

## Beautiful photos of Full Moon eclipse and Mars

Earth flew between the Sun and Mars this week, so, during yesterday's total lunar eclipse, the Moon and Mars were close.

The full Moon on the night of July 27-28, 2018 presented the longest and darkest total lunar eclipse of the 21st century. Totality spanned 1 hour 42 minutes and 57 seconds. The most distant and smallest full moon of the year passed through the centre of the Earth's dark umbral shadow which reached its maximum length and width for the year. This beautiful eclipse happened on the same night of Mars opposition. Conditions were very good for observing the eclipse and yielded many of the usual Blood Moon photographs. However, when photographing the approaching umbra just before it had completely encroached on the Moon, a beautiful vivid blue ozone fringe which lasted for just a few minutes appeared on the illuminated portion of the moon as is shown in this conventional picture taken at about the same time.



An optical effect called the 'Japanese Lantern'. Image taken during the eclipse of July 28 at 3:24 a.m. at the Telok Kemang Observatory in Port Dickson, Malaysia.

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Stages of the lunar eclipse from Abhishek Bethanabotla in Hyderabad, India.

On July 28, 2018, we're smack dab in the middle of an eclipse season. That's one of two periods during every year when eclipses can and do occur, because the Moon crosses the ecliptic (Earth's orbital plane) around the time of new and full Moon.

Eclipses are all about alignments. It's either the Sun, Earth and full Moon aligned (Earth in the middle) causing a lunar eclipse. Or it's the Sun, new Moon and Earth aligned (Moon in the middle), causing a solar eclipse.

**Eclipse seasons recur in periods of about 173 days (somewhat less than six calendar months), enabling these three bodies to align closely enough in space for two to three eclipses to occur. We had a partial solar eclipse on July 13, 2018, followed by a total lunar eclipse on July 27, 2018. A second partial solar eclipse will take place on August 11, 2018.**

That'll be a total of 3 eclipses for this lunar month and eclipse season.

An eclipse season lasts somewhere around 34 to 38 days, and any full moon or new moon occurring within this period will undergo an eclipse. Then we have another eclipse season some six months later. Thus two full eclipse seasons always occur each year, and we have at least four eclipses (two solar and two lunar) each calendar year. In rare instances, however, it's possible to have as many as seven eclipses in one year.

AK, with EarthSky and Wikipedia Notes



2018 total eclipse of the Moon over the Sacra di San Michele, Piemonte, Italy.