

Friday, March 23, 2012

SPECIAL SESSION: DAWN OVER VESTA II: THE HED-VESTA CONNECTION

8:30 a.m. Waterway Ballroom 5

Chairs: Michael Toplis
David Lawrence

- 8:30 a.m. Le Corre L. * Reddy V. Nathues A. Li J.-Y. Denevi B. W. Buratti B. J. Sierks H. Schröder S. E. Pieters C. M. Gaskell R. Becker K. J. Gutiérrez Marqués P. Russell C. T. Raymond C. A.
[Vesta Terrains Seen by the Dawn Framing Camera Color Filters](#) [#1624]
We present an analysis of the different terrains on Vesta using latest data from the color filters of the Dawn Framing Camera. Preliminary understanding of the nature and origin of these bright, dark, gray and orange/red materials will be presented.
- 8:45 a.m. De Sanctis M. C. * Ammannito E. Capria M. T. Capaccioni F. Carraro F. Fonte S. Frigeri A. Magni G. Marchi S. Palomba E. Tosi F. Zambon F. McCord T. B. McFadden L. A. McSween H. Y. Jr. Mittlefehldt D. W. Pieters C. M. Raymond C. A. Russell C. T.
[Overview of Vesta Mineralogy Diversity](#) [#1444]
Vesta's spectrum has strong absorption centered near 0.9 and 1.9 μm , indicative of Fe-bearing pyroxenes. Data from the Dawn VIR characterize and map the mineral distribution on Vesta, providing new insights into Vesta's formation and evolution.
- 9:00 a.m. Prettyman T. H. * Beck A. Feldman W. C. Forni O. Joy S. P. Lawrence D. J. McCoy T. J. McFadden L. A. McSween H. Y. Mittlefehldt D. W. Polansky C. A. Rayman M. D. Raymond C. A. Reedy R. C. Russell C. T. Titus T. N. Toplis M. J. Yamashita N.
[The GRaND Geochemistry of 4 Vesta: First Results](#) [#2389]
We present first results of the analysis and interpretation of geochemical data acquired by the NASA Dawn mission's Gamma Ray and Neutron Detector in the low-altitude mapping orbit around 4 Vesta.
- 9:15 a.m. Mittlefehldt D. W. * Prettyman T. H. Reedy R. C. Beck A. W. Blewett D. T. Gaffey M. J. Lawrence D. J. McCoy T. J. McSween H. Y. Jr. Toplis M. J. Dawn Science Team
[Do Mesosiderites Reside on 4 Vesta? An Assessment Based on Dawn GRaND Data](#) [#1655]
We will use GRaND data from the Dawn spacecraft to test the hypothesis that mesosiderites are a lithologic component of the vestan crust.
- 9:30 a.m. Wasson J. T. *
[Vesta, Iron Meteorites from Extensively Differentiated Asteroids, and the Provenance of the HED Meteorites](#) [#2931]
There were many extensively differentiated asteroids thus Vesta is unlikely to be the source of the HEDs. If the GRAND instrument measures K it may be able to show that Vesta cannot be the HED parent.
- 9:45 a.m. McSween H. Y. Jr. * Mittlefehldt D. W. Beck A. W. McCoy T. J. Marchi S. De Sanctis M. C. Ammannito E. Raymond C. A. Russell C. T.
[Dawn and the Vesta-HED Connection](#) [#1433]
The hypothesis that Vesta is the parent body of HED meteorites is consistent with, and strengthened by, the geologic context for HEDs provided by Dawn.
- 10:00 a.m. Barrat J. A. * Bodenan J. D. Yamaguchi A. Buchanan P. C. Toplis M.
[What Can We Learn on Vesta from the Petrology of Impact Melts?](#) [#1438]
Geochemistry of impact melts suggests that some of them formed from targets unlike HEDs.

- 10:15 a.m. Roszjar J. * Srinivasan G. Whitehouse M. Bischoff A. Mezger K.
[*Hf-W Analyses of Eucrite Zircon: New Crystallization Timescales for the Eucrite Parent Body*](#) [#1774]
In situ ^{182}Hf - ^{182}W isotope analyses of zircon grains were performed in order to determine the timing of crystallization of basaltic eucrites.
- 10:30 a.m. Erb I. R. * Boesenberg J. S.
[*Integrating Elemental X-Ray Mapping and Mineral Analysis Techniques to Estimate the Provenance of the Howardites on Vesta*](#) [#1531]
We compare howardite mineral modes from clasts and fragments in the large and small fractions to obtain an estimate of whether the individual meteorites derive from one or more provenances. Correlations are made between mapping and mineral chemistry.
- 10:45 a.m. Beck A. W. * Sunshine J. M. McCoy T. J. Hiroi T.
[*Challenges to Finding Olivine on the Surface of 4 Vesta*](#) [#2218]
Here we examine laboratory spectra of harzburgitic and orthopyroxenitic diogenites. In the VNIR, these two meteorites are indistinguishable; suggesting that vestan Ol-rich terranes will be difficult to identify using the VIR spectrometer on Dawn.
- 11:00 a.m. Sarafian A. R. * Roden M. F. Patiño-Douce A. E.
[*The Nature of Volatiles in Vesta: Clues from Apatite in Eucrites*](#) [#1175]
We used the electron and ion probe to measure the volatile content of apatite in eucrites. We found several distinct volatile reservoirs in eucrites: degassed and undegassed basalts and two possible late-stage fluids.
- 11:15 a.m. Combe J.-Ph. * McCord T. B. Palomba E. De Sanctis M. C. Prettyman T. H. Pieters C. M. Ammannito E. Capaccioni F. Capria M. T. Raymond C. A. Russell C. T.
[*Water and Other Volatiles on Vesta After the Lunar Case*](#) [#2463]
Reflectance spectra of the surface of Vesta from the Visible and Near-Infrared Mapping Spectrometer (VIR) onboard the Dawn spacecraft are being analyzed for the search of volatiles, in the context of recent discoveries of OH and H₂O on the Moon.
- 11:30 a.m. Stubbs T. J. * Wang Y.
[*On the Presence of Water at the Asteroid 4 Vesta*](#) [#1350]
We investigate the average solar illumination and surface temperatures at the asteroid 4 Vesta, and assess the implications for the presence of water in the subsurface and on the surface of the regolith.