

Thursday, March 18, 2004
PRESOLAR GRAINS
1:30 p.m. Marina Plaza Ballroom

Chairs: E. K. Zinner
M. R. Savina

- 1:30 p.m. Nguyen A. N. * Zinner E.
Discovery of Presolar Silicate Grains in the Acfer 094 Carbonaceous Chondrite [#1675]
 Oxygen isotopic analyses of submicron grains from Acfer 094 with the NanoSIMS has led to the identification of nine presolar silicate grains. The mineralogy of five grains was determined by X-ray analysis. One grain is enriched in ^{26}Mg , attributed to the decay of short-lived ^{26}Al .
- 1:45 p.m. Nagashima K. * Krot A. N. Yurimoto H.
In-Situ Discovery of Presolar Silicates from Primitive Chondrites [#1661]
 Six presolar silicate grains were identified from matrices of two primitive chondrites by in situ high-precision isotope imaging using ion microscopy. The abundances are more than two orders of magnitude smaller than those in IDPs.
- 2:00 p.m. Zinner E. * Nittler L. R. Hoppe P. Gallino R. Lewis R. S.
Oxygen and Magnesium Isotopic Ratios of Presolar Spinel Grains [#1337]
 The O isotopic ratios of 23 spinel grains indicate an origin in red giant or AGB stars. Mg isotopes are dominated by radiogenic ^{26}Mg . Inferred $^{26}\text{Al}/^{27}\text{Al}$ ratios indicate that cool bottom processing occurs in a substantial fraction of the grains' parent stars.
- 2:15 p.m. Krestina N. * Hoppe P.
A NanoSIMS Study of Two New Presolar Spinel Grains from the Bishunpur Ordinary Chondrite [#1670]
 Two new presolar spinel grains from a Bishunpur residue were found and precise O-isotopic compositions were measured with the NanoSIMS. One exceptionally large grain is enriched in ^{17}O and depleted in ^{18}O . The other one is extremely depleted in ^{18}O .
- 2:30 p.m. Nittler L. R. * Hoppe P.
New Presolar Silicon Carbide Grains with Nova Isotope Signatures [#1598]
 We report 3 SiC grains with isotopic ratios indicative of a nova origin. Si compositions are distinct from previously reported nova grains. The grains might have formed in AGB winds from companion stars to white dwarfs experiencing nova outbursts.
- 2:45 p.m. Savina M. R. * Davis A. M. Tripa C. E. Pellin M. J. Gallino R. Lewis R. S. Amari S.
Extinct Technetium in Presolar Grains [#1877]
 We present evidence of extinct Tc in presolar SiC grains in the form of an anomalous Ru isotopic composition compared to the one expected from the AGB stars that produced the grains. We show that AGB stars do not produce enough Tc to leave a detectable Ru anomaly in early solar system materials.
- 3:00 p.m. BREAK
- 3:15 p.m. Hoppe P. * Marhas K. K. Gallino R. Straniero O. Amari S. Lewis R. S.
Aluminum-26 in Submicrometer-sized Presolar SiC Grains [#1302]
 We measured the Mg-Al-isotopic systematics in 23 sub-micrometer-sized presolar SiC grains. All grains exhibit large excesses in ^{26}Mg which can be attributed to the decay of ^{26}Al . Inferred $^{26}\text{Al}/^{27}\text{Al}$ ratios are higher than those of micron-sized grains.

- 3:30 p.m. Smith J. B. * Weber P. K. Huss G. R. Hutcheon I. D.
Nitrogen and Carbon Isotopic Composition of Silicon Carbide in the CO3.0 Meteorite ALHA 77307, a NanoSIMS Study [#2006]
Silicon carbide grains from ALHA 77307 (CO3.0) were analyzed by NanoSIMS to determine their isotopic compositions. Inferences are made about the origin and subsequent history of the grains.
- 3:45 p.m. Marhas K. K. * Hoppe P. Besmehn A.
A NanoSIMS Study of Iron-Isotopic Compositions in Presolar Silicon Carbide Grains [#1834]
We measured Fe-isotopic compositions in 8 presolar SiC grains from the Sahara 97166 enstatite chondrite with the NanoSIMS. Except one X grain, all grains have solar Fe-isotopic compositions within 2 sigma errors.
- 4:00 p.m. Croat T. K. * Stadermann F. J. Zinner E. Bernatowicz T. J.
Coordinated Isotopic and TEM Studies of Presolar Graphites from Murchison [#1353]
TEM and NanoSIMS investigations of the same presolar Murchison KFC graphites revealed high Zr, Mo, and Ru content in refractory carbides within the graphites. Along with isotopically light carbon, these suggest a low-metallicity AGB source.
- 4:15 p.m. Stadermann F. J. * Croat T. K. Bernatowicz T.
NanoSIMS Determination of Carbon and Oxygen Isotopic Compositions of Presolar Graphites from the Murchison Meteorite [#1758]
These measurements were made in ultramicrotome sections, which makes it possible for the first time to directly correlate isotopic and TEM data of KFC1 grains.
- 4:30 p.m. Amari S. * Zinner E. Lewis R. S.
Comparison Study of Presolar Graphite Separates KE3 and KFA1 from the Murchison Meteorite [#2103]
Isotopic characteristics of presolar graphite in separates KE3 and KFA1 from Murchison are examined. Most KE3 grains with $^{12}\text{C}/^{13}\text{C} > 20$ are of a supernova origin, while in KFA1 supernova grains are mainly present in the C isotopic range of 20–200.
- 4:45 p.m. Verchovsky A. B. * Fisenko A. V. Semjonova L. F. Wright I. P. Pillinger C. T.
Presolar Diamonds in Krymka: C, N and Xe Isotope Data from Grain-size Separates and Comparison with Other Meteorites [#1673]
Comparison of carbon isotope variations in grain size fractions of presolar diamonds separated from three meteorites (Efremovka, Boriskino and Krymka) suggest that diamond from various parts of solar nebular have had different C isotope signature.