

## What's Up - October 2020

### Transcript:

What's Up for October? A harvest moon and a blue moon, Mars is up all night, and a journey beyond the galaxy...

This month brings not just one, but two full moons, at the beginning and end of the month. The full moon on October 1st is called the Harvest Moon. The Harvest Moon is the name for the full moon that occurs closest to the September equinox. (One of two days per year when day and night are of equal length.) Most years the Harvest Moon falls in September, but every few years it shifts over to October. The name traces back to both Native American and European traditions related, not surprisingly, to harvest time.

At the end of October, on the 31st, we'll enjoy a second full moon. When there are two full moons in a month, the second is often called a blue moon. (There's another, more traditional definition of a blue moon, but this is the most well known.) Note that this is the only two-full-moon month in 2020!

October is a great time for viewing Mars, as the planet is visible all night right now, and reaches its highest point in the sky around midnight. This period of excellent visibility coincides with the event known as opposition, which occurs about every two years, when Mars is directly on the opposite side of Earth from the Sun. This is also around the time when Mars and Earth come closest together in their orbits, meaning the Red Planet is at its brightest in the sky, so don't miss it.

Spacecraft from several nations are currently on the way to Mars, including NASA's Mars 2020 mission, which is scheduled to land there in February.

Finally this month, it's a great time to try and spot the galaxy of Andromeda. Andromeda is also known as M31. It's a spiral galaxy similar in appearance to our own Milky Way, but slightly larger. Both contain hundreds of billions of stars, and (we think), trillions of planets. Now we can't see the overall shape of the Milky Way, because we're inside it, so Andromeda gives us a sense of what our galaxy would look like if you could see it from afar.

Andromeda is faint, and best viewed with a telescope, but you can observe it with binoculars or even a cell phone with a good camera on it, even from light-polluted areas. And under very dark skies, it's just barely a naked-eye object. So although it might be a little challenging, it's worth it to see an entire galaxy with your own eyes!

To find the Andromeda galaxy, look to the northeast in the evening sky once it's truly dark. Find the sideways "W" that represents the throne of queen Cassiopeia. To the right of Cassiopeia lies the constellation Andromeda, which includes this string of bright stars. Moving upward, hang a left at the second of these bright stars, and as you scan back over toward Cassiopeia, you'll notice a faint, fuzzy patch of light. That fuzzy patch

is the Andromeda galaxy, located 2 million light years away. If you manage it, congratulations! You've just gone intergalactic.

Here are the phases of the Moon for October. You can catch up on all of NASA's missions to explore the solar system and beyond at [nasa.gov](https://nasa.gov). I'm Preston Dyches from NASA's Jet Propulsion Laboratory, and that's What's Up for this month.

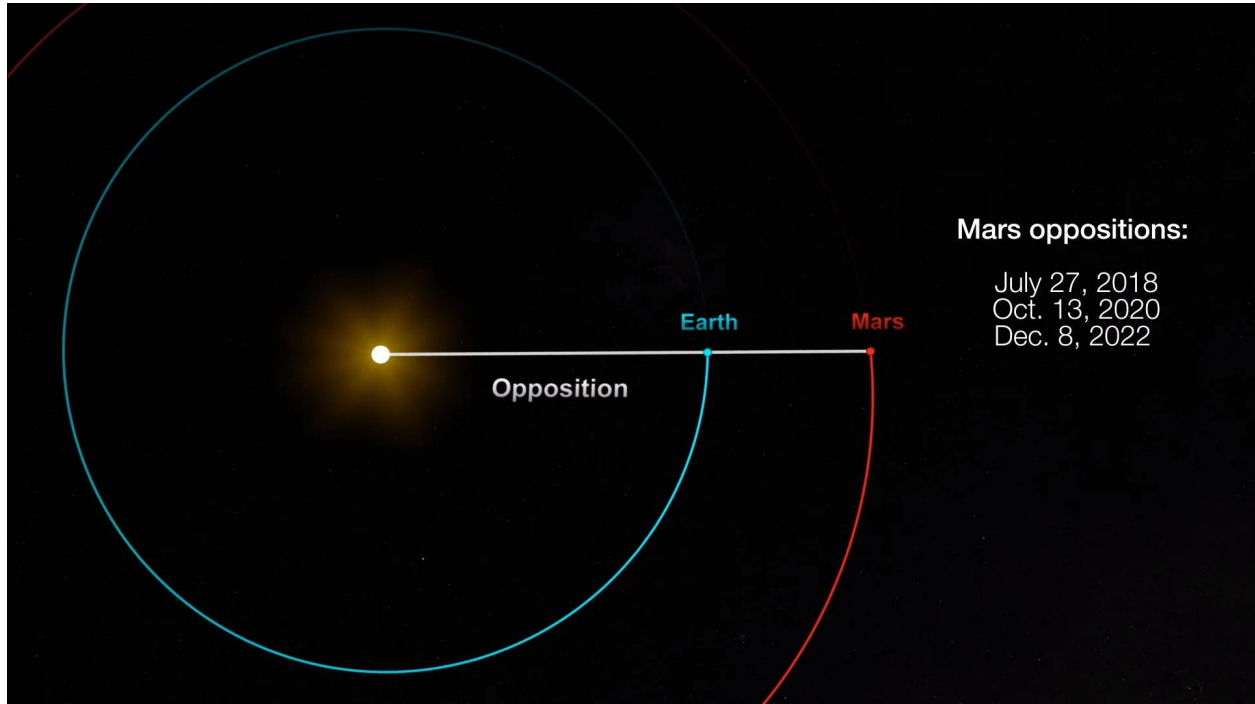
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MarsOppSkychart.jpg

**Caption:** Around the time of opposition, Mars is visible in the sky all night, reaching its highest point around midnight, local time. Credit: NASA/JPL-Caltech



MarsOppOrbits.jpg

**Caption:** Mars oppositions happen about every two years when the Red Planet is directly opposite Earth from the Sun. Credit: NASA's Scientific Visualization Studio



AndromedaTelescopeView\_CreditMichaelSaing.jpg

**Caption:** The Andromeda Galaxy, M31, as it appears through a modest telescope. Credit: Michael Saing



FindingAndromedaSkychart.jpg

**Caption:** To find Andromeda, find the string of bright stars to the east of the "W" of Cassiopeia and hang a left at the star Mirach. Credit: NASA/JPL-Caltech



MoonPhases\_Oct2020.jpg

**Caption:** The phases of the Moon for October 2020. The second full moon of the month is a "blue moon." Credit: NASA/JPL-Caltech