

# The Solar System



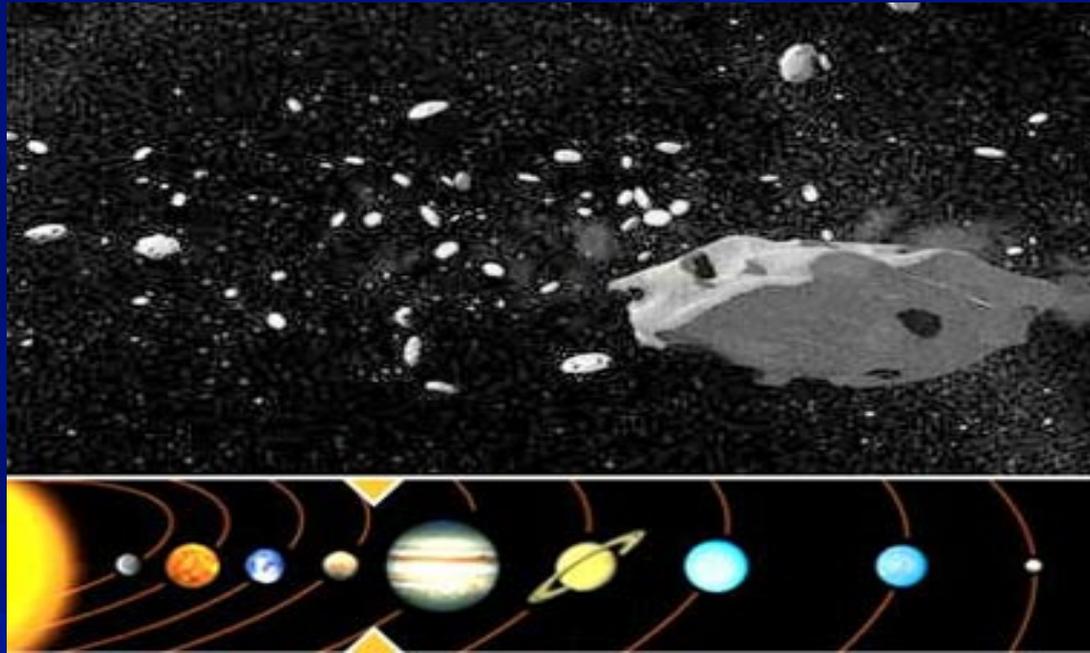
# Birth

- Approximately 5 billion years ago
- Cloud and dust was flattened and spun as the result of the explosion of a near by star
- The debris formed our sun
- Other debris formed the planets and satellites

# Our Solar System

■ Made up of:

- The sun
- 8 Planets
- Natural Satellites
- Comets
- Asteroids



- The planets orbit the sun in an elliptical path
- The asteroid belt separates Mercury, Venus, Earth and Mars (Inner Planets) from Jupiter, Saturn, Uranus and Neptune (Outer Planets)

# The Inner Planets

Terrestrial Planets – Small, Dense and Made Mainly of Rock



Mercury



Venus



Earth



Mars



# The Outer Planets

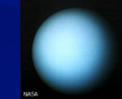
Gas Giants - Mostly gaseous (hydrogen and helium), cold, have rings, and located after asteroid belt



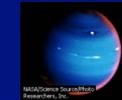
**Jupiter**



**Saturn**



**Uranus**



**Neptune**



# Mercury

- Closest to sun.
- Shortest orbit
- No atmosphere
- Many craters produced by meteoroids
- Temperature: HOT on the side facing the sun and FREEZING on the side turned away from the sun.



NASA/Science Source/Photo  
Researchers, Inc.

