



Dawn

Journey to the Dawn of Our Solar System



Exploring new worlds, Dawn journeys back in time over 4.5 billion years to the beginning of our solar system in an effort to understand planetary formation, a primary goal of the National Aeronautics and Space Administration (NASA).

By investigating the physical and geological properties of Ceres and Vesta, the two most massive bodies in the main asteroid belt (between Mars and Jupiter), we will learn about the nature of the early solar system and the processes occurring as the solar system formed and evolved.

Measurement Objectives

Following launch in 2007, Dawn will carry a suite of sophisticated instruments to image the surface, measure reflected and emitted radiation, and measure the gravity field of each of these large asteroids.

With these measurements scientists will determine:

- Detailed shape, size, and mass of Vesta and Ceres
- Composition of the surfaces and subsurfaces
- Structure of the interiors
- Role of water in the asteroids evolution

With this information we seek to:

- Understand the role of water in the early stages of planet formation
- Investigate the geological origins of meteorites we believe came from Vesta
- Provide the geological, chemical and physical nature of two protoplanets of the type we believe led to the formation of the present terrestrial planets

Dawn's Contributions to Space Exploration:

- The Dawn spacecraft is the first to orbit and study two targets after leaving Earth.
- Without its advanced ion propulsion system, Dawn would not be able to orbit even one of these two mysterious and important asteroids. Ion propulsion enables Dawn to be an affordable, scientifically exciting mission.

For more information, visit the Dawn home page at <http://dawn.jpl.nasa.gov>