Tuesday, March 16, 2004
ASTEROIDS, METEORS, AND COMETS
8:30 a.m. Salon C

Chairs: A. F. Cheng
A. S. Rivkin

8:30 a.m. Durda D. D. *
Ejecta Generation and Redistribution on 433 Eros: Modeling Ejecta Launch Conditions **[#1096]**
Modifications and improvements to a dynamical model being used to evaluate various impact models for specific craters on 433 Eros are described.

8:45 a.m. Cheng A. F. *
Macroscopic Voids in Small Asteroids: Effects of Cohesion **[#1350]**
Can low asteroid densities be explained by empty fractures? Even small cohesion, much less than for lunar fines, can prevent fines from draining into cracks on small asteroids. When the MUSES-C mission visits the small asteroid Itokawa, will it find a low density and empty fractures?

9:00 a.m. Richardson J. E. * Melosh H. J. Greenberg R.
The Seismic Effect of Impacts on Asteroid Surface Morphology: Early Modeling Results **[#1864]**
We present results from numerical models investigating the seismic effect of impacts on asteroid surfaces. Low surface gravity allows relatively small impacts to have global seismic effects, but makes significant regolith motion difficult to achieve.

9:15 a.m. Li J. * A'Hearn M. F. McFadden L. A.
Photometric Studies of Eros from NEAR Data **[#2080]**
We have done the photometric analysis of Eros at 550 nm. We found a geometric albedo of 0.25 and a Bond albedo of 0.097, slightly smaller than previous results, which makes Eros more similar to a typical S-type asteroid.

9:30 a.m. Noble S. K. * Pieters C. M. Keller L. P.
Quantitative Aspects of Space Weathering: Implications for Regolith Breccia Meteorites and Asteroids **[#1301]**
Studies of a space-weathering analog suggest that small degrees of weathering can account for differences between meteorite and asteroid spectra. Analysis of Kapoeta confirm that space weathering products are present, but rare in regolith breccias.

9:45 a.m. Rivkin A. S. * Howell E. S. Bus S. J.
Diversity of Types of Hydrated Minerals on C-Class Asteroids **[#1646]**
We have found that C-class asteroids have two different spectral shapes in the 3-micron region: one like CM meteorite spectra, the other unknown in the meteorite collection. We will discuss the distribution of these types and possible compositions.

10:00 a.m. BREAK

10:15 a.m. Gaffey M. J. * Kelley M. S.
Mineralogical Variations Among High Albedo E-Type Asteroids: Implications for Asteroid Igneous Processes **[#1812]**
Spectra indicate at least three distinct compositional subtypes within the E-asteroid class. Two subtypes could derive from the same parent bodies by different igneous processes. The third subtype is not genetically related to the other two subtypes.

10:30 a.m. Shepard M. K. * Clark-Joseph B. E. Benner L. A. M. Giorgini J. D. Kusnirak P. Margot J.-L. Nolan M. C. Ostro S. J. Pravec P. Sarounova L. Yeomans D. K.
Multi-Wavelength Observations of 2100 Ra-Shalom: Radar and Lightcurves **[#1533]**
We present rotationally-resolved radar and lightcurve observations of 2100 Ra-Shalom. These observations, in conjunction with near-simultaneous UVVIS, NIR, and thermal IR observations, will be used to constrain Ra-Shalom's size, shape, and surface properties.

10:45 a.m. Hiroi T. * Pieters C. M. Rutherford M. J. Zolensky M. E. Sasaki S. Ueda Y. Miyamoto M.
What are the P-type Asteroids Made Of? **[#1616]**
Visible-NIR reflectance spectra of P asteroids have been reproduced using spectra of the CI, CM, and Tagish Lake meteorites and their altered ones, suggesting the P asteroid surface regoliths may be made of such intermediate materials with thermal metamorphism and/or space weathering.

11:00 a.m. Trigo-Rodríguez J. M. * Llorca J.
Sodium Overabundance in Meteoroids from Meteor Spectroscopy **[#1023]**
The relative abundances of Na in meteoroids have been estimated by averaging the composition of the radiating gas along the fireball path. The results show greater sodium abundances than those expected for IDPs and chondritic meteorites, and big differences with the 1P/Halley's sodium abundance.

11:15 a.m. Marov M. Ya. * Ipatov S. I.
Migration Processes and Volatiles Inventory to the Inner Planets **[#1410]**
Delivery of water and volatiles by planetesimals from the zone of the giant planets to the terrestrial planets was investigated. The total mass of water delivered to the Earth is similar to the mass of the Earth's oceans.

11:30 a.m. Lederer S. M. * Domingue D. L. Vilas F. Abe M. Farnham T. L. Jarvis K. S. Lowry S. C. Ohba Y. Weissman P. R. French L. M. Fukai H. Hasegawa S. Ishiguro M. Larson S. M. Takagi Y.
Characterization of the Surface Properties of MUSES-C/Hayabusa Spacecraft Target Asteroid 25143 Itokawa (1998 SF36) **[#2058]**
Multiple photometric data sets have been combined to calculate the Hapke parameters of the surface material of the MUSES-C target near-Earth asteroid 25143 Itokawa, and examine the solar-corrected broadband color characteristics of the asteroid.

11:45 a.m. Fujiwara A. * Abe M. Kato M. Kushiro I. Mukai T. Okada T. Saito J. Sasaki S. Yano H. Yeomans D.
Sample Return Science by Hayabusa Near-Earth Asteroid Mission **[#1521]**
Outline of the sample return mission Hayabusa launched last year is presented.