The left column gives Julian Dates (number of days from 4713 B.C. Jan. 1 noon), useful for finding time spans between events by subtraction. The first 3 digits of the Julian date (245) are omitted.

Hours and minutes, where given, are in Universal Time. (Sometimes the hour appears as “24” or the minute as “60,” because the instant was shortly before the end of the UT day.)

Occasions such as “Moon 1.25° NNE of Venus” are appulses: closest apparent approaches. They are slightly different from conjunctions, when one passes north of the other as measured in right ascension or in ecliptic longitude. A quasi-conjunction is an appulse without a conjunction, and typically happens when a planet is near its stationary moment.

Occasions when three bodies are within a circle of small size are “trios.” Like appulses, they are most interesting when the bodies are bright and are not at small elongation from the Sun.

For meteor showers: ZHR (zenithal hourly rate) is an estimate of the number to be seen under ideal conditions at the peak time if the radiant were overhead; actual rates may be very different. Peak times (predicted from where the center of the stream seems to cross Earth’s orbit) are uncertain; best to start watching the night before. Meteor are usually most abundant in the morning hours.

Tell me of errors you notice. It’s hard to check the accuracy of every detail, but errors are more easily corrected here than in the former printed Astronomical Calendars!

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This calendar may be subject to improvement. Come back to it!

Explanation of terms can be found in our glossary book Albedo to Zodiac. There is more about each topic in The Astronomical Companion. And events in this list can be traced in the large Zodiac Wavy Charts for the year. For all these, see universalworkshop.com

2018
8120.021 Jan 1 Mon 13 Moon 4.5° S of M35 cluster; 171° from the Sun in the midnight sky
8120.325 Jan 1 Mon 20 Mercury at westernmost elongation; 22.6° from Sun in morning sky
8120.409 Jan 1 Mon 21:49 Perigee only 4.6 hours before Full Moon
8120.409 Jan 1 Mon 21:49 Moon at perigee; distance 55.91 Earth-radii; nearest in year
8120.600 Jan 2 Tue 2:24 Full Moon
8121.030 Jan 2 Tue 13 Uranus stationary in longitude; resumes direct motion
Uranus stationary in right ascension; resumes direct motion
Moon 8.6° S of Pollux; 168° and 167° from the Sun in the morning sky
Quadrantid meteors; ZHR 110; peak Jan 3 15h; 2 days after Full
Earth at perihelion; */p AU from the Sun
Moon 2.03° S of Beehive Cluster; 155° and 156° from the Sun in the morning sky
Latest sunrise, at latitude 40° north
Moon at ascending node; longitude 135.2°
Moon 0.89° NNE of Regulus; 135° from the Sun in the morning sky
Mars 0.20° SSW of Jupiter; 59° from the Sun in the morning sky; magnitudes 1.4 and -1.8
Last Quarter Moon
Pluto at conjunction with the Sun; 34.465 AU from Earth; latitude 0.45°
Venus at superior conjunction with the Sun; 1.711 AU from Earth; latitude -1.81°
Moon 6.9° NNE of Spica; 85° from the Sun in the morning sky
Moon 4.2° NNE of Jupiter; 62° from the Sun in the morning sky
Moon, Mars, and Jupiter within circle of diameter 4.54°; about 61° from the Sun in the morning sky; magnitudes -9, 1, -2
Moon 4.4° NNE of Mars; 60° and 61° from the Sun in the morning sky
Moon 9.3° NNE of Antares; 42° and 43° from the Sun in the morning sky
Mercury 0.64° S of Saturn; 20° from the Sun in the morning sky; magnitudes -0.3 and 0.5
Uranus at east quadrature, 90° from the Sun
Moon at apogee; distance 63.73 Earth-radii; farthest in year
Moon 2.63° N of Saturn; 22° from the Sun in the morning sky
Mercury at descending node through the ecliptic plane
Moon, Mercury, and Saturn within circle of diameter 3.61°; about 21° from the Sun in the morning sky; magnitudes -6, 0, 1
Moon 3.4° N of Mercury; 19° from the Sun in the morning sky
New Moon; beginning of lunation 1176
Moon 2.46° N of Venus; 3° and 2° from the Sun in the evening sky
Moon at descending node; longitude 314.9°
Mercury at southernmost declination, -23.48°
8138.338 Jan 19 Fri 20  Sun enters Capricornus, at longitude 299.70° on the ecliptic
8138.632 Jan 20 SAT 3  Sun enters the astrological sign Aquarius, i.e. its longitude is 300°
8139.375 Jan 20 SAT 21 Moon 1.55° SE of Neptune; 42° from the Sun in the evening sky
8142.102 Jan 23 Tue 14 Venus at aphelion, 0.7283 AU from the Sun
8142.688 Jan 24 Wed 5 Moon 4.4° SE of Uranus; 81° from the Sun in the evening sky
8143.430 Jan 24 Wed 22:19 First Quarter Moon
8143.973 Jan 25 Thu 11 Mercury at aphelion, 0.4667 AU from the Sun
8145.958 Jan 27 SAT 11 Moon 0.77° NNE of Aldebaran; 123° and 122° from the Sun in the evening sky
8147.479 Jan 28 SUN 24 Moon 4.5° S of M35 cluster; 144° and 143° from the Sun in the evening sky
8148.878 Jan 31 Wed 8 Mars and Uranus at heliocentric opposition; longitudes 207.6° and 27.6°
8148.908 Jan 30 Tue 9 Moon at perigee; distance 56.28 Earth-radii
8148.917 Jan 30 Tue 10 Moon 8.6° S of Pollux; 164° and 162° from the Sun in the evening sky
8149.833 Jan 31 Wed 8 Moon 2.02° S of Beehive Cluster; 177° and 176° from the Sun in the midnight sky
8150.060 Jan 31 Wed 13:27 Full Moon. Total eclipse of the Moon
8150.282 Jan 31 Wed 19 Moon at ascending node; longitude 134.9°

