

Tuesday, March 8, 2011
POSTER SESSION I: PRESOLAR GRAINS
6:00 p.m. Town Center Exhibit Area

Wopenka B. Jadhav M. Zinner E.

[*Raman Analysis of High-Density Presolar Graphite Grains from the Orgueil Carbonaceous Chondrite*](#) [#1162]

Raman spectra of high-density presolar graphite grains from Orgueil show that most grains indeed consist of graphitic sp^2 carbon with variable degree of crystalline disorder. However, 2/21 grains have spectra typical of amorphous sp^2 carbon.

Jadhav M. Zinner E. Amari S. Maruoka T.

[*More Ca and Ti Isotopic Ratios in High-Density, Presolar Graphite Grains from Orgueil*](#) [#1599]

We present Ca- and Ti-isotopic data for presolar graphites. Confirming previous conclusions, our results indicate that some ^{13}C -enriched grains that have extremely large Ca and Ti anomalies probably originate from born-again AGB stars.

Amari S. Zinner E. Gallino R. Lewis R. S.

[*Presolar Graphite from Murchison*](#) [#1098]

We have analyzed 1642 graphite grains from four Murchison fractions. Many grains in lower-density fractions KE3 and KFA1 originated from supernovae. A significant number of grains in higher-density fractions KFB1 and KFC1 formed in low-metallicity AGB stars.

Heck P. R. Pellin M. J. Davis A. M. Isheim D. Seidman D. N. Hiller J. Mane A. Elam J. Savina M. R. Stephan T. Stadermann F. J. Zhao X. Daulton T. L. Floss C. Amari S.

[*Atom-Probe Tomographic Analyses of Meteoritic Nanodiamond Residue from Allende*](#) [#2070]

We present the first successful atom-probe tomograph analyses of meteoritic nanodiamond residue from Allende. We developed new sample preparation techniques that significantly improve sample stability.

Verchovsky A. B. Fisenko A. V. Semjenova L. F.

[*Isothermal Low-Temperature Combustion of Nanodiamonds from Orgueil: Release of Xe-P3 by Volume Diffusion*](#) [#2551]

We applied isothermal low-temperature combustion to nanodiamonds separated from Orgueil and demonstrated that release of Xe-P3 is governed by Fick's law volume diffusion.

Yabuta H. Amari S. Matsuda J. Hasegawa T. Kilcoyne A. L. D.

[*Refinement of Phase Q Carbon Chemistry Through Comparison Study of Q-Gas Rich and Depleted Fractions from the Allende Meteorite*](#) [#2837]

The acid resistant carbonaceous residue (Q gas rich), its oxidized residue (Q gas depleted) from Allende meteorite, and other Q-rich fractions obtained through suspension and physical separation of the meteorite are analyzed by Carbon-XANES.

Meier M. M. M. Heck P. R. Hoppe P. Groener E. Baur H. Wieler R.

[*Helium and Neon in 15 Presolar Silicon Carbide Grains of Type AB*](#) [#1658]

A He and Ne analysis of 15 individual presolar SiC grains of type AB yielded one grain with ^{21}Ne (and possibly ^{20}Ne) of probable nucleosynthetic origin.

Fujiya W. Hoppe P. Ott U.

[*Hints for Neutrino-Process Boron Recorded in Stardust from Supernovae*](#) [#1371]

The average B-isotopic composition of seven SiC X grains shows a small excess of ^{11}B . This result can be considered as a hint for neutrino-process B in SNeII; however, it reveals the complexity of B production, chemistry, and condensation.

Chen J. H. Papanastassiou D. A. Dauphas N.

[Anomalous Ca Isotopic Compositions in Leachates of Murchison](#) [#2440]

Leachates of Murchison show correlated ^{48}Ca , ^{54}Cr , and possibly ^{46}Ca effects. The presence of both ^{48}Ca , ^{54}Cr supports a SNIa provenance, but the carrier for the Ca anomalies has to be identified. The ^{46}Ca effects may originate in an s-type process.

Zhao X. Floss C. Stadermann F. J. Bose M. Lin Y.

[Continued Investigation of Presolar Silicate Grains in the Carbonaceous Chondrite Ningqiang](#) [#1982]

Seven Fe-rich presolar silicates, two presolar oxides, and one presolar complex grain were found in the Ningqiang C chondrite. Most of the presolar silicate/oxide grains are located in one single matrix area, with a high abundance of 256 ppm.

Leitner J. Hoppe P. Zipfel J.

[The Stardust Inventory of the CR Chondrites GRA 95229 and GRA 06100 Assessed by NanoSIMS](#) [#1713]

We investigated C- and O-anomalous grains in GRA 95229 and GRA 06100. Both meteorites display lower abundances of O-anomalous grains than other CRs, belonging to a presolar silicate-poor subset of meteorites within the CR group.

Kodolányi J. Hoppe P.

[Magnesium Isotope Measurements on Presolar Silicate Grains from AGB Stars](#) [#1094]

We present the Mg isotope composition of presolar silicate grains from AGB stars. The grains were found in the Acfer 094 carbonaceous chondrite. Our data provide information on the galactic chemical evolution and AGB-nucleosynthesis of Mg isotopes.

Trappitsch R. Leya I. Heck P. R.

[New Recoil Model for the Determination of Interstellar Resident Times of Presolar Grains](#) [#2171]

We present a new model to correct interstellar resident times of presolar grains for recoil loss effects. We also discuss implications of our calculations on ^3He and ^{21}Ne data from the literature.

Harada M. Takigawa A. Tachibana S. Nagahara H. Ozawa K.

[Kinetics of Spinel Formation Under Circumstellar Conditions](#) [#2840]

Spinel formation by a reaction between corundum and Mg gas was experimentally studied. The condensation coefficient was estimated to be ~ 0.03 at the supersaturation ratio of ~ 10 , which is applicable to spinel formation in circumstellar environments.