

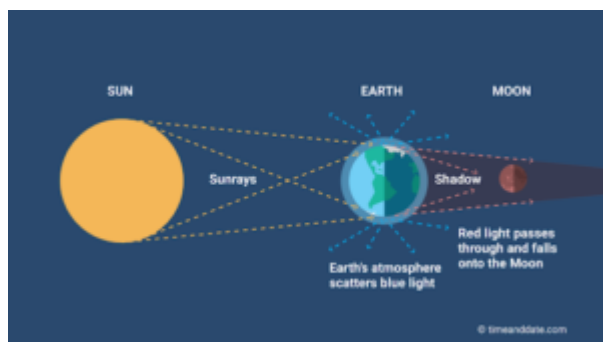
# Blood Moon total lunar eclipse

May 10, 2022

**In news**— The first lunar eclipse of 2022 that begins on May 16 will only be visible in the western hemisphere across Americas, Europe, Africa and not in India.

## What is blood moon?

- **Blood Moon is not a scientific term, though in recent times it is being widely used to refer to a total lunar eclipse because a fully eclipsed Moon** often takes on a reddish color.
- While the moon will be immersed in the earth's shadow, the red wavelengths of sunlight filter through Earth's atmosphere, falling on the moon's surface.



- **A total lunar eclipse happens when the Moon travels through the Earth's umbra and blocks all direct sunlight** from illuminating the Moon's surface.
- However, some sunlight still reaches the lunar surface indirectly, via the Earth's atmosphere, bathing the Moon in a reddish, yellow, or orange glow.
- As the Sun's rays pass through the atmosphere, some colors in the light spectrum—those towards the violet spectrum—are filtered out by a phenomenon called **Rayleigh scattering** (This is the same mechanism that

causes colorful sunrises and sunsets).

- **Red wavelengths are least affected by this effect, so the light reaching the Moon's surface has a reddish hue,** causing the fully eclipsed Moon to take on a red color.
- Depending on the composition of the atmosphere, different parts of the light spectrum are filtered out, so the Moon may also look yellow, orange, or brown during a total lunar eclipse.
- **The term Blood Moon is also sometimes used to refer to four total lunar eclipses** that happen in the span of two years, a phenomenon astronomers call a lunar tetrad.
- The eclipses in a tetrad occur about six months apart with five uneclipsed Full Moons between them.
- **The 2014–2015 lunar tetrad gathered a lot of attention because of claims by some religious organizations that the eclipses in the tetrad were a sign of the end times.**
- The current century 2001 to 2100 will have eight tetrads.
- The first tetrad of the 21st century took place in 2003-2004, the second was in 2014–2015, and the next will be in 2032–2033.