

Tuesday, July 24, 2018

**PROTOPLANETARY DISK PROCESSES AND CHONDRITIC COMPONENTS:
OBSERVATIONS, THEORETICAL MODELS, AND EXPERIMENTS: I**

9:00 a.m. Red Room

**Chairs: Yves Marrocchi
Jean-David Bodénan**

- 9:00 a.m. Pignatale F. C. Charnoz S. Chaussidon M. * Jacquet E.
[*Making the Planetary Material Diversity During the Early Assembling of the Solar System*](#) [#6021]
Numerical models coupling the collapse of the presolar cloud with the formation and early evolution of the disk predict that the main lines of the compositional variability of chondrites is established within the first 200 kyr of the Sun.
- 9:15 a.m. Westphal A. J. * Fakra S. Butterworth A. L. Gainsforth Z. Jilly-Rehak C. E.
[*Technique for Comparison of Micro-CAI Concentration in 81P/Wild 2 Fine-Grained Material and Primitive Meteorite Matrices*](#) [#6301]
We report the development of a synchrotron- and SEM-based technique that allows for direct comparison of the micro-CAI concentration in comet 81P/Wild 2 and in primitive meteorite matrices. We also report preliminary results.
- 9:30 a.m. Mishra R. K. * Marhas K. K.
[*Fossil Record of \$^7\text{Be}\$ and \$^{10}\text{Be}\$ in a CAI: Implications for the Origin and Early Evolution of Our Solar System*](#) [#6125]
Fossil record of ^7Be and ^{10}Be in an Efremovka CAI (E40) provide evidence of multiple episodes of intense irradiation with implications for the origin and early evolution of our solar system.
- 9:45 a.m. Gregory T. * Luu T.-H. Russell S. S. Elliott T.
[*Using Refractory Forsterite Grains to Test Models of \$^{26}\text{Al}/^{27}\text{Al}\$ Heterogeneity*](#) [#6126]
We characterised the chemical and oxygen-isotopic composition of twenty-two refractory forsterite grains. Work is ongoing to measure their mass-independent variations of $^{26}\text{Mg}/^{24}\text{Mg}$ to test models of $^{26}\text{Al}/^{27}\text{Al}$ heterogeneity in the early solar system.
- 10:00 a.m. Yoshizaki T. * Nakamura T. Nakashima D. Sakamoto N. Ishida H. Itoh S.
[*A Short Timescale for CAI Rim Formation*](#) [#6012]
Grain-scale O-isotope disequilibrium in a CV CAI suggests that duration of annealing during the WL rim formation was <10 yrs. CAIs were immediately removed from the hot inner solar nebula before the proto-Jupiter created a gap in the disk.
- 10:15 a.m. Mendybaev R. A. * Shornikov S. I.
[*Evaporation of CaO-MgO- \$\text{Al}_2\text{O}_3\$ - \$\text{SiO}_2\$ Melts: Experiments and Thermodynamic Modeling*](#) [#6061]
We present the results from our experiments on evaporation of CMAS melts under low-pressure conditions and compare them with the calculated ones using thermodynamic approach.
- 10:30 a.m. Ivanova M. A. * Shornikov S. I. Mendybaev R. A. Ryazantsaev K. P. MacPherson G. J.
[*Aspects of Evaporation Processes of CAIs Enriched in Spinel, Melilite and Hibonite*](#) [#6070]
We report our observations of chemical peculiarities of experimental run products produced by evaporation of spinel-rich melts and discuss the results of the thermodynamic modeling of evaporation of two spinel-melilite-hibonite-rich CAIs 54E and 48E.
- 10:45 a.m. Libourel G. * Portail M.
[*Overlooked Chondrules: A High Resolution Cathodoluminescence Survey*](#) [#6088]
Cathodoluminescence of chondrule olivines reveals structures indicative of gas-assisted epitaxial growth during chondrule melt crystallization.

- 11:00 a.m. Barosch J. * Sawatzki L. Hezel D. C.
[*Mineralogical Chondrule Zonation in Chondrites*](#) [#6199]
We studied the textural characteristics of chondrules from all chondrite classes. A large fraction of these chondrules is mineralogically zoned.
- 11:15 a.m. Koch T. E. * Spahr D. Merges D. Beck A. A. Christ O. Genzel P.-T. Lindner M. Mederos Leber D. Winkler B. Brenker F. E.
[*EXCISS: Experimental Chondrule Formation Aboard the International Space Station ISS*](#) [#6139]
We developed a chondrule formation experiment which will be performed aboard the International Space Station (ISS).
- 11:30 a.m. Marrocchi Y. * Villeneuve J. Batanova V. Piani L. Jacquet E.
[*Oxygen Isotopic Diversity of Chondrule Precursors and the Nebular Origin of Chondrules*](#) [#6023]
High resolution X-ray maps and O-isotope measurements allow relict and host olivine grains to be distinguished within chondrules. Our results support a nebular origin of chondrules via gas-assisted melting of nebular condensates.
- 11:45 a.m. Stockdale S. C. Franchi I. A. * Morgan D. J. Anand M. Grady M. M.
[*Cooling Rates of Chondrules from Diffusion Profiles in Relict Olivine Grains*](#) [#6272]
Fe-Mg diffusion profiles in forsteritic-olivine relict grains in chondrules from ALHA 77307 have been modelled. Good diffusion model fits are produced with non-linear cooling rates offering additional insight into the origin of chondrules.