

Wednesday, March 25, 2009
ASTEROID–METEORITE CONNECTIONS
1:30 p.m. Waterway Ballroom 5

Chairs: **Andrew Rivkin**
 Phil Bland

- 1:30 p.m. Hildebrand A. R. * Milley E. P. Brown P. G. McCausland P. J. A. Edwards W. Beech M. Ling A. Sarty G. Paulson M. D. Maillet L. A. Jones S. F.
[Characteristics of a Bright Fireball and Meteorite Fall at Buzzard Coulee, Saskatchewan, Canada, November 20, 2008](#) [#2505]
 A bright fireball was widely observed across Alberta, Saskatchewan and Manitoba from 17:26:40 to 17:26:45 MST during late twilight on November 20, 2008.
- 1:45 p.m. Bland P. A. * Spurný P. Towner M. C. Bevan A. W. R. Singleton A. T. Chesley S. R. Bottke W. F. Jr. Shrubny L. Borovička J. McClafferty T. Vaughan D. Benedix G. K. Deacon G. Hough R. M.
[A Euclite Delivered from an Aten-type Orbit: The Last Link in the Chain from 4 Vesta to Earth](#) [#1664]
 A likely scenario is that our meteorite is a fragment of a Vestoid, derived from the innermost region of the main belt, delivered from the v_6 resonance, evolving onto an Aten-type orbit, before entering the atmosphere over south-western Australia.
- 2:00 p.m. Gaffey M. J. *
[Identifying Asteroidal Ordinary Chondrite Assemblages and Petrographic Types from VNIR Spectra](#) [#1412]
 Existing spectral calibrations are sufficient to identify asteroidal ordinary chondrite assemblages from VNIR (~0.7–2.5 μm) spectra, but have limitations due to systematic mineralogical variations between and within the H-, L-, and LL-types.
- 2:15 p.m. Beck A. W. * McSween H. Y. Jr.
[Interpretation of the Origin of Olivine in Diogenite Breccias](#) [#1127]
 This study proposes that the presence of olivine in diogenites is caused by the brecciation and incorporation of harzburgite fragments. This is based on textural observation and chemical analyses of olivine and two distinct orthopyroxene phases in ten diogenite breccias.
- 2:30 p.m. Lim L. F. * Emery J. P. Moskovitz N. A.
[Diogenite-like Features in the Spitzer IRS \(5–35 \$\mu\text{m}\$ \) Spectrum of 956 Elisa](#) [#2204]
 We report preliminary results from the Spitzer IRS (Infrared Spectrograph) observations of the V-type asteroid 956 Elisa. Several features of this spectrum suggest the presence of diogenitic material at a relatively coarse particle size.
- 2:45 p.m. Delaney J. S. *
[The Surface of 4 Vesta: A Petrologist's View](#) [#1600]
 Vesta has provinces with distinct spectral characteristics. The regolith is best represented by howardites. The howardite meteorites provide the optimum sample suite for constraining the Dawn spectral data.
- 3:00 p.m. McFadden L. A. * Ammonito E. Cloutis E. A. Coradini A. deSanctis M. C. Fulchignoni M. Hadamcik E. Hiroi T. Kolokolova L. Lvasseur-Regourd A. C. Psarev V. Renard J. -B.
[Coordinated Laboratory Studies of Meteorites Supporting Rosetta Mission's Asteroid Flyby Target: 2867 Steins](#) [#2287]
 Aubrite ALH7 8113,82 is studied to support Rosetta flyby of Steins, an E-type asteroid. Two questions are, what is the spectrally active material in Steins at 500 nm? Is Steins a fragment from an aubrite?

- 3:15 p.m. Bottke W. F. * Nesvorný D. Vokrouhlický D. Morbidelli A.
[*The Gefion Family as the Probable Source of the L Chondrite Meteorites*](#) [#1445]
Fragments from the Gefion asteroid family-forming event 470 My ago are the probable source of the tiny fossil L-chondrite meteorites found in an marine limestone quarry in Sweden as well as the larger L-chondrites reaching Earth today.
- 3:30 p.m. Rivkin A. S. * Thomas C. A. Trilling D. E. Enga M. T. Grier J. A.
[*Small Koronis-Family Objects as a Probe of Space Weathering: Broadband Spectrophotometry from Magellan and Kitt Peak*](#) [#1774]
Broadband spectrophotometry of 1–5 km Koronis family objects shows them spanning the range from S-class to Q-class colors. This is consistent with space weathering rather than composition as the cause for similar findings in the NEO population.
- 3:45 p.m. Roth A. S. G. * Baur H. Heber V. S. Reusser E. Wieler R.
[*Cosmic-Ray-produced Helium and Neon in Chondrules in Allende and Murchison*](#) [#1838]
Most chondrules in Allende and Murchison show nearly identical cosmic ray exposure ages. Six chondrules in Murchison show large cosmogenic gas excesses, most likely acquired during tens of Ma of exposure in a parent body regolith.
- 4:00 p.m. Fieber-Beyer S. K. * Gaffey M. J. Hardersen P. S.
[*Near-Infrared Spectroscopy of 3:1 Kirkwood Gap Asteroids 1379 Lomonosawa and 974 Lioba: Plausible Parent Bodies of L- and LL-Chondrites*](#) [#1115]
We present a mineralogical assessment of 3:1 Kirkwood Gap asteroids, 1379 Lomonosawa and 974 Lioba, using data obtained May 19 and 20, 2008 UT using the NASA Infrared Telescope Facility.
- 4:15 p.m. Sunshine J. M. * Day J. M. D. Ash R. D. McCoy T. J. Bus S. J. Klima R. L. Hiroi T.
[*Searching for the Evolved Crust of Oxidized Asteroids*](#) [#1965]
The spectral properties of the unique GRA 06128/9 meteorites are examined so similar asteroids can be recognized. Giving the geochemical links to brachinites, they may occur near previously identified brachinites-like asteroids.
- 4:30 p.m. Sasso M. R. * Macke R. J. Britt D. T. Rivers M. L. Ebel D. S. Friedrich J. M.
[*Physical Properties of Incompletely Compacted Equilibrated Ordinary Chondrites: Implications for Asteroidal Structure and Impact Processing*](#) [#1670]
We detail our synchrotron x-ray microtomographic investigations into the 3D nature of pore spaces in several unusual chondrites. Implications for asteroidal structures and the historical mechanical processing of these materials will be discussed.