Moon 8.0° S. of Pollux , 56° and 55° from the Sun in the evening sky.
259.004	2018 May 20	SUN	12	Moon 1.4° S. of Beehive Cluster , about 68° from the Sun in the evening sky.
259.052			13:15	Moon at ascending node (longitude 128.4°).
259.594	2018 May 21	Mon	2	Sun enters the astrological sign Gemini, i.e. its longitude is 60°.
259.907			10	Venus 0.73° N. of M35 cluster , about 32° from the Sun in the evening sky; magnitudes -4.0 and 5.3.
260.582	2018 May 22	Tue	2	Moon 1.4° N.N.E. of Regulus , about 89° from the Sun in the evening sky.
260.622			3	Autumn equinox on Mars.
260.659			3:50	First Quarter Moon.
260.739			6	Venus at greatest declination north (25.1°).
264.602	2018 May 26	SAT	2	Moon 7.0° N.N.E. of Spica , about 139° from the Sun in the evening sky.
266.329	2018 May 27	SUN	20	Moon 3.8° N.N.E. of Jupiter, 159° and 160° from the Sun in the evening sky.
268.097	2018 May 29	Tue	14:20	Full Moon.

268.282			19	Moon 8.8° N. of Antares , about 175° from the Sun in the midnight sky.
268.782	2018 May 30	Wed	7	Mercury 4.5° S.S.E. of Pleiades , only about 8d from the Sun.
270.074	2018 May 31	Thu	13:47	Moon 1.9° S. of 4 Vesta , 158° and 157° from the Sun in the morning sky .
270.548	2018 Jun 1	Fri	1	Moon 1.6° N. of Saturn , about 153° from the Sun in the morning sky.
271.259			18	Mercury at ascending node through the ecliptic plane.
271.657	2018 Jun 2	SAT	4	Moon 1.2° N. of Pluto , about 141° from the Sun in the morning sky.
272.191			17	Moon at apogee; distance 63.55 Earth-radii.
272.953	2018 Jun 3	SUN	11	Mercury 5.8° N.N.W. of Aldebaran , only about 4d from the Sun.
272.956			11	Moon 3.1° N. of Mars , about 127° from the Sun in the morning sky.
273.026			12:37	Moon at descending node (longitude 307.1°).
275.368	2018 Jun 5	Tue	21	Venus 8.1° S. of Castor , 35° and 37° from the Sun in the evening sky; magnitudes -4.0 and 1.5.
275.576	2018 Jun 6	Wed	2	Mercury at superior conjunction with the Sun, 1.322 AU from the Earth.
275.927			10	Mercury at perihelion, 0.3075 AU from the Sun. Magnitude -2.3.
276.139			15	Venus at greatest latitude north of the ecliptic plane (3.4°).
276.273			18:33	Last Quarter Moon.
276.297			19	Moon 2.3° S.S.E. of Neptune, about 90° from the Sun in the morning sky.
277.858	2018 Jun 8	Fri	9	Venus 4.7° S. of Pollux , about 36° from the Sun in the evening sky; magnitudes -4.0 and 1.2.
278.667	2018 Jun 9	SAT	4	Mars and Saturn at heliocentric conjunction. Their heliocentric longitude is 275.8°.
279.758	2018 Jun 10	SUN	6	Moon 4.6° S.S.E. of Uranus , about 48° from the Sun in the morning sky.
281.826	2018 Jun 12	Tue	8	Moon 8.8° S.S.E. of Pleiades , about 21° from the Sun in the morning sky.
282.467			23	Moon 1.2° N. of Aldebaran , only about 13d from the Sun .
282.668	2018 Jun 13	Wed	4	The equation of time is 0.
283.322			19:44	New Moon. Beginning of lunation 1181.
283.384			21	Mercury 0.81° N. of M35 cluster , only about 9d from the Sun.
283.975	2018 Jun 14	Thu	11	Moon 3.8° S. of M35 cluster , only about 9d from the Sun .
284.074			14	Moon 4.6° S. of Mercury, only about 10d from the Sun .
284.435			22	Mercury at greatest declination north (25.2°).
284.495			23:53	Moon at perigee; distance 56.37 Earth-radii.

285.237	2018 Jun 15	Fri	18	Moon 11.5° S. of Castor , 27° and 28° from the Sun in the evening sky.
285.415			22	Moon 7.8° S. of Pollux , about 29° from the Sun in the evening sky.
286.028	2018 Jun 16	SAT	13	Moon 2.3° S. of Venus , about 38° from the Sun in the evening sky.
286.139			15	Mercury at greatest latitude north of the ecliptic plane (7.0°).
286.244			17:52	Moon at ascending node (longitude 126.5°).
286.329			20	Moon 1.2° S. of Beehive Cluster , about 42° from the Sun in the evening sky.
287.857	2018 Jun 18	Mon	9	Moon 1.6° N.N.E. of Regulus , about 63° from the Sun in the evening sky.
288.322			20	Neptune stationary in longitude.
