

Thursday, March 20, 2014

[R713]

POSTER SESSION: AQUEOUS ALTERATION ON PARENT BODIES

6:00 p.m. Town Center Exhibit Area

Ganino C. Libourel G. Delbo M. Michel P. **POSTER LOCATION #261**
[Reappraisal of Metasomatic Process Conditions of Allende CV3 Chondrite Using Thermodynamic and Schreinemakers Analyses](#) [#2749]

On the basis of equilibrium assemblage phases study we propose here alternative conditions of formation for both Allende matrix and dark inclusions.

Bruck A. M. Dunn T. L. **POSTER LOCATION #262**
[Petrologic Subtype of Type 3 CK Chondrite, Dar al Gani-431 \(DaG-431\)](#) [#1608]

Similar techniques that are used to determine the petrologic subtype of ordinary chondrites will be used to determine the subtype of CK3 chondrite DaG 431.

Miller K. E. Thompson M. S. Lauretta D. S. Zega T. J. **POSTER LOCATION #263**
[Conditions for Formation of Chalcopyrite in the Rumuruti Chondrites](#) [#1461]

Although rare in meteorites, chalcopyrite (CuFeS₂) is seen in R chondrites. Thermodynamics predict it formed in aqueous conditions or by melt crystallization.

Jilly C. E. Huss G. R. Nagashima K. **POSTER LOCATION #264**
[Oxygen Isotope Fractionation Among Secondary Calcite and Magnetite in CR Chondrites](#) [#1642]

We present in situ O-isotope composition of secondary calcite and magnetite in CR chondrites to investigate the nature and evolution of the aqueous reservoir.

Le Guillou C. Changela H. G. Dohmen R. Müller T. Brearley A. J. et al. **POSTER LOCATION #265**
[The Valency of Iron in the Silicates of CR Chondrite Matrices: Observations and Experiments](#) [#2052]

We have performed aqueous alteration experiments of amorphous silicate and compared the Fe³⁺/Fe²⁺ ratio to that of CR chondrite matrices measured by STXM-XANES.

Vollmer C. Barth M. I. F. Le Guillou C. Ramasse Q. Horstmann M. et al. **POSTER LOCATION #266**
[The Early Stages of Aqueous Alteration in CM Chondrites — TEM-UltraSTEM-STXM Investigations of the Less-Altered Chondrite Maribo](#) [#1354]

We investigated the nanoscale mineralogy of alteration features in the CM Maribo by TEM-STXM. Maribo is one of the least-altered CM chondrites in our collection.

Rubin A. E. **POSTER LOCATION #267**
[Degree of Aqueous Alteration in CM2 Paris and the Petrography of its Refractory and Amoeboid Olivine Inclusions](#) [#1130]

In Paris (the first CM2.7 chondrite), aqueous alteration destroyed melilite in CAIs. Compound chondrule-CAI objects suggest mixing during chondrule formation.

Horstmann M. Vollmer C. Barth M. I. F. Chaussidon M. Gurenko A. et al. **POSTER LOCATION #268**
[Tracking Aqueous Alteration of CM Chondrites — Insights from In Situ Oxygen Isotope Measurements of Calcite](#) [#1761]

SIMS analyses of 81 calcite grains in Maribo, Murchison, Cold Bokkeveld, Nogoya, and Banten are presented and discussed with implications for fluid evolution.

Pernet-Fisher J. F. Howarth G. H. Barry P. H. Bodnar R. J. Taylor L. A. **POSTER LOCATION #269**
[The Extent of Aqueous Alteration Within the Jbilet Winselwan CM2 Chondrite](#) [#2386]

Identified are large differences in degrees of aqueous alteration of individual chondrules from the Jbilet Winselwan CM2 chondrite.

Turrin B. D. Lindsay F. N. Park J. Herzog G. F. Delaney J. S. et al. **POSTER LOCATION #270**
[*⁴⁰Ar/³⁹Ar Studies of Murchison \(CM2\) and Tagish Lake \(2-ung\) \[#2485\]*](#)
⁴⁰Ar/³⁹Ar plateau and isochron ages indicate a 3.1 ± 0.05 Ga and 2.2 ± 0.03 Ga alteration event for Murchison and Tagish Lake meteorites, respectively.

Ralchenko M. Britt D. T. Samson C. Herd C. D. K. Herd R. K. et al. **POSTER LOCATION #271**
[*Bulk Physical Properties of the Tagish Lake Meteorite Frozen Pristine Fragments \[#1021\]*](#)
High-precision results are obtained for bulk density, grain density, and porosity of frozen pristine fragments of the Tagish Lake meteorite.

Nakato A. Brearley A. J. Jones R. Ziegler K. **POSTER LOCATION #272**
[*Implications for the Formation of Thermally Metamorphosed Carbonaceous Chondrites Based on Mineralogical Changes in Experimentally Heated Products of Tagish Lake \[#2355\]*](#)
We describe dehydration and reduction evidence of heating products of Tagish Lake, and compared them with thermally metamorphosed carbonaceous chondrites.

Haberle C. W. Garvie L. A. J. Domanik K. Christensen P. R. **POSTER LOCATION #273**
[*Mineralogical Complexity of Altered Kamacite in Sutter's Mill \(SM3, Pre-Rain\): Insights into Asteroidal Dehydration \[#2818\]*](#)
Kamacite surrounded by radially complex alteration products within the Sutter's Mill meteorite sample SM3 (pre-rain).

Yesiltas M. Kebukawa Y. Mattson E. Hirschmugl C. J. Peale R. E. **POSTER LOCATION #274**
[*Micro-Infrared and Micro-Raman Spectroscopies of Sutter's Mill Meteorite Grains \[#1396\]*](#)
We've analyzed multiple Sutter's Mill meteorite grains with two microspectroscopy techniques, and an extremely heterogeneous state of the samples is revealed.

Davidson J. Nittler L. R. Alexander C. M. O'D. Stroud R. M. **POSTER LOCATION #275**
[*Petrography of Very Primitive CO₃ Chondrites: Dominion Range 08006, Miller Range 07687, and Four Others \[#1384\]*](#)
We present detailed petrography for DOM 08006 and the results of a petrographic study of six CO₃ chondrites that appear to define the CO metamorphic trend.

Leroux H. Cuvillier P. Zanda B. Hewins R. H. **POSTER LOCATION #276**
[*Sub-Micrometer Composition Fields of Acfer 094 and Paris Matrices \[#1706\]*](#)
Composition properties of matrices at a submicrometer scale are established for two primitive chondrites (Acfer 94 and Paris) and compared with that of GEMS in IDPs.

Lewis J. A. Jones R. H. **POSTER LOCATION #277**
[*Nephelinization and Metasomatism in the Ordinary Chondrite Parnallee \(LL3.6\) \[#1661\]*](#)
We report the presence of CO-like nephelinization of primary anorthite in the LL3.6 Parnallee and examine the implications for OC parent body metasomatism.

Steer E. D. Schwenzer S. P. Wright I. P. Grady M. M. **POSTER LOCATION #278**
[*Spatial Correlations Between Silicate and Metal Weathering in Antarctic Chondrites \[#1958\]*](#)
Effects of Antarctic alteration in silicates of the rim and interior of an L6 chondrite were studied and correlated with other minerals and distance from rim.