

Tuesday, March 11, 2008

POSTER SESSION I:

ROCKET SCIENTIST'S TOOLBOX I: MISSION SCIENCE AND OPERATIONS

6:30 p.m. Fitness Center

Edwards L. J. Broxton M. J.

*Automated Digital Elevation Model Generation from Orbital Imagery* [#2489]

NASA ARC has been developing 3D surface reconstruction and visualization capabilities for planetary exploration for more than a decade. Recently the IRG has adapted its surface reconstruction tools to generate Digital Elevation Models (DEMs) from orbital imagery.

Dumke A. Spiegel M. Schmidt R. Neukum G.

*High-Resolution Digital Terrain Models and Ortho-Image Mosaics of Mars: Generation on the Basis of Mars-Express HRSC Data* [#1910]

Since December 2003, the European Space Agency's (ESA) Mars Express (MEX) orbiter has been investigating Mars.

Cook A. C. Barnes D. P.

*Terrain Mapping Coverage Around a Lander Using Passive Structured Light* [#2466]

It is common for stereo cameras to be placed on planetary landers and rovers. The technique described here, in some instances, could replace one of the cameras in a stereo system with a very light weight passive structured light system. This would save money, weight, and power.

Golombek M. Sizemore H. G. Huertas A. Tamppari L. Mellon M. T.

*Estimates of the Number and Size of Rocks Within Reach of the Robotic Arm During Phoenix Surface Operations on Mars* [#1868]

The size-frequency distributions of rocks in HiRISE images follow exponential models developed from lander measurements of smaller rocks and are extrapolated to smaller diameter to estimate the number of rocks in the Phoenix robotic arm workspace.

Broxton M. J. Edwards L. J.

*The Ames Stereo Pipeline: Automated 3D Surface Reconstruction from Orbital Imagery* [#2419]

We present our work on a fully automated stereo processing software system for building digital terrain models from stereo imagery. We will show results from a wide range of imagers including MOC-NA, CTX, HRSC, and the Apollo Metric and Panoramic cameras.

Fink W. Datta A. Dohm J. M. Tarbell M. A. Jobling F. M. Furfaro R. Kargel J. S.

Schulze-Makuch D. Lunine J. I. Baker V. R.

*Automated Global Feature Analyzer (AGFA) for the Intelligent and Autonomous Robotic Exploration of the Solar System* [#1883]

AGFA performs automated target identification and characterization through segmentation, providing for feature extraction, feature classification, target prioritization, and unbiased anomaly detection within mapped planetary operational areas.

Schaefer M. W. Dyar M. D. Clegg S. M. Wiens R. C.

*An IDL Routine for Preprocessing and Analysis of LIBS Data* [#2171]

An IDL routine for pre-processing, displaying, and analyzing laboratory LIBS data is presented. This software lays the groundwork for processing of ChemCam data from MSL.

Dreyer C. B. Zacny K. Skok J. Steele J. Paulsen G. Nakagawa M. Schwendeman J. Carroll E.

*Progress on the Development of a Thin Section Sample Preparation Device for Space Exploration* [#2318]

Progress toward the development of a automated rock thin section device for space exploration is presented, supported by PIDDP funding. Progress on rock requirements, rough cutting, and sample grinding/polishing is shown.

Fink W. Tarbell M. A.

*Multi-Rover Test Bed for Tele-Conducted and Autonomous Surface Operations for the Moon and Mars* [#2472]

Describes the development and implementation of a multi-rover, Earth-based test bed for planetary surface operations that permits distributed, automated, science-driven, and less constrained exploration of prime locations on the Moon and Mars.

Sims M. H.

*Autonomy of Rover Operations: Use of AutoPUL in Uplink Processing* [#2514]

AutoPUL is a tools used to autonomously assist MER Microscopic Imager and Engineering Camera personnel in the uplink processing.

Castillo M. Martin P. D.

*Mars Entry, Descent and Landing Risk Modelling for Landing Site Selection Assessment* [#1605]

The main goal of this work is to implement an EDL risk evaluation procedure to support the selection process of candidate landing sites for future European Mars missions.

Hancher M. D. Beyer R. A. Broxton M. J. Kasraie K. Smith M. F.

*New Platforms for Web-based Lunar and Planetary Mapping and GIS* [#2263]

We present a suite of tools for web-based planetary mapping and GIS targeted at the lunar and planetary science communities, based on Google Maps and other frameworks and drawing on lessons learned from successes in the world of Earth science.

Hare T. M. Plesea L.

*Planetary GIS Updates for 2007* [#2536]

Major developments in planetary GIS technologies this year include: (1) enhancements to planetary WMS; (2) new support for ISIS within GDAL; (3) geographic header support for the Planetary Data System (PDS) released HiRISE images.

Gwinner K. Roatsch T. Matz K.-D. Scholten F. Elgner S. Preusker F. Oberst J. Jaumann R.

Heather D. J. Neukum G.

*Archival Stereo Data Products of the HRSC Experiment Onboard Mars Express* [#2373]

Specifications and properties of the high-level stereo data products of the Mars Express HRSC experiment (digital terrain models and ortho-images) now available from PSA and PDS. We also outline schedule and status of the ongoing product generation.

Michael G. Dumke A. Walter S. Neukum G.

*HRSCview: Online Access to Mars Express HRSC Images, DTMs and Mosaics* [#1822]

HRSCview provides a rapid online means to explore Mars Express HRSC images. It is a joint website of the Free University of Berlin and the German Aerospace Center (DLR) and can be visited at <http://hrscview.fu-berlin.de>.

Heather D. J. Barthelemy M. Arviset C. Witasse O. Rossi A. P.

*The Planetary Science Archive of ESA* [#1559]

Data from ESA's planetary missions are available worldwide via the Planetary Science Archive (PSA). Data from GIOTTO, Mars Express, and Huygens are currently available. Venus Express and Rosetta data are expected by late spring/early summer 2008.