

Tuesday, March 18, 2003  
POSTER SESSION I  
7:00 p.m. Fitness Center

**Mars Tectonics and Geophysics: From Holes to Poles**

Vidal A. Mueller K. Golombek M. P.

*Axial Surface Mapping of Wrinkle Ridges on Solis Planum, Mars from MOLA Topography: Constraints on Subsurface Blind Thrust Geometry* [#1125]

We undertook axial surface mapping of selected wrinkle ridges on Solis Planum, Mars in order to assess the subsurface geometry of blind thrusts proposed to exist beneath them. This work builds on previous work that defined structural families of wrinkle ridges based on their surface morphology.

Matney R. N. II Schultz R. A.

*Radial Variations in Lithospheric Properties in Northeast Tharsis: First Results* [#1463]

For the first phase in our quantification of Tharsis, an MGS-referenced data set of normal faults and grabens from a radial slice of Tharsis is created to provide a window into thermal, mechanical, and tectonic properties as a function of time.

Kilby R. E. Herrick R. R.

*Analysis of Unusual Fault Structures in Terra Cimmeria, Mars* [#1298]

In the central Terra Cimmeria region of the Southern Highlands of Mars is a set of linear scarps not clearly associated with known tectonic provinces. The set displays a NE-SW trend for over 1500 kilometers forming multiple horsts and grabens.

Wyrick D. Y. Ferrill D. A. Sims D. W. Colton S. L.

*Distribution, Morphology and Structural Associations of Martian Pit Crater Chains* [#2025]

Mapping of pit crater chains on Mars using MOC images show distribution patterns and morphology that indicate structural association with dilational normal faults.

Hammer J. E. Brachfeld S. Rutherford M. J.

*An Igneous Origin for Martian Magnetic Anomalies?* [#1918]

Constant-rate cooling experiments were run at 1-bar using Fe- rich basalt to ascertain whether conditions necessary for crystallization of minerals retaining intense RM are consistent with models for the generation of the Martian magnetic anomalies.

Jurdy D. M. Stefanick M.

*Mars Magnetic Data: The Impact of Noise on the Vertical Extrapolation of Fields and Methods of Suppression* [#1423]

Fourier analysis of Mars magnetic data along 180 shows an exponential decrease in amplitudes. Removal of noise and vertical extrapolation suggests a major source near 50 S. The magnetization pattern does not require reversed lineations, but does not exclude them either.

Boutin D. B. Arkani-Hamed J. A. H.

*Paleomagnetic Pole Position of Mars Revisited* [#1884]

We model some small, isolated magnetic anomalies of Mars using the aerobraking and science phase data. Many of the new paleomagnetic pole positions agree with the old positions. We discuss the implications on the crustal magnetization and the polar wandering of Mars.

Richmond N. C. Hood L. L.

*Paleomagnetic Pole Positions of Mars* [#1721]

Mapping and aerobraking phase Mars Global Surveyor magnetometer data are used to calculate paleomagnetic pole positions of Mars for several isolated magnetic anomalies.

Redmond H. L. King S. D.

*The Effect of Temperature-Dependent Viscosity on Mantle Convection: Applications Towards the Tharsis Rise* [#1810]

We will present numerical calculations of plumes in a spherical axisymmetric geometry. We vary Rayleigh number, rate of internal heating and rheology. We use topography and areoid as constraints.

Singer S. F.

*Mars Thermal Evolution: Aided by Tidal Dissipation?* [#1146]

We hypothesize that tidal dissipation caused by a disappeared satellite could account for the energy necessary to melt the planet.