

Thursday, March 20, 2003  
POSTER SESSION II  
7:00 p.m. Fitness Center

### Mars Impacts

Barnouin-Jha O. S. Baloga S.

*Comparing Run-out Efficiency of Fluidized Ejecta on Mars with Terrestrial and Martian Mass Movements* [#1599]

We broadly characterize the rheology of fluidized ejecta on Mars as it flows during its final stages of emplacement by using the concept of run-out efficiency.

Chappelow J. E. Sharpton V. L.

*Atmospheric Effects and the Record of Small Craters on Mars* [#1418]

Crater populations and isochrons are used to date surfaces on Mars and its atmosphere is neglected when deriving isochrons. But, even Mars' modern atmosphere may affect cratering rates, and other work shows its past atmosphere may have been denser.

Cho J. Y-K. Stewart S. T.

*Global Dispersal of Dust Following Impact Cratering Events on Mars* [#2101]

Using a shallow-water atmospheric dynamics model, we investigate the global dispersion of dust injected into the stratosphere following large impacts to study the spreading rates, dispersal extent, and the potential for climatic effects.

Jaret S. J. Crane A. N. Albin E. F.

*Schiaparelli Basin: Crater Count Chronology and Geologic Evolution of an Ancient Martian Impact Structure* [#1438]

In this investigation we seek to map the distribution of geomorphic units within and immediately about Schiaparelli impact basin, Mars. Cratering statistics were utilized in order to formulate a geologic history depicting the timing for the emplacement of various map units.

Mouginis-Mark P. J. Garbeil H. Boyce J. M. Baloga S. M. Ui C.

*Measurements of Martian Impact Crater Geometry Via a New Interactive Computer Program* [#1472]

We have developed an interactive computer program to investigate the geometry of impact craters on Mars using the MOLA 1/64th degree DEM. An overview of the program is presented, along with preliminary results for 1,430 craters measured to date.

Magee M. Chapman C. R. Dellenback S. W. Enke B. Merline W. J. Rigney M. P.

*Automated Identification of Martian Craters Using Image Processing* [#1756]

Four image processing based methods for automatically detecting craters have been developed and implemented. It is shown that these methods can successfully locate most craters in typical Mars images by enforcing relatively high confidence measures.

Nezic Z. Salamuniccar G.

*Topography Profile Diagrams of Mars: Algorithms for Computing Altitude of Craters* [#1409]

Case study of twelve different algorithms for computing crater altitude according to the topography, center coordinates and radius of impact crater, required for computation of density-of-craters curve that is part of topography-profile-diagrams.

Forsberg-Taylor N. K. Howard A. D.

*Observations on Spatial Relationships of Impact Crater Floor Morphologies in the Sinus Sabaeus Region of Mars* [#1872]

We have created a comprehensive database of degradational characteristics of impact craters in the Sinus Sabaeus region of Mars. This information has allowed the observation of spatial relationships of crater floor features.

Sarid A. R. Frey H. V. Roark J. H.

*Martian Buried Basins and Implications for Characteristics of the Burial Layer and Underlying Surface* [#2019]

Visible and buried impact crater populations were compared, using MOLA data, to determine characteristics of the surface and underlying terrain. Results show an absence of early Noachian craters and constant thickness of resurfacing material.

Chauhan R. V. Plaut J. J.

*Pristine Impact Crater Populations of Mars* [#2116]

This study focused on obtaining size frequency distributions of pristine crater populations from various terrains of Mars. Images from the Viking Orbiter (VO), Mars Orbital Camera (MOC), and Thermal Emission Imaging System (THEMIS) were utilized for this study.

Reese C. C. Solomatov V. S. Baumgardner J. R. Stegman D. R.

*Giant Impacts and Thermochemical Martian Mantle Convection: Implications for Tharsis* [#1442]

The initial thermal and compositional state of Mars was likely heterogeneous as a result of giant impacts. Finite element simulations suggest that impact-induced compositional differentiation may play an important role in Martian evolution.