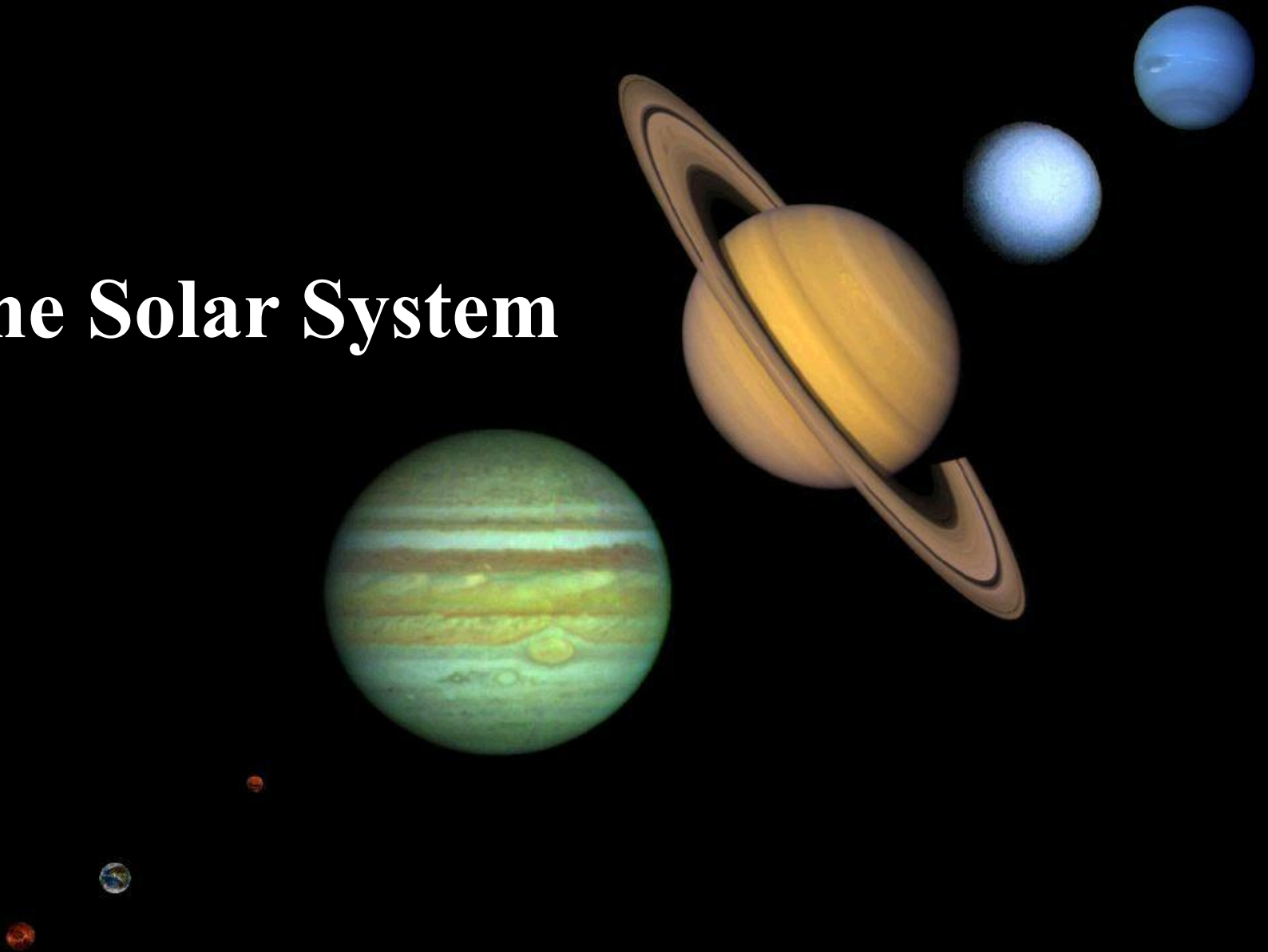


# The Solar System



# What's in Our Solar System?

- Our Solar System consists of a central star (the Sun), the nine planets orbiting the sun, moons, asteroids, comets, meteors, interplanetary gas, dust, and all the “space” in between them.
- The nine planets of the Solar System are named for Greek and Roman Gods and Goddesses.

