

Blood Moon

A "blood moon" occurs when the Earth's moon is in a state of total Lunar Eclipse. The scene in the sky is remarkable as the normally whiteish moon turns red or ruddy-brown, despite the fact that it has no specific astrological importance.

The topic has a very high chance of being asked as a UPSC Prelims Current Affairs Question, as it has been in the news recently.

How Lunar Eclipses Happen?

The moon revolves around the Earth, while the Earth revolves around the sun. The moon orbits Earth in around 27 days and progresses through a 29.5 day cycle of stages. The difference between these two cycles is due to the sun's, Earth's, and moon's spatial arrangement changing during the moon's orbit. Only a full moon can produce a lunar eclipse, as and when the sun lights up the entire surface. Because the moon revolves in a little separate plane than that of the Sun and earth, there is usually no eclipse during a full moon. Nevertheless, the planes do occasionally collide. An eclipse occurs when the Earth passes between both the sun and the moon, blocking the sun's light. A partial eclipse occurs when Earth partly obstructs the sun and the darkest portion of its shadow falls throughout the moon's surface. A penumbral eclipse occurs when the moon travels via the lighter section of Earth's shadow.

Blood Moon Formation

However, something extraordinary happens during a total eclipse. The moon is completely engulfed by Earth's shadow. At about the same moment, a small amount of light from Earth's sunrises as well as the sunsets (on the planet's disc) lands on the surface of the moon. The light waves appear red as they are spread out and the blue light is filtered out by earth's atmosphere. The surface of the moon looks red when such red light touches it. The colour of the moon depends on the amount of pollution, cloud cover, and particles in the air. If an eclipse occurs soon after a volcanic explosion, for example, the particles in the air will cause the moon to appear darker than normal.

Next Blood Moon Dates

- 16th May 2022
- 8th November 2022
- 14th March 2025
- 7th September 2025
- 3rd March 2026
- 31st December 2028
- 26th June 2029
- 21st December 2029
- 25th April 2032
- 18th October 2032

Lunar Tetrad

The name "Blood Moon" is also often used to describe the four total lunar eclipses that occur over the course of two years, a phenomenon known as a lunar tetrad by astronomers. A tetrad of eclipses occurs around at the intervals of six months, with five Full Moons among them. Only roughly one in

every three lunar eclipses is total, and only four to five total eclipses can be witnessed in a decade from just about any single point on Earth. This implies lunar tetrads are extremely rare.

