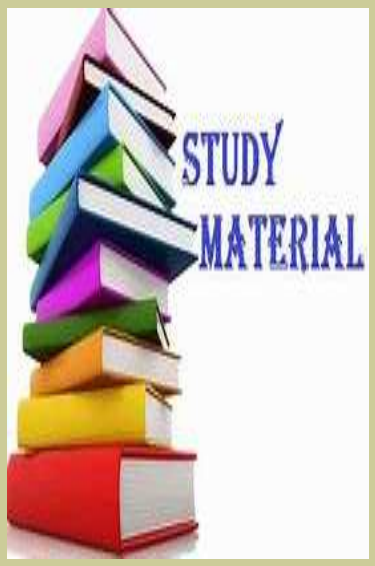
www.clrn-shr.com

SOLAR SYSTEM EXPLORATION



Lrn&Shr Platform offers learning material in different languages viz. English, French, German, Japanese, Chinese, Spanish.

EXPLORATION DU SYSTÈME SOLAIRE

太阳系探索

Sonnensystem-Exploration

Exploración del Sistema Solar

太陽系探査

SELF
LEARNING MATERIAL

www.clrn-shr.com

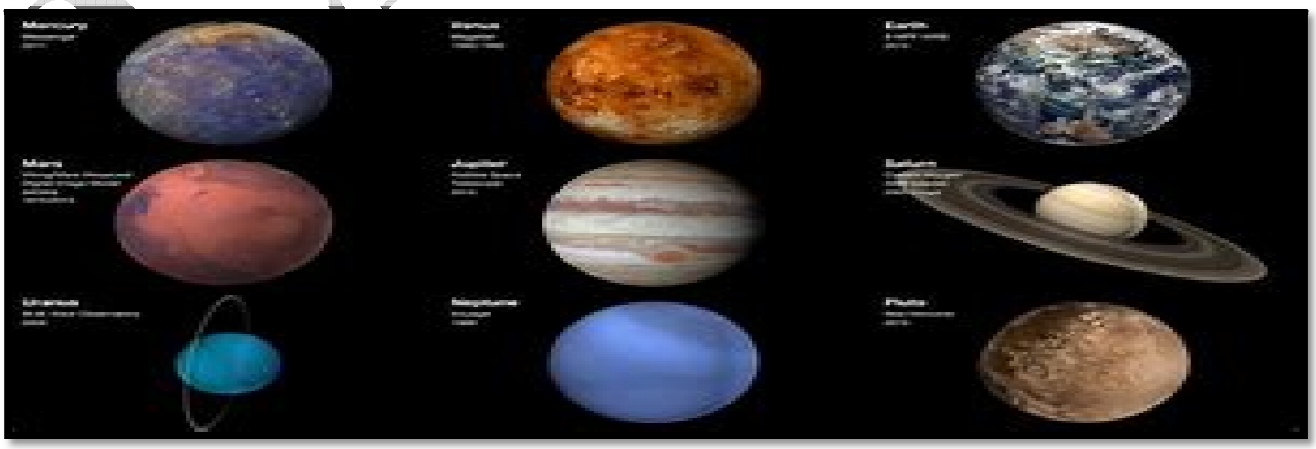
WHAT IS PLANET?

According to the International Astronomical Union (IAU) in 2006, Planet must do three things:

- It must orbit a star (in our cosmic neighborhood, the Sun).
- It must be big enough to have enough gravity to force it into a spherical shape.
- It must be big enough that its gravity cleared away any other objects of a similar size near its orbit around the Sun.

Therefore IAU defined solar system into three categories-

- A planet is a celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, and (c) has cleared the neighbourhood around its orbit.
- A "dwarf planet" is a celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, (c) has not cleared the neighbourhood around its orbit, and (d) is not a satellite.
- All other objects, except satellites, orbiting the Sun shall be referred to collectively as "Small Solar System Bodies".