# Inner and Outer Planets

- Inner Planets:

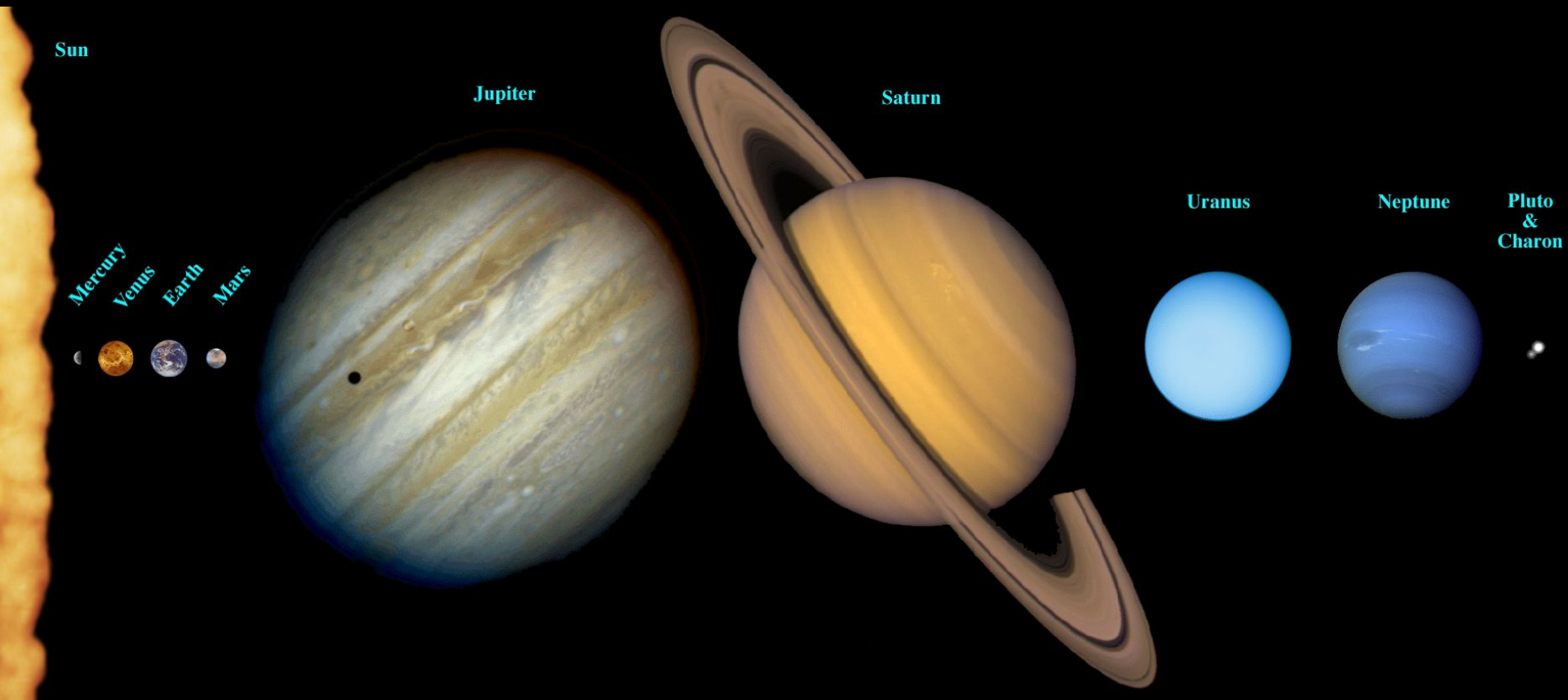
- Mercury
- Venus
- Earth
- Mars

- Outer Planets

- Jupiter
- Saturn
- Uranus
- Neptune
- Pluto

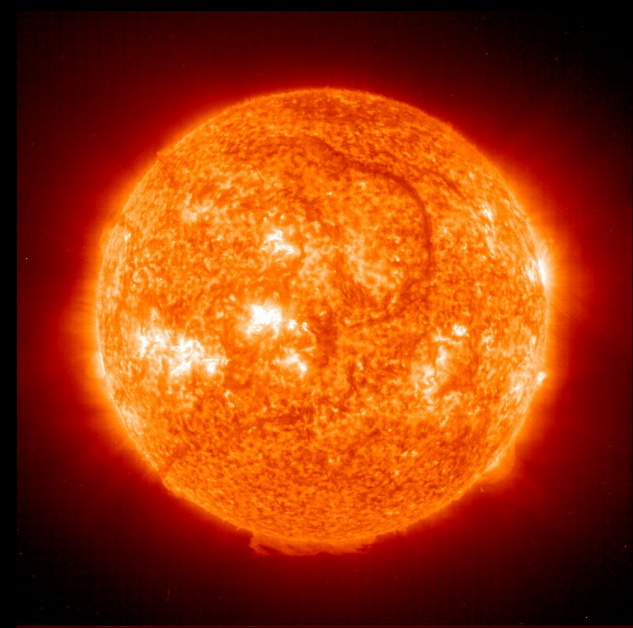


# The Relative Size of the Planets in the Solar System



# The Sun

- The sun's energy comes from nuclear fusion (where hydrogen is converted to helium) within its core. This energy is released from the sun in the form of heat and light.
- Remember: Stars produce light.  
Planets reflect light.
- A star's temperature determines its "color." The coldest stars are red. The hottest stars are blue.



