



Size distribution of icy grains in the coma of 103P/Hartley 2

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Abstract

The Deep Impact eXtended Investigation (DIXI) to comet 103P/Hartley 2 culminated in a closest approach of ~ 700 km on November 4th, 2010 [1]. Spatially resolved near-infrared spectra of the cometary coma have been acquired in the wavelength range 1.05-4.85 μm using the High Resolution Instrument Infrared Spectrometer (HRI-IR) [2, 3]. At closest approach, the relative reflectance spectra extracted in the coma present clear absorption bands near 1.5, 2.0, and 3.0 μm , characteristic of water ice [4]. The modeling analysis based on the Hapke radiative transfer model [5] suggests micron size pure icy grains, in areal mixture with refractory impurities. The spatial map of H_2O ice indicates that the icy grains are not uniformly distributed in the coma. The size distribution of the icy grains in the coma of Hartley 2, as determined by the HRI-IR data analysis, will be presented. We focus on the size variations vs. nucleocentric distance along the jets in order to shed light on the mechanisms that govern the ambient coma.

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References

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