Tuesday, March 8, 2011
POSTER SESSION I: PLANETARY MISSION CONCEPTS
6:00 p.m. Town Center Exhibit Area

Lorenz R. D.
A Long-Duration Stand-Alone Venus Lander Mission: Scientific and Mission Design Considerations **[#1575]**
Feel Venus' heartbeat / Try fifty days, or two hundred / Sun, Earth rise and set.

Esposito L. W.
SAGE New Frontiers Mission to Venus **[#1519]**
SAGE, the Venus Surface and Atmosphere Geochemical Explorer, is proposed to launch to Venus in December 2016.

Graham P. Snyder G. Open Luna Science Team
OpenLuna: An "Open Source", Privately Funded, Return to the Moon Mission **[#2827]**
The OpenLuna Foundation seeks to return mankind to the lunar surface through private enterprise and to do so in a way that it is accessible to everyone through open-source-style development and private funding.

Miller R. S.
The Lunar Occultation Observer (LOCO) — A Nuclear Astrophysics Mission All-Sky Survey Concept **[#2016]**
The Lunar Occultation Observer (LOCO) is a new γ-ray astrophysics mission concept expected to have unprecedented sensitivity in the nuclear γ-ray regime (~0.1–10 MeV).

Yang H. W. Zhao W. J. Wu Z. H.
Some Considerations for Lunar Precise Gravity Field Determination from Orbiter Tracking Data **[#2841]**
Not as on the Earth, GPS has little advantages in gravity measurement for planetary research on other planets.

Huertas A. Cheng Y.
Automatic Mapping of Lunar Craters and Boulders **[#1272]**
We present automatic algorithms for the detection and mapping of boulders and craters from LRO NAC imagery for 25 regions of interest on the lunar surface. Detected craters and boulders are then used in constructing hazard maps for lunar surface missions.

Vizi P. G.
Possibilities After Governmental Space Research like Micro and Nano Space Probes — The Hungarian Puli Space **[#2777]**
Governmental operation is decreasing and private inventions are increasing. Is this a reachable goal to make a new generation of devices like cube sats and micro probes to use for lunar and planetary research?.

Deák M.
Landing Site Analysis for Low-Budget Lunar Missions — Landing Site Candidates of Team Puli Space, Participant of the Google Lunar X Prize **[#1410]**
The landing site analysis of privately funded low-budget lunar missions, for example, the mission of the Google Lunar X Prize participant Team Puli Space, is more influenced by technological possibilities than the government-funded missions.

Gallegos Z. E. Donohue P. Hammond N. Potter R. W. K. Kring D. A.
Maunder Crater: A Case Study of a Landing Site Designed to Full-Fill Multiple NRC [2007] Science Objectives **[#1958]**
This study aims to describe a landing site on the Moon where all four science goals in Concept 6 of the National Research Council's [2007] The Scientific Context for Exploration of the Moon: Final Report can be addressed simultaneously.

Souchon A. L. Flahaut J. Sharma P. Jilly C. E. Blanchette-Guertin J.-F. Kring D. A.
Suggested Landing Sites to Study Key Planetary Processes on the Moon: The Case of Schrödinger Basin **[#1791]**
This work presents lunar landing sites that would allow the study of key planetary processes through the diversity of crustal rocks, with an emphasis on Schrödinger basin, where two landing sites are suggested.

Flahaut J. Souchon A. L. Blanchette-Guertin J.-F. Sharma P. Jilly C. E. Kring D. A.
Identification of Science-Rich Mission Sites Designed to Test the Lunar Magma Ocean Hypothesis **[#1844]**
The present work aims at determining the best science-rich mission sites that could help improve our understanding of planetary differentiation. We expect to learn more about the magma ocean hypothesis by sampling the diversity of lunar crustal rocks.

Jilly C. E. Sharma P. Souchon A. L. Blanchette-Guertin J. F. Flauhaut J. Kring D. A.
Lunar Landing Sites to Explore the Extent of KREEP and Its Significance to Key Planetary Processes **[#1270]**
We present a list of possible lunar landing sites that explore the extent of KREEP. Samples of lunar material from these sites may help to determine the nature of primordial urKREEP and KREEP basalts, to further constrain models of key planetary formation processes.

Sharma P. Blanchette-Guertin J. F. Jilly C. E. Flahaut J. Souchon A. L. Kring D. A.
Identifying Lunar Landing Sites for Sampling Lower Crust and Mantle Material **[#1579]**
In accordance with the NRC 2007 report The Scientific Context for Exploration of the Moon, we have conducted a global survey to determine landing sites on the Moon where the lower crust and/or underlying mantle may be exposed at the surface.