# The 9 Planets of the Solar System

- Planets are categorized according to composition and size. There are two main categories of planets:
  - small rocky planets (Mercury, Venus, Earth, Mars, and Pluto)
  - gas giants (Jupiter, Saturn, Uranus, and Neptune)

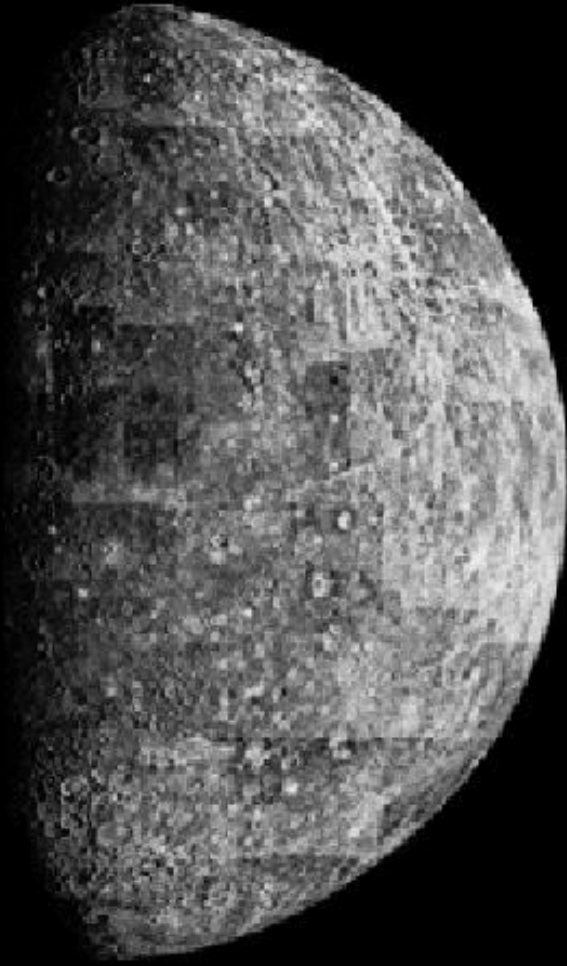
# Characteristics of Small Rocky Planets

- They are made up mostly of rock and metal.
- They are very heavy.
- They move slowly in space.
- They have no rings and few moons (if any).
- They have a diameter of less than 13,000 km.



