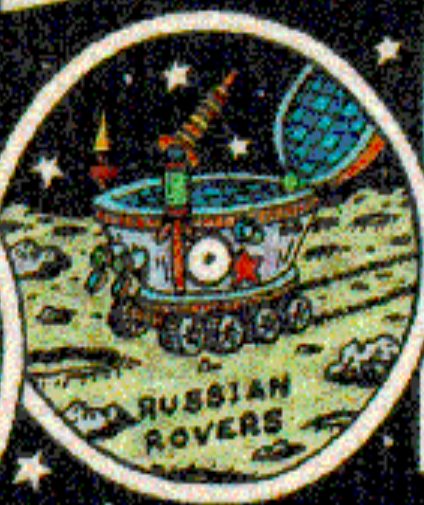


For this presentation
only write what is
underlined in your
worksheet

title : THE MOON

GREETINGS

from
**EARTH'S
WORLD
-FAMOUS**





The Moon

FACTS ABOUT THE MOON

When did the MOON form?

- When the moon formed, it was about 14,000 miles away from us. Now it is 250,000 miles away from us.
- 1) The moon most likely formed at the same time as the Earth and the solar system because the oxygen in the rocks on the moon is molecularly similar to the oxygen in the rocks on Earth.

How did the moon form?

- There are three theories on how the moon might have formed:
- One theory is...



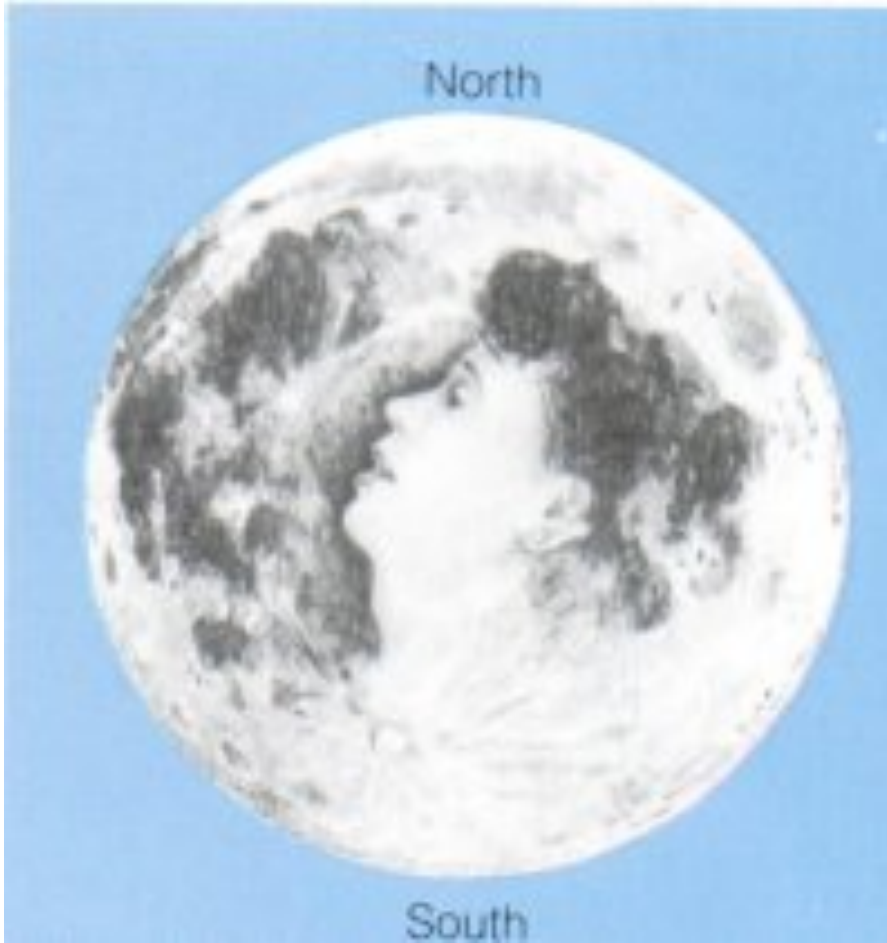
The Giant Impact Theory (The Big Whack)

- 2) proposes a Mars-sized asteroid collided with Earth 4.5 billion years ago.

