

“Rosetta and Philae, mission to comet Churyumov-Gerasimenko”

Stephan ULAMEC

DLR, German Aerospace Center, Cologne, Germany

Rosetta is a Cornerstone Mission of the ESA Horizon 2000 programme. In August 2014 it reached comet 67P/Churyumov-Gerasimenko after a 10 year cruise. Both its nucleus and coma have been studied with its orbiter payload of eleven PI instruments. This also allowed the selection of a landing site for Philae, which successfully landed on the comet nucleus in November 2014.

Rosetta woke up, after hibernation in January 2014 and then approached the target comet. August 6th it was injected into a quasi-orbit. Investigations from the main spacecraft included remote observations with OSIRIS, the science camera, but also in the IR and UV, in-situ measurements of the gas and dust environment in the coma and investigation of the plasma environment.

Philae was ejected from the Rosetta main spacecraft November 12th, 2014 and touched the comet surface after seven hours of descent. After several bounces it came to rest and continued to send scientific data to Earth. All ten instruments of its payload have been operated at least once. Due to the fact that the Lander could not be anchored, the originally planned first scientific sequence had to be modified. Philae went into hibernation on November 15th, after its primary battery ran out of energy. Re-activation of the Lander is expected in spring/summer 2015 (before the conference) when CG is closer to the sun and the solar generator of Philae will provide more power.

The presentation will give an overview of the Rosetta and Philae spacecraft, their journey and the first scientific results.

Rosetta is an ESA mission with contributions from its member states and NASA. Rosetta's Philae lander is provided by a consortium led by DLR, MPS, CNES and ASI with additional contributions from Hungary, UK, Finland, Ireland and Austria.