Thursday, March 26, 2009
POSTER SESSION II: MISSIONS: APPROACHES, ARCHITECTURES, ANALOGS, AND ACTUALITIES
6:30 p.m. Town Center Exhibit Area

Clark K. Stankov A. Pappalardo R. T. Greeley R. Blanc M. Lebreton J.-P. Van Houten T.
The Europa Jupiter System Mission **[#2338]**
The two sister spacecraft of the EJSM — the Jupiter Europa and Jupiter Ganymede Orbiters — perform a choreographed dance exploring the Jupiter system and studying the processes that led to the diversity and interactions of its associated components.

Coustenis A. Lunine J. Matson D. Hansen C. Reh K. Beauchamp P. Lebreton J.-P. Erd C.
The Joint NASA-ESA Titan Saturn System Mission (TSSM) Study **[#1060]**
The NASA-ESA Titan Saturn System Mission designed for an in-depth exploration of Titan and Enceladus. The mission comprises both remote (orbiter dedicated to Titan) and *in situ* (montgolfiere, lander) elements. Launch would be around 2020.

Green J. R. Dudzinski L. A. Sutliff T. J. Spilker T. R. Arakelian T.
Small Radioisotope Power Systems for Planetary Science Mission Applications **[#2484]**
NASA's RPS Program anticipates development of a small RPS for mission applications. We will present the current state of the art and invite the science community to actively participate in defining the requirements for this new capability.

Chicarro A. F.
Mars Express — Science Summary After Five Years in Orbit **[#1392]**
ESA's Mars Express has been orbiting Mars for over five years, providing unprecedented results on the interior, subsurface, surface, atmosphere and space environment of the Red Planet, allowing Europe to chart a future Mars exploration program.

McEwen A. Keszthelyi L. Spencer J. Thomas N. Johnson T. Christensen P. Wurz P. Glassmeier K.-H. Shinohara C. Girard T. Heinsohn G. Furfaro R. Gardner T. Cheeseman D. Beatty R. Ludwinski J. Kowalkowski T. Yen C. Elliot T. Turtle E. Strohbehn K. Janesick J. Falco C. Evans R.
Io Volcano Observer (IVO) **[#1876]**
IVO is a concept mission for Discovery, and would make multiple fast polar flybys of Io and acquire remote sensing and *in situ* measurements to address key questions about volcanic processes, tidal heating, and affects on the Jupiter environment.

Sollitt L. S. Kroening K. Malmstrom R. Segura T. Spittler C.
Mission Concepts to 4015 Wilson-Harrington **[#2391]**
We present a number of different architectures for mission concepts to 4015 Wilson-Harrington, a body which exhibits features of both comets and asteroids. We examine orbiter/lander missions as well as sample return missions, in different size classes.

Bellerose J. Yano H.
Requirements and Constraints for Exploration of Binary Asteroid Systems: From Didymos to Hektor **[#2443]**
Many questions remain regarding close orbit operations at a binary. We present important requirements and constraints including recent work on out-of-plane orbits, influence of the SRP, and contact binaries.

Blome H.-J. Wilson T. L.
Hyperbolic Orbits and the Planetary Flyby Anomaly **[#1704]**
The virial theorem in astrophysics is used to show that energy is not being conserved during the gravity assist procedure used in planetary flybys. These involve hyperbolic trajectories. So the so-called flyby anomaly exists at a very fundamental level.

Jenniskens P. Dissly R. Boyd I. D. ReVelle D. O. Nuth J. A. Worden S. P.
ASIMA — Asteroid Impact Analyzer: A Proposed Close-to-Home Planetary Mission to Probe the Diversity of Comets and Asteroids **[#2305]**
The proposed Asteroid Impact Analyzer (ASIMA) is a Partner Mission of Opportunity that will measure how the bulk carbon-to-metal ratio varies among comets and asteroids.

Foing B. H. Batenburg P. Drijkoningen G. Slob E. Poulakis P. Visentin G. Page J. Noroozi A. Gill E. Guglielmi M. Freire M. Walker R. Sabbatini M. Pletser V. Monaghan E. Boche-Sauvan L. Ernst R. Oosthoek J. Peters S. Borst A. Mahapatra P. Wills D. Thiel C. Wendt L. Gross C. Petrova D. Lebreton J. P. Zegers T. Stoker C. Zhavaleta J. Sarrazin P. Blake C. McKay C. Ehrenfreund P. Chicarro A. Koschny D. Vago J. Svedhem H. Davies G. ExoGeoLab Team EuroGeoMars Team
ExoGeoLab Lander/Rover Instruments and EuroGeoMars MDRS Campaign **[#2567]**
We describe ExoGeoLab a planetary surface instruments research incubator, and the EuroGeoMars campaign at the Mars Desert Research station aimed at validating a procedure for martian surface *in situ* and return science.

Lee P. Gernhardt M. Abercromby A. Braham S. Chase T. Comtois J.-M. Deans M. Effenhauser R. Fong T. Frankel C. Glass B. Hodgson E. Hoffman S. J. Jones J. A. Nelson J. Schutt J. W. Vasquez M.
Moon/Mars Science and Exploration in Pressurized Rovers: Early Lessons from Analog Studies at the Haughton-Mars Project Site, Devon Island, High Arctic **[#2498]**
Pressurized rovers will be key science “instruments” in the future humanexploration of the Moon and Mars. Lessons from long-range vehicular field traverses conducted at the Haughton-Mars Project site, Devon Island, High Arctic, are presented.

