

Wednesday, March 20, 2013

[W301]

SPECIAL SESSION: DAWN: VESTA FROM THE INSIDE OUT

8:30 a.m. Waterway Ballroom 1

- Chairs:** Paul Schenk
Bonnie Buratti
- 8:30 a.m. Russell C. T. * Raymond C. A. McSween H. Y. Jaumann R. Nathues A. et al.
[Vesta in the Light of Dawn](#) [#1200]
Dawn's observations put Vesta in a new light.
- 8:45 a.m. Fu R. R. * Hager B. H. Ermakov A. I. Zuber M. T.
[Early Viscous Relaxation of Asteroid Vesta and Implications for Late Impact-Driven Despinning](#) [#2115]
Finite-element simulations suggest that early Vesta achieved hydrostatic equilibrium. Possible relic hydrostatic terrains indicate 6% late despinning.
- 9:00 a.m. Roberts J. H. * Rivkin A. S. Chabot N. L.
[Thermal Challenges for an Ancient Dynamo on Vesta](#) [#2349]
Magnetized eucrites / Whence the remanent B-field? / Vesta's core stable.
- 9:15 a.m. Raymond C. A. * Park R. S. Asmar S. W. Konopliv A. S. Buczkowski D. L. et al.
[Vestalia Terra: An Ancient Mascon in the Southern Hemisphere of Vesta](#) [#2882]
Vestalia Terra is an ancient terrain on Vesta that displays the highest topography on the asteroid and is associated with a significant mascon.
- 9:30 a.m. Mandler B. E. * Elkins-Tanton L. T.
[Chemical Models for the Crystallization of a Magma Ocean on Vesta: Making HED Lithologies and the Narrow Range in Eucrite Compositions](#) [#2350]
Our model produces all HEDs and the narrow range in eucrite compositions by magma ocean crystallization, melt extraction, and recharge of shallow magma chambers.
- 9:45 a.m. Wasson J. T. *
[No Magma Ocean on Vesta \(or Elsewhere in the Asteroid Belt\): Volatile Loss from HEDs](#) [#2836]
Magma oceans could not form in the asteroid belt. Radiogenic sources heat too slowly, and hot impact debris is lost. Impacts can produce magmas and volatile loss.
- 10:00 a.m. Bowling T. J. * Johnson B. C. Melosh H. J.
[Formation of Equatorial Graben Following the Rheasilvia Impact on Asteroid 4 Vesta](#) [#1673]
Modeling of the Rheasilvia impact on 4 Vesta suggests that the equatorial graben observed by Dawn opened following the passage of the impact stress wave.
- 10:15 a.m. Stickle A. M. * Schultz P. H. Crawford D. A.
[Subsurface Shear Failure in Spherical Bodies: A Possible Formation Mechanism for the Surface Troughs on 4 Vesta](#) [#2417]
Laboratory experiments combined with numerical models suggest a possible formation mechanism for the surface troughs observed on Vesta by the Dawn spacecraft.
- 10:30 a.m. Buczkowski D. L. * De Sanctis M. C. Raymond C. A. Wyrick D. Y. Ammannito E. et al.
[Brumalia Tholus: An Indication of Magmatic Intrusion on Vesta?](#) [#1996]
We show evidence that Brumalia Tholus represents a dike on Vesta, formed due to magmatic intrusion into subsurface fractures under the Vestalia Terra region.

- 10:45 a.m. Titus T. N. * Becker K. J. Tosi F. Capria M. T. De Sanctis M. C. et al.
[*Analysis of Temperature and Thermal Inertia of the Surface of Vesta Using Dawn VIR Survey Observations*](#) [#2400]
In this analysis, we attempted to remove many of the surface physical properties that influence variations in thermal emission and to quantify thermal inertia.
- 11:00 a.m. Lunning N. G. * McSween H. Y. Corrigan C. M.
[*Vesicular Impact-Melt Clasts in Carbonaceous Chondrites: Evidence from the CV3 Meteorite LAR 06317 and Relevance to Surface Processes on the Asteroid 4 Vesta*](#) [#1407]
This study identifies and describes CV vesicular impact-melt clasts, and their relevance to impact features in carbonaceous-chondrite-bearing regolith on Vesta.
- 11:15 a.m. Prettyman T. H. * Mittlefehldt D. W. Feldman W. C. Hendricks J. S. Lawrence D. J. et al.
[*Neutron Absorption Measurements Constrain Eucrite-Diogenite Mixing in Vesta's Regolith*](#) [#3023]
Measurements of neutron absorption by Dawn's Gamma Ray and Neutron Detector reveal global variations in the eucrite-diogenite ratio of Vesta's regolith.
- 11:30 a.m. Tosi F. * Capria M. T. De Sanctis M. C. Denevi B. W. Blewett D. T. et al.
[*Thermal Behavior of Pitted Terrains on Vesta*](#) [#1917]
We present temperature maps and spectra of pitted terrain observed by the VIR experiment onboard Dawn, which constrain their composition and physical structure.