Thursday, March 26, 2009
POSTER SESSION II: MARS: TECTONICS AND DYNAMICS
6:30 p.m. Town Center Exhibit Area

Wang Y. Wen L. Weidner D. J.
Constraining Composition of Mars Using Geophysical Constraints and Mineral Physics Data **[#1880]**
We construct 1-D density models of Mars for different mantle and core compositions, and calculate the hydrostatic gravity, moment of inertia and flattening factor, and then compare the predictions with the observations to constrain Mars composition.

Nunes D. C. Smrekar S. E. Konopliv A. S.
Survey of Gravity Admittance for Mars from the High-Resolution Mars Reconnaissance Orbiter Data **[#2011]**
We examine martian admittance spectra obtained with high-resolution gravity data from MRO, contrasting signatures from northern lowlands, southern highlands, and major volcanoes.

Spagnoulo M. G. Grings F. Perna P. Karszenbaum H. Ramos V. A.
Interpreting SHARAD Radargrams Using Interaction Models and Geological Constraints to Study Faults Zones in Mars **[#2163]**
The objective of this work is to present evidence of the SHARAD capabilities to retrieve information about the structure of a fault zone located at North-East of Ismeniae Fossae.

Roberts J. H. Lillis R. Manga M.
Giant Impacts on Early Mars and the Cessation of the Martian Dynamo **[#1265]**
The global magnetic field on Mars disappeared during the mid-Noachian, at the end of a sequence of giant impacts. We find that impact heating can reduce the CMB heat flow by up to 40%, and may have led to the cessation of dynamo activity.

Bills B. G. Ghent R. R. Nimmo F.
Tidal Dissipation in Mars: Where and How? **[#1712]**
Tidal dissipation in Mars is surprisingly vigorous. Tides raised by Phobos dissipate 3.3 MW. We consider several possible mechanisms for this dissipation, including tidally driven water flow in crustal aquifer systems.

Ruedas T. Tackley P. J. Solomon S. C.
Water, Melting, and Convection in the Martian Mantle **[#1463]**
In numerical thermochemical convection models of the partially molten martian mantle, radionuclides and water are being redistributed. This leads to a stiff upper mantle and a longer-wavelength thermal structure in water-bearing models.

Miskovic A. Grove T. L.
Stability of Hydrous Silicates and Deep Melting of the Early Martian Mantle **[#2539]**
Experimental phase relations predict that hydrous silicates can be buried deep in a growing planet. Relations between hydrous minerals and vapor-saturated solidus in martian mantle are investigated during the early planetary differentiation.

Kite E. S. Manga M. Perron J. T.
Evidence for Past Kilometer-Scale Overturn(s) in Deformed, Layered Terrain Near the Deepest Point on Mars **[#1248]**
In NW Hellas, wind has exhumed layered terrain showing ductile deformation. A kilometer-scale cellular pattern is identified, consistent with thermal and/or compositional convection. ‘Frozen-in’ convection within an impact melt sheet is consistent with observations.

Zeng Z. Zhang Z. Birnbaum S. J. Xie H. Yang W.
Global Dynamical Significance of Zigzag Fractures in South Polar Ice Cap of Mars **[#1225]**
Regional zigzag fractures and an echelon fractures developed in the south polar ice cap of Mars implies an accelerating spinning of Mars about its axis after the formation of the cap and proves the formation mechanism of the spiral trough in the cap.

Lucas A. Mangeney A. Mège D. Bouchut F.
Landslide Scar Geometry Effect on Flow Spreading: Application to Martian Landslides **[#1770]**
The geometry of the landslide scar may play a role mass spreading but it is usually unknown. Numerical tests have been performed so as to figure out this effect. Application to martian cases and implications in terms of mass balance will be discussed.