Thursday, March 13, 2008
MARS FLUVIAL GEOMORPHOLOGY
1:30 p.m. Crystal Ballroom A

Chairs: **T. A. Maxwell**
B. J. Thomson

1:30 p.m. Gulick V. C. * HiRISE Science Team
A Closer Look at Valley, Channel and Gully Formation on Mars with HiRISE **[#2411]**
The HiRISE camera on Mars Reconnaissance Orbiter has returned well over 4,700 images of the surface of Mars, including hundreds of images of valleys, gullies, and channels. These images provide an opportunity to test our understanding of the provenance of these features.

1:45 p.m. Raitala J. * Esestime P. Korteniemi J. Kostama V.-P. Aittola M. Neukum G.
Tectonics and Water-related Episodes on Claritas Fossae, Mars **[#1569]**
Valley, channel, sapping, alcove, spring, fault and fold structures allow us to find traces of hydrologic history in relation to episodic tectonics and water re-distribution on Mars. Five different water-related phases were identified.

2:00 p.m. Bouley S. * Ansan V. Mangold N. Masson Ph. Neukum G.
Relationship Between Naktong Vallis' Heads and Intercrater Plains: Sustained of Fluvial Activity Extending During the Hesperian **[#1573]**
Naktong Vallis, located in the southern highland, has different kinds of heads in amphitheatres. Relationships between these valley heads and intercrater plains show that fluvial activity was present during the Hesperian at least episodically.

2:15 p.m. Hoke M. R. T. * Hynek B. M.
Analyzing and Dating Valley Networks in Arabia Terra and Terra Meridiani, Mars **[#2183]**
Ten of the largest valley networks in the Arabia Terra and Terra Meridiani regions of Mars were mapped, crater-age dated, and analyzed. These networks indicate episodic formation by precipitation during the Late Noachian.

2:30 p.m. Irwin R. P. III* Grant J. A. Howard A. D.
The Alluvial Fan Complex in Holden Crater: Implications for the Environment of Early Mars **[#1869]**
The alluvial fan complex in Holden crater is the largest deposit of this type on Mars and preserves topographic and sedimentary indicators of its formative environment around the Noachian/Hesperian transition.

2:45 p.m. Pondrelli M. * Rossi A. P. Marinangeli L. Hauber E. Baliva A.
Facies Analysis of the Eberswalde Fan Delta (Mars) **[#1583]**
The bright layered deposits of the Eberswalde fan delta have been investigated. Extensive delta plain deposits with distributary channels, ranging from braided to meandering, and interdistributary area facies, with flood plains and crevasse splays, have been recognized.

3:00 p.m. Maxwell T. A. * Irwin R. P. III Howard A. D. Higbie M.
Occurrence of Paleolakes on Early Mars and Empirical Constraints on Water Budgets **[#2384]**
Here we use measurements of breached impact craters and their contributing watersheds to constrain Mars' average annual water budget to an order of magnitude.

3:15 p.m. Fassett C. I. * Head J. W. III
Open-Basin Lakes on Mars: Implications of Valley Network Lakes for the Nature of Noachian Hydrology **[#1139]**
A new study of valley -network-associated open basins on Mars reveals numerous lake chains and many sizeable lakes. The volume of some basins relative to their watershed area suggests a role for groundwater as a potential source for their ponding.

3:30 p.m. Thomson B. J. * Bridges N. T. Milliken R. E. Bell J. F. III Calvin W. M. Weitz C. M.
New Constraints on the Origin and Evolution of the Layered Deposits in Gale Crater, Mars **[#1456]**
We have analyzed new MRO data of the central layered mound in Gale Crater. HiRISE and CTX data confirm geomorphic evidence for fluvial activity, and CRISM spectral data have revealed the presence of alteration minerals in some lower mound layers.

3:45 p.m. Banks M. E. * Lang N. P. Kargel J. S. McEwen A. S. Baker V. R. Strom R. G. Grant J. A. Pelletier J. D. HiRISE Team
Analysis of Sinuous Ridges in the Argyre Planitia, Mars Using HiRISE Images and MOLA Data **[#2480]**
When considered together, the characteristics of the sinuous ridges in the Argyre Planitia, Mars, as revealed in HiRISE imagery and MOLA data, are consistent with terrestrial esker-like landforms.

4:00 p.m. Oehler D. Z. Allen C. C. *
Ancient Hydrothermal Springs in Arabia Terra, Mars **[#1949]**
New HiRISE imagery from Mars Reconnaissance Orbiter shows several features that we interpret as hydrothermal spring deposits in southwestern Arabia Terra, Mars.

4:15 p.m. Harrison K. P. * Grimm R. E.
Cryosphere Disruption Due to Aquifer Recharge on Mars **[#2402]**
We investigate cryosphere disruption by superlithostatic groundwater pressures on Mars. Global groundwater models with various aquifer recharge sources, topographic assumptions, disruption criteria, and permeability distributions are considered.

4:30 p.m. Parker T. J. *
Martian Outflow Channels and the Ocean Hypothesis **[#2496]**
Outflow channels and margins of proposed ocean “shorelines” exhibit lava/debris flow morphology that might be understood if they’re remnants of once continuous debris flow surfaces that have been largely removed by erosion and gardening over geologic time.