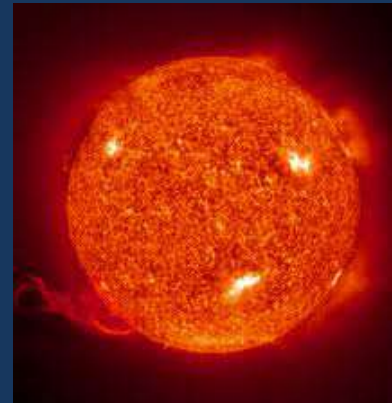
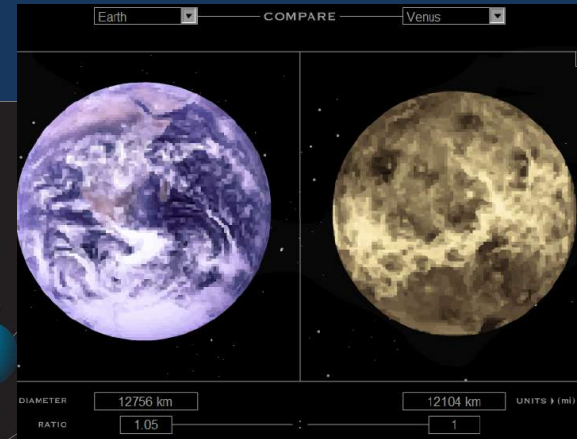
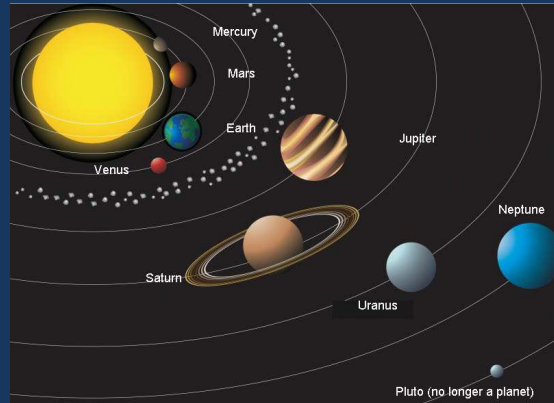


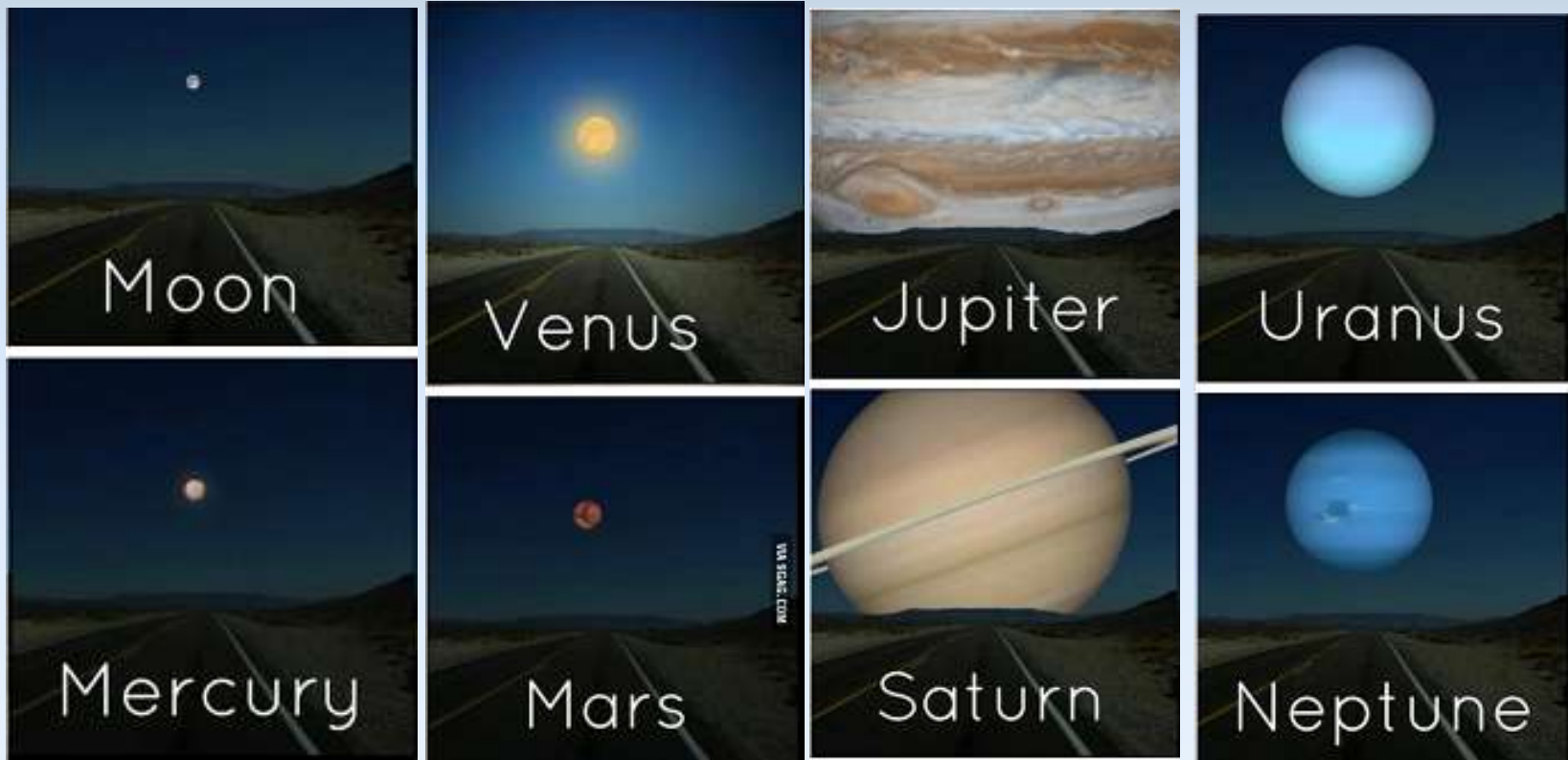
# Space – Our Solar System

- Our Solar System
- The Sun
- The Inner Planets
- The Outer Planets
- Why was Pluto demoted?
- Observing Stars and Planets
- The Moon



