Thursday, March 15, 2007
POSTER SESSION II: STARDUST MISSION
6:30 p.m. Fitness Center

Tsuchiyama A. Nakamura T. Okazaki T. Uesugi K. Nakano T. Akaki T. Jogo K. Iida Y. Suzuki Y.
Three-Dimensional Structures and Elemental Distributions of Stardust Impact Tracks **[#1247]**
We investigated quantitative 3-D structures and elemental distributions of Stardust tracks using SR-tomography and SR-XRF. The value of the Fe mass divided by the track volume correlates to the track shapes and probably to volatile materials.

Fernandes C. D. Bridges J. C. Grady M. M.
UV and Visible Wavelength Reflectance Spectroscopy of Aerogel and of Stardust Grains **[#1727]**
A new UV and visible reflectance microspectroscopy technique has been applied to cometary samples from the Stardust mission. The results have been compared with terrestrial minerals and aerogel.

Nakamura-Messenger K. Zolensky M. E. Bastien R. See T. H. Warren J. L. Bevill T. J. Cardenas F. Vidonic L. F. Horz F. McNamara K. M. Allen C. C. Westphal A. J. Snead C. Ishii H. A. Brownlee D.
Stardust Curation at Johnson Space Center: Photo Documentation and Sample Processing of Submicron Dust Samples from Comet Wild 2 for Meteoritics Science Community **[#2191]**
The Stardust curation team at NASA Johnson Space Center plays a major role in the photo documentation and sample preparations of comet 81P/Wild 2 precious samples. Come and see some cool facts at our poster, and visit our website at http://curator.jsc.nasa.gov.

Kearsley A. T. Ball A. D. Graham G. A. Burchell M. J. Ishii H. Cole M. J. Wozniakiewicz J. Hörz F. See T. H.
Aerogel Track Morphology: Measurement, Three Dimensional Reconstruction, and Particle Location Using Confocal Laser Scanning Microscopy **[#1690]**
CLSM can quantify aerogel track shape and particle location in keystones, quickstones, and cm-scale unprepared blocks. It is suitable for use at an early stage of curation and preparation of small features, e.g., Stardust interstellar grain tracks.

Brennan S. Ishii H. A. Luening K. Ignatyev K. Pianetta P. Bradley J. P.
Panning for Gold: A Case Study in Evaluating the Elemental Composition of Comet Wild 2 Dust in Aerogel **[#1776]**
We present the discovery of high levels of gold in the Stardust samples and establish that it is likely localized, near-surface contamination in the aerogel capture medium, sometimes intermixed with cometary material in the particle impact track.

Wozniakiewicz P. J. Kearsley A. T. Burchell M. J. Bland P. A. Cole M. J.
Constraining the Effect of Capture-Heating on Cometary Silicates and Sulfides Under Stardust Encounter Conditions **[#1579]**
We are studying effects of capture-heating on Stardust silicate (e.g. olivines and pyroxenes) and sulfide (Fe and Ni rich) materials caught on Al foil and in silica aerogel, to help us to re-calculate primary composition from residue analyses.

Sandford S. A. Aléon J. Alexander C. M. O'D. Araki T. Bajt S. Baratta G. A. Borg J. Bradley J. P. Brownlee D. E. Brucato J. R. Burchell M. J. Busemann H. Butterworth A. Clemett S. J. Cody G. Colangeli L. Cooper G. d'Hendecourt L. Djouadi Z. Dworkin J. P. Ferrini G. Fleckenstein H. Flynn G. J. Franchi I. A. Fries M. Gilles M. K. Glavin D. P. Gounelle M. Grossemy F. Jacobsen C. Keller L. P. Kilcoyne A. L. D. Leitner J. Matrajt G. Meibom A. Mennella V. Mostefaoui S. Nittler L. R. Palumbo M. E. Papanastassiou D. A. Robert F. Rotundi A. Snead C. J. Spencer M. K. Steele A. Stephan T. Tsou P. Tyliszczak T. Westphal A. J. Wirick S. Wopenka B. Yabuta H. Zare R. N. Zolensky M. E.
Overview of the Results of the Organics PET Study of the Cometary Samples Returned from Comet Wild 2 by the Stardust Mission **[#1301]**
This presenation will provide an overview of the efforts and results produced by the Organics Preliminary Examination Team during their studies of the samples returned from comet Wild 2 by the Stardust spacecraft.

Zolensky M. Zega T. Weisberg M. Velbel M. Tomioka N. Tomeoka K. Stroud R. Stephan T. Simon S. Rietmeijer F. Ohsumi K. Ohnishi I. Nakamura-Messenger K. Nakamura T. Mikouchi T. Matrajt G. Leroux H. Langenhorst F. Krot A. Kearsley A. Joswiak D. Ishii H. Hagiya K. Grossman L. Grossman J. Graham G. Gounelle M. Fakra S. Dai Z. R. Chi M. Brownlee D. Bridges J. Bradley J.
Wild-2 Déjà-Vu: Comparison of Wild-2 Particles to Chondrites and IDPs **[#1481]**
Comparison of Wild-2 olivine, low-Ca pyroxene and Fe-Ni sulfides to chondrite matrix and chondritic IDPs.

