Thursday, March 26, 2009
POSTER SESSION II: MARTIAN MINERALOGY: CONSTRAINTS FROM MISSIONS AND LABORATORY INVESTIGATIONS
6:30 p.m. Town Center Exhibit Area

Bishop J. L. Dyar M. D. Majzlan J. Lane M. D.
Spectral Properties of Copiapites with Variable Cation Compositions and Implications for Characterization of Copiapite on Mars **[#2073]**
The spectral properties of synthetic copiapite samples were analyzed for comparison with martian data. Changes with Fe vs Mg abundances are most notable in IR spectra near 2, 9,11, 18 and 45 μm and in the relative areas of Mössbauer doublets 1 and 2.

Cloutis E. A.
Reflectance Spectra of Low Atomic Weight ("APXS-Blind") Na-bearing Minerals: Nitrates, Nitrites, Borates, Hydroxides, and Peroxides **[#1176]**
The reflectance spectra of a number of low atomic-weight element-bearing phases, including nitrates, nitrites, borates, hydroxides, and peroxides show a diversity of features, largely related to O + H and cation-OH absorptions.

Fairén A. G. Davila A. F. Duport L. G. Amils R. McKay C. P.
Mars: Cold and Wet **[#1155]**
The role of solutes depressing the melting point of water in a frozen martian environment supports the idea that the majority of the water on Mars was forming super-cooled liquid solutions with large masses of ice covering parts of them.

Hahn B. C. McLennan S. M. Tosca N. J. Reeder R. J.
Trace Element Behavior in Martian Evaporite Minerals: Experimental Constraints **[#1194]**
We detail a series of laboratory investigations determining the partitioning coefficients of the trace elements Ni, Zn, and Cr into a suite of precipitating sulfate evaporite minerals observed on the martian surface.

Altheide T. S. Chevrier V. F. Denson J. Nicholson C.
Evaporation of Sulfate and Chloride Brines on the Surface of Mars **[#1011]**
When evaporated under simulated martian conditions, brines composed of sulfates and chlorides demonstrate lower evaporation rates than pure water, due to ion interactions and, depending on concentration and temperature, salt crystallization.

Xu W. Parise J. B.
$(H_3O)Fe(SO_4)_2$, A New Phase Formed by Dehydrating Rhomboclase **[#1816]**
The stability of rhomboclase with respect to temperature and humidity was examined by *in situ* XRD method, and a new phase $(H_3O)Fe(SO_4)_2$ was found, which needs to be considered when analyzing sulfate mineralogy on Mars.

Rice M. S. Bell J. F. III Cloutis E. A. Wang A. Ruff S. W. Craig M. A. Bailey D. T. Johnson J. R. de Souza P. A. Farrand W. H.
Silica-rich Deposits and Hydrated Minerals at Gusev Crater, Mars **[#2134]**
The Si-rich materials discovered by Spirit have distinct Vis-NIR features in their Pancam spectra that may result from adsorbed water or hydrated minerals. We find that spectrally similar materials are widespread throughout the Columbia Hills.

McGlynn I. O. McSween H. Y. Jr. Fedo C. M.
Mineralogical Characterization of Soils in Gusev Crater and Meridiani Planum, Mars **[#2249]**
The mineralogy of soil sediments at Gusev Crater and Meridiani Planum sites are evaluated combining APXS and MB data from the Mars Exploration Rovers. Soils are basaltic with minimal chemical weathering, are globally similar with local variability.

Ehlmann B. L. Mustard J. F. Poulet F.
Modeling Modal Mineralogy of Laboratory Mixtures of Nontronite and Mafic Minerals from Visible Near-Infrared Spectral Data **[#1771]**
Initial results assessing the efficacy of Shkuratov and Hapke radiative transfer models in estimating modal mineralogy from visible near infrared (VNIR) spectral data for various laboratory mixtures of phyllosilicate and light and dark mafic minerals.