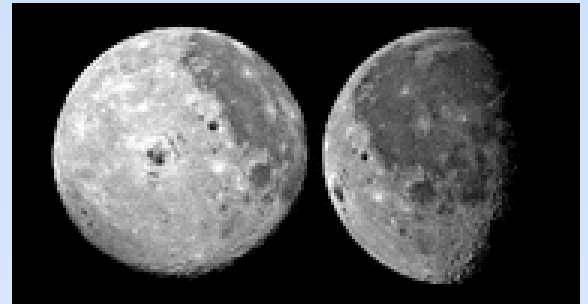
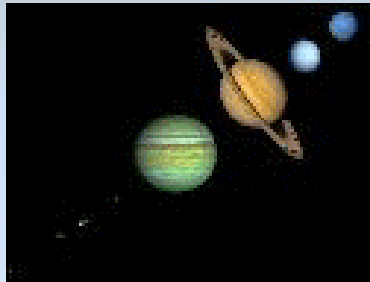
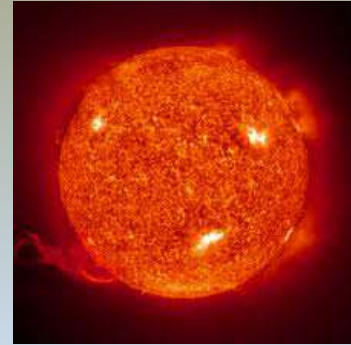
# What if the other planet were as close as the moon?

- The moon is very close and therefore looks large in the sky. The planets inside our solar system are much larger but are much further and therefore, look very small.