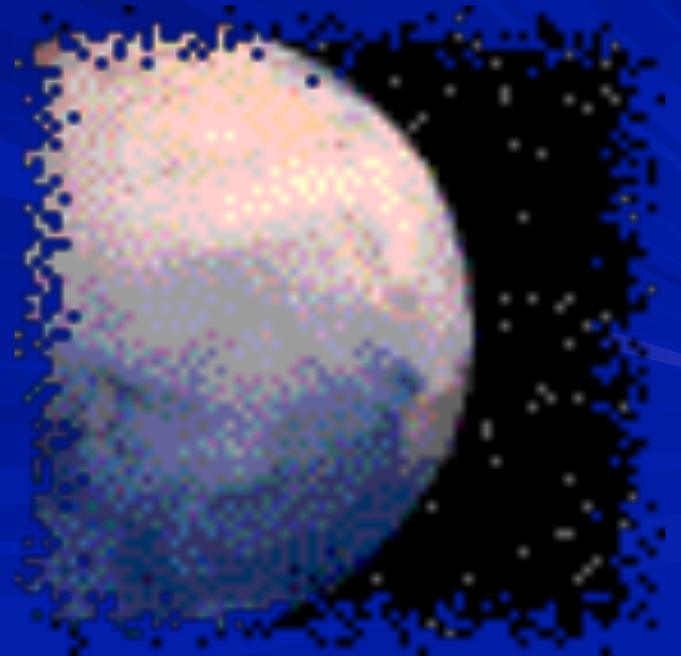
# Venus

- Brightest & Hottest (can reach 477 °C)
- Thick atmosphere
- High levels of carbon dioxide (enormous green house effect)
- Rotates from East to West
- Known as the morning and evening star



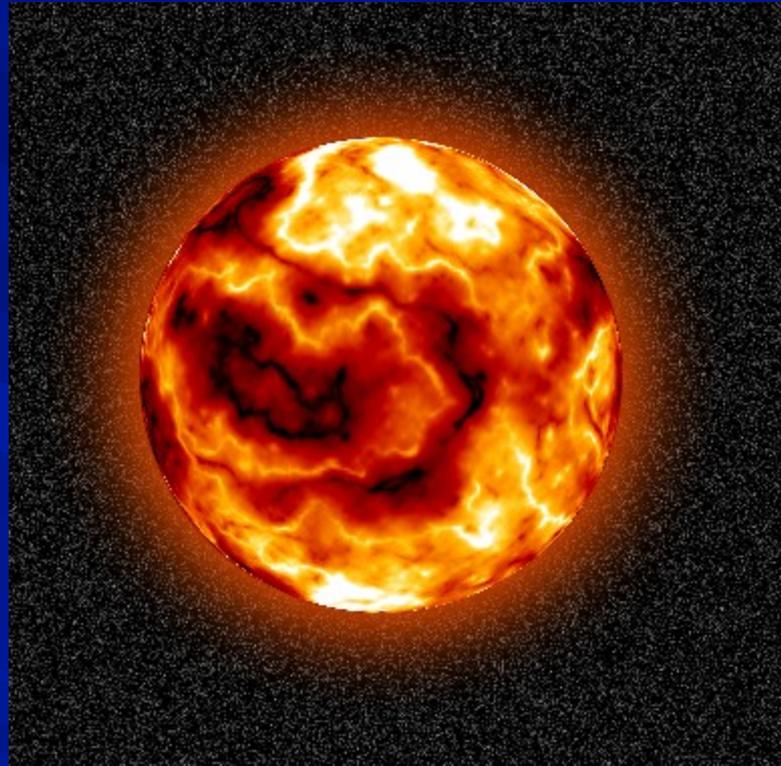
# Earth

- Supports life
- Mostly water (75%)
- Largest Terrestrial Planet
- 1 moon



# Mars

- Reddish color
- 2 moons
- Frozen water
- Atmosphere is 95% carbon dioxide
- Major volcano activity in the past
- May have had life in the past



# Jupiter

- Largest Planet
- Composed mostly of hydrogen
- 11 times the size of the earth
- Colourful bands (gaseous)
- Famous large red spot which is a storm
- 60 moons



# Saturn

- 2<sup>nd</sup> largest planet
- Many rings (rock and ice)
- Could float in water (less dense)
- Stormy bands of gases (very colorful)
- 31 moons