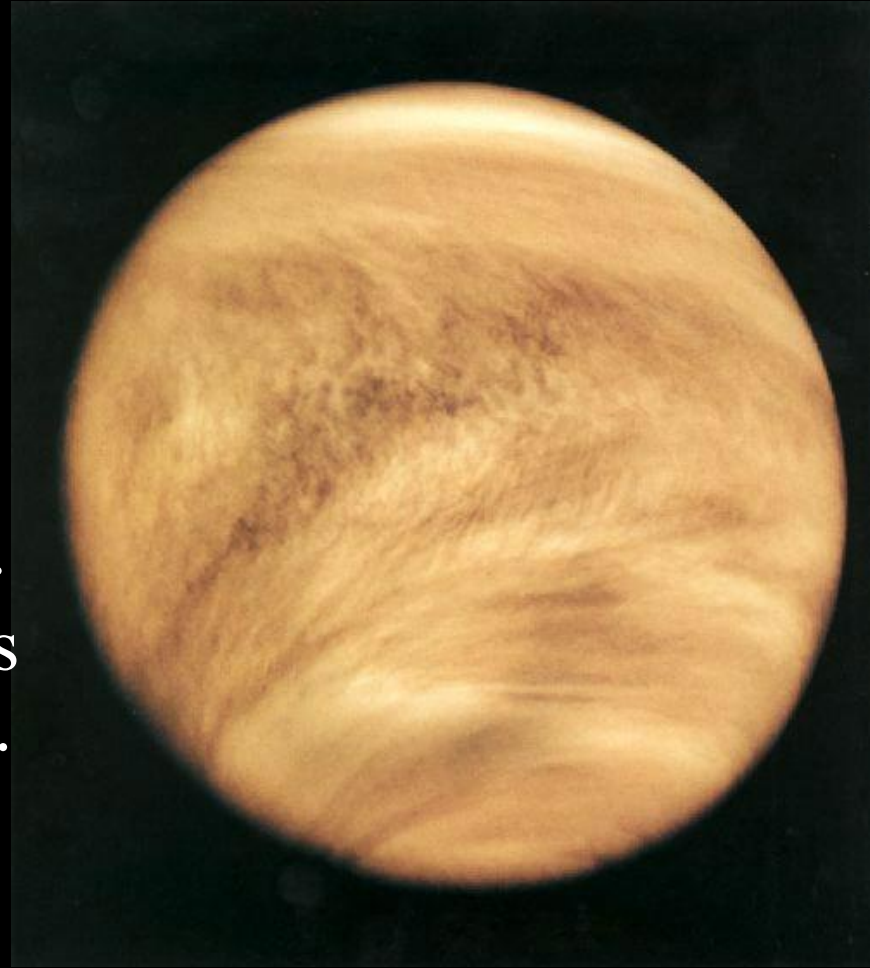
# Mercury

- Mercury has a revolution period of 88 days. Mercury has extreme temperature fluctuations, ranging from 800°F (daytime) to -270°F (nighttime).
- Even though it is the closest planet to the sun, Scientists believe there is ICE on Mercury! The ice is protected from the sun's heat by crater shadows.



# Venus

- Venus is the brightest object in the sky after the sun and moon because its atmosphere reflects sunlight so well. People often mistake it for a star.
- Its maximum surface temperature may reach 900°F.
- Venus has no moons and takes 225 days to complete an orbit.



# Earth

- Earth is the only planet known to support living organisms.
- Earth's surface is composed of 71% water.
  - Water is necessary for life on Earth.
  - The oceans help maintain Earth's stable temperatures.
- Earth has one moon and an oxygen rich atmosphere.



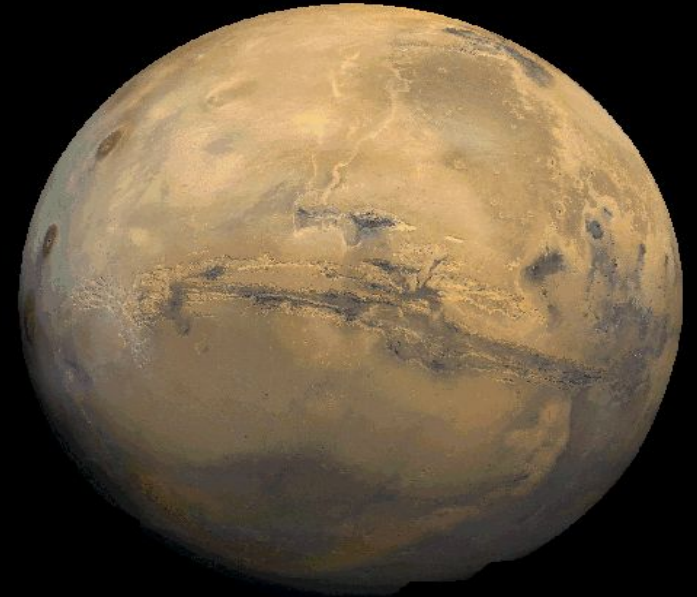
# Earth's Moon



- It takes the moon approximately 29 days to complete one rotation. The same side of the moon always faces us.
- The moon's surface is covered in dust and rocky debris from meteor impacts. It has no water or atmosphere.
- The moon reflects light from the sun onto the earth's surface.

# Mars

- Like Earth, Mars has ice caps at its poles.
- Mars has the largest volcano in our solar system: Olympus Mons. Olympus Mons is approximately 15 miles high.
- Mars appears red because of iron oxide, or rust, in its soil.
- Mars has two moons and takes about two years to complete an orbit.



