Thursday, March 10, 2011
POSTER SESSION II: SNC METEORITES: IGNEOUS AND ALTERATION PROCESSES
6:00 p.m. Town Center Exhibit Area

Satterwhite C. E. McBride K. M. Harrington R. S. Righter K.
Processing of Antarctic Meteorites at NASA/Johnson Space Center **[#2632]**
Discusses processing of Antarctic meteorites in the Meteorite Processing Lab at NASA Johnson Space Center.

Righter K. McBride K. M.
The Miller Range Nakhlites: A Summary of the Curatorial Subdivision of the Main Mass in Light of Newly Found Paired Masses **[#2161]**
The curatorial subdivision of the Miller Range nakhlite MIL 03346 will be summarized, as well as the science resulting from studies of nearly 200 subsamples of this large nakhlite. This summary has been motivated by the discovery of three additional paired masses.

Corrigan C. M. Vicenzi E. P. Konicek A. R. Lunning N.
An Examination of the New Miller Range Nakhlites (MIL 090030, 090032, and 090136) **[#2657]**
We examine the new Miller Range nakhlites (MIL 090030, MIL 090032, and MIL 090136) and their relationship with nakhlite MIL 03346.

Williams C. D. Wadhwa M. Bell D. R.
Lithium Isotope Measurements of Pyroxenes and Evaluation of Matrix Effects in SIMS Analyses: Application to Martian Meteorites **[#2398]**
We have measured the Li isotopic composition in terrestrial pyroxene megacrysts by SIMS and MC-ICPMS to assess the role of matrix effects and their potential influence on the analysis of martian pyroxenes.

Jones J. H. Hanson B. Z.
A Groundmass Composition for EET 79001A Using a Novel Microprobe Technique for Estimating Bulk Compositions. Lithology A as an Impact Melt? **[#2095]**
A new and improved estimate for the groundmass composition of Lithology A lies on a mixing line between Lithology B and an ultramafic assemblage.

Kuehner S. M. Irving A. J. Herd C. D. K. Gellissen M. Lapen T. J. Rumble D. III
Pristine Olivine-Phyric Shergottite Northwest Africa 6162: A Primitive Magma with Accumulated Crystals Derived from Depleted Martian Mantle **[#1610]**
Petrological and compositional studies of this very fresh depleted olivine-phyric shergottite indicate that it does not represent a magmatic liquid.

Becker T. E. Reynolds V. S. Beane R. J. McCoy T. J.
Preferred Orientations of Pyroxene in the Zagami Shergottite: Implications for Magmatic Emplacement **[#2474]**
Electron backscatter diffraction (EBSD) techniques on the (normal) Zagami shergottite identify foliated but not lineated pyroxenes within the coarse-grained lithology. Results for fine-grained lithology will be presented.

Herd C. D. K. McCoy T. J.
Baddeleyite Occurences in Zagami and QUE 94201: 'QUE Q.E.D.' **[#1801]**
Can baddeleyite be found in even the most reduced martian basalt? We document the occurrence of baddeleyite in the Zagami dark, mottled lithology and QUE 94201, and find that this mineral can be found even in QUE 94201: 'QUE Q.E.D.'

Needham A. W. Abel R. L. Tomkinson T. Johnson D. Grady M. M.
Pooling of Water and the Formation of Evaporite Minerals in the Martian Sub-Sufrace **[#2148]**
A combined 3D computed tomography and high resolution electron microscopy study of secondary minerals in the Nakhla meteorite, focusing on the formtation of halite.

McCubbin F. M. Elardo S. M.
Chlorine-Rich Fluid Interaction with Chassignite and Nakhlite Magmas **[#2358]**
Apatites have been analyzed from several Nakhlite and Chassignite meteorites, and all samples analyzed thus far indicate likely magma-brine interaction. Work is ongoing to determine the source of the Cl-rich fluid.

Rao M. N. Nyquist L. E. Ross K. Sutton S. R. Schwandt C. S.
Acid-Sulfate-Weathering Activity in Shergottite Sites on Mars Recorded in GRIM Glasses **[#1476]**
Elemental abundances determined in gas-rich impact-melt (GRIM) glasses from EET 79001, Shergotty Zagami, and QUE 94201 show that acid sulfate fluids interacted with the basaltic parent material at shergottite sites on Mars.

Franz H. B. Farquhar J. Irving A. J.
Acid-Volatile Sulfur Isotopic Composition of Six Shergottites **[#2338]**
We report here new measurements of the isotopic composition of acid-volatile sulfur from several shergottites.

Hallis L. J. Taylor G. J. Stopar J. D. Velbel M. A. Vicenzi E. P.
Martian vs. Terrestrial Alteration Assemblages in MIL 03346 and Nakhla: Hydrogen Isotope and Compositional Comparisons **[#1442]**
Pre-terrestrial secondary alteration phases have been reported within the nakhlite group of martian meteorites by numerous authors. We aim to determine which occurrences within MIL 03346 and Nakhla are terrestrial and which are pre-terrestrial.

Kuebler K. E. Wang A. Jolliff B. L.
Review of Terrestrial Laihunite and Stilpnomelane Analogs, Identified as Potential Secondary Alteration Phases in MIL 03346 **[#1022]**
Stilpnomelane and laihunite have been identified as secondary phases in MIL 03346. These identifications are unusual so we present supporting evidence here: Raman and XRD spectra for stilpnomelane, Raman spectra for laihunite, and EMPA for both.

Ross D. K. Ito M. Hervig R. Rao M. N. Nyquist L. E.
Recognizing the Effects of Terrestrial Contamination on D/H Ratios in Shergottite Phosphates **[#1920]**
Hydrogen isotopes ratios in shergottites are shown to be strongly influenced by terrestrial contamination. The difficulty in distinguishing martian variations in D/H from variable terrestial contamination is highlighted.

Nishiizumi K. Nagao K. Caffee M. W. Jull A. J. T. Irving A. J.
Cosmic-Ray Exposure Chronologies of Depleted Olivine-Phyric Shergottites **[#2371]**
Cosmogenic radionuclides and noble gases in NWA 4925 and seven other shergottites were measured. All eight shergottites must have been ejected from Mars by a single impact at 1.1 ± 0.1 Ma ago but reached Earth at different times individually as small objects.

Korochantseva E. V. Schwenzer S. P. Buikin A. I. Hopp J. Ott U. Trieloff M.
Cosmic Ray Exposure Ages of Nakhlites — Nakhla, Lafayette, Governador Valadares — and Chassigny: One Ejection Event? **[#1263]**
To provide further insight into the vigorously discussed question if all nakhlites and Chassigny were ejected by the same impact event from a common martian location, we present new CRE ages for nakhlites and Chassigny obtained by different methods.