

## "2020 Stargazing Highlights"

(Source: Sea and Sky, [seasky.org](http://seasky.org))

- January 3, 4 - Quadrantids Meteor Shower. The Quadrantids is an above average shower, with an extinct comet known as 2003 EH1, which was discovered in 2003. The shower runs annually from January 3-4. The moon will set shortly after midnight, leaving fairly dark skies for what could be a good show. Epsilon Bootes, but can appear anywhere in the sky.
- January 10 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible in the evening sky. It was known by early Native American tribes as the Full Wolf Moon because this was the time of year when the wolf howl was heard. It was also known as the Full Moon and the Moon After Yule.
- January 10 - Penumbral Lunar Eclipse. A penumbral lunar eclipse occurs when the Moon passes through the Earth's penumbra, which is slightly but not completely. The eclipse will be visible throughout most of Europe, Africa, Asia, and Australia.
- January 24 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the sky. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- February 9 - Full Moon, Supermoon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible in the evening sky. It was known by early Native American tribes as the Full Snow Moon because the heavy snow was common. It was also known by some tribes as the Full Hunger Moon, since the harsh weather made hunting difficult. It will be at its closest approach to the Earth and may look slightly larger and brighter than usual.
- February 10 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation, which is its highest point above the horizon in the evening sky. Look for the planet low in the western sky.
- February 23 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the sky. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- March 9 - Full Moon, Supermoon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible in the evening sky. It was known by early Native American tribes as the Full Worm Moon because this was the time when the earthworms were active. It was also known as the Full Crow Moon, the Full Crust Moon, the Full Sap Moon, and the Leaning Tower of Pisa Moon. It will be at its closest approach to the Earth and may look slightly larger and brighter than usual.
- March 20 - March Equinox. The March equinox occurs at 03:50 UTC. The Sun will shine directly over the equator, which is also the first day of spring (vernal equinox) in the Northern Hemisphere and the first day of fall in the Southern Hemisphere.
- March 24 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the sky. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- March 24 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation, which is its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky.
- March 24 - Venus at Greatest Eastern Elongation. The planet Venus reaches greatest eastern elongation, which is its highest point above the horizon in the evening sky. Look for the bright planet in the western sky.
- April 8 - Full Moon, Supermoon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible in the evening sky. It was known by early Native American tribes as the Full Pink Moon because it marked the appearance of the pink flowers. It was also known as the Sprouting Grass Moon, the Growing Moon, and the Egg Moon. Many birds and animals will spawn. This is also the third of four supermoons for 2020. The Moon will be at its closest approach to the Earth and may look slightly larger and brighter than usual.
- April 22, 23 - Lyrids Meteor Shower. The Lyrids is an average shower, usually producing about 10-20 meteors per hour. It was named after the constellation Lyra, which was discovered in 1861. The shower runs annually from April 16-25. It peaks on April 22-23. Meteors sometimes produce bright dust trails that last for several seconds. The nearly new moon will be visible in the evening sky after midnight. Meteors will radiate from the constellation Lyra, but can appear anywhere in the sky.
- April 23 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible in the sky. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

