Thursday, March 17, 2005
POSTER SESSION II: EXPLORATION: THE FUTURE
7:00 p.m. Fitness Center

Kminek G. Exploration Team
The ESA Exploration Programme — Exomars and Beyond **[#2408]**
An update of the ESA Exploration Programme, with opportunities for international participation and identification of exploration technology developments.

Stevens C. M. Stocky J. F. Nelson R. M.
NASA's New Millennium ST-9 Project **[#1526]**
The ST-9 mission will validate one of five technology capabilities. NASA has prepared a NASA Research Announcement (NRA) soliciting proposals for Solar Sail capability, Large Space Telescopes, Formation Flying, Aerocapture, and Pinpoint Landing.

Chmielewski A. B. Nelson R. M. Stevens C. M. Chien S. Davies A. G. Sherwood R. L. Wyman W.
NASA's New Millennium ST6 Project **[#1523]**
The New Millennium ST6 project developed the Autonomous Sciencecraft Experiment (ASE)and the Inertial Stellar Compass (ISC). ASE improves a spacecraft's ability to make intelligent decisions on what information to gather and downlink. ISC determines a spacecraft's attitude and adjusts its pointing.

Davies A. G. Chien S. Baker V. R. Castaño R. Cichy B. Doggett T. Dohm J. M. Greeley R. Ip F. Rabideau G. Sherwood R. Tran D.
Maximizing Mission Science Return Through Use of Spacecraft Autonomy: Active Volcanism and the Autonomous Sciencecraft Experiment **[#1445]**
The Autonomous Sciencecraft Experiment has demonstrated how science return from missions is increased through use of autonomy. Applications aimed towards planetary volcanism on Io, Mars and icy bodies are discussed.

Ip F. Dohm J. M. Baker V. R. Castano B. Chien S. Cichy B. Davies A. G. Doggett T. Greeley R. Sherwood R.
Monitoring Floods with NASA's ST6 Autonomous Sciencecraft Experiment: Implications on Planetary Exploration **[#2263]**
Space autonomy technology together with floodwater classifiers developed as part of NASA's Autonomous Sciencecraft Experiment (ASE) creates the new capability to autonomously detect, assess, react to, and monitor dynamic events such as flooding.

Fink W. Dohm J. M. Tarbell M. Hare T. M. Baker V. R.
Next-Generation Robotic Planetary Surface/Subsurface Reconnaissance Missions: A Paradigm Shift **[#1977]**
A fundamentally new scientific mission concept for remote planetary surface/subsurface reconnaissance will soon replace engineering and safety constrained mission designs, allowing for optimal acquisition of information from extraterrestrial targets.

Levine J. S. ARES Science Team ARES Engineering Team
The Aerial Regional-scale Environmental Survey (ARES) Mission to Mars **[#1258]**
We describe an exploration mission concept for ARES, an Aerial Regional-scale Environmental Survey of Mars designed to fly an instrumented platform over the surface Mars at very low altitudes (1–3 km) for significant distances.

Coltrane J. J. Arena A. S.
CFD Modeling of NASA's ARES Platform **[#1042]**
NASA has designed a plane for aerial exploration of Mars. This project seeks to explore the aerodynamics of the plane through computational fluid dynamics and share some interesting facts about this proposed Mars Scout platform with the geologic community.

Carsey F. D. Beegle L. W. Nakagawa R. Elliott J. O. Matthews J. B. Coleman M. L. Hecht M. H. Ivanov A. B. Head J. W. III Milkovich S. M. Paige D. A. Hock A. N. Poston D. I. Fensin M. Lipinski R. J. Schriener T. M.
Palmer Quest: A Feasible Nuclear Fission "Vision Mission" to the Mars Polar Caps **[#1844]**
We will describe results of a "vision Mission" study called Palmer Quest, a mission to the deep subsurface of the North Polar Cap of Mars to assess the basal habitat and search for life, using a nuclear powered thermal probe, a surface flux station, and a robotic vehicle.

Banerdt W. B. Christensen U. Crisp D. Dehant V. Delory G. T. Lognonné P. Sotin C. Spohn T.
A Network of Geophysical Observatories for Mars **[#2074]**
We review the scientific rationale and technical requirements for a Mars geophysical network mission to investigate its interior and atmosphere and contribute to Mars exploration. We then discuss current activities aimed toward the implementation of such a mission.

Thompson J. Wiens R. C. Bernardin J.
Mars Atmospheric Sample Return Instrument Development **[#1136]**
This work focuses on the development of the atmospheric collection experiment instrument (ACE). A benchtop prototype system was built and tested to determine the suitability of the design to collect gas samples under Mars atmospheric pressure conditions.

Sollitt L. Arenberg J. W.
A Novel Approach to the Detection of Bouguer Anomalies and Mass Concentrations **[#1235]**
A novel detection approach is presented to detect Bouguer anomalies and associated mass concentrations (mascons) beneath the surfaces of planetary bodies.

Hare T. M. Kirk R. L. Archinal B. A. Tanaka K. L.
Working with Planetary Coordinate Reference Systems **[#2213]**
While planetary coordinate reference systems are well defined, when mixing map projections, datasets, and software packages, there are many potential pitfalls. Accurate documentation and standards will help software to interface more successfully.

Herrick R. R.
Stereo Matching Tool, a Freeware Program for Viewing Stereo Imagery and Editing Match Points **[#1984]**
A variety of missions are producing stereo image pairs (e.g., Galileo, MOC, HRSC). Stereo Matching Tool (SMT), is freeware that allows stereo pairs to be viewed and match points for photogrammetry to be manually edited.

Gibbens M. J. Cook A. C.
Evaluating Automated Feature Extraction Using Expert Opinion **[#1716]**
We apply automated cartographic feature detection algorithms to planetary images and compare with human expert opinion.