

2018 Calendar of Astronomical Events

January 1 - Mercury at Greatest Western Elongation

The planet Mercury reaches greatest western elongation of 22.7 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky just before sunrise.

January 2 - Full Moon, Supermoon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 02:24 UTC. This full moon was known by early Native American tribes as the Full Wolf Moon because this was the time of year when hungry wolf packs howled outside their camps. This moon has also been known as the Old Moon and the Moon After Yule. This is also the first of two supermoons for 2018. The Moon will be at its closest approach to the Earth and may look slightly larger and brighter than usual.

January 3, 4 - Quadrantids Meteor Shower

The Quadrantids is an above average shower, with up to 40 meteors per hour at its peak. It is thought to be produced by dust grains left behind by an extinct comet known as 2003 EH1, which was discovered in 2003. The shower runs annually from January 1-5. It peaks this year on the night of the 3rd and morning of the 4th. Unfortunately the nearly full moon will block out all but the brightest meteors this year. If you are patient, you should still be able to catch some of the brightest ones. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Bootes, but can appear anywhere in the sky.

January 17 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 02:17 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

January 31 - Full Moon, Supermoon, Blue Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 13:27 UTC. Since this is the second full moon in the

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same month, it is sometimes referred to as a blue moon. This is also the last of two supermoons for 2018. The Moon will be at its closest approach to the Earth and may look slightly larger and brighter than usual.

January 31 - Total Lunar Eclipse

A total lunar eclipse occurs when the Moon passes completely through the Earth's dark shadow, or umbra. During this type of eclipse, the Moon will gradually get darker and then take on a rusty or blood red color. The eclipse will be visible throughout most of western North America, eastern Asia, Australia, and the Pacific Ocean.

February 15 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 21:05 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

February 15 - Partial Solar Eclipse

A partial solar eclipse occurs when the Moon covers only a part of the Sun, sometimes resembling a bite taken out of a cookie. A partial solar eclipse can only be safely observed with a special solar filter or by looking at the Sun's reflection. This partial eclipse will only be visible in parts of Chile, Argentina, and Antarctica.

March 2 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 00:51 UTC. This full moon was known by early Native American tribes as the Full Worm Moon because this was the time of year when the ground would begin to soften and the earthworms would reappear. This moon has also been known as the Full Crow Moon, the Full Crust Moon, the Full Sap Moon, and the Lenten Moon.

March 15 - Mercury at Greatest Eastern Elongation

The planet Mercury reaches greatest eastern elongation of 18.4 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the evening sky. Look for the planet low in the western sky just after sunset.

March 17 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 13:12 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

March 20 - March Equinox

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The March equinox occurs at 16:15 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of spring (vernal equinox) in the Northern Hemisphere and the first day of fall (autumnal equinox) in the Southern Hemisphere.

March 31 - Full Moon, Blue Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 12:37 UTC. Since this is the second full moon in the same month, it is sometimes referred to as a blue moon. This year is particularly unique in that January and March both contain two full moons while February has no full moon.

April 16 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 01:58 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

April 22, 23 - Lyrids Meteor Shower

The Lyrids is an average shower, usually producing about 20 meteors per hour at its peak. It is produced by dust particles left behind by comet C/1861 G1 Thatcher, which was discovered in 1861. The shower runs annually from April 16-25. It peaks this year on the night of the 22nd and morning of the 23rd. These meteors can sometimes produce bright dust trails that last for several seconds. The first quarter moon will set shortly after midnight, leaving dark skies for what could be a good show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Lyra, but can appear anywhere in the sky.

April 29 - Mercury at Greatest Western Elongation

The planet Mercury reaches greatest western elongation of 27 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky just before sunrise.

April 30 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 00:58 UTC. This full moon was known by early Native American tribes as the Full Pink Moon because it marked the appearance of the moss pink, or wild ground phlox, which is one of the first spring flowers. This moon has also been known as the Sprouting Grass Moon, the Growing Moon, and the Egg Moon. Many coastal tribes called it the Full Fish Moon because this was the time that the shad swam upstream to spawn.

May 6, 7 - Eta Aquarids

The Eta Aquarids is an above average shower, capable of producing up to 60 meteors per hour

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at its peak. Most of the activity is seen in the Southern Hemisphere. In the Northern Hemisphere, the rate can reach about 30 meteors per hour. It is produced by dust particles left behind by comet Halley, which has known and observed since ancient times. The shower runs annually from April 19 to May 28. It peaks this year on the night of May 6 and the morning of the May 7. The waning gibbous moon will block most of the fainter meteors this year, but you should be able to catch quite a few good ones if you are patient. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Aquarius, but can appear anywhere in the sky.

May 9 - Jupiter at Opposition

The giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Jupiter and its moons. A medium-sized telescope should be able to show you some of the details in Jupiter's cloud bands. A good pair of binoculars should allow you to see Jupiter's four largest moons, appearing as bright dots on either side of the planet.

May 15 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 11:48 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

May 29 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 14:19 UTC. This full moon was known by early Native American tribes as the Full Flower Moon because this was the time of year when spring flowers appeared in abundance. This moon has also been known as the Full Corn Planting Moon and the Milk Moon.