Debris from both the asteroid and the Earth recombined to form the Moon.



The “Man” on the Moon



FACTS

- The moon does not have an iron core

3) It is $\frac{1}{4}$ the size of the Earth.

4) The moon causes TIDES here on earth.

5) The gravity of the moon is $\frac{1}{6}$ that of Earth's gravity. If you weighed 100 lbs here, then you would weigh 16 lbs on the moon.

TIDES

CAUSED BY THE MOON

(NO MOON, NO TIDES!)

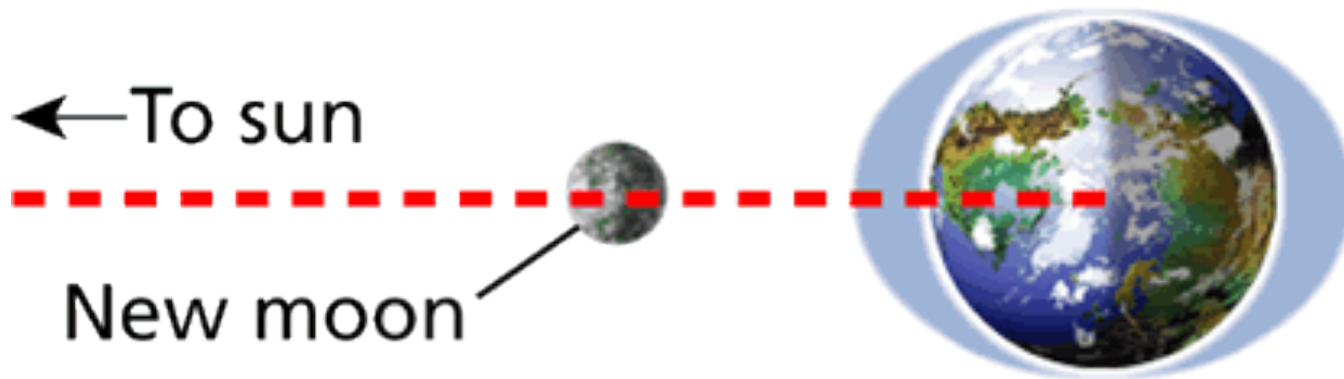
mainly by differences in how
much the moon's gravity pulls
on different parts of Earth

