

Thursday, March 21, 2013

[R701]

## POSTER SESSION: PRESOLAR GRAINS AND DUST EVOLUTION

6:00 p.m. Town Center Exhibit Area

Lewis J. B. Podosek F. Bernatowicz T. Floss C. Gyngard F. et al. **POSTER LOCATION #1**  
[Statistical Constraints on  \$^{13}\text{C}/^{12}\text{C}\$  Anomalies in Allende Nanodiamonds by NanoSIMS Analysis](#) [#2506]

We constrained the isotopic composition of nanodiamonds by applying statistics to large numbers of measurements of smaller aggregates than heretofore analysed.

Nguyen A. N. Keller L. P. Rahman Z. Messenger S. **POSTER LOCATION #2**  
[Crystal Structure and Chemical Composition of a Presolar Silicate from the Queen Elizabeth Range 99177 Meteorite](#) [#2853]

TEM analysis of a presolar AGB silicate from QUE 99177 reveals a small nanocrystalline enstatite core surrounded by an amorphous Fe-bearing pyroxene-like shell.

Stroud R. M. Nittler L. R. Alexander C. M. O'D. **POSTER LOCATION #3**  
[Analytical Electron Microscopy of a CAI-Like Presolar Grain and Associated Fine-Grained Matrix Materials in the Dominion Range 08006 CO3 Meteorite](#) [#2315]

We report the discovery of a CAI-like presolar silicate and provide TEM data to support classification of DOM 08006 in the CO3.00 to CO3.05 range.

Bose M. Zega T. J. Andronokov A. Williams P. **POSTER LOCATION #4**  
[A Large Presolar Oxide Grain Identified in Allende CV3 Chondrite](#) [#3024]

We have found a large  $10 \times 6$ - $\mu\text{m}$ -sized presolar oxide grain in acid residues of CV3 carbonaceous chondrite Allende.

Haenecour P. Floss C. Jolliff B. L. Carpenter P. **POSTER LOCATION #5**  
[Presolar Grains in Fine-Grained Chondrule Rims: Re-Equilibration of Oxygen Isotopic Compositions in some Presolar Silicates by Heating](#) [#1150]

The abundance of presolar silicates is lower in the chondrule rims than in the matrix of LAP 031117, likely reflecting their isotopic homogenization by heating.

Jadhav M. Schmitz S. Croat T. K. Brenker F. E. Schmitt M. et al. **POSTER LOCATION #6**  
[Nano-Synchrotron XRF and XRD: A Powerful Non-Destructive Technique for In Situ Chemical and Structural Analyses of Presolar Grains](#) [#2928]

Some preliminary results of nano-SXRF and SXRD measurements of presolar graphite grains are presented to demonstrate the advantages of this method.

Ong W. J. Floss C. **POSTER LOCATION #7**  
[Fe Isotope Nucleosynthesis: Constraints from Fe Isotopic Analyses of Presolar Silicate Grains from Acfer 094](#) [#1163]

We report Fe-isotopic compositions for presolar silicates from Acfer 094. Some grains show depletions in  $^{57}\text{Fe}$  that are inconsistent with AGB model predictions.

Trappitsch R. Davis A. M. **POSTER LOCATION #8**  
[Retention Model for Radiogenic Lead Isotopes in Presolar Grains](#) [#2666]

We present Monte Carlo model results for the retention of radiogenic lead isotopes from the decay of uranium and thorium in presolar SiC grains.

Matthews L. S. Shotorban B. Hyde T. W. **POSTER LOCATION #9**  
[Effect of Stochastic Charging on Cosmic Dust Aggregation](#) [#1519]

This study examines how stochastic charge fluctuations alter the coagulation process of cosmic dust and the physical characteristics of the aggregates formed.

Barnes W. T. Matthews L. S. Hyde T. W.

**POSTER LOCATION #10**

[Dust Grain Growth in a Protoplanetary Disk: Effects of Location on Charge and Size](#) [#1897]

The formation and charging of dust aggregates at several different locations within the protoplanetary disk are examined using a numerical model.

Frazier S. A. Matthews L. S. Hyde T. W.

**POSTER LOCATION #11**

[Charging Behavior of Dust Aggregates in a Cosmic Plasma Environment](#) [#2480]

When exposed to UV radiation, dust aggregates in a complex plasma may exhibit a mixed charging history.

Takigawa A. Matsumoto T. Miyake A. Tsuchiyama A. Nakata Y. et al.

**POSTER LOCATION #12**

[Surface Structure Formation of Presolar Alumina \( \$Al\_2O\_3\$ \): Hydrogen and Helium Ion Irradiation Experiments](#) [#2080]

We performed irradiation experiments of  $Al_2O_3$  wafers and particles with  $H_2^+$  and  $He^+$  ions and discussed the origin of surface structures of presolar alumina.

Stephan T. Pellin M. J. Rost D. Davis A. M. Savina M. R. et al.

**POSTER LOCATION #13**

[CHILI — The Chicago Instrument for Laser Ionization](#) [#2536]

CHILI, a new RIMS instrument for isotopic analysis at ~10-nm lateral resolution and high sensitivity, is nearing completion at the University of Chicago.