

**Thursday, March 23, 2017**  
**CAIS, CHONDRULES, AND EARLY PROCESSES**  
**1:30 p.m. Waterway Ballroom 6**

[R556]

**Chairs: Gokce Ustunisik**  
**Denton Ebel**

- 1:30 p.m. Charlier B. L. A. Tissot F. L. H. Dauphas N. \*  
[Strontium Stable Isotope Composition of Allende Fine-Grained Inclusions](#) [#2352]  
 We report Sr-84 isotopic composition of 15 fine-grained inclusions from Allende and evaluate whether these anomalies were produced by thermal processing.
- 1:45 p.m. Tang H. \* Liu M. C. McKeegan K. D. Tissot F. L. H. Dauphas N.  
[<sup>36</sup>Cl-<sup>36</sup>S in Allende CAIs: Implication for the Origins of <sup>36</sup>Cl in the Early Solar System](#) [#2618]  
 We analyzed <sup>36</sup>Cl-<sup>36</sup>S system in the secondary phases of four CAIs including Curious Marie, and quantified <sup>36</sup>Cl abundance inherited from stellar sources.
- 2:00 p.m. Leitner J. \* Vollmer C. Henkel T. Hoppe P.  
[The Silicon Nitride Inventory of Enstatite Chondrites](#) [#1391]  
 Silicon nitride in three ECs is isotopically light ( $\delta^{15}\text{N} = -62\%$ ). Two grains were found to be polycrystalline, supporting a nebular origin of the Si<sub>3</sub>N<sub>4</sub>.
- 2:15 p.m. Kööp L. \* Heck P. R. Busemann H. Davis A. M. Greer J. et al.  
[A Record of Early Precompaction Exposure of Hibonites to Energetic Particles: Evidence from Spallogenic Helium-3 and Neon-21](#) [#1559]  
 We find evidence for pre-exposure (excess <sup>21</sup>Ne and <sup>3</sup>He) exclusively in PLACs. This suggests that they were irradiated before incorporation into their parent body.
- 2:30 p.m. Gropman E. E. \* Kööp L. Grabowski K. S. Fahey A. J.  
[Molecule-Free REE Abundances in Hibonite by SIMS-SSAMS](#) [#1551]  
 SIMS of Rare Earth Elements Just got easier. Do it without molecules.
- 2:45 p.m. Dunham E. \* Wadhwa M. Desch S. J.  
[Beryllium-Boron Systematics of Two Distinctive CAIs from CV3 Chondrites: The Relatively Pristine CAI B4 from NWA 6991 and the FUN CAI CMS-1 from Allende](#) [#1507]  
 In situ analyses of Be-B systematics in two distinctive CAIs show that <sup>10</sup>Be in CAIs was predominantly produced by irradiation within the solar nebula.
- 3:00 p.m. Budde G. \* Kruijer T. S. Kleine T.  
[Hafnium-Tungsten Chronology of CR Chondrites](#) [#1886]  
 Hf-W systematics define a CR chondrule formation age of ~3.7 Ma after CAIs. CR metal and silicate have complementary nucleosynthetic W and Mo isotope anomalies.
- 3:15 p.m. MacPherson G. J. \*  
[Once a CAI, always a CAI: Flare-Up-Induced Episodic Fractionation and Melting in the Early Solar Nebula](#) [#2719]  
 Episodic FU Orionis or EX Lupi outbursts may be able to explain elemental fractionation and CAI and chondrule melting in the early solar system.
- 3:30 p.m. Yoshizaki T. \* Nakashima D. Nakamura T. Park C. Sakamoto N. et al.  
[Oxygen Isotopic Heterogeneity in an Ultrarefractory Phase Bearing CAI from a Reduced Type CV3 Chondrite RBT 04143](#) [#1378]  
 O-isotope imaging showed <sup>16</sup>O-poor Sc-pyroxene is embedded in reversely-zoned <sup>16</sup>O-poor melilite in a CV CAI, suggesting aggregation of <sup>16</sup>O-poor and -rich phases.

- 3:45 p.m. Hertwig A. \* Defouilloy C. Kimura M. Kita N. T.  
[Oxygen Isotope Systematics of Chondrule Minerals from the Reduced CV3 Chondrite NWA 8613](#) [#1227]  
SIMS O-isotope study of chondrules from new least altered CVred suggests that CVs formed in water-ice-depleted regions at moderate dust enrichments of  $\times 100$ –200.
- 4:00 p.m. Schrader D. L. \* Nagashima K. Fu R. R. Davidson J. Ogliore R. C.  
[Evidence for Chondrule Migration from Dusty Olivine Chondrules](#) [#1271]  
The chemical and O-isotope compositions of dusty olivine chondrules indicate the migration of earlier formed chondrules between chondrite groups.
- 4:15 p.m. Richardson M. L. A. \* Ouellette N. Metcalf M. Morris M.  
[Cooling Rate Distributions in Ejecta Plumes](#) [#2737]  
We characterize cooling rates in an ejecta plume and compare with constraints from CH/CB chondrules.
- 4:30 p.m. Rubin A. E. \*  
[Type-IAB Chondrules in LL3.0 Semarkona: No Need for High Partial Pressures of SiO\(g\) in the Solar Nebula](#) [#2700]  
Type-IAB chondrules are PP chondrules with relict olivines that underwent multiple episodes of melting. High nebular partial pressures of SiO are not required.