288.860	2018 Jun 19	Tue	9	Neptune stationary in right ascension; begins retrograde (westward) motion.
288.935			10	Asteroid 4 Vesta at opposition. Magnitude 5.3.
289.936	2018 Jun 20	Wed	10	Venus 0.69° N.N.E. of Beehive Cluster , about 39° from the Sun in the evening sky; magnitudes -4.0 and 3.7.
289.952			10:51	First Quarter Moon.
290.922	2018 Jun 21	Thu	10:08	June or summer solstice. sun enters (at the solstice) the astrological sign Cancer, i.e. its longitude is 90°.
291.360			21	Sun enters Gemini, at longitude 90.43° on the ecliptic.
291.831	2018 Jun 22	Fri	8	Moon 7.1° N.N.E. of Spica , about 113° from the Sun in the evening sky.
	2018 Jun 23	SAT		June Boötid meteors. No activity predicted.
292.805			7	Mercury 8.2° S. of Castor , 19° and 21° from the Sun in the evening sky; magnitudes -0.5 and 1.5.
293.387			21	Moon 4.0° N.N.E. of Jupiter, about 131° from the Sun in the evening sky.
294.543	2018 Jun 25	Mon	1	Mercury 4.8° S.S.W. of Pollux , 20° and 21° from the Sun in the evening sky; magnitudes -0.4 and 1.2.
295.542	2018 Jun 26	Tue	1	Moon 8.9° N. of Antares , 156° and 155° from the Sun in the evening sky.
296.380			21	Mars stationary in longitude.
296.842	2018 Jun 27	Wed	8:12	Moon 0.29° N.N.W. of 4 Vesta , about 170° from the Sun in the midnight sky .
297.054			13	Saturn at opposition. Magnitude 0.0.
297.660	2018 Jun 28	Thu	4	Moon 1.8° N. of Saturn , 177° and 179° from the Sun in the midnight sky.
297.704			4:53	Full Moon.
298.077			14	Mars stationary in right ascension; begins retrograde (westward) motion.
298.880	2018 Jun 29	Fri	9	Moon 1.2° N. of Pluto , 167° and 168° from the Sun in the morning sky.
299.634	2018 Jun 30	SAT	3	Moon at apogee; distance 63.66 Earth-radii.

300.198				16:45	Moon at descending node (longitude 306.0°).
300.500				24	Moon 4.7° N. of Mars , about 150° from the Sun in the morning sky.
303.583	2018 Jul	4 wed	2		Moon 2.4° S.S.E. of Neptune, about 116° from the Sun in the morning sky.
304.048				13	Mercury 0.39° S.S.W. of Beehive Cluster , about 25° from the Sun in the evening sky; magnitudes 0.1 and 3.7.
304.801	2018 Jul	5 Thu	7:13		Asteroid 3 Juno 2.8° S. of Uranus , 72° and 71° from the Sun in the morning sky; magnitudes 9.7 and 5.8.
305.828	2018 Jul	6 Fri	7:52		Last Quarter Moon.
306.207			17		Earth at aphelion, 1.01670 AU from Sun.
307.197	2018 Jul	7 SAT	17		Moon 4.7° S.S.E. of Uranus , about 73° from the Sun in the morning sky.
307.234				17:38	Moon 1.8° S.S.E. of 3 Juno , about 73° from the Sun in the morning sky .
309.248	2018 Jul	9 Mon	18		Moon 8.8° S.S.E. of Pleiades , about 47° from the Sun in the morning sky.
309.544	2018 Jul	10 Tue	1		Mercury at descending node through the ecliptic plane.
309.706				5	Venus 0.99° N.N.E. of Regulus , about 42° from the Sun in the evening sky; magnitudes -4.1 and 1.4.
309.896				9	Moon 1.1° N.N.W. of Aldebaran , about 38° from the Sun in the morning sky.
310.194				17	Jupiter stationary in longitude.
310.646	2018 Jul	11 wed	4		Jupiter stationary in right ascension; resumes direct (eastward) motion.
311.419				22	Moon 3.8° S. of M35 cluster , about 17° from the Sun in the morning sky.
311.636	2018 Jul	12 Thu	3		Pluto at opposition. Magnitude 14.2.
311.722				5	Mercury at greatest elongation east , 26.4° from the Sun in the evening sky.
312.617	2018 Jul	13 Fri	2:48		New Moon. Beginning of lunation 1182. Partial eclipse of the Sun.
312.626				3	Asteroid 2 Pallas at opposition. Magnitude 9.6.
312.672				4	Moon 11.5° S. of Castor , only about 6d from the Sun .
312.847				8	Moon 7.8° S. of Pollux , only about 5d from the Sun .
312.852				8:27	Moon at perigee; distance 56.04 Earth-radii.
				8:27	Perigee only 5.6 hours after New Moon.
313.619	2018 Jul	14 SAT	2:52		Moon at ascending node (longitude 125.9°).
