

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

Williford K. H. Taylor S. Matrajt G. Brownlee D. E. Joswaik D. J. Wengert S. Kuehner S. M.
Comparing Olivine Compositions from Micrometeorites with Those from Other Solar System Materials [#2269]
 We analyzed 136 forsteritic olivine grains from South Pole water well micrometeorites and compare the Al, Ca, Fe and Cr results to literature values for other micrometeorites, for meteorites, and for particles returned from Comet Wild-2.

Taylor S. Alexander C. M. O'D. Wengert S.
Rare Micrometeorites from the South Pole, Antarctica [#1628]
 We report on rare micrometeorites collected from the South Pole water well. These include a micrometeorite containing a barred olivine chondrule, ones with spinel ($MgAl_2O_4$) relict grains, and others composed of Fe-Ni-S and euhedral olivine crystals.

Sakamoto K. Nakamura T. Noguchi T. Tsuchiyama A.
Unique Hydrous Micrometeorites Found from the Snow near the Dome Fuji Station: Primitive Materials with Characteristics Different from Major Types of Carbonaceous Chondrites [#1577]
 We report the mineralogy and bulk chemistry of six hydrous micrometeorites collected from Antarctic snow. We suggest that these MMs originate from a hydrated parental object with mineralogy different from major types of carbonaceous chondrites.

Doi M. D. Nakamoto T. Nakamura T. Yamauchi Y.
Three-Dimensional Shapes of Cosmic Spherules: Deformation of Dust Particles Molten in the Earth Atmosphere [#1548]
 We simulated the deformation of molten particles penetrating the Earth atmosphere and compared it with 3-D shapes of cosmic spherules. We found that the ram pressure and the rotation cannot explain a large deformation seen in some cosmic spherules.

Parashar K. Shyam Prasad M.
Preliminary Investigations on Cosmic Dust Collected by 'MACDUC' Experiment from Central Indian Ocean [#1045]
 About ~1250 cosmic spherules have been collected from sea floor and studied in terms of morphology, textures and chemical compositions. Some spherules were found to contain rare "PGNs" whereas others had unique features that have not been reported in earlier works.

Imae N. Dobrica E. Engrand C. Duprat J. Iwata N.
Petrology and Mineralogy of Micrometeorites from Tottuki Coast in Antarctica [#1729]
 We will discuss 52 micrometeorites from the Tottuki bare icefield in Antarctica based on petrology and mineralogy.

Misawa K. Tomiyama T. Kohno M. Noguchi T. Nagao K. Nakamura T. Mikouchi T.
 Nishiizumi K. Motoyama H.
Extraterrestrial Dust Layers in Dome Fuji Ice Core, East Antarctica [#1690]
 We identified two dust-rich layers in Dome Fuji Ice Core at the depth of 2641 m and 2691 m. Morphology, petrographic features and bulk chemistry of dust particles in both layers indicate that they are micrometeorites extraterrestrial in origin.

Engrand C. Narcisi B. Petit J.-R. Dobrica E. Duprat J.
Cosmic Dust Layers in EPICA-DOME C Deep Ice Core [#1554]
 Two important extraterrestrial dust layers dated at 434 ± 6 ka and 481 ± 6 ka, respectively, were recently discovered in the EPICA-Dome C deep ice core (East Antarctic Plateau). The corresponding incoming flux increases to up to 10^4 times the sporadic cosmic dust flux.

Hui S. S. M. Norman M. D. Harvey R. P.

The Petrography and Chemistry of Cosmic Spherules from Lewis Cliff, Antarctica [#1222]

This presentation will describe the petrography, major element and trace element compositions of 120 cosmic spherules from aeolian deposits at the Lewis Cliff ice tongue.

Dobrica E. Engrand C. Leroux H. Duprat J. Gounelle M.

Classic and Exotic Particles in the 2006 CONCORDIA Antarctic Micrometeorite Collection [#1672]

Extraterrestrial matter in the size range of micrometeorites is the most dominant material accreted by the Earth today. From our study of the new collection of micrometeorites from CONCORDIA, we have discovered new primitive solar system objects.

Meier M. M. M. Schmitz B. Heck P. R. Baur H. Wieler R.

Noble Gases in Individual Sediment-dispersed Chromite Grains — Micrometeorites from an Ordovician Asteroid Collision [#1539]

Sediment dispersed chromite grains from fossil meteorite-bearing sediments in Sweden all contain solar wind-implanted He and Ne. They thus arrived on Earth as micrometeorites. Rough exposure ages are calculated from small cosmogenic ^{21}Ne excesses.

Wilson R. C. Dobrica E. Pearson V. K. Turner D. C. Gilmour I.

Comprehensive Organic Analysis of Antarctic Micrometeorites [#1763]

We present the first comprehensive organic analysis of Antarctic micrometeorites using pyrolysis-GCxGC-TOFMS, characterising their diverse organic species in comparison to the carbonaceous chondrite Murchison and terrestrial particles.

Martin M. P. Glavin D. P. Dworkin J. P.

Nanoflow Separation of Amino Acids for the Analysis of Cosmic Dust [#2055]

We report on progress in optimizing a nanoflow liquid chromatography separation system with dual detection via laser-induced-fluorescence time-of-flight mass spectrometry for the labeled amino acids in cosmic dust grains.

Bérczi Sz. Gucsik A. Okumura T. Ninagawa K. Nishido H. Kereszturi Á. Nagy Sz. Hargitai H.

Cathodoluminescence Microcharacterization of Forsterite from Kaba CV3 Chondrite: Implication for Mineralogy and Petrology of IDPs [#1657]

Cathodoluminescence studies of forsterite from the fine fragment sample of Kaba indicate that mineral fragments from low altered and low thermally metamorphic CV3 chondrite might be potentially useful reference material for the IDPs.

Madiedo J. M. Trigo-Rodriguez J. M. Llorca J.

Low-Velocity Cometary Meteoroid Streams Encountering the Earth: Clues on the Fragmentation of Cometary Aggregates and Implications for Interplanetary Dust Particles [#1700]

The SPMN is continuously monitoring meteor activity. We describe unexpected fireball activity, focusing on low-velocity cometary streams. We try to encourage setting up IDP campaigns for collecting cometary particles in the upper atmosphere.