



21 Lutetia: Overview of results from OSIRIS images

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Abstract

On July 10, 2010 the ESA's Rosetta spacecraft will fly by main belt asteroid 21 Lutetia. The asteroid will be observed by OSIRIS, the high resolution camera onboard Rosetta. OSIRIS [1] comprises a wide angle (WAC) and a narrow angle (NAC) camera, which cover the wavelength range 250 - 1000 nm.

Observations of 21 Lutetia will start about 80 hours before closest approach, when Lutetia will be at a distance of $1.04 \cdot 10^7$ km from Rosetta and at phase angle $\alpha \sim 34^\circ$. The closest approach (CA) sequence will start about 10 h before CA and end 15 min after CA. Rosetta will approach 21 Lutetia from $5.4 \cdot 10^4$ km to a minimum distance of about 3000 km, spanning a phase angle range from 10.7° to 156.3° , with zero phase angle 18 min before CA.

The high resolution OSIRIS images will constitute a unique dataset which will improve the characterization of 21 Lutetia. This includes a detailed shape model, surface mapping, search for large surface features (e.g. craters) and satellite search. Images of 21 Lutetia will be obtained through different filters, which will lead to a spectral characterization of different areas on the surface and help to constrain the mineralogy. Here we present the first OSIRIS images and a summary of the main scientific results from the Lutetia flyby.

References

- [1] Keller, H.U., et al.: OSIRIS The Scientific Camera System Onboard Rosetta, Space Science Reviews, 128, 433-506, 2007.