

The Moon – Earth's Satellite (p. 666 – 670)

I. Motions Of The Moon

1. What causes the Moon to “shine”?

Surface reflects sunlight

2. Circle the letter of each sentence that is true about motions of the Moon. (Not in book.)

- a. The Moon revolves around the Earth once a year.
 b. The same side of the Moon always faces the Earth.
 c. The Moon rotates slowly on its axis once every 27.3 days.
 d. A “day” and a “year” on the Moon are the same length.

Synchronous
Rotation

(caused by
tidal forces)

II. Phases Of The Moon

1. Define the term moon phases.

Moon Phases - Change in appearance of the Moon as viewed from Earth.

2. What causes the phases of the Moon?

Changing relative positions of the Moon, Earth, Sun

3. What does the phase of the Moon you see depend on?

How much of the sunlit side on Moon faces the Earth (1/2 of all solar system objects lit at all times!

4. How often does the Moon go through an entire set of phases?

Once every 29.5 days

5. Match the correct moon phase with the correct definition.

- | | |
|---------------------------------------|---|
| 1. <u>G</u> - New Moon | A. All of the side of the Moon facing Earth is lighted. |
| 2. <u>E</u> - Waxing Crescent | B. Left <u>sickle-shaped</u> side of the Moon facing Earth is lit. |
| 3. <u>H</u> - 1 st Quarter | C. Right <u>egg-shaped</u> side of the Moon facing Earth is lit. |
| 4. <u>C</u> - Waxing Gibbous | D. Left <u>half</u> of the side of the Moon facing Earth is lighted. |
| 5. <u>A</u> - Full Moon | E. Right <u>sickle-shaped</u> side of the Moon facing Earth is lit. |
| 6. <u>F</u> - Waning Gibbous | F. Left <u>egg-shaped</u> side of the Moon facing Earth is lit. |
| 7. <u>D</u> - 3 rd Quarter | G. The side of the Moon facing Earth is dark. |
| 8. <u>B</u> - Waning Crescent | H. Right <u>half</u> of the side of the Moon facing Earth is lighted. |

III. Eclipses

1. When the Moon's shadow hits Earth or Earth's shadow hits the Moon, what occurs?

eclipse

2. What are two types of eclipses?

1. Solar
2. Lunar

3. What causes a solar eclipse?

Moon passes directly between Earth + the Sun, blocking sunlight from reaching Earth (Never longer than 7 1/2 minutes)

4. The darkest part of the Moon's shadow is called the Umbra.

5. The larger part of the shadow that is less dark is called the penumbra.

6. Circle the letter of each sentence that is true about solar eclipses.

- a. People in the umbra see only a partial solar eclipse.
- b. During a partial solar eclipse, part of the Sun remains visible.
- c. During a total solar eclipse, the sky grows dark.
- d. People in the penumbra see a total solar eclipse.

- Sky darkens
- Air temp ↓
- Wind increase
- Birds roost
- Flower petals close
- Crickets chirp

7. What is the arrangement of the Earth, the Moon, and the Sun during a lunar eclipse?

Earth is directly between the Moon + the Sun

8. Circle the letter of each sentence that is true about lunar eclipses?

- a. People in Earth's umbra see a total lunar eclipse.
- b. A lunar eclipse always occurs at a full Moon (reddish color ⇒ light bent in umbra)
- c. During a lunar eclipse, Earth blocks sunlight from reaching the Moon.
- d. A partial lunar eclipse occurs when the Moon passes partly into Earth's umbra shadow.

Transit - blocking of sunlight as a planet (Mercury, Venus) passes between Sun + Earth

Annular Solar Eclipse:

Moon is far from Earth and total solar eclipse produces a ring