

SIMBIO-SYS

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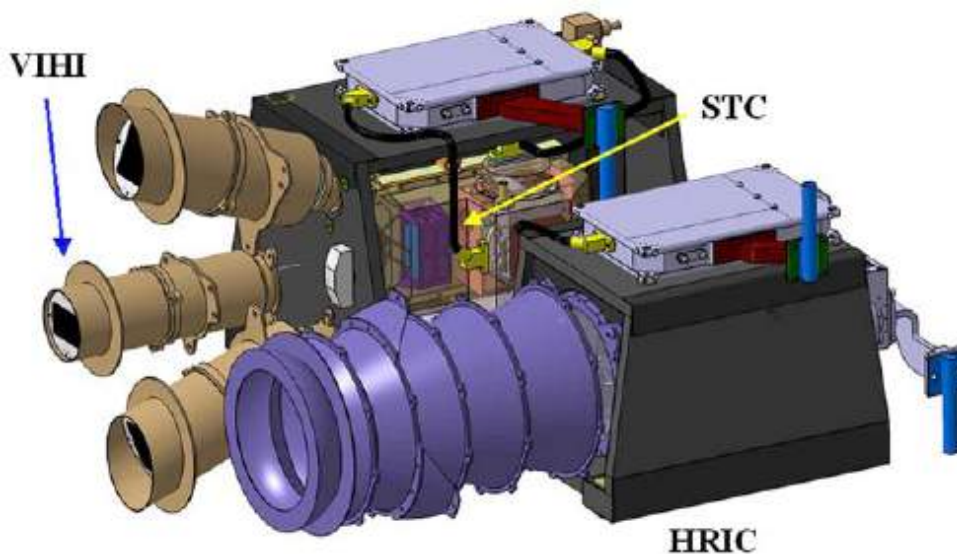
The Spectrometer and Imagers for MPO BepiColombo Integrated Observatory SYSTEM (SIMBIO-SYS) instrument suite is an integrated package for the imaging and spectroscopic investigation of the surface of Mercury.

Scientific objectives

The science goals of SIMBIO-SYS are:

- surface geology (stratigraphy, geomorphology),
- volcanism (lava plain emplacement, volcanoes identification),
- global tectonics (structural geology, mechanical properties of lithosphere),
- surface age (crater population and morphometry, degradation processes),
- surface composition (maturity and crustal differentiation, weathering, rock-forming minerals abundance determination)
- geophysics (libration measurements, internal planet dynamics) .

SIMBIO-SYS incorporates capabilities to perform 50-200 m spatial resolution global mapping in both stereo mode and color imaging, high spatial resolution imaging (5 m/px scale factor at periherm) in panchromatic and three broad-band filters, and imaging spectroscopy in the spectral range 400-2200 nm.

