Monday, March 14, 2005
MARS EXPRESS AND HRSC I
8:30 a.m. Salon B

Chairs: G. Neukum
D. A. Williams

8:30 a.m. Chicarro A. F. *
The Mars Express Mission – Summary of Scientific Results from Orbit **[#1035]**
After over a year of successful operations around Mars, major breakthroughs have been made by most experiments onboard the Mars Express spacecraft. Abundance of water-ice at the poles and methane in the atmosphere, as well as recent volcanic and glacial processes, are the most relevant.

8:45 a.m. Pinet P. C. * Cord A. Jehl A. Daydou Y. Chevrel S. C. Baratoux D. Greeley R. Williams D. A. Neukum G. Mars Express HRSC Co-Investigator Team
Mars Express Imaging Photometry and Surface Geologic Processes at Mars: What Can be Monitored Within Gusev Crater? **[#1721]**
The MEx/HRSC multiangular observations produced over Gusev floor monitor surface scattering properties and reveal significant photometric variations (surface roughness, phase function parameters) in relation to the investigated geologic surfaces.

9:00 a.m. Neukum G. * Jaumann R. Hoffmann H. Hauber E. Head J. W. III Basilevsky A. T. Ivanov B. A. Werner S. C. van Gasselt S. Murray J. B. McCord T. B. Greeley R. HRSC Co-Investigator Team
Mars: Recent and Episodic Volcanic, Hydrothermal, and Glacial Activity Revealed by the Mars Express High Resolution Stereo Camera (HRSC) **[#2144]**
The analysis of HRSC image data shows that calderas on five major volcanoes in the Tharsis and Elysium regions have undergone repeated activation and resurfacing during the last 20% of Martian history, with caldera floors as young as 100 Ma, and flank eruptions as young as 2 Ma.

9:15 a.m. Greeley R. * Williams D. A. Neukum G. Werner S. C. Zegers T. Foing B. H. van Kan M. Lanagan P. D. Pinet P. Mars Express HRSC Team
Fluid Lava Flows in Gusev Crater, Mars **[#2094]**
Basaltic rocks in Gusev are modeled to have viscosities of 2.3 to 50 Pa•s at the time of eruption and thus were emplaced as very fluid flood lavas, consistent with the morphologies seen in orbiter data, at 3.65 by based on crater counts.

9:30 a.m. Zegers T. E. * van Kan M. Foing B. H. Pischel R. Gwinner K. Scholten F. Werner S. Neukum G. HRSC Co-Investigator Team
Mountainous Units in the Martian Gusev Highland Region: Volcanic, Tectonic, or Impact Related? **[#1651]**
Geological mapping and structural analysis of the highland region of Gusev crater was carried out, combining THEMIS and HRSC image data and HRSC digital terrain models (DTM), based on HRSC stereo capabilities.

9:45 a.m. Werner S. C. * Neukum G. HRSC Co-Investigator Team
Major Volcanic Constructs Seen from Mars Express HRSC — New Insights into Their Evolutionary History **[#1766]**
All major volcanic constructs including many Paterae and Tholi have been covered in the first period of the mission. This provides a new opportunity to better characterize most of the volcanoes in the Tharsis and Elysium region and highland volcanoes geomorphologically and chrono-stratigraphically.

10:00 a.m. Williams D. A. * Greeley R. Zuschneid W. Werner S. Neukum G. Crown D. A. Gregg T. K. P. Raitala J. HRSC Co-Investigator Team
Hadriaca Patera: Volcanic History Derived from HRSC-based Crater Counts **[#1470]**
We discuss the results of HRSC-based crater counts of units on Hadriaca Patera that were constrained by previous mapping. We also discuss the implications of these results for the volcanic history of Hadriaca Patera.

10:15 a.m. Kostama V.-P. * Ivanov M. A. Korteniemi J. Aittola M. Raitala J. Glamoclija M. Marinangeli L. Neukum G. HRSC Co-Investigator Team
Major Episodes of the Hydrologic History of Hesperia Planum, Mars **[#1659]**
Hesperia Planum (HP) hosts an array of landforms suggesting the interaction of volcanic and fluvial processes. We outline the most important features in the region correlating temporally the processes that have led to their formation.

10:30 a.m. Jaumann R. * Reiss D. Frei S. Scholten F. Gwinner K. Roatsch T. Matz K.-D. Hauber E. Mertens V. Hoffmann H. Head J. W. III Hiesinger H. Carr M. H. Neukum G. HRSC Co-Investigator Team
Martian Valley Networks and Associated Fluvial Features as Seen by the Mars Express High Resolution Stereo Camera (HRSC) **[#1765]**
In High Resolution Stereo Camera (HRSC) images of the Mars Express Mission a 130 km long inner channel is Lybia Montes. Based on HRSC stereo information we were able to determine the depth of this inner structure and thus we could estimate the discharge in the inner channel.

10:45 a.m. Masson Ph. Ansan V. * Mangold N. Quantin C. Neukum G. HRSC Co-Investigator Team
HRSC/MEX Analysis of Valley Networks in Echus Chasma Plateau and in Aeolis Region **[#1340]**
HRSC data allows us to study valley networks with high resolution imagery and DTMs. First results in Noachian highlands and Hesperian plateau of Valles Marineris show drainage densities and parameters similar to terrestrial rivers systems.

11:00 a.m. Hauber E. * Gwinner K. Stesky R. Fueten F. Michael G. Reiss D. Zegers T. Hoffmann H. Jaumann R. van Gasselt S. Neukum G. HRSC Co-Investigator Team
Interior Layered Deposits in Valles Marineris, Mars: Insights from 3D-Data Obtained by the High Resolution Stereo Camera (HRSC) **[#1760]**
We use HRSC stereo images to study the Interior Layered Deposits (ILD) in the Valles Marineris on Mars. Our results indicate diverse layering morphologies and geometries. No single scenario seems to be able to explain the formation of all ILD.

11:15 a.m. Raitala J. * Aittola M. Korteniemi J. Kostama V.-P. Hauber E. Kronberg P. Neukum G. HRSC Co-Investigator Team
Claritas Paleolake Studied from the MEX HRSC Data **[#1307]**
Water was transported from the southern Claritas Fossae upland peaks into the Claritas basin. The channel from the paleolake into Icaria Planum displays also sapping, crater lake with delta, and alluvial fan.

11:30 a.m. Baratoux D. Mangold N. * Pinet P. C. Forget F. Masson P. Chevrel S. C. Daydou Y. Jehl A. Greeley R. Neukum G. HRSC Co-Investigator Team
New Insights for the Formation of Slope Streaks on Mars from a Systematic Mapping Using Mars Express HRSC Data: A Dry Granular Avalanche Controlled by Wind-Transported Dust **[#1599]**
We present a mapping of slope streaks using HRSC data at Olympus Mons aureole. We argue from these data that slope streaks are a dry-granular avalanche which can be triggered by the accumulation of dust at hill crests in the downstream side of the wind flow.