8151.313 Feb 1 Thu 20 Moon 0.93° NNE of Regulus; 163° from the Sun in the morning sky
8151.5 Feb 2 Fri Ground Hog Day
8153.485 Feb 3 SAT 24 Middle of eclipse season: Sun is at same longitude as Moon’s descending node, 315.1°
8155.208 Feb 5 Mon 17 Moon 7.0° NNE of Spica; 113° from the Sun in the morning sky
8157.163 Feb 7 Wed 15:55 Last Quarter Moon
8157.438 Feb 7 Wed 23 Moon 4.1° NNE of Jupiter; 87° from the Sun in the morning sky
8157.5 Feb 8 Thu Alpha Centaurid meteors; ZHR 6; peak Feb 8 1h; near Last Quarter
8158.813 Feb 9 Fri 8 Moon 4.3° NNE of Mars; 72° from the Sun in the morning sky
8158.958 Feb 9 Fri 11 Moon 9.4° NNE of Antares; 70° and 71° from the Sun in the morning sky
8160.471 Feb 10 SAT 23 Jupiter at west quadrature, 90° from the Sun
8160.909 Feb 11 SUN 10 The equation of time is at a minimum of -14.24 minutes.
8161.095 Feb 11 SUN 14 Moon at apogee; distance 63.61 Earth-radii
8161.125 Feb 11 SUN 15 Moon 2.47° N of Saturn; 47° from the Sun in the morning sky
8161.604  Feb 12 Mon  3  Mars 5.1° N of Antares; 73° from the Sun in the morning sky; magnitudes 1.0 and 1.0
8163.5  Feb 14 Wed  St. Valentine's Day
8163.5  Feb 14 Wed  Ash Wednesday
8164.234  Feb 14 Wed  18  Mercury at southernmost latitude from the ecliptic plane, -7.0°
8164.348  Feb 14 Wed  20  Venus at southernmost latitude from the ecliptic plane, -3.4°
8164.383  Feb 14 Wed  21  Moon at descending node; longitude 315.0°
8165.292  Feb 15 Thu  19  Moon 1.09° N of Mercury; 1° and 2° from the Sun in the morning sky
8165.379  Feb 15 Thu  21:06  New Moon; beginning of lunation 1177. Partial eclipse of the Sun
8166.115  Feb 16 Fri  15  Sun enters Aquarius, at longitude 327.87° on the ecliptic
8166.208  Feb 16 Fri  17  Moon 0.57° SE of Venus; 10° and 9° from the Sun in the evening sky
8166.642  Feb 17 SAT  3  Moon, Venus, and Neptune within circle of diameter 5.65°; about 13° from the Sun in the evening sky; magnitudes -5, -4, 8
8166.708  Feb 17 SAT  5  Moon 1.64° SE of Neptune; 15° from the Sun in the evening sky
8167.009  Feb 17 SAT  12  Mercury at superior conjunction with the Sun; 1.384 AU from Earth; latitude -6.89°
8168.221  Feb 18 SUN  17  Sun enters the astrological sign Pisces, i.e. its longitude is 330°
8169.979  Feb 20 Tue  12  Moon 4.4° SE of Uranus; 54° from the Sun in the evening sky
8171.292  Feb 21 Wed  19  Venus 0.54° SE of Neptune; 11° and 10° from the Sun in the evening sky; magnitudes -3.9 and 8.0
8172.563  Feb 23 Fri  2  Moon 9.1° SE of the Pleiades; 86° from the Sun in the evening sky
8172.839  Feb 23 Fri  8:08  First Quarter Moon
8173.250  Feb 23 Fri  18  Moon 0.80° NNE of Aldebaran; 95° from the Sun in the evening sky
8174.833  Feb 25 SUN  8  Moon 4.5° S of M35 cluster; 116° from the Sun in the evening sky
8175.000  Feb 25 SUN 12  Mercury, Venus, and Neptune within circle of diameter 4.54°; about 8° from the Sun in the evening sky; magnitudes -1, -4, 8
8175.042  Feb 25 SUN 13  Mercury 0.43° SE of Neptune; 7° from the Sun in the evening sky; magnitudes -1.4 and 8.0
8176.313  Feb 26 Mon  20  Moon 8.6° S of Pollux; 136° and 135° from the Sun in the evening sky
8177.108  Feb 27 Tue 14:36  Moon at perigee; distance 57.06 Earth-radii
8177.250  Feb 27 Tue 18  Moon 1.98° S of Beehive Cluster; 149° and 148° from the Sun in the evening sky
8177.711  Feb 28 Wed  5  Moon at ascending node; longitude 134.9°
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<tr>
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<tr>
<td>8178.771</td>
<td>Mar 1</td>
<td>Thu</td>
<td>Moon 0.97° NE of Regulus; 170° and 169° from the Sun in the evening sky</td>
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<td>8179.535</td>
<td>Mar 2</td>
<td>Fri</td>
<td>Full Moon</td>
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<td>8181.408</td>
<td>Mar 3</td>
<td>Sat</td>
<td>Mars and Jupiter at heliocentric conjunction; longitude 223.3°</td>
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<tr>
<td>8181.750</td>
<td>Mar 4</td>
<td>Sun</td>
<td>Mercury 1.06° NW of Venus; 13° from the Sun in the evening sky; magnitudes -1.2 and -3.9</td>
</tr>
<tr>
<td>8182.081</td>
<td>Mar 4</td>
<td>Sun</td>
<td>Neptune at conjunction with the Sun; 30.935 AU from Earth; latitude -0.94°</td>
</tr>
<tr>
<td>8182.625</td>
<td>Mar 5</td>
<td>Mon</td>
<td>Moon 7.0° NNE of Spica; 140° from the Sun in the morning sky</td>
</tr>
<tr>
<td>8183.290</td>
<td>Mar 5</td>
<td>Mon</td>
<td>Mercury at ascending node through the ecliptic plane</td>
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<tr>
<td>8184.896</td>
<td>Mar 7</td>
<td>Wed</td>
<td>Moon 4.0° NNE of Jupiter; 113° and 114° from the Sun in the morning sky</td>
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<tr>
<td>8186.292</td>
<td>Mar 8</td>
<td>Thu</td>
<td>Moon 9.3° NNE of Antares; 97° and 98° from the Sun in the morning sky</td>
</tr>
<tr>
<td>8186.671</td>
<td>Mar 9</td>
<td>Fri</td>
<td>Jupiter stationary in longitude; starts retrograde motion</td>
</tr>
<tr>
<td>8186.877</td>
<td>Mar 9</td>
<td>Fri</td>
<td>Last Quarter Moon</td>
</tr>
<tr>
<td>8187.583</td>
<td>Mar 10</td>
<td>Sat</td>
<td>Moon 3.8° N of Mars; 83° and 84° from the Sun in the morning sky</td>
</tr>
<tr>
<td>8187.958</td>
<td>Mar 10</td>
<td>Sat</td>
<td>Mercury at perihelion, 0.3075 AU from the Sun</td>
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<td>8188.5</td>
<td>Mar 11</td>
<td>Sun</td>
<td>Clocks forward 1 hour (America)</td>
</tr>
<tr>
<td>8188.625</td>
<td>Mar 11</td>
<td>Sun</td>
<td>Moon 2.24° N of Saturn; 72° from the Sun in the morning sky</td>
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<tr>
<td>8188.888</td>
<td>Mar 11</td>
<td>Sun</td>
<td>Moon at apogee; distance 63.45 Earth-radii</td>
</tr>
<tr>
<td>8189.706</td>
<td>Mar 12</td>
<td>Mon</td>
<td>Sun enters Pisces, at longitude 351.56° on the ecliptic</td>
</tr>
<tr>
<td>8191.5</td>
<td>Mar 14</td>
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<td>Gamma Normid meteors; ZHR 6; peak Mar 14 16h; 3 days before New</td>
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<tr>
<td>8191.658</td>
<td>Mar 14</td>
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<td>Moon at descending node; longitude 314.5°</td>
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<tr>
<td>8193.126</td>
<td>Mar 15</td>
<td>Thu</td>
<td>Mercury at easternmost elongation; 18.4° from Sun in evening sky</td>
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<tr>
<td>8194.083</td>
<td>Mar 16</td>
<td>Fri</td>
<td>Moon 1.69° SE of Neptune; 12° from the Sun in the morning sky</td>
</tr>
<tr>
<td>8194.287</td>
<td>Mar 16</td>
<td>Fri</td>
<td>Mars at descending node through the ecliptic plane</td>
</tr>
<tr>
<td>8194.5</td>
<td>Mar 17</td>
<td>Sat</td>
<td>St. Patrick's Day</td>
</tr>
<tr>
<td>8195.051</td>
<td>Mar 17</td>
<td>Sat</td>
<td>New Moon; beginning of lunation 1178</td>
</tr>
<tr>
<td>8196.417</td>
<td>Mar 18</td>
<td>Sun</td>
<td>Moon 3.5° SE of Venus; 17° from the Sun in the evening sky</td>
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<tr>
<td>8196.479</td>
<td>Mar 18</td>
<td>Sun</td>
<td>Moon 7.3° SE of Mercury; 18° from the Sun in the evening sky</td>
</tr>
<tr>
<td>8196.854</td>
<td>Mar 19</td>
<td>Mon</td>
<td>Mercury 3.8° NNW of Venus; 18° and 17° from the Sun in the evening sky; magnitudes 0.5 and -3.9</td>
</tr>
<tr>
<td>8197.333</td>
<td>Mar 19</td>
<td>Mon</td>
<td>Moon 4.4° SE of Uranus; 28° from the Sun in the evening sky</td>
</tr>
<tr>
<td>8198.170</td>
<td>Mar 20</td>
<td>Tue</td>
<td>Mercury at northernmost latitude from the ecliptic plane, 7.0°</td>
</tr>
</tbody>
</table>
March or spring or vernal equinox

Sun enters the astrological sign Aries, i.e. its longitude is 0°

Moon 9.0° SE of the Pleiades; 59° from the Sun in the evening sky

Mercury stationary in right ascension; starts retrograde motion

Moon 0.87° N of Aldebaran; 68° from the Sun in the evening sky

Mercury stationary in longitude; starts retrograde motion

Moon 4.3° S of M35 cluster; 89° and 88° from the Sun in the evening sky

First Quarter Moon

Mars at west quadrature, 90° from the Sun

Palm Sunday.

