Astronomical Events for 2018

(compiled from Astropixels.com and RASC Observer's Handbook)

Date	EST (h:m)	Event
JANUARY		
Jan **01 Mon**	**15:00**	**Mercury at Greatest Elongation 22.7°W**
01 Mon	16:54	Moon at Perigee: 356 566 km (closest of 2018)
01 Mon	21:24	FM (perigean FM -largest of 2018) rises locally 3:52 pm EST
03 Wed	01:00	Earth at Perihelion: 0.98329 AU
03 Wed	14:50	Beehive 2.3°N of Moon
03 Wed	**15:00**	**Quadrantid Meteor Shower (120/h) Moon 96% full**
05 Fri	02:24	Regulus 0.9°S of Moon
07 Sun	**03:25**	**Mars-Jupiter separation 0.25°. Very Close!**
08 Mon	17:25	LQ rises locally at 11:52 pm EST
09 Tue	01:00	Venus at Superior Conjunction (not visible)
11 Thu	00:59	Jupiter 4.3°S of Moon
11 Thu	05:03	Mars 4.6°S of Moon
13 Sat	**03:00**	**Mercury 0.7° S of Saturn (nice morning view in east -crescent Moon nearby)**
14 Sun	21:10	Moon at Apogee: 406461 km
14 Sun	21:13	Saturn 2.6°S of Moon
15 Mon	**02:24**	**Mercury 3.4° S of Moon -nice grouping of crescent Moon, Saturn and Mercury at 7 am in east**
16 Tue	21:17	NM rises locally at 7:29 am EST (if you could see it)
24 Wed	17:20	FQ rises locally at 11:45 am EST
27 Sat	05:09	Aldebaran 0.7°S of Moon
30 Tue	04:54	Moon at Perigee: 358 995 km
31 Wed	02:19	Beehive 2.3°N of Moon
31 Wed	08:27	FM (another perigean FM, also a Blue Moon) rises locally at 4:41 pm EST
31 Wed	**08:30**	**Total Lunar Eclipse; mag=1.315 (Totality starts after moonset @7:44 am) Best west of Ontario-Manitoba border**

FEBRUARY

Feb 01 Thu 13:24 Regulus 0.9°S of Moon
07 Wed 10:54 LQ rises locally at 12:49 am EST
07 Wed 14:47 Jupiter 4.3°S of Moon
09 Fri 00:12 Mars 4.4°S of Moon
11 Sun 09:16 Moon at Apogee: 405701 km
11 Sun 09:46 Saturn 2.5°S of Moon
11 Sun 11:40 Mars 5.0°N of Antares
15 Thu 15:51 Partial Solar Eclipse; mag=0.599 (Antartica and south tip S. America)
15 Thu 16:05 NM rises locally at 7:23 am EST (if you could see it)
17 Sat 07:00 Mercury at Superior Conjunction (not visible)
23 Fri 03:09 FQ rises locally at 11:34 am EST
23 Fri 12:07 Aldebaran 0.7°S of Moon
27 Tue 09:48 Moon at Perigee: 363938 km
27 Tue 12:28 Beehive 2.3°N of Moon

MARCH

Mar 01 00:09 Regulus 0.9°S of Moon
01 19:51 FM rises locally at 5:57 pm EST
04 01:00 Mercury 1.1° N of Venus (two Evening Stars in March)
closest separation (1° 4 min) on Mar 3 before setting in west at 7:17 pm
04 09:00 Neptune in Conjunction with Sun (not visible)
07 01:57 Jupiter 4.1°S of Moon
09 06:20 LQ rises locally at 1:36 am EST
09 19:37 Mars 3.8°S of Moon
10 21:37 Saturn 2.2°S of Moon
11 03:00 Daylight Saving Time starts (clocks go ahead 1 hr)
11 04:13 Moon at Apogee: 404 682 km
15 10:00 Mercury at Greatest Elongation: 18.4°E
17 08:12 NM rises locally at 7:54 am EDT (if you could see it)
18 14:07 Venus 3.7°N of Moon (Nice lineup with crescent Moon in west after sunset)
19 03:00 Mercury 3.8°S of Venus
20 11:15 Vernal Equinox (Spring starts!)
22 17:33 Aldebaran 0.9°S of Moon
24 10:35 FQ rises locally at 12:10 pm EDT
26 12:17 Moon at Perigee: 369104 km
26 19:52 Beehive 2.2°N of Moon
28 08:38 Regulus 1.0°S of Moon
31 07:37 FM rises locally at 8:08 pm EDT (2nd FM of March)

