NASA is hoping for a wealth of data, the agency said Friday, from its Dawn space probe, which arrived at the dwarf planet Ceres last week and will spend 16 months exploring it. Dawn's discoveries could help the researchers understand the evolution of the solar system and the planet formation process.

The Dawn spacecraft was launched in 2007 and has been flying in the asteroid belt since. After arriving at Ceres, it will start to study the dwarf planet in detail, including its geology and composition.

The Dawn mission is a joint effort between NASA and the European Space Agency (ESA). The spacecraft was designed to study two of the most interesting objects in the asteroid belt: Vesta and Ceres.

Ceres, which is about 940 kilometers in diameter, is one of the largest objects in the asteroid belt. It is classified as a dwarf planet and is thought to be made of a rocky core surrounded by an icy mantle.

Dawn's instruments will study Ceres' surface, looking for signs of geologic activity and exploring the planet's interior. The spacecraft will also study the orbits of asteroids that are influenced by Ceres' gravity, which could provide insights into the planet's mass and density.

The Dawn mission has been extended to include studies of another asteroid, Vesta, which is about 525 kilometers in diameter. The spacecraft will spend a year studying Vesta, which is thought to be a primitive body that formed early in the solar system.

Dawn's mission is expected to conclude in 2016, after which it will become an asteroid orbiter, studying the asteroid belt and other objects in the outer solar system.

The Dawn mission has already yielded important results, including discoveries about the composition and structure of Vesta and Ceres. The spacecraft has also provided new information about the formation and evolution of the asteroid belt and the solar system as a whole.