

Monday, March 13, 2006
ASTEROIDS: OBSERVATIONS AND EXPERIMENTS
8:30 a.m. Amphitheater

Chairs: A. S. Rivkin
L. F. Lim

- 8:30 a.m. Buczkowski D. L. * Prockter L. Barnouin-Jha O. S.
Mapping Lineaments on 433Eros: Process, Results, and Implications [#1330]
 We identify lineaments on the surface of Eros and classify them according to type and region. We compare lineament orientation to impact craters to determine if there is a causal relationship and what effect lineaments have on crater shape.
- 8:45 a.m. Riner M. A. * Eckart J. M. Digilio J. G. Robinson M. S.
Global Study of Small-scale Color Features on 433 Eros, the Effect of Residual Scattered Light and Implications for Pondered Deposit Formation Mechanisms [#2291]
 Utilizing all viable MSI color image sequences, we cataloged every resolvable spectral/albedo unit on Eros. A new detailed analysis of residual scattered light is presented and used to constrain interpretations of the spectral ratios.
- 9:00 a.m. Sasaki S. * Nimura T. Hiroi T. Ishiguro M. Hirata N. Abe M. Ueda Y. Yamamoto A. Clark B. E.
Space Weathering of Rock Surface Without Regolith: Laboratory Simulation of Spectral Change [#1705]
 Laboratory space weathering simulation shows that small less-regolith asteroids with silicate composition may change their brightness and color by space weathering, although their weathering degree would be weaker than regolith-covered asteroids.
- 9:15 a.m. Vilas F. * Hendrix A. R.
Space Weathering on Asteroids: New Results from the Ultraviolet [#2447]
 We explore the effects of space weathering on asteroids in the ultraviolet wavelength range, using existing observations from IUE and new observations from HST. These are compared with space weathering trends seen in lunar samples.
- 9:30 a.m. Reddy V. * Gaffey M. J. Abell P. A. Hardersen P. S.
Compositional Investigation of Near-Earth Asteroids 6456 Golombek, (5660) 1974 MA, (13553) 1992 JE [#1746]
 Near-Earth Asteroids are the most important, yet least understood class objects. Of the ~3600 NEAs, only few have mineralogic and compositional information. We present our results from compositional studies of three NEAs: 6456 Golombek, 1974 MA, 1992 JE.
- 9:45 a.m. Rivkin A. S. * Volquardsen E. L.
What is the Surface Composition of Ceres? [#1822]
 After staying up all night watching the world Ceres, we will make our pitch for new interpretations of its surface composition (iron-rich clays?) and highlight evidence for previously-unknown constituents (carbonates?).
- 10:00 a.m. Fieber-Beyer S. K. * Gaffey M. J. Hardersen P. S.
Near-Infrared Spectroscopic Analysis of Mainbelt M-Asteroid 755 Quintilla [#1315]
 The mainbelt M-type asteroid 755 Quintilla exhibits an unusual set of absorption features suggesting that spinel may be a spectrally important mineral phase on its surface.
- 10:15 a.m. Lim L. F. * Emery J. E. McConnochie T. H.
Mid-IR Spectroscopy of M Asteroids with the Spitzer IRS: Preliminary Results [#2148]
 Preliminary results from a survey of the emission spectra of 27 class M asteroids using the Spitzer Infrared Spectrograph (IRS; 5.2–38 μm) will be presented.

- 10:30 a.m. Hardersen P. S. * Gaffey M. J. Cloutis E. A. Abell P. A. Reddy V.
Discovering Spectral and Mineralogical Diversity Among the M-Asteroid Population [#1106]
Continuing spectral study of the M-asteroid population is finding significant diversity among these objects. A variety of spectral features suggest that M-asteroids have varying surface abundances of pyroxene, olivine, and phyllosilicate minerals.
- 10:45 a.m. Emery J. P. * Cruikshank D. P. Van Cleve J.
Structure and Composition of the Surfaces of Trojan Asteroids from Reflection and Emission Spectroscopy [#2075]
Comparisons with spectral libraries are not able to completely explain thermal emission spectra of several dark asteroids, including three Trojans (from Spitzer). We suggest this is due to the surface structure, and offer a couple of hypotheses.
- 11:00 a.m. Klima R. L. * Pieters C. M. Dyar M. D.
Pyroxene Spectroscopy at Visible Wavelengths: Effect of Iron Content on Spin Forbidden Absorption Features [#1637]
Spin-forbidden absorptions at visible wavelengths are one indicator of the form and chemistry of pyroxenes on an asteroid or planet's surface. We analyze synthetic Ca-free pyroxenes to systematically investigate how Fe²⁺ content affects these bands.
- 11:15 a.m. Lawrence S. J. * Lucey P. G. Taylor G. J.
Asteroid Surface Mineralogy Using Hapke Mixing Models: The Spectral Effects of Coarse-Grained Metal [#1670]
A new theoretical treatment for the spectral effects of coarse-grained Fe,Ni-metal is presented, and its implications are discussed.
- 11:30 a.m. Gaffey M. J. *
A Plethora of Partially Melted Asteroids? [#1223]
Asteroid spectral analyses suggest that partially melted asteroids are relatively common in contrast to the rarity of such assemblages among meteorites. The normal melting behavior of heated asteroids should produce abundant partially melted objects.