Thursday, March 13, 2008
POSTER SESSION II: MARS FLUVIAL GEOMORPHOLOGY
6:30 p.m. Fitness Center

Segura T. L. Toon O. B. Colaprete A. Zahnle K.
A Sustained Greenhouse Climate and Erosion Period on Mars Following an Impact Event **[#1793]**
We have modeled the effects of large impacts on Mars using a 1D radiative-convective model. We have found that the surface may be kept above freezing for 95 days to centuries. We also estimate the total erosion due to rainfall following each event.

Craddock R. A. Ansan V. Howard A. D. Mangold N.
Crater Modification Processes in the Aeolis Region of Mars **[#1617]**
We analyze modified impact craters in the Aeolis highlands to determine the types and intensity of geologic processes that have occurred through time on Mars. Our results indicate long-lived and intense surface runoff in this area.

Ansan V. Mangold N. Masson Ph. Neukum G.
The Topography of Valley Networks on Mars: Comparison Between Valleys of Different Ages **[#1585]**
The topography of valley networks is derived in four regions of different ages (Noachian and post-Noachian) from HRSC stereoscopic images resulting in a DEM with 15 m to 50 m of spatial grid.

Hynek B. M. Beach M. Hoke M. R. T.
Updated Global Map of Martian Valley Networks and Implications for Hydrologic Processes **[#2353]**
An updated global map of Mars' valley networks identifiable in THEMIS data is presented. Relative to Viking-based studies, greater density networks are evident, and these systems are indicative of early warm and wet conditions.

Bowen T. A. Hynek B. M.
Mars' Climate History as Inferred from Valley Networks on Volcanoes **[#2393]**
We mapped valleys that occur globally on martian volcanos, calculated their drainage densities, and determined which ones were likely formed by runoff. This, combined with crater age-dating, allows us to infer climate change through time on Mars.

Andrews-Hanna J. C. Zuber M. T. Phillips R. J.
Early Mars Hydrology: Valley Networks and Evaporites **[#1993]**
We use global hydrological models to investigate the early history of water on Mars. Long-wavelength patterns of groundwater flow are consistent with the observed distributions of both valley networks and evaporite deposits.

Fortezzo C. M. Williams K. K. Grant J. A.
Geologic History Within Southeastern Margaritifer Terra, Mars **[#2244]**
Geologic mapping of southeastern Margaritifer Terra has revealed a complex water history surrounding the central basin of an ancient multi-ringed impact crater: rim dissection, ponding, infiltration, deposition, collapse, and impact gardening.

Wilkinson M. J. Allen C. C. Oehler D. Z. Salvatore M. R.
A New Fluvial Analog for the Ridge-forming Unit, Northern Sinus Meridiani/Southwest Arabia Terra, Mars **[#1392]**
Geomorphic analysis suggests that the Ridged Unit of northern Meridiani/southwest Arabia Terra may be an ancient, martian megafan that was emplaced by fluvial flow off the Southern Highlands.

Salvatore M. R. Wilkinson M. J. Allen C. C. Oehler D. Z.
Terrestrial Megafans as an Analog for Ridged Unit of SW Arabia Terra, Mars: Current Observations and Future Analysis **[#1455]**
The ridged unit of southwest Arabia Terra appears to be the remains of one or several megafans. Evidence that these ridges are fluvial in origin is present in microscale, mesoscale, and macroscale observations.

Hardgrove C. Whisner S. Moersch J. E.
Thermophysical Patterns in Terrestrial Alluvial Fans for Application to the Study of Martian Sedimentary Features **[#1226]**
Terrestrial alluvial fans are studied using orbital and ground-based thermal imagery. Thermophysical patterns are characterized based upon differences in particle size distribution between fluvial and debris-flow-dominated fans.

Pacifici A.
The Southern Argentinean Patagonia as a Terrestrial Analog for Mars **[#1995]**
This work points out some geological and geomorphological analogs occurring between the Santa Cruz area (southern Argentinean Patagonia) and the martian landscape.

Zimbelman J. R. Irwin R. P. III
Field Investigations of Pluvial Features in the Western United States as Analogs to Features on Mars **[#1148]**
A new MFRP project will examine the topography of both depositional and erosional pluvial features in Nevada and Oregon as analogs to possible lakes in impact craters on Mars.

Kraal E. R. Postma G.
The Challenge of Explaining Meander Bends in the Eberswalde Delta **[#1897]**
We examine the challenges of forming meanders in the sedimentary environment of the Eberswalde delta and discuss alternate hypothesis for their formation.

Fedo C. M. Finkelstein D. B. Moersch J. E.
Alternative Interpretation for the Eberswalde Delta, Holden NE Crater, Mars **[#2019]**
Examination of HiRISE images from the Eberswalde delta reveal that it is hard to identify sedimentologic and stratigraphic components of a fluvio-deltaic system, leaving open alternative interpretations for the origin of the strata and geomorphology.

Di Achille G. Komatsu G.
Using HRSC and HiRISE for the Study of Martian Depositional Environments: An Example from Ophir Planum **[#1608]**
HRSC and HiRISE datasets provide the ideal high-resolution combination required to study in detail small martian sedimentary deposits. In this study, we present evidence for a new possible 40-km-diameter crater lake detected at Ophir Planum.

Bargery A. S. Wilson L. Neather A. C.
CO_2-driven Water Fountains During Water Release Events on Mars **[#1102]**
We explore the release at the surface of Mars of water containing dissolved CO_2 derived from magmatic intrusions beneath aquifers. Many volcanically-triggered water release events should have been accompanied by kilometer-high water droplet fountains.

Neather A. C. Wilson L. Bargery A. S.
Origin of Ridged Deposits Proximal to Mangala Fossa, Mars **[#1591]**
We propose a new mechanism for the emplacement of the ridged deposits proximal to parts of the rim of the Mangala Fossa graben involving energetic release of muddy water driven by release of dissolved carbon dioxide.

Rodriguez J. A. P. Kargel J. S. Crown D. A. Tanaka K. L.
Extensive Secondary Chaos Formation Along Simud Vallis, Mars **[#1522]**
We have identified an enormous chaotic terrain produced by the collapse of the channel floor materials within Simud Vallis, the formation of which does not appear to have resulted in catastrophic flooding.