Clocks forward 1 hour (Europe)

Moon 8.4° S of Pollux; 109° and 108° from the Sun in the evening sky

Moon at perigee; distance 57.87 Earth-radii

Moon 1.88° S of Beehive Cluster; 122° and 121° from the Sun in the evening sky

Moon at ascending node; longitude 133.7°

Mars at southernmost declination, -23.55°

Moon 1.02° NNE of Regulus; 142° from the Sun in the evening sky

Venus 0.07° SE of Uranus; 19° from the Sun in the evening sky; magnitudes -3.9 and 5.9

Saturn at west quadrature, 90° from the Sun

Good Friday

Full Moon

Easter

All Fools' Day

Moon 6.9° NNE of Spica; 167° from the Sun in the morning sky

Mercury at inferior conjunction with the Sun; 0.597 AU from Earth; latitude 4.19°

Mars 1.27° S of Saturn; 94° from the Sun in the morning sky; magnitudes 0.3 and 0.6

Moon 3.8° NNE of Jupiter; 141° and 142° from the Sun in the morning sky

Moon 9.1° NNE of Antares; 125° from the Sun in the morning sky

Moon 1.93° N of Saturn; 98° and 99° from the Sun in the morning sky

Moon, Mars, and Saturn within circle of diameter 3.45°; about 97° from the Sun in the morning sky; magnitudes -10, 0, 1
8216.271 Apr  7 SAT 19  Moon 3.1° N of Mars; 96° from the Sun in the morning sky
8216.731 Apr  8 SUN  6  Moon at apogee; distance 63.36 Earth-radii
8216.805 Apr  8 SUN  7:20  **Last Quarter Moon**
8218.840 Apr 10 Tue  8  Moon at descending node; longitude 312.6°
8220.638 Apr 12 Thu  3  Venus at ascending node through the ecliptic plane
8221.521 Apr 13 Fri  1  Moon 1.85° SE of Neptune; 38° from the Sun in the morning sky
8221.575 Apr 13 Fri  2  Mercury at descending node through the ecliptic plane
8222.657 Apr 14 SAT  4  Mercury stationary in right ascension; resumes direct motion
8223.021 Apr 14 SAT 13  Moon 3.6° SE of Mercury; 20° from the Sun in the morning sky
8223.886 Apr 15 SUN  9  Mercury stationary in longitude; resumes direct motion
8224.156 Apr 15 SUN 16  The equation of time is 0.
8224.582 Apr 16 Mon  1:59  **New Moon**; beginning of lunation 1179
8224.771 Apr 16 Mon  7  Moon 4.4° SE of Uranus; 5° and 2° from the Sun in the evening sky
8226.438 Apr 17 Tue 23  Moon 5.2° SE of Venus; 25° and 24° from the Sun in the evening sky
8226.496 Apr 17 Tue 24  Saturn at aphelion, 10.0657 AU from the Sun
8226.513 Apr 18 Wed  0  Saturn stationary in right ascension; starts retrograde motion
8226.521 Apr 18 Wed  0  Saturn stationary in longitude; starts retrograde motion
8227.063 Apr 18 Wed 14  Moon 8.8° SE of the Pleiades; 33° and 32° from the Sun in the evening sky
8227.085 Apr 18 Wed 14  Uranus at conjunction with the Sun; 20.895 AU from Earth; latitude -0.55°
8227.686 Apr 19 Thu  4  Sun enters Aries, at longitude 29.07° on the ecliptic
8227.729 Apr 19 Thu  6  Moon 1.11° N of Aldebaran; 41° from the Sun in the evening sky
8228.633 Apr 20 Fri  3  Sun enters the astrological sign Taurus, i.e. its longitude is 30°
8229.109 Apr 20 Fri 14:36  Moon at perigee; distance 57.81 Earth-radii
8229.292 Apr 20 Fri 19  Moon 4.1° S of M35 cluster; 62° from the Sun in the evening sky
8230.5 Apr 22 SUN  **Lyrid meteors**; ZHR 18; peak Apr 22 12h; near First Quarter
8230.582 Apr 22 SUN  2  Pluto stationary in longitude; starts retrograde motion
8230.813 Apr 22 SUN  8  Moon 8.2° S of Pollux; 82° and 81° from the Sun in the evening sky
8231.116 Apr 22 SUN 15  Pluto stationary in right ascension; starts retrograde motion
8231.407 Apr 22 SUN 21:46  **First Quarter Moon**
8231.5 Apr 23 Mon  Pi Puppид meteor; ZHR 10; peak Apr 23 17h; 1 day after First Quarter
8231.792 Apr 23 Mon  7   Moon 1.66° S of Beehive Cluster; 95° from the Sun in
the evening sky
8231.942 Apr 23 Mon 11  Mercury at aphelion, 0.4667 AU from the Sun
8232.015 Apr 23 Mon 12  Moon at ascending node; longitude 131.2°
8233.375 Apr 24 Tue 21  Moon 1.18° NNE of Regulus; 116° and 115° from the Sun
in the evening sky
8233.521 Apr 25 Wed  1   Venus 3.5° SE of the Pleiades; 26° from the Sun in
the evening sky; magnitudes -3.9 and 2.9
8237.354 Apr 28 SAT 21  Moon 6.9° NNE of Spica; 165° from the Sun in the
evening sky
8238.261 Apr 29 SUN  1   Mercury at westernmost elongation; 27.0° from Sun in
morning sky
8238.540 Apr 30 Mon 0:58  Full Moon
8239.333 Apr 30 Mon 20  Moon 3.7° NNE of Jupiter; 169° and 171° from the Sun
in the morning sky

