

Thursday, March 21, 2013

[R725]

**POSTER SESSION: FLUIDS ON MARS:  
OCEANS, LAKES, VALLEYS, GULLIES, RSLs, AND ANALOGS  
6:00 p.m. Town Center Exhibit Area**

Oehler D. Z. Allen C. C. *POSTER LOCATION #433*

[\*New Support for Hypotheses of an Ancient Ocean on Mars\*](#) [#1162]

Giant polygons in the martian lowlands may reflect ancient bodies of water in which major accumulations of fine-grained sediments were deposited.

Wilson S. A. Grant J. A. Howard A. D. *POSTER LOCATION #434*

[\*Inventory of Equatorial Alluvial Fans and Deltas on Mars\*](#) [#2710]

This systematic investigation of CTX data in the equatorial region of Mars quintuples the number of craters with fans and doubles the number of deltas.

Glines N. H. Fassett C. I. *POSTER LOCATION #435*

[\*Evidence for Groundwater Sapping on Mars from Junction Angles of Nirgal Vallis Tributaries\*](#) [#2011]

Seepage erosion on Mars is controversial. We examine junction angles of Nirgal Vallis tributaries to test whether observations are consistent with sapping.

Fairén A. G. Davies N. S. Squyres S. W. *POSTER LOCATION #436*

[\*Equatorial Ground Ice and Meandering Rivers on Mars\*](#) [#2948]

Permafrost is a compelling source of bank stability on martian inverted-relief channels.

Ramkissoo N. K. Elsner P. *POSTER LOCATION #437*

[\*A Morphometric Investigation of Martian Valley Networks\*](#) [#1936]

Morphometry is used to compare martian valley networks with terrestrial drainage basins to determine if valley networks were formed by surface runoff.

Kostama V.-P. Kukkonen S. Raitala J. *POSTER LOCATION #438*

[\*Outflow Channels of Mars: Formation Process and Timing of Waikato Vallis-Morpheus Basin-Reull Vallis — Fluvial System in the Eastern Hellas Rim Region\*](#) [#2656]

CTX, HiRISE, and HRSC data was used to constrain the formation time of two martian outflow channels, Waikato and Reull Vallis, to a period between 3.52 and 3.67 Ga.

Kukkonen S. Kostama V. -P. *POSTER LOCATION #439*

[\*Dating the Resurfacing Events of the Harmakhis Vallis Source Regions, Mars: Preliminary Results\*](#) [#2140]

Preliminary results of mapping and crater counting within the head depression region of Harmakhis Vallis, Mars based on the CTX and HiRISE images.

Fortezzo C. M. Skinner J. A. Jr *POSTER LOCATION #440*

[\*Geologic History of Runanga-Jorn Basin, Northeast Hellas, Mars: Based on Modeled Crater Ages\*](#) [#2104]

The Runanga-Jorn basin, Northeast Hellas, has exposed scarps of volcanic, fluvial, and impact materials in what may be a regionally common suite of materials.

Korteniemi J. Kukkonen S. *POSTER LOCATION #441*

[\*Detailed Mapping and Chronology of the Dao Vallis Canyon, Mars\*](#) [#2815]

We show the Dao Vallis floor to consist of many units with distinct ages, e.g., patches of original canyon floor, and viscous flows resurfaced in the last few Ma.

Aureli K. L. Head J. W. Goudge T. A. Fassett C. I. *POSTER LOCATION #442*

[\*An Analysis of Candidate Closed-Basin Lakes in Impact Craters on Mars\*](#) [#1244]

We mapped 387 candidate closed-basin lakes in impact craters, in a distribution far more widespread across the southern highlands than previously thought.

Salese F. Murana A. Ori G. G. Pondrelli M. **POSTER LOCATION #443**  
[Stratigraphical and Sedimentological Evidence for Lacustrine-Like Basin \(Southwest Plateau of Juventae Chasma\)](#) [#2321]

Extensive LLDs cover the SW plateau of Juventae Chasma. We conduct sedimentological and stratigraphical analysis of the outcrops and their morphological patterns.

Golder K. B. Gilmore M. S. **POSTER LOCATION #444**  
[Eridania Basin, Mars: Evolution of Electric Terrain, Chaos, and Paleolake](#) [#2995]

We present the results from our analysis of the Eridania basin, Mars; to constrain paleolake levels and to determine formation mechanisms for chaos knob fields.

Zuschneid W. van Gasselt S. **POSTER LOCATION #445**  
[Fluvial Processes in Eastern Hellas Planitia, Mars: New Stratigraphic Insights](#) [#2191]

Investigation of the fluvial and sedimentary history of the eastern plains located within the Hellas basin using up-to-date imagery.