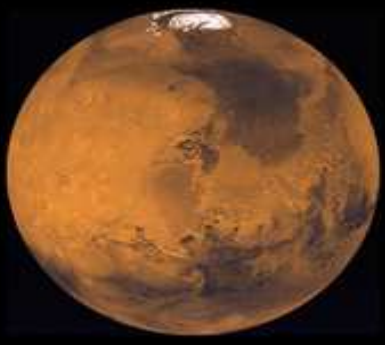
GALAXY WITH PLANETS

- There are more planets than stars in our galaxy. The current count orbiting our star: eight.
- The inner, rocky planets are Mercury, Venus, Earth and Mars. The outer planets are gas giants Jupiter and Saturn and ice giants Uranus and Neptune.
- Beyond Neptune, a newer class of smaller worlds called dwarf planets reign, including perennial favourite Pluto.

PLANETS IN OUR SOLAR SYSTEM

Earth

Earth—our home planet—is the only place we know of so far that's inhabited by living things. It's also the only planet in our solar system with liquid water on the surface.

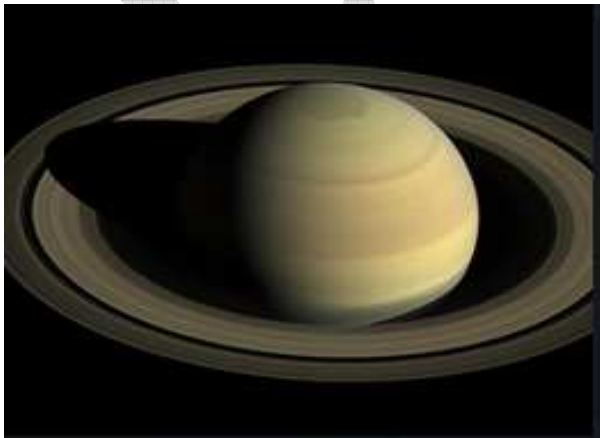


Mars

Mars is a dusty, cold, desert world with a very thin atmosphere. There is strong evidence Mars was—billions of years ago—wetter and warmer, with a thicker atmosphere.