8241.000 May  2 Wed 12  Moon 8.9° NNE of Antares; 151° and 152° from the Sun
in the morning sky
8241.292 May  2 Wed 19  Venus 6.4° N of Aldebaran; 28° from the Sun in the
evening sky; magnitudes -3.9 and 0.9
8243.375 May  4 Fri 21  Moon 1.73° NNE of Saturn; 125° from the Sun in the
morning sky
8244.5 May  6 SUN    Eta Aquarid meteors; ZHR 50; peak May 6 2h; 2 days
before Last Quarter
8244.517 May  6 SUN 0   Moon at apogee; distance 63.41 Earth-radii
8244.813 May  6 SUN 8   Moon 2.74° N of Mars; 109° and 110° from the Sun in the
morning sky
8245.932 May  7 Mon 10  Moon at descending node; longitude 309.6°
8246.5 May  8 Tue    Eta Lyrid meteors; ZHR 3; peak May 8 16h; 1 day
after Last Quarter
8246.591 May  8 Tue 2:10 Last Quarter Moon
8247.520 May  9 Wed 0   Jupiter at opposition; magnitude -2.5
8248.938 May 10 Thu 11  Moon 2.07° SE of Neptune; 64° from the Sun in the
morning sky
8252.042 May 13 SUN 13  Mercury 2.20° SE of Uranus; 23° from the Sun in the
morning sky; magnitudes -0.2 and 5.9
8252.203 May 13 SUN 17  Mercury at southernmost latitude from the ecliptic
plane, -7.0°
8252.242 May 13 SUN 18  Moon, Mercury, and Uranus within circle of diameter
4.44°; about 23° from the Sun in the morning sky; magnitudes -6, 0, 6
8252.271 May 13 SUN 19  Moon 4.4° SE of Uranus; 23° from the Sun in the
morning sky
8252.313 May 13 SUN 20  Moon 2.29° SE of Mercury; 23° from the Sun in the
morning sky
8252.638 May 14 Mon  3   The equation of time is at a maximum of 3.65 minutes.
8252.803 May 14 Mon  7   Sun enters Taurus, at longitude 53.45° on the ecliptic
8253.992 May 15 Tue 11:49 New Moon; beginning of lunation 1180
8254.417 May 15 Tue 22   Moon 8.7° SE of the Pleiades; 7° from the Sun in the evening sky
8254.463 May 15 Tue 23   Venus at perihelion, 0.7184 AU from the Sun
8254.5 May 16 Wed       1st day of Ramadan (1439 A.H.)
8255.063 May 16 Wed 14   Moon 1.18° N of Aldebaran; 15° from the Sun in the evening sky
8256.313 May 17 Thu 20   Moon 4.8° S of Venus; 32° and 31° from the Sun in the evening sky
8256.379 May 17 Thu 21:05 Moon at perigee; distance 57.04 Earth-radii
8256.442 May 17 Thu 23   Moon, Venus, and M35 clu within circle of diameter 5.41°; about 33° from the Sun in the evening sky; magnitudes -7, -4, 5
8256.604 May 18 Fri 3    Moon 3.9° S of M35 cluster; 36° and 35° from the Sun in the evening sky
8258.083 May 19 SAT 14   Moon 8.0° S of Pollux; 56° and 55° from the Sun in the evening sky
8258.5 May 20 SUN       Whit Sunday
8259.021 May 20 SUN 13   Moon 1.38° S of Beehive Cluster; 69° and 68° from the Sun in the evening sky
8259.052 May 20 SUN 13   Moon at ascending node; longitude 128.4°
8259.594 May 21 Mon 2    Sun enters the astrological sign Gemini, i.e. its longitude is 60°
8259.938 May 21 Mon 11   Venus 0.73° N of M35 cluster; 32° from the Sun in the evening sky; magnitudes -4.0 and 5.3
8260.604 May 22 Tue 3    Moon 1.44° NNE of Regulus; 89° from the Sun in the evening sky
8260.622 May 22 Tue 3    Autumn equinox on Mars
8260.659 May 22 Tue 3:50 First Quarter Moon
8260.739 May 22 Tue 6    Venus at northernmost declination, 25.06°
8263.271 May 24 Thu 19   Autumn equinox on Mars
8263.271 May 24 Thu 19   Autumn equinox on Mars
8264.625 May 26 SAT 3    Moon 7.0° NNE of Spica; 139° from the Sun in the evening sky
8266.354 May 27 SUN 21   Moon 3.8° NNE of Jupiter; 159° and 160° from the Sun in the evening sky
8268.097 May 29 Tue 14:20 Full Moon
8268.313 May 29 Tue 20   Moon 8.9° NNE of Antares; 175° from the Sun in the midnight sky
8268.813 May 30 Wed 8    Mercury 4.5° SE of the Pleiades; 8° and 10° from the Sun in the morning sky; magnitudes -1.5 and 2.9
8270.563 Jun 1 Fri 2    Moon 1.65° N of Saturn; 152° and 153° from the Sun in the morning sky
8271.259 Jun 1 Fri 18   Mercury at ascending node through the ecliptic plane
8272.191 Jun 2 SAT 17   Moon at apogee; distance 63.55 Earth-radii
8272.979 Jun 3 SUN 12   Moon 3.1° N of Mars; 126° and 127° from the Sun in the morning sky
8272.979 Jun 3 SUN 12   Mercury 5.8° NWW of Aldebaran; 3° and 6° from the Sun in the morning sky; magnitudes -2.0 and 0.9
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<td>8273.026 Jun 3</td>
<td>Moon at descending node; longitude 307.1°</td>
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<tr>
<td>8275.396 Jun 5</td>
<td>Venus 8.1° S of Castor; 35° and 37° from the Sun in the evening sky; magnitudes -4.0 and 1.5</td>
</tr>
<tr>
<td>8275.576 Jun 6</td>
<td>Mercury at superior conjunction with the Sun; 1.322 AU from Earth; latitude 3.17°</td>
</tr>
<tr>
<td>8275.927 Jun 6</td>
<td>Mercury at perihelion, 0.3075 AU from the Sun</td>
</tr>
<tr>
<td>8276.139 Jun 6</td>
<td>Venus at northernmost latitude from the ecliptic plane, 3.4°</td>
</tr>
<tr>
<td>8276.273 Jun 6</td>
<td>Last Quarter Moon</td>
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<tr>
<td>8276.5 Jun 7</td>
<td>Moon 2.32° SE of Neptune; 90° from the Sun in the morning sky</td>
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<tr>
<td>8277.875 Jun 8</td>
<td>Daytime Arietid meteors; ZHR 30; peak Jun 7 10h; 1 day after Last Quarter</td>
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<tr>
<td>8278.667 Jun 9</td>
<td>Venus 4.7° S of Pollux; 36° from the Sun in the evening sky; magnitudes -4.0 and 1.2</td>
</tr>
<tr>
<td>8279.771 Jun 10</td>
<td>Mars and Saturn at heliocentric conjunction; longitude 275.3°</td>
</tr>
<tr>
<td>8281.854 Jun 12</td>
<td>Moon 8.8° SE of the Pleiades; 21° from the Sun in the morning sky</td>
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<td>8282.479 Jun 12</td>
<td>Moon 1.17° N of Aldebaran; 13° from the Sun in the morning sky</td>
</tr>
<tr>
<td>8282.668 Jun 13</td>
<td>The equation of time is 0.</td>
</tr>
<tr>
<td>8283.322 Jun 13</td>
<td>New Moon; beginning of lunation 1181</td>
</tr>
<tr>
<td>8283.396 Jun 13</td>
<td>Mercury 0.81° N of M35 cluster; 10° and 9° from the Sun in the evening sky; magnitudes -1.3 and 5.3</td>
</tr>
<tr>
<td>8283.688 Jun 14</td>
<td>Earliest sunrise, at latitude 40° north</td>
</tr>
<tr>
<td>8284.000 Jun 14</td>
<td>Moon 3.8° S of M35 cluster; 10° and 9° from the Sun in the evening sky</td>
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<tr>
<td>8284.058 Jun 14</td>
<td>Moon, Mercury, and M35 clu within circle of diameter 4.57°; about 10° from the Sun in the evening sky; magnitudes -5, -1, 5</td>
</tr>
<tr>
<td>8284.104 Jun 14</td>
<td>Moon 4.6° S of Mercury; 11° and 10° from the Sun in the evening sky</td>
</tr>
<tr>
<td>8284.435 Jun 14</td>
<td>Mercury at northernmost declination, 25.15°</td>
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<tr>
<td>8284.495 Jun 14</td>
<td>Moon at perigee; distance 56.37 Earth-radii</td>
</tr>
<tr>
<td>8285.438 Jun 15</td>
<td>Moon 7.8° S of Pollux; 30° and 29° from the Sun in the evening sky</td>
</tr>
<tr>
<td>8286.042 Jun 16</td>
<td>Moon 2.32° S of Venus; 38° from the Sun in the evening sky</td>
</tr>
<tr>
<td>8286.139 Jun 16</td>
<td>Mercury at northernmost latitude from the ecliptic plane, 7.0°</td>
</tr>
<tr>
<td>8286.244 Jun 16</td>
<td>Moon at ascending node; longitude 126.5°</td>
</tr>
<tr>
<td>8286.283 Jun 16</td>
<td>Moon, Venus, and Beehive within circle of diameter 4.31°; about 40° from the Sun in the evening sky; magnitudes -8, -4, 4</td>
</tr>
<tr>
<td>8286.354 Jun 16</td>
<td>Moon 1.26° S of Beehive Cluster; 42° from the Sun in the evening sky</td>
</tr>
</tbody>
</table>
8287.875 Jun 18 Mon 9  Moon 1.63° NNE of Regulus; 63° from the Sun in the evening sky
8288.322 Jun 18 Mon 20  Neptune stationary in longitude; starts retrograde motion
8288.860 Jun 19 Tue 9  Neptune stationary in right ascension; starts retrograde motion
8289.952 Jun 20 Wed 10:51  First Quarter Moon
8289.958 Jun 20 Wed 11  Venus 0.69° NNE of Beehive Cluster; 39° from the Sun in the evening sky; magnitudes -4.0 and 3.7
8290.922 Jun 21 Thu 10:08  June or summer solstice
8290.922 Jun 21 Thu 10:08  Sun enters the astrological sign Cancer, i.e. its longitude is 90°
8291.360 Jun 21 Thu 21  Sun enters Gemini, at longitude 90.42° on the ecliptic
8291.854 Jun 22 Fri 9  Moon 7.1° NNE of Spica; 113° from the Sun in the evening sky
8292.5 Jun 23 SAT  JUne Bootid meteors; ZHR 5; peak Jun 23 Oh; 3 days after First Quarter
8292.833 Jun 23 SAT 8  Mercury 8.2° S of Castor; 19° and 21° from the Sun in the evening sky; magnitudes -0.5 and 1.5
8293.417 Jun 23 SAT 22  Moon 4.0° NNE of Jupiter; 132° and 131° from the Sun in the evening sky
8294.563 Jun 25 Mon 2  Mercury 4.8° SSW of Pollux; 20° and 21° from the Sun in the evening sky; magnitudes -0.4 and 1.2
8295.563 Jun 26 Tue 2  Moon 8.9° NNE of Antares; 156° and 155° from the Sun in the evening sky
8296.380 Jun 26 Tue 21  Mars stationary in longitude; starts retrograde motion
8297.054 Jun 27 Wed 13  Saturn at opposition; magnitude 0.0
8297.315 Jun 27 Wed 19:33  Latest sunset, at latitude 40° north
8297.688 Jun 28 Thu 5  Moon 1.81° NNE of Saturn; 177° and 179° from the Sun in the midnight sky
8297.704 Jun 28 Thu 4:53  Full Moon
8298.077 Jun 28 Thu 14  Mars stationary in right ascension; starts retrograde motion
8299.634 Jun 30 SAT 7:52  Moon at apogee; distance 63.66 Earth-radii
8300.198 Jun 30 SAT 17  Moon at descending node; longitude 306.0°
8300.521 Jul 1 SUN 1  Moon 4.7° N of Mars; 149° and 150° from the Sun in the morning sky
8303.604 Jul 4 Wed 3  Moon 2.45° SE of Neptune; 116° from the Sun in the morning sky
8304.063 Jul 4 Wed 14  Mercury 0.39° SSW of Beehive Cluster; 25° from the Sun in the evening sky; magnitudes 0.1 and 3.7
8305.828 Jul 6 Fri 7:52  Last Quarter Moon
8306.207 Jul 6 Fri 17  Earth at aphelion; */p AU from the Sun
8307.208 Jul 7 SAT 17  Moon 4.7° SE of Uranus; 73° from the Sun in the morning sky
8309.271 Jul 9 Mon 19  Moon 8.9° SE of the Pleiades; 47° from the Sun in the morning sky
8309.544 Jul 10 Tue 1  Mercury at descending node through the ecliptic plane
8309.729 Jul 10 Tue 6  Venus 0.99° NNE of Regulus; 42° from the Sun in the evening sky; magnitudes -4.1 and 1.4
8309.917 Jul 10 Tue 10 Moon 1.13° N of Aldebaran; 38° from the Sun in the morning sky
8310.194 Jul 10 Tue 17 Jupiter stationary in longitude; resumes direct motion
8310.646 Jul 11 Wed 3  Jupiter stationary in right ascension; resumes direct motion
8311.438 Jul 11 Wed 23 Moon 3.8° S of M35 cluster; 17° from the Sun in the morning sky
8311.636 Jul 12 Thu 3  Pluto at opposition; magnitude 14.2
8311.722 Jul 12 Thu 5  Mercury at easternmost elongation; 26.4° from Sun in evening sky
8312.617 Jul 13 Fri 2:48 New Moon; beginning of lunation 1182. Partial eclipse of the Sun
8312.852 Jul 13 Fri 8:27 Perigee only 5.6 hours after New Moon
8312.852 Jul 13 Fri 8:27 Moon at perigee; distance 56.04 Earth-radii
8312.875 Jul 13 Fri 9  Moon 7.8° S of Pollux; 4° and 7° from the Sun in the evening sky
8313.619 Jul 14 SAT 3  Moon at ascending node; longitude 125.9°
8313.750 Jul 14 SAT 6  Moon 1.15° S of Beehive Cluster; 16° from the Sun in the evening sky
8314.479 Jul 14 SAT 24 Moon 2.18° NNE of Mercury; 26° from the Sun in the evening sky
8315.250 Jul 15 SUN 18 Moon 1.73° NNE of Regulus; 37° from the Sun in the evening sky
8315.708 Jul 16 Mon 5  Moon 1.60° NNE of Venus; 43° from the Sun in the evening sky
8319.104 Jul 19 Thu 15 Moon 7.2° NNE of Spica; 87° from the Sun in the evening sky
8319.328 Jul 19 Thu 19:53 First Quarter Moon
8319.913 Jul 20 Fri 10 Mercury at aphelion, 0.4667 AU from the Sun
8320.537 Jul 21 SAT 1 Sun enters Cancer, at longitude 118.24° on the ecliptic
8320.625 Jul 21 SAT 3 Moon 4.2° NNE of Jupiter; 105° from the Sun in the evening sky
8322.376 Jul 22 SUN 21 Sun enters the astrological sign Leo, i.e. its longitude is 120°
8322.813 Jul 23 Mon 8  Moon 9.0° NNE of Antares; 130° and 129° from the Sun in the evening sky
8324.271 Jul 24 Tue 19 Mercury 7.6° W of Regulus; 22° and 28° from the Sun in the evening sky; magnitudes 1.5 and 1.4; quasi-conjunction
8324.771 Jul 25 Wed 7  Moon 2.01° N of Saturn; 152° from the Sun in the evening sky
8324.803 Jul 25 Wed 7  Mercury stationary in right ascension; starts retrograde motion
8324.979 Jul 25 Wed 12 Uranus at west quadrature, 90° from the Sun
8325.706 Jul 26 Thu  5 Mercury stationary in longitude; starts retrograde motion
8325.753 Jul 26 Thu  6 The equation of time is at a minimum of -6.54 minutes.
8326.716 Jul 27 Fri  5 Mars at opposition; magnitude -2.8
8326.724 Jul 27 Fri  5 Moon at apogee; distance 63.69 Earth-radii
8327.348 Jul 27 Fri 20:21 Full Moon. Total eclipse of the Moon
8327.354 Jul 27 Fri 21 Moon 6.6° N of Mars; 180° and 173° from the Sun in the midnight sky
8327.445 Jul 27 Fri 23 Moon at descending node; longitude 305.9°
8327.5 Jul 28 SAT Piscid Austrinid meteors; ZHR 5; peak Jul 28 3h; near Full
8328.475 Jul 28 SAT 23 Middle of eclipse season: Sun is at same longitude as Moon's ascending node, 125.8°
8329.5 Jul 30 Mon Southern Delta Aquarid meteors; ZHR 25; peak Jul 30 5h; 2 days after Full
8329.5 Jul 30 Mon Alpha Capricornid meteors; ZHR 5; peak Jul 30 5h; 2 days after Full
8330.813 Jul 31 Tue  8 Moon 2.43° SE of Neptune; 142° from the Sun in the morning sky
8330.833 Jul 31 Tue  8 Mars nearest to Earth, 0.385 AU

