

Tuesday, March 16, 2004

POSTER SESSION I: MARS POLAR PROCESSES: LAND AND SKY
7:00 p.m. Fitness Center

Nomanbhoy M. Murray B. Pathare A. Koutnik M. Byrne S.

Morphological Evidence for the Large-scale Evolution of Martian North Polar Troughs? [#1694]

We measure the MOLA-derived morphological properties of troughs within the North PLD, and consider the implications for their capwide evolution.

Ivanov A. B. Byrne S.

New Views of the Martian Polar Regions: The Latest Results from the Mars Odyssey

THEMIS Investigation [#2099]

We present the latest mosaics obtained by the THEMIS instrument of the South Polar Layered Deposits of Mars: 36 m/pixel springtime mosaic and 18 m/pixel summertime mosaic. Comparison of the two suggests intriguing seasonal changes.

van Gasselt S. Werner S. C. Neukum G.

Observations at the Chasma Australe Re-Entrant, South Polar Region, Mars [#2106]

The Chasma Australe formation is proposed to be due to successive headward thermo-erosional processes. Indication for sapping and/or supra-glacial erosion have been found.

Gerstell M. F. Byrne S. Murray B. Nomanbhoy M. Koutnik M. Pathare A.

Stratigraphic Details of Uppermost Units Within South Polar Layered Deposits on Mars [#1688]

Our preliminary analysis of SPLD stratigraphy supports the suggestion by Byrne and Ivanov (2004) that the same stack of layers is repeatedly found throughout the uppermost sequences of the SPLD.

Kolb E. J. Tanaka K. L.

Detailed Geologic Analysis of Part of the South Polar Layered Deposits, Planum Australe, Mars: Part II [#2105]

In this abstract, we present further results of our geologic mapping initially presented at the 3rd Mars Polar Science Conf. of a trough system within the south polar layered deposits of Planum Australe, Mars.

Nunes D. C. Phillips R. J.

SHARAD: Radar Volume Scattering and the Polar Layered Terrains on Mars [#1654]

We investigate the propagation of a SHARAD-like signal through a dielectric model of the Polar Layered Terrains and show that the detection of layering might be difficult if dust fractions in ice are as low as those reported in the literature.

Mitrofanov I. G. Litvak M. L. Kozyrev A. S. Sanin A. B. Tretyakov V. I. Boynton W. V. Hamara D. K. Shinohara C. Saunders R. S.

Arabia and Memnonia Equatorial Regions with High Content of Water: Data from HEND/Odyssey [#1640]

One particular surface element of Arabia with coordinates (30°E, 10°N) has the smallest emission of epithermal neutrons in the equatorial belt. The best fitting subsurface parameters for this element correspond to 16 wt% water under a dry layer of soil with thickness 29 g/cm².

Kargel J. S. Wessels R. Beget J. E. Eddy T. Lloyd S. Macaulay D. Proch M. Skinner J. Tanaka K. L.
Alaskan Permafrost Analogs of Martian Small Valley Networks, Thermokarst, Terrain Softening, Terraces, and Volcanic Craters [#1995]

A continuous permafrost landscape in Bering Land Bridge National Preserve (Alaska) offers an analog model for some Martian terrains and geothermal-permafrost interactions. Key features include the world's largest maar craters and valley networks. This is an MFRP project.

Langsdorf E. L. Britt D. T.

Periglacial Processes in the Southern Hemisphere of Mars [#2115]

This abstract discusses the systematic identification and mapping of patterned ground onto a base map of the southern polar region of Mars.

Wood S. E. Leovy C. B. Catling D. C. Montgomery D. R. Ginder E. A.

Thermal Modeling of Possible Surface Water Ice Deposits in Juventae Chasma [#2136]

We present thermal modeling analysis of interior layered deposits in Juventae Chasma on Mars.

Chamberlain M. A. Boynton W. V.

Modeling Depth to Ground Ice on Mars [#1650]

Presented here are some sample results from models being developed to calculate the depth to stable ice and rate of vapor diffusion in the Martian regolith.

Mellon M. T. Arvidson R. E. Seelos F. Tamppari L. K. Boynton W. V. Smith P. Phoenix Science Team
Ground Ice at the Phoenix Landing Site: A Preflight Assessment [#1900]

The Mars Scout mission, Phoenix, will be capable of excavating into the martian subsurface in search of ice or ice-cemented soil for analysis. We consider the potential depths and locations of ice-cemented materials from various lines of evidence.

Jernsletten J. A.

Possible Temperature-related Differences in Slope Angle Between the North and South Walls of Coprates Chasma, Mars [#1495]

This study aims to determine whether the expected difference in surface temperature between the north and south walls of Coprates Chasma results in measurable slope angle differences, perhaps through its influence on the distribution of ground ice.

Armstrong J. C. Titus T. N. Kieffer H. H.

Seasonal Variations Within Korolev Crater, Mars [#1744]

We present TES and THEMIS observations of seasonal variations within Korolev crater. Observations indicate the presence of water ice in the mid summer within the crater, and modeling suggests a layer of water-rich material under the surface.

Sprague A. L. Boynton W. V. Kim K. Reedy R. Kerry K. Janes D.

South Polar Ar Enhancement as a Tracer for Southern Winter Horizontal Meridional Mixing [#1644]

Measurement of an Ar excess in the southern winter high latitude atmosphere at Mars by the GRS on Mars Odyssey has permitted estimation of meridional mixing. Eddy mixing rates for early southern winter and for late southern winter and spring have been made.

Qu Z. Tamppari L. K. Smith M. D. Bass D. Hale A. S.

An Investigation of the Correlation of Water-Ice and Dust Retrievals Via the MGS TES Data Set [#2138]

Comparison between water-ice cloud data derived from MGS/TES limb- and nadir-geometry observations, as well as comparison between water-ice and the dust are conducted in the attempt to assess the data quality for limb-geometry data and water-ice retrieval quality.

Espley J. R. Cloutier P. A. Brain D. A. Crider D. H. Acuña M. H.

Observations of Plasma Waves near Mars and Their Implications for Atmospheric Loss [#1733]

We use MGS magnetometer data to characterize the plasma waves near Mars. We find that some of the waves are indicative of the ongoing erosion of the Martian atmosphere by the solar wind.