Tuesday, March 24, 2009
POSTER SESSION I: COMET WILD 2: MINERALOGY AND MORE
6:30 p.m. Town Center Exhibit Area

Rost D. Henkel T. King A. Lyon I.
Study of Aerogel Surface Exposed to the Particle Flux of Comet Wild 2: An Update **[#2480]**
Surfaces of Stardust aerogel have been analyzed with latest technology ToF-SIMS, utilising a beam of 40kV C60 ions, most suitable to measure heavy organic compounds at high lateral resolution.

Stephan T.
TOF-SIMS Analysis of Cometary Fragments Extracted from a Stardust Aerogel Track **[#1698]**
TOF-SIMS of cometary fragments from Stardust aerogel show that terminal particles are less mixed with aerogel than material from bulbous cavities. For a comprehensive picture of Wild 2 matter, all material from along the tracks needs to be analyzed.

Stodolna J. Jacob D. Leroux H.
Mineralogy and Petrology of Stardust Particles Extracted from the Walls of Track 80 **[#1762]**
We report a TEM examination of a compressed wall piece extracted from track 80. The sample shows a large diversity of mineralogy suggesting that the incident particles was a complex fine grained aggregate.

Stodolna J. Jacob D. Leroux H.
ATEM Study of Four Thermally Modified Stardust Particles from Track 80 **[#1754]**
We compare the microstructure and composition of thermally modified particles extracted from track 80. Elements distribution attests for capture induced reduction process. No evolution of the thermal alteration is observed along the track.

Ogliore R. C. Butterworth A. L. Fakra S. C. Gainsforth Z. Marcus M. A. Westphal A. J.
Fe-bearing Mineral Groupings in Stardust Fragments **[#2215]**
The Fe-bearing minerals in 193 micron-sized fragments from 11 Stardust tracks are shown to cluster into five groups, giving clues to the heterogeneity scale of comet Wild2.

Schmitz S. Brenker F. E.
Microstructural Indications for Protoenstatite Precursor of Cometary $MgSiO_3$ Pyroxene: A Further High Temperature Component of Comet Wild 2 **[#1580]**
We investigated samples from comet Wild 2 using the TEM. Here we present evidence for the former existence of the high temperature $MgSiO_3$ polymorph protoenstatite as a precursor for the formation of clino- and minor orthoenstatite.

Leroux H.
Mineralogy of Track 77 (PUKI): Toward the Understanding of the Fine-Grained Components of Wild 2 **[#1809]**
Using TEM we show that samples from track 77 display a combination of non-equilibrated crystalline silicates and amorphous material, the latter originates from a fine-grained material thermally altered during the capture in the aerogel.

Joswiak D. J. Brownlee D. E. Matrajt G.
Mineralogical and Textural Changes of a Wild 2 Terminal Particle Pentlandite from Capture Heating in Aerogel **[#2150]**
A ~3 μm pentlandite grain observed in Stardust track 59 and derived from comet Wild 2 was disaggregated and thermally modified (partially) to monosulfide solid-solution (MSS) and heazlewoodite from heating during capture in silica aerogel.

Price M. C. Kearsley A. T. Burchell M. J. Hörz F. Cole M. J.
Comet 81P/Wild 2: The Updated Stardust Coma Dust Fluence Measurement for Smaller (Sub 10-Micrometre) Particles **[#1564]**
Presented is an updated coma dust fluence measurement for comet 81P/Wild 2 for sub-10 micron particles based upon new experimental data. We show this brings the cumulative particle size distribution closer to that measured by the DFMI.

Ishii H. A. Joswiak D. Bradley J. P. Teslich N. Matzel J. Hutcheon I. D. Brownlee D. Matrajt G. MacPherson G. McKeegan K. D.
Enabling Al-Mg Isotopic Measurements on Comet Wild 2's Micro-CAIs **[#2288]**
In order to enable Al-Mg isotopic measurements otherwise not possible on the micro-CAIs returned by Stardust from comet 81P/Wild 2, we combined TEM mineral mapping and precise and selective removal of interfering minerals by focused ion beam milling.

Leroux H. Jacob D. Cordier P.
Fine-grained Material Trapped in Stardust Track Walls **[#1785]**
Using TEM we describe micro-tracks in the Stardust aerogel medium. The size and composition of the cometary material present as discrete patches along these micro-tracks suggest that it originates from an ultrafine matrix, CI-like in composition.

Khodja H. Raepsaet C. Burchell M. J. Flynn G. J. Gainsforth Z. Herzog G. F. Keller L. P. Lanzirotti A. Rao W. Sutton S. R. Taylor S. Westphal A.
Characterization of 81P/Wild 2 Prticles C2103,1,98,1,0, C2103,1,98,2,0, and C2065,1,97,1,0 **[#1746]**
Three aerogel-coated Stardust grains have organics and CI-like Cr/, Mn/, Ni,/ and Zn/Fe ratios. Some flight aerogel has 5 wt% C. C and N in 30 × 30 µm areas of Alais and Orgueil match CI values to within a factor of two. Coal shot into aerogel left a track but no terminal particle.

Wirick S. Flynn G. J. Frank D. Sandford S. A. Zolensky M. E. Tsou P. Peltzer C. Jacobsen C.
Carbon XANES Data from Six Aerogel Picokeystones Cut from the Top and Bottom Sides of the Stardust Comet Sample Tray **[#1340]**
Nine aerogel picokeystones were cut from the top (comet-side) and bottom of the comet sample tray tiles for C XANES spectra analyses. Six of these keystones have been analyzed and four types of C XANES spectra have been found in the non-track containing aerogel.