

**Thursday, March 15, 2007**  
**MARS SURFACE PROCESS AND EVOLUTION**  
**8:30 a.m. Crystal Ballroom A**

**Chairs: J. A. Skinner Jr.**  
**T. K. P. Gregg**

- 8:30 a.m. Basilevsky A. T. \* Neukum G. Werner S. C. van Gasselt S. Dumke A. Zuschneid W. Chapman M. Greeley R.  
*Geological Evolution of Mangala Valles, Mars: Analysis of the HRSC Image H0286* [#1079]  
 Analysis of the HRSC image H0286 showed that the Mangala Valley flooding had more than one source. One, known from previous works, was the graben in the valley head, another was the release of ground water from the valley slopes and floor.
- 8:45 a.m. Chapman M. G. \* Neukum G. Werner S. C. van Gasselt S. Dumke A. Zuschneid W. Michael G.  
*Echus Chasma and Kasei Valles, Mars: New Data and Geologic Interpretations* [#1407]  
 A new study of volcanic and fluvial materials from the Echus Chasma and Kasei Valles system that utilizes data from HRSC images and derived DTMs, THEMIS, MOC, and MOLA.
- 9:00 a.m. Oosthoek J. H. P. Zegers T. E. \* Rossi A. Foing B. Neukum G. HRSC Co-Investigation Team  
*3D Mapping of Aram Chaos: S Record of Fracturing and Fluid Activity* [#1577]  
 Mapping of structures and stratigraphic units of Aram Chaos was performed with HRSC data, using in particular the stereo (3D) capabilities of HRSC. In combination with published spectral information from TES, THEMIS and OMEGA, 3D mapping was used to derive the geological evolution of the area.
- 9:15 a.m. Nelson P. A. \* Manga M. Bourke M. C. Clarke J. D. A.  
*A Model for Mound Spring Formation and Evolution* [#2111]  
 We present a model of mound spring deposit formation and evolution and discuss its potential application in understanding martian paleohydrology.
- 9:30 a.m. Popa C. I. \* Esposito F. Ori G. G. Marinangeli L. Colangeli L.  
*Tithonium Chasma Domes: A Result of Salt Diapirism by Means of Thin-skinned Extension?* [#1848]  
 The study focuses on the origin and evolution of the salt bearing deposits in Tithonium Chasma. We tested the hypothesis of domes as result of diapirism upraise in thin-skinned extension conditions from a previously deposited salt layer.
- 9:45 a.m. Skinner J. A. Jr.\* Skinner L. A. Kargel J. S.  
*Re-Assessment of Hydrovolcanism-based Resurfacing Within the Galaxias Fossae Region of Mars* [#1998]  
 Based on analysis of high-resolution images, we re-assess the character of the Galaxias Fossae region and speculate it evolved through debris intrusion into transient ice-rich mantles during (and perhaps throughout) the Amazonian.
- 10:00 a.m. Rogers A. D. \* Aharonson O. Bandfield J. L. Christensen P. R.  
*The Nature and Origin of Mars' Intercrater Plains: New Insight from THEMIS* [#2313]  
 New geologic and mineralogic units within the intercrater plains on Mars are resolved with THEMIS. These units are analyzed in an effort to understand the relative contribution of volcanic, sedimentary, and impact material to intercrater plains.

- 10:15 a.m. Mest S. C. \*  
*Characteristics of Impact Crater Interior Deposits in Noachis Terra, Mars* [#1841]  
Impact craters (D>15 km) in the highlands of Noachis Terra contain interior deposits that display morphologies, surface textures and features that indicate a variety of geologic processes modified the craters subsequent to their formation.
- 10:30 a.m. Balme M. R. \* Murray J. B. Ackley S. F. Muller J-P. Kim J. R.  
*Morphological Evidence for a Sea-Ice Origin for Elysium Planitia Platy Terrain* [#2202]  
The origin of platy terrain in Elysium Planitia is controversial with possible formation mechanisms including flood lava plains or as remnants of a frozen sea. We present observations from ongoing mapping West of Cerberus Fossae that suggests a sea ice genesis.
- 10:45 a.m. Ackley S. F. \* Wagner P. Xie H.  
*Sea Ice Ridging and Rafting Structures: Is the Microstructural Controlled Transition from Ductile to Brittle Behavior on Earth Also Seen on Mars?* [#2035]  
From the similarity of sea ice pressure ridge between Mars and Earth, we infer that they first started from a ductile material to a single phase while deforming, resulting in brittle behavior near the end of the ridging process.
- 11:00 a.m. Sakimoto S. E. H. \* Gregg T. K. P. Fagan A. L.  
*Mechanical and Flow Models Constraints on the Origins of Platy Flows on Mars: Lava, Frozen Sea or Something Rather Muddy?* [#2441]  
We will discuss the constraints on Mars platy terrain from models, etc.
- 11:15 a.m. Jaeger W. L. \* Keszthelyi L. P. McEwen A. S. Russell P. S. HiRISE Team  
*Early HiRISE Observations of Athabasca Valles: A Lava-draped Channel System* [#2066]  
Early HiRISE images show that the flood-carved landscape in Athabasca Valles is draped by a thin veneer of lava. More recently, the region was mantled by a layer of light-toned, friable material that has since been stripped away by eolian erosion.
- 11:30 a.m. Gregg T. K. P. \* Crown D. A.  
*Redefining Hesperia Planum, Mars, Through Geologic Mapping* [#1190]  
The ridged plains of Hesperia Planum, Mars, are not a single geologic unit emplaced at the same geologic time.