

Tuesday, March 8, 2011

**POSTER SESSION I: CRYOSPHERE: ICY INSIGHTS INTO MARS PALEOCLIMATE
6:00 p.m. Town Center Exhibit Area**

Baker D. M. H. Head J. W. Marchant D. R.

[*New Evidence for Regional Glacial Modification of Plains Units in Deuteronilus Mensae, Mars*](#) [#1422]

New observations of ice-rich lobate debris aprons and an adjacent plains unit in Deuteronilus Mensae, Mars, including similar crater retention ages and complex marginal textures, suggest modification of the plains unit by regional glaciation.

Kadish S. J. Head J. W.

[*Preservation of Layered Paleodeposits in High-Latitude Pedestal Craters on Mars*](#) [#1003]

High-latitude pedestal craters, including one on the south polar layered deposits, that have exposed layers along their marginal scarps offer supporting evidence that the process by which pedestals form involves impacts into ice-rich paleodeposits.

Orgel Cs.

[*Analysis of Cryokarstic Surface Patterns on Debris Aprons at the Mid-Latitudes of Mars*](#) [#1305]

This work focuses on the morphological analysis of the surface patterns (mounds, furrows, craters) and surface types (smooth surface, corn-like surface, polygonal mantling material, brain-like texture) on debris apron surfaces using HiRISE's images.

Quartini E. Holt J. W. Brothers T. C.

[*Internal Structure of a Lobate Debris Apron Complex in Eastern Hellas: Evidence for Multiple Mid-Latitude Glaciations on Mars*](#) [#2470]

The past depositional history of a lobate debris apron complex in eastern Hellas has been investigated by conducting a combined analysis of its surface morphology and subsurface structure using a CTX mosaic and orbital radar sounding data from SHARAD.

Brothers T. C. Holt J. W.

[*SHARAD Investigations of Possible Links Between Erosion of Mars' Planum Boreum Basal Unit and Nearby Sedimentary Deposits*](#) [#2669]

SHARAD basal unit (BU) investigations have uncovered a multitude of features previously hidden. This study is an investigation of BU reentrants in effort to understand their relation to circumpolar deposits.

Christian S. Holt J. W.

[*Frequency Analysis of SHARAD Reflectors Within the North Polar Layered Deposits, Mars and Implications for the Link Between Radar and Optical Data*](#) [#2628]

Frequency analyses of SHARAD amplitude data have been conducted in order to compare common wavelengths with results of albedo frequency analyses and optical and radar statistical properties.

Nunes D. C. Christian S. Holt J. W. Smrekar S. E. Phillips R. J.

[*Modeling SHARAD Echoes from HiRISE-Derived Stratigraphy of the Northern Polar Layered Deposits of Mars*](#) [#2552]

We apply HiRISE-derived stratigraphy to propagation models and investigate plausible compositions of ice and dust. Initial results show reflections to have similar spacing (~30 m) as the separation of visual maker beds.

Russell P. S. Byrne S. Mattson S. Christian S. Holt J. W. Milkovich S. M. Putzig N. E.
[Mars North Polar Layered Deposit Stratigraphy near Gemini Lingula from HiRISE Imagery and DTMs](#) [#2752]

A new HiRISE DTM, in conjunction with nearby images, are analyzed in order to establish consistencies and variability of NPLD stratigraphy in a region chosen to optimize eventual linking of visible and SHARAD radar layers.

Sori M. Perron T. Huybers P. Aharonson O.

[Distinguishing Orbital Signals from Stochastic Variability in the Martian Polar Layered Deposits](#) [#2641]

We model formation of martian PLDs and use a dynamic time-warping algorithm to determine the goodness of fit between our model outputs and the planet's recent insolation history, with the goal of doing the same for observed records of PLDs.