PRESOLAR, INTERPLANETARY, AND COMETARY DUST

Thursday, March 24, 2016
8:30 a.m.   Montgomery Ballroom

Chairs: Ryan Ogliore
         Reto Trappitsch

8:30 a.m. Hoppe P. * Pignatari M. Kodolányi J. Groener E.

New Insights into Supernova Nucleosynthesis from a Presolar SiC Grain with Unique Carbon Isotopic Composition [#1108]

A SiC SN grain identified by ion imaging has the highest $^{12}C/^{13}C$ ever found for presolar grains and provides a unique opportunity to study SN He shell matter.

8:45 a.m. Kodolányi J. * Vollmer C. Hoppe P. Müller M.

NanoSIMS and TEM Investigations of Supernova SiC Grains [#1478]

Hexagonal crystals (in particular the 6H polytype) are more common among presolar SiC grains of SN origin than among SiC from the winds of AGB stars.

9:00 a.m. Trappitsch R. * Stephan T. Davis A. M. Pellin M. J. Rost D. et al.

Simultaneous Analysis of Iron and Nickel Isotopes in Presolar SiC Grains with CHILI [#3025]

Using CHILI, we analyzed 11 presolar SiC grains for their Fe and Ni isotopic composition and element ratios. These elements are proxies for studying GCE effects.


Presolar Graphite from a CO Nova [#1580]

We report coordinated in situ isotopic, elemental, and microstructural analyses of the first plausible presolar graphite grain from a CO nova.

9:30 a.m. Jadhav M. * Holt M. Winarksi R. Miller D. J.

Combined Nano Computed Tomography and X-Ray Fluorescence Measurements of a Presolar Grain [#2829]

We present results from a new synchrotron-based X-ray nano tomography-assisted chemical correlation (nTACCo) study of a presolar graphite grain.

9:45 a.m. Stroud R. M. * Pravdivtseva O. V. Meshik A. P. Shatoff E. A.

Aberration-Corrected STEM Analysis of Electrophoresis Separates of Allende Nanodiamond [#2311]

STEM analyses of Allende nanodiamond separates reveal microstructural variation, including a 0.6 nm Ir-rich particle in a Xe-HL-rich fine fraction.

10:00 a.m. Floss C. * Haenecour P.

Meteorite Hills (MET) 00526: An Unequilibrated Ordinary Chondrite with High Presolar Grain Abundances [#1030]

Presolar silicate abundances are ~100 higher in the UOC MET 00526 than Semarkona, emphasizing the need for systematic presolar grain searches in other UOCs.

10:15 a.m. Snead C. J. * Keller L. P. McKeeegan K. D. Messenger S.

Precision Oxygen Isotope Measurements of Two C-Rich Hydrated Interplanetary Dust Particles [#2850]

We report results of oxygen isotope measurements of two C-rich hydrated interplanetary dust particles.


High Precision Oxygen Three-Isotopes Analyses from Comet 81P/Wild 2 and Probable Cometary Material from a Giant Cluster IDP [#1584]

O isotope analyses from Wild 2 and GC-IDP silicates show a possible link with CR chondrites while $^{16}$O-rich Wild 2 pyroxenes could be linked to AOAs.
10:45 a.m. Joswiak D. J.* Brownlee D. E.  
*Possible Igneous Origins of Sulfide-Silicate Assemblages Found in Comet Wild 2 and a Giant Cluster IDP of Probable Cometary Origin [#1679]*  
Some coarse-grained sulfide-silicate assemblages found in comet Wild 2 and a giant cluster IDP may have formed at high temperatures.

11:00 a.m. Gainsforth Z.* Butterworth A. L. Jilly-Rehak C. E. Westphal A. J. Brownlee D. E. et al.  
*Possible GEMS and Ultra-Fine Grained Polyphase Units in Comet Wild 2 [#2366]*  
Chemical compositions and morphologies of two objects in the wake of a terminal particle of track C2086.22.191 suggest they may be a GEMS and UFG-PU.

11:15 a.m. De Gregorio B. T.* Stroud R. M.  
*What Would a Cometary Interplanetary Dust Particle Look Like After Hypervelocity Impact in Silica Aerogel? [#2673]*  
An offshoot terminal particle from Track 196 is consistent with a porous impactor, with abundant pyroxene “whiskers” and carbonaceous matter. Perhaps an IDP?

11:30 a.m. Croat T. K.* Haas B. A. Floss C.  
*The Composition of Surviving Fine Grained Cometary Material in Stardust Al-Foil Craters [#2204]*  
We present SEM-EDX and Auger semi-quantitative analysis methods for Al-foil-captured cometary fines along with compositional data from 150 Stardust craters.