Bay of Fundy, Nova Scotia

Difference between high tide and low tide
averages 55 feet every 6h 25m



Spring Tide Greatest difference between low and high tides



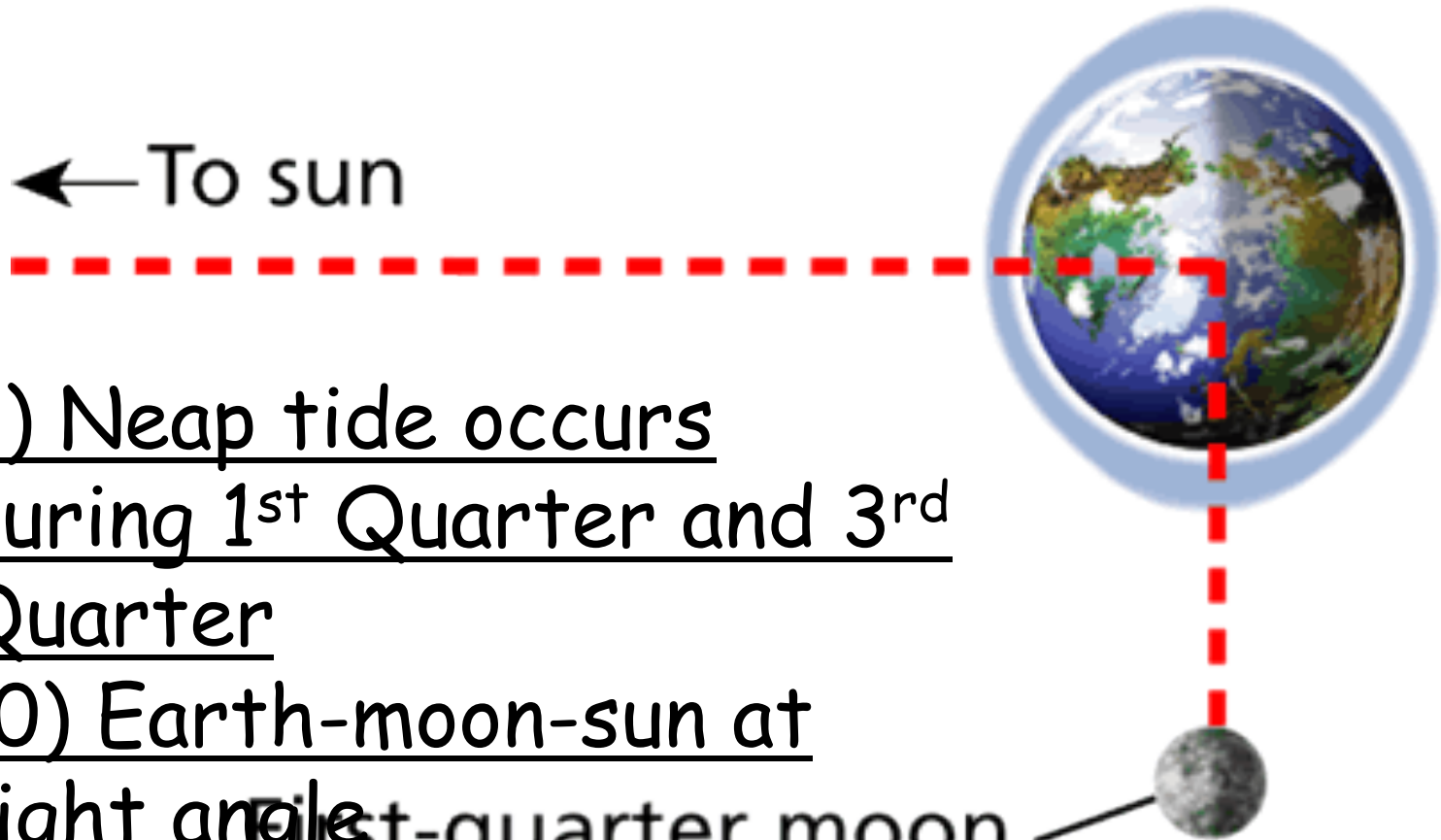
6) Spring Tide causes the highest HIGH tide and the LOWEST low tide

7) Spring Tide alignment - Earth Moon and Sun in a straight line

8) Occurs during new moon and full moon

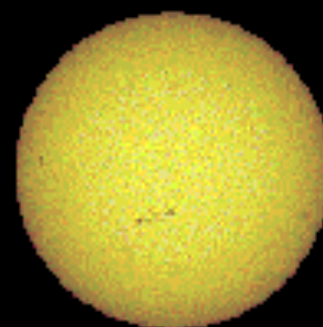
Neap Tide Smallest difference
between low and high tides

← To sun



9) Neap tide occurs
during 1st Quarter and 3rd
Quarter

10) Earth-moon-sun at
right angle



TYPES OF TERRAIN (LAND) ON THE MOON

CRATERS

11) Large
round pits
formed by
impacts of
asteroids



12) 2 Types of terrain on the Moon

a) HIGHLANDS-heavily cratered and very old

b) MARIA- dark, flat areas

- Maria is mostly on the near side. The far side of the moon is beaten up with asteroid impact craters.