APRIL

Apr 01 13:00 Mercury at Inferior Conjunction (not visible)
03 09:14 Jupiter 3.9°S of Moon
07 07:50 Saturn 1.9°S of Moon
07 13:15 Mars 3.1°S of Moon
08 00:32 Moon at Apogee: 404 145 km
08 02:18 LQ rises locally at 3:01 am EDT
14 04:24 Mercury 3.9°N of Moon
15 20:57 NM rises locally at 6:51 am EDT (if you could see it)
17 14:29 Venus 5.4°N of Moon
18 10:00 Uranus in Conjunction with Sun
18 23:45 Aldebaran 1.1°S of Cres. Moon in Hyades. Pleiades, Venus nearby
20 09:44 Moon at Perigee: 368 713 km
22 13:00 Lyrid Meteor Shower
22 16:46 FQ rises locally at 11:03 am EDT
23 01:17 Beehive 1.9°N of Moon
24 11:47 Venus 3.4°S of Pleiades
24 14:39 Regulus 1.2°S of Moon
29 13:00 Mercury at Greatest Elongation 27.0°W
29 19:58 FM rises locally at 7:00 pm EDT
30 12:16 Jupiter 3.8°S of Moon

MAY

May 02 08:29 Venus 6.3°N of Aldebaran
04 15:31 Saturn 1.7°S of Moon
05 02:00 Eta-Aquarid Meteor Shower (60/h, Moon 66% near LQ -best S. of equator)
05 19:35 Moon at Apogee: 404 458 km
06 02:24 Mars 2.7°S of Moon
07 21:09 LQ rises locally at 2:20 am EDT
08 19:00 Jupiter at Opposition
13 12:21 Mercury 2.4°N of Moon
15 06:48 NM rises locally at 6:26 am EDT (if you could see it)
17 13:11 Venus 4.8°N of Moon
17 16:06 Moon at Perigee: 363 777 km
20 06:57 Beehive 1.7°N of Moon
21 19:53 Regulus 1.4°S of Moon
21 22:49 FQ rises locally at 12:16 pm EDT
27 12:39 Jupiter 4.0°S of Moon
29 09:20 FM rises locally at 9:02 pm EDT
31 20:20 Saturn 1.6°S of Moon

JUNE

Jun 02 11:34 Moon at Apogee: 405 316 km
03 06:58 Mars 3.2°S of Moon
05 21:00 Mercury at Superior Conjunction (not visible)
06 13:32 LQ rises locally at 1:57 am EDT
07 22:37 Venus 4.6°S of Pollux
13 14:43 NM rises locally at 5:43 am EDT (if you could see it)
14 18:55 Moon at Perigee: 359 507 km
16 08:13 Venus 2.3°N of Moon
16 14:38 Beehive 1.5°N of Moon
18 02:25 Regulus 1.7°S of Moon
19 21:21 Venus 0.4°N of Beehive
20 05:51 FQ rises locally at 1:35 pm EDT
21 05:07 Summer Solstice (Summer starts!)
23 13:47 Jupiter 4.2°S of Moon
24 16:37 Mercury 4.7°S of Pollux
27 07:00 Saturn at Opposition (magnitude 0.0)
27 22:59 Saturn 1.8°S of Moon
27 23:53 FM rises locally at 8:46 pm EDT
29 21:43 Moon at Apogee: 406 061 km
30 20:43 Mars 4.8°S of Moon

