

Thursday, March 24, 2016

[R551]

**DIFFERENTIATED METEORITES:
MULTIPLE PARENT BODIES AND MULTIPLE MODELS
1:30 p.m. Waterway Ballroom 1**

**Chairs: Brent Turrin
Hilary Downes**

- 1:30 p.m. Mittlefehldt D. W. * Greenwood R. C. Peng Z. X. Ross D. K. Berger E. L. et al.
[*Petrologic and Oxygen-Isotopic Investigations of Eucritic and Anomalous Mafic Achondrites*](#) [#1240]
Studies of eucrite-type meteorites reveal an array of anomalous characteristics that bespeak multiple parent asteroids. Winner: 2016 Best LPSC Abstract Award!
- 1:45 p.m. Sanborn M. E. * Yin Q.-Z. Mittlefehldt D. W.
[*The Diversity of Anomalous HEDs: Isotopic Constraints on the Connection of EET 92023, GRA 98098, and Dhofar 700 with Vesta*](#) [#2256]
We present high-precision Cr isotopic measurements of the anomalous HEDs EET 92023, GRA 98089, and Dhofar 700 to investigate their connection with Vesta.
- 2:00 p.m. Barrett T. J. * Barnes J. J. Anand M. Franchi I. A. Greenwood R. C. et al.
[*The Isotopic Composition of Chlorine in Apatite from Eucrites*](#) [#2746]
We present preliminary isotopic compositions of chlorine in apatite from two eucrites. The values of which show some similarities to the Moon.
- 2:15 p.m. Ashcroft H. O. * Wood B. J.
[*HED Petrogenesis: An Insight from Low-Ca Pyroxene-Melt REE Partitioning*](#) [#2155]
Pyroxene-melt partition coefficients for REEs were determined experimentally, and used to investigate the trace element variations in eucrites and diogenites.
- 2:30 p.m. Dhaliwal J. K. * Day J. M. D. Tait K. T.
[*Establishing a Pristinity Index for Eucrites Using the Highly Siderophile Elements*](#) [#2644]
Elucidating planetary differentiation on the HED parent body using potentially primitive HSE mantle signatures in pristine unbrecciated eucrite samples.
- 2:45 p.m. Downes H. * Beard A. D. Franchi I. A. Greenwood R. C.
[*Origin of Opal \(Hydrated Silica\) in Polymict Ureilites*](#) [#1443]
Petrography of opal clasts in a brecciated ureilite indicates an extraterrestrial origin but NanoSIMS oxygen isotope data lie on terrestrial fractionation line.
- 3:00 p.m. Goodrich C. A. * Treiman A. H. Kita N. T. Defouilloy C.
[*Increasing Diversity of Ordinary Chondrite and Rumuruti-Type Chondrite Clasts in Polymict Ureilites*](#) [#1617]
We describe new and increasingly diverse OC and RC chondritic clasts in polymict ureilites. These clasts extend the diversity of known RC materials.
- 3:15 p.m. Shearer C. K. * Bell A. S. Burger P. V. Papike J. J. Jones J. et al.
[*The Cr Redox Record of \$fO_2\$ Variation in Angrites. Evidence for Redox Conditions of Angrite Petrogenesis and Parent Body*](#) [#1370]
We exam the origin and conditions of melting on the angrite parent body through micro-scale determinations of Cr redox state in olivine from volcanic angrites.

- 3:30 p.m. Santos A. R. * Agee C. B. Shearer C. K. McCubbin F. M.
[Northwest Africa 8535 and Northwest Africa 10463: New Insights into the Angrite Parent Body](#) [#2590]
New angrite meteorites NWA 8535, a dunite, and NWA 10463, a basalt, were studied to provide insight into igneous processes on the angrite parent body.
- 3:45 p.m. Neumann W. O. * Breuer D. Kleine T. Kruijer T. S.
[Heating and Melt Segregation During Planetesimal Differentiation and the Significance of Hf-W Model Ages of Iron Meteorites](#) [#3047]
We calculated the differentiation of the magmatic iron meteorite parent bodies. Our results are in a good agreement with the metal separation data available.
- 4:00 p.m. Weiss B. P. * Bryson J. F. J. Harrison R. J. Neufeld J. A. Elkins-Tanton L. T. et al.
[A Core Dynamo on an Iron Meteorite Parent Body and the Magnetism of Metallic Asteroids](#) [#1661]
We present the first identification of a dynamo on an iron meteorite parent body. Magnetic field generation was likely powered by inward core crystallization.
- 4:15 p.m. Jones J. H. * Ross D. K. Chabot N. L. Keller L. P.
[Implications for Metallographic Cooling Rates, Derived from Fine-Scale Analytical Traverses Across Kamacite, Taenite, and Tetrataenite in the Butler Iron Meteorite](#) [#2432]
The distribution of Ni and Ge in iron meteorites, coupled with measured diffusivities, imply that Ni-derived cooling rates may not be applicable below ~500°C.
- 4:30 p.m. Gregory J. D. * Mayne R. G. Boesenberg J. S. Humayun M. Silver A. P. et al.
[Choteau Makes Three: A Characterization of the Third Member of the Vermillion Subgroup](#) [#2393]
First Vermillion, then / Yamato 8451 / Now Choteau makes three.
- 4:45 p.m. Worsham E. A. * Bermingham K. R. Walker R. J.
[Comparative Molybdenum-Tungsten-Osmium Isotope Evidence for the Diverse Genetics and Chronology of IAB Complex Iron Meteorites](#) [#2392]
Mo-W-Os isotopes show that the IAB complex represents multiple parent bodies and metal segregation events. Much of the complex is genetically similar to Earth.