Tuesday, March 24, 2009
POSTER SESSION I: MARS POLAR INVESTIGATIONS
6:30 p.m. Town Center Exhibit Area

Litvak M. L. Boynton W. V. Kozyrev A. S. Mitrofanov I. G. Sanin A. B. Tretyakov V. I. Varenikov A. Golovin D.
Observation of Martian Seasonal Caps: Dimensions, Density, Mass, Inter Annual Variations **[#1254]**
Results of long term (eight years) observations of martian seasonal caps onboard Mars Odyssey are presented.

Pathare A. V. Chuang F. C.
The Mass Balance of Stratigraphic Anomalies in the Martian North Polar Layered Deposits **[#1400]**
The present-day mass balance of stratigraphic anomalies within north polar troughs is constrained by incorporating CRISM spectral observations of surface water ice into an NPLD sublimation model.

Fortezzo C. M. Tanaka K. L.
Unconformities Revealed by MRO Context Images in the Polar Layered Deposits of Planum Boreum, Mars **[#2270]**
Details of unconformities mapped using a CTX image mosaic in the martian north pole indicate that one regional, and multiple localized erosion or non-deposition episodes occurred during the formation of the polar plateau in the Gemini Scopuli region.

Rodriguez J. A. P. Tanaka K. L. Berman D. C.
Depression Systems in Western Planum Boreum, Mars: Distributions, Orientations, and Cross-Cutting Relationships **[#2371]**
Planum Boreum, in the north polar region of Mars, forms a domical plateau largely dissected by depression systems of various dimensions. In this investigation we discuss their distributions, orientations, and cross-cutting relationships.

Russell P. S. Byrne S. Fishbaugh K. Herkenhoff K. Thomas N. HiRISE Team
Heights and Slopes on Mars North Polar Scarps Using HIRISE Point-to-Point Stereo Measurements **[#2479]**
We present a technique for making vertical elevation-difference and slope measurements between two points that yields results more accurate than MOLA (at polar scarps) yet is not as complex and resource-intensive as producing a full scale DEM.

Guallini L. Rossi A. P. Marinangeli L. Biccari D. Pettinelli E. Seu R.
New Elements on Stratigraphy of South Polar Layered Deposits on Promethei Lingula Region and a Possible Structural Approach **[#1602]**
New stratigraphical/tectonical elements was found on Promethei Lingula south polar layer deposits. We assume two possible depositional cycles marked by an angular unconformity. Layers strain response could be useful to define sequence stratigraphy.

Betz E. O. Titus T. N. Cushing G. E.
Determining the Heights and Distributions of Swiss Cheese Features on Mars South Polar Residual Cap using Photoclinometry **[#1363]**
Strange features known as “Swiss cheese” form in the thin CO_2 veneer of Mars south polar residual cap. Here we determine the heights and distributions of Swiss cheese features using photoclinometry in order to constrain the thickness of this veneer.

Langevin Y. Hansen C. Thomas N. Vincendon M. Titus T. Piqueux S. Bibring J.-P. Gondet B.
Investigations of Cryptic Regions of the South Seasonal Cap, 12/2008–02/2009 **[#2017]**
The origin of dust contamination in a major fraction of the cryptic region of the South seasonal cap of Mars has yet to be determined. An observation campaign in late 2008 / early 2009 with OMEGA, HIRISE, CRISM and THEMIS has been set up for adressing this issue.

Gardin E. Quantin C. Allemand P.
Defrosting Sequence on the Russell Megadune, Mars **[#2032]**
We have observed the complete defrosting sequence over the Russell megadune from small size dark spots to large dark streak spreading down the slope. Our results based on HiRiSE and CRISM data may question the current proposed model for defrosting features formation.

Westbrook O. W. Zuber M. T. Byrne S.
Southern Circumpolar Crater Ice Deposits on Mars **[#2147]**
Just beyond the martian south polar layered deposits (SPLD) are numerous impact craters containing mounded deposits that resemble outliers of the SPLD. We catalog and measure these crater-filling deposits and seek to understand their distribution, morphologies, and origins.

Moore M. Dasgupta A. Alva S. Casey S. Figueroa M. Hendershot C. Hwang D. Nagarajan S. Nguyen T. Szymanski J. Wilson R.
Defining Correlations Between Presence of Ice Deposits and Area Covered by Craters in Vastitas Borealis **[#1951]**
The Klein MSIP team gathered a number of THEMIS images to analyze. Areas of images covered by craters were correlated with areas covered by persistent ice deposits.

Kuzmin R. O. Zabalueva E. V. Christensen P. R.
Mapping of the Water Ice Amount in the Martian Surface Soil on the Periphery of the Retreating Seasonal Northern Polar Cap Based on the TES Data **[#1917]**
We present the results of the mapping of the water ice amount in the martian surface soil layer in the area around the Northern seasonal polar cap at the different stages of its recession.

Kuti A.
Thermal Behavior of Dokka Crater and its Surroundings in the North Polar Region of Mars **[#1006]**
The basic characterists of Dokka Crater and its surroundings in the north polar region of Mars are presented, focusing on the thermal properties and frost behavior. The results imply that the different thermal behavior is caused by H_2O ice.

Hovius N. Conway S. J. Barnie T. B. Besserer J.
Ice Filled Craters in Mars' North Polar Region — Implications for Sub-Surface Volatiles **[#2042]**
We present a study of impact craters above 65°N, to assess the sub-surface water budget, with emphasis on 17 craters containing lumps. We suggest these impacts formed a conduit to a periodically overpressurized aquifer, producing the lumps.

Swindle T. D. Thomas C. Mousis O. Lunine J. I. Picaud S.
The Trapping of Ar, Kr, and Xe in Martian Clathrates and the Possibility of Detecting Clathrates on Mars by Seasonal Changes in the Xe/Kr Ratio **[#1660]**
Calculations show that Xe would be much more readily trapped in multiple guest clathrates on Mars than would be Kr. Measurement of the Xe/Kr ratio over the course of a martian year would be a sensitive detector of seasonal formation of clathrate.

Blackburn D. G. Bryson K. Chevrier V. F. Roe L. A. White K. F.
Sublimation Kinetics of CO_2 Ice and Evolution of the Martian Polar Caps **[#1339]**
We report the experimentally measured sublimation rate of pure CO_2 ice under simulated martian conditions and compare them to data from MOLA, MOC, HiRISE, and CRISM. We predict the perennial CO_2 cap should disappear in approximately three martian years.