Thursday, March 16, 2006
POSTER SESSION II: MARS FLOWING AND STANDING WATER
7:00 p.m. Fitness Center

Bargery A. S. Wilson L.
Modelling Water Flow with Bedload on the Surface of Mars **[#1218]**
We theorise the thermodynamical effects of entrainment of eroded cold rock and ice on proposed aqueous flow on the surface of Mars, at temperatures well below the triple point, with an upper surface exposed to the Martian atmosphere.

Keszthelyi L. O'Connell D. R. H. Denlinger R. P. Burr D.
A 2.5D Hydraulic Model for Floods in Athabasca Valles, Mars **[#2245]**
We present initial results from the application of a new numerical model to floods in Athabasca Valles, Mars. Issues with the sparseness of MOLA data are of concern.

Collier A. Sakimoto S. E. H. Grossman J. A. Silliman S. E.
Parametric Study of Martian Floods at Cerberus Fossae **[#2313]**
Recent studies of Athabasca Valles use values that may be artificially constrained. A set of Earth-derived values are proposed to be used when calculating flow rates. This will allow for the determination of the formation events of Athabasca Valles with greater accuracy.

Gregoire-Mazzocco H. Stepinski T. F. McGovern P. J. Lanzoni S. Frascati A. Rinaldo A.
Martian Meanders: Wavelength-Width Scaling and Flow Duration **[#1185]**
Martian meanders reveals linear wavelength/width scaling with a coef. k~10, that can be used to estimate discharges. Simulations of channel evolution are used to determine flow duration from sinuosity. Application to Nirgal Vallis yields 200 yrs.

Howard A. D. Matsubara Y.
Flow Routing in a Cratered Landscape: 1. Background and Application to Mars **[#1209]**
A model is presented which routes runoff through enclosed depressions, balancing lake evaporation with runoff. As evaporation relative to precipitation decreases, flow integration increases. Global and regional Martian simulations are presented.

Matsubara Y. Howard A. D.
Flow Routing in a Cratered Landscape: 2. Model Calibration for Pleistocene and Modern Lakes and Rivers of the U.S. Great Basin **[#1210]**
A hydrologic routing model for cratered is applied to the U.S. Great Basin, a strong analog to the Martian highlands. Estimates of areally distributed runoff and evaporation closely match both present and Pleistocene lake distribution.

Molloy I. Stepinski T. F.
Automated Mapping of Valley Networks on Mars **[#1743]**
An automated channel mapping algorithm is developed and applied to map valley networks on Mars. Results in eight test sites reveal an excellent agreement with accurate manual maps.

Grant J. A. Fortezzo C.
The Evolution of Martian Drainage Basin Hypsometry **[#1393]**
Basin hypsometry on Mars may be created predominately by impact cratering. The resulting topography may be predisposed to relatively efficient discharge of water and sediment along later forming valleys.

Raitala J. Korteniemi J. Aittola M. Kostama V.-P. Hauber E. Kronberg P.
Neukum G. HRSC Co-Investigator Team
Fluvial Activity Resulted in Alluvial Fan in Icaria Planum, Mars **[#1299]**
The channel out of the Claritas paleolake led out water and deposited particles. Dust was washed away, particles were sorted and re-oriented. The alluvial fan can be identified by four-channel HRSC classification.

Di Achille G. Ori G. G. Reiss D. Hauber E. Gwinner K. Michael G. Neukum G. HRSC Co-Investigator Team
A Steep Fan at Coprates Catena, Valles Marineris, Mars as Seen by High Resolution Stereo Camera (HRSC) **[#1672]**
Using the new HRSC data, we present a sedimentological and morphometric analysis of an unusually steep and high fan-shaped deposit found into one of the secondary troughs associated to Coprates Catena, Valles Marineris, Mars.

Weitz C. M. Irwin R. P. III Chuang F. C. Bourke M. C. Crown D. A.
Formation of a Terraced Fan Deposit in Coprates Catena, Mars **[#1362]**
We favor a deltaic origin for the fan deposit, with the terraces representing erosion and re-distribution of material during each drop in lake level.