313.735				6	Moon 1.1° S.S.W. of Beehive Cluster , about 16° from the Sun in the evening sky.
314.451				23	Moon 2.1° N.N.E. of Mercury, about 26° from the Sun in the evening sky.

315.228	2018 Jul 15	SUN	17	Moon 1.7° N.N.E. of Regulus , about 37° from the Sun in the evening sky.
315.680	2018 Jul 16	Mon	4	Moon 1.6° N.N.E. of Venus , about 43° from the Sun in the evening sky.
319.090	2018 Jul 19	Thu	14	Moon 7.2° N.N.E. of Spica , about 87° from the Sun in the evening sky.
319.328			19:53	First Quarter Moon.
319.913	2018 Jul 20	Fri	10	Mercury at aphelion, 0.4667 AU from the Sun.
320.537	2018 Jul 21	SAT	1	Sun enters Cancer, at longitude 118.25° on the ecliptic.
320.608			3	Moon 4.2° N.N.E. of Jupiter, about 105° from the Sun in the evening sky.
322.376	2018 Jul 22	SUN	21	Sun enters the astrological sign Leo, i.e. its longitude is 120°.
322.784	2018 Jul 23	Mon	7	Moon 8.9° N. of Antares , 130° and 129° from the Sun in the evening sky.
324.260	2018 Jul 24	Tue	18	Mercury 7.6° W. of Regulus , 22° and 28° from the Sun in the evening sky; magnitudes 1.5 and 1.4.
324.753	2018 Jul 25	wed	6	Moon 2.0° N. of Saturn , about 152° from the Sun in the evening sky.
324.803			7	Mercury stationary in right ascension; begins retrograde (westward) motion.
325.706	2018 Jul 26	Thu	5	Mercury stationary in longitude.
325.753			6	The equation of time reaches a shallow minimum of -6.54 minutes.
326.081			14	Moon 1.3° N. of Pluto , about 166° from the Sun in the evening sky.
326.716	2018 Jul 27	Fri	5	Mars at opposition. Magnitude -2.8.
326.724			5	Moon at apogee; distance 63.69 Earth-radii.
327.333			20	Moon 6.6° N. of Mars , only about 3d from the Sun .
327.348			20:21	Full Moon. Total eclipse of the Moon.
327.445			22:41	Moon at descending node (longitude 305.9°).
328.475	2018 Jul 28	SAT	23	Middle of eclipse season: Sun is at same longitude as Moon's ascending node, 125.8°.
	2018 Jul 30	Mon		Southern Delta Aquarid meteors. Very unfavorable.
330.798	2018 Jul 31	Tue	7	Moon 2.4° S.S.E. of Neptune, about 142° from the Sun in the morning sky.
330.833			8	Mars nearest to Earth (0.385 AU).
332.193	2018 Aug 1	wed	17	Venus at descending node through the ecliptic plane.
334.522	2018 Aug 4	SAT	1	Moon 4.7° S.S.E. of Uranus , about 99° from the Sun in the morning sky.
335.263			18:19	Last Quarter Moon.
335.418			22:02	Moon 1.1° N.N.W. of 3 Juno , about 88° from the Sun in the morning sky .

336.600	2018 Aug 6 Mon	2	Venus crosses equator into south hemisphere of sky.
336.606		3	Moon 8.9° S.S.E. of Pleiades , about 73° from the Sun in the morning sky.
337.281		19	Moon 1.1° N. of Aldebaran , about 64° from the Sun in the morning sky.
337.475		23	Jupiter at east quadrature.
338.052	2018 Aug 7 Tue	13	Uranus stationary in longitude.
338.206		17	Uranus stationary in right ascension; begins retrograde (westward) motion.
338.841	2018 Aug 8 Wed	8	Moon 3.8° S. of M35 cluster , about 43° from the Sun in the morning sky.
339.583	2018 Aug 9 Thu	2	Mercury at inferior conjunction with the Sun, 0.604 AU from the Earth and 4.80° south of the Sun.
340.117		15	Moon 11.5° S. of Castor , 25° and 28° from the Sun in the morning sky.
340.173		16	Mercury at greatest latitude south of the ecliptic plane (-7.0°).
340.293		19	Moon 7.8° S. of Pollux , 23° and 25° from the Sun in the morning sky.
341.071	2018 Aug 10 Fri	13:42	Moon at ascending node (longitude 125.9°).
341.083		14	Moon shows minimum libration for the year, 0.08°.
341.192		17	Moon 1.1° S. of Beehive Cluster , only about 10d from the Sun .
341.257		18:10	Perigee only 15.8 hours before New Moon.
341.368		18:10	Moon at perigee; distance 56.14 Earth-radii.
341.637	2018 Aug 11 SAT	3	Sun enters Leo, at longitude 138.18° on the ecliptic.
341.915		9:58	Moon 5.4° N.N.E. of Mercury, only about 5d from the Sun .
342.661	2018 Aug 12 SUN	4	New Moon. Beginning of lunation 1183. Partial eclipse of the Sun.
