

**Thursday, March 22, 2018**  
**POSTER SESSION II: CHONDRITES AND THEIR COMPONENTS V**  
**6:00 p.m. Town Center Exhibit Area**

[R605]

Dall'Asén A. G. Stokke A. R. Paul R. Kayastha R. Bromley B. C. et al. **POSTER LOCATION #75**  
[\*Mineralogical and Elemental Composition of Carbonaceous Chondrites by Micro-Raman Spectroscopy and SEM/EDS\*](#) [#2571]

We present a comparative study of the composition of the chondrules and matrix of chondritic meteorites Moss and Murray using Raman spectroscopy and SEM/EDS.

Young J. M. Glotch T. D. Yesiltas M. **POSTER LOCATION #76**  
[\*Tracking Thermal History of Chondritic Parent Bodies via Raman Spectroscopic Analysis of PAH Contents\*](#) [#1767]  
 Tiny organic rings / Are records of history / Read it with lasers.

Varela M. E. **POSTER LOCATION #77**  
[\*Acfer 182 Gives New Clues to Chondrule Formation\*](#) [#1358]  
 Study of Mg-rich cryptocrystalline (CC) and ferrous radiating pyroxene (RP) chondrules as a contribution to better constrain chondrule formation processes.

Crapster-Pregont E. J. Gemma M. E. Ebel D. S. **POSTER LOCATION #78**  
[\*Rare Earth Elements in CV Carbonaceous Chondrite Components\*](#) [#2933]  
 Chondrule glass, matrix / So different; they combine / Near-flat REE! CAIs mix in / Do they skew refractories? / Need more statistics!

Garvie L. A. J. **POSTER LOCATION #79**  
[\*Powder X-Ray Diffractometry of the Orgueil Carbonaceous Chondrite: Insights into the Clay Mineralogy\*](#) [#2085]  
 Insights into the bulk nature of the clays are provided by powder X-ray diffraction (XRD) of samples prepared using standard clay identification procedures.

Aponte J. C. Abreu N. M. Keller L. P. Elsilá J. E. Dworkin J. P. **POSTER LOCATION #80**  
[\*Soluble Amines in Anomalous CR Chondrite Miller Range \(MIL\) 090001\*](#) [#1543]  
 MIL 090001 has amines in 30 times lower concentrations compared with CR2s and unique isotopic composition. Differences not the result of parent body processes.

Bose M. Root R. **POSTER LOCATION #81**  
[\*Identification of Organic and Elemental Sulfur in the Fine-Grained Matrix of Graves Nunataks GRA 95229\*](#) [#2098]  
 Elemental and organic sulfur is abundant in the interchondrule matrix of GRA 95229, and is predominantly associated with sulfates.

Yamamoto D. Kuroda M. Tachibana S. Sakamoto N. Yurimoto H. **POSTER LOCATION #82**  
[\*Oxygen Isotope Exchange Between Amorphous Forsterite and Water Vapor: An Experimental Study\*](#) [#1995]  
 Oxygen isotope exchange between sub-micron-sized amorphous forsterite dust and water vapor would occur at >~500 K within the disk lifetime.

Dobrica E. Oglione R. C. Engrand C. Nagashima K. Brearley A. J. **POSTER LOCATION #83**  
[\*Oxygen Isotope Systematics of Magnetite in Hydrated Antarctic Micrometeorites: New Water Reservoir\*](#) [#2666]  
 Magnetite in AMMs / A new water reservoir / Falling to the Earth.

Le Guillou C. Leroux H. Zanetta P-M. Brearley A. J. de la Pena F. et al. **POSTER LOCATION #84**  
[\*Water Content in Amorphous Silicates of Chondrite Matrices Determined by Advanced TEM Analysis — And Scanning Transmission X-Ray Microscopy\*](#) [#2342]  
 Methodology for water content determination at the nanometer scale. Amorphous silicates in ALH 77307 and Renazzo are heterogeneously hydrated (from 7 to 12%).