Kraal E. R. Moore J. M. Howard A. D. Asphaug E.
Martian Alluvial Fans: Prelimary Results from Southern Hemisphere Survey **[#1342]**
Preliminary results confirm that there is a distinctive grouping of three alluvial fan clusters originating from the rims of impact craters. We have also found several 'outlier' fans including geographically isolated fans and one in Capris Chasm.

Plescia J. B.
Acheron Fossae, Mars: Evidence of Fluvial Activity and Mass Flow **[#1488]**
Acheron Fossae is an arcuate block north of Olympus Mons. The Noachian surface displays fluvial, aeolian and mass flow modification. Mass flow features are suggested to be glacial or periglacial. Faulting and fluvial activity were contemporaneous.

Mangold N. Ansan V. Baratoux D. Masson P. Neukum G. HRSC Co-I Team
Identification of a New Outflow in the Syrtis Major Region, Mars **[#1802]**
HRSC images display erosional features such as valleys, grooves and tear-dropped islands suggesting a megaflood was once flowing over the lavas of Syrtis Major Planum, a location previously considered as composed by volcanic and eolian landforms only.

Lucchitta B. K.
Possible Secondary Aqueous Deposits in West Candor Chasma, Mars **[#1952]**
Possible channels with inverted relief on Ceti Mensa merge with a lobe of rounded, blocky deposits, suggesting that aqueous processes formed lobes on this ILD mound. Younger, finely layered materials in troughs below the mound may be secondary and eroded from the mensa.

Gaddis L. R. Skinner J. Hare T. Kirk R Titus T. Weller L. Neukum G.
Morphology and Morphometry of Ceti Mensa, West Candor Chasma, Mars **[#2076]**
We use high-resolution topographic data to examine the morphology and morphometry of Ceti Mensa (CM), a feature comprised of layered units on the floor of West Candor Chasma in the Valles Marineris (VM), Mars.

Wilson S. A. Howard A. D. Moore J. M.
The Geologic History of Terby Crater: Evidence for Lacustrine Deposition and Dissection by Ice **[#1863]**
The landforms in Terby Crater were likely deposited in a lacustrine environment when the circum-Hellas region may have been occupied by a body of water up to 3.6 km deep. The interior deposits were then subsequently dissected and modified by ice.

Ghatan G. J. Zimbelman J. R. Irwin R. P.
Oceans on Mars: A Search for Coastal Constructional Landforms Using THEMIS, MOC and MOLA Data **[#1916]**
We use THEMIS, MOC and MOLA data to search for coastal constructional landforms on Mars, possibly formed in association with a northern lowlands-filling ocean.

Lu X. Kieffer S. W.
A Comparison of Terrestrial and Martian Gravity Conditions on the Behavior of CO_2-driven Aqueous Flow **[#2011]**
Exsolution of small amounts of volatiles from discharging water can cause pulsing flow (geysering) on Mars (forming streamlined mesas in the Cerberus Plains). Martian gravity changes the properties of the pulses from terrestrial conditions.

Smith Z. E. Tullis J. A. Steele K. F. Malfavon L.
Martian Sinkholes: Implications for Large Scale Evaporite Deposits **[#1071]**
We believe that sinkholes can form on Mars and be used as evidence for regional deposition of limestone rather than the calcite cemented sandstone that is thought to be the dominant form of calcite deposition.

Bart G. D.
Comparison of Martian Gullies and Lunar Crater-Wall Landslides **[#1345]**
I present lunar landslides that resemble martian gullies, despite the lack of water on the Moon. Thus, gully features can be formed via dry landslides. On Mars, morphology alone is insufficient to determine the gully formation mechanism.

Ishii T. Miyamoto H. Sasaki S. Tajika E.
Constraints on the Formation of Gullies on Mars: A Possibility of the Formation of Gullies by Avalanches of Granular CO_2 Ice Particles **[#1646]**
Martian gullies are formed on the slopes with high inclination and their distribution seems to be consistent with distribution of seasonal condensation of CO_2 at high obliquity. This may suggest that gullies have been formed by avalanches of CO_2 ice.

Lanza N. L. Gilmore M. S.
Depths, Orientation and Slopes of Martian Hillside Gullies in the Northern Hemisphere **[#2412]**
Basic measurements of northern hemisphere gullies will be presented.