

FIRST RESULTS BY ESA'S ROSETTA MISSION ON COMET 67P/CHURYUMOV-GERASIMENKO

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Introduction: Rosetta mission arrived on August 6, 2014, at the comet 67P/Churyumov-Gerasimenko after 10 years of interplanetary journey. The instruments on board the orbiter started to give a huge quantity of data. An overview of the obtained results will be presented, in particular those obtained by OSIRIS and VIRTIS. The full nucleus has been mapped by the OSIRIS (Optical, Spectroscopic, and Infrared Remote Imaging System) imaging system [1], which comprises a Narrow Angle Camera (NAC) for nucleus surface and dust studies and a Wide Angle Camera (WAC) for the wide field coma investigations. The VIRTIS (Visible InfraRed and Thermal Imaging Spectrometer) [2] instrument which includes two channels (M & H at different resolution) has acquired the entire nucleus' illuminated hemisphere in the 0.25-5 μm spectral range.

Results: We present the first science results achieved by Rosetta mission from the arrival at the comet. An overview of the obtained results on the nucleus, in particular shape, surface morphology, activity and the compositional and thermal properties will be given. The mapping includes imaging using the full spectral range of the Narrow Angle Camera of the OSIRIS imaging system at different filters (from 0.245 to 1 μm). During the pyramid approach phase, the color mapping of the nucleus is done at $\sim 1\text{m}/\text{pixel}$ with some areas up to 20 cm/pixel.

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References: [1] Keller, H.U. et al. 2007. *Space Science Reviews*, 128, 433 [2] Coradini, A. et al. 2007, *Space Science Reviews*, 128, 529-559.