Friday, March 17, 2006
PRESOLAR GRAINS
1:30 p.m. Amphitheater

Chairs: M. J. Pellin
H. Busemann

1:30 p.m. Vollmer C. * Hoppe P. Brenker F. E. Palme H.
A Complex Presolar Grain in Acfer 094 — Fingerprints of a Circumstellar Condensation Sequence? **[#1284]**
We have identified 14 presolar silicates in the Acfer 094 meteorite with one complex grain consisting of an Al-rich core and a silicate rim. EDX measurements of this grain and results from a subsequent NanoSIMS study are presented.

1:45 p.m. Marhas K. K. * Hoppe P. Stadermann F. J. Floss C. Lea A. S.
The Distribution of Presolar Grains in CI and CO Meteorites **[#1959]**
Comparison of presolar silicate abundances from the Tagish Lake meteorite (CI2) and Yamato 81025 (CO3).

2:00 p.m. Ebata S. * Nagashima K. Itoh S. Kobayashi S. Sakamoto N. Fagan T. J. Yurimoto H.
Presolar Silicate Grains in Enstatite Chondrites **[#1619]**
We report the first finding of presolar silicates grains from three primitive enstatite (EH3) chondrites: Yamato-691, Allan Hills 81189, and Sahara 97072. We discovered 12 presolar silicates and discussed metamorphism effects for the abundances.

2:15 p.m. Kimura Y. * Nuth J. A. III
New Formation Route for Carbide-Core, Graphitic-Carbon Mantle Grains Based on Fullerenes **[#1073]**
We demonstrate a new formation route for core-mantle grains. The grains could have been produced by the deposition of large pre-nucleated carbon cages, formed via the Boudouard reaction from CO, that were then deposited onto carbide grain cores.

2:30 p.m. Jadhav M. * Maruoka T. Amari S. Marhas K. K. Zinner E.
Si and Mg-Al Isotopic Studies of Presolar Graphite from Orgueil **[#2177]**
We present Si and Mg-Al isotopic data for presolar graphite grains from Orgueil. The analyses indicate that the low-density graphite grains have a supernova origin, while the high-density grains appear to originate from low-metallicity AGB stars.

2:45 p.m. Busemann H. * Alexander C. M. O'D. Nittler L. R. Zega T. J. Stroud R. M. Cody G. D. Yabuta H. Hoppe P.
Correlated Microscale Isotope and Scanning Transmission X-Ray Analyses of Isotopically Anomalous Organic Matter from the CR2 Chondrite EET 92042 **[#2005]**
We discuss correlated examinations of organic matter from the CR2 chondrite EET 92042, using SIMS, STXM and other methods. We found a large, isotopically highly anomalous region of probable presolar origin that is C- and ^{13}C-poor and ^{15}N-rich.

3:00 p.m. Croat T. K. * Stadermann F. J.
Silicon Carbide Within Presolar Graphite **[#2048]**
Composite presolar grains (e.g., silicon carbide within graphite) can place constraints on circumstellar environments in which both of these phases form. We present results from a TEM and nanoSIMS study of a Murchison graphite with internal SiCs and iron grains.

3:15 p.m. Hynes K. M. * Croat T. K. Amari S. Mertz A. F. Bernatowicz T. J.
A Transmission Electron Microscopy Study of Ultramicrotomed SiC-X Grains **[#2202]**
We report the results of a NanoSIMS and TEM study of four SiC X-grains, which have a supernova origin. Like mainstream SiCs, initial polytype determinations indicate 3C-SiC is common, but with smaller domain size and higher Mg content from decayed ^{26}Al.

3:30 p.m. Gyngard F. * Amari S. Jadhav M. Zinner E. Lewis R. S.
Carbon, Nitrogen, and Silicon Isotopic Ratios in KJG Presolar Grains from Murchison **[#2194]**
Most previous measurements of Ti isotopes in SiC have suffered from various selection effects. To rectify this situation, we report C, N, and Si data for 247 randomly chosen SiC grains on which we plan to soon obtain Ti isotopic measurements.

3:45 p.m. Pellin M. J. * Savina M. R. Calaway W. F. Tripa C. E. Barzyk J. G. Davis A. M. Gyngard F. Amari S. Zinner E. Lewis R. S. Clayton R. N.
Heavy Metal Isotopic Anomalies in Supernovae Presolar Grains **[#2041]**
Isotopic anomalies in supernovae presolar grains do not show a canonical r-process. Rather they appear to have been exposed to an intense, but relatively brief neutron exposure.

4:00 p.m. Barzyk J. G. * Savina M. R. Davis A. M. Gallino R. Gyngard F. Amari S. Zinner E. Pellin M. J. Lewis R. S. Clayton R. N.
Measurement of the Isotopic Compositions of Six Elements in Individual Presolar SiC Grains **[#1999]**
We measured isotopic compositions of up to six elements (Mo, Zr, Ba, C, N, Si) in presolar SiC grains, allowing identification of contamination with material of solar system composition and constraining ^{13}C pockets abundance in AGB stars.

4:15 p.m. Kashiv Y. * Davis A. M. Cai Z. Lai B. Sutton S. R. Lewis R. S. Gallino R. Clayton R. N.
Extinct ^{93}Zr in Single Presolar SiC Grains and Condensation from Zirconium-depleted Gas **[#2464]**
The abundances of Zr and Nb in single presolar SiC grains were measured by SXRF. The data suggest that the s-process radioisotope ^{93}Zr ($t_{1/2} = 1.5 \times 10^6$ yr) condensed into the grains and that many of the grains condensed from Zr-depleted gas.

4:30 p.m. Heck Ph. R. * Hoppe P. Gröner E. Marhas K. K. Baur H. Wieler R.
Automated Search for Rare Presolar Silicon Carbide from Novae and of Type A/B: A Combined Isotopic Study of Single Grains with NanoSIMS and Noble Gas Mass Spectrometry **[#1355]**
We discuss new presolar nova grain candidates and A/B type grains found during an automated search for single presolar SiC grains with low C-12/C-13 ratios with the NanoSIMS and during a combined study with NanoSIMS and noble gas mass spectrometry.