JULY

Jul 04 00:39 Mercury 0.6°S of Beehive
06 02:51 LQ rises locally at 1:20 am EDT
06 12:00 Earth at Aphelion: 1.01670 AU
09 18:34 Venus 0.9°N of Regulus
10 04:30 Aldebaran 1.1°S of Moon
12 00:00 Mercury at Greatest Elongation 26.4°E
12 21:48 NM rises locally at 5:17 am EDT (if you could see it)
12 22:01 Partial Solar Eclipse; mag=0.337 (10% in S. Australia, 30% in Antarctica)
13 03:28 Moon at Perigee: 357 432 km
14 17:04 Mercury 2.2°S of Moon
15 11:14 Regulus 1.7°S of Moon
15 22:31 Venus 1.6°S of Moon
19 14:52 FQ rises locally at 1:38 pm EDT
20 18:57 Jupiter 4.4°S of Moon
24 11:49 Mercury 1.2°S of Regulus
25 01:10 Saturn 2.0°S of Moon
27 01:00 Mars at Opposition (magnitude -2.8!)
27 00:44 Moon at Apogee: 406 223 km
27 15:20 FM rises locally at 8:57 pm EDT
27 15:22 Total Lunar Eclipse; mag=1.609 (not vis. locally, best in Africa, central Asia)
28 04:00 Delta-Aquarid Meteor Shower

AUGUST

Aug 04 13:18 LQ rises locally at 12:18 am EDT
06 13:35 Aldebaran 1.1°S of Moon
08 21:00 Mercury at Inferior Conjunction (not visible)
10 13:05 Moon at Perigee: 358 083 km
11 04:46 Partial Solar Eclipse; mag=0.737 (40% IN Greenland, N. Europe, Asia max = 80%)
11 04:58 NM rises locally at 6:26 pm EDT (if you could see it)
12 20:00 Perseid Meteor Shower (90/h, Moon 4% -best of year!)
14 08:35 Venus 6.3°S of Moon
17 05:38 Jupiter 4.5°S of Moon
17 11:00 Venus at Greatest Elongation 45.9°E
18 02:49 FQ rises locally at 2:40 pm EDT
20 21:09 Mercury 4.8°S of Beehive
21 04:55 Saturn 2.1°S of Moon
23 06:23 Moon at Apogee: 405 744 km
26 06:56 FM rises locally at 8:35 pm EDT
26 15:00 Mercury at Greatest Elongation 18.3°W
31 23:45 Venus 1.0°S of Spica

SEPTEMBER

Sep 02 20:34 Aldebaran 1.2°S of Moon
02 21:37 LQ rises locally at 12:02 am EDT Sep 3
03 to 19 Best time to Observe Comet 21/P Giacobini-Zinner
Look in Auriga then Gemini (chart on website)
06 21:13 Beehive 1.4°N of Moon
07 12:00 Neptune at Opposition (magnitude 7.8)
07 20:21 Moon at Perigee: 361 355 km
09 13:01 NM rises locally at 6:32 am EDT
13 21:21 Jupiter 4.4°S of Moon
16 18:15 FQ rises locally at 2:29 pm EDT
17 11:46 Saturn 2.1°S of Moon
19 19:54 Moon at Apogee: 404 875 km
20 01:38 Mars 4.8°S of Moon
20 21:00 Mercury at Superior Conjunction (not visible)
22 20:54 Autumnal Equinox (Fall starts)
24 21:52 FM rises locally at 7:32 pm EDT
30 02:06 Aldebaran 1.4°S of Moon