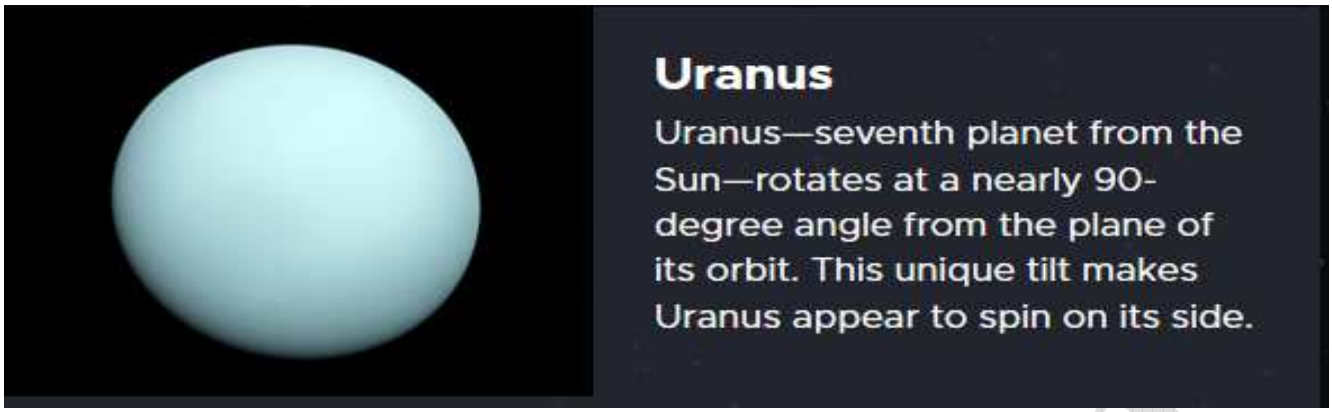
Jupiter

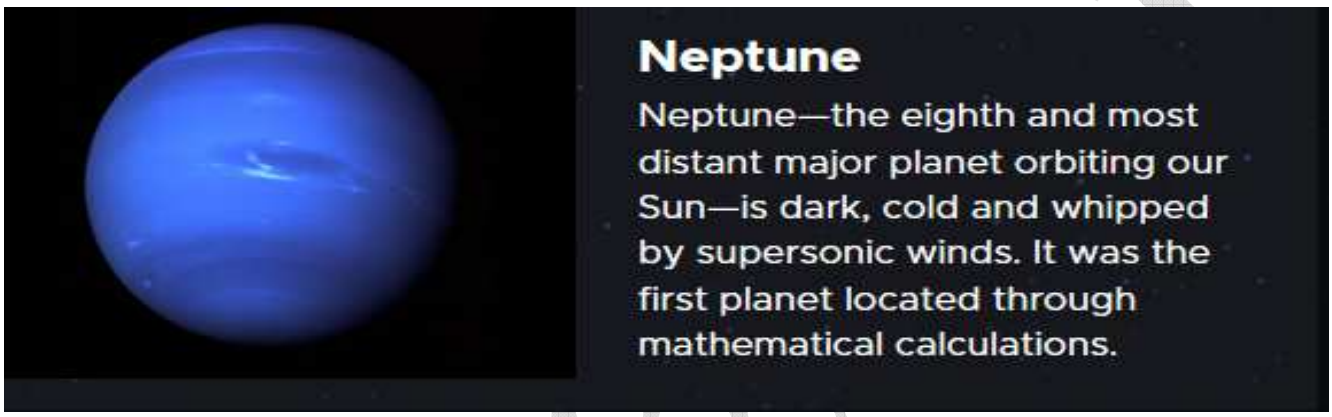
Jupiter is more than twice as massive than the other planets of our solar system combined. The giant planet's Great Red spot is a centuries-old storm bigger than Earth.



Saturn

Adorned with a dazzling, complex system of icy rings, Saturn is unique in our solar system. The other giant planets have rings, but none are as spectacular as Saturn's.





DWARF PLANETS IN OUR SOLAR SYSTEM

According to the definition adopted by the IAU in 2006, a dwarf planet is, "a celestial body orbiting a star that is massive enough to be rounded by its own gravity but has not cleared its neighboring region of planetesimals and is not a satellite. More explicitly, it has to have sufficient mass to overcome its compressive strength and achieve hydrostatic equilibrium."

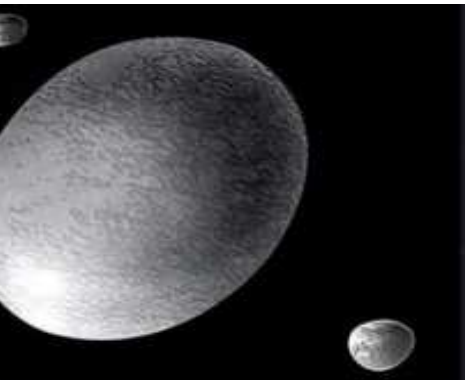
IAU currently recognizes five bodies within our Solar System as dwarf planets, six more could be recognized in the coming years.

Ceres

Ceres makes up almost a third of the asteroid belt's total mass, but it is still far smaller than Earth's Moon. Ceres is heavily cratered with large amounts of ice underground.

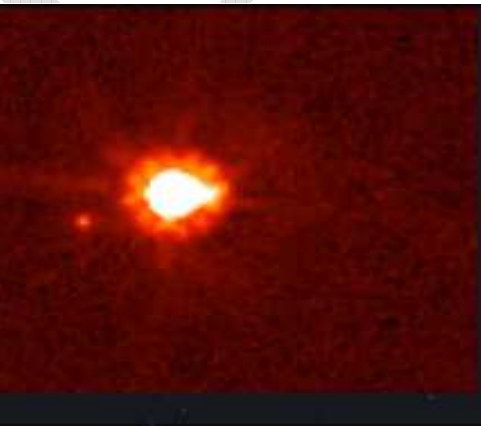
Makemake

It takes 310 Earth years for Makemake to complete one orbit around our Sun.



Haumea

Haumea is one of the fastest rotating large objects in our solar system.

