



DLR

BepiColombo (MERTIS)

Mercury Radiometer and Thermal Infrared Imaging Spectrometer



Brief description

MERTIS is a spectrometer combined with a radiometer on board the ESA/JAXA BepiColombo mission, which was launched to Mercury in October 2018. MERTIS is characterised by its compact design and low power consumption.



Aims

This near- and mid-infrared spectrometer will investigate the mineralogical composition of Mercury's surface and identify rock-forming minerals. The integrated micro-radiometer allows comprehensive measurements of the temperature and thermal conductivity of Mercury. From the data, the scientists hope to learn more about the formation and evolution of the planet.

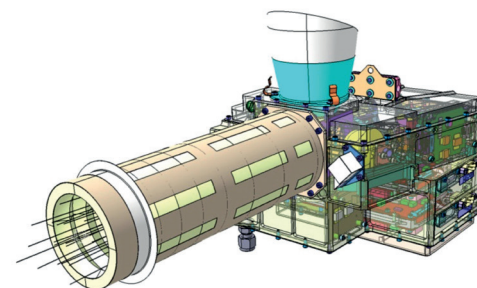


Applications

- Exploration and basic research
- Planetary geology and evolution
- Mineralogy and petrology
- Temperature map

Outlook

- Sensors under extreme environmental conditions
- Highly integrated and miniaturised sensor concepts
- Improved energy technology



Parties involved

DLR, University of Münster,
OHB System AG



Facts and figures

Mission launch: October 2018

Arrival at Mercury: 2025

Mass: 3 kg

Power: 19 watts

Spectral range: 7–14 micrometres (Spectrometer)/7–40 micrometres (Radiometer)

Dimensions: 18 x 18 x 13 cm (excl. baffles), 38 x 18 x 25 cm with baffles

Sensors: microbolometer, thermal imaging sensor, fully reflective optics



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