Thursday, March 20, 2014 **[R710]**
POSTER SESSION: MARS SALTS AND BRINES: SPECTROSCOPY, EXPERIMENTS, AND MODELS
6:00 p.m. Town Center Exhibit Area

Wang A. Zhou Y. ***POSTER LOCATION #201***
Rates of Al-, Fe-, Mg-, Ca-Sulfates Dehydration Under Mars Relevant Conditions **[#2614]**
Among Al-, Fe^{2+}-, Fe^{3+}-, Mg-, and Ca-sulfates with the highest hydration degrees, malenterite and epsmoite has the highest dehydration rates.

Connor K. Wang A. ***POSTER LOCATION #202***
Origin of Martian Kieserit **[#2750]**
Low T-RH evaporations of Mg-Cl-SO_4-H_2O brines with Cl:SO_3 ≤ 18:1 shows NO evidence of kieserite precipitation, thus dehydration is the origin of martian kieserite.

Miller J. L. Elwood Madden M. E. Elwood Madden A. S. Pritchett B. N. ***POSTER LOCATION #203***
Temperature, pH, and Brine Effects on Alunite Dissolution: Implications for Mars **[#2344]**
Alunite may indicate past liquid water on Mars. pH, temperature, and brine conditions affect the dissolution rate of alunite, and determine duration of water.

Dixon E. M. Pritchett B. N. Elwood Madden A. S. Elwood Madden M. E. ***POSTER LOCATION #204***
Flow-Through Dissolution Rates of K-Jarosite in Water and Brines **[#1966]**
This study is a comparison of dissolution rates of K-jarosite in water and brines in a flow-through reactor.

Steiner M. H. Hausrath E. M. Schofield R. E. ***POSTER LOCATION #205***
Dissolution of Nontronite by High Ionic Strength Brines and Implications for Habitable Environments on Mars **[#1510]**
Aqueous signatures of brines may reflect longer time periods than similar signatures by more dilute solutions, with different implications for habitability.

Martin P. E. Gilmore M. S. Greenwood J. P. ***POSTER LOCATION #206***
Modeling and Experimental Analysis of Potential Martian Chloride Brines **[#2543]**
Potential martian brines are modeled to high concentration, created, and allowed to evaporate. Resulting evaporites are analyzed with XRD and VNIR spectroscopy.

Legett C. IV Pritchett B. N. Elwood Madden A. S. Elwood Madden M. E. ***POSTER LOCATION #207***
Measuring Mineral Dissolution Rates in Perchlorate Brines: Method Development and Applications **[#2492]**
A new spectrophotometric method for the determination of Fe in high-salinity perchlorate solutions is described and applied to jarosite dissolution experiments.

Toner J. D. Catling D. C. Halbert S. Light B. ***POSTER LOCATION #208***
Towards an Accurate Low-Temperature Thermodynamic Model for Perchlorate Brines on Mars **[#2515]**
We have measured accurate freezing-point depressions for perchlorate brines and build a more accurate and thermodynamically consistent model for perchlorates.

Bruck A. M. Sutter B. Ming D. W. Mahaffy P. ***POSTER LOCATION #209***
Thermal Decomposition of Calcium Perchlorate/Iron-Mineral Mixtures: Implications of the Evolved Oxygen from the Rocknest Eolian Deposit in Gale Crater, Mars **[#2057]**
Investigate catalytic interactions on calcium perchlorate from various iron-bearing minerals known to be present in the Rocknest material.

Carrier B. L. Kounaves S. P. ***POSTER LOCATION #210***
Oxidation of Chloride to Perchlorate Under Ambient Mars Conditions **[#2570]**
Formation of perchlorate by oxidation of chloride on mineral surfaces under Mars conditions.

Zhao Y. -Y. S. McLennan S. M. Jackson A. W. Karunatillake S. ***POSTER LOCATION #211***
Photochemical Influences on Bromine and Chlorine Geochemistry on the Martian Surface **[#2534]**
Our UV experiments demonstrated that loss of Br^- and Cl^-, and production of oxychlorine phases can be obtained photochemically from halide brines.

Sutter B. Archer P. D. Ming D. W. Niles P. B. Eigenbrode J. L. et al. ***POSTER LOCATION #212***
The Investigation of Chlorates as a Possible Source of Oxygen and Chlorine Detected by the Sample Analysis at Mars (SAM) Instrument in Gale Crater, Mars **[#2136]**
The thermal decomposition of chlorate salts as possible sources of the O_2 and HCl releases detected by SAM analysis of the Gale Crater materials are presented.

Elsenousy A. Chevrier V. F. ***POSTER LOCATION #213***
Thermodynamic Properties of Hypochlorites and Chlorites: Applications to the Phoenix Surface Chemistry **[#2920]**
We present a compilation of thermodynamic data relevant to hypochlorite (ClO^-) and chlorite (ClO^{2-}) salts potentially present on the martian surface.

Elsenousy A. Chevrier V. F. ***POSTER LOCATION #214***
Thermodynamic Modeling of the Deliquescence of Perchlorate/Chloride Salt Mixtures Using Geochemist's Workbench (GWB): Application to the Phoenix Surface Chemistry **[#2910]**
We present the first thermodynamic numerical models of deliquescence of salts binary perchlorate/chloride mixtures relevant to the martian surface.

Smyth S. Applin D. M. Izawa M. R. M. Cloutis E. A. ***POSTER LOCATION #215***
Diffuse Reflectance Spectra of Monohydrocalcite **[#2899]**
Diffuse reflectance spectra of monohydrocalcite are presented.

Applin D. M. Cloutis E. A. Izawa M. R. M. ***POSTER LOCATION #216***
Reflectance Spectroscopy of Hydrated Carbonate Minerals **[#1881]**
The reflectance spectra of select hydrated carbonates are presented. Phase discrimination and comparison with anhydrous carbonates is discussed.

Harner P. L. Gilmore M. S. ***POSTER LOCATION #217***
Are Martian Carbonates Hiding in Plain Sight? VNIR Spectra of Hydrous Carbonates **[#2728]**
An examination of several Mars-relevant hydrated carbonates with VNIR spectra similar to other hydrated salts that might have been overlooked.

Melwani Daswani M. Schwenzer S. P. Reed M. H. Wright I. P. Grady M. M. ***POSTER LOCATION #218***
Carbonate Precipitation Driven by Clay Leachates on Early Mars **[#1280]**
Modeling shows secondary low T carbonates in ALH 84001 could not have formed in the host rock without components leached from clays in the martian surface.

Pitman K. M. Jamieson C. S. Noe Dobrea E. Z. Dalton J. B. III Abbey W. J. ***POSTER LOCATION #219***
Reflectance Spectra and Optical Constants of Mars Calcium, Magnesium, and Iron Carbonate Analogs **[#1590]**
We present laboratory reflectance spectra and optical functions from 0.35 to 5 µm for Ca-, Mg-, and Fe-carbonates for estimating surface abundances on Mars.

Bishop J. L. Ward M. K. Roush T. L. Davila A. Brown A. J. et al. ***POSTER LOCATION #220***
Spectral Properties of Na, Ca-, Mg- and Fe-Chlorides and Analyses of Hydrohalite-Bearing Samples from Axel Heiberg Island **[#2145]**
VNIR reflectance spectra of several chloride salts and ices are presented that will enable CRISM analyses of the martian chloride units at low-albedo sites.