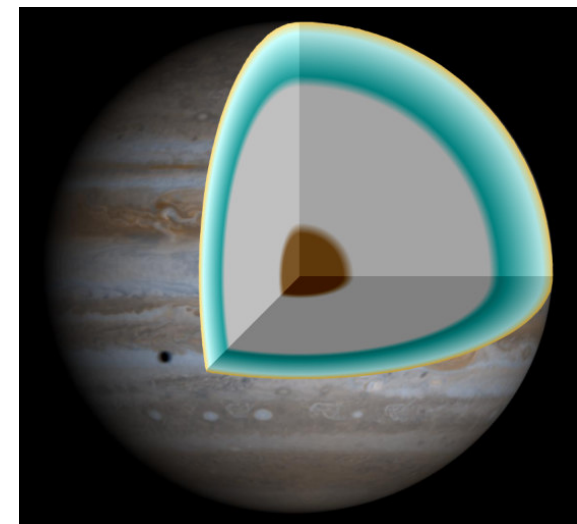


Ch 23.3 The Outer Planets (and Pluto too)

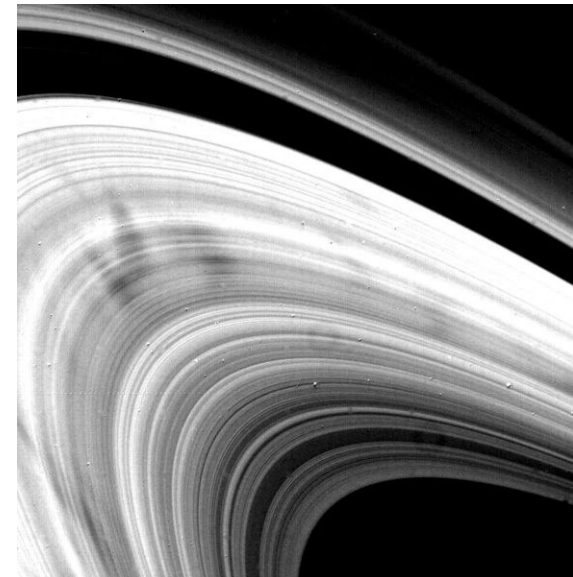
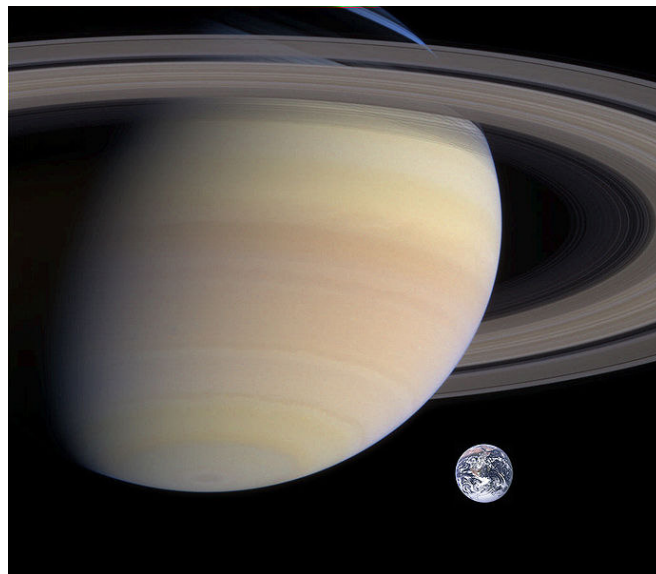
Jupiter: Giant Among Planets

- Jupiter has a mass that is 2 ½ times greater than the mass of all other planets and moons.
- Jupiter has alternating bands of multicolored clouds that run parallel to its equator.
- The most striking feature is the Great Red Spot, which is a cyclonic storm.
- Jupiter is a planet of compress liquid hydrogen and is believed to have a rocky and metallic core.
- Its atmosphere is a hydrogen-helium mix.
- Jupiter has 63 moons so far discovered: the largest four are Io, Europa, Ganymede and Callisto.