345.230	2018 Aug 13 Mon		Moon 1.7° N.N.E. of Regulus , only about 11d from the Sun .
345.230	2018 Aug 14 Tue	18	Perseid meteors. Very favorable.
345.712	2018 Aug 15 wed	5	Moon 5.9° N.N.E. of Venus , about 46° from the Sun in the evening sky.
346.423		22	Venus at theoretical dichotomy, half illuminated as seen from Earth.
346.984	2018 Aug 16 Thu	12	Moon 7.2° N.N.E. of Spica , about 61° from the Sun in the evening sky.
347.375		21	Mars at greatest declination south (-26.5°).
348.052	2018 Aug 17 Fri	13	Moon shows maximum libration for the year, 10.20°.
348.217	2018 Aug 17 Fri	13	Moon 4.3° N.N.E. of Jupiter, about 81° from the Sun in the evening sky.
348.217		17	Venus at greatest elongation east , 45.9° from the Sun in the evening sky.

348.826	2018 Aug 18 SAT	7:49	First Quarter Moon.
349.011		12	Mercury stationary in right ascension; resumes direct (eastward) motion.
349.680	2018 Aug 19 SUN	4	Mercury stationary in longitude.
350.048		13	Moon 8.9° N. of Antares , 104° and 103° from the Sun in the evening sky.
351.603	2018 Aug 21 Tue	2	Mars at greatest latitude south of the ecliptic plane (-1.8°).
351.614		3	Mercury 5.4° S.E. of Beehive Cluster , -16° and -20° from the Sun in the morning sky; magnitudes 1.1 and 3.7.
351.913		10	Moon 2.1° N. of Saturn , 125° and 124° from the Sun in the evening sky.
353.294	2018 Aug 22 Wed	19	Moon 1.4° N. of Pluto , 140° and 139° from the Sun in the evening sky.
353.673	2018 Aug 23 Thu	4	Sun enters the astrological sign Virgo, i.e. its longitude is 150°.
353.968		11	Moon at apogee; distance 63.62 Earth-radii.
354.151		16	Moon 6.7° N. of Mars , 149° and 148° from the Sun in the evening sky.
354.703	2018 Aug 24 Fri	4:52	Moon at descending node (longitude 305.9°).
356.998	2018 Aug 26 SUN	11:57	Full Moon.
357.351		20	Mercury at greatest elongation west , 18.3° from the Sun in the morning sky.
357.990	2018 Aug 27 Mon	12	Moon 2.3° S.S.E. of Neptune, 168° and 169° from the Sun in the morning sky.
358.084		14	Mars stationary in longitude.
358.925	2018 Aug 28 Tue	10	Mars stationary in right ascension; resumes direct (eastward) motion.
359.229		17	Mercury at ascending node through the ecliptic plane.
359.456		23	Mars 11.3° E.S.E. of Pluto , 143° and 133° from the Sun in the evening sky; magnitudes -2.2 and 14.2.
361.742	2018 Aug 31 Fri	6	Moon 4.6° S.S.E. of Uranus , about 125° from the Sun in the morning sky.
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	2018 Sep 1 SAT		Aurigid meteors.
362.993		12	Venus 1.2° S.S.W. of Spica , about 45° from the Sun in the evening sky; magnitudes -4.4 and 1.0.
363.089		14	The equation of time is 0.
363.878	2018 Sep 2 SUN	9	Moon 8.8° S.S.E. of Pleiades , 99° and 100° from the Sun in the morning sky.
363.897		10	Mercury at perihelion, 0.3075 AU from the Sun. Magnitude -0.9.
364.566	2018 Sep 3 Mon	2	Moon 1.2° N.N.W. of Aldebaran , 91° and 90° from the Sun in the morning sky.
364.610		2:38	Last Quarter Moon.
366.182	2018 Sep 4 Tue	16	Moon 3.7° S. of M35 cluster , about 70° from the Sun in the morning sky.

366.848	2018 Sep	5 wed	8	Venus at aphelion, 0.7282 AU from the Sun.
367.499			24	Moon 11.4° S. of Castor , 52° and 54° from the Sun in the morning sky.
367.616	2018 Sep	6 Thu	3	Mercury 1.00° N.N.E. of Regulus , -14° and -13° from the Sun in the morning sky; magnitudes -1.1 and 1.4.
367.681			4	Moon 7.7° S. of Pollux , 49° and 50° from the Sun in the morning sky.
367.888			9	Saturn stationary in right ascension; resumes direct (eastward) motion.
367.916			10	Saturn stationary in longitude.
368.447			22:43	Moon at ascending node (longitude 125.4°).
368.599	2018 Sep	7 Fri	2	Moon 1.1° S.S.W. of Beehive Cluster , about 37° from the Sun in the morning sky.
369.260			18	Neptune at opposition. Magnitude 7.8.
369.558	2018 Sep	8 SAT	1:24	Moon at perigee; distance 56.65 Earth-radii.
