Friday, March 23, 2012
MARS POLAR PROCESSES: VERY COLD AND REALLY COOL
10:00 a.m. Waterway Ballroom 6

Chairs: **Candice Hansen**
Nathan Bridges

10:00 a.m. Brown A. J. * Calvin W. M.
Water Ice Grain Size Evolution on Martian North Polar Residual Layered Deposits for Late Summer MY28 AND 30 from CRISM/MARCI Observations **[#1742]**
We report on the late summer evolution of the the NPLD. We used CRISM data to identify an increase in VNIR albedo that we attribute to a decrease in ice grain size from L_s = 132–167 in MY28. MARCI data indicate this is not likely due to clouds or dust.

10:15 a.m. Calvin W. M. * James P. B. Hansen C. J.
Seasonal Variation in Volatile Ices in the North Polar Region of Mars **[#2278]**
Spring and summer CRISM observations of selected sites in the north polar region are examined to explore volatile ice composition and grain size evolution with season. The polar layered deposits are diverse with both seasonal and annual variability.

10:30 a.m. Plaut J. J. * Frigeri A. Orosei R.
Compositional Constraints on the Martian North Polar Basal Unit from MARSIS Radar Sounding Data **[#2458]**
Data from the 2011 north polar MARSIS campaign allow estimation of the dielectric constant of the basal unit of the polar plateau. The values suggest a component of lithic material as high as 50%.

10:45 a.m. Holt J. W. * Greve R. Smith I. B. Steel L. E. Cowan T. C.
Stratigraphic and Modeling Evidence in Support of a Young Age for the North Polar Layered Deposits, Mars **[#2879]**
Internal radar stratigraphy of the NPLD is consistent with modeling results that indicate its deposition of the northern polar ice within the past 4 million years.

11:00 a.m. Frigeri A. * Orosei R. Cartacci M. Cicchetti A. Mitri G. Giuppi S. Noschese R. Picardi G. Plaut J. J.
Three Dimensional Structure and Possible Lateral Inhomogeneities of the Mars North Polar Basal Unit **[#2922]**
MARSIS subsurface radar sounder data from 2011 allowed us to start to map in three deminsions the internal structure of the North Pole of Mars, and in particular we are exploring the structure of the Basal Unit.

11:15 a.m. Hansen C. J. * Bourke M. C. McEwen A. Mellon M. Pommerol A. Portyankina G. Thomas N.
Year 3 HiRISE Observations of Sublimation of the Northern Seasonal Polar Cap on Mars **[#2386]**
HiRISE has imaged the sublimation of Mars' northern seasonal polar cap for three years. The processes by which the dunes are reshaped every year are explored with high-resolution color images of the same locations as spring progresses.

11:30 a.m. Becerra P. * Byrne S. HiRISE Team
CO_2 Frost Halos on the South Polar Residual Cap of Mars **[#2513]**
We present observational analysis, and a numerical model to explain the formation of bright CO_2 frost halos seen by HiRISE on the edges of scarps and "swiss cheese" features in the south polar residual cap of Mars.