Tuesday, March 22, 2016

POSTER SESSION I: AQUEOUS ALTERATION ON MARS: A COMPLEX HISTORY
6:00 p.m. Town Center Exhibit Area

Schwenzer S. P. Bullock M. A. Bridges J. C. Chavez C. L. Filiberto J. et al. POSTER LOCATION #273

Noble Gas Fractionation in Hydrous Rock Alteration Under Diagenetic Pressure and Temperature Conditions [#1889]
Long-term alteration experiments are presented with results from alteration mineralogy and noble gas adsorption, both relevant to the nakhlite meteorites.

Saetre C. Riu L. Dypvik H. Hellevang H. Pilorget C. et al. POSTER LOCATION #274

Experimental Studies on Liquid and Vapor Phase Alteration of Basaltic Glass: Implications for Earth and Mars [#1865]
We perform hydrothermal alteration experiments to study weathering and alteration of amorphous phases in various hydrous regimes with a martian perspective.


Introducing Fully Open Systems in the Kinetic Modeling of Divergent Mineral Sequences on Mars [#1101]
Highly fractured basalt (large reactive surface) would form clays, while massive basalt (small reactive surface) would result in the precipitation of salts.

Black S. R. Hynek B. M. Hoover R. Beckerman L. G. Alvarado G. E. POSTER LOCATION #276

Characterization of Hydrothermal Alteration in Costa Rica: Mineralogy, Methodology, and Implications for Mars [#2546]
Investigating the effects of primary lithology on secondary mineralogy in hydrothermal regions, and identification via Mars analog instrumentation.

Losa-Adams E. Gil-Lozano C. Fairen A. G. Chevrier V. Davila A. F. et al. POSTER LOCATION #277

Using a Reverse Osmosis Reactor to Model the Crystallization of Secondary Minerals in Mars During Long-Term Evaporation Processes [#3063]
We used by batch reactors connected to reverse osmosis (RO) membranes to model long-term evaporation processes on Mars.

Parnell S. P. Phillips-Lander C. M. McGraw L. E. Elwood Madden M. E. POSTER LOCATION #278

Carbonate Dissolution Rates in High Salinity Brines [#1460]
Calcite and magnesite experiments show slower dissolution rates in high salinity brines.

Phillips-Lander C. M. Legett C. Parnell S. R. Elwood Madden A. S. Elwood Madden M. E. POSTER LOCATION #279

Pyroxene Dissolution Rates in High Salinity Brines: Implications for Post-Noachian Aqueous Alteration on Mars [#1313]
Initial dissolution rates for ultrapure water nearly ~10x slower than NaCl and Na2SO4 brines. These differences are not linked to pH, but aqueous complexation.

Dehouck E. McLennan S. M. Sklute E. C. Dyar M. D. POSTER LOCATION #280

Stability of 2-Line Ferrihydrite at Gale Crater, Mars: Experimental Approach [#2223]
We present lab experiments exploring the stability of two-line ferrihydrite in various conditions relevant to Mars in general, and Gale crater in particular.
Insights into the Aqueous History of Mars from Acid-Sulfate Weathered Phyllosilicates
Acid sulfate-weathered phyllosilicates may explain observations of sulfates and phyllosilicates in close proximity to each other on Mars.

Late-Stage Weathering and Chlorapatite Dissolution as a Possible Source for Chlorides on the Martian Surface
Chlorides in dry lakes / Where did the chlorine come from? / Phosphate unlikely.

Olivine Oxidation and Implications for Planetary Surface Processes
Fo-Oxidation / Hematite dominates but / Magnetite as well.

Signs of Transport of Chemical Elements and Soil-Forming Processes in Surface Soils at Gale Crater, Mars
Millimeter-scale depth profiles measured by ChemCam across vertical soil faces at Gale Crater were examined for chemical transport and soil-forming processes.

Opportunity, Geologic and Structural Context of Aqueous Alteration in Noachian Outcrops, Marathon Valley and Rim of Endeavour Crater
In situ study of outcrops by Opportunity at Endeavour crater identifies the context of smectite detection in crater rims throughout Noachian terrains of Mars.

Clay Formation and Iron Partitioning During Anoxic Isochemical Hydrothermal Basalt Alteration: Implications for Formation of Fe Smectites on Early Mars
Anoxic hydrothermal alteration of basalt produced a ferrous smectite structurally similar to clays found on Mars. May be a globally relevant process.

Mineralogical and Chemical Characterization of Cores from Lake Towuti, Indonesia as a Comparative Study for Curiosity Observations at Gale Crater, Mars
Analyses of the mineralogy and chemistry of core samples from Lake Towuti, Indonesia, a potential modern analogue to the paleolake basin Gale Crater.

Chemical Evidence for an Episode of Acidic Leaching at the Base of Mount Sharp, Gale Crater, Mars, as seen by the APXS
MSL APXS data indicate large scale acidic leaching at the base of Mount Sharp by elevated Si, S, Ti. Various elemental trends with SiO₂ will be discussed.

The Materials at an Unconformity Between the Murray and Stimson Formations at Marias Pass, Gale Crater, Mars
After Stimson deposition on unaltered Murray, diagenesis of lowermost Stimson involved calcium sulfate as veins and cement, and enrichment of SiO₂ up to 75 wt%.