

Thursday, March 21, 2013
ICE, GLACIERS, AND POLAR PROCESSES ON MARS
1:30 p.m. Waterway Ballroom 4

[R451]

Chairs: Jean-Pierre Bibring
Reid Parsons

- 1:30 p.m. Bibring J. -P. * Forget F.
[*Why has Mars Uniquely Preserved the Record of its Early \(Possibly Habitable\) Times?*](#) [#2161]
 New simulations show that Mars dichotomy was partially ice covered and thus protected against the effects of the LHB, preserving the record of Mars habitable(?) times.
- 1:45 p.m. Clifford S. M. * Costard F. PetitJean M. Mouginit J. Parker T.
[*Evidence for the Widespread Occurrence of Massive Ground Ice in the Northern Plains of Mars: A Potential Relic of a Former Ocean?*](#) [#2889]
 Radar and geomorphic evidence is presented for the survival of massive ground ice, possibly a frozen relic of an ancient ocean, beneath the northern plains.
- 2:00 p.m. Fastook J. L. * Head J. W.
[*Amazonian Non-Polar Glaciation: Supply-Limited Glacial History and the Role of Ice Sequestration*](#) [#1256]
 Pd elevations provide estimates of potential ice volume stored in the transient layer, as well as maximum layer thicknesses resulting from complete cap removal.
- 2:15 p.m. Le Deit L. * Hauber E. Fueten F. Pondrelli M. Rossi A. P. et al.
[*Investigation of Possible Coastal and Periglacial Landforms in Gale Crater, Mars*](#) [#2187]
 Using orbital data, we analyzed several landforms in the crater suggesting the past presence of a lake connected to ice-rich permafrost in Aeolis Mons.
- 2:30 p.m. Hallet B. * Sletten R. S. Stewart W. Williams R. Mangold N. et al.
[*Fracture Networks, Gale Crater, Mars*](#) [#3108]
 Direct observations by Curiosity promise to help eliminate certain hypotheses about the genesis of fractures and support others.
- 2:45 p.m. Oehler D. Z. *
[*A Periglacial Analog for Landforms in Gale Crater, Mars*](#) [#1322]
 The high thermal inertia unit within the MSL landing ellipse at Gale Crater contains a suite of features that can be interpreted within a periglacial framework.
- 3:00 p.m. Parsons R. A. * Holt J. W.
[*Glaciation at Euripus Mons, Mars: Insights from Combining Numerical Ice Flow Modeling, SHARAD Observations and High-Resolution Topography*](#) [#1840]
 Informed by SHARAD and HRSC data, simulations suggest ice flow over a sloping surface with ice grain sizes in excess of 1 mm, assuming an ice temperature of 205 K.
- 3:15 p.m. Pedersen G. B. M. * Head J. W.
[*Frozen Martian Lahars? Emplacement Mechanisms and Geologic Impact of topia-Elysium Flows*](#) [#1514]
 The morphology of Utopia-Elysium flows suggests that marginal lahar deposits emplaced in the martian environment are ice-rich due to freezing of pore-water.
- 3:30 p.m. Scanlon K. E. * Head J. W.
[*Volcano-Ice Interactions at Arsia Mons, Mars*](#) [#2091]
 We survey new evidence for glaciovolcanic landforms, polythermal glaciation, and more extant ice than previously thought in the Arsia Mons fan-shaped deposit.

- 3:45 p.m. Soare R. J. * Conway S. J. Dohm J. M.
[Low-Centred Polygons and Recent Landscape Modification by “Wet” Periglacial Processes In and Around the Argyre Impact Basin, Mars](#) [#1025]
Very late Amazonian landforms, whose morphology and key characteristics point to an origin by “wet” periglacialism in the Argyre region of Mars, are discussed.
- 4:00 p.m. Sizemore H. G. * Zent A. P. Rempel A. W.
[Initiation and Growth of Martian Ice Lenses](#) [#1368]
We employ numerical simulations of soil-ice interactions to place quantitative constraints on the growth of segregated ice lenses in the northern latitudes.
- 4:15 p.m. Guallini L. * Brozzetti F. Marinangeli L.
[“Soft-Sediment” and Deep-Seated Gravitational Slope Deformations Mechanisms in the South Polar Layered Deposits \(Promethei Lingula, Mars\): Geologic and Climatic Implications](#) [#1480]
We report first structural analysis of complex deformational systems affecting SPLD (Promethei Lingula, Mars) consistent with soft-sediment and DSGSD mechanisms.
- 4:30 p.m. Brothers T. C. * Holt J. W.
[Korolev Crater, Mars: Growth of a 2-km Thick Ice-Rich Dome Independent of, but Possibly Linked to, the North Polar Layered Deposits](#) [#3022]
3-D SHARAD stratigraphy over the icy mound in Korolev, Mars, is consistent with an atmospheric origin and hints at deposition coeval with the NPLD.