

Tuesday, March 13, 2007
POSTER SESSION I: MARS TECTONICS
6:30 p.m. Fitness Center

Kainu T. Raitala J.

Rotational Component in the Strike-Slip Fault Across the Light Block on the Floor of Ius Chasma [#1604]

The identified rotational fault component allows estimations of the block fracturing and further discussions of the origin, re-location, and thickness of the block.

Neel C. R. Mueller K.

Structural Analysis of Wrinkle-Ridge Rings on Lunae Planum and Hesperia Planum, Mars: Evidence of Buried Topography [#2185]

Our study of wrinkle-ridge rings in Hesperia Planum and Lunae Planum suggests that buried craters guide thrusts only at shallow levels and that these thrusts ultimately penetrate to depths comparable to those proposed for these and other regions.

Borraccini F. Di Achille G. Ori G. G. Wezel F. C.

Structural Analysis and Tectonic Reconstruction of the Eastern Margin of the Thaumasia Plateau (Mars) [#1566]

We present a structural mapping and tectonic analysis of a 2,400,000-km²-wide area in the eastern Thaumasia region. Finally, we propose an overall evolutionary model for the region.

Ritzer J. A. Hauck S. A. II

Influence of External Loads on Interpretations of Lithospheric Flexure and Tectonics at Isidis Planitia, Mars [#2244]

We investigate the effects of external loads on the lithospheric stress state in the vicinity of Isidis by comparing both flexure models constrained by global gravity and topography data and localized loading models with observed tectonics.

Okubo C. H. Schultz R. A. Polit A. T. McEwen A. S. HiRISE Team

Displacement-Length Scaling of Joints in Layered Deposits, Southwest Candor Chasma [#1225]

Recent HiRISE observations provide insight into displacement/length scaling relations for fractures that are less than a few hundred meters in length.

Fuete F. Stesky R. MacKinnon P. Hauber E. Gwinner K. Scholten F. Zegers T.

Neukum G. HRSC Co-Investigator Team

Faulting of ILD Deposits on Ceti Mensa, Western Candor Chasma, Mars [#1388]

Active normal faulting within Ceti Mensa continued until at least 1.4 km of ILD material was deposited. Only a thin layer of ILD material postdates fault motion. The domal topography of Ceti Mensa may reflect the inward tilt of two fault blocks.

Fuete F. Stesky R. MacKinnon P. Hauber E. Gwinner K. Scholten F. Zegers T.

Neukum G. HRSC Co-Investigator Team

The Structure of Interior Layered Deposits in Southwestern Candor Chasma from HRSC Image Data and Stereo-derived DTM [#1394]

Lower competent ILD units within Candor Chasma have regionally consistent attitudes and are unconformably overlain by finer layered units which drape over them. A resistant capping unit forms a second unconformity over the finer ILD units.

Zarnek S. W. Manga M.

Mantle Plumes and Long-lived Volcanism on Mars as a Result of Compositional Layering [#2133]

To address the influence of a deep, dense mantle layer on the thermal evolution of the martian interior, we use a series of 1D numerical convection simulations. Mantle layering is found to increase both the amount and duration of melting.

Li Q. Kiefer W. S.

Mantle Convection and Magma Production on Present-Day Mars: The Effects of Water [#2062]

By incorporating water effects on both the solidus and the viscosity, we explore how water content affects mantle convection and melt production on Mars. Increasing water content increases heat fluxes and magma production rate significantly.

Khan A. Connolly J. A. D.

Constraining the Composition and Thermal State of Mars from Inversion of Geophysical Data [#1085]

We have inverted global geophysical for martian composition and thermal state. Our results suggest a mantle enriched in FeO relative to the Earth, but less than inferred from the SNC meteorites. We find a liquid Fe core ~1600 km in radius, containing ~12 wt% S, with CMB temperatures around 2350 K.