Thursday, September 8, 2016
THE MARTIAN CLIMATE RECORD 1: POLAR CAP EDITION
10:30 a.m. Ceremonial Hall

In this session we will discuss the climate of Mars from Global Circulation Models and climate recorded in the layers of the polar layered deposits.

Chairs: Patricio Becerra
Stefano Nerozzi

10:30 a.m. Holt J. W. * [INVITED]
*History of the Martian North Polar Layered Deposits, As We Know It [6094]*
Current state of knowledge regarding NPLD evolution, recent progress, and challenges.

11:00 a.m. Becerra P. * Byrne S. Sori M. M.
*Searching for a Climate Signal in Mars’ North Polar Deposits [6037]*
Wavelet analysis of new stratigraphic profiles of the North Polar Layered Deposits reveals a non-linear relationship between the deposits and astronomically forced climate change.

11:15 a.m. Hvidberg C. S. *
*Constraints on Past Climate on Mars from the North Polar Layers Deposits [6114]*
We infer constraints from the NPLD stratigraphy on the water and dust cycles and their variations on longer timescales. We present a model of PLD formation with insolation-driven ice and dust deposition rates and focus on dust processes.

11:30 a.m. Lalich D. E. * Holt J. W.
*Modeling SHARAD Reflectors as Marker Beds: A Possible Record of Regional Accumulation Rates in the North Polar Layered Deposits [6058]*
Using SHARAD data we examine reflectors in the uppermost NPLD and conclude that regional variations in reflectivity between separate reflectors may be the result of a consistent deposition pattern.

11:45 a.m. Emmett J. A. Murphy J. R.
*Formation of the Martian Polar Layered Terrains: Quantifying Polar Water Ice and Dust Surface Deposition During Current and Past Orbital Epochs with the NASA Ames GCM [6017]*
The NASA Ames GCM will be used to quantify net annual polar deposition rates of water ice and dust on Mars during current and past orbital epochs to investigate the formation history, structure, and stratigraphy of the polar layered terrains.

12:00 p.m. Wood S. E. * Phillips R. J. Smith I. B. Putzig N. E. Bierson C. J.
*Modeling the Past 1 Myr of Mars Perennial CO₂ Caps and Atmospheric Mass [6112]*
We have performed seasonally-resolved calculations of the evolution of Mars’ atmospheric pressure over the past 1 Myr.

12:15 p.m. Discussion

12:30 p.m. Lunch