

Example case-study: Performed Missions: Orbital (Manned and Robotic) Admission is called orbital when a spacecraft orbits any celestial body, for example a planet, moon, asteroid, or star. The International Space Station is such a mission orbiting Earth. This is a very valuable type of mission. While a spacecraft is orbiting a celestial body, it can collect a large amount of useful data such as: surface observation, atmospheric and surface compositions, and other important dimensions and measurements such as a celestial body's diameter and mass.

Voyager Mission: Solar Wind Exploration

(Outer Solar System, 1977–Present)

Mission Statement:

The Voyager mission aims to extend NASA's exploration of the solar system beyond the outer planets and into the far reaches of the Sun's sphere of influence, and potentially beyond.

Goals:

1. **Explore Jupiter and Saturn:** The mission's primary focus was on exploring Jupiter and Saturn, but was later extended to include further exploration of Uranus and Neptune. Voyager remains the only spacecraft to have visited these distant outer planets.
2. **Voyager Interstellar Mission (VIM):** This extended mission will explore the outermost edge of the Sun's domain, seeking to understand the boundary where the solar wind gives way to the interstellar medium.
3. **Characterize the Outer Solar System Environment:** Continue to study and gather data on the conditions and dynamics of the outer solar system, including the properties of distant planetary bodies.
4. **Search for the Heliopause Boundary:** Investigate the boundary known as the heliopause, which marks the outer limits of the Sun's magnetic influence and the solar wind.
5. **Penetrate the Heliopause:** The mission will push further to study the interaction between the solar wind and the interstellar medium, measuring interstellar fields, particles, and waves that are unaffected by the solar wind.

The Voyager mission represents a groundbreaking effort to understand the farthest reaches of our solar system and the space beyond, making significant contributions to space science and our knowledge of the solar wind.

Requisites:

1. Determine the three-dimensional structure and dynamic behavior of the rings of Saturn
2. Determine the composition of the satellite surfaces and the geological history of each object
3. Determine the nature and origin of the dark material on Iapetus's leading hemisphere
4. Measure the three-dimensional structure and dynamic behavior of the magnetosphere

5. Study the dynamic behavior of Saturn's atmosphere at cloud level

Voyager mission (Outer Solar System, 1977–current) Mission statement Extend the NASA exploration of the solar system beyond the neighborhood of the outer planets to the outer limits of the Sun's sphere of influence, and possibly beyond Goals Primary mission was the exploration of Jupiter and Saturn and was extended to include

1. Explore Uranus and Neptune. Voyager is the only spacecraft to have visited those outer planets
2. The Voyager Interstellar Mission (VIM) will explore the outermost edge of the Sun's domain
3. Continue to characterize the outer solar system environment
4. Search for the heliopause boundary, the outer limits of the Sun's magnetic field and outward flow of the solar wind
5. Penetration of the heliopause boundary between the solar wind and the interstellar medium to measure the interstellar fields, particles and waves unaffected by the solar wind.