- May 6, 7 - Eta Aquarids Meteor Shower. The Eta Aquarids is an above average shower, capable of being seen in both Hemispheres. In the Northern Hemisphere, the rate can reach about 30 meteors per hour. It is one of the best meteor shower times. The shower runs annually from April 19 to May 28. It peaks this year on the night of May 6-7 with some of the brightest meteors. But if you are patient, you should still be able to catch a few of the fainter meteors. The constellation Aquarius, but can appear anywhere in the sky.
- May 7 - Full Moon, Supermoon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible all night long. It was known by early Native American tribes as the Full Flower Moon because this was the time for planting. It is also known as the Corn Planting Moon and the Milk Moon. This is also the last of four supermoons for 2020. The Moon will be larger than usual.
- May 22 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- June 4 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation on June 4. It will be at its highest point above the horizon in the evening sky. Look for the planet low in the western sky after sunset.
- June 5 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible all night long. It is known by early Native American tribes as the Full Strawberry Moon because it signaled the time of year for strawberries to ripen. The moon has also been known as the Full Rose Moon and the Full Honey Moon.
- June 5 - Penumbral Lunar Eclipse. A penumbral lunar eclipse occurs when the Moon passes through the Earth's penumbra, slightly but not completely. The eclipse will be visible throughout most of Europe, Africa, Asia, and Australia. ([NASA Map and Eclipse Information](#))
- June 21 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- June 21 - Annular Solar Eclipse. An annular solar eclipse occurs when the Moon is too far away from Earth to completely cover the Sun. The Sun's corona is not visible during an annular eclipse. The path of the eclipse will begin in the Pacific Ocean. A partial eclipse will be visible throughout most of eastern Africa, the Middle East, and parts of Europe and Asia.
- June 22 - June Solstice. The June solstice occurs at 21:44 UTC. The North Pole of the earth will be tilted directly over the Tropic of Cancer at 23.44 degrees north latitude. This is the first day of summer in the Northern Hemisphere and the first day of winter in the Southern Hemisphere.
- July 5 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and will be visible all night long. It is known by early Native American tribes as the Full Buck Moon because the male buck deer would begin to grow their antlers. It is also known as the Full Hay Moon.
- July 5 - Penumbral Lunar Eclipse. A penumbral lunar eclipse occurs when the Moon passes through the Earth's penumbra, slightly but not completely. The eclipse will be visible throughout most of North America, South America, and parts of Europe and Asia. ([NASA Map and Eclipse Information](#))
- July 14 - Jupiter at Opposition. The giant planet will be at its closest approach to Earth and its full disk will be visible all night long. This is the best time to view and photograph Jupiter and its moons. A moderate good pair of binoculars should allow you to see Jupiter's four largest moons, appearing as bright stars.
- July 20 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will not be visible. This is a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- July 20 - Saturn at Opposition. The ringed planet will be at its closest approach to Earth and its full disk will be visible all night long. This is the best time to view and photograph Saturn and its moons. A moderate good pair of binoculars should allow you to see Saturn's rings.
- July 22 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation on July 22. It will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky before sunrise.
- July 28, 29 - Delta Aquarids Meteor Shower. The Delta Aquarids is an average shower that can be seen in both Hemispheres. It is named after Marsden and Kracht. The shower runs annually from July 12 to August 23. It peaks this year on the night of July 28-29 with some of the fainter meteors this year. But if you are patient, you should still be able to catch a few of the brighter meteors. The constellation Aquarius, but can appear anywhere in the sky.

- August 3 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and is known by early Native American tribes as the Full Sturgeon Moon because the large sturgeon fish of the Great Lakes also been known as the Green Corn Moon and the Grain Moon.
- August 12, 13 - Perseids Meteor Shower. The Perseids is one of the best meteor showers to observe. It was discovered in 1862. The Perseids are famous for producing a large number of bright meteors on the evening of August 12 and the morning of August 13. The second quarter moon will block out some of the fainter meteors. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Perseus.
- August 13 - Venus at Greatest Western Elongation. The planet Venus reaches greatest eastern elongation at its highest point above the horizon in the morning sky. Look for the bright planet in the eastern sky.
- August 19 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will be a good time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- September 2 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and is known by early Native American tribes as the Full Corn Moon because the corn is harvested.
- September 11 - Neptune at Opposition. The blue giant planet will be at its closest approach to Earth and will be visible all night long. This is the best time to view and photograph Neptune. Due to its distance, it will only be visible with telescopes.
- September 17 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will be a good month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.
- September 22 - September Equinox. The September equinox occurs at 13:31 UTC. The Sun will be directly over the equator for the world. This is also the first day of fall (autumnal equinox) in the Northern Hemisphere and the first day of spring in the Southern Hemisphere.
- October 1 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and is known by early Native American tribes as the Full Hunters Moon because at this time of year the leaves are falling. This moon is also known as the Harvest Moon. The Harvest Moon is the last full moon of the year and the Blood Moon. This moon is also known as the Harvest Moon. The Harvest Moon is the last full moon of the year and the Blood Moon.
- October 1 - Mercury at Greatest Eastern Elongation. The planet Mercury reaches greatest eastern elongation at its highest point above the horizon in the evening sky. Look for the planet low in the western sky.
- October 7 - Draconids Meteor Shower. The Draconids is a minor meteor shower producing only a few meteors per hour which was first discovered in 1900. The Draconids is an unusual shower in that the best viewing is in the early evening annually from October 6-10 and peaks this year on the the night of the 7th. The second quarter moon will be in the early evening from a dark location far away from city lights. Meteors will radiate from the constellation Draco.
- October 13 - Mars at Opposition. The red planet will be at its closest approach to Earth and its full disk will be visible all night long. This is the best time to view and photograph Mars. A medium-sized telescope will show surface details.
- October 16 - New Moon. The Moon will be located on the same side of the Earth as the Sun and will be a good time 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. It has been known and observed since ancient times. The shower runs annually from October 2 to November 20. The crescent moon will set before midnight leaving dark skies for what should be a good show. Best viewing is from Orion, but can appear anywhere in the sky.
- October 31 - Full Moon, Blue Moon. The Moon will be located on the opposite side of the Earth as the Sun and is the second full moon in the same month, it is sometimes referred to as a blue moon. This rare event occurs once every 29 months.
- October 31 - Uranus at Opposition. The blue-green planet will be at its closest approach to Earth and will be visible all night long. This is the best time to view Uranus. Due to its distance, it will only be visible with telescopes.
- November 4, 5 - Taurids Meteor Shower. The Taurids is a long-running minor meteor shower producing up to 10 meteors per hour. The first is produced by dust grains left behind by Asteroid 2004 TG10. The second stream is produced by dust grains left behind by Asteroid 1989 BF. It peaks this year on the the night of November 4. The first quarter moon will be in the early evening. Best viewing will be just after midnight from a dark location far away from city lights.

