

Tuesday, March 13, 2007
ASTEROID OBSERVATIONS: SPECTRA, MOSTLY
1:30 p.m. Amphitheater

Chairs: L. J. Chizmadia
A. S. Rivkin

- 1:30 p.m. Gietzen K. M. * Lacy C. H. S.
Visible and Near Infrared Spectra of Main Belt and Near Earth Asteroids [#1104]
 Asteroids provide unique insights into the origin and early history of the solar system. We present a progress report of our reflectance spectra studies of twenty-five main belt and near-Earth asteroids in the visible and near infrared.
- 1:45 p.m. Binzel R. P. * Masi G. Foglia S. Vernazza P. Burbine T. H. Thomas C. A. DeMeo F. E. Nesvorny D. Birlan M. Fulchignoni M.
Searching for V-type and Q-type Main-Belt Asteroids Based on SDSS Colors [#1851]
 Using colors for 43,000 asteroids measured by the Sloan Digital Sky Survey, we identify main-belt candidates for V- and Q-class asteroids. We report results of follow-up spectroscopy to confirm/refute V- and Q-type main-belt asteroid candidates.
- 2:00 p.m. Mayne R. G. * Sunshine J. M. Bus S. J. McCoy T. J. McSween H. Y. Gale A. Corrigan C. M.
Mineralogic Variability Among Vestoids [#1157]
 This study uses previously collected petrologic and spectral data on the unbrectiated eucrites and compares it with spectral analysis of the Vestoids.
- 2:15 p.m. Rivkin A. S. *
A Simple Look at C-Complex Asteroids in the Sloan Digital Sky Survey [#2095]
 Using a simple criterion for classification and a sample of nearly 3600 main-belt objects, it is inferred that the fraction of hydrated C-class asteroids is broadly constant regardless of size range or solar distance.
- 2:30 p.m. Corrigan C. M. * McCoy T. J. Sunshine J. M. Bus S. J. Gale A.
Does Spectroscopy Provide Evidence for Widespread Partial Melting of Asteroids? I. Mafic Mineral Abundances [#1463]
 We introduce a new effort to expand the database of polyminerallic laboratory spectra and discuss the implications of applying established techniques to these spectra.
- 2:45 p.m. Klima R. L. * Pieters C. M. Dyar M. D.
Vis-NIR Spectroscopy of Synthetic Pyroxenes: Calcium Bearing Pyroxenes and Application to the HED Meteorites [#1733]
 We present spectral analyses of a comprehensive set of synthetic Ca-Fe-Mg pyroxenes addressing fundamental constraints of composition and crystal structure on absorption. The relationships established in the pure system are applied to HED meteorites.
- 3:00 p.m. Gaffey M. J. *
One Pyroxene? Two Pyroxenes? Three Pyroxenes? Pyroxene Compositions from Asteroid Spectra [#1618]
 The equations to derive pyroxene compositions from absorption band positions in asteroid spectra (Gaffey et al., 2002) fail when applied to ordinary chondrite spectra. A method and a set of correction factors are defined to remedy this shortcoming.

- 3:15 p.m. Sunshine J. M. * Connolly H. C. Jr. McCoy T. J. Bus S. J. La Croix L.
Identification of Refractory-rich Asteroids: Evidence for the Earliest Accreted Bodies in the Solar System [#1613]
New telescopic data show that spinel-rich asteroids are not rare. Comparisons to spectra of petrographically controlled CAIs, the oldest materials in the solar system, demonstrate the role of FeO and alteration in linking these populations.
- 3:30 p.m. Hardersen P. S. * Gaffey M. J. Kumar S. Fieber-Beyer S. K. Crowell J. J. Crowell A. M.
Near-IR Reflectance Spectra of M-Asteroids 250 Bettina, 369 Aeria, 413 Edburga, and 931 Whitemora [#1956]
Near-IR spectra of M-Asteroids 250 Bettina, 369 Aeria, 413 Edburga, and 931 Whitemora display spectral properties consistent with the interpretations in Hardersen et al. (2005), as well as suggesting potentially new interpretations (369 Aeria).
- 3:45 p.m. Reddy V. * Gaffey M. J. Abell P. A. Hardersen P. S.
Mineralogical Investigation and Thermal Modeling of Near-Earth Asteroids (11405) 1999 CV₃, 2000 BD₁₉, 2003 SA₂₂₄, and 2005 YY₉₃ [#1238]
Constraining composition, albedo and diameter of NEAs has important implications for impact hazard assessment. We present results from our effort to physically characterize four NEAs (1999 CV₃, 2000 BD₁₉, 2003 SA₂₂₄, and 2005 YY₉₃) using the NASA IRTF.
- 4:00 p.m. Fieber-Beyer S. K. * Gaffey M. J. Abell P. A. Reddy V.
Mineralogical Characterization of Near Earth Amor Asteroid 1036 Ganymed [#1695]
Results of our analysis indicate 1036 Ganymed is an S (VI) asteroid with a surface silicate assemblage consisting of opx and cpx, [Fs₂₃(±5)Wo₃(±3) average of both phases] possibly with a metal component.
- 4:15 p.m. Chizmadia L. J. *
Reproduction of Phyllosilicate Textures in CM2 Chondrites During Experimental Hydration of Amorphous Silicate Smokes [#1005]
During hydration experiments involving amorphous Mg-silicate smoke, phyllosilicates have been grown that resemble those seen in CM2 chondrites. Mixing Mg- and Fe-smoke retards the hydration reaction but allows for the alteration of the Fe-smoke.
- 4:30 p.m. Heggy E. * Asphaug E. Carley R. Safaeinili A. Righter K.
Dielectric Properties of Chondrites and Their Implication in Radar Sounding of Asteroid Interiors [#1596]
We present laboratory dielectric characterization of asteroid analog material to support current radar observation and future sounding experiments.