Thursday, March 20, 2003
PRESOLAR GRAINS: FIVE SERVINGS PER DAY
1:30 p.m. Marina Plaza Ballroom

Chairs: S. R. Messenger
R. M. Stroud

Stroud R. M. * Nittler L. R. Alexander C. M. O'D. Bernatowicz T. J. Messenger S. R.
Transmission Electron Microscopy of Non-Etched Presolar Silicon Carbide **[#1755]**
TEM data from two non-etched presolar SiC grains is reported. The morphologies are distinct from each other and from that of the one previously reported non-etched grain. One grain has a silicate rim.

Smith J. B. * Huss G. R.
Isotopic Composition of Silicon Carbide in the CO3 Chondrite Colony **[#1729]**
Isotopic compositions of Si, C, and N in SiC from Colony are similar in most respects to those for SiC from Murchison and Orgueil. However, N is not as ^{14}N-rich as in similar-sized SiC from Orgueil. An unusual high-metallicity Y grain was found.

Savina M. R. * Tripa C. E. Pellin M. J. Davis A. M. Clayton R. N. Lewis R. S. Amari S.
Isotopic Composition of Molybdenum and Barium in Single Presolar Silicon Carbide Grains of Type A + B **[#2079]**
We report isotopic compositions of Mo and Ba in presolar SiC grains of type A + B. Most show solar system isotopic compositions; however, one is enhanced in the p-process isotopes ^{92}Mo and ^{94}Mo. This is the first such observation and may help to elucidate the astrophysical site of the p-process.

Davis A. M. * Gallino R. Straniero O. Domínguez I. Lugaro M.
Heavy Element Nucleosynthesis in Low Metallicity, Low Mass AGB Stars **[#2043]**
Nucleosynthesis calculations are used to predict the isotopic compositions of Sr, Zr, Mo, Ba and Ca in low metallicity asymptotic giant branch stars, which are believed to the source of Types Y and Z presolar SiC grains.

Yoshida T. * Hashimoto M.
Supernova Nucleosynthesis and Application to the Isotopic Ratios of Individual Presolar Grains from Supernovae **[#1141]**
We pursue the nucleosynthesis of supernova explosions numerically. Then we investigate how many kinds of isotopic ratios of individual presolar grains from supernovae are reproduced by considering the mixing of the supernova ejecta.

Clayton D. D. *
Presolar Galactic Merger Spawned SiC Grain Mainstream **[#1059]**
The puzzling isotopic heaviness of Si in presolar SiC mainstream grains and the puzzling three-isotope correlation slope m = 4/3 are both explained by the presolar merger of the galactic gas with a low-metallicity starburst satellite galaxy.

Stadermann F. J. * Bernatowicz T. Croat T. K. Zinner E. Messenger S. Amari S.
Titanium and Oxygen Isotopic Compositions of Sub-Micrometer TiC Crystals Within Presolar Graphite **[#1627]**
We have used the NanoSIMS to study Ti isotopes of individual TiC crystals inside a presolar graphite spherule. These measurements were made directly in TEM sections and the results can be compared to previous O measurements in the same subgrains.

Hoppe P. * Nittler L. R. Mostefaoui S. Alexander C. M. O'D. Marhas K. K.
A NanoSIMS Study of Titanium-isotopic Compositions of Presolar Corundum Grains **[#1570]**
We report Ti-isotopic data for four presolar corundum grains. These data allow to put constraints on the GCE of Ti isotopes and to test predictions of Ti-isotopic compositions in AGB stars.

Nguyen A. * Zinner E. Lewis R. S.
Identification of Presolar Spinel Grains from a Murray Residue by Multi-Detection Raster Imaging **[#1637]**
Multi-detection raster imaging with the NanoSIMS on Murray separate CG led to the identification of 40 presolar spinel grains. This detection mode is an efficient means of locating rare presolar oxide grains.

Nittler L. R. * Hoppe P. Alexander C. M. O'D. Busso M. Gallino R. Marhas K. K. Nollett K.
Magnesium Isotopes in Presolar Spinel **[#1703]**
We report Mg isotopic data for seven presolar spinel grains. Six grains have close-to-solar compositions and are in general agreement with astrophysical models. One grain, OC2, has O and Mg isotopic ratios indicating an origin in an intermediate mass star undergoing hot bottom burning.

Croat T. K. * Bernatowicz T. Stadermann F. J. Messenger S. Amari S.
TEM Study of Internal Crystals in Supernova Graphites **[#1470]**
A coordinated TEM and isotopic study of ten supernova (SN) graphites from the Murchison meteorite has revealed many internal grains, mostly titanium carbides (TiCs) and TiC-kamacite composite grains, which were accreted during the graphite growth.

Amari S. * Stadermann F. J. Zinner E. Lewis R. S.
Continued Study of Presolar Graphite from Murchison Separate KFA1 **[#1864]**
We have analyzed Mg-Al, K, Ca and Ti isotopes in the KFA1 graphite grains. Some of the grains show a signature of a supernova origin. Partly due to the high level of contamination of the sample, we are not able to infer any other stellar sources.

Messenger S. * Keller L. P. Walker R. M.
Continued Studies of Stardust in IDPs **[#1630]**
We present the results of detailed oxygen isotopic analyses of anhydrous cluster IDPs with the NanoSIMS combined with petrographic analysis using TEM to identify silicate stardust.