

Tuesday, March 20, 2018

[T252]

**AQUEOUS ALTERATION ON MARS I:
RESULTS FROM ROVERS, METEORITES, AND ANALOGS
3:00 p.m. Waterway Ballroom 1**

**Chairs: Kirsten Siebach
John Bridges**

- 3:00 p.m. Siebach K. L. * McLennan S. M.
[Re-Evaluating the CIA Paleoclimate Proxy on Mars at Curiosity's Drill Sites](#) [#2694]
MSL XRD data allows correction of chemical weathering estimates for the source areas for Gale sediments; minimal alteration in sands but some in Murray lake.
- 3:15 p.m. Yen A. S. * Gellert R. Thompson L. M. Treiman A. H. Morris R. V. et al.
[Mobility of Potassium-Rich Fluids on Mars: Implications for Diagenesis](#) [#2690]
Alteration of lithified sediments by fluids rich in K, Fe, and S are evident in Gale Crater. K-rich samples need to be considered as possible diagenetic products.
- 3:30 p.m. Gellert R. * Berger J. A. Boyd N. Desouza E. D. O'Connell-Cooper C. et al.
[Trace Elements on Mars: Chemical Evidence for an Aqueous History at Gale Crater, Mars and Other Landing Sites](#) [#2259]
The APXS on MER and MSL has quantified a large enrichment in Ge, Ga, Sr, Pb, and Se that indicates aqueous, possibly hydrothermal activity on Mars.
- 3:45 p.m. Liu Y. * Ma C. Guan Y. Beckett J. R. Lingappa U. F. et al.
[Diverse Fluid Activities on Mars: Zinc-Bearing Silicate and Oxide in Martian Breccia Meteorite Northwest Africa \(NWA\) 7533](#) [#1045]
First report of Zn-bearing silicate and oxide in martian meteorite NWA 7533, suggesting new forms of hydrothermal activities in Martian surface and crust.
- 4:00 p.m. Black S. R. * Hynek B. M. McCollom T. M. Larsen J. F.
[Hydrothermal Acid-Sulfate Alteration of a Synthetic Mars Composition Basalt: Secondary Iron Mineralogy and the Role of Primary Basalt Composition](#) [#2122]
To test the impact of very high parent Fe on secondary mineralogy, we exposed synthetic Mars basalts to hydrothermal acid-sulfate alteration in the lab.
- 4:15 p.m. Hu J. * Liu Y. Asimow P. D. Ma C. Beckett J. R. et al.
[Unique Hydrothermal Alteration on Mars: Pyrite-Polycrystalline Pyrrhotite Assemblage in Northwest Africa 7034/7533](#) [#2898]
Pyrite-pyrrhotite assemblage in NWA 7034/7533 potentially better constrain the conditions of major hydrothermal event(s) at ~ 1.5 Ga.
- 4:30 p.m. Bridges J. C. * Hicks L. J. Miller M. A. Schwenzer S. P. Ott U. et al.
[Amazonian Hydrothermal Alteration: Comparing Nakhlite Secondary Mineralogy to Water-Rock Reaction Experiments](#) [#2028]
Amazonian nakhlite clays formed via partial dissolution of olivine and feldspar in alteration lasting a few months, shown by water-rock reaction experiments.