

# THE MOON

Earth's natural satellite



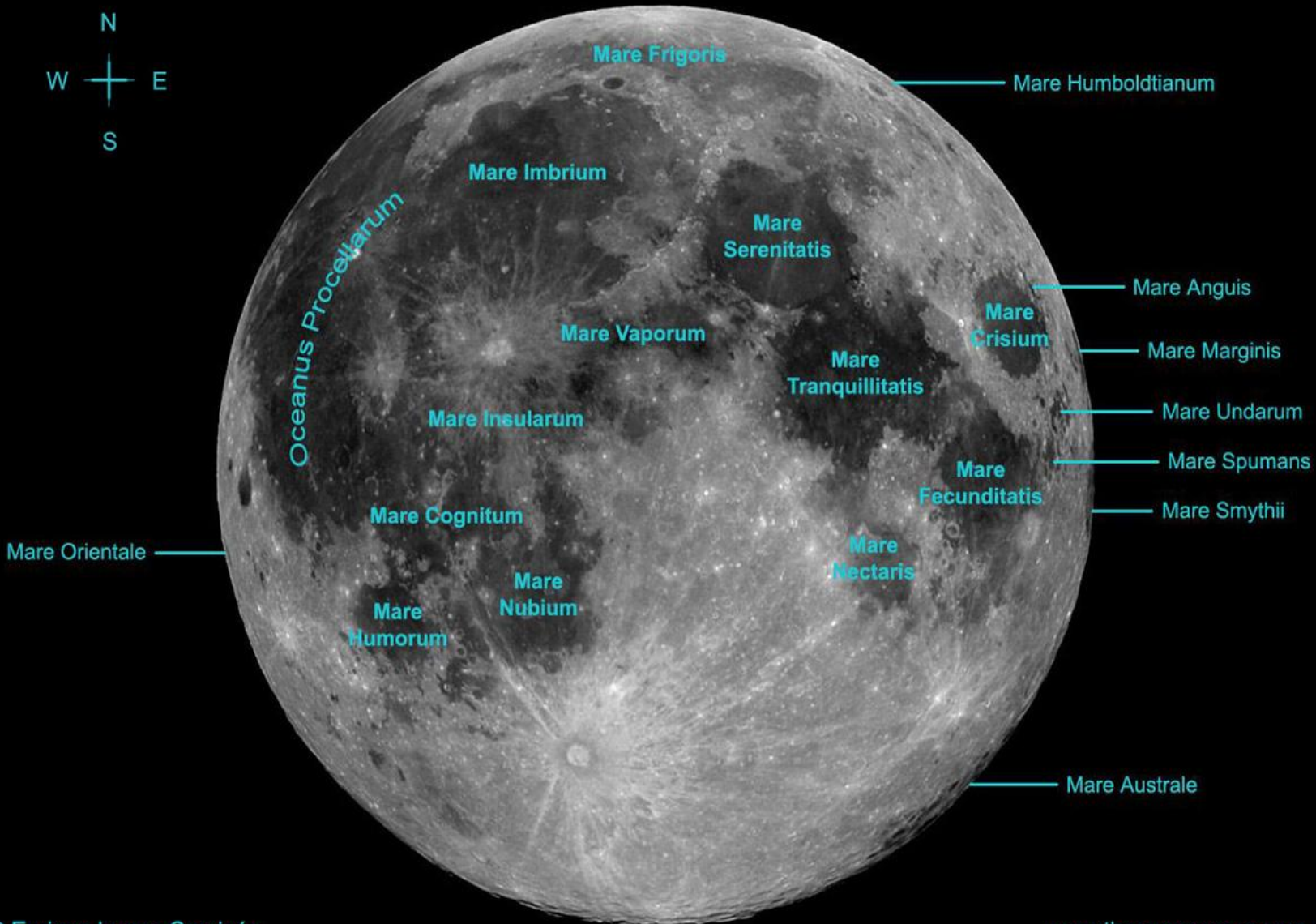
# 1. THE MOON IS EARTH'S NATURAL SATELLITE