Blanchette-Guertin J.-F. Jilly C. E. Flahaut J. Souchon A. L. Sharma P. Kring D. A.
Mission Strategies for Determining the Vertical Extent and Structure of the Lunar Megaregolith **[#1405]**
We propose three mission strategies to assess the vertical extent and structure of the lunar megaregolith, one of the scientific goals presented in the NRC 2007 Scientific Context for the Exploration of the Moon report.

Neal C. R. Banerdt W. B. Alkalai L. Lunette Team
Lunette: A Two-Lander Discovery-Class Geophysics Mission to the Moon **[#2832]**
The document "The Scientific Context for the Exploration of the Moon" designated understanding the structure and composition of the lunar interior as the second highest priority lunar science concept that needs to be addressed.

Tanaka S. Mitani T. Iijima Y. Otake H. Ogawa K. Kobayashi N. Hashimoto T. Hoshino T. Otsuki M. Kimura J. Kuramoto K.
The Science Objectives of Japanese Lunar Lander Project SELENE-II **[#2778]**
Japanese lunar lander, 'SELENE-II' is being planned as a successor to 'Kaguya'. SELENE-II science mission team has been actively working to maximize the science gain. In this presentation we report the current status of the science instruments and scenario.

Zelenyi L. M. Khartov V. V. Mitrofanov I. G. Martynov M. B.
Short- and Mid-Term Russian Program **[#1804]**
The concept of Russian robotic lunar program is presented for short-term and mid-term perspectives, which goal is to study polar regions of the moon.

Mitrofanov I. G. Zelenyi L. M. Tret'yakov V. I. Dolgopolov V. P.
Science Program of Lunar Landers of "Luna-Glob" and "Luna-Resource" Missions **[#1798]**
Program of scientific investigations is presented for two Russian polar landers: Luna Resource and Luna Glob. This program has to address two tasks: studies of composition of lunar polar regolith and studies of lunar exosphere at both poles.

Cohen B. A. Bassler J. A. Chavers D. G. Eng D. S. Hammond M. S. Harris D. W. Hill L. D. Holloway T. A. Kubota S. Morse B. J. Mulac B. D. Reed C. L. B.
Further Development of Small Robotic Landers for Planetary Missions **[#2201]**
Touching the surface / Lander designs grant access / To dazzling worlds.

Cohen B. A. Jolliff B. L. Bierhaus E. B. Clark B. C. Clegg S. M. Elphic R. C. Glavin D. P. Hagerty J. J. Lawrence D. J. Mahaffy P. R. Wang A. Wiens R. C.
The Case for In Situ Exploration of Volatile Deposits at the Lunar Poles **[#1425]**
Lunar poles harbor / Strange and wonderful ices / Awaiting our touch.

Beyer R. Cockrell J. Colaprete A. Fong T. Elphic R. Heldmann J. Pedersen L.
Feasibility and Definition of a Lunar Polar Volatiles Prospecting Mission **[#2735]**
Substantial remote sensing data indicates that significant amounts of volatiles exist in the polar regions of the Moon. In order to understand the cost, benefits, and requirements for exploiting these resources, surface prospecting must be performed.

Jackson T. L. Farrell W. M. Stubbs T. J.
Charging and Subsequent Dissipation of a Rover Wheel in the Lunar Polar Regions **[#2144]**
As a roving vehicle moves along the lunar surface in cold shadowed regions such as craters, tribo-charge will build up. This work will model the charging and dissipation times of a rover wheel rolling along the lunar regolith.

Li R. He S. Skopjlak B. Meng X. Yilmaz A. Jiang J. Banks M. S. Kim S. Oman C.
The Latest Progress of LASOIS: A Lunar Astronaut Spatial Orientation and Information System **[#2100]**
LASOIS is being designed to continuously provide spatial orientation and navigation information to astronauts and thereby reduce the effects of spatial disorientation. The system is expected to reduce relative positioning error to around 1%.

Rice J. W. Jr.
Manned NEO Mission EVA Challenges **[#2816]**
Manned near Earth objects (NEO) missions will present a host of new and exciting problems that will need to be better defined and solved before such a mission is launched. Here I will focus on the challenges for conducting asteroidal EVAs.