8332.193 Aug  1 Wed 17 Venus at descending node through the ecliptic plane
8334.542 Aug  4 SAT  1 Moon 4.7° SE of Uranus; 99° from the Sun in the morning sky
8335.263 Aug  4 SAT 18:19 Last Quarter Moon
8336.625 Aug  6 Mon  3 Moon 8.9° SE of the Pleiades; 73° from the Sun in the morning sky
8337.292 Aug  6 Mon 19 Moon 1.10° N of Aldebaran; 64° from the Sun in the morning sky
8337.475 Aug  6 Mon 23 Jupiter at east quadrature, 90° from the Sun
8338.052 Aug  7 Tue 13 Uranus stationary in longitude; starts retrograde motion
8338.206 Aug  7 Tue 17 Uranus stationary in right ascension; starts retrograde motion
8338.854 Aug  8 Wed  9 Moon 3.8° S of M35 cluster; 43° and 44° from the Sun in the morning sky
8339.583 Aug  9 Thu  2 Mercury at inferior conjunction with the Sun; 0.604 AU from Earth; latitude -7.00°
8340.173 Aug  9 Thu 16 Mercury at southermost latitude from the ecliptic plane, -7.0°
8340.313 Aug  9 Thu 20 Moon 7.8° S of Pollux; 23° and 25° from the Sun in the morning sky
8341.071 Aug 10 Fri 14 Moon at ascending node; longitude 125.9°
8341.083 Aug 10 Fri 14 Moon shows minimum libration for the year, 0.08°
8341.208 Aug 10 Fri 17 Moon 1.18° S of Beehive Cluster; 10° and 11° from the Sun in the morning sky
8341.257 Aug 10 Fri 18:10 Moon at perigee; distance 56.14 Earth-radii
8341.257 Aug 10 Fri 18:10 Perigee only 15.8 hours before New Moon
8341.368 Aug 10 Fri 21 Sun enters Leo, at longitude 138.17° on the ecliptic
8341.667 Aug 11 SAT  4    Moon 5.4° NNE of Mercury; 4° and 6° from the Sun in the morning sky
8341.915 Aug 11 SAT  9:58 New Moon; beginning of lunation 1183. Partial eclipse of the Sun
8342.5   Aug 12 SUN Perseid meteors; ZHR 110; peak Aug 12 19h; 1 day after New
8342.688 Aug 12 SUN  5    Moon 1.74° NNE of Regulus; 11° from the Sun in the evening sky
8345.250 Aug 14 Tue 18 Moon 5.9° NNE of Venus; 46° from the Sun in the evening sky
8345.712 Aug 15 Wed  5 Venus dichotomy (D-shape)
8346.438 Aug 15 Wed 23 Moon 7.2° NNE of Spica; 61° from the Sun in the evening sky
8346.984 Aug 16 Thu 12 Mars at southernmost declination, -26.50°
8347.375 Aug 16 Thu 21 Moon shows maximum libration for the year, 10.20°
8347.5   Aug 17 Fri Kappa Cygnid meteors; ZHR 3; peak Aug 17 24h; near First Quarter
8348.063 Aug 17 Fri 14 Moon 4.3° NNE of Jupiter; 81° from the Sun in the evening sky
8348.217 Aug 17 Fri 17 Venus at easternmost elongation; 45.9° from Sun in evening sky
8348.826 Aug 18 SAT  7:49 First Quarter Moon
8349.011 Aug 18 SAT 12 Mercury stationary in right ascension; resumes direct motion
8349.680 Aug 19 SUN  4 Mercury stationary in longitude; resumes direct motion
8350.063 Aug 19 SUN 14 Moon 8.9° NNE of Antares; 104° and 103° from the Sun in the evening sky
8351.603 Aug 21 Tue  2 Mars at southernmost latitude from the ecliptic plane, -1.8°
8351.625 Aug 21 Tue  3 Mercury 5.4° SE of Beehive Cluster; 16° and 20° from the Sun in the morning sky; magnitudes 1.1 and 3.7
8351.938 Aug 21 Tue 11 Moon 2.15° N of Saturn; 125° and 124° from the Sun in the evening sky
8353.673 Aug 23 Thu  4 Sun enters the astrological sign Virgo, i.e. its longitude is 150°
8353.968 Aug 23 Thu 11 Moon at apogee; distance 63.62 Earth-radii
8354.167 Aug 23 Thu 16 Moon 6.7° N of Mars; 149° and 148° from the Sun in the evening sky
8354.703 Aug 24 Fri  5 Moon at descending node; longitude 305.9°
8356.998 Aug 26 SUN 11:57 Full Moon
8357.351 Aug 26 SUN 20 Mercury at westernmost elongation; 18.3° from Sun in morning sky
8358.021 Aug 27 Mon 13 Moon 2.37° SE of Neptune; 168° and 169° from the Sun in the morning sky
8358.084 Aug 27 Mon 14 Mars stationary in longitude; resumes direct motion
8358.925 Aug 28 Tue 10 Mars stationary in right ascension; resumes direct motion
8359.229 Aug 28 Tue 17 Mercury at ascending node through the ecliptic plane
8361.771 Aug 31 Fri  7   Moon 4.7° SE of Uranus; 125° from the Sun in the morning sky