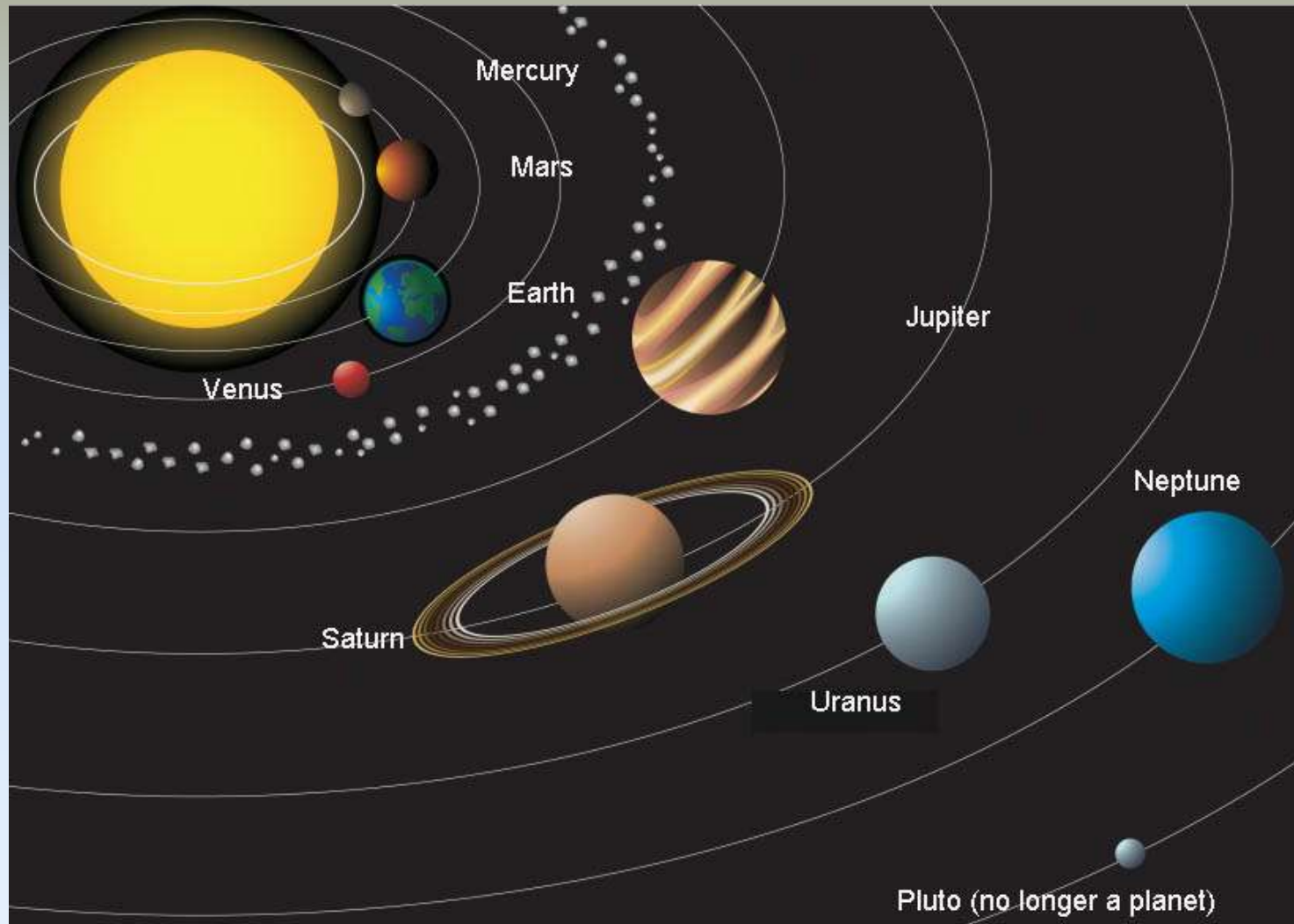


# OUR SOLAR SYSTEM

- The Sun
- Eight Planets
- Some Moons
- Many Comets and asteroids

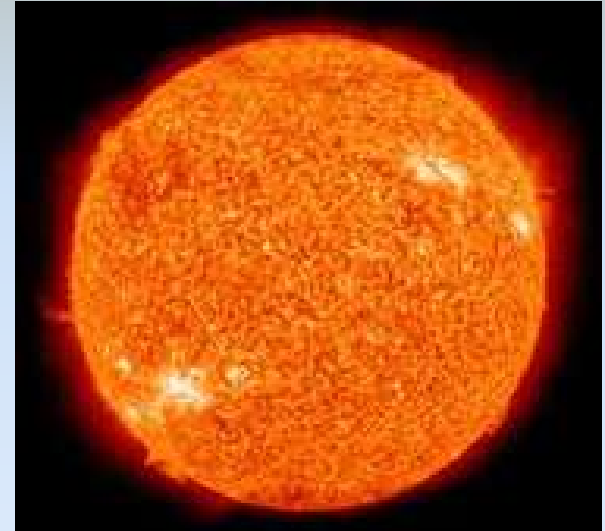


# Our Solar System



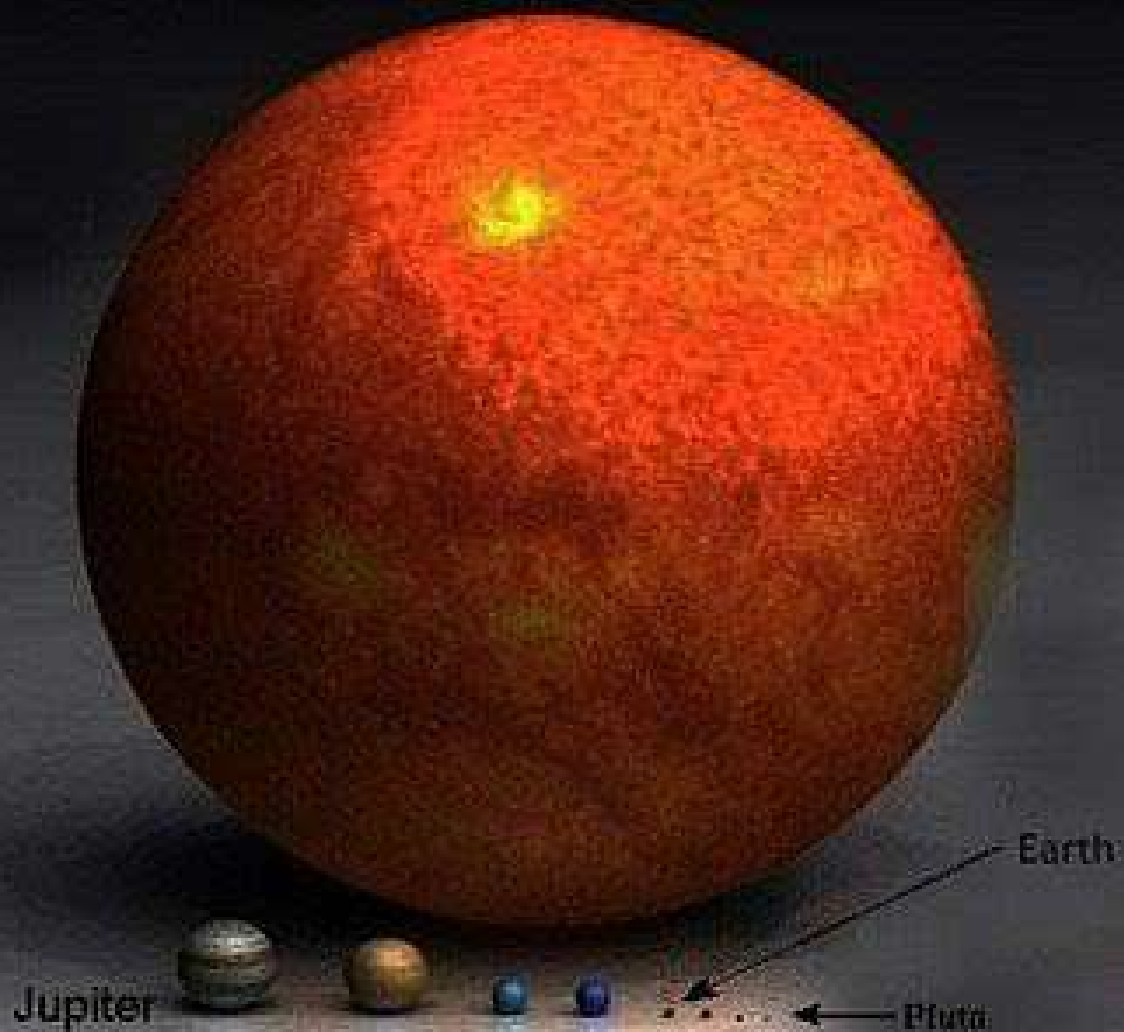
# The Sun

- 75% hydrogen and 25% helium by mass
- Sun converts hydrogen to helium in its core (fusion)
- Core conditions
  - temperature is 15.6 million Kelvin
  - pressure is 250 billion times more than on Earth



# The Sun is Huge!!

Sun



The Sun makes up about 99.8% of the mass of our solar system!

