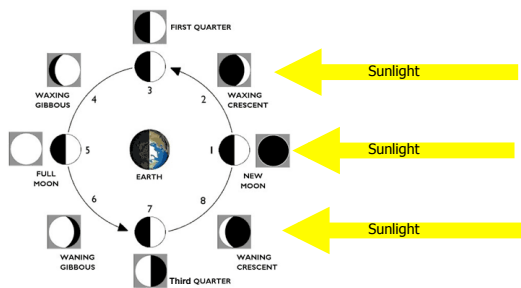
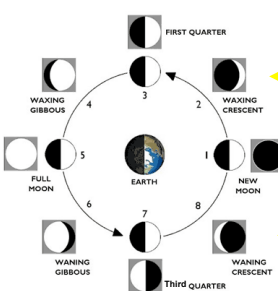


Mastering Astronomy Assignment 4

- Due Mar 3, 11 am
- Read Section 2.3

Where is the Moon in the orbit?





How many phases shown in the picture at the right will the Moon go through in one day?

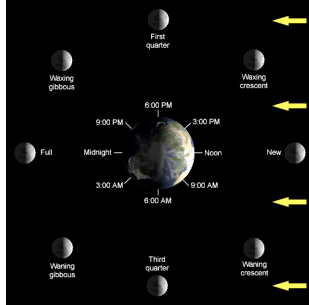
How long does it take the Earth to complete one rotation? How far will the Moon have moved?

How long does it take the Moon to complete one orbit? How many of the phases will the Moon have gone through in this time?

How much of the Moon's total surface is illuminated when it is in the New Phase? Full Phase?

Phases of the Earth

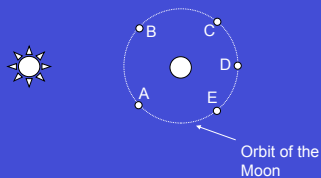
- Observers on the Moon would observe the Earth exhibiting phases
- When Earth sees a full moon, the Moon is observing the night side of Earth
- ..or a “new” Earth!
- Earth phases are opposite moon phases



In-class Activities: The Cause of Moon Phases

- Work with a partner!
- Read the instructions and questions carefully.
- Discuss the concepts and your answers with one another. Take time to understand it now!!!!
- Come to a consensus answer you both agree on.
- If you get stuck or are not sure of your answer, ask another group.
- If you get really stuck or don't understand what the question is asking, ask me.

Which Moon position (A-E), shown in the diagram at right, best corresponds with the moon phase shown below?





If the Moon were in the phase shown above, what phase would it be in two weeks later?

- A. New Moon
- B. First Quarter
- C. Full Moon
- D. Third Quarter

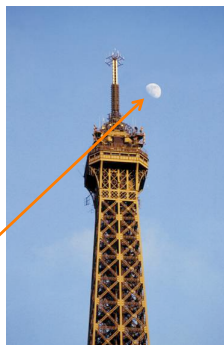
During the waxing gibbous moon phase, how much of the Moon's surface is being illuminated by sunlight?

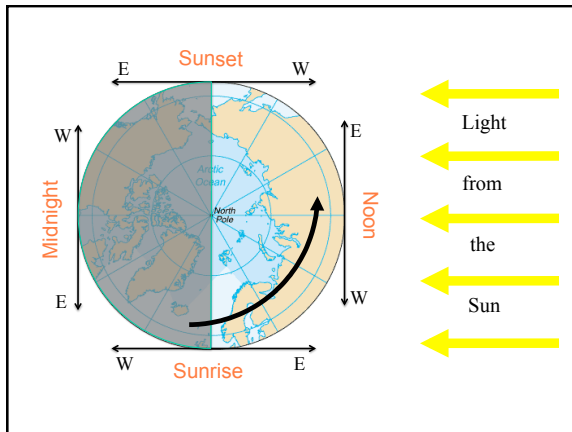
- A. None
- B. Less than half
- C. Half
- D. More than half
- E. All

When does the Moon rise?