370.102			14	Moon 1.7° N.N.E. of Regulus , about 16° from the Sun in the morning sky.
370.452			23	Moon 0.89° N.N.E. of Mercury, only about 11d from the Sun .
	2018 Sep	9 SUN		September Epsilon Perseid meteors. Very favorable.
371.251			18:02	New Moon. Beginning of lunation 1184.
373.824	2018 Sep	12 wed	8	Moon 7.1° N.N.E. of Spica , about 35° from the Sun in the evening sky.
374.108			15	Mercury at greatest latitude north of the ecliptic plane (7.0°).
374.428			22	Moon 9.9° N.N.E. of Venus , 42° and 43° from the Sun in the evening sky.
375.698	2018 Sep	14 Fri	5	Moon 4.2° N.N.E. of Jupiter, about 58° from the Sun in the evening sky.
377.364	2018 Sep	15 SAT	21	Moon 8.8° N. of Antares , 78° and 77° from the Sun in the evening sky.
378.028	2018 Sep	16 SUN	13	Mars at perihelion, 1.3814 AU from the Sun. Magnitude -1.7.
378.469			23:15	First Quarter Moon.
378.584	2018 Sep	17 Mon	2	Sun enters Virgo, at longitude 174.15° on the ecliptic.
379.199			17	Moon 2.1° N. of Saturn , about 98° from the Sun in the evening sky.
380.553	2018 Sep	19 wed	1	Moon 1.4° N. of Pluto , 113° and 112° from the Sun in the evening sky.
381.548	2018 Sep	20 Thu	1	Moon at apogee; distance 63.48 Earth-radii.
381.723			5	Moon 4.7° N. of Mars , about 125° from the Sun in the evening sky.
381.899			9:34	Moon at descending node (longitude 304.8°).
382.568	2018 Sep	21 Fri	2	Mercury at superior conjunction with the Sun, 1.387 AU from the Earth.
382.899			10	Venus shows greatest illuminated extent.

384.579	2018 Sep 23 SUN	1:54	September of fall or autumn equinox. Sun enters (at the equinox) the astrological sign Libra, i.e. its longitude is 180°.
385.212		17	Moon 2.3° S.S.E. of Neptune, about 164° from the Sun in the evening sky.
385.292		19	Mercury crosses equator into south hemisphere of sky.
386.621	2018 Sep 25 Tue	2:54	Full Moon.
386.679		4	Venus brightest; magnitude -4.6.
387.491		24	Saturn at east quadrature.
388.889	2018 Sep 27 Thu	9:20	Asteroid 4 Vesta 2.8° S. of Saturn , 88° and 89° from the Sun in the evening sky; magnitudes 7.4 and 0.6.
388.923		10	Moon 4.5° S.S.E. of Uranus , 152° and 153° from the Sun in the morning sky.
389.044		13	Venus at greatest latitude south of the ecliptic plane (-3.4°).
390.508	2018 Sep 29 SAT	0	Venus 13.8° W.S.W. of Jupiter, 35° and 46° from the Sun in the evening sky; magnitudes -4.6 and -1.8.
391.104		14	Moon 8.6° S.S.E. of Pleiades , about 126° from the Sun in the morning sky.
391.700	2018 Sep 30 SUN	5	Pluto stationary in right ascension; resumes direct (eastward) motion.
391.793		7	Moon 1.4° N.N.W. of Aldebaran , about 117° from the Sun in the morning sky.
391.843		8	Mars and Neptune at heliocentric conjunction. Their heliocentric longitude is 345.6°.
392.226		17	Pluto stationary in longitude.
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393.432	2018 Oct 1 Mon	22	Moon 3.5° S. of M35 cluster , about 96° from the Sun in the morning sky.
393.907	2018 Oct 2 Tue	9:46	Last Quarter Moon.
394.783	2018 Oct 3 Wed	7	Moon 11.2° S. of Castor , 79° and 80° from the Sun in the morning sky.
394.971		11	Moon 7.5° S. of Pollux , 76° and 77° from the Sun in the morning sky.
395.633	2018 Oct 4 Thu	3:11	Moon at ascending node (longitude 123.5°).
395.918		10	Moon 0.94° S.S.W. of Beehive Cluster , about 64° from the Sun in the morning sky.
396.675	2018 Oct 5 Fri	4	Venus stationary in right ascension; begins retrograde (westward) motion.
397.293		19	Venus stationary in longitude.
397.438		22:31	Moon at perigee; distance 57.45 Earth-radii.
397.468		23	Moon 1.8° N.N.E. of Regulus , about 43° from the Sun in the morning sky.
397.513	2018 Oct 6 SAT	0	Mercury at descending node through the ecliptic plane.

397.868		9	Mercury 2.0° N.N.E. of Spica , about 11° from the Sun in the evening sky; magnitudes -0.6 and 1.0.
	2018 Oct 9 Tue		Draconid meteors. Very favorable.
400.657		3:47	New Moon. Beginning of lunation 1185.
