

Tuesday, March 15, 2005
POSTER SESSION I: MARS EXPRESS AND HRSC II
7:00 p.m. Fitness Center

Koehler U. Neukum G. van Gasselt S. Jaumann R. Roatsch Th. Hoffmann H. Zender J.
 Acton C. Drigani F. HRSC Co-Investigator Team
*Public Outreach and Archiving of Data from the High Resolution Stereo Camera Onboard Mars Express:
 2004 — The First Year* [#2202]

During 2004, the HRSC imaging experiment onboard Mars Express recorded 23 Gigabyte of raw data. Every six months these HRSC 'Level 2' data are fed into ESA's Planetary Science Archive (PSA) that sends all data also to the Planetary Data System (PDS).

Shean D. E. Head J. W. III Marchant D. R. Neukum G. HRSC Co-Investigator Team
*Arsia Mons Fan-shaped Deposit: Spatial and Temporal Relationships Among Cold-based Glacial Facies
 from HRSC Data* [#2190]

New high-resolution HRSC images reveal details of a fan-shaped deposit on the flanks of Arsia Mons interpreted to be a cold-based, tropical mountain glacier, showing evidence for superposed moraines, debris-covered alpine and piedmont glacial deposits, and candidate subglacial eruptions.

Hiesinger H. Head J. W. III Neukum G. Jaumann R. Hauber E. Carr M. H. Masson Ph. Foing B. H.
*Evidence for Snow and Ice Accumulation Aiding Debris Flow and Glacial Flow at Mid- to
 Low-Latitudes on Mars* [#1988]

HRSC image data show debris aprons suggesting extremely ice-rich glacier-like viscous flow and sublimation, and ice-rich debris-covered glaciers suggesting geologically recurring glacial activity in low- and mid-latitude regions.

Dickson J. L. Head J. W. III Parsons R. L. Neukum G. HRSC Co-Investigator Team
Arsia Mons Flank Pit Craters and Valleys: Modification by Downslope Movement Processes [#1790]

We use new HRSC image data to document pit crater and linear valley modification processes at the southern margin and flank of the summit of Arsia Mons. Candidates include mass wasting, slumping, gelifluction, solifluction, and glaciation.

Reiss D. Michael G. G. Hauber E. van Gasselt S. Jaumann R. Neukum G. HRSC Co-Investigator Team
*Ages of Rampart Craters in the Xanthe Terra Region and Southern Chryse Planitia, Mars: Implications for the
 Distribution of Ground Ice in Equatorial Regions* [#1725]

We determined the absolute ages of rampart craters in two near equatorial regions on Mars by measuring the ejecta blankets superposed crater frequencies in Mars Express High Resolution Stereo Camera (HRSC) imagery.

Lahtela H. Kortenienmi J. Kostama V.-P. Raitala J. Neukum G. the HRSC Co-Investigator Team
The Ancient Lakes in Hellas Basin Region as Seen Through the First Year of Mars Express HRSC-Camera [#1683]

This study concentrates on mapping and describing the paleolakes on Hellas Basin region using the Mars Express HRSC images. The camera has imaged the area with enough good coverage to give preliminary view of paleolake distribution there.

Kortenienmi J. Kostama V.-P. Aittola M. Öhman T. Törmänen T. Lahtela H. Raitala J.
 Neukum G. HRSC Co-Investigator Team

Mars Express HRSC Analysis of Two Impact Craters in Terra Tyrrhena, Mars [#1680]

Two craters in Terra Tyrrhena north of Hellas basin exhibit anomalous floors. Here we present the geological history of the area.

Kortenienmi J. Lahtela H. Raitala J. Neukum G. HRSC Co-Investigator Team
Anomalous Depressions on the Circum-Hellas Crater Floors as Seen in the First Year MEX HRSC Images [#1669]

The Hellas rim and basin region exhibit a multitude of anomalous pits, collapses and depressions on the crater floors. We use the new HRSC images to identify and categorize these features and find that they are mostly erosion- and volatile-related.

Aittola M. Kostama V.-P. Raitala J. Korteniemi J. Greeley R. Williams D. Hauber E.
Neukum G. HRSC Co-Investigator Team

Amphitrites Patera Studied from the Mars Express HRSC Data [#1664]

The multi-channel data of the HRSC reveals several surface units with different properties within the Amphitrites Patera, as well as evidences of small scale volcanic activity postdating the formation of the patera.

Mangold N. Masson Ph. Ansan V. Quantin C. Neukum G. HRSC Co-Investigator Team

Analysis of Valley Networks on Valles Marineris Plateau Using HRSC/MEX Data [#1336]

Dense dendritic networks of valleys likely formed by surface run off are observed close to Echus Chasma attesting of late fluvial episodes in that region. Inverted channels near Juventae Chasma suggests this process was not restricted in one location.

McColley S. M. Head J. W. III Neukum G. HRSC Team

The Medusae Fossae Formation: Geological Characteristics and Topographic and Stratigraphic Relationships of the Lower Member Along Southeastern Elysium Planitia [#1184]

A detailed geologic assessment of the lower member (Aml) of the Medusae Fossae Formation along southeastern Elysium Planitia.