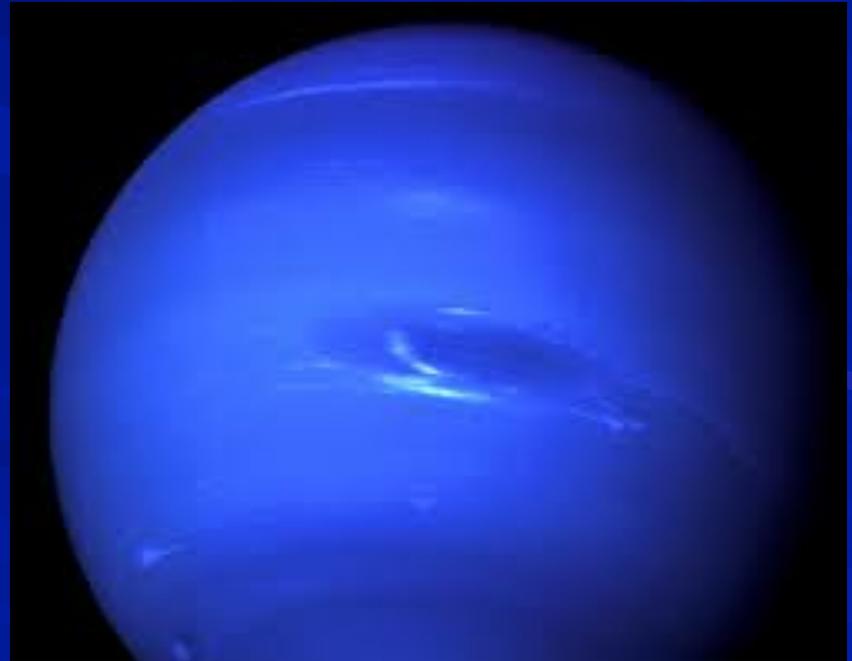
# Uranus

- Very cold
- Greenish-blue colour
- Made up of hydrogen, helium, and methane
- Thin rings (carbon based)
- Invisible to the naked eye
- Rotates on its side
- 27 moons



# Neptune

- Blue colour
- Methane rich atmosphere
- Large storm spot called “Great Dark Spot”
- Clouds for layers
- 6 rings
- 13 moons



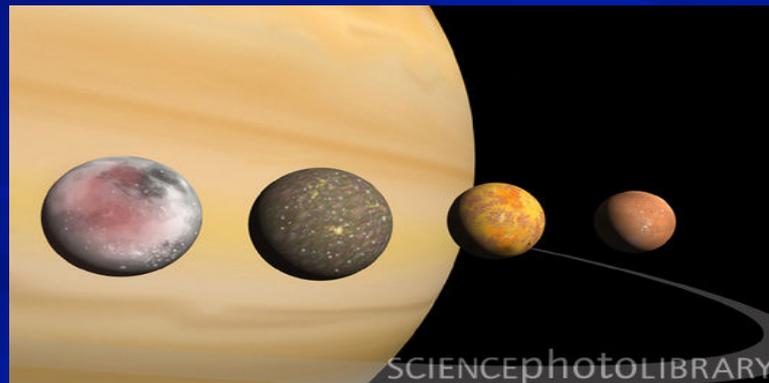
# Pluto, the Dwarf Planet

- Pluto lost its planet classification in 2006
- Smaller than the moon
- Composed of rock, ice and solidified gases



# Natural Satellites (Moons)

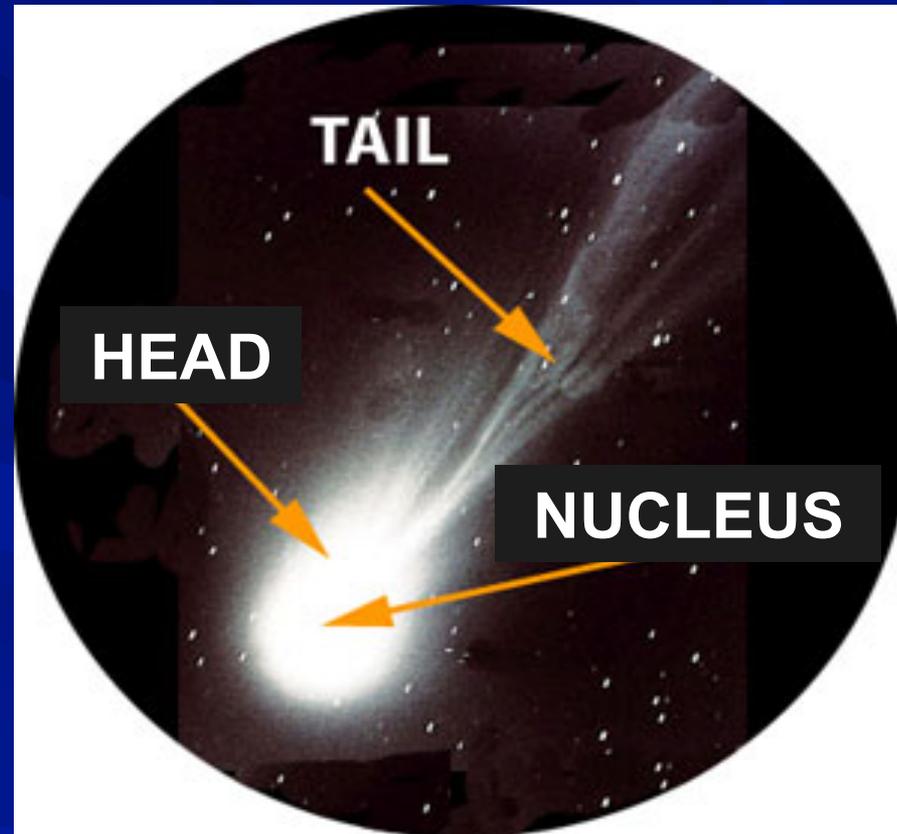
- Is a celestial body that revolves around a planet
- Mercury and Venus do not have any
- Jupiter has the biggest moon (Ganymede)



