**Thursday, March 15, 2007**
**POSTER SESSION II: MARS SURFACE PROCESSES AND EVOLUTION**
**6:30 p.m. Fitness Center**

Chicarro A. F.
*Mars Express — Discoveries After More than Three Years in Orbit* **[#1029]**
After more than three years in orbit, the latest discoveries from the ESA Mars Express mission will be presented, including surface morphology, geology and mineralogy, subsurface sounding and gravity anomalies, as well as atmospheric circulation, composition and escape.

White O. L. Stofan E. R. Plaut J. J. Safaeinilli A. Gim Y. Picardi G. MARSIS Team
*MARSIS Radar Sounder Observations in the Vicinity of Ma'adim Vallis* **[#1541]**
Reflections seen in MARSIS radargrams over Ma'adim Vallis region are described. It is suggested that they are indicative of sediment-filled basins. Alternatively, they may be produced by ionospheric interference.

Watters T. R. Campbell B. A. Carter L. M. Leuschen C. J. Plaut J. J. Picardi G. Safaeinili A. Clifford S. M. Farrell W. M. Ivanov A. B. Phillips R. J. Stofan E. R. MARSIS Science Team
*MARSIS Subsurface Radar Sounding of the Medusae Fossae Formation, Mars* **[#1661]**
The MARSIS radar sounder instrument has detected nadir echoes in orbits over units of the Medusae Fossae Formation in Elysium Planitia. These echoes are interpreted to be from the subsurface interface between the Medusae Fossae Formation material and the underlying lowlands plains.

Allen J. G. Gregg T. K. P.
*Using Pedestal Craters Around the Medusae Fossae Formation, Mars, to Constrain Erosion Rates* **[#2016]**
We analyze locations, diameters, and heights of pedestal craters around the Medusae Fossae Formation to constrain the paleo-extent of this formation as well as erosion rates.

Islam F. Cooke M. L. McGill G. E.
*Boundary Element Modelling of the Polygonal Fault Networks of Utopia Planitia, Mars* **[#1738]**
The overlap in scale between terrestrial sedimentary basins polygonal terrains and the polygonal terrains of Utopia Planitia suggest they may have similar origins. Models that simulate volumetric contraction will produce martian and earth scale spacing between fractures.

Griffes J. L. Grant J. Arvidson R. E. McEwen A. HiRISE Team
*Geomorphic Analysis of Northern Meridiani Planum Using HiRISE Imaging* **[#2073]**
A detailed geomorphic study was done in Northern Meridiani Planum using HiRISE, THEMIS, MOLA and OMEGA to characterize the morphology of five geologic units and study superposition relationships between kieserite and polyhydrated sulfates.

Murray J. B. Balme M. R. Muller J.-P. A. L. Kim J.-R.
*Stratigraphical Evidence of Elysium Sea Ice from HiRISE Images* **[#2247]**
A HiRISE image of Elysium plains shows features indicating both sea and ground ice. Size-frequency crater distributions show that some areas between ice rafts are several times older, discounting lavas and indicating complete sublimation of sea ice.

Fagan A. L. Sakimoto S. E. H.
*Measuring Platy Textures of Putative Martian Frozen Sea and/or Lava Surfaces Using THEMIS and MOLA Data* **[#2384]**
Platy textures on Mars that are remnants of suspected frozen seas, lava flows, or mud flows can be measured using THEMIS and MOLA data; this can perhaps give us some insight into how these structures formed.

Kostama V.-P. Raitala J. Ivanov M. A. Törmänen T. Korteniemi J.
*Western Promethei Terra, Mars: Preliminary View of the Geological History* **[#1980]**
The last major geological episode of the study region (35°–45°S, 90°–110°E) was a period of late resurfacing. Localised channels (with no apparent sources), possible lag deposits, and esker-like features imply that one possibility for this was a glacier.

Oehler D. Z. Allen C. C. Venechuk E. M. Paris K. N.
*Layered Sediments, Rampart Craters, and Potential Fluvio-Lacustrine Activity in S.W. Arabia Terra, Mars: Support for a History of Aqueous Conditions* **[#1057]**
Rampart craters, along with possible fluvio-lacustrine sediments in Vernal Crater (S.W. Arabia Terra), add to regional considerations and spectroscopic data suggesting that this region has had a considerable history of aqueous conditions.

Crown D. A. Berman D. C. Gregg T. K. P.
*Geologic Diversity and Chronology of Hesperia Planum, Mars* **[#1169]**
The distribution and nature of sedimentary and volcanic units within southern Hesperia Planum is examined and new constraints on the formation and modification of Hesperia Planum are provided from crater statistics.

Chuang F. C. Crown D. A.
*Modification of the Ancient Highland Plateau Along the Dichotomy Boundary, Deuteronilus Mensae, Mars* **[#1455]**
We present a synthesis of recent work that highlights our geologic mapping results, discusses collapse of plateau materials, and preliminary reconstruction modeling of apron and valley fill materials.

Peet V. M. Ramsey M. S. Crown D. A.
*Remote Sensing Analyses of Small Terrestrial Volcanic and Impact Craters: A Mars Analog for Formation, Morphology, and Erosional Processes* **[#2330]**
Small terrestrial volcanic and impact craters are analyzed using remote sensing techniques to determine formation and erosion processes. Ejecta are mapped and apparent thermal inertia is generated for application to martian datasets.

Forsberg-Taylor N. K. Phillips R. J.
*Oh Where, Oh Where Has the Crater Rim Gone? A Quantitative Look at Hellas Basin Rim Erosion* **[#1245]**
Where? Probably onto the basin floor. A quantitative study of Hellas Basin shows the volume of material removed from the rim over time may have resulted in layer of sediment at least 2.4 km thick on the basin floor.

Korteniemi J. Raitala J. Ivanov M. Kostama V.-P. Törmänen T.
*Mesas and Related Features on the Eastern Rim of the Hellas Basin, Mars* **[#1671]**
The slope between Reull-Teviot Vallis and Hellas basin has a set of unique flat-topped E-W elongated mesas with scalloped flanks. They show evidence of long-lasting intense erosion, indicating that they are remnants of a large regional massif.

Coleman K. S. A. Tullis J. A.
*Classification of Depression Types on Mars* **[#1156]**
Objective of the study is to create improved classification of closed depressions found on the martian surface in an attempt to identify solution-dominated features.

Cushing G. E. Titus T. N. Wynne J. J. Christensen P. R.
*THEMIS Observes Possible Cave Skylights on Mars* **[#1371]**
Here we report the discovery of seven candidate skylight entrances into subterranean caverns. All seven are located in a region with widespread collapse pits and grabens which may indicate an abundance of subsurface void spaces.