Johnson J. M. Brearley A. J. **POSTER LOCATION #85**  
[Porous, Ca-Rich Aggregates and Complex Minor Element Data of Chondrule Phenocrysts in the Northwest Africa NWA 2364 CV3<sub>OxA</sub> Chondrite and Its Lithic Inclusion: Evidence of Fluid-Rock Interactions](#) [#2674]  
 CV3 Chondrite / Shows trace element exchange / Perplexing moist past.

Mason E. King A. J. Bates H. Schofield P. F. **POSTER LOCATION #86**  
 Donaldson Hanna K. L. et al.  
[Tracing the Earliest Stages of Hydrothermal Alteration on Primitive Asteroids](#) [#1482]  
 The modal mineralogy, H abundances, and infrared spectra of LAP 04514, LAP 04796, and LAP 04565 indicate that they are amongst the least altered CM chondrites.

Louro M. D. Abreu N. M. Friedrich J. M. **POSTER LOCATION #87**  
[Examining Chondrule and Clast Sizes in the CM Chondrites LaPaz Icefield 04514, LaPaz Icefield 04527, and LaPaz Icefield 04565](#) [#2387]  
 We investigate the sizes of chondrules and clasts (mineral fragments) in three CM chondrites that experienced very limited aqueous alteration.

Lee M. R. Cohen B. E. Mark D. F. Boyce A. **POSTER LOCATION #88**  
[Evidence for Widespread Post-Hydration Heating of the CM Carbonaceous Chondrites](#) [#1285]  
 The CM carbonaceous chondrite SCO 06043 gives an Ar/Ar age of <3.2 Ga, supporting the idea that many CMs experienced late-stage heating.

Choi J. Nagao K. Baek J. M. Lee J. I. **POSTER LOCATION #89**  
[Effect of Thermal Metamorphism on Noble Gas of Carbonaceous Chondrites: Comparison of Vigarano \(CV3\) and Maralinga \(CK4\)](#) [#1940]  
 We present results of stepwise heating analyses of noble gases of Vigarano(CV3) and Maralinga (CK4).

Arai T. Komatsu M. Takenouchi A. Mikouchi T. Tomeoka K. **POSTER LOCATION #90**  
[Na Variation and Redox State of Plagioclase in CK4 Chondrites: Possible Record of Thermal Metamorphism](#) [#2995]  
 Na variation and redox state of plagioclase in CK4 chondrites are studied to understand thermal metamorphism.

Leitner J. Vollmer C. Hoppe P. **POSTER LOCATION #91**  
[A Study of Osbornite from Enstatite Chondrites at the Submicrometer Scale](#) [#1851]  
 Osbornite in Enstatite Chondrites has isotopically light nitrogen (−30 ‰). It is likely a secondary phase and only a minor contributor to bulk nitrogen.

Alpert S. A. Ebel D. S. Weisberg M. K. **POSTER LOCATION #92**  
[Comparison of Opaque Nodules in UOCs Watonga and Semarkona](#) [#2920]  
 Opaque nodules in unequilibrated ordinary chondrites Semarkona and Watonga are compared using mode code. Nodules in Watonga exhibit relative homogeneity.

Schrader D. L. Zega T. J. **POSTER LOCATION #93**  
[Pyrrhotite and Pentlandite in LL3 to LL6 Chondrites: Determining Compositional and Microstructural Indicators of Formation Conditions](#) [#2621]  
 We investigate the compositions and microstructures of sulfides in LL3 to LL6 chondrites in preparation of analyzing Hayabusa sulfides.

Niihara T. Koike M. Kagoshima S. Tanaka K. Sano Y. **POSTER LOCATION #94**  
[Preliminary Sulfur Isotope Studies on Chelyabinsk Chondrite](#) [#1852]  
 We performed petrology, mineralogy, and isotopic measurements on impact melted portion of Chelyabinsk chondrite.

