

Wednesday, March 19, 2014

[W302]

**ALTERATION OF THE MARTIAN SURFACE AND CRUST:  
EVIDENCE FOR DIVERSE CONDITIONS**

8:30 a.m. Waterway Ballroom 4

**Chairs:** Nina Lanza  
Elizabeth Rampe

- 8:30 a.m. McAdam A. C. \* Franz H. B. Mahaffy P. R. Eigenbrode J. L. Stern J. C. et al.  
[SAM-Like Evolved Gas Analyses of Phyllosilicate Minerals and Applications to SAM Analyses of the Sheepbed Mudstone, Gale Crater, Mars](#) [#2337]  
SAM EGA-MS water traces from Sheepbed mudstone samples are most consistent with high-temperature water evolution from an Fe-saponite.
- 8:45 a.m. Rampe E. B. \* Morris R. V. Ming D. W. Archer P. D. Bish D. L. et al.  
[Characterizing the Phyllosilicate Component of the Sheepbed Mudstone in Gale Crater, Mars Using Laboratory XRD and EGA](#) [#1890]  
Lab XRD and EGA analyses of smectite and vermiculite indicate interlayer cation composition causes differences in phyllosilicates detected at Gale by MSL.
- 9:00 a.m. Milliken R. E. \* Bish D. L.  
[Distinguishing Hisingerite from Other Clays and its Importance for Mars](#) [#2251]  
Hisingerite is compared to other Fe-clays and its relevance to Mars is discussed in light of possible existence in CheMin XRD patterns.
- 9:15 a.m. Carter J. \* Viviano-Beck C. Le Deit L. Bishop J. Loizeau D.  
[Orbital Detection and Implications of Akaganeite on Mars](#) [#2364]  
We report the detection of the iron/chloride hydroxide akaganeite at several locations on Mars using orbital data from CRISM/MRO, and discuss its implications.
- 9:30 a.m. Clark B. C. \* Gellert R. Arvidson R. E. Squyres S. W. Ruff S. W. et al.  
[Esperance: Extreme Aqueous Alteration in Fracture Fills and Coatings at Matijevic Hill, Mars](#) [#1419]  
Fracture fill composition in Esperance boxworks is consistent with montmorillonite + silica; a dark coating is rich in mafic sulfates; both potentially habitable.
- 9:45 a.m. Lanza N. L. \* Ollila A. M. Cousin A. Hardgrove C. Wiens R. C. et al.  
[Manganese Trends with Depth on Rock Surfaces in Gale Crater, Mars](#) [#2599]  
ChemCam has discovered trends with depth in manganese on rock surfaces in Gale Crater that are consistent with Mn-rich rock coatings.
- 10:00 a.m. Johnson J. R. \* Wiens R. C. Maurice S. Bender S. DeFlores L. et al.  
[First Year of ChemCam Passive Reflectance Spectroscopy at Bradbury Landing, Mars](#) [#1367]  
MSL ChemCam passive reflectance spectra from Sols 0-360 revealed six spectral classes of materials distinguished by variations in ferrous and ferric components.
- 10:15 a.m. McHenry L. J. \* Gerard T. L. Carson G. L. Gerard T. L.  
[Mineralogy of Acid Sulfate Fumarole vs. Near Neutral Sinter Deposits at Lassen Volcanic National Park: Comparison to Gusev Crater, Mars](#) [#2712]  
The Lassen hydrothermal system has both acid sulfate fumaroles and near neutral sinters, providing a test for the origins of Gusev Crater hydrothermal deposits.

- 10:30 a.m. Che C. \* Glotch T. D.  
[\*Unique Spectral Features Detected in the Mawrth Vallis Regions of Mars: Implications for the Search for Thermally Altered Clays on Mars\*](#) [#2112]  
Analysis of CRISM data revealed a unique spectral shape in the Mawrth Vallis, Mars. This spectral shape is consistent with 500°–700°C heated montmorillonites.
- 10:45 a.m. Thomas N. H. \* Bandfield J. L. Amador E. S.  
[\*Identification and Characterization of Martian Serpentine Using Target Transformation and CRISM Data\*](#) [#1909]  
We have identified serpentine on Mars and are testing for its presence in association with olivine-rich basalts by applying target transformation to CRISM data.
- 11:00 a.m. Viviano-Beck C. E. \* Murchie S. L.  
[\*Hydrothermally Altered Stratigraphy in the Walls of Valles Marineris\*](#) [#1963]  
Hydrothermally-altered minerals are localized to the eastern walls of Coprates and may imply an orogenic formation of the Thaumasia highlands to the south.
- 11:15 a.m. Berger J. A. \* Schmidt M. E. Gellert R. King P. L.  
[\*Comparing Gale Crater and Gusev Crater Enrichments of Fluid-Mobile Elements Measured by Alpha-Particle X-Ray Spectrometers on Mars\*](#) [#2285]  
Curiosity's APXS discovered fluid-mobile element enrichments in Gale — Cl, Br, K, Na, Zn, Ge. MSL results are presented and compared to similar enrichments in Gusev.
- 11:30 a.m. Filiberto J. \* Goodrich C. A. Treiman A. H. Gross J. Giesting P. A.  
[\*Evidence for Magmatic-Hydrothermal Activity on Mars from Cl-Rich Scapolite in Nakhla\*](#) [#1620]  
We report the first occurrence of Cl-scapolite in a martian meteorite and use terrestrial metamorphic analogs to constrain its origin.