

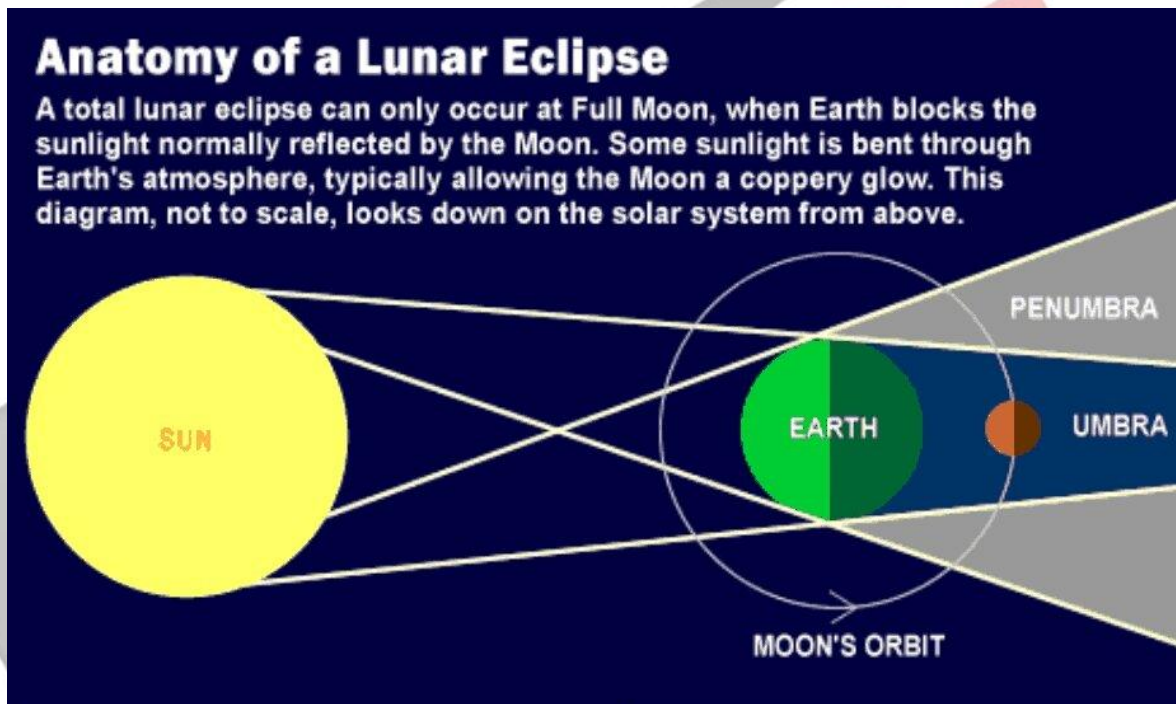


Blood Moon

Why in News?

On 8th September 2025, skywatchers across **Asia, Australia, and parts of Africa** witnessed a spectacular **Blood Moon**—a total lunar eclipse where Earth's shadow turned the **Moon deep red**.

- It was the **year's second total lunar eclipse** after March 2025, lasting over five hours with 82 minutes of totality, and building anticipation for the August 2026 **solar eclipse**.
- Unlike a solar eclipse, lunar eclipses are **safe to view with the naked eye**.



Key Points

- **Lunar Eclipse:** A lunar eclipse occurs when the Sun, Earth, and Moon align in a straight line, with Earth positioned in the middle. This blocks sunlight from directly reaching the Moon.
 - **Total Lunar Eclipse:** When the Moon passes through the Earth's inner, darkest shadow (umbra), it appears **deeply shaded or red**.
 - **Partial Eclipse:** When only part of the Moon passes through the umbra.
 - **Penumbral Eclipse:** When the Moon **enters only the outer shadow** (penumbra), the dimming is subtle and often hard to notice.

LUNAR ECLIPSES



Penumbral



Partial



Total

- **“Blood Moon” Effect:** The [“Blood Moon” effect](#) happens because Earth’s atmosphere filters sunlight before it reaches the Moon. When light passes through our atmosphere:
 - **Blue light** scatters easily (this is why our sky looks blue).
 - **Red light** bends around Earth and reaches the Moon, causing it to glow red or coppery during a total eclipse.
 - A **bright red Moon** suggests clearer air with fewer pollutants.
 - A deeper red Moon signals more dust, ash, or pollution in the air, reflecting the condition of [Earth’s atmosphere](#).
- **Correlation:** The phenomenon behind the Blood Moon is the same process that colours the sky and sunsets: [Rayleigh scattering](#), first explained by physicist John William Strutt, 3rd Baron Rayleigh.
 - **Daytime Sky:** Short-wavelength blue light scatters in all directions, making the sky appear blue.
 - **Sunrise & Sunset:** Sunlight passes through thicker layers of atmosphere, scattering away blue light. What remains are long wavelengths — red, orange, and yellow.
 - During a lunar eclipse, the Moon is essentially bathed in **all the world’s sunsets at once**, projected through Earth’s atmosphere.