

**MPO - THE BEPICOLOMBO MERCURY PLANETARY ORBITER.** J. Benkhoff<sup>1</sup>, <sup>1</sup>ESA Research and Scientific Support Department, ESTEC, Postbox 299, 2200AG Noordwijk zh, The Netherlands, Johannes.Benkhoff@esa.int

**Introduction:** 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 spacecrafts, 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 August 2013 with arrival in August 2019. Solar electric propulsion will be used for the journey to Mercury. In November 2004, the Bepi-Colombo scientific payload has been officially approved.

detailed information necessary to understand Mercury and its magnetospheric environment and to find clues to the origin and evolution of a planet close to its parent star. The MPO will focus on a global characterization of Mercury through the investigation of its interior, surface, exosphere and magnetosphere. In addition, it will be testing Einstein's theory of general relativity. 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. A detailed overview of the status of BepiColombo will be given with special emphasis on the MPO and its payload complement.

Mercury Planetary Orbiter (MPO)		Payload
<b>PI:</b> Tilman Spohn, Germany and Nicolas Thomas, Switzerland	BepiColombo Laser Altimeter	<b>BELA</b>
<b>PI:</b> Valerio Iafolla, Italy	Italian Spring Accelerometer	<b>ISA</b>
<b>PI:</b> Karl-Heinz Glassmeier, Germany	Magnetic Field Investigation	<b>MERMAG</b>
<b>PI:</b> Elmar K. Jessberger, Germany	Mercury Radiometer and Thermal Imaging Spectrometer	<b>MERTIS</b>
<b>PI:</b> Dr. Igor Mitrofanov, Russia	Mercury Gamma-Ray and Neutron Spectrometer	<b>MGNS</b>
<b>PI:</b> Dr. George Fraser, UK	Mercury Imaging X-ray Spectrometer	<b>MIXS</b>
<b>PI:</b> Luciano Iess, Italy	Mercury Orbiter Radio Science Experiment	<b>MORE</b>
<b>PI:</b> Eric Chassefière, France	Probing of Hermean Exosphere by Ultraviolet Spectroscopy	<b>PHEBUS</b>
<b>PI:</b> Orsini, Stefano, Italy	Search for Exospheric Refilling and Emitted Natural Abundances	<b>SERENA:</b> Elena, MIPA, PICAM, Strofio
<b>PI:</b> Dr. Juhani Huovelin, Finland	Solar Intensity X-ray and particle Spectrometer	<b>SIXS</b>
<b>PI:</b> Enrico Flamini, Italy	Spectrometers and Imagers for MPO BepiColombo Integrated Observatory	<b>SIMBIO-SYS:</b> HIRC, STC, VIHI

**Payload of BepiColombo:** The MPO scientific payload comprises eleven instruments/instrument packages; the MMO scientific payload consists of five instruments/instrument packages. Together, the scientific payload of both spacecraft will provide the