8362.5  Sep  1 SAT   Aurigids; ZHR 5; peak Sep 1 2h; 2 days before Last Quarter
8363.021 Sep  1 SAT 13   Venus 1.23° SSW of Spica; 45° from the Sun in the evening sky; magnitudes -4.4 and 1.0
8363.089 Sep  1 SAT 14   The equation of time is 0.
8363.896 Sep  2 SUN 10   Moon 8.8° SE of the Pleiades; 99° and 100° from the Sun in the morning sky
8363.897 Sep  2 SUN 10   Mercury at perihelion, 0.3075 AU from the Sun
8364.583 Sep  3 Mon  2   Moon 1.20° N of Aldebaran; 90° from the Sun in the morning sky
8364.610 Sep  3 Mon  2:38 Last Quarter Moon
8366.208 Sep  4 Tue 17   Moon 3.8° S of M35 cluster; 69° and 70° from the Sun in the morning sky
8366.848 Sep  5 Wed  8   Venus at aphelion, 0.7282 AU from the Sun
8367.646 Sep  6 Thu  4   Mercury 1.00° NNE of Regulus; 14° and 13° from the Sun in the morning sky; magnitudes -1.1 and 1.4
8367.708 Sep  6 Thu  5   Moon 7.7° S of Pollux; 49° and 50° from the Sun in the morning sky
8367.888 Sep  6 Thu  9   Saturn stationary in right ascension; resumes direct motion
8367.916 Sep  6 Thu 10   Saturn stationary in longitude; resumes direct motion
8368.447 Sep  6 Thu 23   Moon at ascending node; longitude 125.4°
8368.625 Sep  7 Fri  3   Moon 1.15° S of Beehive Cluster; 36° and 37° from the Sun in the morning sky
8369.260 Sep  7 Fri 18   Neptune at opposition; magnitude 7.8
8369.558 Sep  8 SAT  1:24   Moon at perigee; distance 56.65 Earth-radii
8370.125 Sep  8 SAT 15   Moon 1.74° NNE of Regulus; 16° from the Sun in the morning sky
8370.142 Sep  8 SAT 15   Moon, Mercury, and Regulus within circle of diameter 4.72°; about 14° from the Sun in the morning sky; magnitudes -6, -1, 1
8370.479 Sep  8 SAT 24   Moon 0.97° NE of Mercury; 11° from the Sun in the morning sky
8370.5  Sep  9 SUN   September Epsilon Perseid meteors; ZHR 10; peak Sep 9 11h; near New
8371.251 Sep  9 SUN 18:02 New Moon; beginning of lunation 1184
8371.5  Sep 10 Mon   Rosh Hashanah, 1st say of Hebrew year 5779 A.M.
8373.5  Sep 12 Wed   1st day of Muslim year (1440 A.H.)
8373.854 Sep 12 Wed  9   Moon 7.1° NNE of Spica; 35° from the Sun in the evening sky
8374.108 Sep 12 Wed 15   Mercury at northernmost latitude from the ecliptic plane, 7.0°
8374.458 Sep 12 Wed 23   Moon 9.9° NNE of Venus; 43° from the Sun in the evening sky
8375.729 Sep 14 Fri  6   Moon 4.2° NNE of Jupiter; 58° from the Sun in the evening sky
8377.375 Sep 15 SAT 21   Moon 8.8° NNE of Antares; 78° and 77° from the Sun in the evening sky
8378.028 Sep 16 SUN 13   Mars at perihelion, 1.3814 AU from the Sun
8378.469 Sep 16 SUN 23:15 First Quarter Moon
8378.584 Sep 17 Mon 2    Sun enters Virgo, at longitude 174.14° on the ecliptic
8379.229 Sep 17 Mon 18   Moon 2.09° NNE of Saturn; 98° from the Sun in the evening sky
8381.548 Sep 20 Thu 1    Moon at apogee; distance 63.48 Earth-radii
8381.750 Sep 20 Thu 6    Moon 4.7° N of Mars; 126° and 125° from the Sun in the evening sky
8382.568 Sep 21 Fri 2    Mercury at superior conjunction with the Sun; 1.387 AU from Earth; latitude 5.42°
8382.899 Sep 21 Fri 10   Venus shows greatest illuminated extent, 50.9 square seconds
8384.579 Sep 23 SUN 1:54 Sun enters the astrological sign Libra, i.e. its longitude is 180°
8384.579 Sep 23 SUN 1:54 September of fall or autumn equinox
8385.229 Sep 23 SUN 18   Moon 2.29° SE of Neptune; 164° from the Sun in the morning sky
8386.621 Sep 25 Tue 2:54 Full Moon
8386.679 Sep 25 Tue 4    Venus brightest; magnitude -4.56°
8387.491 Sep 25 Tue 24   Saturn at east quadrature, 90° from the Sun
8388.938 Sep 27 Thu 11   Moon 4.5° SE of Uranus; 152° and 153° from the Sun in the morning sky
8389.044 Sep 27 Thu 13   Venus at southernmost latitude from the ecliptic plane, -3.4°
8391.125 Sep 29 SAT 15   Moon 8.6° SE of the Pleiades; 125° and 126° from the Sun in the morning sky
8391.700 Sep 30 SUN 5    Pluto stationary in right ascension; resumes direct motion
8391.813 Sep 30 SUN 8    Moon 1.40° N of Aldebaran; 117° from the Sun in the morning sky
8391.843 Sep 30 SUN 8    Mars and Neptune at heliocentric conjunction; longitude 345.2°
8392.226 Sep 30 SUN 17   Pluto stationary in longitude; resumes direct motion
8393.458 Oct 1 Mon 23   Moon 3.6° S of M35 cluster; 96° from the Sun in the morning sky
8393.907 Oct 2 Tue 9:46 Last Quarter Moon
8395.000 Oct 3 Wed 12   Moon 7.6° S of Pollux; 76° and 77° from the Sun in the morning sky
8395.633 Oct 4 Thu 3    Moon at ascending node; longitude 123.5°
8395.938 Oct 4 Thu 11   Moon 0.96° S of Beehive Cluster; 63° and 64° from the Sun in the morning sky
8396.5 Oct 5 Fri      October Camelopardalid meteors; ZHR 5; peak Oct 5 19h; 3 days before New
8396.675 Oct 5 Fri 4    Venus stationary in right ascension; starts retrograde motion
Venus stationary in longitude; starts retrograde motion

