

Tuesday, March 20, 2018

[T205]

CHONDRITES AND THEIR COMPONENTS I: NEBULAR PROCESSES

8:30 a.m. Montgomery Ballroom

Chairs: Jon Friedrich
Katherine Bermingham

- 8:30 a.m. Kööp L. * Nagashima K. Davis A. M. Krot A. N.
[*On the Rarity of Nebular Materials with Solar Oxygen Isotopes*](#) [#2706]
We present the isotopic systematics (Ca, Ti, Al-Mg) of a CAI with solar O isotopes. We explore the reasons for the rarity of such objects in meteorites.
- 8:45 a.m. Aléon J. *
[*Closed System Oxygen Isotope Redistribution in Igneous CAIs Upon Spinel Dissolution*](#) [#2014]
The mineralogical control on oxygen isotopes in igneous CAI is well accounted for by dissolution of ¹⁶O-rich spinel in a partial melt previously depleted in ¹⁶O.
- 9:00 a.m. Torrano Z. A. * Rai V. K. Wadhwa M.
[*Combined Investigation of Chromium, Titanium, and Magnesium Isotope Compositions of Refractory Inclusions from a Variety of Carbonaceous Chondrites*](#) [#2405]
Diverse CAIs / Show heterogeneous / Early reservoir.
- 9:15 a.m. Bermingham K. R. * Gussone N. Mezger K.
[*Origins of Mass-Dependent and Mass-Independent Ca Isotope Variations in Meteoritic Components*](#) [#2178]
Mass-dependent and mass-independent Ca isotope compositions of 16 CAIs, AOAs, chondrules, and dark inclusions are presented and their origins discussed.
- 9:30 a.m. Render J. * Brennecka G. A. Ebert S. Burkhardt C. Kleine T.
[*A Common Source of Refractory Inclusions in Different Carbonaceous Chondrite Classes? Insights from Titanium Isotopic Signatures*](#) [#2116]
Titanium isotope signatures of CAIs from CO chondritic meteorites indicate a strong genetic relationship to CAIs from other chondrite classes.
- 9:45 a.m. Ivanova M. A. * Mendybaev R. A. Shornikov S. I. Ryazantsev K. M. MacPherson G. J.
[*Evaporation of Spinel-Rich CAI Melts: A Possible Link to CH-CB CAIs*](#) [#1965]
We report results on experiment and calculation of the spinel-rich CAI melt evaporation to investigate the evolution of the bulk chemical compositions of CAIs.
- 10:00 a.m. Mendybaev R. A. * Teng F.-Z. Kamibayashi M. Georg R. B. Davis A. M. et al.
[*Magnesium Isotopic Fractionation During Evaporation of CAI-Like Melts in Low-Pressure Hydrogen Gas and in Vacuum: Similarities and Differences*](#) [#2580]
Experiments show that evaporation of CAI-like melts in low-pressure H₂ gas fractionate Mg isotopes (and chemical composition) the same way as in vacuum.
- 10:15 a.m. Pravdivtseva O. * Meshik A. Tissot F. L. H. Dauphas N.
[*I-Xe Studies of Aqueous Alteration in the Allende CAI Curious Marie*](#) [#2959]
We present new I-Xe ages for the U-depleted Allende CAI Curious Marie.
- 10:30 a.m. Keller L. P. * Yasuhara A. Han J. Keller E. L.
[*The Crystal Chemistry of Defect-Structured Meteoritic Hibonite: Atomic Resolution Imaging and X-Ray Mapping*](#) [#2392]
Atomic-scale imaging and chemical data are used to determine the structure and bonding in hibonite defects and the role of Mg and Ti in their formation.

- 10:45 a.m. Houde V. L. * Flemming R. L. Bouvier A. Terskikh V.
[Cation Ordering in Spinel from a Calcium-Aluminium-Rich Inclusion in Carbonaceous Chondrite Northwest Africa 2364 to Quantify Temperature in the Early Solar Nebula](#) [#2673]
Cation ordering in spinel from a CAI from NWA 2364 was measured using ^{27}Al MAS NMR to estimate the temperature of spinel formation in the solar nebula.
- 11:00 a.m. Yoshizaki T. * McDonough W. F. Ash R. D.
[Ratio Variations of Refractory Lithophile Elements in Chondrites and Their Components: Implications for Planetary Compositions](#) [#1436]
Refractory lithophile element ratios of enstatite chondrite components are variable, suggesting chemical fractionations in a reduced nebula condition.
- 11:15 a.m. Bloom H. E. * Chen H. Fegley B. Jr. Lodders K. Wang K.
[Potassium Isotope Compositions of Carbonaceous and Ordinary Chondrites: Implications on the Origin of Volatile Depletion in the Early Solar System](#) [#1193]
Implications of volatile depletion in early solar system planetary bodies through potassium isotope concentrations of carbonaceous and ordinary chondrites.
- 11:30 a.m. Sikdar J. * Becker H. Schuessler J.
[Si and Fe Isotope Heterogeneity in Enstatite Chondrites: Implications for Nebular Fractionation and Terrestrial Core Formation](#) [#1827]
Results from high precision Si and Fe isotope analyses in different components of enstatite chondrites are summarized in abstract.