

Thursday, March 26, 2009
COMPARATIVE PLANETOLOGY
8:30 a.m. Waterway Ballroom 5

Chairs: Patrick McGovern
Kathleen Nicoll

- 8:30 a.m. Montési L. G. J. *
[Fabric Development, Shear Zone Formation, and the Possibility of Plate Tectonics on Earth and Venus](#) [#2350]
 The presence of plate tectonics on Earth and not Venus can be explained by the formation of ductile shear, which is possible as a consequence of layer development in a polyphase material on Earth, but not if all phases are dry.
- 8:45 a.m. McGovern P. J. * Watters T. R.
[Interaction of Membrane Stresses and Magma Ascent at Large Impact Basins on Mars and Mercury](#) [#1765]
 We use a simple mathematical model of the broad-scale loading effects induced by impact basins to investigate how such loading may control magmatism within and around basins on Mars (Borealis, Utopia, and Hellas) and Mercury (Caloris).
- 9:00 a.m. Lee C.-T. A. * Luffi P. Dalton H. A.
[Application of New Thermobarometers to Constraining the Origin of Magmas on Mars, Venus, Earth, the Moon, and the Eucrite Parent Body](#) [#1467]
 New thermobarometers are presented that can estimate T-P of magma generation on Earth, Mars and other planetary bodies, providing constraints on lithosphere thickness and planetary thermal state (emphasis will be on Mars).
- 9:15 a.m. Horodyskyj U. N. * Wyatt M. B.
[Compositional Variations with Depth in Icelandic Cores: Applications to Integrated Mars Remote Sensing Data Sets](#) [#2527]
 To better constrain the regional effects and depth of alteration at high-latitudes on Mars, we are examining compositional variations with depth in Icelandic basaltic cores.
- 9:30 a.m. Nicoll K. * Chan M. A. Parker T. J. Jewell P. W. Komatsu G. Okubo C. H.
[Bonneville Basin Analogues for Large Lake Processes and Chronologies of Geomorphic Development on Mars](#) [#1962]
 We present an inventory of geomorphic analogues for Lake Bonneville and Mars, with focus on potential standing-water features. The goal is to understand water as a geomorphic agent at a variety of temporal and spatial scales.
- 9:45 a.m. Halevy I. * Schrag D. P. Pierrehumbert R. T.
[Radiative Transfer in the Early Atmospheres of Mars and Earth](#) [#1029]
 Small differences in the formulation of CO₂ absorption in a line-by-line model result in large differences in the radiative forcing provided by 0.1–5 bars of CO₂. This uncertainty pervades any modeling study of the early planetary climate.