

Chapter 22 Origin of Modern Astronomy

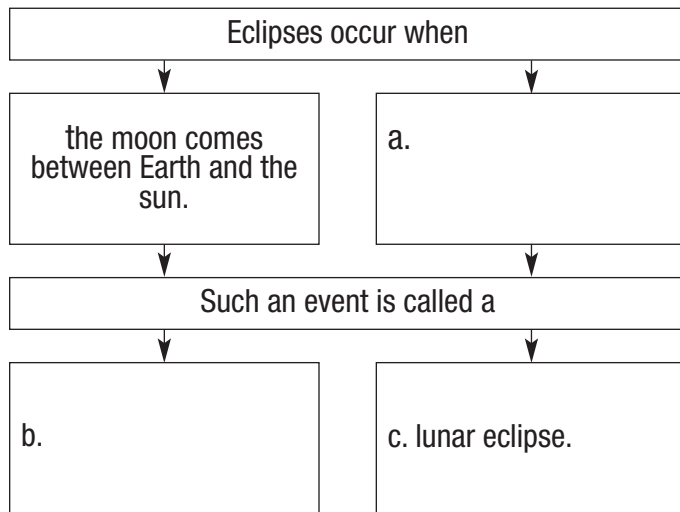
Section 22.2 The Earth-Moon-Sun System

(pages 622–629)

This section describes how Earth moves in space and how changes in the relative positions of Earth, the sun, and the moon cause seasons, phases of the moon, and eclipses.

Reading Strategy (page 622)

Monitoring Your Understanding As you read, complete the flowchart to show how eclipses occur. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



Motions of Earth (pages 622–625)

1. Circle the letter of the two main motions of Earth.

 - a. rotation and precession
 - b. rotation and revolution
 - c. rotation and aphelion
2. Is the following sentence true or false? Day and night are caused by Earth’s revolution on its axis. _____
3. Is the following sentence true or false? Seasons are caused in part by the tilt of Earth’s axis of rotation. _____

Motions of the Earth-Moon System (pages 626–627)

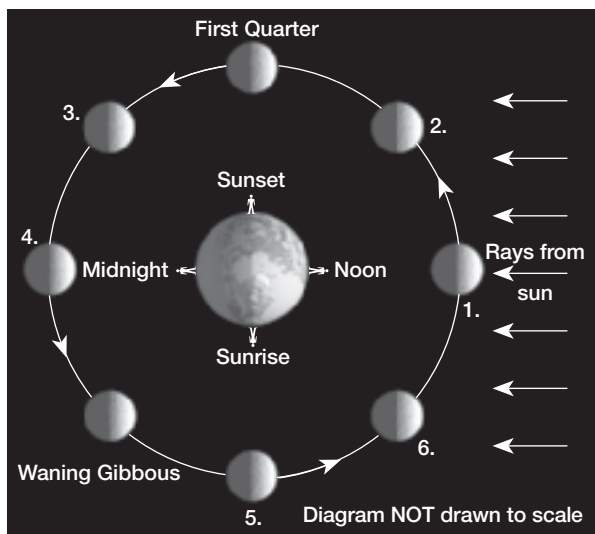
4. Circle the letter of the term that describes the point at which the moon is farthest from Earth.

 - a. apogee
 - b. aphelion
 - c. perigee

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6. Identify each numbered phase on the figure as one of the following: waning crescent, waxing gibbous, new, waxing crescent, full, third quarter.

1. _____ 3. _____ 5. _____
 2. _____ 4. _____ 6. _____



7. ☾ Lunar phases are caused by changes in how much of the sunlit side of the _____ faces Earth.
8. Is the following sentence true or false? The cycle of the phases takes about two days longer than the moon's revolution around Earth.

9. Two reasons why the moon's surface has extremely high and low temperatures are long periods of daylight and darkness and the absence of an _____.

Eclipses (page 628)

10. A(n) _____ eclipse occurs when the moon passes between Earth and the sun and casts a shadow on Earth. Circle the correct answer.
 lunar total solar
11. Is the following sentence true or false? A lunar eclipse occurs when the moon passes into Earth's shadow. _____
12. ☾ In order for an eclipse to take place, the moon's orbit must cross the plane of the ecliptic during a new-moon or _____ phase.