- November 10 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest at its highest point above the horizon in the morning sky. Look for the planet low in the eastern
  - November 15 - New Moon. The Moon will be located on the same side of the Earth as the Sun and is a good month to observe faint objects such as galaxies and star clusters because there is no moonlight.
  - November 17, 18 - Leonids Meteor Shower. The Leonids is an average shower, producing up to 100 meteors per hour in years where hundreds of meteors per hour can be seen. That last of these occurred in 2001. The last major outburst was in 1865. The shower runs annually from November 6-30. It peaks this year on the night of the 17th and 18th. What should be an excellent show. Best viewing will be from a dark location after midnight. Meteor activity will be visible from 10:00 PM to 5:00 AM.
  - November 30 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and is a good month to observe faint objects such as galaxies and star clusters because there is no moonlight. Known by early Native American tribes as the Full Beaver Moon because this was the time of year when beavers were busy building their dams. Also known as the Frosty Moon and the Hunter's Moon.
  - November 30 - Penumbral Lunar Eclipse. A penumbral lunar eclipse occurs when the Moon passes through the Earth's penumbra and darkens slightly but not completely. The eclipse will be visible throughout most of North America.
  - December 13, 14 - Geminids Meteor Shower. The Geminids is the king of the meteor showers, producing up to 120 meteors per hour at its peak. It is produced by debris left behind by an asteroid known as 3200 Phaethon. The shower runs annually from December 7-17. It peaks this year on the night of the 13th and morning of the 14th. The morning of the 15th could also be a good time for an excellent show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Gemini.
  - December 14 - New Moon. The Moon will be located on the same side of the Earth as the Sun and is a good month to observe faint objects such as galaxies and star clusters because there is no moonlight.
  - December 14 - Total Solar Eclipse. A total solar eclipse occurs when the moon completely blocks the sun. This year's total eclipse will only be visible in parts of southern Chile and southern Argentina. A partial eclipse will be visible in parts of the Atlantic Ocean.
- ([NASA Map and Eclipse Information](#)) ([NASA Interactive Google Map](#))
- December 21 - December Solstice. The December solstice occurs at 10:02 UTC. The South Pole will be in direct sunlight and will be directly over the Tropic of Capricorn at 23.44 degrees south latitude. This is the winter (solstice) in the Southern Hemisphere.
  - December 21 - Rare Conjunction of Jupiter and Saturn. A conjunction of Jupiter and Saturn will occur on December 21st. This is a great conjunction. The last great conjunction occurred in the year 2000. The two bright planets will appear very close together and make a bright double planet. Look to the west just after sunset for this impressive and rare planetary event.
  - December 21, 22 - Ursids Meteor Shower. The Ursids is a minor meteor shower producing about 10 meteors per hour. It was discovered in 1790. The shower runs annually from December 17-25. It peaks this year on the night of the 21st and 22nd. Leaving dark skies for what could be a good show. Best viewing will be just after midnight from a dark location. Meteors can appear anywhere in the sky.
  - December 30 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and is a good month to observe faint objects such as galaxies and star clusters because there is no moonlight. Known by early Native American tribes as the Full Cold Moon because this is the time of year when the weather is cold. Also known as the Full Long Nights Moon and the Moon Before Yule.

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