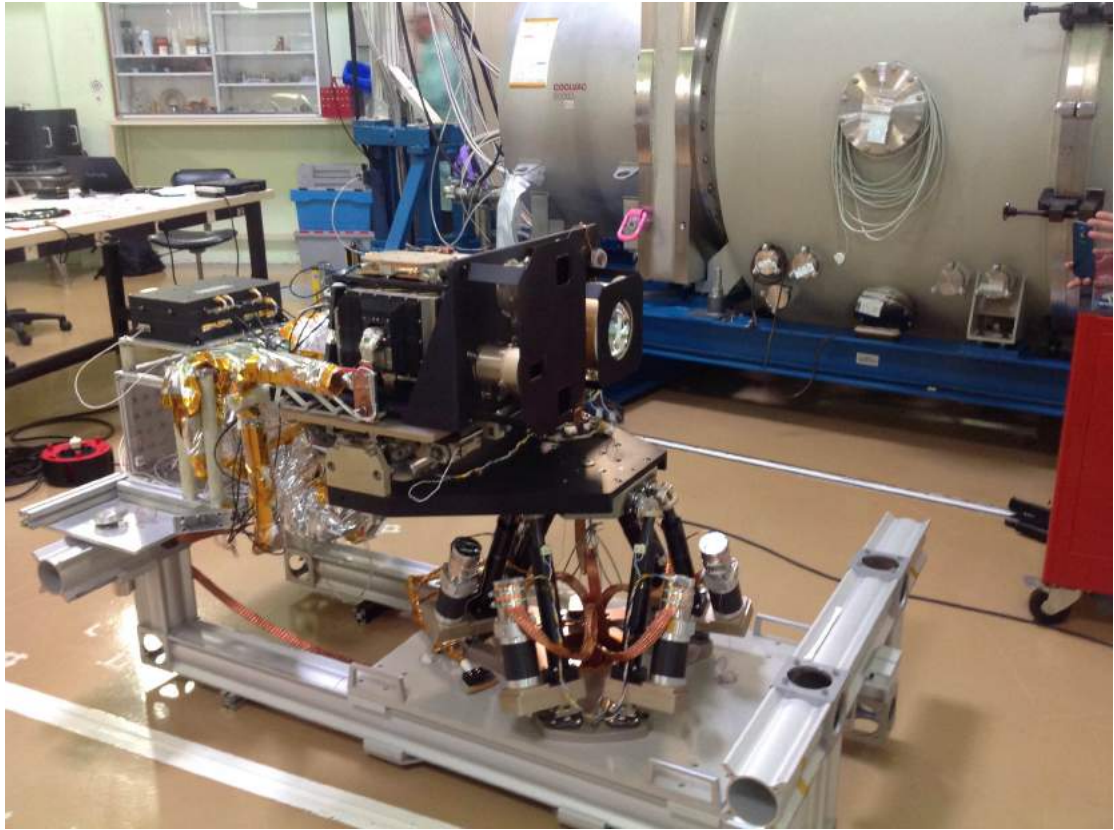


Flight Model

SIMBIO-SYS has been delivered to ESA on April 2015, the final mass is about 13 kg. The calibrations have been performed at channel level in the Leonardo s.p.a. laboratories nearby Florence in Italy and at system level in the Orsay facility, few km far from Paris in the Institute de Astrophysique Spatiale. Most of the devices used for the calibration in Orsay have been manufactured for SIMBIO-SYS.



Overview of the facility in Orsay.

