



Earth Science

Name: _____

LAB #8: THE MOON IN MOTION

Date: _____

The Moon in Motion

Lab #8

Discussion: As the moon revolves about the Earth, we see only one side of the moon. However, we see more or less of the moon in its own shadow as it follows its ellipse around us.

Purpose: By the time you finish this investigation, you should be able to:

1. identify phases of the moon by name or by illustration
2. identify the relative positions of the sun, Earth, and moon during each lunar phase
3. determine the approximate time given the phase and position of the moon in the sky
4. determine the phase of the moon given time on Earth and the position of the moon in the sky
5. determine the position of the moon in the sky given the time on Earth and the phase of the moon

Hypothesis: Using drawings and data charts as models helps us understand the world around us.

Theory:

Phases of the moon are a result of its revolution around Earth:



Materials: pencil this packet

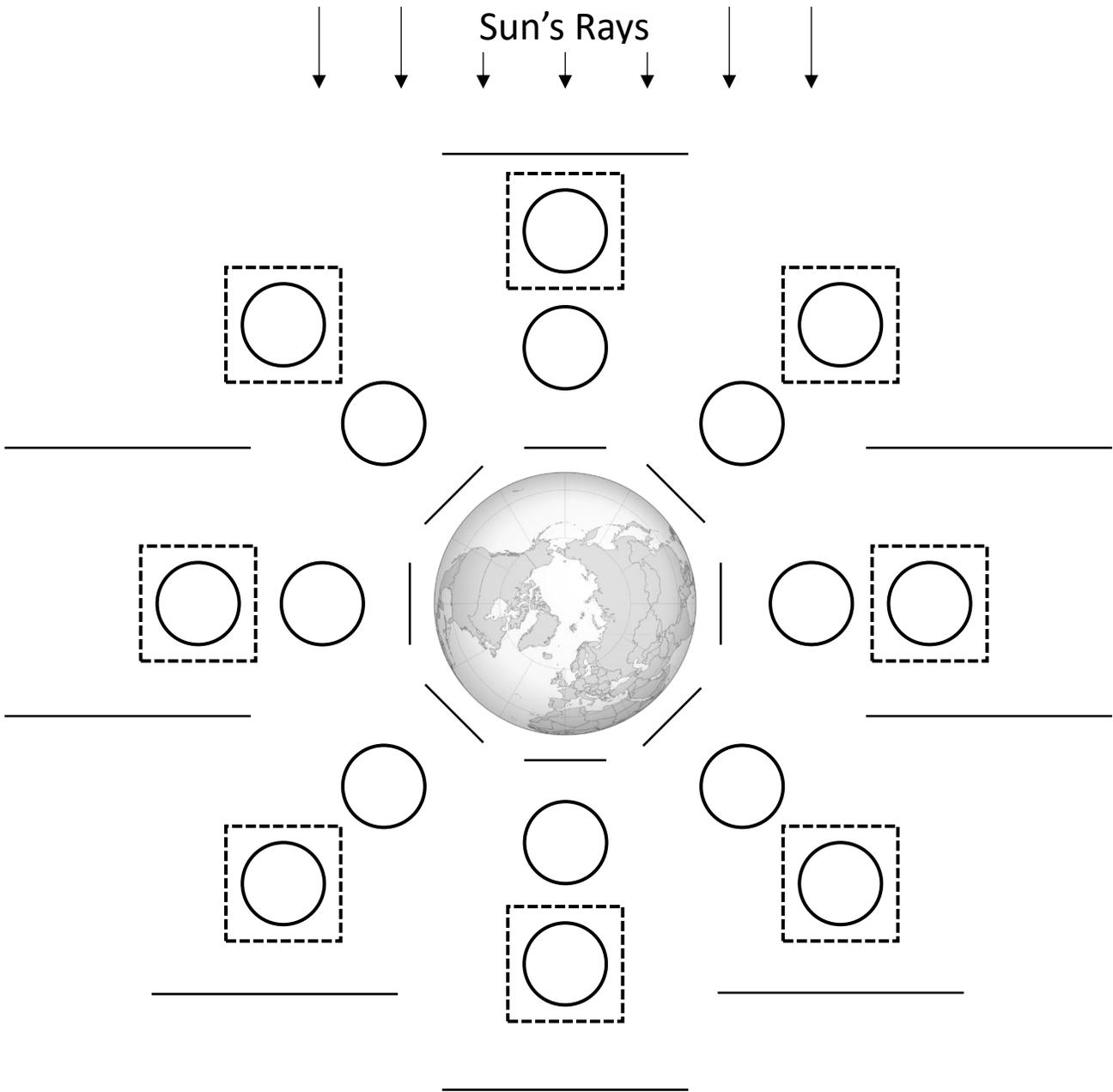
Method:

For the Lunar Phase Diagram (north polar views) page:

1. Draw a terminator line on the Earth showing day and night then shade the night side.
2. Label the time of day for the position on the Earth directly below that lunar phase.
3. Draw lines that show the lunar terminator as viewed from space in the unboxed diagrams of the moon and then shade the dark side of the moon (if any).
4. Draw lines that show the lunar terminator as viewed from Earth in the boxed diagrams of the moon and then shade the dark side of the moon (if any).
5. Write the name of each of the lunar phases on the lines provided.

Data Collection and Processing:

Lunar Phase Diagram (north polar view)

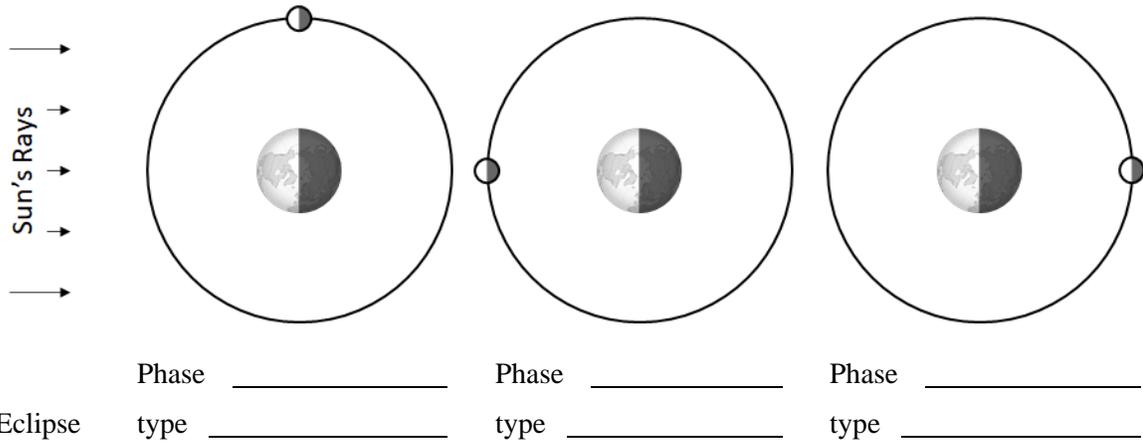


moon as
viewed from

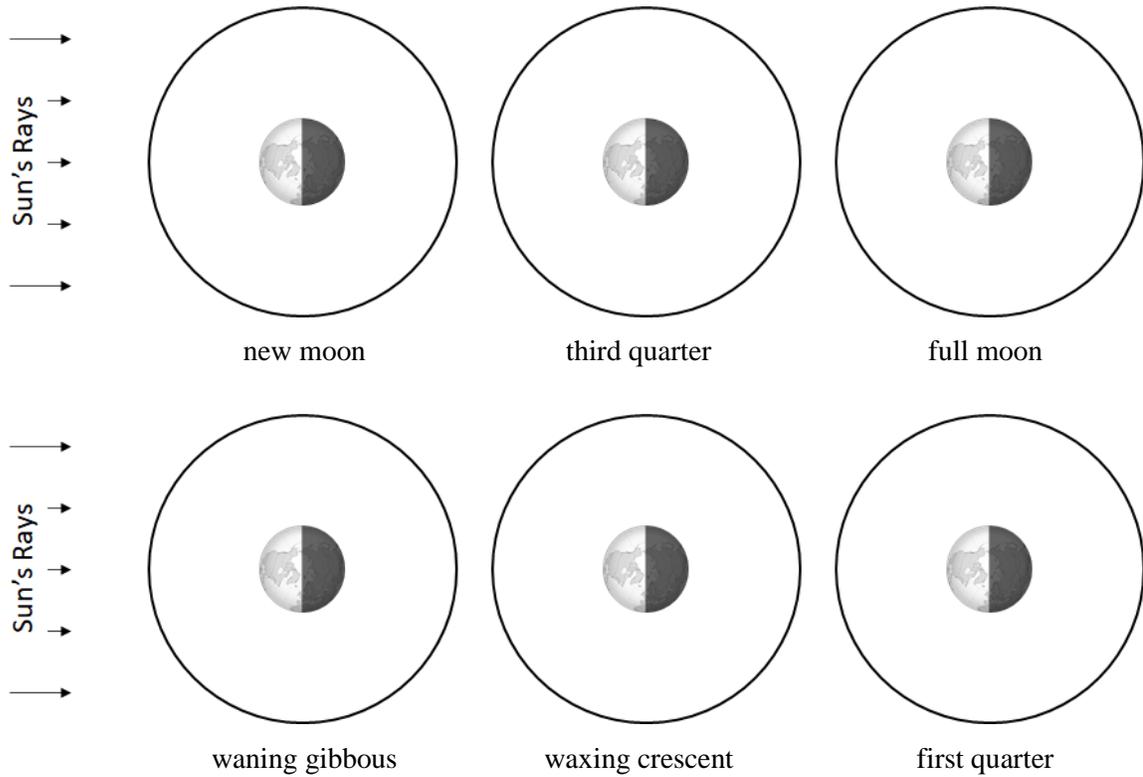
Polaris Earth

Analysis and Conclusions:

1. Label the phase of the moon indicated and the type of eclipse possible (if any).

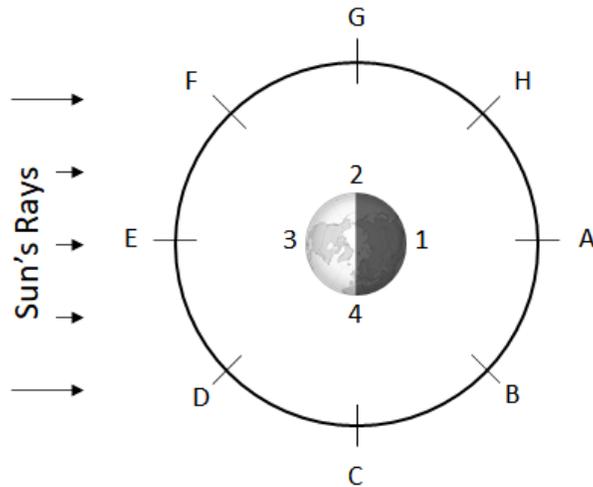


2. For each phase given in the diagrams below, place a moon (with shadow) in the proper place.



3. What is the phase of a moon rising in the east at 6:00 AM? _____
4. At what time would a third quarter moon set? _____
5. What phase is a moon that rises at 9:00 AM and is highest at 3:00 PM? _____

Use the diagram below for questions 6 through 10.



6. Tell what time it is on Earth at position:

(1) _____ (2) _____ (3) _____ (4) _____

7. Tell what phase the moon is in at position:

(A) _____ (B) _____ (C) _____ (D) _____

(E) _____ (F) _____ (G) _____ (H) _____

8. When the moon is at position C:

At what time is the moon highest in the sky? _____

At what time does the moon set? _____

At what time does the moon rise? _____

9. At what position is the moon full? _____

What time would the moon rise? _____

What time is moonset? _____

At what time does the moon reach maximum altitude? _____

10. At what position is the moon a waning (old) gibbous phase? _____

What time would the moon rise? _____

What time is moonset? _____

At what time does the moon reach maximum altitude? _____