OCTOBER

Oct 02 04:45 LQ rises locally at 12:36 am EDT Oct 3
04 04:51 Beehive 1.3°N of Moon
05 16:58 Regulus 1.8°S of Moon
05 17:29 Moon at Perigee: 366 396 km
08 22:47 NM rises locally at 6:37 am EDT
11 16:21 Jupiter 4.1°S of Moon
14 22:01 Saturn 1.8°S of Moon
15 22:00 Mercury 6.2° of Venus
16 13:02 FQ rises locally at 2:52 pm EDT
17 14:16 Moon at Apogee: 404 227 km
18 08:01 Mars 1.9°S of Moon
21 12:00 Orionid Meteor Shower (20/h, Moon 91% near Full)
23 20:00 Uranus at Opposition (magnitude 5.9)
24 11:45 FM rises locally at 6:54 pm EDT
26 09:00 Venus at Inferior Conjunction (not visible)
27 08:04 Aldebaran 1.6°S of Moon
29 01:00 Mercury 3.1° of Jupiter
31 10:24 Beehive 1.0°N of Moon
31 11:40 LQ rises locally at 12:43 am EDT Nov 1
31 15:05 Moon at Perigee: 370 201 km

NOVEMBER

Nov 01 23:16 Regulus 2.1°S of Moon
04 03:00 Eastern Standard Time starts (clocks back 1 hr)
05 13:00 S. Taurid Meteor Shower (10/h, Moon 5%)
06 10:00 Mercury at Greatest Elongation 23.3°E
07 11:02 NM rises locally at 6:50 am EST
08 23:58 Mercury 1.8°N of Antares
11 10:46 Saturn 1.4°S of Moon
12 12:00 N Taurid Meteor Shower (15/h. Moon 24%)
14 10:57 Moon at Apogee: 404 341 km
14 18:14 Venus 0.2°S of Spica
15 09:54 FQ rises locally at 1:40 pm EST
15 23:16 Mars 1.0°N of Moon: Occultation. (miss by more than 1° locally)
17 18:00 Leonid Meteor Shower (20/h, Moon 72%)
23 00:39 FM rises locally at 5:36 pm EST
23 16:11 Aldebaran 1.7°S of Moon
26 01:00 Jupiter in Conjunction with Sun
26 07:10 Moon at Perigee: 366 623 km
27 04:00 Mercury at Inferior Conjunction (not visible)
27 15:57 Beehive 0.8°N of Moon
29 04:27 Regulus 2.3°S of Moon
29 19:19 LQ rises locally at 11:58 pm EST

DECEMBER

Dec 03 13:42 Venus 3.6°S of Moon
05 16:06 Mercury 1.9°S of Moon
07 02:20 NM rises locally at 7:51 am EST (if you can see it)
09 00:30 Saturn 1.1°S of Moon (thin cres.): Occultation. (miss locally but M22 nearby!)
12 07:25 Moon at Apogee: 405 177 km
14 07:00 Geminid Meteor Shower (120/h, Moon 41%)
14 18:21 Mars 3.6°N of Moon
15 06:00 Mercury at Greatest Elongation 21.3°W
15 06:49 FQ rises locally at 1:03 pm EST
16 Sun Comet 46/P Wirtanen near Pleiades (may be mag. 3). Visible through Jan and Feb 2019
21 02:31 Aldebaran 1.7°S of Moon
21 15:00 Mercury 0.8° of Jupiter
21 17:22 Winter Solstice
22 03:05 Mercury 5.8°N of Antares
22 10:03 Jupiter 5.1°N of Antares
22 12:49 FM rises locally at 5:03 pm EST
22 16:00 Ursid Meteor Shower
24 04:52 Moon at Perigee: 361 060 km
24 23:52 Beehive 0.6°N of Moon
26 11:06 Regulus 2.5°S of Moon
29 04:34 LQ rises locally at 12:10 am EST

Glossary: Only some selected terms here; for a full glossary consult an astronomical dictionary or google the word you need defined**.**

Aphelion/Perihelion: Earth's orbit is elliptical so the planet is farthest from the Sun at aphelion (July 3) and closest at perihelion (Jan 4) in 2017.