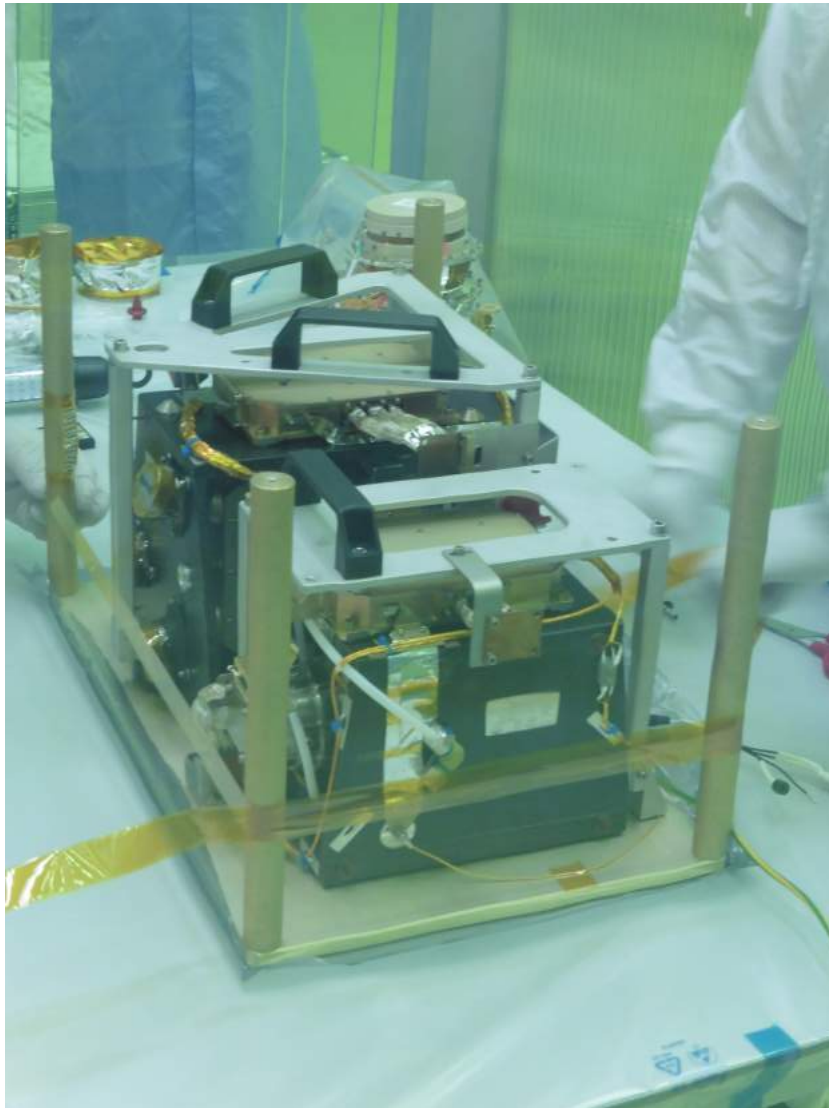


SIMBIO-SYS mounted on the exapode.

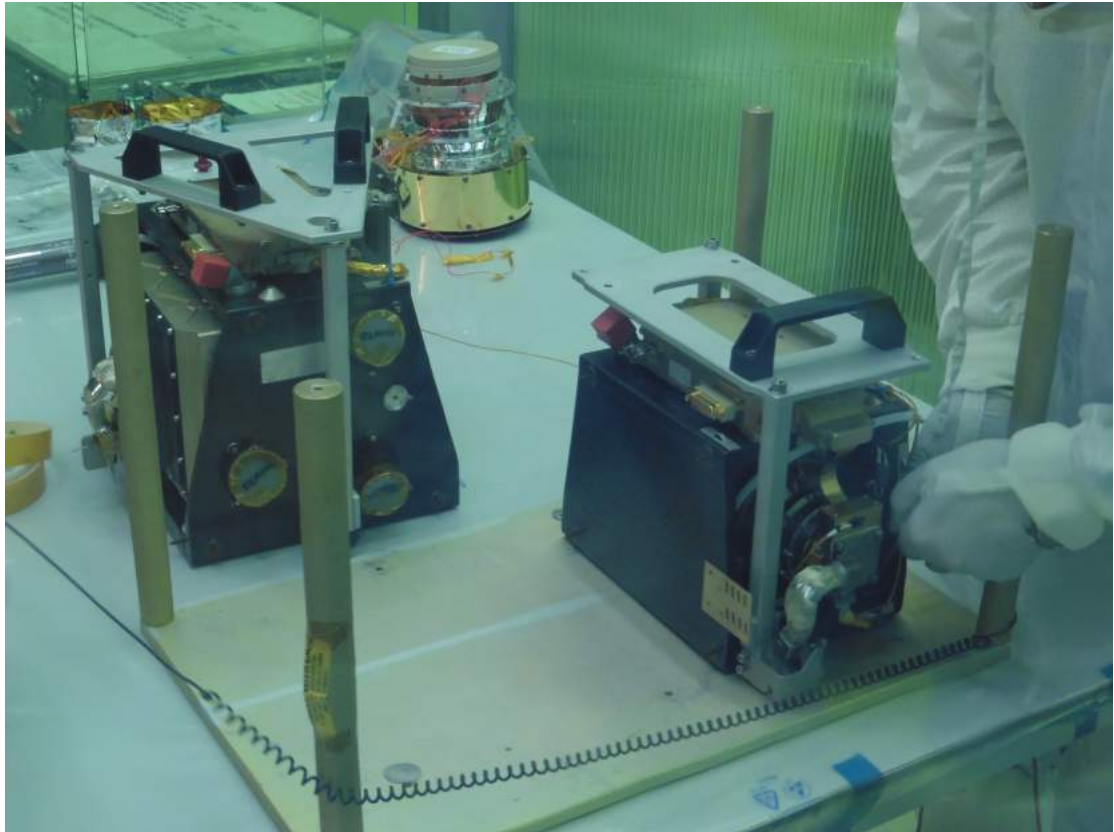


SIMBIO-SYS within the tank and ready for the measurements.

