

**Monday, March 12, 2007**  
**MARS POLAR LAYERED DEPOSITS**  
**2:30 p.m. Marina Plaza Ballroom**

**Chairs: R. J. Phillips**  
**J. J. Plaut**

- 2:30 p.m. Tanaka K. L. \*  
*North Polar Layered Deposits on Mars as Revealed by HiRISE Images* [#1866]  
 New HiRISE images spectacularly illustrate a diversity of newly recognized stratigraphic, structural, and modificational features of the north polar layered deposits on Mars.
- 2:45 p.m. Byrne S. \* Herkenhoff K. E. Russell P. Hansen C. McEwen A. HiRISE Team  
*Preliminary HiRISE Polar Geology Results* [#1930]  
 The High Resolution Imaging Science Experiment on board the Mars Reconnaissance Orbiter has successfully acquired a unique dataset over the north polar layered deposits and residual ices. Here, we review the major new findings.
- 3:00 p.m. Fishbaugh K. E. \* Byrne S. Herkenhoff K. Thomas N. Russell P. HiRISE Team  
*The Martian North Polar Layered Deposits at High Resolution with the Mars Reconnaissance Orbiter HiRISE Camera* [#1542]  
 We describe the northern Mars polar layered deposits at high-resolution using images from the MRO HiRISE camera, which has revealed unprecedented detail. We analyze layer morphology and albedo, stratigraphy, and links to climate signals.
- 3:15 p.m. Phillips R. J. \* Seu R. Biccari D. Campbell B. A. Plaut J. J. Zuber M. T. Murchie S. Byrne S. Safaeinili A. Orosei R. Marinangeli L. Masdea A. Picardi G. Smrekar S. E. Carter L. M. Putzig N. E. Nunes D. C. SHARAD Team  
*North Polar Deposits on Mars: New Insights from MARSIS, SHARAD and Other MRO Instruments* [#1925]  
 The Mars sounding radars (MARSIS on Mars Express and SHARAD on MRO) are providing new and complementary insights into the structure of the north polar deposits.
- 3:30 p.m. Russell P. S. \* Byrne S. Herkenhoff K. Hansen C. Fishbaugh K. Thomas N. McEwen A. HiRISE Team  
*HiRISE High-Resolution, Stereo, and Color Perspectives of Mars North Polar Basal Stratigraphy and Erosional Processes* [#2358]  
 The exciting new perspective provided by HiRISE reveals the basal unit to be PLD-like, ice-rich layers within cross-bedded sands and suggests several new processes of polar scarp erosion, including possible evidence for debris flow.
- 3:45 p.m. Hecht M. H. \*  
*Evolution of the Martian North PLD* [#1182]  
 An energy balance model shows that scarp retreat is sufficient to explain the evolution of the NPLD on the scale of a few million years, and precession of perihelion primarily determines the ablation rate while obliquity primarily influences the equilibrium slope.
- 4:00 p.m. Pathare A. V. \* Murray B. C.  
*Five Questionable Assertions About the Recent Mass Balance of the Martian North Polar Layered Deposits* [#1529]  
 We present counter-arguments to several common NPLD assertions (e.g., large-scale deposition has occurred since 1 Ma; accretion governs the mass balance of troughs; ablation prevents trough closure by flow; and the formation age is less than 5 Ma).

- 4:15 p.m. Milkovich S. M. \* Plaut J. J.  
*Comparisons of Martian South Polar Layered Deposit Strata in MARSIS Radar and Visual Images* [#1816]  
Multiple subsurface reflections are observed in the SPLD by the MARSIS radar. We attempt to correlate these reflections with stratigraphy observed in images to determine if the reflections are due to individual layers or are interference patterns.
- 4:30 p.m. Plaut J. J. \* Ivanov A. Safaeinili A. Milkovich S. M. Picardi G. Seu R. Phillips R.  
*Radar Sounding of Subsurface Layers in the South Polar Plains of Mars: Correlation with the Dorsa Argentea Formation* [#2144]  
The MARSIS radar sounder on Mars Express has detected a subsurface layer hundreds of meters to over 1 km thick in areas equatorward of the south polar layered deposits. The distribution correlates well with that of the Hesperian Dorsa Argentea Formation.