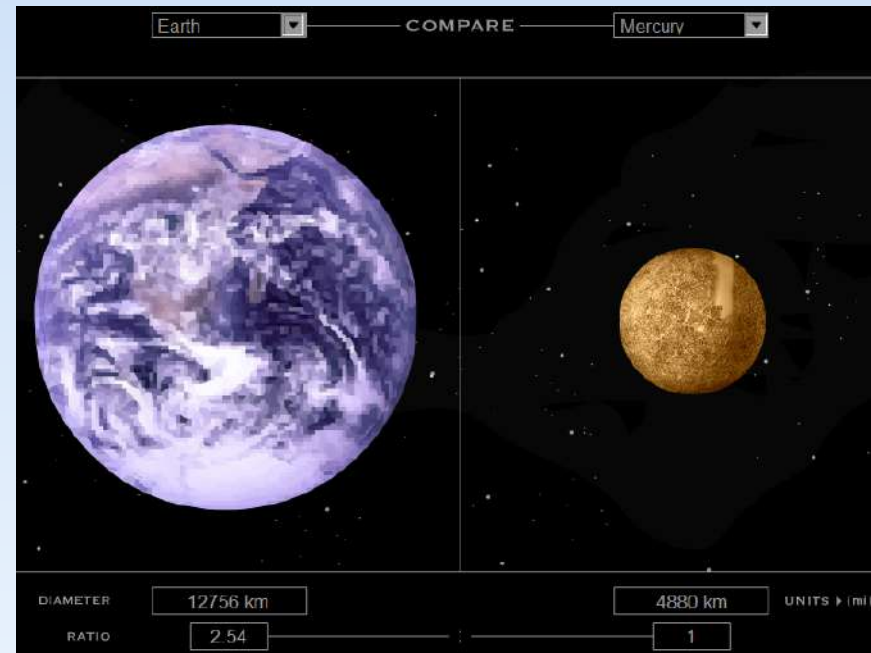
# The Inner Planets





# MERCURY

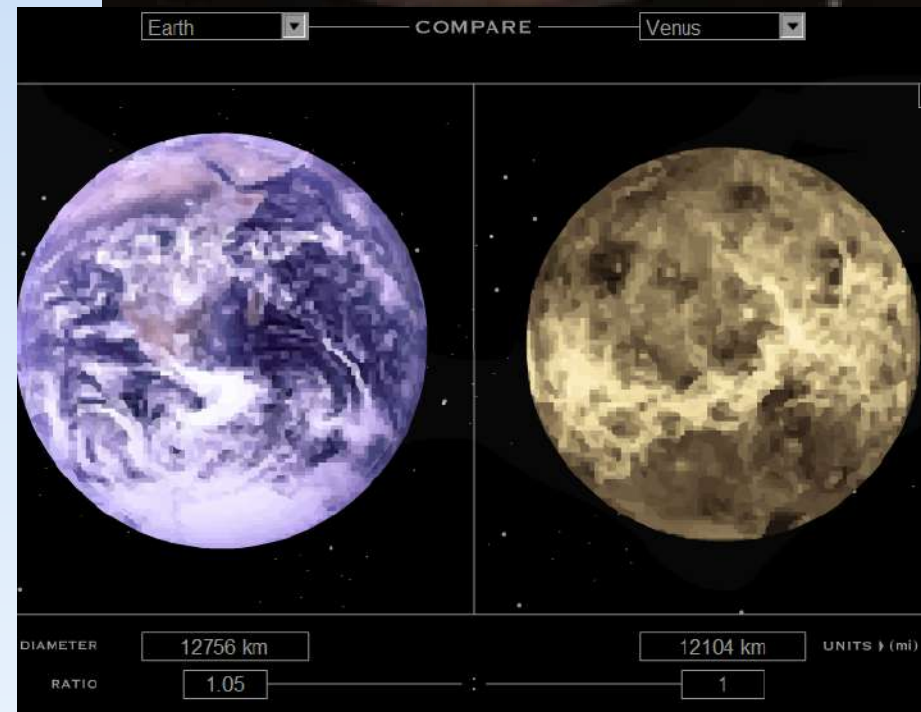
- Shortest orbit around the Sun (0.24 Earth Years)
- Earth's diameter is about 2.5 times larger
- Rocky ball





# VENUS

- Orbit (0.62 Earth Years)
- Diameters is roughly equal to Earth's
- Brightest in the sky
- Rocky ball
- Huge greenhouse effect  
→ very high temperatures (~800 °F)



