

**Tuesday, March 11, 2008**  
**POSTER SESSION I: MARS ATMOSPHERE**  
**6:30 p.m. Fitness Center**

Ong L. Asphaug E.

*Volatile Retention and Atmospheric Erosion by Impacts on Mars* [#2454]

We model vapor plume expansion of comet impacts into hypothetical martian atmospheres. Mars may currently occupy a "sweet spot" where the competing effects of erosion and volatile injection always push the atmosphere toward an equilibrium pressure.

Zahnle K. Haberle R. M.

*Atmospheric Photochemistry on Modern and Ancient Mars* [#2220]

We develop a new Mars atmospheric photochemical model based on diffusion-limited H escape and surface deposition of highly reactive oxidants. We use the model to map out the limits to the photochemical stability of the CO<sub>2</sub> atmosphere.

Altieri F. Zasova L. Bellucci G. Carozzo F. G. D'Aversa E. Gondet B. Bibring J.-P.

*O<sub>3</sub> Apparent Abundances as Seen by the OMEGA/MEX Instrument* [#1767]

In this work we report about the O<sub>3</sub> apparent abundances as derived from the O<sub>2</sub> emission observed at 1.27 μm in the OMEGA nadir and limb observations.

Halevy I. Schrag D. P. Pierrehumbert R. T.

*The Role of SO<sub>2</sub> in the Climate and Geochemistry of Early Mars* [#2287]

Volcanically outgassed SO<sub>2</sub> in the early martian atmosphere may have helped maintain liquid water and inhibited the precipitation of carbonates. We present a Monte-Carlo radiation model, which we will use to study the radiative contribution of SO<sub>2</sub>.

Johnson S. S. Pavlov A. A. Mischna M. A.

*Longevity of Atmospheric SO<sub>2</sub> on Early Mars* [#2090]

Our photochemical simulations for a 500 mb ancient martian atmosphere suggest that moderate mixing ratios of SO<sub>2</sub> (i.e.,  $f(\text{SO}_2) = 10^{-6}$ ) could have persisted in the atmosphere for at least hundreds of years, generating warming after volcanic degassing.

Withers P. Barnes J. R. Justus C. G. Justh H. L. Kass D. M. Montabone L. Rafkin S. C. R.

*Comparison of Atmospheric Observations and Predictions for the Atmospheric Entries of Spirit and Opportunity* [#2175]

We shall compare atmospheric predictions for the landings of Spirit and Opportunity to atmospheric density, pressure, and temperature profiles observed during those landings.

Carozzo F. G. Bellucci G. Altieri F. D'Aversa E.

*Water Ice/Frost Deposition at Low Latitudes on Mars: Thermal Modelling Predictions* [#1857]

In this paper we report on the results of a thermal model that we have used to predict the deposition of water frost/ice at low latitudes.

Cornwall C. Titus T. N.

*Comparison of North and South Polar Cold Spots of Mars: Implications for the Global Dust Storm of 2001* [#1089]

This study uses MGS TES data to analyze the differences found between polar northern and southern cold spots; as well as the effects of the 2001 global dust storm on southern cold spot formation.

Hayne P. Paige D. A.

*Mars Polar Cold Spots Observed by MRO Mars Climate Sounder* [#2516]

Using radiometric observations from the Mars Climate Sounder during southern winter, we report evidence that the low brightness temperatures of polar cold spots are correlated with tropospheric, optically thick clouds.

Brown A. J. McGuire P. Wolff M. J.

*Atmospheric Modeling of the Martian Polar Regions: CRISM EPF Coverage During the South Polar Spring Recession* [#2140]

We describe efforts to model dust and ice aerosols content and soils and icy surface reflectance in the martian southern polar region during spring recession ( $L_s = 152-320$ ) using CRISM emission phase function (EPF) observations.

Espley J. R. Farrell W. M. Vaubailon J. Grebowsky J. Morgan D. Plaut J. J.

*Effects of Meteor Showers on the Martian Ionosphere: Results from the 2007 Marsis Observations* [#2312]

We present MARSIS observations showing no ionospheric effects during a predicted martian meteor shower. We discuss the plausible interpretations of this result.