Apogee/Perigee: Since orbits around the Sun or Earth are usually ellipses, the farthest and nearest distances use "apo" (far) and "peri" (near) to describe the maximum and minimum values. For Earth and its satellites, apogee is the farthest point and perigee is the nearest. The same prefixes are applied to orbits around the Moon -"luna" (apolune and perilune) Sun -"helios" (aphelion/perihelion), etc.

Appulse: A close approach of two astronomical objects. i.e. minimum separation expressed in minutes and seconds of arc.

Conjunction: The point in time when two stellar objects have the same Right Ascension. This is usually close to the minimum separation of the two objects but see also appulse above. When a planet is at **Inferior Conjunction (not visible)** with the Sun it is between Earth and Sun and in **Superior Conjunction (not visible)** it is on the opposite side of the sun. At neither time are they easy to see since they are near the Sun.

Dichotomy: The point when a planet or moon is exactly 50% illuminated by sunlight. For Earth's Moon, synonymous with FQ and LQ phase.

Ecliptic: The path the Sun takes across the celestial sphere as seen from Earth. It follows the constellations of the zodiac generally except for a brief stint in a non-zodiac constellation in late November when it passes through Ophiuchus. The Sun spends about a month “in” each constellation during the year (assuming each zodiac constellation covers 30° of sky, which they don’t and herein lies the conflict between astrology and astronomy).

Elongation (E or W): The time of farthest apparent separation in the sky between two celestial objects, one usually the Sun. For ex. a Greatest Elongation East for Mercury means it is best seen in the evening sky, east of the Sun after sunset.

Graze (or grazing occultation): When the Moon moving in its orbit passes a star so that it appears to skim along the top or bottom edge of the Moon. The Moon’s profile may cause the star to blink on and off a number of times as it passes behind mountains on the Moon’s edge. See also occultation.

Meteor Shower: An occasion when a larger than average number (more than 7 or 8 per hour) appear to radiant from a specific point in a constellation. The constellation determines the name of the shower, for ex. the Perseids radiate from Perseus. **Meteor**s are commonly called **shooting stars**, but they are usually tiny bits of space debris that are entering our atmosphere and not stellar in any way. Larger fragments that survive the journey to land on Earth are called **meteorites**.

Occultation (or total occultation): When the Moon passes in front of a bright star or planet so that it occults the object. A star will wink out virtually instantly while planets may take several minutes. Total occultations on the leading edge of the Moon are followed some time later by a reappearance on the opposite limb of the Moon.

Opposition: A planet in opposition is located opposite the Sun from Earth (imagine looking down from above the solar system -the alignment is Sun-Earth-planet. The planet is on the same side of the solar system as Earth and so appears in our “midnight” sky. From Earth, the planet appears to rise in thne east when the Sun sets in the west. Consequently, it is highest in our sky at midnight and then sets on the western horizon when the Sun is rising in the east. A month either side of opposition is the best time to view planets as they are in dark sky for the longest period.

Perigee: The closest distance between the Moon (or other Earth satellite) and the Earth since the Moon’s orbit around Earth is an ellipse. See also apogee.

Radiant: The point in space from which meteors appear to radiate. This is purely a perspective effect like snowflakes appearing to come from a point ahead as you drive into falling snow or the appearance of road appearing to narrow in the distance.

Sporadic: A meteor that is not part of a shower, i.e., a random shooting star. Usually 7 or 8 per hour.

Transit: The passage of an object like a planet across the disk of another celestial object. Most common are transits of Mercury and Venus across the Sun. The ISS can be seen to transit the Moon or Sun and more rarely other planets like Jupiter or Saturn. Transits of planets across planets can happen but are extremely rare.
can be seen as the Earth is constantly colliding with space debris.