- Earth's pull of gravity keeps moon as our natural satellite
- Takes 3 days to get there with a space craft
- Only one side of the moon is seen from earth
  - This is because the moon turns once on its axis each time it orbits the Earth
    - Near side- side we can see
    - Far side-side we can't see
  - [moon demo](#) NASA VIDEO
- The moon rotates counterclockwise

## 2. MOON STRUCTURE

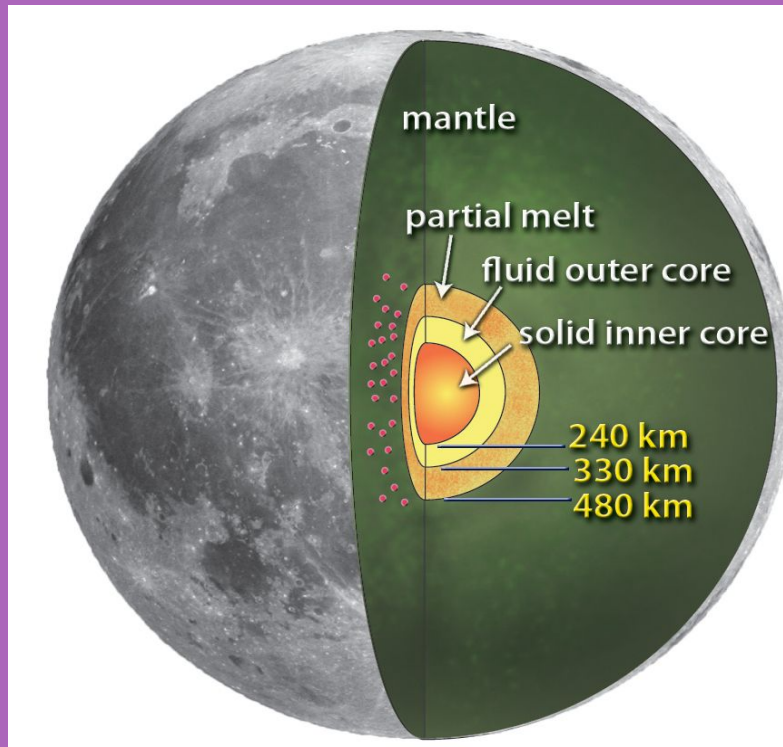
- Dark part of the moon is called mare (plural =maria)
  - Not bodies of water, but different types of solid rock
  - Moon has no air, water, clouds, or life forms
- Light part of moon called highlands
  - Covered with impact craters, no erosion so craters stay untouched

# LUNAR MARE



# 3. MOON INTERIOR

- ◉ 3 main layers - crust, mantle, and core
- ◉ Core is similar to earth, but has a partially melted layer outside the liquid outer core



# 4. MOON FORMATION

## ○ Collision-

- An early version of earth is hit by a smaller object

## ○ Re-forming-

- The many pieces pull each other into orbit around the earth

## ○ Earth and Moon-

- The moon forms from the material that orbits the new earth

# 5. MOON PHASES

- It takes one month for the moon to orbit around the Earth
- As the moon orbits around the earth, sunlight reflects off of the moon making it visible in the night sky.
- From earth, we can only see certain portions of the lit moon

# 6. MOON PHASES Cont.

- Full lunar phase takes one month (4 weeks)
  - Weeks 1-2 are waxing(growing) phases
  - Weeks 3-4 are waning (shrinking) phases



