

Wednesday, March 21, 2012
PRIMARY AND SECONDARY MARTIAN GEOCHEMISTRY
8:30 a.m. Waterway Ballroom 6

Chairs: **Melissa Lane**
Paul Archer Jr.

- 8:30 a.m. Clenet H. * Quantin C. Ceamanos X. Flahaut J. Allemand P. Pinet P. C. Daydou Y.
[*Crustal Composition in the Vicinity of Valles Marineris, Mars, as Seen from the Central Peaks of Impact Craters*](#) [#1486]
 We studied impact craters central peaks with CRISM data. MGM is used to extract chemical composition of mafic minerals. There is a relationship between depth of sampled crust and orthopyroxene composition. Link with alteration is also investigated.
- 8:45 a.m. Wilson J. H. * Mustard J. F.
[*Extensive Exposures of Olivine-Rich Volcanic Rocks in Noachian-Aged Surfaces on Mars*](#) [#2090]
 Noachian-aged volcanics on Mars are difficult to identify, so their composition hasn't been addressed in detail. Volcanics identified on a Noachian surface, east of Ares Vallis, are studied to address the character and scope of ancient volcanics.
- 9:00 a.m. Ody A. * Poulet F. Langevin Y. Bibring J.-P. Gondet B. Carter J.
[*Olivine Detections in the Martian Northern Plains with OMEGA/Mex*](#) [#2430]
 Based on data from the imaging spectrometer MEx/OMEGA, olivine was detected in crater ejectas and extended deposits within the martian northern plains, thus allowing some constraints to be put on the global geological history of these northern plains.
- 9:15 a.m. Huang J. * Edwards C. S. Christensen P. R. Horgan B. H. Xiao L.
[*Thermally Distinct Olivine-Rich Dikes in Thaumasia Planum, Mars*](#) [#2577]
 We report several new occurrences of dikes in Thaumasia Planum, which have distinct thermophysical and compositional characteristics. They are important for understanding the magmatic properties and processes in early martian geological time.
- 9:30 a.m. Pan C. * Rogers A. D.
[*Thermal and Near-Infrared Analyses of Central Uplifts of Martian Impact Craters*](#) [#2312]
 We analyze martian impact craters with central uplifts globally using TIR and NIR data. Comparisons between spectrally distinct crater central uplifts and their surrounding regions are also discussed.
- 9:45 a.m. McLennan S. M. *
[*Constraints on the Age, Composition and Size of the Martian Sedimentary Mass*](#) [#1869]
 The overall martian sedimentary mass is ancient, of mafic composition, and approximately 2–20% of the size of the terrestrial sedimentary record.
- 10:00 a.m. Karunatillake S. * Gasnault O. McLennan S. M. Rogers A. D. Wray J. J. Squyres S. W. Boynton W. V.
[*The Hydration State of Sulfates on Mars*](#) [#2940]
 We assess the hydration state of sulfates using Mars Odyssey Gamma Ray Spectrometer (GRS) derived H₂O and S mass fraction distributions in the mid-latitude subsurface at decimeter depths.
- 10:15 a.m. Robertson K. M. * Bish D. L.
[*Stability of Phases in the CaSO₄·nH₂O System and Implications for Their Occurrence on Mars*](#) [#1547]
 Experimental results are presented here that provide a clearer understanding of phase stabilities in the CaSO₄·nH₂O system under martian conditions that help constrain the association between observable hydrous phases and current and past climates.

- 10:30 a.m. Franz H. B. * Farquhar J. Irving A. J.
[Clues to the Martian Sulfur Cycle Revealed Through Isotopic Analysis of Shergottites, Nakhrites, and Chassigny](#) [#2232]
We report results of an extensive study to characterize the isotopic composition of both reduced and oxidized sulfur-bearing mineral phases in 27 shergottites, the Y-000593 nakhlite, and Chassigny, which we will compare to other solar system bodies.
- 10:45 a.m. Cannon K. M. * Sutter B. Ming D. W. Boynton W. V. Quinn R. C.
[Possible Calcite and Magnesium Perchlorate Interaction in the Mars Phoenix Thermal and Evolved Gas Analyzer \(TEGA\)](#) [#2008]
Laboratory experiments simulating TEGA analysis indicate that a lower-temperature carbon dioxide release detected by TEGA may have been caused by an inorganic reaction between magnesium perchlorate and calcite in the instrument ovens.
- 11:00 a.m. Archer P. D. Jr. * Lauer H. V. Jr. Sutter B. Ming D. W. Niles P. B. Boynton W. V.
[A Possible Organic Contribution to the Low Temperature CO₂ Release seen in Mars Phoenix Thermal and Evolved Gas Analyzer Data](#) [#2276]
Organic combustion by perchlorate-produced oxygen could contribute to the low-temperature CO₂ release detected by the TEGA instrument on the Mars Phoenix Lander.
- 11:15 a.m. Hanley J. * El Senousy A. Chevrier V. F. Farris H.
[Analysis of the Salt Assemblage from WCL at the Phoenix Landing Site](#) [#2574]
Ion concentrations obtained from WCL were modeled to determine the original salts present at the Phoenix landing site, as well as their implications for the stability of liquid water.
- 11:30 a.m. Meslin P.-Y. * Hamara D. K. Boynton W. V. Sabroux J.-C. Gasnault O.
[Analysis of Uranium and Thorium Lines in Mars Odyssey Gamma Spectra and Refined Mapping of Atmospheric Radon](#) [#2852]
A new analysis of Mars Odyssey GRS spectra confirms the presence of radon in the atmosphere of Mars, and allowed us to map it and to observe its time variations.