June 13 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 19:44 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

June 21 - June Solstice

The June solstice occurs at 10:07 UTC. The North Pole of the earth will be tilted toward the Sun, which will have reached its northernmost position in the sky and will be directly over the Tropic of Cancer at 23.44 degrees north latitude. This is the first day of summer (summer solstice) in the Northern Hemisphere and the first day of winter (winter solstice) in the Southern Hemisphere.

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June 27 - Saturn at Opposition

The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Saturn and its moons. A medium-sized or larger telescope will allow you to see Saturn's rings and a few of its brightest moons.

June 28 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 04:53 UTC. This full moon was known by early Native American tribes as the Full Strawberry Moon because it signaled the time of year to gather ripening fruit. It also coincides with the peak of the strawberry harvesting season. This moon has also been known as the Full Rose Moon and the Full Honey Moon.

July 12 - Mercury at Greatest Eastern Elongation

The planet Mercury reaches greatest eastern elongation of 26.4 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the evening sky. Look for the planet low in the western sky just after sunset.

July 13 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 02:48 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

July 13 - Partial Solar Eclipse

A partial solar eclipse occurs when the Moon covers only a part of the Sun, sometimes resembling a bite taken out of a cookie. A partial solar eclipse can only be safely observed with a special solar filter or by looking at the Sun's reflection. This partial eclipse will only be visible in extreme southern Australia and Antarctica.

July 27 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 20:22 UTC. This full moon was known by early Native American tribes as the Full Buck Moon because the male buck deer would begin to grow their new antlers at this time of year. This moon has also been known as the Full Thunder Moon and the Full Hay Moon.

July 27 - Total Lunar Eclipse

A total lunar eclipse occurs when the Moon passes completely through the Earth's dark shadow, or umbra. During this type of eclipse, the Moon will gradually get darker and then take

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on a rusty or blood red color. The eclipse will be visible throughout most of Europe, Africa, western and central Asia, the Indian Ocean, and Western Australia.

July 27 - Mars at Opposition

The red planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Mars. A medium-sized telescope will allow you to see some of the dark details on the planet's orange surface.

July 28, 29 - Delta Aquarids Meteor Shower

The Delta Aquarids is an average shower that can produce up to 20 meteors per hour at its peak. It is produced by debris left behind by comets Marsden and Kracht. The shower runs annually from July 12 to August 23. It peaks this year on the night of July 28 and morning of July 29. The nearly full moon will be a problem this year, blocking out all but the brightest meteors. But if you are patient, you should still be able to catch a few good ones. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Aquarius, but can appear anywhere in the sky.

August 11 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 09:58 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

August 11 - Partial Solar Eclipse

A partial solar eclipse occurs when the Moon covers only a part of the Sun, sometimes resembling a bite taken out of a cookie. A partial solar eclipse can only be safely observed with a special solar filter or by looking at the Sun's reflection. The partial eclipse will be visible in parts of northeast Canada, Greenland, extreme northern Europe, and northern and eastern Asia. It will be best seen in northern Russia with 68% coverage.

August 12, 13 - Perseids Meteor Shower

The Perseids is one of the best meteor showers to observe, producing up to 60 meteors per hour at its peak. It is produced by comet Swift-Tuttle, which was discovered in 1862. The Perseids are famous for producing a large number of bright meteors. The shower runs annually from July 17 to August 24. It peaks this year on the night of August 12 and the morning of August 13. The thin crescent moon will set early in the evening leaving dark skies for what should be an excellent show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Perseus, but can appear anywhere in the sky.

August 17 - Venus at Greatest Eastern Elongation

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The planet Venus reaches greatest eastern elongation of 45.9 degrees from the Sun. This is the best time to view Venus since it will be at its highest point above the horizon in the evening sky. Look for the bright planet in the western sky after sunset.

August 26 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 11:57 UTC. This full moon was known by early Native American tribes as the Full Sturgeon Moon because the large sturgeon fish of the Great Lakes and other major lakes were more easily caught at this time of year. This moon has also been known as the Green Corn Moon and the Grain Moon.

August 26 - Mercury at Greatest Western Elongation

The planet Mercury reaches greatest western elongation of 18.3 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky just before sunrise.

September 7 - Neptune at Opposition

The blue giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Neptune. Due to its extreme distance from Earth, it will only appear as a tiny blue dot in all but the most powerful telescopes.

September 9 - New Moon

The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 18:01 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

September 23 - September Equinox

The September equinox occurs at 01:54 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of fall (autumnal equinox) in the Northern Hemisphere and the first day of spring (vernal equinox) in the Southern Hemisphere.

September 25 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 02:53 UTC. This full moon was known by early Native American tribes as the Full Corn Moon because the corn is harvested around this time of year. This moon is also known as the Harvest Moon. The Harvest Moon is the full moon that occurs closest to the September equinox each year.