401.241		18	Moon 7.0° N.N.E. of Spica , only about 8d from the Sun .
	2018 Oct 10 Wed		Southern Taurid meteors.
401.687		4	Moon 5.5° N.N.E. of Mercury, only about 13d from the Sun .
402.437		22	Moon 12.4° N.N.E. of Venus , 23° and 24° from the Sun in the evening sky.
403.478	2018 Oct 11 Thu	23	Moon 3.9° N.N.E. of Jupiter, about 36° from the Sun in the evening sky.
404.730	2018 Oct 13 SAT	6	Moon 8.6° N. of Antares , 51° and 50° from the Sun in the evening sky.
406.623	2018 Oct 15 Mon	3	Moon 1.8° N. of Saturn , about 72° from the Sun in the evening sky.
407.357		21	winter solstice on Mars.
407.607	2018 Oct 16 Tue	3	Venus 6.2° S.S.W. of Mercury, 18° and 17° from the Sun in the evening sky; magnitudes -4.3 and -0.3.
407.878		9	Moon 1.2° N. of Pluto , about 86° from the Sun in the evening sky.
407.882		9	Mercury at aphelion, 0.4667 AU from the Sun.
408.251		18:01	First Quarter Moon.
409.006	2018 Oct 17 Wed	12:08	Moon at descending node (longitude 302.2°).
409.306		19	Moon at apogee; distance 63.38 Earth-radii.
410.010	2018 Oct 18 Thu	12	Moon 1.9° N.N.W. of Mars , about 109° from the Sun in the evening sky.
412.338	2018 Oct 20 SAT	20	Saturn at greatest declination south (-22.8°).
412.493		24	Moon 2.4° S.S.E. of Neptune, about 136° from the Sun in the evening sky.
	2018 Oct 21 SUN		Orionid meteors. Quite favorable.
414.974	2018 Oct 23 Tue	11	Sun enters the astrological sign Scorpius, i.e. its longitude is 210°.
415.523	2018 Oct 24 Wed	1	Uranus at opposition. Magnitude 5.7.
416.146		16	Moon 4.4° S.S.E. of Uranus , only about 2d from the Sun .
416.199		16:46	Full Moon.
417.343	2018 Oct 25 Thu	20	Pluto at descending node through the ecliptic plane.**
418.091	2018 Oct 26 Fri	14	Venus at inferior conjunction with the Sun, 0.272 AU from the Earth and 6.26° south of the Sun.
418.364		21	Moon 8.4° S.S.E. of Pleiades , 152° and 153° from the Sun in the morning sky.
419.041	2018 Oct 27 SAT	13	Moon 1.6° N. of Aldebaran , about 144° from the Sun in the morning sky.

420.656	2018 Oct 29 Mon	4	Moon 3.3° S. of M35 cluster , about 123° from the Sun in the morning sky.
420.773		7	Mercury 3.1° S.S.W. of Jupiter , about 22° from the Sun in the evening sky; magnitudes -0.2 and -1.7.
422.005	2018 Oct 30 Tue	12	Moon 10.9° S. of Castor , about 106° from the Sun in the morning sky.
422.194		17	Moon 7.3° S. of Pollux , 103° and 104° from the Sun in the morning sky.
422.657	2018 Oct 31 wed	3:46	Moon at ascending node (longitude 120.6°).
422.782		7	Sun enters Libra, at longitude 217.80° on the ecliptic.
423.161		16	Moon 0.68° S. of Beehive Cluster , 90° and 91° from the Sun in the morning sky.
423.195		16:41	Last Quarter Moon.
423.350		20:24	Moon at perigee; distance 58.05 Earth-radii.
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424.736	2018 Nov 2 Fri	6	Moon 2.0° N.N.E. of Regulus , about 70° from the Sun in the morning sky.
425.881	2018 Nov 3 SAT	9	The equation of time is at maximum for the year, 16.48 minutes.
428.142	2018 Nov 5 Mon	15	Mercury at greatest latitude south of the ecliptic plane (-7.0°).
428.607	2018 Nov 6 Tue	3	Moon 7.0° N.N.E. of Spica , about 20° from the Sun in the morning sky.
428.848		8:20	Moon 1.7° S.S.W. of 1 Ceres , 17° and 18° from the Sun in the morning sky .
428.856		9	Moon 8.8° N.N.E. of Venus , about 17° from the Sun in the morning sky.
429.140		15	Mercury at greatest elongation east , 23.3° from the Sun in the evening sky.
430.168	2018 Nov 7 wed	16:02	New Moon. Beginning of lunation 1186.
430.576	2018 Nov 8 Thu	1:49	Asteroid 4 Vesta 3.1° S. of Pluto , about 63° from the Sun in the evening sky; magnitudes 7.8 and 14.3.
431.310		19	Moon 3.7° N.N.E. of Jupiter, only about 14d from the Sun .
431.993	2018 Nov 9 Fri	12	Mercury 1.8° N. of Antares , about 23° from the Sun in the evening sky; magnitudes -0.1 and 1.0.
