Tuesday, July 24, 2018
PROTOPLANETARY DISK PROCESSES AND CHONDRITIC COMPONENTS: OBSERVATIONS, THEORETICAL MODELS, AND EXPERIMENTS: II
1:30 p.m. Red Room

Chairs: **Michael Weisberg**
Dominik Hezel

1:30 p.m. Weisberg M. K. * Ebel D. S. Howard K. T.
Dusty Silicates in Unequilibrated Enstatite Chondrites **[#6355]**
Dusty grains in the ALH 81189 enstatite chondrite formed from reduction of FeO-olivine and record a pre-history of chondrule formation during oxidizing conditions followed by a change in the chondrule-forming environment to more reducing conditions.

1:45 p.m. Akimkin V. V. *
Retention of Small Dust in Protoplanetary Environments **[#6086]**
By solving the Smoluchowski equation for charged grains we investigate the conditions for the retention of micron-size dust in protoplanetary disk (PPD) environments, which is important for PPD infrared observations and meteorite matrix structure.

2:00 p.m. Hezel D. C. * Parteli E.
Constraints for Mixing Chondrules from Multiple Parental Reservoirs **[#6230]**
We compare bulk chondrule compositional data to the results of a mixing model we developed to explore whether it is possible that chondrules of individual chondrites represent mixtures of various parental reservoirs. This is likely not the case.

2:15 p.m. Greenwood J. P. * Herbst W.
Experimental and Theoretical Progress on the Flyby Model for Chondrule and Chondrite Formation **[#6334]**
We will report on experimental and theoretical progress on the Flyby model for chondrule and chondrite formation.

2:30 p.m. Harries D. * Barth M. I. F. Langenhorst F.
Iron Nitride in Metal of the Primitive Chondrite Acfer 094: Extreme Nebular Nitrogen Processing? **[#6079]**
We report the finding of roaldite (Fe_4N) in a metal grain of the very primitive chondrite Acfer 094. Nitride formation in a nebular environment suggests extreme nitrogen activities, possibly provided by ammonia.

2:45 p.m. Bodénan J.-D. * Surville C. Mayer L. Schönbächler M.
Chondrule Formation in Shocks Generated by Jupiter Travelling in the Protoplanetary Disk **[#6059]**
Combining astrophysics methods and data from cosmochemistry, we assess whether the presence of Jupiter and the shocks it causes in the protoplanetary disk could explain chondrule formation.

3:00 p.m. Pavlyuchenkov Ya. N. * Elbakyan V. G. Vorobyov E. I. Shustov B. M.
Gravitationally Bound Fragments in a Protoplanetary Disk as Possible Places of Chondrules Formation **[#6037]**
We demonstrate in hydrocode simulation that the transient ensemble of gravitationally bound fragments appears in disk and the fragments can provide the necessary conditions for chondrules formation.

3:15 p.m. Ebel D. S. * Crapster-Pregont E. J. Weisberg M. K.
Complementary CO Chondrules and Matrix Approach Solar Mg/Si with Grade **[#6318]**
Mg/Si ratios in CO 3.0 chondrules and matrix are, respectively, well above and below solar (and bulk CO) Mg/Si. With increasing petrologic grade to 3.7, Mg/Si in both matrix and chondrules approach solar, consistent with complementarity. Statistical power!

3:30 p.m. Zanda B. * Humayun M. Lewin E. Pont S. Hewins R. H.
Mo-W Isotopic Evidence Against Chondrule-Matrix Complementarity **[#6171]**
Mo-W isotopic evidence demonstrates that chondrules and matrix do not originate by chemical fractionation from the same isotopically defined reservoir of material, but derive from entirely different reservoirs with distinct nucleosynthetic origins.