13) Terminator: Day-Night Line



Buzz Aldrin's Footprint on the Moon

- The Moon's surface is covered with *Regolith (dust)* It varies between 1 inch – 15 km in depth.
- Powdered rock created by billions of years of impacts.



What is it like on the moon?

14) no weather - no wind

15) no atmosphere to protect you from extreme temperatures of space.

16) Very cold (-173°C) AND hot ($+100^{\circ}\text{C}$)

17) It has no magnetic field. Compasses don't work.

The Moon has No Atmosphere.... the sky is black !

The Moon lacks the necessary gravity to hold an atmosphere.



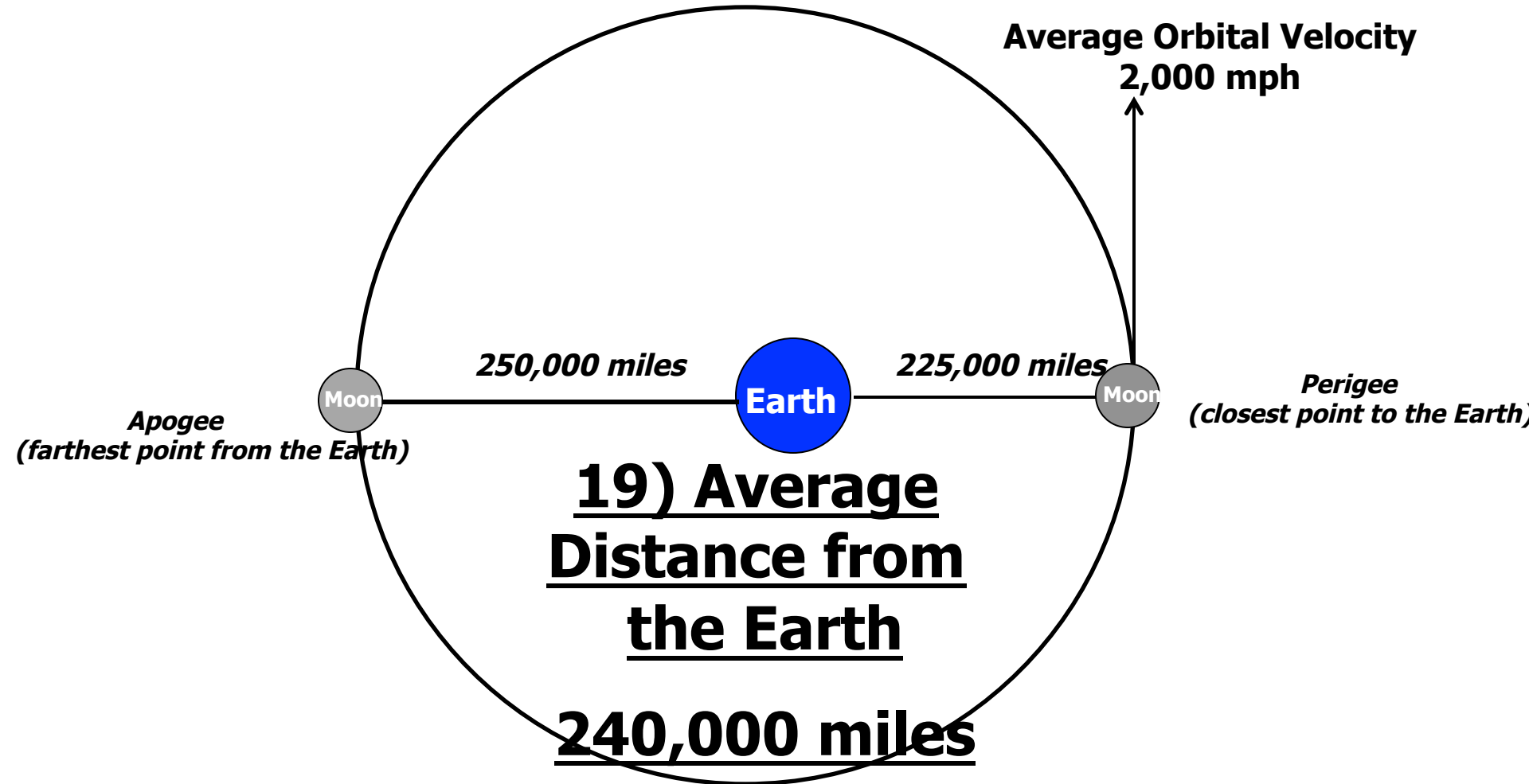
MOTIONS OF THE MOON

The Moon's Move

18) The moon rotates once on its axis in the SAME amount of time as it revolves around Earth.

- **A moon day = a moon year. (1:1)**
- **Because of this, you see the same side of the moon (you never see the dark side of the moon.)**