October 8 - Draconids Meteor Shower

The Draconids is a minor meteor shower producing only about 10 meteors per hour. It is produced by dust grains left behind by comet 21P Giacobini-Zinner, which was first discovered in 1900. The Draconids is an unusual shower in that the best viewing is in the early evening instead of early morning like most other showers. The shower runs annually from October 6-10 and peaks this year on the the night of the 8th. This will be an excellent year to observe the Draconids because there will be no moonlight to spoil the show. Best viewing will be in the early evening from a dark location far away from city lights. Meteors will radiate from the constellation Draco, but can appear anywhere in the sky.

October 9 - New Moon

The Moon will located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 03:47 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

October 21, 22 - Orionids Meteor Shower

The Orionids is an average shower producing up to 20 meteors per hour at its peak. It is produced by dust grains left behind by comet Halley, which has been known and observed since ancient times. The shower runs annually from October 2 to November 7. It peaks this year on the night of October 21 and the morning of October 22. The nearly full moon will block some of the fainter meteors this year, but the Orionids tend to be fairly bright so it could still be a good show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Orion, but can appear anywhere in the sky.

October 23 - Uranus at Opposition

The blue-green planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view Uranus. Due to its distance, it will only appear as a tiny blue-green dot in all but the most powerful telescopes.

October 24 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be will be fully illuminated. This phase occurs at 16:46 UTC. This full moon was known by early Native American tribes as the Full Hunters Moon because at this time of year the leaves are falling and the game is fat and ready to hunt. This moon has also been known as the Travel Moon and the Blood Moon.

November 5, 6 - Taurids Meteor Shower

The Taurids is a long-running minor meteor shower producing only about 5-10 meteors per hour. It is unusual in that it consists of two separate streams. The first is produced by dust

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grains left behind by Asteroid 2004 TG10. The second stream is produced by debris left behind by Comet 2P Encke. The shower runs annually from September 7 to December 10. It peaks this year on the the night of November 5. The thin crescent moon will set early in the evening leaving dark skies for viewing. Best viewing will be just after midnight from a dark location far away from city lights. Meteors will radiate from the constellation Taurus, but can appear anywhere in the sky.

November 6 - Mercury at Greatest Eastern Elongation

The planet Mercury reaches greatest eastern elongation of 23.3 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the evening sky. Look for the planet low in the western sky just after sunset.

November 7 - New Moon

The Moon will located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 16:02 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

November 17, 18 - Leonids Meteor Shower

The Leonids is an average shower, producing up to 15 meteors per hour at its peak. This shower is unique in that it has a cyclonic peak about every 33 years where hundreds of meteors per hour can be seen. That last of these occurred in 2001. The Leonids is produced by dust grains left behind by comet Tempel-Tuttle, which was discovered in 1865. The shower runs annually from November 6-30. It peaks this year on the night of the 17th and morning of the 18th. The waxing gibbous moon will set shortly after midnight leaving fairly dark skies for what could be a good early morning show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Leo, but can appear anywhere in the sky.

November 23 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be will be fully illuminated. This phase occurs at 05:40 UTC. This full moon was known by early Native American tribes as the Full Beaver Moon because this was the time of year to set the beaver traps before the swamps and rivers froze. It has also been known as the Frosty Moon and the Hunter's Moon.

December 7 - New Moon

The Moon will located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 07:20 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

December 13, 14 - Geminids Meteor Shower

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The Geminids is the king of the meteor showers. It is considered by many to be the best shower in the heavens, producing up to 120 multicolored meteors per hour at its peak. It is produced by debris left behind by an asteroid known as 3200 Phaethon, which was discovered in 1982. The shower runs annually from December 7-17. It peaks this year on the night of the 13th and morning of the 14th. The first quarter moon will set shortly after midnight leaving dark skies for what should be an excellent early morning show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Gemini, but can appear anywhere in the sky.

December 15 - Mercury at Greatest Western Elongation

The planet Mercury reaches greatest western elongation of 21.3 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky just before sunrise.

December 21 - December Solstice

The December solstice occurs at 22:23 UTC. The South Pole of the earth will be tilted toward the Sun, which will have reached its southernmost position in the sky and will be directly over the Tropic of Capricorn at 23.44 degrees south latitude. This is the first day of winter (winter solstice) in the Northern Hemisphere and the first day of summer (summer solstice) in the Southern Hemisphere.

December 22 - Full Moon

The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 17:49 UTC. This full moon was known by early Native American tribes as the Full Cold Moon because this is the time of year when the cold winter air settles in and the nights become long and dark. This moon has also been known as the Full Long Nights Moon and the Moon Before Yule.

December 21, 22 - Ursids Meteor Shower

The Ursids is a minor meteor shower producing about 5-10 meteors per hour. It is produced by dust grains left behind by comet Tuttle, which was first discovered in 1790. The shower runs annually from December 17-25. It peaks this year on the the night of the 21st and morning of the 22nd. This year the glare from the full moon will hide all but the brightest meteors. If you are extremely patient, you might still be able to catch a few good ones. Best viewing will be just after midnight from a dark location far away from city lights. Meteors will radiate from the constellation Ursa Minor, but can appear anywhere in the sky.