Thompson T. W. Horttor R. L. Acton C. H. Jr. Zamani P. Johnson W. T. K. Plaut J. J.

Holmes D. P. No S. Asmar S. W. Goltz G.

The Mars Express/NASA Project at JPL [#1088]

ESA's Mars Express Mission, which has been in orbit since December 2003, is supported by a number of U.S. contributions described in this report.

Spiegel M. Schmidt R. Stilla U. Baumgartner A. Neukum G. HRSC Co-Investigator Team

Registering HRSC Imagery of the Mars Express Mission to Mars Observer Laser Altimeter Data [#1761]

The goal is to register the HRSC data of Mars Express Mission to the Mars Observer Laser Altimeter data (MOLA). The concept and results of the bundle adjustment with and without MOLA data as control information is described.

Schmidt R. Spiegel M. Heipke C. Oberst J. Neukum G. HRSC Co-Investigator Team

Automatic Tie Point Generation for the Processing of HRSC Imagery of the Mars Express Mission [#1769]

The automatic determination of tie points for the improvement of the exterior orientation of the spacecraft is carried out at Institute of Photogrammetry and GeoInformation (IPI) of Universität Hannover and is presented in this abstract.

Werner S. C. Ivanov B. A. Neukum G. van Kan M. Zegers T. E. Foing B. H. Greeley R.

Williams D. HRSC Co-Investigator Team

Evolutionary History of Gusev — The MER Landing Site — Seen by MEX-HRSC [#1777]

The evolutionary history of Gusev and its vicinity is discussed. Comparing Gusev-sized impact craters the level of infill of Gusev is about 1–1.5 km more than for others, possibly due to the contribution of fluvial activity of Ma'adim Vallis.

Raitala J. Basilevsky A. T. Neukum G. Werner S. C. Denk T. McCord T. B. HRSC C-Investgator Team

Mars Express HRSC Colors of White Rock, Arabia, Mars [#1710]

The MEX HRSC spectral data suggest (but not prove) that White Rock may be evaporite deposit resembling the Opportunity sulfate deposits.

Hauber E. Gwinner K. Reiss D. Scholten F. Michael G. G. Jaumann R. Ori G. G. Marinangeli L.

Neukum G. HRSC Co-Investigator Team

Delta-like Deposits in Xanthe Terra, Mars, as Seen with the High Resolution Stereo Camera (HRSC) [#1661]

HRSC images show delta-like deposits in impact craters in Xanthe Terra on Mars. The morphology and topography of the deposits suggest a formation as Gilbert-type deltas and are in agreement with clastic sedimentation in a lacustrine environment.

Pischel R. Zegers T. Hoffmann H. Hauber E. Mertens V. Roatsch T. Jaumann R. Matz K.-D. Companys V. Lauer M. Denis M. Moorhouse A. Rabenau E. Ricketts M.
Targeting Mars — The Mars Express Science Planning and Operations [#1017]

Since the ESA Mars Express mission arrived at Mars more than 600 orbits have been used for observations. The paper describes the complex process of planning the science operations for Mars Express with emphasis on the accuracy of observations.

Komatsu G. Ori G. G. Di Lorenzo S. Rossi A. P. Neukum G. HRSC Co-Investigator Team
Morphology and Morphometry of Fluidized Ejecta Blankets: New Results from the Mars Express High Resolution Stereo Camera [#1379]

The morphology and morphometric properties of fluidized Martian impact crater ejecta blankets were studied using the HRSC stereo data set. The results indicate their origin as water-related ejecta emplacement and liquefaction/fluidization.

van Gasselt S. Hauber E. Reiss D. Scholten F. Neukum G. HRSC Co-Investigator Team
Slope Morphologies of the Hellas Mensae Constructs, Eastern Hellas Planitia, Mars [#2090]

Lobate debris aprons of the Eastern Hellas region show a variety of adjacent landforms that contributed to their formation. Through time, varying amounts of available water or ice caused retreat and movement of surficial deposits with varying rheologic behaviours.

Martin P. D. Cord A. Foing B. H. Zegers T. van Kan M. Pinet P. Daydou Y. Hoffmann H. Hauber E. Jaumann R. Neukum G. HRSC Co-Investigator Team
Photometric and Compositional Surface Properties of the Gusev Crater Region, Mars, as Derived from Multi-Angle, Multi-Spectral Investigation of Mars Express HRSC Data [#1687]

The focus of this investigation is to use the potential of the HRSC multi-angular and multi-spectral data sets for identifying photometric, color and compositional units and their heterogeneity.

Basilevsky A. T. Neukum G. Ivanov B. A. Werner S. C. van Gasselt S. Head J. W. III
Hauber E. HRSC Co-Investigator Team
Mars Express HRSC View of Western Olympus Mons: Evidence for Ice-bearing Deposit and High-Altitude Glaciation [#1060]

The analysis of the HRSC images for the western Olympus Mons provides evidence of the presence of an ice-bearing deposit composing part of the Olympus Mons construct as well as evidence of the high-altitude glaciations in the geologic past.