- One common misconception is that the Moon is only visible at night
- The time of day in which the Moon is in our sky varies depending on its phase

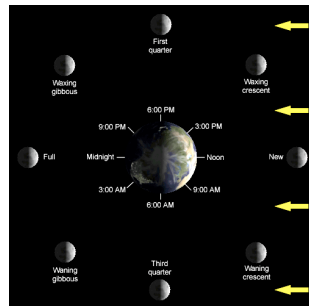
This picture clearly displays the Moon, visible during the day





When does the Moon rise?

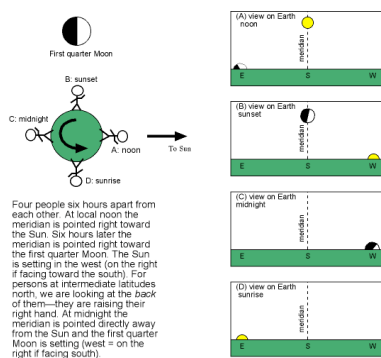
- The position of each phase tells us when its highest in the sky
- The moon will rise about 6 hours before its highest in the sky and set about 6 hours later



Example: The waning crescent moon is high in the sky around 9:00 AM local time

When does a first quarter moon rise?

- A first quarter moon:
 - Rises at noon
 - Highest in the sky at sunset
 - Sets at midnight
 - Below the horizon at sunrise



Phases of the Moon

East

West

Waxing gibbous Moon (D)

Full Moon (E)

Waxing gibbous Moon (F)

Third quarter Moon (G)

Waxing crescent Moon (H)

New Moon (A)

Waxing crescent Moon (B)

First quarter Moon (C)

Waxing crescent Moon (I)

Midnight

6 AM

6 PM

Noon

What time is it when the waxing crescent moon is highest in the sky?

When does it first rise?

When does it set?

Phases of the Moon

East

West

Waxing gibbous Moon (D)

Full Moon (E)

Waxing gibbous Moon (F)

Third quarter Moon (G)

Waxing crescent Moon (H)

New Moon (A)

Waxing crescent Moon (B)

First quarter Moon (C)

Waxing crescent Moon (I)

Midnight

6 AM

6 PM

Noon

What time is it when the waxing crescent moon is highest in the sky?

When does it first rise?

When does it set?

Phases of the Moon

East

West

Waxing gibbous Moon (D)

Full Moon (E)

Waxing gibbous Moon (F)

Third quarter Moon (G)

Waxing crescent Moon (H)

New Moon (A)

Waxing crescent Moon (B)

First quarter Moon (C)

Waxing crescent Moon (I)

Midnight

6 AM

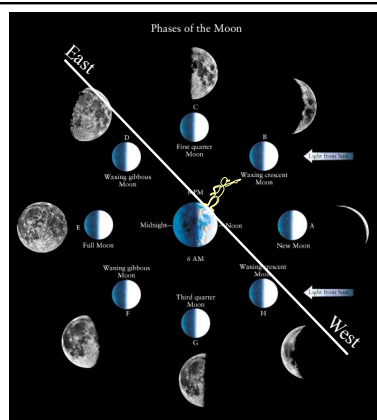
6 PM

Noon

What time is it when the waxing crescent moon is highest in the sky?

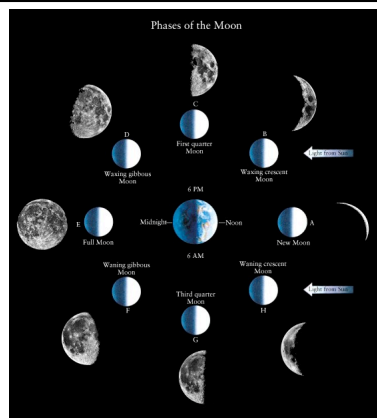
When does it first rise?

When does it set?



What moon phase would be rising in the East at 3pm?

What Moon phase would be setting in the West at 3pm?



The Moon Phase is highest in the sky at 9pm today. What phase will the Moon be in three weeks after today?

In-class Activities: Predicting Moon Phases

- Work with a partner!
- Read the instructions and questions carefully.
- Discuss the concepts and your answers with one another. Take time to understand it now!!!!
- Come to a consensus answer you both agree on.
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