An Overview on Dwarf planets

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Abstract - The Milky way galaxy has many celestial bodies like stars, planets, satellites, asteroids. Earlier there were 9 planets in the solar system. Mercury, Venus, Earth , Mars, Jupiter , Saturn , Uranus, Neptune& Pluto. However, currently, there are 8 planets in the solar system. Have you ever wondered why Pluto is not considered a planet? This research paper aims to explain the same and highlight the latest findings from the field of Astronomy!

Dwarf planets

Dwarf planets are a celestial body resembling a small planet but lacking certain technical criteria that are required for it to be classified as a planet. Some examples of dwarf planets in our solar system are - Pluto , Ceres, Make, Haumea and Eris.

WHAT MAKES THESE PLANETS DWARF

In August 2006, the definition of planets was changed by the International Astronomical Union, for being eligible to be a planet an object had to be in an orbit around the Sun, have sufficient mass for itself-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, has cleared the neighborhood around its orbit. Any celestial body that doesn't follow these criteria not consideredto be planets. Let's look at some of these dwarf planets in our solar system in a bit more detail.

PLUTO

Figure 1

- Pluto is considered a dwarf planet as it cannot clear its neighborhood around its orbit and keeps dashing with whatever comes in its way.
- Pluto often does not travel in its orbit and goes to its neighboring orbits.
- Pluto also has 4 moons- Charon, Nix , Hydra ,Kerberos , Styx
- It was discovered on 18 February 1930 by Clyde Tombaugh

CERES

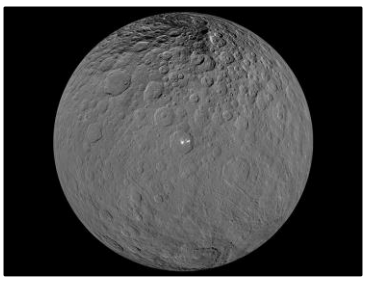

Figure 2

- Ceres is not a planet because it does not dominate its orbit, sharing it as it does with the thousands of other asteroids in the asteroid belt and constituting only about 25% of the belt's total mass.
- Ceres is considered as an asteroid
- It has no moons
- It was discovered on 1 january 1801 by Giuseppe Piazzi

Make make –

- Since Makemake has a diameter of more than 1,400 km , it was large enough for gravity to have made its shape round, and thus in 2008 it was designated as a dwarf planet
- It is located on the Kuiper belt
- It is the second most brightest object seen from the earth in the Kuiper belt

- Th was discover on 31 march 2005 by Michael E. Brown, Chad Trujillo, David L.Rabinowitz

Haumea-

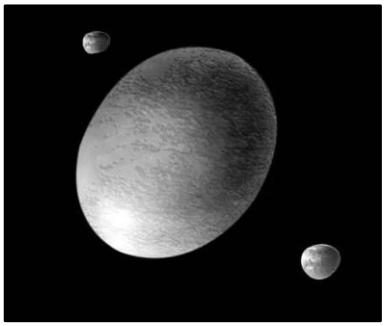

Figure 3

- It is not a planet as, The fast spin distorts Haumea's shape, making it looklike a rugby ball
- It is also located in the kuiper belt
- It has 2 moons Hi‘iaka and Namaka where Hi‘iaka is bigger
- It was discovered on 28 december 2004 by Michael E. Brown, David L. Rabinowitz, José Luis Ortiz Moreno

Eris

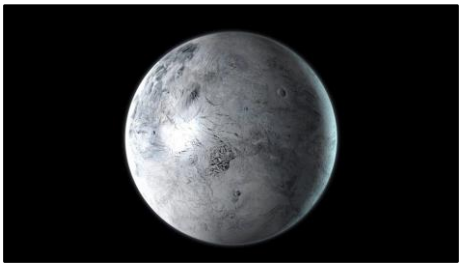

Figure 5

- Eris does not clear out its orbit, so it did not meet one of the requirements ofbeing a planet. Therefore it is similar to Pluto
- It has a moon named Dysnomia
- It is also located in the kuiper belt
- It was discovered on 5 january 2005 by Michael E. Brown, Chad Trujillo, David L. Rabinowitz

Makemake, along with Eris and Haumea, were responsible for Pluto's drop in status from planet to dwarf planet. Though Makemake and Haumea are just smaller than Pluto, Eris is more massive; the dwarf planet Ceres, found in theasteroid belt, is the smallest of the bunch. Haumea and Pluto have satellites, but the rest don't.

CONCLUSION-

Dwarf planets are few in number and often exhibit peculiarities that make them apparent outliers in their neighborhood in the

solar system. Studying them and understanding their unusual properties have led to leaps in understanding of our solar system and its history.

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