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BEPICOLOMBO, Mission Overview

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BepiColombo is an interdisciplinary mission to explore the planet Mercury through a partnership between ESA and Japan's Aerospace Exploration Agency (JAXA). From their dedicated orbits two spacecraft, the Mercury Planetary Orbiter (MPO) and the Mercury Magnetospheric Orbiter (MMO), will be studying the planet and its environment. Both orbiters will be launched together on a single Soyuz-Fregat. The launch is foreseen for April 2012 with arrival in spring 2017. Solar electric propulsion will be used for the journey to Mercury. The MMO provided by JAXA focuses on investigating the wave and particle environment of the planet from an eccentric orbit. The MPO, a three-axis-stabilized and nadir-pointing spacecraft in a low-eccentricity polar orbit, is dedicated to the characterization of Mercury. It will provide high accuracy measurements of the planet's interior structure, a thoroughly investigation of Mercury's exosphere, and a full coverage of the planet surface at high resolution, whereby surface morphology will be correlated to surface composition. Major effort was put into optimizing the scientific return by defining the payload complement such that individual measurements can be interrelated and complement each other. The MPO payload comprises 11 instruments/instrument packages; the MMO payload consists of 5 instruments/instrument packages. An overview of the mission will be given.