

**Thursday, March 15, 2007**  
**POSTER SESSION II: MARS: MAGNETICS AND ATMOSPHERE**  
**6:30 p.m. Fitness Center**

Langlais B. Thébault E. Quesnel Y.

*Magnetic Signature of Demagnetized Impact Craters: Tools to Time the Shutdown of the Dynamo on Mars?* [#1573]

Large impact craters modified the properties of the magnetized lithosphere on Mars. A 100-km wide crater will have a 1 nT signature at 100-km altitude. This allows correlation between weakly magnetized areas and craters to be studied, which should better constrain the dynamo shutdown time on Mars.

Lawrence K. P. Paty C. Johnson C. L. Harnett E. Milbury C.

*Possible Shielding of the Martian Atmosphere by a Crustal Magnetic Field* [#1453]

We investigate the possibility that magnetic field pressure from a strong crustal magnetic field on Mars may be sufficient to balance early solar wind pressure, thereby protecting an atmosphere capable of sustaining surface flow throughout the Noachian after cessation of an internal dynamo.

Milbury C. A. Johnson C. L. Schubert G.

*Insights from Magnetic and Geologic Observations in Mars' Southern Hemisphere Crust* [#2080]

In this paper we extend the analysis of Johnson and Phillips (2005) to the ancient crust in Mars' southern hemisphere to test for differences in the distributions of the observed magnetic field from that predicted by a dipolar magnetic field model.

Espley J. R. Farrell W. Brain D. A. Morgan D. D. Acuña M. H. Cantor B. Plaut J. Picardi G.  
*Martian Ionospheric Variability as Observed by MARSIS: The Effects of Solar Energetic Particles, Ionizing Radiation, Meteors, and Dust Activity* [#2043]

We present evidence for time variability in the martian ionosphere due to solar energetic particles. We also discuss possible ionospheric effects from meteoric material, dust storms, the diurnal ionization cycle, and crustal magnetic fields.

Nazarava K. Sephton M. A. Bland P. A.

*An Assessment of the Meteoritic Contribution to the Methane Component of the Martian Atmosphere* [#1624]

Methane has been detected in the martian atmosphere at an average concentration of  $10 \pm 5$  ppbv. In the current work, we estimate the amount of methane obtained due to ablation of meteoroids in Mars' atmosphere.

Altieri F. Zasova L. Grassi D. Bellucci G. Bibring J. P.

*OMEGA Observation of a Double Ozone Layer in the Southern Hemisphere of Mars* [#2152]

In this work we retrieved the vertical profiles for an OMEGA limb observation in the southern hemisphere where a double ozone layer is clearly visible.

Bergstrahl J. T. Natarajan M. Tolson R.

*Density Variations in the Martian Middle and Lower Atmosphere* [#1025]

Atmospheric density variations will be the major source of uncertainty for landing MSL. We compare empirical density profiles, derived from MGS-TES temperature profiles, with model predictions for some proposed MSL landing sites.

Wagner P. Xie H. Zhu M. Guan H.

*Using OMEGA Data to Determine the Optical Depths of Water Vapor Absorption Bands in the Martian Atmosphere* [#2065]

By examining the optical depths of four selected water vapor absorption bands from OMEGA image, we demonstrate that all four bands have potential to retrieve vertical and horizontal (across latitudes) distribution of water vapor abundance on Mars.

Tamppari L. K. Smith M. D. Bass D. S. Hale A. S.

*Water Vapor Behavior in the North Polar Region of Mars as Seen by MGS TES* [#1320]

Understanding the water vapor behavior through time in the north-polar region will lend insight to the atmospheric dynamics that control the transport of water. We will show the water vapor behavior in the North Polar Region of Mars for the MGS TES era.