

# What's in the Sky for December 2022

## MARS IS HERE!

### December 7: Full Moon and Mars Lunar Occultation

This year the December Full Moon, also called the Cold Moon, is a very special among astronomers. On the evening of December 7, the Moon will eclipse Mars. Mars will disappear behind the moon and appear again about an hour later. The International Occultation Timing Association (IOTA) has Dallas, TX occultation beginning approximately at 5:53 UTC (8:53 CST). An exact start time is difficult to get. Not all of the US will be able to see it.

### December 7-8: Mars in Opposition

Mars will be its closest to Earth on December 7-8, just 51.60 million miles away. It will not be this close again until 2031. Mars rises near sunset and climbs high enough by 8:00-8:30pm CST for a look through a telescope. Because December can be a very cloudy time of year, you can start looking for Mars as early as December 1st and as late as mid December and hopefully find a clear night to view it. The red planet will still be impressively bright during this time frame. If you don't have access to a telescope you can attend the UNT Bi-monthly Star Party at The Rafes Urban Astronomy Center located at 2350 Tom Cole Road, in Denton, TX. Their Star Parties for December are scheduled for December 3rd and December 17th. Follow this link <https://astronomy.unt.edu/observatories/star-parties> for more information, map, cost, and updates regarding possible cancellation due to weather. Rafes has very large telescopes. You can expect the views of Mars to be spectacular there. (It is outdoors so bundle up)

### December 13-14: Geminid Meteor Shower

The Geminid meteor shower is one of the most active and reliable meteor showers of the year! The Geminids occur every year from about December 4 to 16, **peaking the night of December 13 into the morning of December 14**. This is the time when the most meteors fall per hour. Expect to see an average of **75 meteors per hour** during the Geminids' peak! The show typically starts as early as 9:00pm and peaks around 2:00am the next day. They streak through the sky every minute or two all night. Unfortunately, the moon will be in its waning gibbous phase and fairly bright. This means it will likely present some challenges to spotting all of the meteors that occur this night.

### December 21: December Solstice/Winter Solstice

Solstice marks the shortest day in the Northern Hemisphere and the start of winter. In the months leading up to the Solstice, the position of sunrise and sunset creeps southward. On the day of Solstice, it reaches the southernmost point. After that, it begins to creep northward again. The Earth is not furthest from the sun on Winter Solstice, even though it feels like it because it's cold. The distance from the sun is not what dictates the seasons. Earth spins on a tilted axis. It is winter in the northern hemisphere when the northern hemisphere is tilted away from the sun. During our winter time, planet Earth is actually closest to the sun.

### December 22-23: Ursid Meteor Shower

The Ursid meteor shower will peak on December 22-23. The Ursids are generally a sparse display, producing approximately 5 -10 meteors per hour. Visibility should be good as the sky will be void of bright moonlight.

### December 23: New Moon

The Moon is between Earth and the Sun, so the bright side of the Moon is facing away from Earth. December's new moon nights are good for viewing deep sky objects, star trails, and maybe a sleigh and 8 reindeer on practice drills.

**Planets:** Mercury and Venus are only visible just after sunset in the southwestern sky. Mercury is difficult to see. Venus has fairly good visibility. Mars is up pretty much all night and with perfect visibility. Both Jupiter and Neptune are in the sky from dark to almost Midnight. Neptune is very difficult to see. Jupiter starts the month with perfect visibility but has only good visibility near the end. Saturn begins and ends the month with average visibility. Saturn is moving further away from us and setting earlier every night. Try to catch Saturn while you still can.