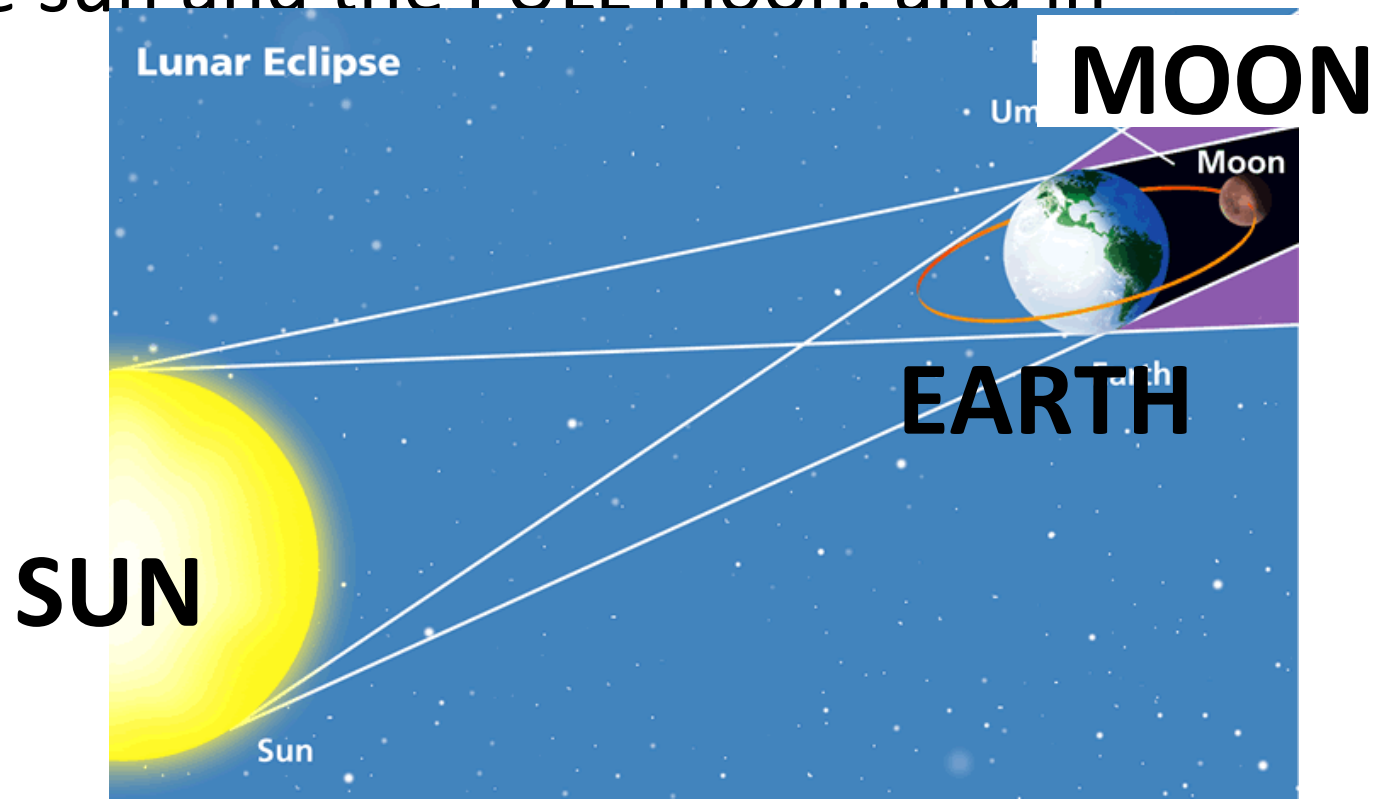
The Orbit of the Moon



ECLIPSES

Lunar Eclipse

- 20) A lunar eclipse happens when we look at the moon and see Earth's shadow and see the FULL moon.
- In order for this to happen, the Earth must be in between the sun and the FULL moon. and in





