

Thursday, March 15, 2007
INTERPLANETARY DUST/GENESIS
1:30 p.m. Amphitheater

Chairs: G. J. Flynn
C. Floss

- 1:30 p.m. Nguyen A. N. * Busemann H. Nittler L. R.
Remarkably High Abundance of Presolar Grains in Interplanetary Dust Particles Collected from the Comet Grigg-Skjellerup Dust Stream [#2332]
 Isotopic studies of IDPs collected from the comet Grigg-Skjellerup dust stream reveal extremely high abundances of presolar grains in two of four IDPs. These abundances exceed those of any other extraterrestrial material analyzed and support a cometary origin for these IDPs.
- 1:45 p.m. Messenger S. * Keller L. Nakamura-Messenger K. Ito M.
The Abundance and Distribution of Presolar Materials in Cluster IDPs [#2122]
 We report the initial results of a study aimed at (1) determining the abundances of presolar grains in IDPs with improved accuracy and (2) evaluating whether presolar molecular cloud material (with H and/or N isotopic anomalies) is preferentially associated with presolar dust grains.
- 2:00 p.m. Floss C. * Stadermann F. J. Mertz A. Bernatowicz T.
Anatomy of an Isotopically Primitive Interplanetary Dust Particle: Coordinated NanoSIMS and Auger Nanoprobe Analyses [#1145]
 Slices of the isotopically primitive IDP Andric contain multiple presolar grains and N-anomalous compositions. Auger elemental maps of C and N suggest that the highest C and N abundances are not associated with the most anomalous N compositions.
- 2:15 p.m. Flynn G. J. * Lanzirotti A. Sutton S. R. Sitnitsky I.
Chemical Compositions of Five Large Cluster IDPs [#2290]
 We measured the elemental compositions of five large cluster IDPs, the mass equivalent of hundreds of ~10- μ m IDPs, and are measuring their X-ray diffraction patterns to determine their mineralogy, and infer the mean composition of their parent bodies.
- 2:30 p.m. Nishiizumi K. * Nakamura T. Caffee M. W. Yada T.
Exposure Histories of 10 Microgram Individual Antarctic Micrometeorites: Radionuclide Measurements, Chemical, and Morphological Analyses [#2129]
 We measured cosmogenic radionuclides in ≤ 10 μ g of Antarctic micrometeorites (AMMs). We have also performed chemical, mineralogical, and morphological analyses. The ^{10}Be exposure ages for all AMMs is >3 Myr, assuming exposure as a small body.
- 2:45 p.m. Morlok A. * Koike C. Tomioka N. Tomeoka K.
Mid-Infrared Spectroscopy of Experimentally Shocked Murchison CM2 Samples: Comparison with Astronomical Observations of Circumstellar Dust [#1023]
 Mid-infrared spectra of matrix material from the Murchison CM2 chondrite, shocked with pressures from 10 to 49 GPa, were obtained. The results are compared to infrared spectra of dust from collisions in debris disks.
- 3:00 p.m. Yokoyama M. * Takigawa A. Tachibana S. Nagahara H. Ozawa K.
Anisotropic Evaporation of Forsterite in Hydrogen Gas [#1724]
 Evaporation experiments of forsterite in hydrogen gas showed that anisotropy in evaporation rates is different from that in vacuum. This implies that evaporated forsterite grains have different shapes in different hydrogen pressure conditions.

- 3:15 p.m. Rietmeijer F. J. M. * Pun A. Nuth J. A.
Deep Metastable Eutectic Condensation in Low-Silica Al-Fe-SiO-H₂-O₂ Smoke: Simple Experiments, Major Implications [#1121]
Laboratory condensation of a low-silica Al-Fe-SiO-H₂-O₂ smoke found a ferroaluminate Deep Metastable Eutectic at 60 wt% FeO.
- 3:30 p.m. Heber V. S. * Baur H. Burnett D. S. Wieler R.
Helium and Neon Isotopic and Elemental Composition in Different Solar Wind Regime Targets from the Genesis Mission [#1894]
He and Ne analysed in different solar wind (SW) regime targets from Genesis revealed differences in isotopic and elemental composition. As example, the slow SW is enriched in ³He (23%) and possible in ²⁰Ne (6±2%) relative to ⁴He and ²²Ne, resp., and bulk SW.
- 3:45 p.m. Grimberg A. * Baur H. Burnett D. S. Bochsler P. Wieler R.
The Depth Distribution of Neon and Argon in the Bulk Metallic Glass Flown on Genesis [#1270]
We present Ar and Ne data from the Genesis metallic glass, analyzed to investigate the depth-dependent elemental and isotopic composition of solar noble gases, which provides information about the dependence of the solar wind composition on energy.
- 4:00 p.m. Mabry J. C. * Meshik A. P. Hohenberg C. M. Marrocchi Y. Pravdivtseva O. V. Wiens R. C. Olinger C. Reisenfeld D. B. Allton J. Bastien R. McNamara K. Stansbery E. Burnett D. S.
Refinement and Implications of Noble Gas Measurements from Genesis [#2412]
We report our refined results of light noble gases from Genesis collectors. We also discuss possible reasons for light isotopic enrichments in the outer layers of the collectors. One plausible explanation is the low-energy neutral component of the solar wind, and another is diffusion.
- 4:15 p.m. Marty B. * Zimmermann L. Burnard P.
Nitrogen Elemental and Isotopic Analysis of Genesis Targets [#1704]
We report the elemental and isotopic analysis of nitrogen and light noble gases in gold-over-sapphire targets exposed in space to solar wind irradiation during 27 months by the Genesis spacecraft.
- 4:30 p.m. Huang S. * Humayun M. Burnett D. Jurewicz A. J. G.
Determination of Fe and Mg Fluences in Genesis SoS Wafer Fragments [#1891]
Iron and Mg fluences in Genesis SoS wafer fragments were determined by LA-ICP-MS.