# Comets

- Is a ball of snow, ice and rock
- Seen in a zone beyond Neptune's orbit
- Has its own orbit around the sun
- When close to the sun the ice sublimates (solid to gas)
- Dust escapes the comet forming a tail which extends away from the sun
- A comet eventually loses its tail when there is no longer any ice left.
- Meteor showers occur when debris leftover from a comet enters the earth's atmosphere

# Parts of a Comet



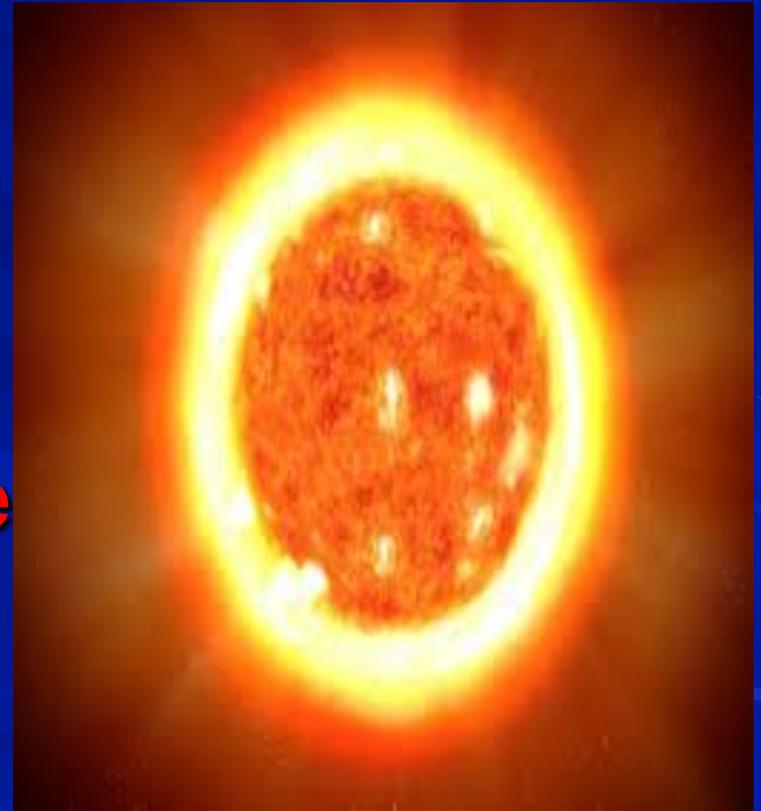
The TAIL is approx. 10 million km  
The HEAD is approx. 100 000 km



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# Sun

- **Star**
- Helium & Hydrogen gases
- **Sunspots – cool spots**  
caused by gas movement  
in the interior
- **Solar flares – burst of light  
& ultraviolet rays into space**  
(May cause Blackouts on  
Earth)



- Extremely high temperatures
- 5770 °C on the surface
- 15,000,000 °C at the center
- Mass is 333,000 times that of earth
- Is a large nuclear reactor
- Has used up half its energy reserves
- Will run out of energy in 5 billion years (it will expand and swallow the earth, then cool and die)

# The End

**VIDEO: Planets Explained**

<http://www.videojug.com/film/the-planets-explained>