432.104		14	Moon 6.6° N.N.E. of Mercury, 24° and 23° from the Sun in the evening sky.
432.106		15	Moon 8.4° N.N.E. of Antares , 24° and 23° from the Sun in the evening sky.
434.155	2018 Nov 11 SUN	16	Moon 1.4° N. of Saturn , about 47° from the Sun in the evening sky.
435.060	2018 Nov 12 Mon	13	Mercury at greatest declination south (-24.8°).
435.259		18	Moon 0.91° N. of Pluto , about 59° from the Sun in the evening sky.
436.088	2018 Nov 13 Tue	14:07	Moon at descending node (longitude 299.2°).

436.631	2018 Nov 14	Wed	3	Venus stationary in right ascension; resumes direct (eastward) motion.
437.163			16	Moon at apogee; distance 63.40 Earth-radii.
437.335			20	Venus 1.3° E. of Spica , -27° and -28° from the Sun in the morning sky; magnitudes -4.5 and 1.0.
438.120	2018 Nov 15	Thu	14:53	First Quarter Moon.
438.701	2018 Nov 16	Fri	5	Moon 0.95° S.S.E. of Mars , about 96° from the Sun in the evening sky.
438.951			11	Venus stationary in longitude.
439.561	2018 Nov 17	SAT	1	Mercury stationary in longitude.
439.705			5	Mercury stationary in right ascension; begins retrograde (westward) motion.
439.826			8	Moon 2.6° S.S.E. of Neptune, about 109° from the Sun in the evening sky.
440.003			12	Asteroid 3 Juno at opposition. Magnitude 7.4.
	2018 Nov 18	SUN		Leonid meteors. Favorable.
443.450	2018 Nov 20	Tue	23	Moon 4.5° S.S.E. of Uranus , about 151° from the Sun in the evening sky.
	2018 Nov 21	Wed		Alpha Monocerotid meteors. Unfavorable.
444.655	2018 Nov 22	Thu	4	Mercury 4.0° N.N.E. of Antares , 12° and 11° from the Sun in the evening sky; magnitudes 2.0 and 1.0.
444.876			9	Sun enters the astrological sign Sagittarius, i.e. its longitude is 240°.
445.335			20	Venus at ascending node through the ecliptic plane.
445.720	2018 Nov 23	Fri	5	Moon 8.4° S.S.E. of Pleiades , less than 1° from the Sun.
445.736			5:40	Full Moon.
445.965			11	Asteroid 3 Juno at perihelion, 1.9833 AU from the Sun. Magnitude 7.5.
445.992			12	Sun enters Scorpius, at longitude 241.14° on the ecliptic.
446.378			21	Moon 1.7° N. of Aldebaran , 171° and 170° from the Sun in the midnight sky.
446.657	2018 Nov 24	SAT	4	Jupiter farthest from Earth (6.347 AU).
447.198			17	Mercury at ascending node through the ecliptic plane.
447.447			23	Neptune stationary in longitude.
447.745	2018 Nov 25	SUN	6	Neptune stationary in right ascension; resumes direct (eastward) motion.
447.950			11	Moon 3.1° S. of M35 cluster , about 151° from the Sun in the morning sky.
448.778	2018 Nov 26	Mon	7	Jupiter at conjunction with the Sun.
449.005			12:07	Moon at perigee; distance 57.48 Earth-radii.
449.264			18	Moon 10.7° S. of Castor , about 133° from the Sun in the morning sky.
449.448			23	Moon 7.1° S. of Pollux , about 131° from the Sun in the morning sky.
449.720	2018 Nov 27	Tue	5:17	Moon at ascending node (longitude 118.0°).

449.881			9	Mercury at inferior conjunction with the Sun, 0.678 AU from the Earth and 0.91° north of the Sun.
450.374			21	Mercury 0.42° N.N.E. of Jupiter, only about 1d from the Sun.
450.396			22	Moon 0.45° S. of Beehive Cluster , about 118° from the Sun in the morning sky.
451.866	2018 Nov 29	Thu	9	Mercury at perihelion, 0.3075 AU from the Sun. Magnitude 3.9.
451.958			11	Moon 2.3° N.N.E. of Regulus , about 97° from the Sun in the morning sky.
452.514	2018 Nov 30	Fri	0:20	Last Quarter Moon.
452.600			2	Venus brightest; magnitude -4.7.
452.811			7	Sun enters Ophiuchus, at longitude 248.03° on the ecliptic.
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454.484	2018 Dec 1	SAT		December Phi Cassiopeid meteors.
			24	Venus shows greatest illuminated extent.
	2018 Dec 2	SUN		Phoenicid meteors. No activity predicted.
455.523	2018 Dec 3	MON	1	Mars at east quadrature.
455.886			9	Moon 7.2° N.N.E. of Spica , about 47° from the Sun in the morning sky.