Moon at perigee; distance 57.45 Earth-radii
Moon 1.81° NNE of Regulus; 43° from the Sun in the morning sky
Mercury at descending node through the ecliptic plane
Mercury 2.02° NNE of Spica; 11° from the Sun in the evening sky; magnitudes -0.6 and 1.0

Draconid meteors; ZHR 20; peak Oct 8 18h; near New

New Moon; beginning of lunation 1185

Moon 7.0° NNE of Spica; 9° and 8° from the Sun in the evening sky
Southern Taurid meteors; ZHR 5; peak Oct 10 9h; 1 day after New
Moon 5.5° NNE of Mercury; 15° and 13° from the Sun in the evening sky
Delta Aurigid meteors; ZHR 2; peak Oct 11 9h; 2 days after New
Moon 4.0° NNE of Jupiter; 36° from the Sun in the evening sky
Moon 8.6° NNE of Antares; 51° and 50° from the Sun in the evening sky
Moon 1.82° N of Saturn; 72° from the Sun in the evening sky
Mercury 6.2° NNE of Venus; 17° and 18° from the Sun in the evening sky; magnitudes -0.3 and -4.3
Mercury at aphelion, 0.4667 AU from the Sun

First Quarter Moon

Epsilon Geminid meteors; ZHR 3; peak Oct 18 11h; 2 days after First Quarter
Winter solstice on Mars
Winter solstice on Mars
Moon 1.91° N of Mars; 109° from the Sun in the evening sky
Saturn at southernmost declination, -22.77°
Orionid meteors; ZHR 25; peak Oct 21 11h; 3 days before Full
Moon 2.39° SE of Neptune; 137° and 136° from the Sun in the evening sky
Sun enters the astrological sign Scorpius, i.e. its longitude is 210°
Leo Minorid meteors; ZHR 2; peak Oct 24 11h; near Full
Uranus at opposition; magnitude 5.7
Moon 4.5° SE of Uranus; 175° and 179° from the Sun in the midnight sky

Full Moon

Pluto at descending node through the ecliptic plane
8418.091 Oct 26 Fri 14  
Venus at inferior conjunction with the Sun; 0.272 AU from Earth; latitude -2.35°