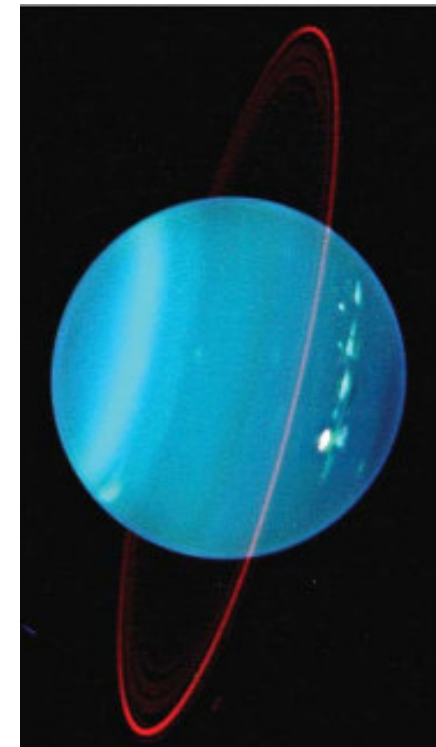
Saturn: The Elegant Planet

- The most prominent feature of Saturn is its system of rings.
- Saturn's atmosphere is very active, winds roar up to 1500 kilometers per hour.
- Saturn's rings are composed of "moonlets" of ice and rock that circle the planet while regularly impacting one another.
- Moonlets range in size from a few centimeters to several meters.
- Saturn has 56 moons, Titan being the largest and is bigger than Mercury.



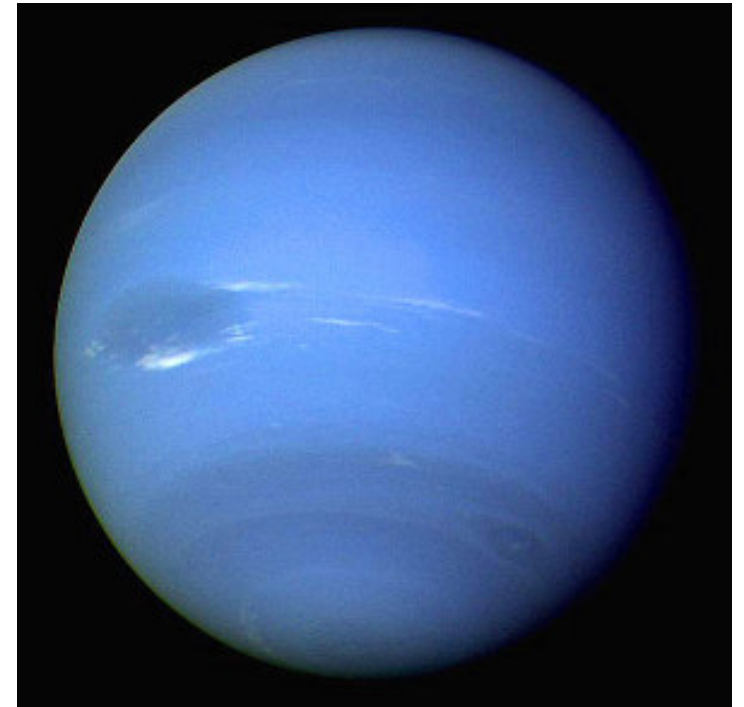
Uranus: The Sideways Planet

- It is named after the ancient Greek deity of the sky Uranus the father of Kronos (Saturn) and grandfather of Zeus (Jupiter).
- This was also the first discovery of a planet made using a telescope.
- The atmosphere of Uranus is composed primarily of hydrogen and helium, with a small amount of methane and traces of water and ammonia.
- Uranus gets its blue-green color from methane gas.
- Uranus's axis of rotation lies on its side with respect to the plane of the Solar System, Uranus rotates more like a tilted rolling ball.



Neptune: The Windy Planet

- Named for the Roman god of the sea.
- Neptune was discovered on September 23, 1846, and was the first planet found by mathematical prediction rather than by observation.
- Neptune's atmosphere, while similar to Jupiter's and Saturn's in that it is composed primarily of hydrogen and helium, along with traces of hydrocarbons and possibly nitrogen, contains a higher proportion of "ices" such as water, ammonia and methane.



Pluto: Dwarf Planet

- Pluto is a dwarf planet that orbits far from the sun. It shares the region of its orbit, known as the Kuiper belt, with a collection of similar icy bodies called Kuiper belt objects.
- In 1905, Percival Lowell, an American astronomer, found that the force of gravity of some unknown object seemed to be affecting the orbits of Neptune and Uranus. He died in 1916 without finding it.
- In 1929, Clyde W. Tombaugh, an assistant at the Lowell Observatory, found Pluto's image on three photographs. The planet was named after the Roman god of the dead. The name also honors Percival Lowell, whose initials are the first two letters of Pluto (PL).