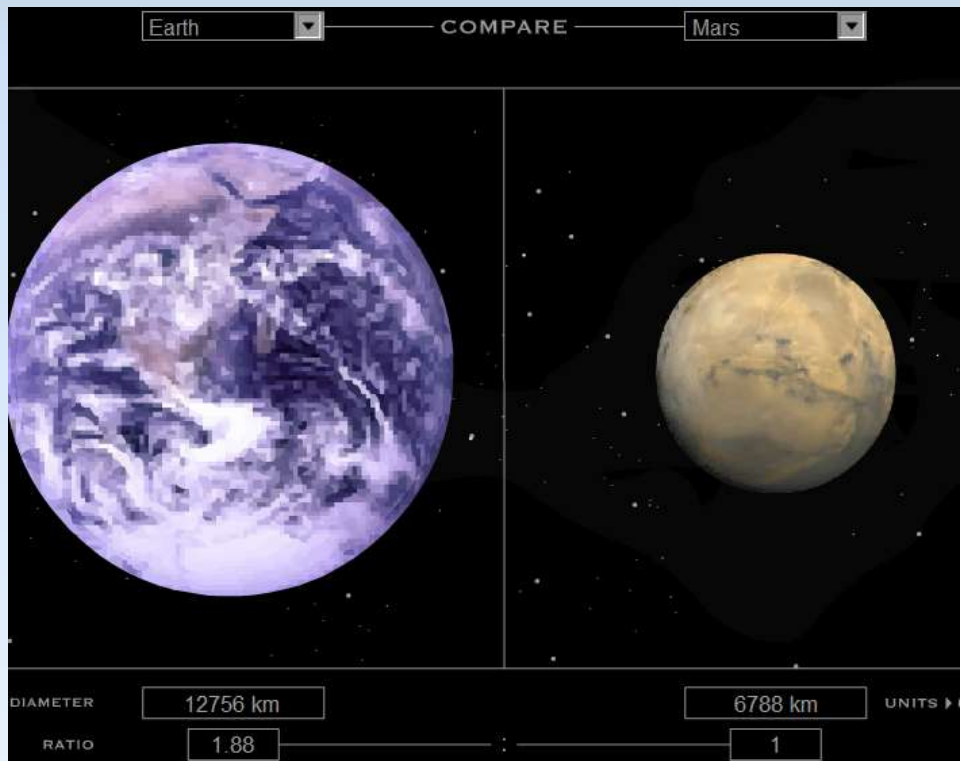
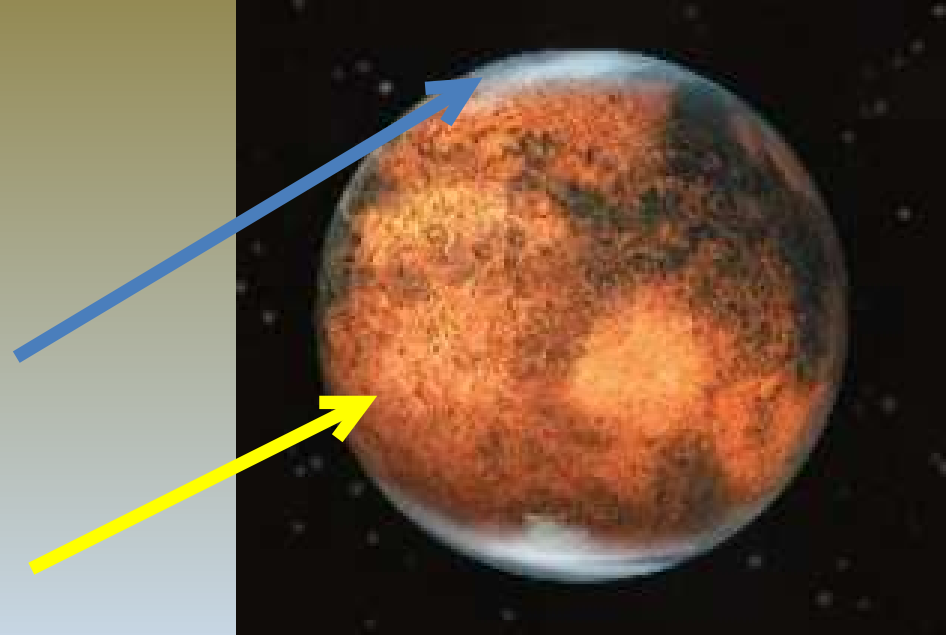
# EARTH

- 3rd rock from the Sun
- Orbit 365.25 days
- Only planet known to sustain life in the Universe

