

**Thursday, March 22, 2012**  
**POSTER SESSION II: MARS POLAR PROCESSES**  
**6:00 p.m. Town Center Exhibit Area**

Dixon E. M. Calvin W. M. James P. B. Cantor B. A.

[\*New Observations of the Martian Northern Seasonal Cap Recession with MARCI\*](#) [#2798]

Data from the 2008 north cap recession has been analyzed and compared to data from the 2000 recession. The recession rate was found to be very similar for the two years but the 2008 recession began earlier in the year compared to the 2000 recession.

Russell P. S. Byrne S. Pathare A. Herkenhoff K. E.

[\*Active Erosion and Evolution of Mars North Polar Scarps\*](#) [#2747]

Four years of observations confirm that north polar scarps are highly active places. The distribution and rates of mass-wasting are presented and the link between powder avalanches and block mass-wasting is tested.

Mount C. Titus T. N.

[\*Time Evolution and Inter-Annual Variability of Seasonal Ice on the Mars Northern Polar Cap\*](#) [#1043]

We explore the temporal density variations of Mars' NPSC and use ice depth and density estimates to constrain the CROCUS date for a specific location and compare it to the CROCUS dates from three previous Mars years.

Mellem B. A. Brown A. J. Kahre M. A. Hollingsworth J. L. Schaefer J. R.

[\*Investigation of Asymmetric H<sub>2</sub>O Ice Distribution During Northern Spring on Mars Using a Modified NASA Ames Global Climate Model\*](#) [#1724]

We attempt to use the NASA Ames Global Climate Model to test whether a source of water ice in the location of residual ice deposits could lead to asymmetric condensation of water ice over the top of the residual ice cap.

Smith I. B. Holt J. W.

[\*The Northern Spiral Troughs of Mars as Cyclic Steps: A Theoretical Framework for Calculating Average Migration and Accumulation Rates\*](#) [#2116]

We interpret the spiral troughs of the NLPD to be depositional forms of cyclic steps, features that have been well characterized on Earth. Within this framework we estimate migration rates for the troughs to be tens of millimeters per Mars year.

Steel L. E. Holt J. W.

[\*Characterization of Large-Scale Sequence Boundaries and Erosional Events Within the North Polar Layered Deposits, Mars\*](#) [#2355]

This study examines large-scale erosional events in the north polar layered deposits in order to constrain their number, location, and extent. Based on radar stratigraphy, deposits are broken into three sequences bounded by unconformities.

Rodriguez J. A. P. Tanaka K. L. Platz T.

[\*Types and Formational Mechanisms of South Polar Troughs, Mars\*](#) [#2613]

Our investigation reveals three distinct morphologic types of south polar troughs, each with a distinct formational history involving unique modes of basement and atmospheric controls.

Cowan T. C. Holt J. W.

[\*Quantifying Accumulation Patterns in the Uppermost North Polar Layered Deposits, Mars Using Internal Radar Stratigraphy\*](#) [#2834]

We map radar reflectors in the upper portions of Gemina Lingula to quantify accumulation patterns in that region. Results show latitude dependent spatial patterns and agreement with recent climate models.

Milkovich S. M.

[\*Correlating Images and Radar at the Surface of Promethei Lingula in the South Polar Layered Deposits of Mars\*](#) [#2587]

Promethei Lingula contains numerous subsurface SHARAD radar reflectors; some of these reflectors intersect with the surface. The locations of such intersections are mapped and compared with images to determine which layers create radar reflections.

Milkovich S. M. Byrne S. Russell P. S.

[\*Variations in Surface Texture of the North Polar Residual Cap of Mars\*](#) [#2226]

The rough surface texture of the martian north residual ice cap shows quasi-periodic patterns. Spectral analysis of this texture allows us to map out variations in its orientation and size and look for processes controlling resurfacing of the cap.

Moore M. W. Holt J. W. Campbell B. A.

[\*Internal Structure of the Domed Deposit Within Korolev Crater, Mars from Radar Sounding\*](#) [#2894]

First radar investigation into the Korolev Crater on Mars. Korolev is a larger martian crater located near the north polar layered deposit and contains up to 1.8 kilometers of ice.