

Monday, March 14, 2005
MARS TECTONISM AND MAGNETISM
2:15 p.m. Salon C

Chairs: H. V. Frey
M. E. Purucker

- 2:15 p.m. Frey H. V. * DeSoto G. E. Lazrus R. M.
Regional Studies of Highland-Lowland Age Differences Across the Mars Crustal Dichotomy Boundary [#1407]
 Buried lowlands in two regions across the Mars dichotomy boundary have crater retention ages equal to the global average lowlands. Cratered terrain in W Arabia has a similar (not older) age, but elsewhere highlands appear older than the lowlands.
- 2:30 p.m. Kiefer W. S. *
Gravity Models of the Hemispheric Dichotomy in Eastern Mars: Lithospheric Thickness and Subsurface Structure [#1192]
 Gravity observations indicate the presence of buried, high-density loads along the dichotomy boundary in much of eastern Mars. This contrasts with the negative gravity anomalies seen along the Arabia Terra portion of the dichotomy boundary.
- 2:45 p.m. Roberts J. H. * Zhong S.
Crustal Relaxation and Its Implications for the Martian Crustal Dichotomy [#2170]
 Viscoelastic relaxation calculations show that the crustal dichotomy would have relaxed in less than 1 Gy, given that the early crust was relatively warm. We propose degree-1 mantle convection as a force to maintain the dichotomy early on.
- 3:00 p.m. Connerney J. E. P. * Acuña M. H. Kletetschka G. Ness N. F. Mitchell D. L. Lin R. P.
Tectonic Implications of Mars Crustal Magnetism [#1401]
 We present here a new map of the magnetic field of Mars. The Mars crust retains in places the magnetic signature originally imprinted more than 4 billion years ago when it formed by crustal spreading in the presence of a reversing dynamo.
- 3:15 p.m. Purucker M. E. * Whaler K. A.
A Martian Paleomagnetic Pole Estimate Made Using the Distribution and Intensity of Large Scale Magnetic Features [#1720]
 Using the the regional distribution of magnetization, we deduce a new paleomagnetic pole associated with the large magnetic features of the Cimmeria region. The pole would suggest that the Tharsis bulge was within 20 degrees of the magnetic equator when the Martian magnetic field was active.
- 3:30 p.m. Hood L. L. * Harrison K. P.
Are Martian Crustal Magnetic Anomalies and Valley Networks Concentrated at Low Paleolatitudes? [#1110]
 The mean paleomagnetic equator calculated from an analysis of crustal magnetic anomalies tends to follow the distributions of both valley networks and magnetic fields.
- 3:45 p.m. Hanna J. C. * Phillips R. J.
Tectonic Pressurization of Aquifers in the Formation of Mangala and Athabasca Valles on Mars [#2261]
 Several Martian outflow channels emanate from extensional tectonic features, including Mangala and Athabasca Valles. We demonstrate that these floods could have been produced as a direct result of the pressurization of the aquifers by the tectonism.

- 4:00 p.m. Polit A. T. * Schultz R. A. Soliva R.
A Tale of Two Stratigraphies: From Alba Patera to the Northern Plains [#2175]
We use fault population characteristics and measured throw distributions from grabens on Alba Patera and the northern plains to map out distinct boundaries in the Martian crust.
- 4:15 p.m. Neuffer D. P. * Schultz R. A.
Landslides in Interior Layered Deposits, Valles Marineris, Mars: Effects of Water and Ground Shaking on Slope Stability [#2076]
Using slope stability analysis, we assessed the failure mechanisms of landslides in the Interior Layered Deposits of Valles Marineris, Mars. Four landslides could have failed under dry conditions, while one slope failure probably involved water.