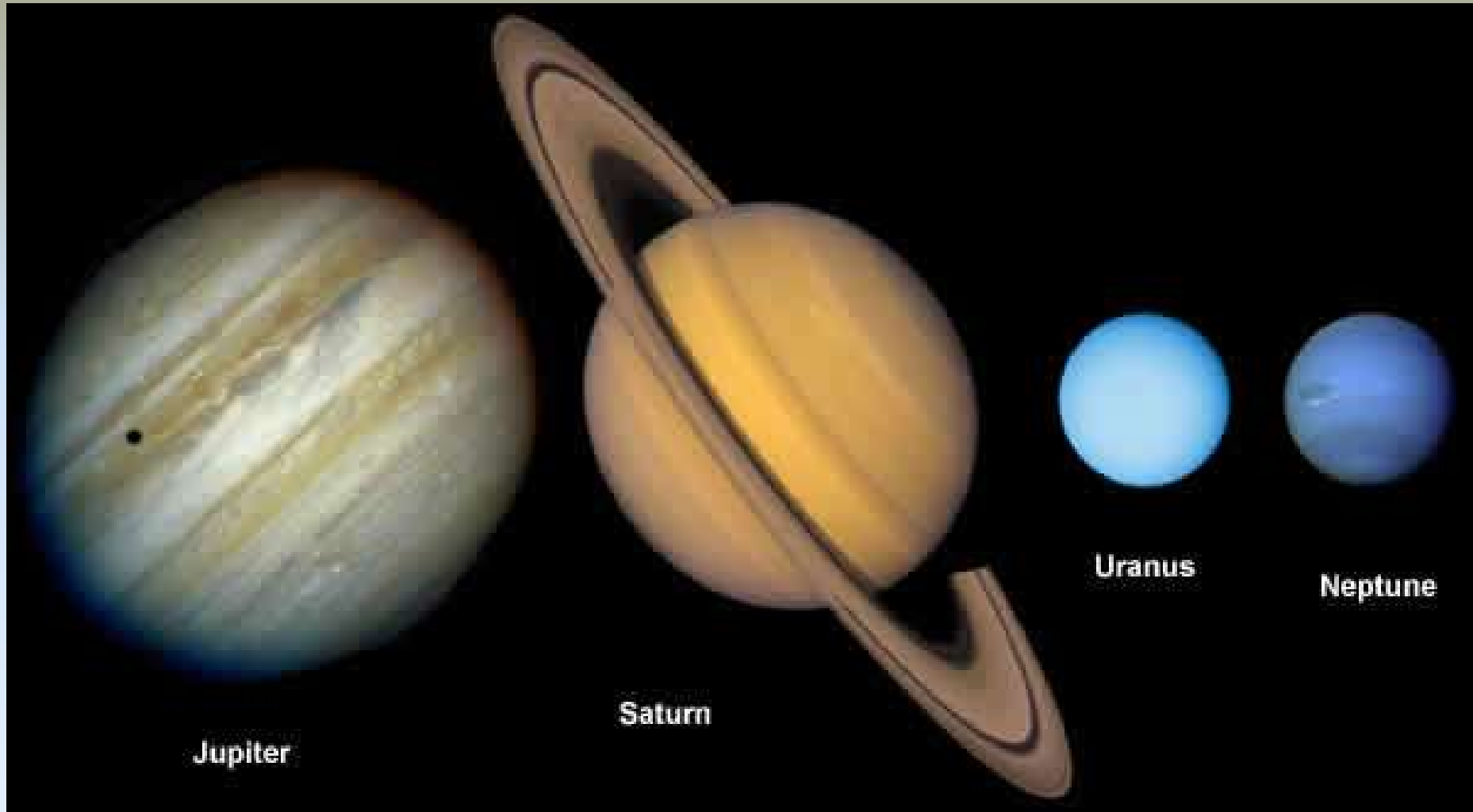


# MARS

- Solid carbon dioxide is found at the poles
- Mars is known as the red planet due to the rust covering the surface
- Orbit (1.88 Earth Years)
- Earth's diameter is 1.88 times larger
- Rocky ball

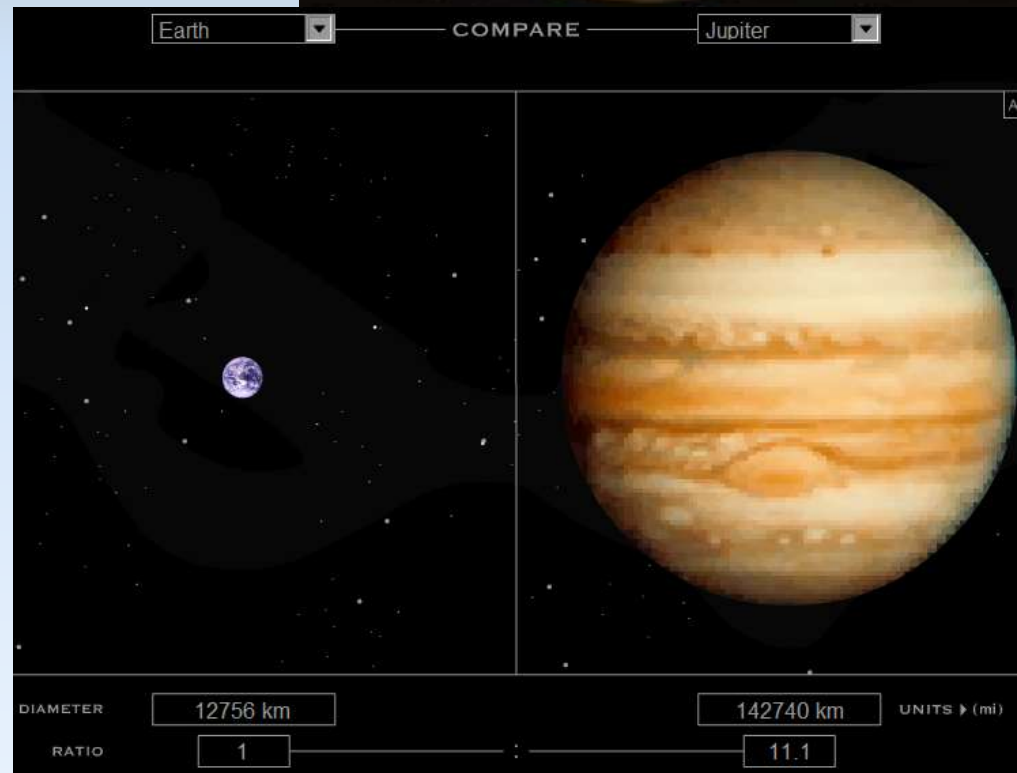


# The Outer Planets



# JUPITER

- Jupiter contains over 70% of the mass in the solar system outside the Sun.
- Jupiter is a ball of gas and liquid (mostly hydrogen and helium).
- **If it were larger it would be a Star**
- Its diameter is 11.1 times larger than Earth's