Ori G. G. Flamini E. Dell’Arciprete I. Taj-Eddine K.
A Facility of the Agenzia Spaziale Italiana to Test Operations, Instruments and Landing Systems for Mars Exploration: The PLANLAB Project of the Ibn Battuta Centre at Marrakech (Morocco) **[#1587]**
The Agenzia Spaziale Italiana in collaboration with the IRSPS has started a program (PLANLAB) to prepare and execute tests of rovers, landing systems, instruments and operations related to the exploration of Mars.

Garry W. B. Hörz F. Lofgren G. E. Kring D. A. Chapman M. G. Eppler D. B. Rice J. W. Jr. Lee P. Nelson J. Gernhardt M. L. Walheim R. J.
Science Operations for the 2008 NASA Lunar Analog Field Test at Black Point Lava Flow, Arizona **[#1649]**
Surface science operations on the Moon will require merging lessons from Apollo with new operation concepts that take advantage of the Constellation Lunar Architecture. We will present science operations for two prototype lunar rovers.

Cottingham C. M. Roark S. E. Deininger W. D. Dissly R. W. Epstein K. W. Waller D. M. Scheeres D. J.
Small Surface Probes for Enhanced Asteroid and Comet Rendezvous Missions **[#2310]**
This poster will discusses system concepts, architectures, and technology development work to mature critical components for low-cost surface probes for small solar system bodies.

Lawrence D. J. Elphic R. C. Weinberg J. D. Delory G. T. Dissly R. Evanyo J. Crider D. H. Lucey P. G. Fong T. Vondrak R. Zacny K. Yachbes I.
Exomoon — A Discovery and Scout Mission Capabilities Expansion Concept **[#1451]**
This submission describes a Discovery class landed mission concept for the *in situ* investigation of volatiles in the lunar polar cold traps. This mission is enabled by the use of the Advanced Stirling Radioisotope Generators (ASRG), currently in development by NASA.

Gilyén A. Szvoboda P.
Development of the Hungarosphere: The Husar-11 Rover Within a Transparent Spherical Space Probe Model with Special Planetary Surface Activities **[#1170]**
We built a spherical Hungaroszféra (Husar-11) rover: with transparent plexy body, camera can see bottom, it moves by inner driving, no spur outsteming from the sphere, can move on fluids, all instruments are defended from dust pollution.

Pasztor A. Simon T. Nagy Sz. Bérczi Sz.
Husar-8 Rover Swarm Collective Activity Around Hunveyor-8: Planetary Robotics at the Kecskemét College, GAMF Faculty, Hungary **[#1491]**
By constructing the HUSAR-8 model the GAMF Faculty at Kecskemét College began student robotics program with swarm strategy for navigation on the field trip in order to develop teaching programming and trigger student personal activity.

Perl S. M. DeLaurentis D. A. Caldwell B. S. Crossley W. A.
Adapting System-of-Systems Engineering for the Advancement of the Mars Exploration Program **[#1911]**
To introduce the System-of-Systems (SoS) methodology for modeling the data network of the Mars Science Laboratory (MSL) mission. The goal of this protocol is to obtain the best science data return with a finite and varying amount of resources.

Clark P. E. Millar P. S. Beaman B. Choi M. Cooper L. Feng S. King R. Leshin L. Lewis R. Yeh P. S. Young E. Lorenz J.
Science Packages and Tools Designed for the Lunar Surface **[#1126]**
Lunar surface science packages may need to operate without radioisotope-based power systems available for Apollo. We demonstrate here that alternative state-of-the-art design and components can meet the power and mass constraints of earlier packages.

Griffes J. L. Grotzinger J. Grant J. Vasavada A. R. Golombek M. McEwen A.
Analysis of Four Potential Mars Science Laboratory Landing Sites Using HiRISE **[#1800]**
An overview of the four landing sites remaining under consideration for the 2011 Mars Science Laboratory Mission: Holden Crater, Gale Crater, Eberswalde Crater, and Mawrth Vallis.

Golombek M. Grant J. Vasavada A. R. Grotzinger J. Watkins M. Kipp D. Noe Dobrea E. Griffes J. Parker T.
Selection of Four Landing Sites for the Mars Science Laboratory **[#1404]**
This abstract describes the four landing sites under consideration and the selection process for the Mars Science Laboratory (MSL) after discussion of seven downselected sites at the third Landing Site Workshop and a subsequent project meeting.

Golombek M. P. Haldemann A. F. C. Simpson R. A. Fergason R. L. Putzig N. E. Huertas A. Arvidson R. E. Heet T. Bell J. F. III Mellon M. T. McEwen A. S.
Relationships Between Remote Sensing Data and Surface Properties of Mars Landing Sites **[#1409]**
The surface characteristics and material properties found at the landing sites are used as “ground truth” for interpreting orbital and Earth-based remote sensing data of Mars.