MARS LOW-TEMPERATURE GEOCHEMISTRY AND MINERALOGY

1:30 p.m.   Waterway Ballroom 4

Chairs: Elizabeth Rampe
Briony Horgan

1:30 p.m. Yen A. S. * Ming D. W. Gellert R. Clark B. C. Mittlefehldt D. W. et al. * Silica Retention and Enrichment in Open-System Chemical Weathering on Mars [#2380] Samples analyzed at Meridiani Planum, Gusev Crater, and Gale Crater show similar signatures of open-system chemical weathering.

1:45 p.m. McLennan S. M. * Dehouck E. Grotzinger J. P. Hurowitz J. A. Mangold N. et al. * Geochemical Record of Open-System Chemical Weathering at Gale Crater and Implications for Paleoclimates on Mars [#2533] Sedimentary rocks examined by Curiosity at Pahrump Hills exhibit evidence for chemical weathering, consistent with relatively clement climatic conditions.

2:00 p.m. Ming D. W. * Mittlefehldt D. W. Gellert R. Peretyazhko T. Clark B. C. et al. * Iron-Manganese Redox Reactions in Endeavour Crater Rim Apron Rocks [#2676] Redox reactions have played an important role in mobilization and transportation of redox sensitive elements in Endeavour crater rim deposits.

2:15 p.m. Szynkiewicz A. * Goff F. Faiia A. M. Vaniman D. T. Subia T. et al. * Aqueous Sulfur Budget and Oxidation of Fumarolic H₂S in the Volcanic Complex of Valles Caldera, New Mexico — Geochemical Implications for Mars [#1303] We have been studying the terrestrial hydrological sulfur cycle related to volcanic sulfur emission and aqueous chemical weathering as Mars geochemical analogs.


2:45 p.m. Fox A. * Peretyazhko T. Sutter B. Niles P. Ming D. W. et al. * Effect of Sulfur Concentration and pH Conditions on Akaganeite Formation: Understanding Akaganeite Formation Conditions in Yellowknife Bay, Gale Crater, Mars [#1199] The formation of akaganeite in variable pH conditions and sulfur concentrations was studied to better understand how akaganeite formed at Yellowknife Bay, Mars.


3:30 p.m.  Horgan B. * Rutledge A.  Rampe E. B.
 **Clay Mineralogy and Crystallinity as a Climatic Indicator: Evidence for Both Cold and Temperate Conditions on Early Mars** [#2923]
Warm and arid climates tend to produce more crystalline clays than cold climates. Clay minerals on Mars suggest both cold and seasonally temperate climates.

3:45 p.m.  Gainey S. R. * Hausrath E. M.  Hurowitz J. A.
 **Weathering Profiles at Mawrth Vallis Yield Insight into the Aqueous History and Potential Habitability of Mars** [#2248]
Reactive transport modeling of potential weathering profiles at Mawrth Vallis may yield insight into the aqueous history and potential habitability of Mars.

4:00 p.m.  Peretyazhko T. S. * Sutter B.  Morris R. V.  Agresti D. G.  Le L.  et al.
 **Smectite Formation from Basaltic Glass Under Acidic Conditions on Mars** [#2404]
Formation of smectites studied under acidic conditions.

4:15 p.m.  Friedlander L. R. * Glotch T. D.
 **Nontronite Detections in Nili Fossae Based on an Impact-Altered Natural Nontronite Sample Resemble Regional-Scale Spectral Variability Previously Associated with Phyllosilicate Diagenesis** [#2852]
Results from CRISM image processing show that some spectral shifts previously interpreted as diagenesis may also be related to impact processes.

4:30 p.m.  Osterloo M. M. * Hynek B. M.
 **Martian Chloride Deposits: The Last Gasps of Widespread Surface Water** [#1054]
We present results of geologic characterizations of the largest chloride sites to better understand their geologic setting, age, and formation mechanisms.