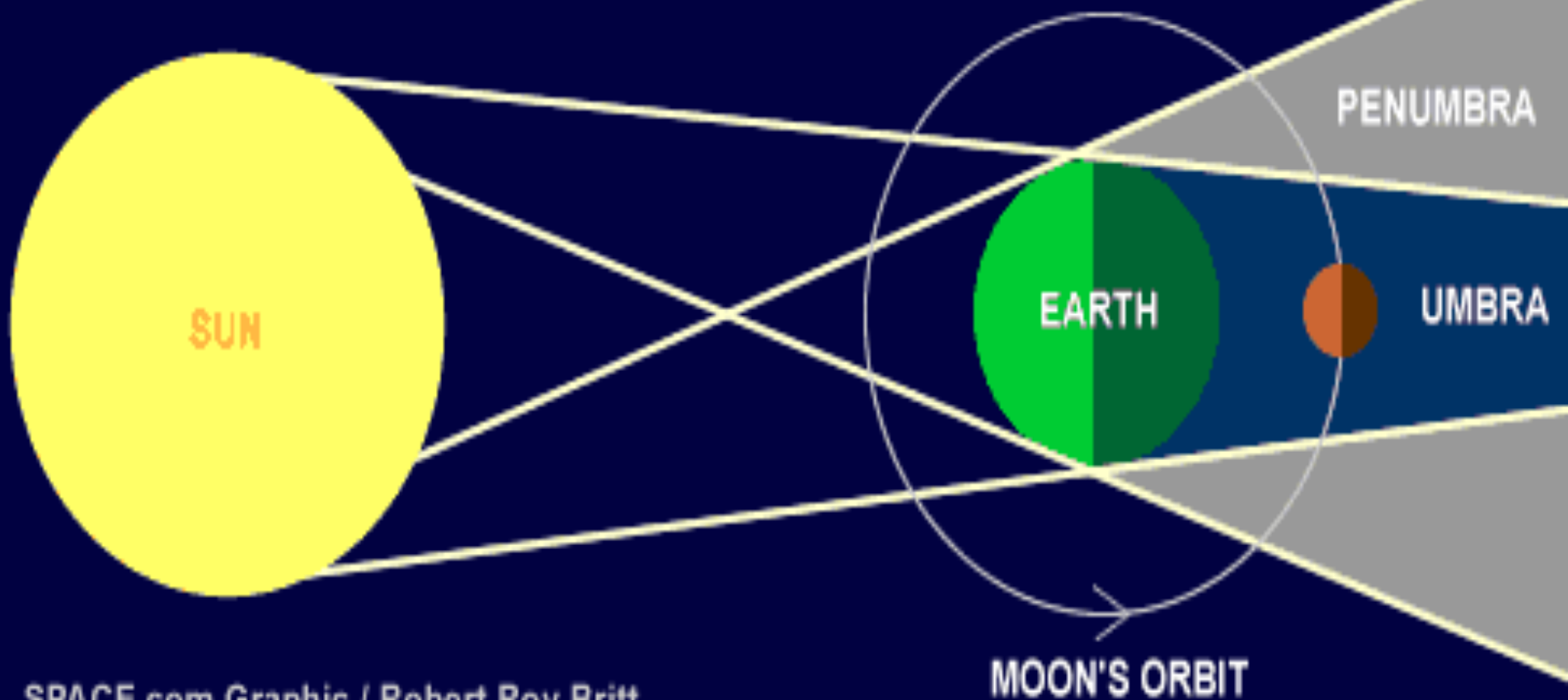


Total Lunar Eclipse - Bozeman, MT - 02/20/2008

chad frelter

Anatomy of a Lunar Eclipse

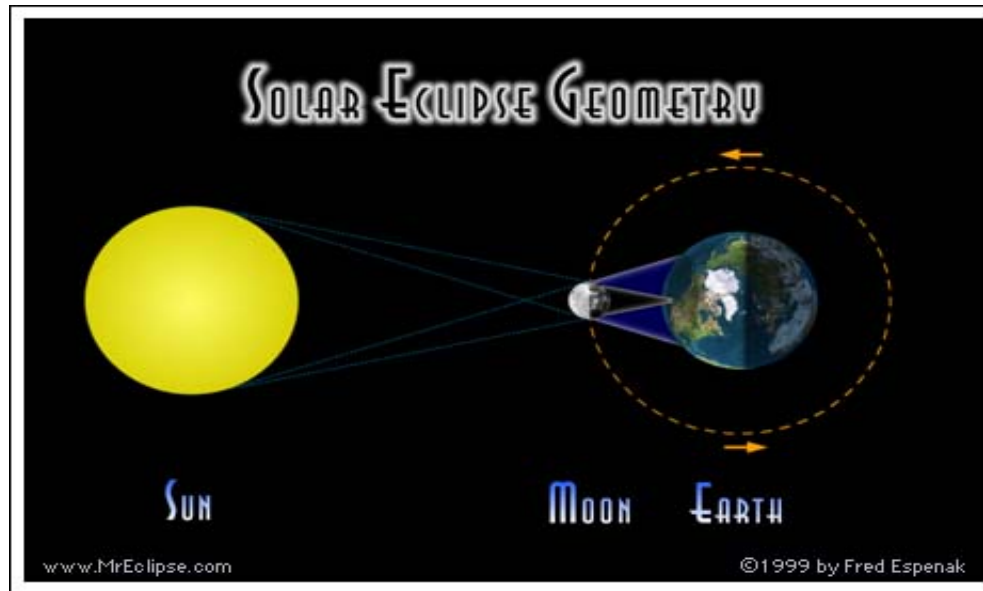
A total lunar eclipse can only occur at Full Moon, when Earth blocks the sunlight normally reflected by the Moon. Some sunlight is bent through Earth's atmosphere, typically allowing the Moon a coppery glow. This diagram, not to scale, looks down on the solar system from above.



SPACE.com Graphic / Robert Roy Britt
SOURCES: Fred Espenak, NASA; The Moon Book

Solar Eclipse

- 21) A solar eclipse is when you look at the sun and see the NEW moon blocking the light of the sun.
- In order: sun, NEW moon, and Earth.





Phases of the Moon

- There are eight phases of the moon.
- The first phase begins with a **new moon** with the **light** reaching the **right** side of the moon **first**.
- The names of the phases are
 1. New moon
 2. Waxing Crescent
 3. First Quarter
 4. waxing Gibbous
 5. Full Moon
 6. Waning gibbous
 7. Third Quarter
 8. Waning Crescent