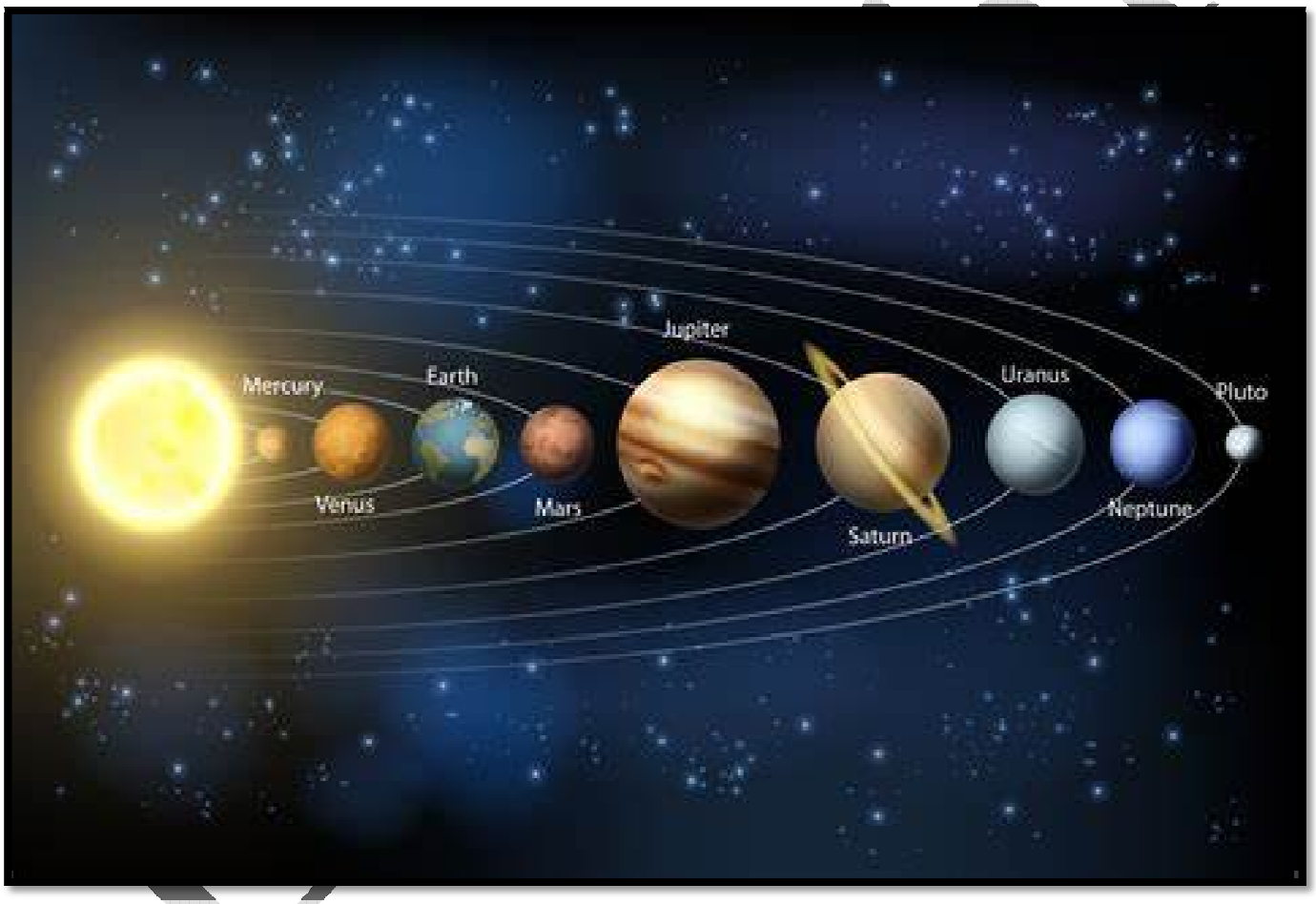


Eris

Eris is one of the largest known dwarf planets in our solar system. It's about the same size as Pluto, but it is three times farther from the Sun. One orbit takes about 557 years.

LEARNING OUTCOME

1. What do you understand by planets?
2. What are Dwarf planets?
3. Discuss characteristics of each planet in the solar system.



Source : www.universetoday.com , https://solarsystem.nasa.gov

Information collected from : https://solarsystem.nasa.gov