

**Thursday, March 13, 2008**  
**POSTER SESSION II: PRESOLAR GRAINS**  
**6:30 p.m. Fitness Center**

Marosits E. Daulton T. L. Sudek Ch. Ott U.

*What We Do to Meteoritic Nanodiamonds When We Heat Them* [#1252]

We investigated the alteration in meteoritic nanodiamonds annealed at different temperatures with and without additional chemical treatment. We correlate observed structural changes with the release of noble gases.

Davidson J. Busemann H. Alexander C. M. O'D. Nittler L. R. Hoppe P. Franchi I. A. Grady M. M.  
*Were Presolar Grains Destroyed by the Nebular Process Responsible for the Volatile Element Fractionation?* [#1184]

We present SiC abundances from a number of CM and CR chondrites using NanoSIMS raster ion imaging of acid residues. We find higher SiC abundances for CRs than previously estimated based on noble gases.

Barzyk J. G. Savina M. R. Davis A. M. Gyngard F. Amari S. Zinner E. Pellin M. J. Lewis R. S. Clayton R. N.

*Heavy Element Isotopic Compositions of Presolar SiC Grains of Types AB, X, Y and Z* [#1986]

Seven grains had at least of heavy element (Zr, Mo, Ba) measured. The potential stellar origins of the grains are discussed.

Fujiya W. Sugiura N.

*A Search for Presolar Chromium-Oxide ( $Cr_2O_3$ ) Grains in Orgueil* [#1524]

Bulk Orgueil, CI chondrite has  $^{54}Cr$  isotopic anomaly. Components of presolar origin are suggested to be the candidates with the anomaly. We measured Cr isotopic compositions of a chromium-oxide grain to detect presolar Cr-bearing grains.

Vollmer C. Hoppe P.

*Silicon Isotope Measurements of Presolar Silicates* [#1093]

We have measured the Si isotopic compositions of over 30 presolar silicates in Acfer 094 by NanoSIMS. Our data support the supernova origin of Group IV grains and put new constraints on possible stellar sources of highly  $^{17}O$  enriched Group I grains.

Hynes K. M. Amari S. Bernatowicz T. J. Croat T. K. Mertz A. F.

*Continued Studies of Ultramicrotomed Presolar SiC X Grains* [#2076]

We report the results of a coordinated NanoSIMS and TEM study of three SiC X grains. The SN origin of these grains is indicated by their isotopic compositions, their crystal sizes, and the large amount of Mg from the decay of  $^{26}Al$  observed in the grains.

Lin Y. Gyngard F. Zinner E.

*Aluminum-26, Titanium-44, and Vanadium-49 in SiC and  $Si_3N_4$  Grains of Type X from the Qingzhen (EH3) Chondrite* [#1529]

We report Mg, Ca, and Ti isotopic compositions of 24 Qingzhen SiC and  $Si_3N_4$  X grains that were previously measured for Si, C, and N isotopes. All of the X grains have large  $^{26}Mg$  excesses, and some of them have significant excesses of  $^{44}Ca$  and  $^{49}Ti$ .

Bose M. Stadermann F. J. Floss C.

*An Investigation into the Origin of Group 4 Stardust Grains* [#1099]

We reproduced the measured O isotopic compositions of group 4 grains by mixing material from few layers of the SNe ejecta and predicted the Si isotopes using the same mixing ratios. Then we compared the model values to the measured Si isotopic data.

Charnley S. B. Rodgers S. D.

*Nitrogen Superfractionation in Interstellar Chemistry* [#2233]

We report new calculations of isotopic fractionation in interstellar nitrogen.

Levine J. Savina M. R. Davis A. M. Pellin M. J. Stephan T.

*High-Precision Resonance Ionization Mass Spectrometry: Application to Presolar Grains* [#1661]

Improvements to our instrument and analytical protocols now enable the first ever high-precision, low-interference isotopic measurements of trace elements in individual presolar grains.

Gucsik A. Verchovsky A. B. Ott U. Marosits E. Karczemska A. Kozanecki M. Szurgot M.

*Meteoritic Nanodiamond: A Micro-Raman Spectroscopical Overview* [#1201]

According to this Raman study, meteoritic nanodiamonds might be formed by both processes such as CVD and shock wave, but promoted by supernovae-induced shock wave front into the interstellar medium.

Berg T. Marosits E. Maul J. Nagel P. Ott U. Schertz F. Schuppler S. Sudek Ch. Schönhense G.

*Quantum Confinement Observed in the X-Ray Absorption Spectrum of Size Distributed Nanodiamonds Extracted from the Murchison Meteorite* [#1247]

We report on NEXAFS measurements of the C K-edge of Murchison nanodiamonds. A C 1s exciton peak was observed that was not detected during previous investigations. We present quantitative analysis of the modified peak shape compared to bulk diamond.