

Thursday, March 10, 2011
PRIMITIVE METEORITES I: DIVERSITY
1:30 p.m. Waterway Ballroom 5

Chairs: Michael Weisberg
 Kieren Howard

- 1:30 p.m. Humayun M. * Weiss B. P.
[A Common Parent Body for Eagle Station Pallasites and CV Chondrites](#) [#1507]
 We present new siderophile element data for Eagle Station and Cold Bay, and show that these compositions can be derived from CV chondrites, supporting recent paleomagnetic studies for a partially differentiated CV parent body.
- 1:45 p.m. Dyl K. A. * Young E. D.
[Insights from High Precision Oxygen Isotopic Analyses of Reduced CV Meteorite Separates: CV Matrix Homogeneity and Preservation of Nebular Heterogeneity](#) [#2492]
 The oxygen-isotopic composition of matrix from reduced CVs Efremovka and Vigarano has been measured and is indistinguishable from Allende. This indicates a similar nebular history and a preservation of different nebular conditions within reduced CV meteorites.
- 2:00 p.m. Howard K. T. * Benedix G. K. Bland P. A. Gibson J. Greenwood R. C. Franchi I. A. Cressey G.
[Mineralogic and O-Isotope Evolution in CM Chondrites: On the Non-Relationship Between Bulk O-Isotopes and Degree of Aqueous Alteration](#) [#2429]
 Contrary to predictions, no obvious correlation exists between the degree of aqueous alteration defined by PSD-XRD modal mineralogy and O-isotope compositions of CM chondrites. Heterogeneous hydrous reservoirs and/or consumption of water by oxidation may explain these data.
- 2:15 p.m. Keller L. P. *
[Mineralogy and Petrography of MIL 090001, a Highly Altered CV Chondrite from the Reduced Sub-Group](#) [#2409]
 MIL 090001 is a CV chondrite from the reduced subgroup that has been extensively altered. The alteration assemblage is similar to that in CR chondrites. MIL 090001 should be classified as a CV2 chondrite.
- 2:30 p.m. Goreva Y. S. * McCoy T. J.
[Ca/Al Variations in CV3 Dark Inclusions: Evidence for Pre-accretion Aqueous and Thermal Processing](#) [#2269]
 Wide range in Ca/Al bulk ratio as well as textural characteristics of Allende dark inclusion studied in this work, suggest extensive aqueous alteration that was followed by high temperature metamorphism prior to incorporation into Allende.
- 2:45 p.m. Brunner C. E. * Brearley A. J.
[Microstructural Investigation of the Crystalline Component of Matrix in the Pristine CR Chondrite MET 00426: Implications for Diversity in Nebular Dust](#) [#1815]
 A FIB/TEM study of the matrix of MET 00426. Interesting findings include a possible cluster of primary nebular Fe-Mg carbonate mixed with unequilibrated olivines and sulfides.

- 3:00 p.m. Lindgren P. * Lee M. R. Sofe M. Zolensky M. E.
[*Xenoliths in the CM2 Carbonaceous Chondrite LON 94101: Implications for Complex Mixing on the Asteroidal Parent Body*](#) [#1349]
 Xenoliths with various alteration histories are found in the CM2 carbonaceous chondrite LON 94101, and indicate complex mixing on the asteroidal parent body.
- 3:15 p.m. Weisberg M. K. * Bunch T. E. Rumble D. III Ebel D. S.
[*Petrology and Oxygen Isotopes of NWA 5492, A New Metal-Rich Chondrite*](#) [#1198]
 NWA 5492 is a metal-rich chondrite breccia. Its silicates are highly reduced. Oxygen isotopes indicate at least two different oxygen reservoirs. The most common oxygen isotope composition is unlike other chondrite groups but is similar to GRO 95551.
- 3:30 p.m. Friedrich J. M. * Troiano J. Rumble D. III Rivers M. L.
[*Compositional Studies of Four Low-FeO Ordinary Chondrites: Is a New Chondritic Meteorite Parent Body Necessary?*](#) [#1885]
 We have investigated the compositions and 3D petrography of the low-FeO ordinary chondrites Burnwell, LAP 04575, EET 96031, and MIL 07273. A reanalysis of Burnwell's oxygen isotopes shows it to be identical to the H chondrites.
- 3:45 p.m. Sprung P. * Göpel C. Kleine T. Van Orman J. A. Maden C.
[*The High-Temperature History and Primary Structure of the L Chondrite Parent Body*](#) [#1850]
 We present internal Hf-W isochrons for eight equilibrated L chondrites of all petrologic types. Decreasing Hf-W ages with increasing petrologic type show that the L-chondrite parent body had a concentrically layered primary structure.
- 4:00 p.m. Bendel V. * Patzer A. Pack A. Hezel D. C. Münker C.
[*Rare Earth Elements in Bulk Chondrites and Chondrite Components*](#) [#1711]
 Volatility-controlled fractionations of rare earth elements occurred on asteroidal and planetary scale. Fractionations between different chondrite components like matrix, chondrules and refractory inclusions are also discussed.
- 4:15 p.m. Sissay A. Ostrowski D. Gietzen K. M. Sears D. W. G. *
[*Near-IR Reflectance Spectral Properties and Metamorphic History of Unequilibrated \(Type 3\) Ordinary Chondrites*](#) [#1601]
 Near-IR spectra enable the quantitative determination of clinopyroxene in type 3 ordinary chondrites. As expected, the amount varies with petrographic type 3.0–3.9. This has implications for metamorphism and the nature of asteroid surfaces.
- 4:30 p.m. Weirich J. R. * Isachsen C. E. Swindle T. D. Li C. Downs R. T.
[*Progress Towards Turning Ar-Ar Chronology of Ordinary Chondrites into Thermochronology*](#) [#1887]
 The high temperature release of Chico and NWA 091 is from feldspar enclosed in a higher temperature mineral, which may make it unsuitable for thermochronology. The low temperature release is suitable if we know the structural state of feldspar.