

Tuesday, March 8, 2011  
**POSTER SESSION I: EARLY SOLAR SYSTEM II:  
 CHONDRULES AND AMOEBOID OLIVINE AGGREGATES**  
 6:00 p.m. Town Center Exhibit Area

Mathieu R. Pack A.

[\*Constraining Chondrule Formation Using an Aerodynamic Levitation Apparatus\*](#) [#2476]

In this abstract we describe a new apparatus used to clarify the formation mechanism of chondrules. Then, we will present our first results on thermal history constraints (heating temperature and cooling rates).

Kataoka K. Tachibana S. Takigawa A. Nagahara H. Ozawa K. Kogure T.

[\*Condensation Experiments of Magnesium-Silicates Under Protosolar Disk Conditions: Condensates\*](#) [#2839]

We carried out condensation experiments of Mg-silicates under controlled protoplanetary disk-like conditions, and obtained crystalline forsterite as condensates grown epitaxially on the forsterite substrate.

Hood L. L. Weidenschilling S. J.

[\*The Planetesimal Shock Model for Chondrule Formation: Improved Orbital Simulations and Extended Shock Fronts\*](#) [#2068]

The efficiency of potential chondrule formation in shock waves produced by planetesimals passing through jovian resonances is evaluated further using an improved planetesimal accretion and orbital evolution code.

Fedkin A. V. Grossman L. Ciesla F. J. Simon S. B.

[\*Mineralogical and Isotopic Effects of Shock Wave Thermal Histories on Chondrule Precursors\*](#) [#2123]

Improved models show very significant Mg, Si, and Fe evaporation from chondrule precursors in shock wave thermal histories that reach near-liquidus Ts, resulting in preservation of large internal isotopic heterogeneities, even at high-dust enrichments.

Sanders I. S.

[\*Early Planetesimals as Reservoirs for Chondrule Materials\*](#) [#2484]

Recent observations add to a growing body of evidence that chondrules were derived from the disruption of planetesimals, and were not formed by the melting of dust clumps.

Cristarella T. C. Sears D. W.

[\*Classifying Chondrules Based on Cathodoluminescence\*](#) [#1225]

Sears et al. (1991) proposed a scheme to classify chondrules based on cathodoluminescence color and electron microprobe analysis. This research evaluates that scheme and criticisms received from Grossman and Brearley (2005).

Lehner S. W. Petaev M. I. Zolotov M. Buseck P. R.

[\*The Origin of Niningerite in EH3 Silica-Bearing Chondrules\*](#) [#1863]

Certain EH3 silica-bearing chondrules are enriched in Al, S, Na, Mn, and Si relative to CI chondrites and contain evidence that niningerite formed from pyroxene and olivine via silicate sulfidation reactions.

Teplyakova S. N. Humayun M. Lorenz C. A. Ivanova M. A. Korochantsev A. V. Sadilenko D. A.

[\*Trace Element Distribution Between Minerals of Nodules, Veins and Fine-Grained Metal Particles from Some Ordinary Chondrites\*](#) [#1802]

Ordinary chondrites contain nodules are often depleted in HSE and Cu compared to fine-grained metal and enriched in W, Mo. We report preliminary results on major and trace element distribution in metal particles veins from four ordinary chondrites.

Patzer A. Hezel D. C. Bendel V. Pack A.

[\*The Leoville CV3 Chondrite Revisited: Prime Material for the Study of Refractory Trace Elements\*](#) [#1404]

We studied the petrography and chemical composition of constituents in the reduced CV3 chondrite Leoville, investigated their budgets of refractory trace elements, and calculated bulk REE proportions.

Hewins R. H. Zanda B. Bourot-Denise M.

[\*The Formation of Type II Chondrules in CM Chondrites: The View from Paris\*](#) [#1914]

In Paris (CM) Type II chondrules, olivine cores are  $Fa_{7-76}$  with  $Fa_{1-19}$  relics. Fe-Mn correlations show that CM and LL chondrules come from different reservoirs and formed by condensation of Fe and Mn onto Type I material in a late oxidizing environment.

Sierchio J. M. Lauretta D. S. Davidson J.

[\*Fe-Mg Diffusion Processes in Compound Chondrules in the NWA 505 Chondrite\*](#) [#2000]

We present the results of numerically modeling isothermal Fe-Mg diffusion processes in the NWA 505 chondrite. We also discuss the implications of these results for the thermal history and formation of compound chondrules in NWA 505.

Humayun M. Burnett D. S. Jurewicz A. J. G.

[\*Preliminary Magnesium Isotopic Composition of Solar Wind from Genesis SOS\*](#) [#1211]

We report the presence of isotopically light Mg ( $-4\%$ ) extracted from cleaned Genesis SOS wafers.

Ushikubo T. Kimura M. Kita N. T. Valley J. W.

[\*Primordial Oxygen Isotope Reservoirs of the Solar Nebula Recorded in Chondrules from Acfer 094 Carbonaceous Chondrite\*](#) [#1183]

Oxygen-isotope ratios of phenocrysts and glass in each chondrule from Acfer 094 are identical. Chondrules from Acfer 094 show a bimodal oxygen isotope distribution, indicating that they formed in two distinct oxygen isotope reservoirs.

Isa J. Rubin A. E. Marin-Carbonne J. McKeegan K. D. Wasson J. T.

[\*Oxygen-Isotopic Compositions of R-Chondrite Chondrules\*](#) [#2623]

We observed different O-isotopic compositions in three PO chondrules from the primitive R3.6 chondrite, PRE 95404. R chondrites are much more closely related to OC than to CC.

Tenner T. J. Ushikubo T. Kurahashi E. Kita N. T. Nagahara H.

[\*Oxygen Isotopic Measurements of Phenocrysts in Chondrules from the Primitive Carbonaceous Chondrite Yamato 81020: Evidence for Two Distinct Oxygen Isotope Reservoirs\*](#) [#1426]

Mineral compositions and oxygen isotope ratios of chondrules from Y-81020 (CO3.0) were investigated. Bimodal distribution of O isotopic ratios may suggest two distinct reservoirs within the carbonaceous chondrule-forming region.

Morris M. A. Janney P. E. Hines R. Wadhwa M.

[\*\$^{26}Al\$ - \$^{26}Mg\$  Systematics of Selected Chondrules from Allende and Semarkona\*](#) [#2773]

We report initial results from LA-MC-ICPMS analyses of Mg isotopes in selected chondrules in Allende and Semarkona, which suggest these chondrule formed no earlier than  $\sim 1$  Ma and no later than  $\sim 3$  Ma after CAIs.

Das J. P. Meshik A. P. Pravdivtseva O. V. Hohenberg C. M.

[\*A First Test of a New Analyte.193 Laser Ablation System: In-Situ Helium, Neon and Argon Compositions of Chondrule Zones and Surrounding Matrix in NWA 801 CR2 Chondrite\*](#) [#2238]

A new excimer laser is attached to the noble gas mass spectrometer at St Louis Noble Gas Laboratory. This abstract discuss the first test with this new set up and report primary results obtained during this test for the chondrules of NWA 801 CR2 chondrite.

Varela M. E. Zinner E. Kurat G. Magnelli D. E.

[\*Acfer 182 Chondrules Give Evidence for Direct Condensation of Enstatite-Rich Liquids from the Solar Nebula\*](#) [#1497]

We report the results of major- and trace-element studies of some CC chondrules in Acfer 182. The patterns could reflect condensation of the enstatite-rich liquids from a gas from which variable proportion of refractory phases had been removed.