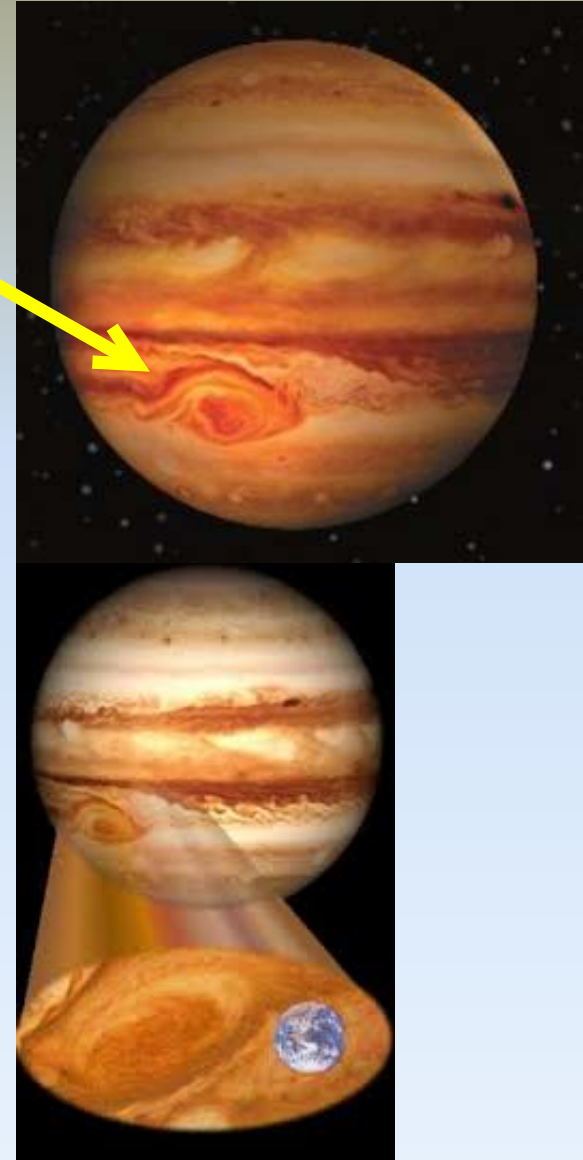


# Jupiter's Great Red Spot

- Has a great red spot
- It is a storm that has been going on for at least 400 years
- The storm is larger than the Earth



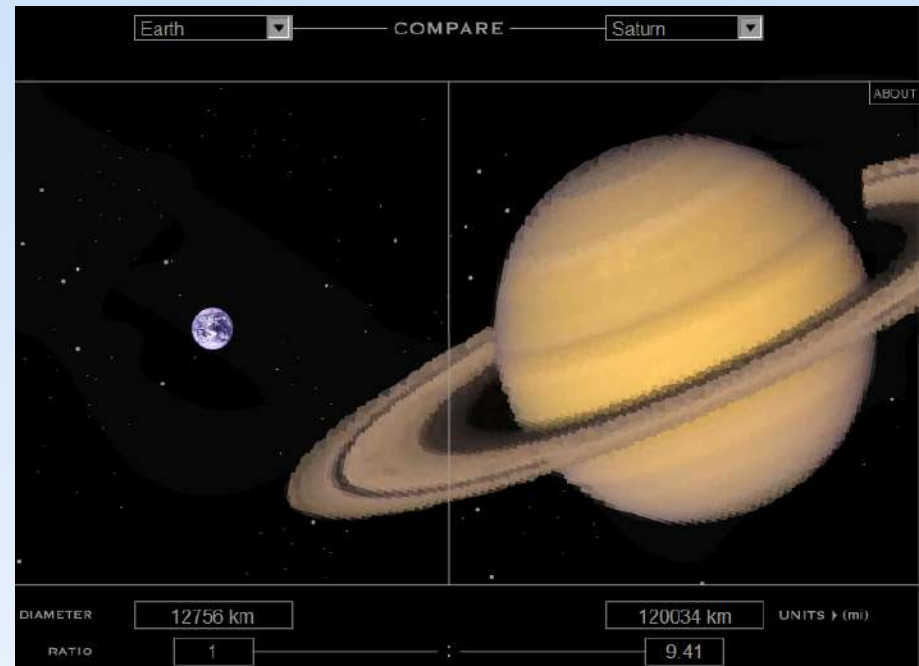
Jupiter's Super Storm



# SATURN



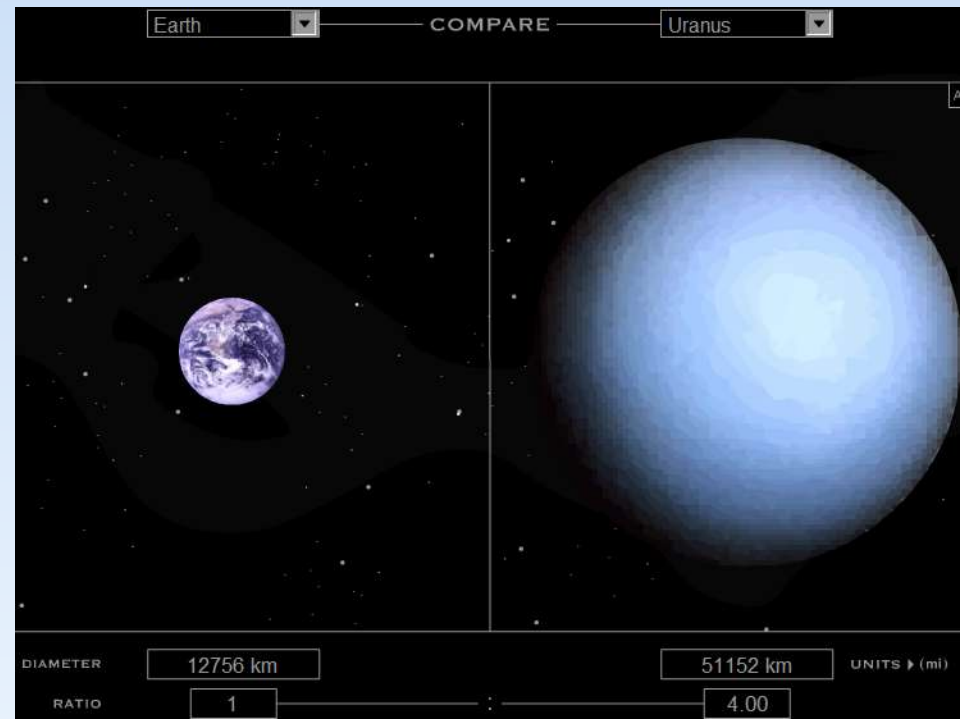
- Made of gas
- One of its moons (Titan) is larger than Mercury!
- Identified by its many rings composed of ice particles
- Orbit (29.46 Earth years)
- It's diameter is 9.41 times larger than Earth's





# URANUS

- Made of gas
- Thinner ring system
- Atmosphere is composed of methane gas giving it its blue colour
- Orbit (84.01 Earth Years)
- Its diameter is 4 times larger than Earth's
- Is flipped on its side (caused by a collision??)



