

Wednesday, March 21, 2018

[W451]

**AQUEOUS ALTERATION ON MARS II:  
RESULTS FROM ROVERS, METEORITES, AND ANALOGS  
1:30 p.m. Waterway Ballroom 1**

**Chairs: Rebecca Smith  
Steven Chemtob**

- 1:30 p.m. Niles P. B. \* Sun T. Berger E. L. Evans M. E. El-Shenawy M.  
[Revisiting the Origin of Carbonates in Elephant Moraine A79001 and Possible Evidence for Liquid Water on Mars in the Amazonian](#) [#2719]  
The origin of the carbonates in martian meteorite EETA 79001 remains controversial. We present FIB-SEM and TEM results showing the presence of aragonite.
- 1:45 p.m. Sutter B. \* Archer P. D. McAdam A. C. Niles P. B. Navarro-González R. et al.  
[Comparing the Detection of Carbon at the Phoenix Lander and Mars Science Laboratory Rover Landing Sites](#) [#2897]  
Carbon detections in Phoenix Lander and Mars Science Laboratory landing site surface materials suggests organic-C and carbonate are widespread across Mars.
- 2:00 p.m. Craig P. I. \* Rudolph A. Morris R. V. Achilles C. N. Rampe E. B. et al.  
[Collapsed Smectite in Gale Crater: Martian Clay Minerals May Have Been on Acid](#) [#1986]  
Something more than just dehydration caused the extreme collapse of the smectite identified by CheMin in the Oudam drill sample in Gale Crater, Mars.
- 2:15 p.m. Chemtob S. M. \* Rivera-Banuchi V. B. Catalano J. G. Nickerson R. D. Morris R. V. et al.  
[Oxidation Pathways for Ferrous Iron Smectites on Mars and the Redox Evolution of Gale Crater](#) [#2821]  
Oxidation of ferrous smectites produces nontronite and iron oxides. We discuss implications for the hematite-phyllsilicate facies of the Murray Formation.
- 2:30 p.m. Sheppard R. Y. \* Milliken R. E. Russell J. M. Vogel H. Melles M. et al.  
[Signatures of Iron Cycling in a Terrestrial Redox-Stratified Lake and Implications for Gale Crater, Mars](#) [#1471]  
Source-to-sink study of a lake in mafic terrain in Indonesia shows movement of Fe from crystalline to X-ray amorphous phases, promoted by deposition/diagenesis.
- 2:45 p.m. McAdam A. C. \* Knudson C. A. Andrejkovicova S. Stern J. C. Wieman S. T. et al.  
[Salt and Secondary Silicate Mineralogy in Antarctic Soil Profiles: Implications for Martian Soils](#) [#2131]  
Trends in the salt and secondary silicate mineralogy of Antarctic soil profiles can give constraints on Mars analog soil processes, including crust formation.
- 3:00 p.m. Thomas N. H. \* Ehlmann B. L. Meslin P.-Y. Cousin A. Forni O. et al.  
[MSL ChemCam Observations of Chloride Salts in Gale Crater, Mars](#) [#2876]  
Halite is found in isolated Mt. Sharp ChemCam points. We discuss a possible emplacement scenario and evidence for later groundwater reworking and remobilization.
- 3:15 p.m. Peretyazhko T. S. \* Ming D. W. Rampe E. B. Morris R. V. Agresti D. G.  
[Effect of Solution pH and Chloride Concentration on Akaganeite Precipitation: Implications for Akaganeite Formation on Mars](#) [#2093]  
Akaganeite formation on Mars.

- 3:30 p.m. Mitra K. \* Catalano J. G.  
[\*Oxychlorine Species as an Oxidant on Past and Present Mars: New Oxidation Pathways for Dissolved Fe\(II\) on the Martian Surface\*](#) [#1031]  
Investigating the oxidizing potential of oxychlorine species (perchlorates and chlorates) on dissolved Fe(II) on the martian surface: rates and mineral products.
- 3:45 p.m. Smith R. J. \* Horgan B. Rampe E. Dehouck E.  
[\*The Composition of Amorphous Phases in Soils and Sediments and on Earth and Mars\*](#) [#1779]  
We investigate a weathering origin for the abundant amorphous phases found in Gale Crater, Mars by comparing to amorphous phases formed in soils on Earth.
- 4:00 p.m. Achilles C. N. \* Downs G. W. Downs R. T. Morris R. V. Rampe E. B. et al.  
[\*Amorphous Phase Characterization Through X-Ray Diffraction Profile Modeling: Implications for Amorphous Phases in Gale Crater Rocks and Soils\*](#) [#2661]  
We present a novel method to characterize amorphous material in diffraction patterns with the goal of applying this approach to CheMin diffraction data.
- 4:15 p.m. Ackiss S. E. \* Horgan B. Scudder N. Gudnason J. Haberle C. et al.  
[\*The Mineralogic Variability of Icelandic Palagonites: An Analog Study for Mars\*](#) [#1773]  
These rocks from Iceland / Vary in composition / Help to study Mars.
- 4:30 p.m. Thomas-Keprta K. L. \* Clemett S. J. Baskar N. Rahman Z. Gibson E. K. et al.  
[\*Unusual Aqueous Deposits Within the Martian Meteorite Nakhla\*](#) [#2781]  
We report the first identification of two unique, aqueously altered, foliated assemblages on interior fracture surfaces of the martian meteorite Nakhla.