new moon



new crescent



first quarter



waxing gibbous



full moon



waning gibbous



last quarter



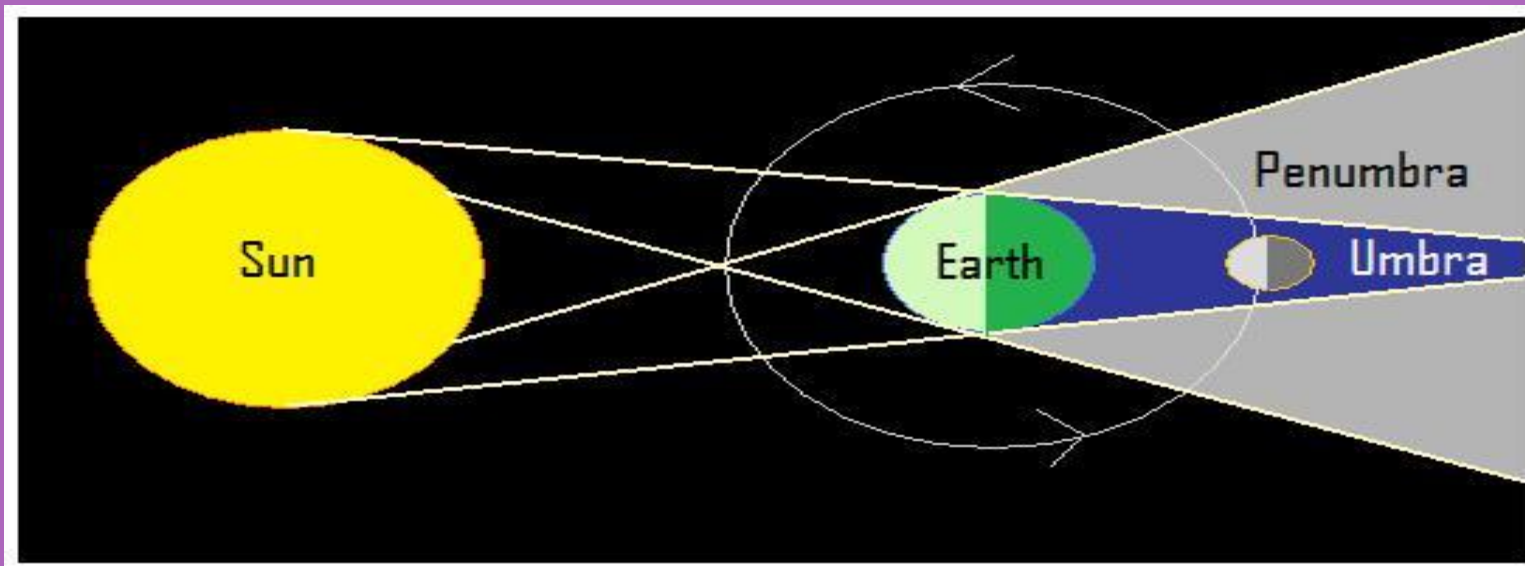
old crescent

[www.visualdictionaryonline.com](http://www.visualdictionaryonline.com)