456.383			21	Moon 3.4° N.N.E. of Venus , about 41° from the Sun in the morning sky.
457.051	2018 Dec 4	Tue	13:13	Moon 1.5° S.S.W. of 1 Ceres , about 33° from the Sun in the morning sky .
458.420	2018 Dec 5	Wed	22	Moon 1.8° N.N.E. of Mercury, about 17° from the Sun in the morning sky.
459.122	2018 Dec 6	Thu	15	Moon 3.4° N.N.E. of Jupiter, only about 8d from the Sun .
459.345			20	Mercury stationary in right ascension; resumes direct (eastward) motion.
459.387			21	Mercury stationary in longitude.
459.442			23	Moon 8.4° N.N.E. of Antares , only about 6d from the Sun .
	2018 Dec 7	Fri		Puppis-Velid meteors. Very favorable.
459.806			7:21	New Moon. Beginning of lunation 1187.
460.090			14	Mars 0.04° N.N.W. of Neptune, about 88° from the Sun in the evening sky; magnitudes 0.1 and 7.9.
461.721	2018 Dec 9	SUN	5	Moon 1.1° N. of Saturn , about 22° from the Sun in the evening sky.
462.000			12	Moon at southernmost declination in year, - 21.54°.
462.077			14	Mercury at greatest latitude north of the ecliptic plane (7.0°).
462.642	2018 Dec 10	Mon	3	Moon 0.73° N. of Pluto , about 32° from the Sun in the evening sky.
463.250			18:00	Moon at descending node (longitude 297.2°).
465.015	2018 Dec 12	Wed	12	Moon at apogee; distance 63.53 Earth-radii.

466.345	2018 Dec 13 Thu	20	Mars and Uranus at heliocentric conjunction. Their heliocentric longitude is 31.2°.
	2018 Dec 14 Fri		Geminid meteors.
467.177		16	Moon 2.8° S.S.E. of Neptune, about 81° from the Sun in the evening sky.
467.350		20	Moon, Mars, and Neptune within circle of diameter 4.89°; 83° east of the Sun.
467.579	2018 Dec 15 SAT	2	Moon 3.4° S.S.E. of Mars , 85° and 86° from the Sun in the evening sky.
467.971		11	Mercury at greatest elongation west , 21.3° from the Sun in the morning sky.
467.992		11:48	First Quarter Moon.
470.808	2018 Dec 18 Tue	7	Moon 4.7° S.S.E. of Uranus , about 122° from the Sun in the evening sky.
471.086		14	Sun enters Sagittarius, at longitude 266.60° on the ecliptic.
473.155	2018 Dec 20 Thu	16	Moon 8.4° S.S.E. of Pleiades , 152° and 151° from the Sun in the evening sky.
473.806	2018 Dec 21 Fri	7	Moon 1.6° N.N.W. of Aldebaran , about 160° from the Sun in the evening sky.
474.329		20	Mercury 0.83° N.N.E. of Jupiter , about 20° from the Sun in the morning sky; magnitudes -0.4 and -1.8.
474.434		22:25	December or winter solstice. Sun enters (at the solstice) the astrological sign Capricornus, i.e. its longitude is 270°.
	2018 Dec 22 SAT		Ursid meteors. Very unfavorable.
475.026		13	Mercury 6.0° N.N.E. of Antares , -20° and -21° from the Sun in the morning sky; magnitudes -0.4 and 1.0.
475.243		17:49	Full Moon.
475.357		21	Moon 3.1° S. of M35 cluster , 177° and 178° from the Sun in the midnight sky.
476.000	2018 Dec 23 SUN	12	Moon at northernmost declination in year, 21.55°.
476.275		19	Jupiter 5.2° N. of Antares , about 22° from the Sun in the morning sky; magnitudes -1.8 and 1.0.
476.635	2018 Dec 24 Mon	3	Moon 10.6° S. of Castor , 161° and 159° from the Sun in the morning sky.
476.812		7	Moon 7.0° S. of Pollux , about 158° from the Sun in the morning sky.
476.915		9:57	Moon at perigee; distance 56.61 Earth-radii.
476.997		11:55	Moon at ascending node (longitude 116.9°).
477.714	2018 Dec 25 Tue	5	Moon 0.33° S.S.W. of Beehive Cluster , about 146° from the Sun in the morning sky.
477.904		10	The equation of time is 0.
479.179	2018 Dec 26 Wed	16	Venus at perihelion, 0.7185 AU from the Sun. Magnitude -4.5.
479.237		18	Moon 2.4° N.N.E. of Regulus , about 125° from the Sun in the morning sky.

479.938	2018 Dec 27 Thu 10:30	Venus 3.0° S.S.W. of asteroid 1 Ceres, about 47° from the Sun in the morning sky; magnitudes -4.5 and 8.9.
481.900	2018 Dec 29 SAT 9:36	Last Quarter Moon.
483.112	2018 Dec 30 SUN 15	Moon 7.3° N.N.E. of Spica , about 75° from the Sun in the morning sky.