8418.375 Oct 26 Fri 21  
Moon 8.4° SE of the Pleiades; 152° and 153° from the Sun in the morning sky

8419.063 Oct 27 SAT 14  
Moon 1.60° N of Aldebaran; 144° from the Sun in the morning sky

8419.5 Oct 28 SUN  
Clocks back 1 hour (Europe)

8420.688 Oct 29 Mon 5  
Moon 3.3° S of M35 cluster; 123° from the Sun in the morning sky

8420.792 Oct 29 Mon 7  
Mercury 3.1° SSW of Jupiter; 22° from the Sun in the evening sky; magnitudes -0.2 and -1.7

8422.08 Oct 30 Tue 17  
Moon 7.3° S of Pollux; 103° and 104° from the Sun in the morning sky

8422.657 Oct 31 Wed 4  
Moon at ascending node; longitude 120.6°

8422.782 Oct 31 Wed 7  
Sun enters Libra, at longitude 217.79° on the ecliptic

8423.167 Oct 31 Wed 16  
Moon 0.7° S of Beehive Cluster; 90° and 91° from the Sun in the morning sky

8423.195 Oct 31 Wed 16:41  
**Last Quarter Moon**

8423.350 Oct 31 Wed 20:24  
Moon at perigee; distance 58.05 Earth-radii

8424.750 Nov 2 Fri 6  
Moon 2.02° NNE of Regulus; 70° from the Sun in the morning sky

8425.881 Nov 3 SAT 9  
The equation of time is at a maximum of 16.48 minutes.

8426.5 Nov 4 SUN  
Clocks back 1 hour (America)

8428.142 Nov 5 Mon 15  
Mercury at southernmost latitude from the ecliptic plane, -7.0°

8428.625 Nov 6 Tue 3  
Moon 7.1° NNE of Spica; 20° from the Sun in the morning sky

8428.875 Nov 6 Tue 9  
Moon 8.8° NNE of Venus; 17° from the Sun in the morning sky

8429.140 Nov 6 Tue 15  
**Mercury at easternmost elongation;** 23.3° from Sun in evening sky

8430.168 Nov 7 Wed 16:02  
**New Moon;** beginning of lunation 1186

8431.333 Nov 8 Thu 20  
Moon 3.7° NNE of Jupiter; 15° and 14° from the Sun in the evening sky

8432.021 Nov 9 Fri 13  
Mercury 1.81° N of Antares; 23° from the Sun in the evening sky; magnitudes -0.1 and 1.0

8432.125 Nov 9 Fri 15  
Moon 6.6° NNE of Mercury; 24° and 23° from the Sun in the evening sky

8432.125 Nov 9 Fri 15  
Moon 8.4° NNE of Antares; 24° and 23° from the Sun in the evening sky

8433.5 Nov 11 SUN  
Armistice Day

8434.167 Nov 11 SUN 16  
Moon 1.46° N of Saturn; 47° from the Sun in the evening sky

8434.5 Nov 12 Mon  
Northern Taurid meteors; ZHR 5; peak Nov 12 11h; 3 days before First Quarter

8435.060 Nov 12 Mon 13  
Mercury at southernmost declination, -24.82°

8436.088 Nov 13 Tue 14  
Moon at descending node; longitude 299.2°
8436.631 Nov 14 Wed  3   Venus stationary in right ascension; resumes direct motion
8437.163 Nov 14 Wed 16  Moon at apogee; distance 63.40 Earth-radii
8437.354 Nov 14 Wed 21  Venus 1.25° E of Spica; 27° and 28° from the Sun in the morning sky; magnitudes -4.5 and 1.0; quasi-conjunction
8438.120 Nov 15 Thu 14:53  First Quarter Moon
8438.729 Nov 16 Fri  6   Moon 0.99° SE of Mars; 97° and 96° from the Sun in the evening sky
8438.951 Nov 16 Fri 11  Venus stationary in longitude; resumes direct motion
8439.5 Nov 17 SAT  Leonid meteors; ZHR 15; peak Nov 17 17h; 2 days after First Quarter
8439.561 Nov 17 SAT  1   Mercury stationary in longitude; starts retrograde motion
8439.705 Nov 17 SAT  5   Mercury stationary in right ascension; starts retrograde motion
8439.854 Nov 17 SAT  9   Moon 2.61° SE of Neptune; 109° from the Sun in the evening sky
8443.479 Nov 20 Tue 24  Moon 4.5° SE of Uranus; 151° from the Sun in the evening sky
8443.5 Nov 21 Wed  Alpha Monocerotic meteors; ZHR 5; peak Nov 21 17h; 2 days before Full
8444.667 Nov 22 Thu  4   Mercury 4.0° NNE of Antares; 12° and 11° from the Sun in the evening sky; magnitudes 2.0 and 1.0
8444.876 Nov 22 Thu  9   Sun enters the astrological sign Sagittarius, i.e. its longitude is 240°
8445.335 Nov 22 Thu 20  Venus at ascending node through the ecliptic plane
8445.736 Nov 23 Fri  5:40  Full Moon
8445.750 Nov 23 Fri  6   Moon 8.4° SE of the Pleiades; 176° from the Sun in the midnight sky
8445.992 Nov 23 Fri 12  Sun enters Scorpius, at longitude 241.13° on the ecliptic
8446.396 Nov 23 Fri 22  Moon 1.68° N of Aldebaran; 171° and 170° from the Sun in the morning sky
8447.198 Nov 24 SAT 17  Mercury at ascending node through the ecliptic plane
8447.447 Nov 24 SAT 23  Neptune stationary in longitude; resumes direct motion
8447.745 Nov 25 SUN  6   Neptune stationary in right ascension; resumes direct motion
8447.979 Nov 25 SUN 12  Moon 3.2° SE of M35 cluster; 150° and 151° from the Sun in the morning sky
8448.778 Nov 26 Mon  7   Jupiter at conjunction with the Sun; 6.347 AU from Earth; latitude 0.78°
8449.005 Nov 26 Mon 12:07  Moon at perigee; distance 57.48 Earth-radii
8449.479 Nov 26 Mon 24  Moon 7.1° S of Pollux; 130° and 131° from the Sun in the morning sky
8449.720 Nov 27 Tue  5   Moon at ascending node; longitude 118.0°
8449.881 Nov 27 Tue  9   Mercury at inferior conjunction with the Sun; 0.678 AU from Earth; latitude 2.00°
8450.396 Nov 27 Tue 22  Mercury 0.42° NNE of Jupiter; 2° and 1° from the Sun in the morning sky; magnitudes 5.2 and -1.7
8450.417 Nov 27 Tue 22  Moon 0.58° SE of Beehive Cluster; 118° from the Sun in the morning sky
8450.5 Nov 28 Wed  November Orionid meteors; ZHR 3; peak Nov 28 0h; 2 days before Last Quarter
8451.866 Nov 29 Thu 9  Mercury at perihelion, 0.3075 AU from the Sun
8451.979 Nov 29 Thu 12  Moon 2.28° NNE of Regulus; 97° from the Sun in the morning sky
8452.514 Nov 30 Fri 0:20 Last Quarter Moon
8452.600 Nov 30 Fri 2  Venus brightest; magnitude -4.65°
8452.811 Nov 30 Fri 7  Sun enters Ophiuchus, at longitude 248.02° on the ecliptic
8454.484 Dec 1 SAT 24  Venus shows greatest illuminated extent, 54.3 square seconds
8454.5 Dec 2 SUN  Phoenicid meteors; ZHR 5; peak Dec 2 6h; 5 days before New
8455.523 Dec 3 Mon 1  Mars at east quadrature, 90° from the Sun
8455.917 Dec 3 Mon 10 Moon 7.2° NNE of Spica; 47° from the Sun in the morning sky
8456.396 Dec 3 Mon 22 Moon 3.4° NNE of Venus; 41° from the Sun in the morning sky
8458.438 Dec 5 Wed 23 Moon 1.82° NNE of Mercury; 17° from the Sun in the morning sky
8459.146 Dec 6 Thu 16 Moon 3.4° NNE of Jupiter; 9° and 8° from the Sun in the morning sky
8459.345 Dec 6 Thu 20 Mercury stationary in right ascension; resumes direct motion
8459.387 Dec 6 Thu 21 Mercury stationary in longitude; resumes direct motion
8459.458 Dec 6 Thu 23 Moon 8.4° NNE of Antares; 6° and 7° from the Sun in the morning sky
8459.5 Dec 7 Fri  Puppid-Velid meteors; ZHR 10; peak Dec 7 0h; near New
8459.806 Dec 7 Fri 7:21 New Moon; beginning of lunation 1187
8460.104 Dec 7 Fri 15 Mars 0.04° N of Neptune; 88° from the Sun in the evening sky; magnitudes 0.1 and 7.9
8461.191 Dec 8 SAT 16:35 Earliest sunset, at latitude 40° north
8461.5 Dec 9 SUN  Monocerotid meteors; ZHR 3; peak Dec 9 4h; 2 days after New
8461.750 Dec 9 SUN 6  Moon 1.17° NNE of Saturn; 22° from the Sun in the evening sky
8461.958 Dec 9 SUN 11  Moon at southernmost declination in year, -21.54°
8462.077 Dec 9 SUN 14  Mercury at northernmost latitude from the ecliptic plane, 7.0°
8463.250 Dec 10 Mon 18 Moon at descending node; longitude 297.2°
8464.5 Dec 12 Wed  Sigma Hydrid meteors; ZHR 3; peak Dec 12 3h; 3 days before First Quarter
8465.015 Dec 12 Wed 12 Moon at apogee; distance 63.53 Earth-radii
8466.345 Dec 13 Thu 20 Mars and Uranus at heliocentric conjunction; longitude 31.1°
8466.5 Dec 14 Fri Geminid meteors; ZHR 120; peak Dec 14 6h; 1 day before First Quarter
8467.188 Dec 14 Fri 17 Moon 2.82° SE of Neptune; 81° from the Sun in the evening sky
8467.358 Dec 14 Fri 21 Moon, Mars, and Neptune within circle of diameter 4.89°; about 83° from the Sun in the evening sky; magnitudes -10, 0, 8
8467.604 Dec 15 SAT 3 Moon 3.4° SE of Mars; 86° from the Sun in the evening sky
8467.971 Dec 15 SAT 11 Mercury at westernmost elongation; 21.3° from Sun in morning sky
8467.992 Dec 15 SAT 11:48 First Quarter Moon
8468.5 Dec 16 SUN Coma Berenicid meteors; ZHR 3; peak Dec 16 1h; 1 day after First Quarter
8470.833 Dec 18 Tue 8 Moon 4.7° SE of Uranus; 123° and 122° from the Sun in the evening sky
8471.086 Dec 18 Tue 14 Sun enters Sagittarius, at longitude 266.59° on the ecliptic
8471.5 Dec 19 Wed December Leo Minorid meteors; ZHR 5; peak Dec 19 23h; 3 days before Full
8473.167 Dec 20 Thu 16 Moon 8.4° SE of the Pleiades; 152° and 151° from the Sun in the evening sky
8473.833 Dec 21 Fri 8 Moon 1.68° N of Aldebaran; 161° and 160° from the Sun in the evening sky
8474.354 Dec 21 Fri 21 Mercury 0.83° NNE of Jupiter; 20° from the Sun in the morning sky; magnitudes -0.4 and -1.8
8474.434 Dec 21 Fri 22:25 December or winter solstice
8474.434 Dec 21 Fri 22:25 Sun enters the astrological sign Capricornus, i.e. its longitude is 270°
8474.5 Dec 22 SAT Ursid meteors; ZHR 15; peak Dec 22 15h; near Full
8475.042 Dec 22 SAT 13 Mercury, Jupiter, and Antares within circle of diameter 5.97°; about 21° from the Sun in the morning sky; magnitudes 0, -2, 1
8475.042 Dec 22 SAT 13 Mercury 6.0° NNE of Antares; 20° and 21° from the Sun in the morning sky; magnitudes -0.4 and 1.0
8475.243 Dec 22 SAT 17:49 Full Moon
8475.375 Dec 22 SAT 21 Moon 3.1° S of M35 cluster; 177° and 178° from the Sun in the midnight sky
8476.000 Dec 23 SUN 12 Moon at northernmost declination in year, 21.55°
8476.292 Dec 23 SUN 19 Jupiter 5.2° N of Antares; 22° from the Sun in the morning sky; magnitudes -1.8 and 1.0
8476.833 Dec 24 Mon 8 Moon 7.0° S of Pollux; 158° from the Sun in the morning sky
8476.915 Dec 24 Mon 9:57 Moon at perigee; distance 56.61 Earth-radii
8476.997 Dec 24 Mon 12 Moon at ascending node; longitude 116.9°
8477.5 Dec 25 Tue Christmas
8477.750 Dec 25 Tue 6 Moon 0.54° SE of Beehive Cluster; 145° and 146° from the Sun in the morning sky
The equation of time is 0.

- **Dec 25 Tue 10**: Venus at perihelion, 0.7185 AU from the Sun
- **Dec 26 Wed 16**: Moon 2.42° NNE of Regulus; 125° from the Sun in the morning sky
- **Dec 26 Wed 18**: 
  - **Dec 29 SAT 9:36**: Last Quarter Moon
  - **Dec 30 SUN 15**: Moon 7.3° NNE of Spica; 75° from the Sun in the morning sky