

Tuesday, March 24, 2009

**POSTER SESSION I: MARTIAN PHYLLOSILICATES:  
IDENTIFICATION, FORMATION, AND ALTERATION  
6:30 p.m. Town Center Exhibit Area**

Maturilli A. Helbert J. D'Amore M.

[\*Identification of the Surficial Component from Martian Remote Sensing Infrared Spectra: Application to Mars Express PFS Measurements\*](#) [#1257]

Target transformation and factor analysis techniques are applied to PFS LWC observations of the Nili Fossae region, where previous instruments detected phyllosilicates. PFS spectra are interpreted using the Berlin Emissivity Database (BED) spectral library.

Carter J. Poulet F. Bibring J.-P. Murchie S. Langevin Y. Mustard J. F. Gondet B.

[\*Phyllosilicates and Other Hydrated Minerals on Mars: 1. Global Distribution as Seen by MEx/OMEGA\*](#) [#2028]

This abstract presents the global spatial distribution of the phyllosilicate-bearing deposits on Mars as seen by MEx/OMEGA.

Makarewicz H. D. Parente M. Bishop J. L.

[\*Determining the Composition of Phyllosilicates Using Automated Gaussian Modeling of Spectral Features\*](#) [#1358]

Kaolinite-montmorillonite and nontronite-ferrihydrite mixture spectrawere analyzed using automated modified Gaussian modeling in order to relate relative band depths with endmember composition in lab spectra, and eventually in CRISM spectra on Mars.

Amador E. A. Bishop J. L. McKeown N. K. Parente M. Clark J. T.

[\*Detection of Kaolinite at Mawrth Vallis, Mars: Analysis of Laboratory Mixtures and Development of Remote Sensing Parameters\*](#) [#2188]

Laboratory mixtures and spectral parameters were created to better characterize and detect kaolinite in the Mawrth Vallis region of Mars where Al-phyllosilicates, including kaolinite and montmorillonite, have been detected.

Tosca N. J.

[\*Clay Mineral Assemblages Derived from Experimental Acid-Sulfate Basaltic Weathering\*](#) [#1543]

Basaltic weathering experiments lasting 295 days have yielded a variety of clay mineral assemblages. Linking clay mineral chemistry to aqueous chemistry provides insight into major controls on clay formation through basaltic weathering.

Hurowitz J. A.

[\*Clay Mineral Formation and Evolution in an Experimental Basaltic Weathering Profile\*](#) [#2083]

This work reports on a new experimental approach aimed at understanding basaltic weathering profile chemical evolution processes using a unique packed-bed flow through reactor design that enables *in situ* analysis of undisturbed alteration minerals.

Che C. Glotch T. D.

[\*The Infrared Spectra Study of Dehydrated and Dehydroxylated Phyllosilicates\*](#) [#1482]

We report the results of changes in the infrared spectra of thirteen phyllosilicates with exposure to increasingly higher temperatures. We hope this will increase the understanding of possible processes affecting phyllosilicate evolution on Mars.

Fairén A. G. Davila A. F. Marzo G. A. Roush T. L. McKay C. P.

[\*Recent Liquid Water on Mars Inferred from Shock Decomposition Analysis of Phyllosilicates Within Impact Craters\*](#) [#1156]

The analysis of the stability of phyllosilicates against shock pressure and temperature after an impact reveal recent water activity on Mars.

Altheide T. S. Chevrier V. F.

[Acidic Weathering of Martian-Relevant Phyllosilicates](#) [#1012]

Acidic weathering of phyllosilicates with varying pHs of sulfuric acid solutions demonstrates potential relationship between sulfates and phyllosilicates, and may also help explain recent observations of phyllosilicate layered deposits on Mars.

Gavin P. Chevrier V. Ninagawa K. Gucsik A. Hasegawa S.

[Experimental Investigation of the Effect of Meteoritic Impacts on Clays on Mars](#) [#2069]

Analysis of shock pressures and temperatures reached during impact experiments, as well as XRD and NIR spectral analysis, help determine whether clays found in association with impact craters on Mars were pre-existing or formed during the impact.