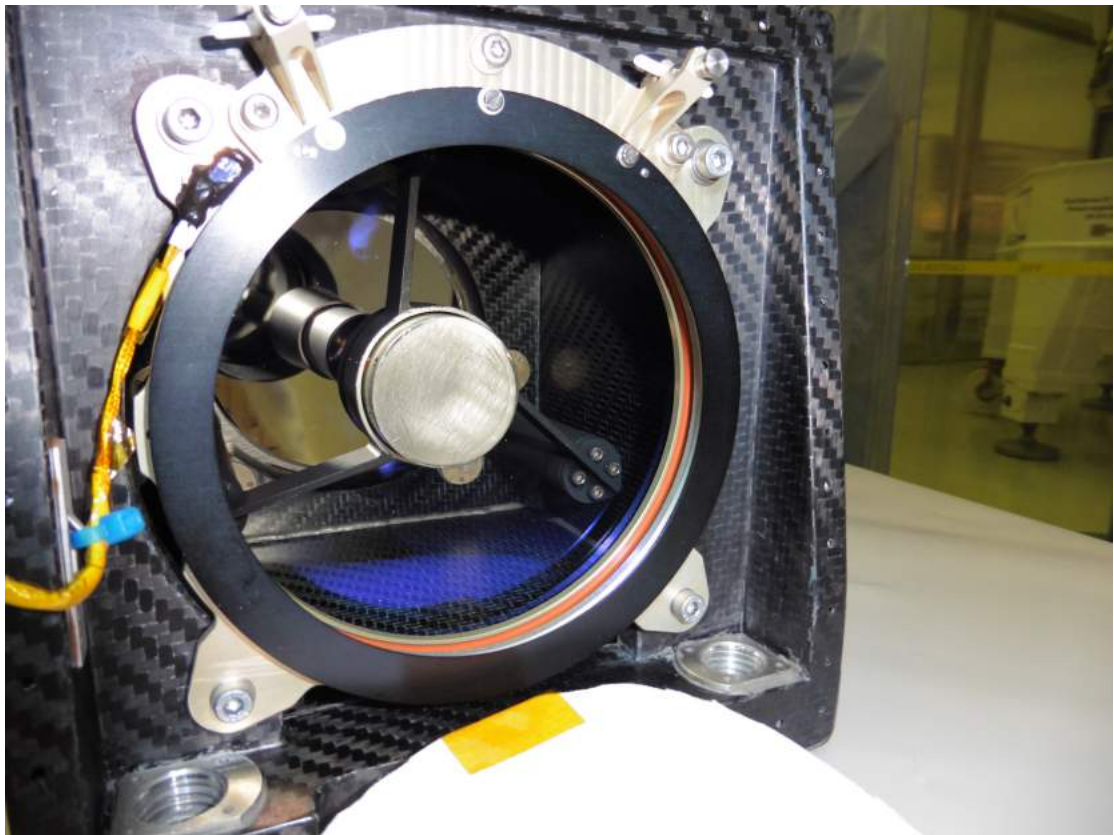
SIMBIO-SYS after the calibrations at system level from Orsay has been shipped to Estec, the ESA site in The Netherlands where is located the satellite for the several tests.



SIMBIO-SYS during the acceptance in Estec, ESA.



SIMBIO-SYS during the acceptance in Estec, ESA.



Aperture of HRIC, before integration.

The tests at the payload started in December 2015 and will end on April 2017, few days before shipping the satellite to Kourou for the launch that will be on October 2017. Up to now everything worked well for SIMBIO-SYS.