

Mapping of albedo and mineralogical variation on asteroid Itokawa

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The Near-Infrared Spectrometer (NIRS) on board the Hayabusa spacecraft obtained more than 80,000 spectra on the almost all surface of asteroid 25143 Itokawa in September through November 2005. The solar phase angles were near 0 up to 38 degrees. The footprint sizes were 6 to 30 meters. Albedo variations on the Itokawa surface can be obtained from the spectra with corrections of the solar phase, incident, and emission angles. The mineralogy can be estimated from the ratios of absorption band strength.

Since the exact position of spacecraft and precise shape model including surface slopes are necessary for the exact calculations, the analyses are not completed. The preliminary analysis showed that there are some variations of albedo and physical properties on the surface of Itokawa. The latest results on these variations will be presented at the session. Some maps will be also presented.