# Pluto

- Pluto has only one moon and takes about 249 years to orbit the sun.
- Part of Pluto's orbit passes inside that of Neptune, so at times Neptune is the planet farthest from the sun.
- Pluto was located and named in 1930, but today Pluto is no longer considered a planet.

# Characteristics of Gas Giants

- They are made up mostly of gases (primarily hydrogen & helium).
- They are very light for their size.
- They move quickly in space.
- They have rings and many moons.
- They have a diameter of less than 48,000 km

# Jupiter

- Jupiter is the largest and most massive planet.
- It's diameter is 11 times bigger than that of the Earth's.
- It takes about 12 years for Jupiter to orbit the sun.
- Jupiter has 16 known moons.





# Saturn



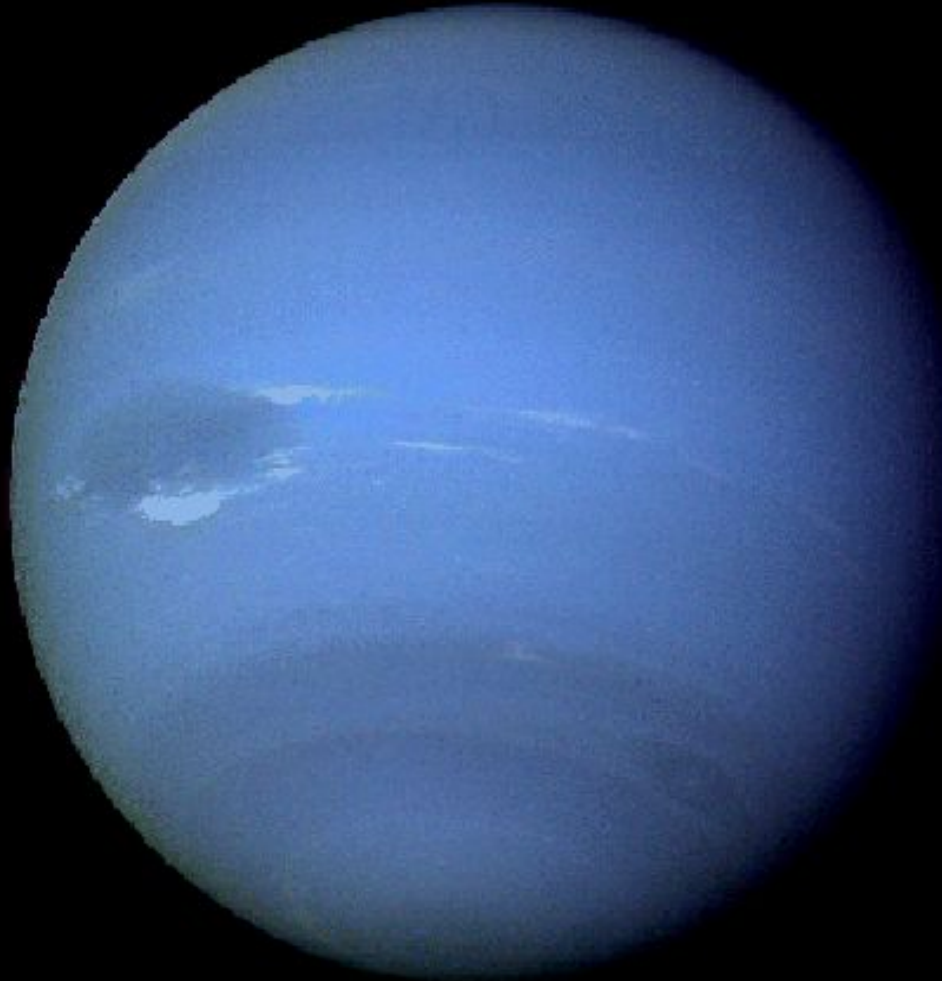
- Saturn is composed almost entirely of hydrogen and helium.
- Saturn has many rings made of ice. Saturn's rings are very wide. They extend outward to about 260,000 miles from the surface but are less than 1 mile thick.
- Saturn has 18 known moons, some of which orbit inside the rings!
- It takes Saturn about 30 years to orbit the sun.

# Uranus

- Uranus is blue in color due to methane gas in its atmosphere.
- Uranus has 11 dark rings surrounding it.
- Uranus has 21 known moons and takes 84 years to complete one orbit.



# Neptune



- Neptune has the fastest winds in the solar system: up to 2,000 km/hr.
- Neptune is also blue in color due to methane gas in its atmosphere.
- Neptune takes 165 years to orbit the sun and has 8 moons.