Thursday, March 4, 2010
POSTER SESSION II: STARDUST MISSION TO COMET WILD 2
7:00 p.m. Town Center Exhibit Area

Jurewicz A. J. G. Jones S. M. Zolensky M. Frank D. Dupray L. deHoog B.
Stardust Aerogel Baseline Data: Recovery and Use **[#1897]**
We report on pre-flight Stardust aerogel data being recovered for use by the scientific community. In addition, pre- and post-flight densities for select cells are compared. Density profiles of some cells changed significantly enough to affect models of particle capture.

Price M. C. Kearsley A. T. Burchell M. J. Abel R. Cole M. J.
Comet Wild 2 Dust: How Particle Structure and Composition are Reflected in the Shape of Stardust Aerogel Tracks **[#1313]**
Laboratory shots of artificial mineral aggregates at ~6 km/s give Type C (bulbous) aerogel tracks. Larger grains in a fine mineral matrix makeType B. Some purely organic particles also create Type C tracks, implying volatile expansion is important.

Meshik A. P. Hohenberg C. M. Pravdivtseva O. V.
Spallogenic Neon in the Exposed Layer of Stardust Aerogel — Submicron Dust or Surface Artifact? **[#2706]**
Small but statistically significant excess of ^{21}Ne is found in outer layer of Stardust aerogel exposed to the comet.

Ogliore R. C. Butterworth A. L. Doran A. Gainsforth Z. Scholl A. Westphal A. J. Young A.
Photoemission Electron Microscopy of Stardust Cometary Foils **[#2572]**
We present results from photoemission electron microscopy (PEEM) analysis of Stardust cometary foil craters. In addition, we explain how this instrument is well-suited for analysis of Stardust interstellar foil craters.

Kearsley A. T. Westphal A. J. Stadermann F. J. Armes S. P. Ball A. D. Borg J. Bridges J. C. Brownlee D. E. Burchell M. J. Chater R. J. Davis A. M. Floss C. Flynn G. Gainsforth Z. Grün E. Heck P. Hoppe P. Hörz F. Howard L. E. Howe G. Huss G. R. Huth J. Landgraf M. Leitner J. Leroux H. Nittler L. Ogliore R. Postberg F. Price M. C. Srama R. Stroud R. Trieloff M. Trigo-Rodriguez J. Sandford S. A. Stephan T. Sternovsky Z. Tsou P. Zolensky M. E.
Finding Interstellar Particle Impacts on Stardust Aluminium Foils: The Safe Handling, Imaging and Analysis of Samples Containing Femtogram Residues **[#1593]**
Hypervelocity shots and numerical simulations show the likely form of Stardust interstellar particle impacts on Al foil. A robust holder for sample handling in preliminary examination is now available, with a protocol for contamination monitoring.

Stadermann F. J. Floss C. Lam H. Y. M. Price M. C. Burchell M. J. Kearsley A. T.
Identifying Off-Normal Hypervelocity Impacts in Aluminum Foil by Auger Imaging: Implications for the Examination of the Interstellar Collector **[#1349]**
We show that thin impact sprays can be used to identify off-normal hypervelocity impacts. The measurement of these sprays by Auger imaging is non-destructive and has the potential to provide information that is not otherwise available.

Gainsforth Z. Butterworth A. L. Bonal L. Brownlee D. E. Fakra S. C. Huss G. R. Joswiak D. Kunz M. Marcus M. A. Nagashima K. Ogliore R. C. Tamura N. Telus M. Tyliszczak T. Westphal A. J.
Integrating Analytical Techniques for Analysis of Comet 81P/Wild2 in Stardust Track C2052,2,74 **[#2698]**
Stardust case study examining sample preparation, experimental issues and instrumental prioritization.

Greenberg M. Ebel D. S. Ramcharan S. Hein P. Newville M. Lanzirotti A. Zolensky M. E.
Nondestructive XRF and Quantitative Volumetric Image Analysis of Stardust Tracks 140, 151 & 152 **[#2346]**
We present a full textural analysis of three whole Stardust tracks, with an emphasis placed on three-dimensional, nondestructive methods. Implications of data on hypervelocity impacts modeling and Stardust material processing will be discussed as well.

Sanders N. E. Velbel M. A.
The Size Distribution of Stardust Metal Sulfide Droplets **[#1175]**
The size distribution of nanoscale Fe-Ni-S droplets has been determined from TEM images of melted Stardust grains. This distribution could aid the interpretation of capture modification and the composition of the incident cometary material.

Matrajt G. Messenger S. Ito M. Wirick S. Flynn G. Joswiak D. Brownlee D.
TEM, XANES and NanoSIMS Characterization of Carbonaceous Phases from Individual Stardust and IDP Particles **[#1564]**
We present chemical and isotopic data on four different carbon morphologies found in IDPs and Stardust samples.

Milam S. N. Nuevo M. Sandford S. A. Cody G. D. Kilcoyne A. L. D. Stroud R. M. DeGregorio B. T.
Comparison of the Organic Composition of Cometary Samples with Residues Formed from the UV Irradiation of Astrophysical Ice Analogs **[#2078]**
We present C-, N-, and O-XANES results of organic residues produced in the laboratory from the UV irradiation of astrophysical ice analogs containing H_2O, CO, CH_3OH, NH_3, in order to mimic processes that may occur in comets.

Burchell M. J. Cole M. J. Price M. C. Kearsley A. T. Nixon A.
Glycine Survival in Hypervelocity Impacts in the Laboratory into Aerogel and onto Aluminium Foil **[#1637]**
Survival of glycine under impact at 6 km/s is tested with aerogel and aluminium targets. SEM-EDX shows residue in al craters but Raman spectroscopy finds no signals for glycine.

Stodolna J. Jacob D. Burchell M. J. Leroux H.
Collect-induced Microstructure Modifications in Stardust Samples: Some Experimental Evidences **[#1659]**
Olivine and pyroxene samples have been experimentally shot in aerogel reproducing Wild2 material capture conditions. The TEM investigation improves the understanding of the collect-induced microstructure modifications.