



First Results of Asteroid 21 Lutetia: Photometry and Variegation

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Abstract

In July 2010, the OSIRIS cameras onboard the Rosetta spacecraft will observe asteroid 21 Lutetia with high spatial resolution, over a wide range of phase angles, starting at 11° already before the body is resolved, passing near zero, and ending the observational sequence around 160° after closest approach. Special observational sequences of the narrow (NAC) and wide (WAC) angle cameras will cover the passage near phase angle zero to observe the opposition effect, diagnostic for regolith properties. Images around closest approach will reveal details smaller than a thousandth of Lutetia's diameter in the northern hemisphere ($\sim 60\text{m}/\text{pixel}$). Potential variegation on the surface will be documented by the use of a wide range of NAC and WAC filters covering the spectral range from 245 nm to 1000 nm. These spectral information together with ground based observations can be used to assess the mineralogy. The team is well prepared for the analysis using tools and programs developed for the Rosetta flyby of asteroid 2867 Steins