

Monday, March 12, 2007
MARS POLAR AND GLACIAL PROCESSES
8:30 a.m. Crystal Ballroom A

Chairs: F. Nimmo
 C. C. Allen

- 8:30 a.m. Rodriguez J. A. P. * Tanaka K. L. Langevin Y. Bourke M. Kargel J. Christensen P.
Water-free Low Albedo Surfaces in Planum Boreum, Mars [#1763]
 We have identified extensive low albedo surfaces in Planum Boreum, where the water-ice spectral signature appears to be largely suppressed by extensive veneers that extend from dark deposits located between the lower and the upper layered deposits.
- 8:45 a.m. Smith D. E. * Zuber M. T.
The Accumulation of Seasonal CO₂ at the Northern and Southern Poles of Mars [#1932]
 Laser altimetry data have been re-analyzed to determine the dynamic range of the seasonal deposition of carbon dioxide on both of the polar caps of Mars. The results suggest that the precipitation is greater in depth in the north and the south than previous estimates.
- 9:00 a.m. Schmidt F. * Douté S. Schmitt B. Langevin Y. Bibring J.-P. OMEGA Team
Does Insolation Control the Seasonal South Cap Recession of Mars ? [#1743]
 This study discusses the control of the seasonal south polar cap recession of Mars and its control by two potential factors: 1) insolation modulated by topography and roughness; 2) albedo.
- 9:15 a.m. Xie H. * Guan H. Zhu M. Thueson M.
A Conceptual Model of H₂O/CO₂ Frost Sublimation and Condensation Caused Albedo Change in Crater Interiors, Martian Seasonal Polar Cap Regions [#2079]
 We propose a conceptual model of sublimation/condensation (or decrease/increase of mass or extent) of CO₂ frost and H₂O frost/ice within a crater with observed high albedo deposits in later spring to middle summer.
- 9:30 a.m. Langevin Y. * Murchie S. Bibring J. -P. Seelos F. Gondet B. Vincendon M. Poulet F. Douté S.
Combined OMEGA and CRISM Observations of the Cryptic Region of the South Seasonal Cap Close to Equinox [#1602]
 We will report on combined observations of the cryptic region by OMEGA/MEX and CRISM/MRO immediately after sunrise at high southern latitudes (February 2007). This will provide a test of the venting model for the formation of spots, fans, and spiders at high southern latitudes.
- 9:45 a.m. Parsons R. A. * Nimmo F. Ellehoj M. D.
North-South Asymmetry in Martian Crater Slopes [#2108]
 Asymmetric slopes of crater faces at martian mid-latitudes suggest a variation in insolation resulted in differing rates of ice-driven creep. Shallower pole-facing may indicate a recent period of high obliquity.
- 10:00 a.m. Brown A. J. * Byrne S. Roush T. Tornabene L. L. Herkenhoff K. E. Bishop J. L. Hansen C. Green R. O. Russell P. McEwen A. Murchie S. L. CRISM Team HiRISE Team
Evolution of Water Ice Mound Deposit in "Louth" Crater as Observed by CRISM and HiRISE [#2262]
 We report here on observations made by MRO of an unnamed crater that has perennial water ice and lies at 70°N, 103°E. We have observed a layered deposit that suggests this crater may bear a greater resemblance to the polar cap than previously realized.

- 10:15 a.m. Madeleine J-B. Forget F. * Head J. W. III Levrard B. Montmessin F.
Mars: A Proposed Climatic Scenario for Northern Mid-Latitude Glaciation [#1778]
Using climate modeling, we propose a climatic scenario to explain the formation of glaciers in the northern mid-latitude (e.g., Deuteronilus-Protonilus Mensae region) in the recent geological past.
- 10:30 a.m. Fastook J. L. * Head J. W. III Marchant D. R.
Tharsis Montes Ice Sheet Models at High Obliquity Driven by GMC Results [#1119]
We describe the use of results from an atmospheric GCM for Mars at high obliquity that favors deposition of snow on the flanks of Tharsis volcanoes; we use predicted accumulation rates to drive an ice sheet model that is then seen to be in agreement with the geological evidence for glaciation.
- 10:45 a.m. Hudson T. L. * Aharonson O. Schorghofer N. Farmer C. B.
Diffusive Growth and Retreat of Ground Ice on Mars [#2027]
Two complimentary experiments to investigate the processes of diffusive retreat and advance of ice, where the atmosphere is either the source or the sink of water vapor are described and implications of the results to the understanding of ground ice on Mars are presented.
- 11:00 a.m. Allen C. C. * Kanner L. C.
Present-Day Exposures of Water Ice in the Northern Mid-Latitudes of Mars [#1174]
Mid-latitude areas of the northern plains mantled by residual ice-rich layers also display evidence of present-day surface exposures of water ice. These exposures could constrain the latitudinal and temporal stability of surface ice on Mars.
- 11:15 a.m. Osinski G. R. * Soare R. J.
Circular Structures in Utopia Planitia, Mars: Impact V. Periglacial Origin and Implications for Assessing Ground-Ice Content [#1609]
Various types of circular structures are present in Utopia Planitia, Mars. We discuss the impact versus periglacial origin for these landforms and the implications for our understanding of the history of H₂O, in particular ground-ice, in this region.
- 11:30 a.m. Farrand W. H. * Lane M. D.
"Blebbly" Terrain and Domes on the Northern Plains of Mars: Evidence of Ancient Ice Ages? [#1972]
Unusual terrains and landforms in the northern plains of Mars have been characterized using THEMIS imagery and other data. These features are described and considered as potentially being evidence of ancient martian ice ages.