Chicarro A. F.
The European Robotic Exploration of the Planet Mars **[#1325]**
Following the 2016–2018 missions of the ESA and NASA Mars Exploration Program, a network of surface stations would be launched, to investigate the interior, geodesy, atmospheric dynamics, and geology of each landing site before Mars sample return.

Martin P. D. Gleeson D. F.
Enhancing Landing Site Selection: Toward a Mars Landing Requirements Database **[#2074]**
Benefiting from a wealth of Mars data, and with the perspective of several upcoming landed missions that will prepare for an eventual Mars sample return mission, we are building a Mars landing requirements database to enhance landing site selection.

Weitz C. M. Bishop J. L.
A Proposed Future Mars Landing Site in Noctis Labyrinthus **[#1874]**
We have identified candidate rover traverses and scientific targets for a proposed landing ellipse in one of the troughs of Noctis Labyrinthus.

Klaus K. Elsperman M. S. Smith D. B. Cook T. S.
Multiple NEO Rendezvous, Reconnaissance and In Situ Exploration **[#1979]**
We propose a two spacecraft rendezvous with multiple NEOs. A two spacecraft mission mimics architecture for human explorers to use a mother ship to get from Earth to the NEO and a small body lander for *in situ* investigation on or close to the NEO.

Jones T. Lee P. Bellerose J. Fahnestock E. Farquhar R. Gaffey M. Heldmann J. Lawrence D. Nolan M. Prettyman T. Smith P. Thomas P. Veverka J. Benedix G. Elphic R. Gellert R. Hildebrand A. Yano H. Bhavsar P. Chartres J. Cox A. Debus T. De Rosee R. Dunham D. Fleischner R. Goldsten J. Horsewood J. Mayer D. McCarthy J. McCarthy T. Mungas G. Osterman D. Sanchez H. Williams B.
Amor: A Lander Mission to Explore the C-Type Triple Near-Earth Asteroid system 2001 SN263 **[#2695]**
Amor is a Discovery-class spacecraft that will rendezvous with, land on, and explore a remarkable triple asteroid system: C-type near-Earth asteroid (NEA) 2001 SN263.

Safko T. Kelly D. Guzewich S. Bell S. Rivkin A. S. Kirby K. W. Gold R. E. Cheng A. F. Aldridge T. M. Colon C. M. Colson A. D. Lantukh D. V. Pashai P. Quinn D. Yun E. H. ASTERIA Team
ASTERIA: A Robotic Precursor Mission to Near-Earth Asteroid 2002 TD60 **[#1818]**
We present results from a student-led mission concept study of an asteroid rendezvous/lander. The mission was designed to provide initial data in advance of a human visit to an asteroid. A strawman payload and operations timeline will be discussed.

Marchis F. Burns K. J. Dankanich J. Bellerose J. GRC-Compass Team
Diversity: A Mission Concept for a Grand Tour of Multiple Asteroid Systems **[#2062]**
Diversity is a mission concept to explore several multiple asteroid systems including 3749 Balam, 45 Eugenia, and 90 Antiope by successive rendezvous.

Lynch K. L. Smith I. B. Singer K. N. Vogt M. F. Blackburn D. G. Chaffin M. Choukroun M. Ehsan N. DiBraccio G. A. Gibbons L. J. Gleeson D. Jones B. A. LeGall A. McEnulty T. Rampe E. Schrader C. Seward L. Tsang C. C. C. Williamson P. Castillo J. Budney C.
The Ganymede Interior Structure, and Magnetosphere Observer (GISMO) Mission Concept **[#2364]**
As part of the 2010 NASA Planetary Science Summer School, the Ganymede Interior, Surface, and Magnetosphere Observer (GISMO) team developed a preliminary satellite design for a science mission to Jupiter's moon Ganymede.

Sotin C. Altwegg K. Brown R. H. Hand K. Lunine J. I. Soderblom J. Spencer J. Tortora P. JET Team
JET: Journey to Enceladus and Titan **[#1326]**
JET is a Discovery mission to Enceladus and Titan that would acquire 50 m/pixel images of Titan's surface and would analyze Enceladus' plume and Titan's upper atmosphere with a 10× larger mass range, 100× higher resolution, and 1000× better sensitivity than the Cassini mission.

Lunine J. I. Reh K. Sotin C. Couzin P. Vargas A.
Titan Aerial Explorer: A Mission to Circumnavigate Titan **[#1230]**
After the spectacular discovery of an active methane cycle on Titan by Cassini/Huygens, a key next step is a mission that can simultaneously cover large areas and yet perform close-up observations and *in situ* investigations. We describe a balloon-borne mission to do so.