

Monday, March 10, 2008
ASTEROIDS, COMETS, AND SMALL BODIES
8:30 a.m. Amphitheater

Chairs: **A. S. Rivkin**
 W. F. Bottke

- 8:30 a.m. Murchie S. L. * Choo T. Humm D. Rivkin A. S. Bibring J.-P. Langevin Y. Gondet B.
 Roush T. L. Duxbury T. CRISM Team
 MRO/CRISM Observations of Phobos and Deimos [#1434]
 CRISM observations confirm association of Phobos' "bluer unit" with Stickney. The redder unit and Deimos have a 0.65- μ m absorption like in low-grade carbonaceous chondrites. No features due to bound water, organics, or mafic minerals are seen.
- 8:45 a.m. Gietzen K. M. * Lacy C. H. S. Ostrowski D. R. Sears D. W. G.
 Analysis of Reflectance Spectra of Ordinary Chondrites: Implications for Asteroids [#1125]
 Analysis of 13 asteroid spectra indicated all but one contain abundant pyroxene in the clinorhombic form. The presence of clinopyroxenes on the asteroids suggests a strong relationship between the S asteroids and ordinary chondrites.
- 9:00 a.m. Ostrowski D. R. * Sears D. W. G. Gietzen K. M. Lacy C. H. S.
 Spectral Features in C and C-like Asteroids and the Possible Presence of Phyllosilicates [#1061]
 The composition of C and C-like asteroids can be determined from reflectivity spectra, which closely resemble that of CI and CM chondrites that are known to consist of phyllosilicates. The amount and distribution of water may explain the difference.
- 9:15 a.m. Schmidt B. E. * Thomas P. C. Bauer J. M. Li J.-Y. McFadden L. A. Mutchler M.
 Parker J. M. Rivkin A. S. Russell C. T. Stern S. A.
 Hubble Takes a Look at Pallas: Shape, Size and Surface [#2502]
 We present new information about Pallas' shape, size and surface from HST observation in 2007.
- 9:30 a.m. Donaldson Hanna K. L. * Sprague A. L.
 Mineralogy of Vesta and Howardite, Eucrite, and Diogenite (HED) Meteorites Determined by Spectral Deconvolution [#1410]
 We use an established spectral deconvolution algorithm with mid-infrared spectral libraries of mineral separates of varying grain sizes to determine minerals and their abundances of Vesta and HED meteorites.
- 9:45 a.m. Li J.-Y. * McFadden L. A. Thomas P. C. Mutchler M. Parker J. Wm. Young E. F.
 Russell C. T. Sykes M. V. Schmidt B. E.
 Photometric Mapping of Asteroid (4) Vesta from HST Observation [#2253]
 The high-resolution images of asteroid (4) Vesta were obtained from HST/WFPC2 through four filters to complement the previous HST/WFPC2 mapping. We will discuss our observations and initial mapping results.
- 10:00 a.m. Rivkin A. S. * Volquardsen E. L.
 Sitting Around Watching the World Ceres: A Rotational Study of the Innermost Dwarf Planet [#1920]
 Rotationally-resolved spectra of Ceres in the 3- μ m region show a relatively uniform surface, though hints of regional-level differences of a few percent are also present.
- 10:15 a.m. Schorghofer N. *
 The Lifetime of Ice on Main Belt Asteroids [#1351]
 The loss rate of ice from main belt asteroids and main belt comets is studied systematically. The concept of a "buried snow line" is introduced, where the loss of ice is sufficiently slow over the age of the solar system.

- 10:30 a.m. Barnouin-Jha O. S. * Cheng A. F. Gaskell R. W.
The Surface Roughness of Asteroid 25143 Itokawa and 433 Eros [#1297]
We analyze co-registered, high resolution laser altimeter and imager data from Itokawa, obtained by Hayabusa, to explore fractal properties and surface roughness distributions on Itokawa for comparison with the results from Eros.
- 10:45 a.m. Bottke W. F. * Levison H. F. Morbidelli A. Tsiganis K.
The Collisional Evolution of Objects Captured in the Outer Asteroid Belt During the Late Heavy Bombardment [#1447]
New dynamical models of the lunar late heavy bombardment suggest that numerous comets were implanted in the outer asteroid belt 3.9 G.y. ago. Using collisional models, we show this result is consistent with observations.
- 11:00 a.m. Scheeres D. J. * Mirrahimi S. Gaskell R. W.
YORP Sensitivity to Shape and Shadowing [#2348]
A new secular theory of the YORP effect on an asteroid's rotation state is given. The theory can be used to study the sensitivity of YORP to the fine-scale shape and global shape of an asteroid, to shadowing, and to thermal inertia.
- 11:15 a.m. Flynn G. J. * Leroux H. Tomeoka K. Tomioka N. Ohnishi I. Mikouchi T. Wirick S. Keller L. P. Jacobsen C. Sandford S. A.
Carbonate in Comets: A Comparison of Comets 1P/Halley, 9P/Tempel 1, and 81P/Wild 2 [#1979]
Submicron carbonate is found in Halley, Tempel 1, and Wild 2, the comets studied in sufficient detail to identify minor minerals, and in anhydrous IDPs. This may indicate carbonate forms by processes other than aqueous alteration in the solar system.
- 11:30 a.m. Belton M. J. S. *
The Source Region of the 2005 June 14 and Other Mini-Outbursts on Comet 9P/Tempel 1. The Case for Active Cryo-Volcanism [#1086]
We locate the source region of an outburst on comet Tempel 1. We deduce the tilt of the DI impact ejecta curtain. We use nine other outbursts to locate three active regions on the surface. The outbursts are not triggered by the Sun. A cryovolcanic mechanism is advocated.