- Schmieder M. Kring D. A. **POSTER LOCATION #95**  
[Impacts on the LL-Chondrite Asteroid\(s\) — New Insights from Shock-Melted Meteorites](#) [#1739]  
 LL-impact melt breccias from Antarctica and Africa show evidence for rapid cooling, and are compared and contrasted with impact-melted H- and L-chondrites.
- Zolensky M. Martinez J. Sitzman S. Mikouchi T. Hagiya K. et al. **POSTER LOCATION #96**  
[Measuring the Shock Stage of Asteroid Regolith Grains by Electron Back-Scattered Diffraction](#) [#2049]  
 We are developing techniques to use EBSD for regolith shock determination.
- Zanetta P-M. Leroux H. Le Guillou C. Zanda B. **POSTER LOCATION #97**  
[Development of an Advanced Electron Microscopy Methodology: Comparison of the Mineralogy of Fine-Grained Rims and Adjacent Matrix in the CM Paris Chondrite](#) [#2232]  
 The mineralogy of the matrix and fine-grained rims are compared in the Paris chondrite thanks to a new methodology suited for material with small grain size.
- Daly L. Cohen B. E. Halpin J. Lee M. R. Hallis L. J. et al. **POSTER LOCATION #98**  
[Porosity Variations Between Fine Grained Rims and Matrix in a CM Chondrite by 3D Serial Sectioning](#) [#1499]  
 3D serial sectioning of CM chondrite EET 96029 find porosity variation between matrix and fine grained rims: Implications for fluid flow on the CM parent body.
- Hoskins Z. N.P. Bland P. A. Benedix G. K. Godel B. Bevan A. W.R. et al. **POSTER LOCATION #99**  
[High Resolution Visualization of Carbonaceous Chondrite Fabric by X-Ray Computed Tomography](#) [#1966]  
 Evidence of compaction and quantification of primary porosity in carbonaceous chondrites using the highest resolution X-ray micro-tomography ever performed.
- DeFelice J. D. Ebel D. **POSTER LOCATION #100**  
[Tieschitz \(H/L3.6\): Modal Analysis by Pixel Counting](#) [#2568]  
 Modal analysis using pixel counting provides a quantitative analysis of clast abundance in EMPA images in Tieschitz (H/L 3.6).
- Macke R. J. Kohout T. Toth J. **POSTER LOCATION #101**  
[Scale Dependence in Porosity for Intact Stones of Kosice](#) [#1279]  
 Size matters. Porosity of completely intact stones of Kosice is a function of specimen volume.
- Abreu N. M. Cloutis E. A. Hamilton V. E. **POSTER LOCATION #102**  
[Understanding the Effects of Antarctic Weathering on the Petrologic and Spectral Characteristics of Pristine CR Carbonaceous Chondrites](#) [#1297]  
 Weathering of CRs is heterogeneous. Oxidation of Fe-Ni and nanosulfides observed. Matrix has localized Fe-enrichment, silicates, C-matter minimally affected.
- Oldroyd W. J. Radebaugh J. Stephens D. Lorenz R. D. Harvey R. P. et al. **POSTER LOCATION #103**  
[Modeling Meteorite Heat Transfer in an Antarctic Environment](#) [#2794]  
 We are modeling the thermal interactions of meteorites in an Antarctic environment to constrain the equilibrium depth of meteorites sinking from solar heating.

Moreau J. Kohout T. Wünnemann K.

**POSTER LOCATION #104**

[Numerical Modeling of Shock Wave Propagation in Iron and Troilite Assemblages in Ordinary Chondrites](#) [#1165]

Using shock physics mesoscale modeling, we studied the propagation of shock waves within iron and troilite grain eutectic mixtures in ordinary chondrites.

Kletetschka G.

**POSTER LOCATION #105**

[Magnetization of Extraterrestrial Allende Material May Relate to Terrestrial Descent](#) [#1364]

Decelerating/accelerating process allows magnetic remanence acquisition at temperature when collapsible deformation took place on Allende meteorite.