

Monday, March 19, 2018
PROTOPLANETARY DISKS I: DYNAMICS AND RESERVOIRS
8:30 a.m. Montgomery Ballroom

[M105]

Chairs: Benjamin Weiss
 Katherine Bermingham

- 8:30 a.m. Nuth J. A. III * Johnson N. M. Ferguson F. T.
[CO is Chemically Active in the Solar Nebula: CO Self-Shielding is Invalid](#) [#1131]
 For self-shielding to work, un-photolyzed C¹⁶O must remain sequestered from subsequent reactions, yet CO is reactive on surfaces over a wide temperature range.
- 8:45 a.m. Chakraborty S. * Thiemens M. H.
[Mineral Formation and Growth with Anomalous Oxygen Isotopic Composition on Siliceous Dust Surfaces](#) [#2866]
 Study of new mineral formation and growth on siliceous dust surface analogs. SEM, EDX, and oxygen isotopic analysis to characterize the new particles.
- 9:00 a.m. Dunham E. T. * Liu M.-C. Simon S. B. Krot A. N. Wadhwa M.
[Beryllium-Boron Systematics of ²⁶Al-Poor CAIs: Implications for the Relationship Between FUN and Non-FUN CAIs](#) [#2402]
 10-beryllium / Large range in FUN and / Non-FUN CAIs.
- 9:15 a.m. Brennecke G. A. * Burkhardt C. Nimmo F. Kruijer T. S. Kleine T.
[Molybdenum Isotopic Evidence for a Distal Formation of Refractory Inclusions](#) [#2429]
 Mo isotope signatures of unmelted CAIs share a genetic heritage with samples that formed in the outer solar system. Perhaps that is where CAIs formed?
- 9:30 a.m. Budde G. * Burkhardt C. Kleine T.
[Early Solar System Dynamics Inferred from Molybdenum Isotope Anomalies in Meteorites](#) [#2353]
 Mo isotope dichotomy between CC and NC meteorites holds for all groups. Earth's mantle shows evidence for addition of CC material toward end of accretion.
- 9:45 a.m. Melosh H. J. * Bland P. A. Collins G. S. Johnson B. C. Minton D. A. et al.
[Chondrite Origins in Nebular Fiefdoms of the Early Solar System](#) [#1673]
 We propose the existence of long-lasting distinct domains ("fiefdoms") in the protoplanetary nebula to explain the variety and nature of chondrites.
- 10:00 a.m. Yin Q.-Z. * Sanborn M. E. Goodrich C. E. Zolensky M. Fioretti A. M. et al.
[Nebula Scale Mixing Between Non-Carbonaceous and Carbonaceous Chondrite Reservoirs: Testing the Grand Tack Model with Almahata Sitta Stones](#) [#1810]
 A case for large scale mixing between inner terrestrial planet forming region and outer planet region is evidenced with important implication for Jupiter's role.
- 10:15 a.m. Perez A. M. * Desch S. J. Schrader D. L. Till C. B.
[An Experimental Investigation of the Planetary Embryo Bow Shock Model as a Chondrule Formation Mechanism](#) [#2041]
 Making chondrules rocks / To test embryo bow shocks / Through their cooling rates.
- 10:30 a.m. Bryson J. F. J. * Weiss B. P. Lima E. A. Gattacceca J. Cassata W.
[Evidence for Planetary Migration in the Early Solar System from Meteorite Paleomagnetism](#) [#1252]
 We present evidence for early planetary migrations and constrain the rate of chondrule and CAI transport using the paleomagnetism of the Tagish Lake meteorite.

- 10:45 a.m. Desch S. J. * Kalyaan A. Alexander C. M. O'D.
[*Solution of the CAI Storage Problem, and the Time and Place of Formation of Meteorite Parent Bodies*](#) [#2335]
Carbonaceous chondrites formed in pressure maximum beyond Jupiter, where CAIs were trapped. We assign a time and place for the formation of most meteorites.
- 11:00 a.m. Umurhan O. M. * Estrada P. R. Cuzzi J. N. Hartlep T.
[*Streaming Instability in Turbulent Protoplanetary Disks: Theoretical Predictions*](#) [#2832]
The streaming instability, is a turbulent possibility. If the stirring is too strong and the particles too small, it is hard to make planetesimals grow at all.
- 11:15 a.m. Arnold J. A. * Weinberger A. J. Videen G. Zubko E.
[*Radiation Pressure Forces and Blow-Out Sizes for Particles in Debris Disks*](#) [#2711]
It scatters starlight / Yet is by starlight blown. Dust: / Will you stay or go?
- 11:30 a.m. Castillo-Rogez J. C. * Walsh K. J. Vernazza P. Takir D.
[*Genetic Relationships Among Small Body Reservoirs from Geophysical Constraints*](#) [#1709]
The heat budget of midsize planetesimals across the solar system derived from available physical data yields constraints on accretional environments.