

Eclipses - Solar and Lunar

Chapter 12: Earth, Moon, and the Sun · Topic 2

Key Concept

Eclipses do not happen every month, even though new and full moons occur monthly, because the Moon's orbit is slightly tilted compared to Earth's orbit around the Sun — perfect alignment for an eclipse only happens occasionally. A total solar eclipse, where the Moon completely covers the Sun, can only be seen from a narrow path on Earth, while a lunar eclipse can be seen from the entire night side of Earth at once, making lunar eclipses more commonly observed by any given location.

Quick Revision Notes

- Solar eclipse: Moon between Sun and Earth, Moon's shadow falls on Earth.
- Lunar eclipse: Earth between Sun and Moon, Earth's shadow falls on the Moon.
- Eclipses are not monthly because the Moon's orbit is slightly tilted relative to Earth's orbit.
- A total solar eclipse is visible from a narrow path; a lunar eclipse is visible from the whole night side of Earth.

Practice Questions

- 1 Draw a simple diagram showing the alignment during a lunar eclipse.
- 2 Explain why a total solar eclipse is visible from only a narrow path on Earth.
- 3 Why don't eclipses occur every single month, given that new and full moons happen monthly?