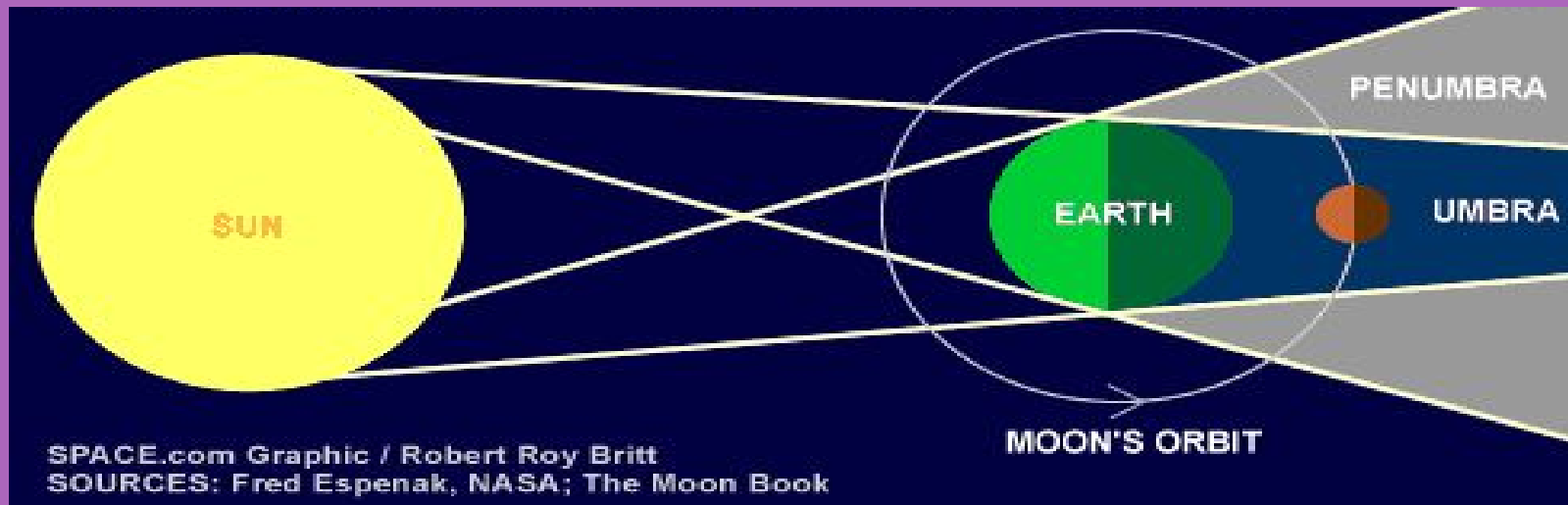
# 7. ECLIPSES

- Sun, moon, and earth line up exactly a shadow crosses Earth or the moon
  - Make either the sun or moon grow dark
- Umbra- dark part of shadow
- Penumbra- light part of shadow



# 8. LUNAR ECLIPSE

- Moon moves into the Earth's shadow (umbra, and penumbra)
  - Total lunar eclipse- moon moves completely into Earth's umbra

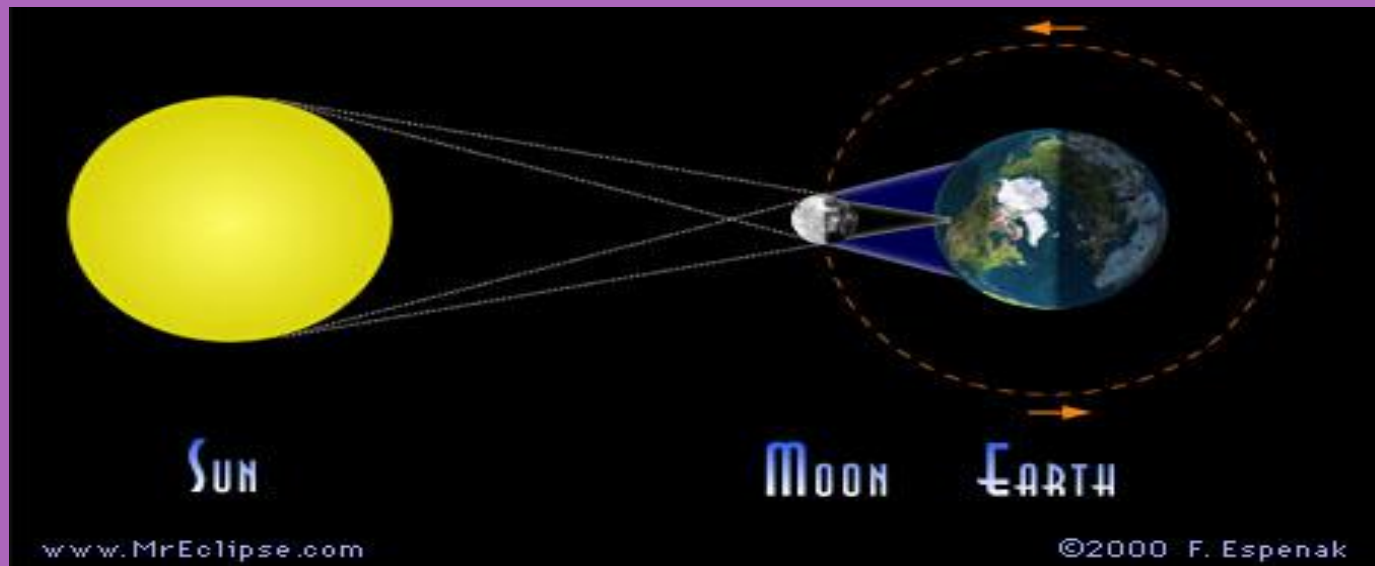


# LUNAR ECLIPSE



# 9. SOLAR ECLIPSE

- When the moon passes in between the Earth and the Sun
  - Moon's umbra and penumbra create shadow on Earth
- Only locations in the path of the moon's shadow experience a solar eclipse



# SOLAR ECLIPSE



Shadow the moon leaves on Earth

# SOLAR ECLIPSE