Craig J. Sedaghatpour F. Gucsik A. Sears D. W. G.
Fragments of Separated Opaque Matrix from the Semarkona Unequilibrated Ordinary Chondrite **[#1095]**
An ESEM analysis of matrix fragments from the unequilibrated ordinary chondrite Semarkona as an analog for Stardust particle analysis.

Sears D. Gucsik A. Craig J. Sedaghatpour F. Graupner W.
A Thermoluminesence Study of Semarkona Chondrite: An Application on Determination of Metamorphic History of Stardust Particles **[#1055]**
Natural and induced thermoluminescence measurements on Stardust grains are feasible and have the potential to provide unique information on radiation history and metamorphism experienced by the grains.

Gucsik A. Sears D. W. G. Craig J. Sadeghatpour F. Graupner W.
Cathodoluminescence Properties of the Semarkona Chondrite: An Implication for Mineralogy of Interstellar Dust Particles of the Stardust Mission **[#1051]**
We suggest that cathodoluminescence would be a means of quickly surveying Stardust particles to get a first order indication of their mineralogy and petrology.

Grossemy F. Borg J. Simionovici A. Djouadi Z. Lemelle L. Ferroir T. Bleuet P. Susini J. Gillet P.
The Slowing Down of Stardust Cometary Grains in Aerogel: The Fe-XANES Information **[#1734]**
In the framework of the Bulk Composition Preliminary Examination Team, we carried out a Fe-XANES study on five keystones extracted from Stardust aerogel collector, getting information on the slowing down of Wild 2 grains.

Li J.-Y. A'Hearn M. F. McFadden L. A.
Photometric Analysis of Comet 81P/Wild 2 from Stardust Data **[#1853]**
The photometric properties of Comet 81P/Wild 2 are analyzed using the images returned by Stardust.

Velbel M. A. Harvey R. P.
Sulfide-Metal Textural Relations in a Glassy Stardust Particle **[#1700]**
FeS in this Stardust sample occurs in capture-melted Fe-Ni-S droplets and as angular grains of likely cometary FeS. The distribution of Ni in droplets and angular crystals suggests this Stardust particle contained cometary Ni-bearing sulfides.

Westphal A. J. Bastien R. K. Borg J. Bridges J. Brownlee D. E. Burchell M. J. Cheng A. F. Clark B. C. Djouadi Z. Floss C. Franchi I. Gainsforth Z. Graham G. Green S. F. Heck P. R. Horányi M. Hoppe P. Hörz F. P. Huth J. Kearsley A. Leroux H. Marhas K. Nakamura-Messenger K. Sandford S. A. See T. H. Stadermann F. J. Teslich N. E. Tsitrin S. Warren J. L. Wozniakiewicz P. J. Zolensky M. E.
Non-Random Spatial Distribution of Impacts in the Stardust Cometary Collector **[#1418]**
We report the discovery that impacts in the Stardust cometary collector are not distributed randomly in the collecting media, but appear to be clustered on scales smaller than ~10 cm.

Hagiya K. Ohsumi K. Mikouchi T. Zolensky M. E.
Synchrotron X-Ray Diffraction Study of the Comet Wild 2 Particle (C2054,0,35,4) Returned by the NASA Stardust Mission **[#2381]**
The Comet Wild 2 particle (C2054,0,35,4) returned by the NASA Stardust Mission was analyzed by microarea diffraction equipment. Our purpose is to perform the structure refinement of olivine and pyroxene including site occupancies.

Leitner J. Stephan T. Kearsley A. T. Hörz F. Flynn G. J. Sandford S. A.
TOF-SIMS Analysis of Wild 2 Cometary Matter Collected by Sardust Aluminum Foil **[#1591]**
TOF-SIMS investigation of elements as well as of organic compounds in crater residues on Stardust Al foils reveals a quite heterogeneous composition of the dust of 81P/Wild 2. However, on average the residues show a CI-like composition.

Foster N. J. Burchell M. J. Creighton J. A. Kearsley A. T. Stardust Organics PET
Does Capture in Aerogel Change Carbonaceous Raman D and G Bands? **[#1647]**
Raman spectroscopy of carbon-rich meteorite samples is used. Spectra from raw grains are compared with those from grains fired into aerogel at 6 km/s. It is shown that there is little systematic change, but that some shifts can occur.

Lisse C. M. Deep Impact Spitzer Science Team
Updating the Results of the Deep Impact Compositional Modeling for Three Other Comet Spectra, YSO HD100546, and the Stardust PET Findings **[#2259]**
We have used the results from the Spitzer observations of Deep Impact to study the nature of the dust in other systems. We have found many common emission signatures, as well as major differences. There remain a number of issues still to be improved upon with the new Stardust results.