Cassini Spacecraft

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Cassini Spacecraft Latest News

A fresh look at data collected by NASA's Cassini spacecraft has uncovered more evidence that Saturn's moon Enceladus may be able to support life.

About Cassini Spacecraft

- It is a joint project of **NASA, the European Space Agency** and the **Italian space agency** (ASI).
- Cassini was a **sophisticated robotic spacecraft** sent to **study Saturn** and its complex system of **rings and moons** in unprecedented detail.
- It was **launched on October 15, 1997.** It was one of the largest interplanetary spacecraft.
- The mission consisted of **NASA's Cassini orbiter,** which was the first space probe to orbit Saturn, and the **ESA's Huygens probe**, which landed on Titan, Saturn's largest moon

Objectives of Cassini Spacecraft

- **Saturn**—Study cloud properties and atmospheric composition, winds and temperatures, internal structure and rotation, ionosphere, origin, and evolution
- **Rings**—Observe their structure and composition, dynamical processes, interrelation of rings and satellites, dust and micrometeoroid environment.
- **Titan**—Study abundances of atmospheric constituents, distribution of trace gases and aerosols, winds and temperatures, composition and state of the surface, and upper atmosphere
- **Saturn's Magnetosphere**—Study its structure and electric currents; composition, sources, and sinks of particles within it; dynamics; interaction with the solar wind, satellites, and rings; Titan's interaction with solar wind and magnetosphere

Components of Cassini Spacecraft

- The instruments on board Cassini included **radar to map the cloud-covered surface of Titan** and a magnetometer to study Saturn's magnetic field.
- The disk-shaped Huygens probe was mounted on the side of Cassini and carried **six instruments** designed to study the **atmosphere and surface of Titan.**

Key Facts about Enceladus

- It is named after a giant in **ancient Greek mythology,**
- It is one of the **innermost moons** of the ringed gas giant Saturn.
- It has a diameter of 313 miles (504 km) and orbits Saturn at a distance of roughly 148,000 miles (238,000 km).
- Scientists believe Enceladus possesses the chemical ingredients needed for life and has hydrothermal vents releasing hot, mineral-rich water into its ocean, the same type of environment that may have spawned Earth's first living organisms.
- Its ocean resides under a crust of ice about 12-19 miles (20-30 km) thick.

Source: DD News
