

Thursday, March 22, 2012
POSTER SESSION II: PLANETARY BRINES AND ALTERATION
6:00 p.m. Town Center Exhibit Area

Marion G. M. Catling D. C. Crowley J. K. Kargel J. S.
[*Sulfite-Sulfide-Carbonic Equilibria on Earth and Mars*](#) [#1501]

Volcanism on a cold Mars may be the primary causes of high sulfur minerals on Mars, compared to volcanism on a warm Earth that led to high carbonate minerals.

Chevrier V. F. Lozano C. G. Altheide T. S.
[*Experimental Weathering of Silicates and Carbonates in a SO₂ Atmosphere: Implications for the Martian Surface Mineralogy*](#) [#2908]

Weathering experiments of carbonates and silicates in a SO₂ atmosphere and water or water plus hydrogen peroxide result in differences in nature and abundance of secondary phases, favoring sulfites in the first case and sulfates in the second.

Uts I. Rivera-Valentin E. G. Chevrier V. F.
[*Exploring Possible Brine Compositions for Martian Paleolakes*](#) [#1731]

We use the possible brine compositions from Tosca et al. (2011) in order to model the evolution of a martian paleolake accounting for possible initial chemistries.

Martinez G. M. Renno N. O. Elliott H. M.
[*Optical Evidence for Brines on Mars in Richardson Crater*](#) [#2825]

In this work, we show optical evidence from HiRISE images in the near infrared (NIR) for the existence of brines at Richardson Crater during the spring.

Runyon K. D. Davatzes A. K. Gulick V. C.
[*Putative Active Brine Flows in the Cerberus Fossae, Mars*](#) [#2072]

The equatorial Cerberus Fossae may currently be hydrogeologically active as evidenced by morphologic and albedo features termed slope lineae. Some lineae show significant modification between repeat HiRISE images.

Massé M. Beck P. Schmitt B. Pommerol A. McEwen A. Chevrier V. F. Brissaud O.
[*Nature and Origin of RSL: Spectroscopy and Detectability of Liquid Brines in the Near-Infrared*](#) [#1856]

The aim of our study is to test with laboratory experiments the plausibility of a brine origin for the formation of the recurrent slope linea (RSL). We thus acquire near-infrared spectra during some brine dehydration and hydration processes.

Al-Samir M. van Berk W. Kneissl T. van Gasselt S. Gross C. Wendt L. Jaumann R.
[*A Model Scenario for Kieserite-Dominated Evaporites in Juventae Chasma, Mars*](#) [#2453]

Taking evaporation as a prerequisite, we measured the "stairstep" morphology and the volume of mound B to model the mineral assemblage to reconstruct the amount of water needed to form mound B in its composition as measured by CRISM and OMEGA.

Berard G. Applin D. Stromberg J. Sharma R. Mann P. Grasby S. Bezys R. Horgan B. Londry K. Rice M. Last B. Last F. Badiou P. Goldsborough G. Bell J. F. III
[*A Hypersaline Spring Analogue in Manitoba, Canada for Potential Ancient Spring Deposits on Mars*](#) [#1513]

This study explores the characteristics of a spring complex, East German Creek, Manitoba (EGC), as a terrestrial analogue for similar environments on Mars. We focus on EGC's mineral precipitation patterns and potential for biosignature preservation.

Oehler D. Z. Allen C. C.

[Fluid Expulsion, Habitability, and the Search for Life on Mars](#) [#1044]

The search for evidence of past life on Mars should be concentrated on settings with potential for long-lived water, sources of nutrient and energy renewal, and sediments that would preserve organics. We provide an example of such a setting.

Loizeau D. Werner S. C. Mangold N. Bibring J.-P. Vago J. L.

[Chronology of Deposition and Alteration in the Mawrth Vallis Region, Mars](#) [#2114]

We have investigated ages of deposition and alteration of the clay unit of the Mawrth Vallis plateaus, through regional and local crater counts. This work provides useful boundaries for constraining the time period of water activity in this region.