Wednesday, March 19, 2003
MARS GEOMORPHOLOGY AND IMPACTS
1:30 p.m. Salon B

Chairs: J. B. Plescia
H. E. Newsom

Beyer R. A. * McEwen A. S.
Measurements of the Strike and Dip of Layers in Coprates Chasma, Valles Marineris, Mars **[#2130]**
We have used MOC, MOLA, and THEMIS data to make measurements of the strike and dip of layers in the Coprates Chasma region of Mars.

Harrison K. H. * Grimm R. E.
Rheological Constraints on Martian Landslides **[#1859]**
We constrain the rheological properties of martian landslide material from dynamical numerical models, compare the results to terrestrial and lunar examples, and draw conclusions regarding pore fluid pressure requirements.

Plescia J. B. *
Amphitrites-Peneus Paterae/Malea Planum Geology **[#1478]**
Amphitrites–Peneus Paterae lie on the southern rim of Hellas. The calderas are each ~125 km across. The surface is heavily mantled obscuring the underlying morphology. The mantle has a scallop morphology associated with removal of ground ice.

Ghail R. C. * Hutchison J. E.
An Alluvial Fan at Apollinaris Patera, Mars **[#1775]**
The large fan-like deposit at Apollinaris Patera, Mars, is demonstrated from Mola, Themis and Moc data to have an alluvial origin, indicating that active volcanism and a caldera lake coexisted for an extended period of time.

Tanaka K. L. * Skinner J. A. Jr.
Volatile-Driven, Deformational and Resurfacing Origin for the Vastitas Borealis Formation on Mars **[#1924]**
We propose that the enigmatic features associated with the Vastitas Borealis Formation on Mars collectively point to an origin involving deformation and resurfacing involving near-surface ground volatiles. New MGS and THEMIS data are providing a fresh look.

Ghatan G. J. * Head J. W.
South Circumpolar Ice Sheet on Mars: Regional Drainage of Meltwater Beneath the Hesperian-aged Dorsa Argentea Formation **[#1129]**
Detailed mapping of the Cavi Sisyphi area in the south polar region of Mars reveals evidence for basal meltwater drainage. Sinuous, esker-like ridges along the Sisyphi basin floors, suggest meltwater likely drained beneath the basins.

Kreslavsky M. A. * Head J. W.
Stratigraphy of Young Deposits in the Northern Circumpolar Region, Mars **[#1476]**
We used high-resolution MOC images to found stratigraphic relationships between geologically young units surrounding the northern polar cap: ice-rich high-latitude layer, dark and bright dunes, icy layered deposits (polar cap outliers).

Werner S. C. * Neukum G.
The End of the Heavy Bombardment as Reflected in the Ages of Martian Impact Basins **[#1986]**
The ages of Martian basins are discussed in comparison to the lunar situation.

Hiesinger H. * Head J. W. III

Geology of the Isidis Basin, Mars **[#1261]**

We investigate the Isidis basin based on topographic and imaging data from Mars Global Surveyor and Mars Odyssey. This study complements our recently completed analyses on Syrtis Major to the west and the transition between Syrtis Major and Isidis.

Newsom H. E. * Barber C. A. Schelble R. T. Hare T. M. Feldman W. C. Sutherland V. Gordon H. Thorsos I. E. Livingston A. Lewis K.

Evidence for an 800 km Diameter Impact Structure in Meridiani Planum and Associated Channels and Basins: A Connection with the Origin of the Hematite Deposits? **[#1414]**

The discovery of an 800 km diameter multi-ringed basin and evidence for fluvial and lacustrine environments in Meridiani suggests a connection with the origin of the hematite deposits and is consistent with the hematite occurrence in the Aram basin.

Hartmann W. K. * Popova O. Nemtchinov I.

SNC's That Didn't Make It: Analysis of Impact Crater Clusters on Mars **[#1815]**

New work is reported on clusters of craters found on Mars. We confirm small clusters (10-m scale craters) predicted in our earlier work and suggest that large clusters (50-m scale craters) result from fragments of objects launched from Mars almost at escape velocity.

Herrick R. R. * Hessen K.

The Impact Angles of Different Crater Forms on Mars **[#2122]**

We have surveyed Martian impact craters over a large size range to empirically determine the angles for which various phenomena occur.

McEwen A. S. * Turtle E. P. Burr D. M. Milazzo M. P. Lanagan P. D. Christensen P. R. Boyce J. M. THEMIS Science Team

Discovery of a Large Rayed Crater on Mars: Implications for Recent Volcanic and Fluvial Activity and the Origin of Martian Meteorites **[#2040]**

THEMIS IR images reveal a very recent 10-km crater on Mars with 800-km rays consisting of about a million secondary craters, a result consistent with the existence and discovery of Martian meteorites.