Wilkinson M. J. Herridge A. **POSTER LOCATION #446**  
[Ridge Orientations of the Ridge Forming unit, Sinus Meridiani, Mars — A Fluvial Explanation](#) [#3063]

Ridge orientations in Sinus Meridiani follow the regional slope, suggesting a fluvial interpretation is possible.

Jacobsen R. E. Burr D. M. **POSTER LOCATION #447**  
[Local-Scale Stratigraphy of Inverted Fluvial Features in Aeolis Dorsa, Western Medusae Fossae Formation, Mars](#) [#2165]

We use various stratal markers to construct three inverted fluvial feature stratigraphies, which describe a diverse history of fluvial activity in Aeolis Dorsa.

Voelker M. Platz T. Tanaka K. L. Fortezzo C. M. Ferguson R. et al. **POSTER LOCATION #448**  
[Hyperconcentrated Flow Deposits and Valley Formation of Havel Vallis, Xanthe Terra, Mars](#) [#2886]

Two scenarios are presented about how Havel Vallis may have formed. The observation of hyperconcentrated flow deposits associated with valley formation is included.

Allender E. J. Lucieer A. **POSTER LOCATION #449**  
[Mineral Composition of Gully Features Within Hale Crater, Mars](#) [#1485]

An investigation into the mineral composition of gully features within Hale Crater using CRISM hyperspectral imagery and a HiRISE DEM.

Travis B. J. Feldman W. C. **POSTER LOCATION #450**  
[Surface Features and Brine Convection in the Martian Near-Surface](#) [#2820]

Numerical simulation of convection of presumed brines in the near surface results in patterns of surface deformation similar to observed polygons on Mars.

Cedillo-Flores Y. Treiman A. H. Lasue J. Clifford S. M. **POSTER LOCATION #451**  
[CO<sub>2</sub> Gas Fluidization: A Possible Mechanism for the Formation of Martian Polar Gullies](#) [#1769]

Martian gully landforms have been interpreted as evidence for liquid H<sub>2</sub>O. Gullies are also present in polar regions where temperatures are too low for liquid water.

Ito G. Sylvest M. Dixon J. C. **POSTER LOCATION #452**  
[Understanding the Role of CO<sub>2</sub> Frost Sublimation on Martian Gullies](#) [#2144]

Gullies on Mars may have been formed by CO<sub>2</sub> sublimation. In this experiment, we explore the effect of CO<sub>2</sub> sublimation on a typical martian slope.

Raack J. Reiss D. Vincendon M. Ruesch O. Appéré T. et al. **POSTER LOCATION #453**  
[Seasonal Activity of Gullies in South Polar Pits](#) [#2067]

With images, temperature, and spectral data we analyzed the timing of changes to detect the possible medium and mechanism initiating present day gully activity.

Ojha L. Wray J. J. McEwen A. S. Murchie S. L. **POSTER LOCATION #454**  
[Spectral Constraints on the Nature and Formation Mechanism of Recurring Slope Lineae](#) [#2423]  
Recurring slope lineae (RSL) are inferred to be briny flow on present-day Mars. Here, we present results from our search for spectroscopic evidence for brines.

Farris H. Chevrier V. F. Dixon J. C. Ph D de Mijolla G. M. **POSTER LOCATION #455**  
[Experimental Simulations of Recurrent Slope Lineae on the Surface of Mars](#) [#2670]  
RSLs are small slope features found on the martian surface. In this work, we attempt to quantify the effect of low temperature and viscosity on their morphology.

Marra W. A. Kleinhans M. G. Hauber E. McLelland S. J. Murphy B. J. et al. **POSTER LOCATION #456**  
[Diagnostic Morphology for Martian Groundwater Outflows from Flume Experiments](#) [#1899]  
Morphological characteristics and identification of martian valleys formed by several types of groundwater systems, using laboratory flume experiments.

Arfstrom J. D. **POSTER LOCATION #457**  
[Tunnel Valleys as Terrestrial Analogs of the Inner Channels of Kasei Valles, Mars](#) [#1001]  
Two inner channels of Kasei Valles share several characteristics with tunnel valleys. Critically, water erupted to carry a sediment load to a higher elevation.

Kraal E. R. **POSTER LOCATION #458**  
[Connecting the Surface Morphology of Alluvial Fans to Precipitation and Climate: The Atacama Desert as an Analog for Mars](#) [#2413]  
Application of a terrestrial study of sediment transport and surface flow on alluvial fans compared to climate records as an analog to martian alluvial fans.

Harmon J. K. **POSTER LOCATION #459**  
[Radar Imagery of the Chryse-Xanthe Region, Mars](#) [#1411]  
Arecibo radar imagery of the Chryse-Xanthe region of Mars shows bright depolarized features associated with aqueous deposition/modification.