# NEPTUNE

- Outermost planet and is made of gas
- Its composition and atmosphere is similar to Uranus
- Very thin ring system
- Orbit (164.8 Earth Years)
- Its diameter is 3.8 times larger than Earth's



# PLUTO



- No longer considered a Planet
- Is the second most massive known dwarf planet in the Solar System (after Eris)
- Pluto's mass is less than 0.24 percent that of the Earth
- Its diameter is roughly 66% that of our Moon

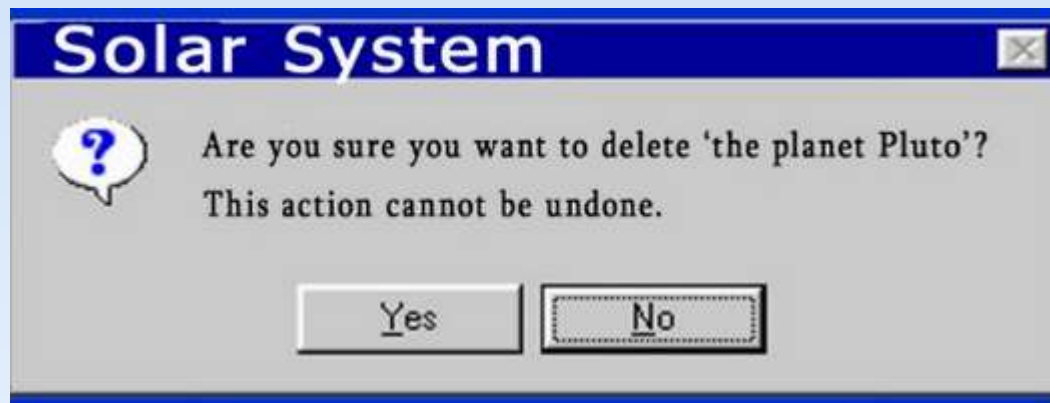
# Pluto



Why isn't Pluto a planet anymore?

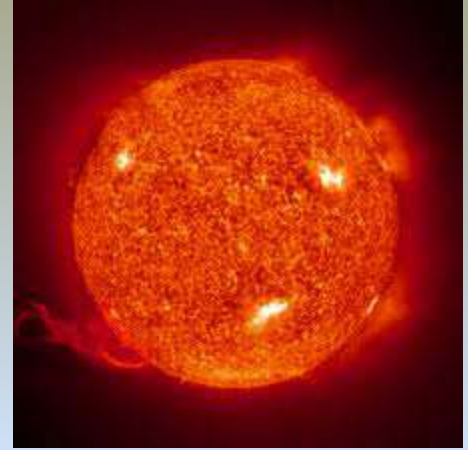
# Why was Pluto demoted?

- Really small – smaller than the Moon
- Too many similar objects – instead of adding 1000's of planets, they removed one
- It has a very strange orbit



# Observing Stars and Planets

- A *star* is a big ball of burning gas
- A *planet* is a smaller ball of rock (or gas) that goes around a star
- We can see the planets Venus, Mars, Jupiter, Saturn and Mercury without a telescope at certain times of the year



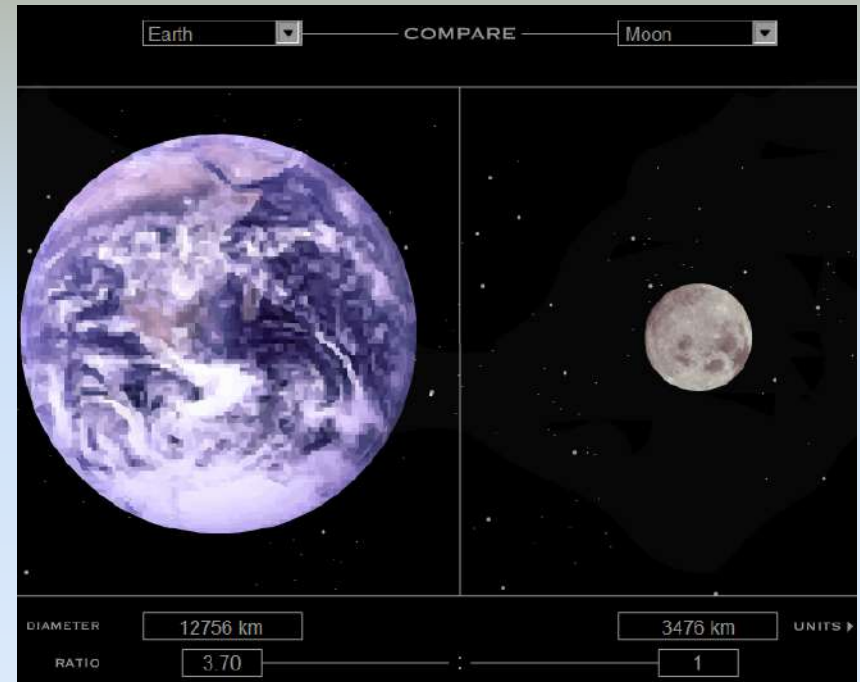
- the Sun and all the objects that travel around it make up the *Solar System*
- the Sun is called *luminous* because it produces its own light
- planets and moons are called *nonluminous* because they do not produce their own light; they reflect the light of the Sun
- our Sun is also a star





# The Moon

- Takes about 28 days for the Moon to orbit the Earth
- The Moon has several effects on the earth
  - e.g. tides, night-time illumination, tilt and rotational speed.
- Earth's diameter is 3.7 times larger



# Bill Nye: Outer Space

