

Thursday, March 26, 2009
POSTER SESSION II: MARS: VALLEYS AND VALLEY NETWORKS
6:30 p.m. Town Center Exhibit Area

Hoke M. R. T. Hynek B. M.

[*Valley Network Formation on the Ancient Highlands of Mars Occurred in the Late Noachian and Early Hesperian Epochs*](#) [#1885]

We compare valley network N(2) crater numbers with isochrons to place the end of their formation in the L. Noachian and E. Hesperian Epochs. Analysis of their crater populations indicates five of these networks experienced multiple periods of formation.

Luo W. Stepinski T. F.

[*Global, Computer-generated Map of Valley Networks on Mars*](#) [#1311]

The new, global map of valley networks on Mars has been created entirely by a computer algorithm parsing topographic data. Dependencies between dissection density and its potential controlling factors are derived and discussed.

Yamaguchi Y. Miyamoto H. Tanaka K. L. Palmero Rodriguez J. A.

[*Mapping Valley Networks in the Noachian Terrain around Naktong Vallis, Mars: Topographic Control on Drainage Density*](#) [#1630]

We find that a positive correlation exists between the mean slope and the drainage density of valley networks in Naktong Vallis on Mars, indicating that precipitation-fed surface runoff played a significant role in the valley formations.

Bodager E. C. Sweitzer-Lamme J. W. Tobias M. J.

[*An Analysis of Potential Fluvial Patterns on Mars' Surface Utilizing THEMIS*](#) [#1955]

Application of THEMIS rendered visual evidence for analysis of evidence and indicators of fluvial systems on Mars' surface. Results formulated by examining the thermal inertia of the area of interest.

Fassett C. I. Dickson J. L. Head J. W.

[*Small, Young Fluvial Features in Icy Terrains on Mars*](#) [#1185]

We describe small valleys found in association with ice-rich terrains on Mars (lobate debris aprons and viscous flow features). The most probable mechanism for their formation is the melting of ice, likely during the Amazonian.

Dickson J. L. Fassett C. I. Head J. W.

[*Young Valley Networks on Mars: Persistent Flow of Water in Lyot Crater, an Amazonian Impact Basin Microenvironment*](#) [#1184]

We document a suite of sinuous valley networks on the floor of Lyot Crater that incise a mantling unit dated as mid-Amazonian. We interpret the valley networks to be fluvial in origin and to have been sourced by mid- or late-Amazonian glacial units.

Newsom H. E. Lanza N. L. Ollila A. M. Wiseman S. M. Roush T. L. Marzo G. A. Tornabene L. L. Crumpler L. S. Okubo C. H. Osterloo M. M. Hamilton V. E.

[*Inverted Channels on the Floor of Miyamoto Crater, Mars, Viewed by the HiRISE Camera*](#) [#1396]

Curvilinear ridges on the western floor of Miyamoto crater have similar characteristics to positive relief channel deposits seen on Earth near Green River, UT that are interpreted as exhumed, inverted, fluvial paleochannel deposits.

Marzo G. A. Roush T. L. Lanza N. L. McGuire P. C. Newsom H. E. Ollila A. M. Wiseman S. M.

[*Mineralogy of the Inverted Channel on the Floor of Miyamoto Crater, Mars*](#) [#1236]

Miyamoto Crater contains an inverted paleochannel deposit. Based on CRISM and HRSC observations, the paleochannel appears located in an area rich in Fe/Mg-smectite uniquely associated with the lowest terrain in the area.

Burr D. M. Williams R. M. E.

[*The Stanislaus Table Mountain: Observations of a Lava-capped Inverted Paleochannel for Interpretation of Inverted Paleochannels on Mars*](#) [#1633]

Inverted fluvial features on Mars may form through a variety of processes. Investigations into a lava-capped paleochannel on Earth provide observations that aid in distinguishing among formation mechanisms and assessing paleochannel preservation.

Bouley S. Craddock R. A. Mangold N. Ansan V.

[*Comparison of Different Crater Counting Methods Applied to Parana Valles*](#) [#1097]

The exact timing of valleys networks is still not well understood. We set out to test the reliability of different counting methods applied to Parana Valles using a large dataset of HR images that allow to reduce uncertainties in age determination.

Dohm J. M. Hare T. M.

[*Coupling Viking Information with Themis and Mola Data Results in Significant Improvement in Paleoerosional Detail of Warrego Valles*](#) [#1949]

Here we report preliminary findings on the re-evaluation of the Viking-based, published geologic map information of the Thaumasia region through detailed investigation of the Warrego rise region, which includes Warrego Valles.

Musiol S. Cailleau B. Neukum G.

[*A Model of Pore-Fluid Flow Applied to the Formation of Outflow Channels in the North-Eastern Hellas Region on Mars*](#) [#1023]

The numerical calculations are done with the finite-elements software ABAQUS. We analyse stresses and pore-fluid flow in the lithosphere under the assumption of a poroelastic martian crust, and compare our results to surface structures.