

**Tuesday, March 11, 2008**  
**REFRACTORY INCLUSIONS**  
**8:30 a.m. Marina Plaza Ballroom**

**Chairs: J. M. Paque**  
**B. Jacobsen**

- 8:30 a.m. Ruzicka A. \* Floss C. Hutson M.  
*Amoeboid Olivine Aggregates (AOAs) in the Efremovka (CV<sub>R</sub>) Chondrite: First SIMS Trace-Element Results [#1764]*  
 SIMS trace-element results for six inclusions in Efremovka imply that condensation was important in the formation of AOAs and that precursor compositions or mode of origin were different for olivine in AOAs and in chondrules.
- 8:45 a.m. Dyl K. A. \* Young E. D. Krot A. N.  
*In-Situ UV-Laser Fluorination Oxygen Isotopic Analyses of an Efremovka CAI and Matrix: Implications for Oxygen Isotopic Exchange in the Solar Nebula [#2486]*  
 Using a UV-laser ablation fluorination system, we obtained high-precision *in situ* data for E44 and surrounding matrix. The <sup>16</sup>O-rich anorthite and solid-state diffusion calculations indicate that this process may be important to the evolution of oxygen in this CAI.
- 9:00 a.m. Mendybaev R. A. \* Richter F. M. Davis A. M.  
*Fun in the Laboratory: Evaporation of Forsterite-rich Melts and Fractionation of Magnesium Isotopes [#2345]*  
 We present results from our vacuum evaporation experiments of precursors for FUN CAIs. Despite differences in the initial stages of the evaporation, the Mg isotope fractionation factor at 1900°C of FUN CAI,  $\alpha_{\text{Mg}} = 0.98545 \pm 0.00064$ , is very close to that of CAIB.
- 9:15 a.m. Richter F. M. \* Teng F. Z. Mendybaev R. A. Davis A. M. Georg R. B.  
*Elemental and Isotope Fractionation of CAI-like Liquids by Evaporation in Low Pressure H<sub>2</sub> [#1385]*  
 Elemental and isotopic fractionations of CAI-like liquids by evaporation into low pressure hydrogen gas are compared to the fractionations by evaporation into vacuum.
- 9:30 a.m. Krot A. N. \* Nagashima K. Hutcheon I. D. Davis A. M. Thrane K. Bizzarro M. Huss G. R. Papanastassiou D. A. Wasserburg G. J.  
*Oxygen Isotopic Compositions of Individual Minerals from FUN CAIs [#2162]*  
 O-isotopic compositions of spinel, fassaite and forsterite from six FUN CAIs measured indicate progressive evaporation and mass fractionation during crystallization of the CAI melts having initially similar composition at  $\Delta^{17}\text{O} = -49\%$ ,  $\Delta^{18}\text{O} = -48\%$ .
- 9:45 a.m. MacPherson G. J. Nagashima K. Bullock E. S. \* Krot A. N.  
*Mass-dependent Oxygen Isotopic Fractionation in Non-FUN Forsterite-bearing Type B CAIs [#2039]*  
 four non-FUN forsterite-bearing Type B CAIs show mass-dependent O-isotopic fractionation related to melt volatilization, but to a lesser extent than their FUN counterparts. Differences in ambient gas pressure or precursor compositions are required.
- 10:00 a.m. Ito M. \* Messenger S.  
*Magnesium Isotope Imaging of Anorthite from Allende CAI with the NanoSIMS 50L Ion Microprobe [#2031]*  
 We report the results of a Mg isotopic imaging study of anorthite from an Allende CAI, utilizing the JSC NanoSIMS 50L. We evaluate the measurement conditions and the precision of the isotope images through the analysis of terrestrial standards.

- 10:15 a.m. Jacobsen B. \* Cosarinsky M. Wasserburg G. J. Yin Q.-Z. McKeegan K. D. Hutcheon I. D. Krot A. N. Nagashima K. Palme H.  
*Mg Isotopic Composition of Low Al/Mg Phases in CAIs: The Initial Solar  $^{26}\text{Mg}/^{24}\text{Mg}$ ?* [#2387]  
MC-SIMS Al-Mg isotope systematics of five Allende CAIs, including Egg 3, are presented.
- 10:30 a.m. Tonui E. K. \* Connolly H. H. McCoy T. Young E. D.  
*Mg Isotope Study of CAIs by UV Laser Ablation and Solution MC-ICPMS: Implications for Canonical and Supra-Canonical Evolution* [#1380]  
This abstract presents new solution data from several CAIs and a comparative study of one CAI by UV laser ablation and solution MC-ICPMS that shows both canonical and supra-canonical values in the one object. Possible reasons for this discrepancy are discussed.
- 10:45 a.m. Makide K. \* Nagashima K. Krot A. N. Huss G. R. Hutcheon I. D. Bischoff A.  
*Magnesium and Oxygen Isotopic Compositions of Calcium-Aluminum-rich Inclusions from CR Carbonaceous Chondrites* [#2407]  
To constrain the duration of CAI formation and thermal processing, and evolution of oxygen isotopic composition in the early solar system, we measured oxygen and magnesium isotopic compositions of CR CAIs using the UH Cameca ims 1280 ion microprobe.
- 11:00 a.m. Rout S. S. \* Bischoff A.  
*Ca,Al-rich Inclusions in Rumuruti Chondrites* [#1255]  
We studied 20 R chondrites and found 126 Ca,Al-rich objects (101 CAIs, 19 Al-rich chondrules, and 6 spinel-rich fragments). Based on the mineralogical characterisation the inclusions can be grouped into different classes.
- 11:15 a.m. Ishii H. A. \* Krot A. N. Keil K. Nagashima K. Bradley J. P. Teslich N. Jacobsen B. Yin Q.-Z.  
*Discovery of Wadalite in Allende Type B CAI* [#1989]  
We present electron microprobe, SEM and FIB-TEM analyses on Allende Type B CAIs identifying the Cl-bearing mineral wadalite for the first time in a meteoritic material. We propose its formation by interaction of grossular with a Cl-bearing fluid.
- 11:30 a.m. Paque J. M. \* Beckett J. R. Burnett D. S.  
*Refractory Metal Nuggets as an Indicator of Alteration Processes in a V-rich Ca-Al-rich Inclusion* [#1841]  
V and refractory elements are lost from RMNs, and Fe and Ni gained, in an oxidation/chlorination event. Insight into the volatility and mobility of elements during alteration and formation of Fremdlinge and opaque inclusions is obtained.