

Thursday, March 15, 2007
POSTER SESSION II: MARS CRATERING
6:30 p.m. Fitness Center

Ghosh S. Stepinski T. F. Vilalta R.

Automatic Mapping of Martian Landforms Using Segmentation-based Classification [#1200]

We use terrain segmentation and classification techniques to automatically map landforms on Mars. The method is applied to six sites to obtain geomorphic maps geared toward rapid characterization of impact craters.

Novosel H. Salamunićcar G. Lončarić S.

Crater Detection Algorithms Based on Pixel-Difference, Separated-Pixel-Difference, Roberts, Prewitt, Sobel and Frei-Chen Gradient Edge Detectors [#1351]

Implementations of six different crater detection algorithms based on six different well-known gradient edge detectors are presented. They are analyzed and compared using free-response receiver operating characteristics.

Stepinski T. F. Mendenhall M. P. Bue B. D.

Robust Automated Identification of Martian Impact Craters [#1202]

Robust automatic identification of martian craters is achieved by a computer algorithm acting on topographic data. The algorithm outperforms manual counts; derived crater sizes and depths are comparable to those measured manually.

Salamunićcar G. Lončarić S.

From Cross-Analysis Using Ground Truth Catalogue of Martian Craters Towards New Generation of Catalogues of Craters [#1088]

Cross-analysis using ground truth catalogue of martian craters, assembled for evaluation of crater detection algorithms, is presented. Capability to detect and correct errors is a good basis for new generation of catalogues of craters.

Salamunićcar G. Lončarić S.

From Evaluation of Ground Truth Catalogue of Martian Craters Towards Estimation of Possible Improvements of Catalogues of Craters [#1087]

Evaluation of ground truth catalogue of martian craters, assembled for evaluation of crater detection algorithms, is presented. Based on this evaluation, estimation of possible improvements of catalogues of craters is given.

Barlow N. G.

Martian Central Pit Craters: Characteristics, Distribution, and Comparison with Central Pit Craters on Ganymede [#1242]

Central pits are found in martian impact craters between 5 and 57 km in diameter and between 51°N and 69°S. Both crater and pit tend to be smaller than central pit craters on Ganymede.

Valentour N. R. Barlow N. G.

Identification of Nested Craters on Mars [#1777]

Observations of marine target impacts on Earth show that they often display a nested crater appearance. This study examines the topography and morphology of potential candidates in the northern hemisphere of Mars.

Suzuki A. Baratoux D. Kurita K.

The Ejecta of Martian DLE Craters in Utopia Planitia: First Report on the Study of Thermal Properties and New Methods for Measuring Volume Ratio [#1974]

This is the first report on the study for establishing new methods to measure the volume ratio of martian DLE craters. This also include the preliminary result of the thermal properties of martian DLE.

McGowan E. M. McGill G. E.

Distribution of Rampart Craters, in Utopia Planitia, Mars [#1022]

This paper describes the statistical analysis of features in the northern lowlands of Mars whose formation may be related to the presence of water.

Barnouin-Jha O. S. Buczkowski D. L.

Comparing the Runout of Fluidized Ejecta on Mars with Mass Movements on Earth [#1304]

We compare the runout of fluidized ejecta for over 100 martian craters, with the runout of landslides on Earth and Mars to broadly assess the importance of volatiles and an atmosphere during the emplacement of fluidized ejecta.

Komatsu G. Ori G. G. Di Lorenzo S. Rossi A. P. Neukum G.

Impact-induced Liquefaction in Water-rich, Unconsolidated, Near-Surface Sediments on Mars? [#1189]

Impact-induced liquefaction in water-rich, unconsolidated, near-surface sediments may have contributed at least partially to the formation of some landforms associated with impact craters on Mars.

de Villiers G. King D. T. Jr. Marzen L. J.

Shallow Marine Impact Craters on Mars [#2233]

The objective of this study is to locate, map, and describe impact structures in Arabia Terra. The study of shallow-marine impact craters on Mars is still in an early stage, thus the results of this study could be useful in the general characterization of these craters.

Boyce J. M. Garbiel H.

Depth to Diameter Relationships of Pristine Martian Complex Impact Craters: Implication to Crater Mechanics, Surface Properties and Surface Process Studies [#1931]

The d_r/D relationship for fresh craters on Mars has been used as a standard for erosion, target material properties, and crater mechanics studies. A significantly better estimate of this d_r/D function has been derived by using only pristine crater in a size bin from a global population.

Gehrke S. Köhring R. Barlow N. G. Gwinner K. Scholten F. Lehmann H. Albertz J.

A Topographic Image Map of the Sabrina Valles Region Including Information on Large Martian Impact Craters [#1583]

The Catalog of Large Martian Impact Craters provides detailed information on 42,283 craters >5 km; it is planned to be integrated in the Topographic Image Map Mars 1:200,000 series. Such an update is shown in a special target map, based on HRSC data.

Morrison S. J. Frey H. V.

Crater Densities in Noachis Terra: Evidence for Overlapping Ejecta from Argyre and Hellas [#1355]

The cumulative frequency distribution of visible and buried craters in Noachis Terra provide evidence for effects of overlapping ejecta and secondary cratering in the area between Hellas and Argyre.

Frey H. V. Edgar L. A.

Very Large Diameter Impact Basins on Mars: Contributions from Crustal Thickness Data [#1716]

Stretched crustal thickness data suggest a half-dozen very large (>1000 km diameter) Circular Thin Areas (CTAs) which may be giant impact basins not previously recognized as QCDs. One may be the oldest large basin on Mars.