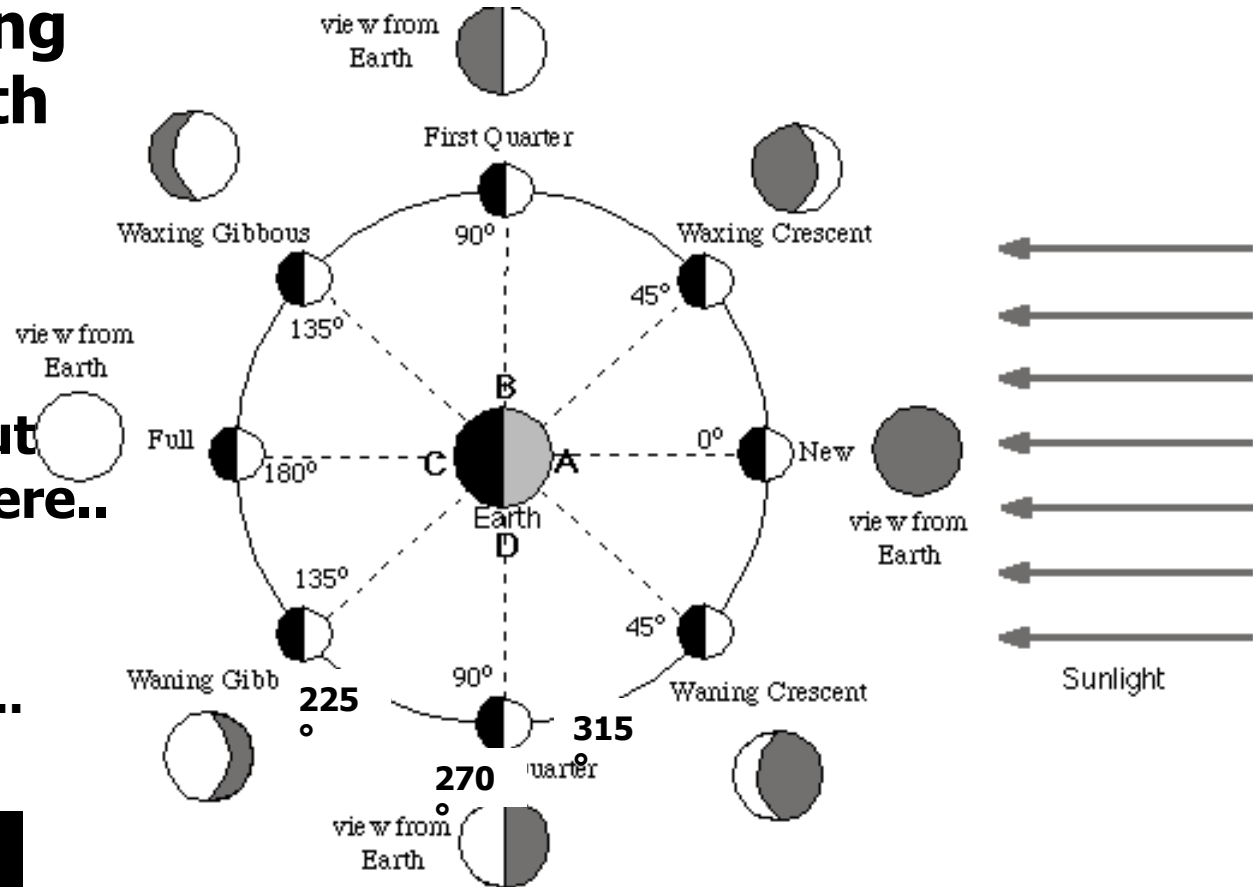
Phases of the Moon

* ***Farside***: side facing
Away from the Earth

* ***Nearside***:
side facing
the Earth

* ***Darkside***: side without
sunlight... it's dark there..
“Night”

* ***Lightside***: side with
sunlight... it's light there..
“Daytime” !!!



- In which phase would the moon be in to see a lunar eclipse?
- Answer: a full moon
- How are the Earth, Moon and Sun aligned for a spring tide?
- In a straight line.
- Why do we always see the same side of the moon (like the face on the full moon).
- Rotation = revolution, or day = year on the moon.

