

Wednesday, March 14, 2007

ASTEROIDS AND DEEP IMPACT: STRUCTURE, DYNAMICS, AND EXPERIMENTS
1:30 p.m. Amphitheater

Chairs: K. A. Holsapple
B. E. Schmidt

- 1:30 p.m. Dombard A. J. * Barnouin-Jha O. S. Thomas P. C. Prockter L. M. Cheng A. F.
Can Boulders Supply Material for Ponds on the Asteroid 433 Eros? [#2221]
 We propose that boulders, thermally eroding in place, may provide material for ponds on Eros. Ponds appear preferentially located on locally low slopes and at higher elevations, suggesting regolith thickness plays a role in pond formation.
- 1:45 p.m. Gaskell R. W. * Barnouin-Jha O. S. Scheeres D. J.
Modeling Eros with Stereophotoclinometry [#1333]
 9000 digital topo/albedo maps covering Eros were constructed from NEAR images. They are combined to make high-resolution global and local topography with application to global dynamics and surface studies. NLR ranges are now added to the data set.
- 2:00 p.m. Schmidt B. E. * Bauer J. Buratti B. J. Russell C. T.
Rotational Light Curve and Rotation Period of 5535 Annefrank [#1859]
 Observations were taken of 5535 Annefrank over two oppositions between May 31, 2005, and Dec. 9, 2006. From light curves and PDM analysis, we find that rotation periods of 0.5, 0.63 or 0.95 days may exist, with the best fit at 0.63 days.
- 2:15 p.m. Taylor P. A. * Margot J.-L. Vokrouhlicky D. Scheeres D. J. Pravec P. Lowry S. C. Fitzsimmons A. Nolan M. C. Ostro S. J. Benner L. A. M. Giorgini J. D. Magri C.
The Increasing Spin Rate of Asteroid (54509) 2000 PH5: A Result of the YORP Effect [#2229]
 Optical observations reveal a continuous increase in the spin rate of near-Earth asteroid 2000 PH5 [1]. We show that this increase is attributable to the YORP effect, a radiation torque due to the absorption and asymmetric re-emission of sunlight.
- 2:30 p.m. Lowry S. C. * Fitzsimmons A. Pravec P. Vokrouhlicky D. Boehhardt H. Taylor P. Margot J.-L. Galad A. Irwin M. Irwin J. Kushnirak P.
Direct Detection of the Asteroidal YORP Effect [#2438]
 The YORP effect is a torque due to both incident solar radiation pressure and the recoil effect from the anisotropic emission of thermal photons on small bodies in the solar system. Evidence for the effect has so far been indirect. Here we report the first direct detection of the effect.
- 2:45 p.m. Scheeres D. J. * Gaskell R. W. Abe M. Nakamura R. Yoshikawa M. Abell P. A.
Itokawa, YORP and Seismic Shaking [#1599]
 As a consequence of the YORP effect, Itokawa should have experienced a period of seismic shaking on the order of a few hundred thousand years ago, and perhaps many times prior to that.
- 3:00 p.m. Demura H. * Gaskell R. Hirata N. Miyamoto H. Sasaki S. Scheeres D. Saito J. Geomorphology Group of Hayabusa
Global Shape and General Geology of Itokawa [#2309]
 Global shape and general geology of (25143) Itokawa.
- 3:15 p.m. Holsapple K. A. * Michel P.
Tidal Disruptions II: Solid Bodies with All Kinds of Strength [#2127]
 The limit approach and orbiting distances for tidal disruptions for solid satellites with a general strength model are determined and presented.

- 3:30 p.m. Sugita S. * Kadono T. Sako S. Ootsubo T. Honda M. Kawakita H.
Furusho R. Watanabe J.
Mid-IR Observations of Deep Impact Reveal the Primordial Origin of a Surface of Comet 9P/Tempel 1 [#1911]
Detailed analysis of high-resolution Subaru telescope mid-IR imaging observation data of the Deep Impact collision with comet 9/P Tempel 1 reveals that the surface dust mantle of the comet may have been made before its first perihelion passage.
- 3:45 p.m. Schultz P. H. * Eberhardy C. A. Ernst C. M.
Initial Stages of the Deep Impact Collision [#1890]
Laboratory experiments investigate the early-stage evolution of impact-generated vapor in order to interpret the Deep Impact (DI) oblique impact. High-speed spectroscopy and thermal imaging reveal details unresolved by DI and contribute to understanding Earth-based observations.
- 4:00 p.m. Flynn G. J. * Durda D. D. Kreft J. W. Sitnitsky I. Strait M.
Catastrophic Disruption Experiments on the Murchison Hydrous Meteorite [#1744]
We disrupted an ~30 g whole stone of the Murchison hydrous carbonaceous chondrite at the AVGR, and we compare the results to prior disruption experiments on anhydrous meteorites.
- 4:15 p.m. Housen K. R. *
The Effect of Collisions on the Strength of Rocky Asteroids [#1462]
Experiments are conducted to determine the degradation of target strength due to impact.
- 4:30 p.m. Cheng A. F. * Barnouin-Jha O. Hirata N. Miyamoto H. Nakamura R.
Yano H. Hayabusa Team
First Looks at Collisional Disruption and Reaccumulation [#2315]
Itokawa, unlike Eros, is a rubble pile formed by reaccumulation of fragments after a catastrophic disruption event. Hayabusa has enabled a first detailed examination of the surface geology of an object formed in this way.