

Tuesday, March 13, 2007

POSTER SESSION I: ASTEROIDS/KUIPER BELT OBJECTS

6:30 p.m. Fitness Center

Craig M. A. Cloutis E. A. Bailey D. T.

The Effects of Grain Size, <45–1000 μm , on the Reflectance Spectrum of Planetary Analogs from 0.35–2.5 μm [#1356]

The spectral reflectance properties of three common planetary materials are presented here (basalt, olivine, orthopyroxene). Five different grain sizes have each been spectrally characterized from 0.35–2.5 μm .

Kelley M. S. Gaffey M. J. Reddy V.

Near-IR Spectroscopy and Possible Meteorite Analogs for Asteroid (253) Mathilde [#2366]

Recent near-IR spectroscopic data for asteroid 253 Mathilde, a NEAR spacecraft flyby target, show that it has undergone an alteration process very similar to C11 or CM2 carbonaceous chondrites, and has a surface dominated by phyllosilicate minerals.

McFadden L. A. Ebel D. S. Loeffler M. J. Boesenberg J. Baragiola R. A.

Infrared Spectroscopy of Eucrite Juvinas Under Vacuum: IR Absorption of Water and Organic Species [#2390]

Laboratory spectra of Juvinas in the IR under controlled environment shows absorptions due to water and C-H species.

Honda T. Nakamura A. M. Mukai T.

Laboratory Measurements of Opposition Surge from Simulated Asteroid Surfaces [#1530]

We performed measurements of the opposition surge by simulated surfaces of asteroids. The trend between the surge amplitude and the relative reflectance of the surface is similar to those found in the results of observation of asteroids.

Hapke B. W. Shepard M. K. Nelson R. M. Smythe W. D. Mannatt K.

Comparison of the Bidirectional Reflectance of a Well-Characterized Powder with Predictions of Models Based on the Equation of Radiative Transfer [#1321]

The bidirectional reflectance of a powder of spherical particles predicted by exact numerical solutions of the radiative transfer equation are more forward scattering than laboratory measurements, because the particles are more backscattering in a regolith than when isolated.

Cloutis E. A. Craig M. A. Bailey D. T.

Bidirectional Reflectance Properties of Orthopyroxene [#1300]

Bidirectional reflectance spectra of powdered samples of orthopyroxenes measured at a wide variety of phase angles show variations in overall reflectance and slopes, but this mineral remains recognizable on the basis of the persistence of its characteristic absorption bands.

McCoy T. J. Corrigan C. M. Sunshine J. M. Bus S. J. Gale A.

Does Spectroscopy Provide Evidence for Widespread Partial Melting of Asteroids?:

II. Pyroxene Compositions [#1631]

Calibrations of pyroxene composition from spectra overestimate the FeO concentration and suggest partial melting. Band II centers for Eros and Itokawa likely reflect mixing high-Ca and low-Ca pyroxenes of ordinary chondrite compositions.

Burbine T. H. Greenwood R. C. Buchanan P. C. Franchi I. A. Smith C. L.

Reflectance Spectra of Mesosiderites: Implications for Asteroid 4 Vesta [#2119]

Oxygen isotopic data argues that HEDs and mesosiderites may be from the same parent body. A spectral survey of mesosiderites was done to determine their spectral properties in the visible and near-infrared and compare to HEDs.

Burbine T. H. Buchanan P. C. Binzel R. P.

Deriving Formulas from HED Spectra for Determining the Pyroxene Mineralogy of Vesta and Vestoids [#2117]

We use high-resolution HED spectra and detailed compositional analyses to derive formulas for determining their average pyroxene mineralogies.

Moskovitz N. A. Willman M. Lawrence S. J. Jedicke R. Nesvorny D. Gaidos E. J.

A Survey of Basaltic Asteroids in the Main Belt [#1663]

We present a program designed to find basaltic asteroids in the main belt, thus providing an estimate for the distribution of such objects. This has important implications for constraining the accretion history of small bodies in the solar system.

Vilas F. Hendrix A. R.

Testing the Effects of Space Weathering on S-Class Asteroids with New MMT UV/Blue Reflectance Spectra [#1332]

We report the results of ground-based moderate-resolution spectroscopic observations of six S-class asteroids covering the ~330–600 nm wavelength range which we have previously analyzed using IUE spectra and ground-based photometry for UV/blue effects of space weathering.

Emery J. P. Cruikshank D. P. Brown R. H. Burr D. M.

Near-Infrared Spectroscopy of Trojan Asteroids [#1426]

We present new near-infrared (0.8–2.5 μm) spectroscopy of 40 Trojan asteroids.

Eluszkiewicz J. Cady-Pereira K. Brown M. Stansberry J.

Towards a Microphysical Interpretation of the Near-IR Spectra of the Kuiper Belt Object 2005 FY9 [#1854]

Recent observations of the Trans-Neptunian Object 2005 FY9 have been interpreted to indicate the presence of unusually long (1 cm) optical path lengths in layer of methane ice. A good semi-quantitative match with the measured near-IR spectra can be obtained with a porous slab model.

Tricarico P.

An Efficient Search Strategy for Near Earth Asteroids [#2357]

We present a NEA search strategy which by design maximizes the volume searched in the space of the orbital elements of the unbiased NEAs distribution.

Vernazza P. Rossi A. Birlan M. Fulchignoni M. Nedelcu A. Dotto E.

832 Karin: Absence of Rotational Spectral Variations [#1008]

Here, we present new visible (0.45–0.95 μm) and near-infrared (0.7–2.5 μm) spectroscopic observations of 832 Karin obtained in January and April 2006, covering most of Karin's longitudes.

Reddy V. Dyvig R. R. Pravec P. Kušnirák P. Gajdoš Š. Galád A. Kornoš L. Ries J. G.

Photometric Observations of Binary Near-Earth Asteroid (7088) Ishtar and (11405) 1999 CV3 [#1239]

Of the ~4,400 NEAs currently known, a significant number (up to 15±4%) are binary objects. We present the results from a photometric survey to detect asynchronous binary NEAs. (7088) Ishtar is the second binary NEA detected by the survey.

Farrell L. L. McGary R. S. Sparks D. W.

Thermal History and Differentiation of Ice/Rock Planetesimals [#1827]

This paper describes one-dimensional numerical models of heating, melting, differentiation and water loss in 100–1000 km ice/rock planetesimals.

García-Martínez J. L. Ortega-Gutiérrez F.

Probable Asteroidal Meteoroid Streams with Associated Substreams [#2038]

Five meteoroid streams of apparent asteroidal nature have been identified in the IAU_MDC photographic meteor database. Two streams contain substreams, composed of two or more meteoroids sharing the same orbit; only one asteroid, apparently associated with one stream, has been identified.