Thursday, March 15, 2007
POSTER SESSION II: LUNAR MISSIONS AND INSTRUMENTS
6:30 p.m. Fitness Center

Yue Z. Xie H. Liu J. Ouyang Z.
An Introduction of Chinese Lunar Exploration Program **[#2082]**
China has established a strategy plan to carry out a three-stage plan for "orbiting the Moon," "landing on the Moon," and "returning back" in 13 years.

Leshin L. A. Morgan T. H.
Science Opportunities in NASA's Lunar Architecture **[#1832]**
The Science Capability Focus Element of NASA's Lunar Architecture Team has assessed the suitability of NASA's Lunar Architecture for accomplishing a wide range of potential science objectives. A large number of scientifically interesting objectives can be accomplished.

Chin G. Bartels A. Brylow S. Foote M. Garvin J. Kaspar J. Keller J. Mitrofanov I. Raney K. Robinson M. Smith D. Spence H. Spudis P. Stern S. A. Zuber M.
Update on the Lunar Reconnaissance Orbiter: The Instrument Suite and Mission **[#1764]**
This presentation updates the progress of the development of NASA's Lunar Reconnaissance Orbiter (LRO) mission, scheduled for launch in October 2008.

Sanin A. Boynton W. Evans L. Harshman K. Kozyrev A. Litvak M. Malakhov A. Milikh G. Mitrofanov I. Mokrousov M. Sagdeev R. Shevchenko V. Schvetsov V. Starr R. Trombka J. Vostrukhin A.
Lunar Exploration Neutron Detector (LEND) for NASA Lunar Reconnaissance Orbiter **[#1648]**
This presentation is about the LEND instrument which has been selected for the NASA LRO mission to provide the global search of hydrogen distribution in 1–2 meters of lunar soil with spatial resolution up to 5 km from 50 km circular polar orbit.

Cooper B. L.
Mafic Materials in Scott Crater? A Test for Lunar Reconnaisance Orbiter **[#1377]**
Clementine 750 nm and multispectral ratio data, along with Lunar Orbiter and radar data, were used to study the crater Scott in the lunar south polar region. The multispectral data provide evidence for mafic materials, impact melts, anorthositic materials, and a small pyroclastic deposit.

Heldmann J. L. Colaprete T. Wooden D. Asphaug E. Schultz P. Plesko C. S. Ong L. Korycansky D. Galal K. Briggs G.
Lunar Crater Observation and Sensing Satellite (LCROSS) Mission: Opportunities for Observations of the Impact Plumes from Ground-based and Space-based Telescopes **[#1369]**
The LCROSS mission will impact the Moon and create an ejecta plume whose properties, including water ice and vapor content, will be observed by a shepherding spacecraft (S-S/C) plus Earth- and space-based telescopes.

Pieters C. M. Boardman J. Buratti B. Clark R. Green R. Head J. W. Lundeen S. Malaret E. McCord T. B. Mustard J. F. Runyon C. Staid M. Sunshine J. Taylor L. Tompkins S. Varanasi P.
M3 on Chandrayaan-1: Strategy for Mineral Assessment of the Moon **[#1295]**
The Moon Mineralogy Mapper on Chandrayaan-1 will characterize the mineral character across the Moon with global and targeted data. Measurement strategy is designed to optimize science return and integration with other international instruments.

Green R. O. Pieters C. Mouroulis P. Sellars G. Eastwood M. Geier S. Shea J.
The Moon Mineralogy Mapper: Characteristics and Early Laboratory Calibration Results **[#2354]**
We describe the characteristics and early calibration results for the NASA Moon Mineralogy Mapper (M3) to be launched in 2008 onboard the Chandrayaan-1 Mission.

Bussey D. B. J. Spudis P. D. Nozette S. Lichtenberg C. L. Raney R. K. Marinelli W. Winters H. L.
Mini-RF: Imaging Radars for Exploring the Lunar Poles **[#1610]**
In 2008 two imaging radars will fly to the Moon to map the polar regions. They will use a new hybrid architecture to search for ice.

Yamada R. Yamada I. Shiraisi H. Kobayashi N. Takeuchi N. Murakami H. Tanaka S. Fujimura A.
Seismic Observation by the Seismometer on Board the Penetrator for Lunar Exploration **[#1503]**
The seismic observation has been made by the seismometer on board the penetrator and two references; the same type of the seismometer without the penetrator and L-4 geophone. These observed waveforms show good correlation with each other.

Kato M. Takizawa Y. Sasaki S. SELENE Project Team
The SELENE Mission: Present Status and Science Goals **[#1211]**
This is the mission summary of the SELENE lunar orbiter upcoming launch of summer 2007.

Iwata T. Namiki N. Hanada H. Minamino H. Takano T. Kawano N. Matsumoto K. Sasaki S.
SELENE Small Sub-Satellites for Lunar Gravity Observation **[#1557]**
Lunar gravity model will be improved by combining four-way Doppler measurements and differential VLBI observations using two small sub-satellites of SELENE: the Relay Satellite (Rstar) and the VLBI Radio Satellite (Vstar).

Asada N. Kimura K. Hodokuma T. Demura H. Hirata N. Ohtake M. Haruyama J. Matsunaga T.
Detection Possibility of Mantle Materials by Multi-Band Imager **[#1261]**
Multi-band Imager on SELENE is possible to detect or separate the outcrop of the mantle substance at the crater walls or the crater central peaks from regoliths.

Ohtake M. Haruyama J. Matsunaga S. Morota T. Yokota Y. Honda C. Yamamoto A.
Arai T. Takeda H.
Objectives of the SELENE Multiband Imager and Spectral Study of Dho489 **[#1829]**
One of the important scientific goals of SELENE Multiband Imager is to explore most primitive lunar crustal materials. To achieve that goal we study reflectance spectra of Dho 489 to establish analytical methods to identify magnesian anorthosite.

Haruyama J. Ohtake M. Matsunaga T. Morota T. Honda C. Torii M. Yokota Y. Kawasaki H.
Pre-Launch Operation Planning of Lunar Imager/Spectrometer (LISM) on SELENE **[#1136]**
In this presentation, we introduce Lunar Imager/Spectrometer on the Japanese Moon orbiter SELENE that will be launched in this year, focusing on the planned operation.

Honda C. Morota T. Yokota Y. Haruyama J. Ohtake M. Matsunaga T. Ogawa Y. Demura H.
Hirata N. Iwasaki A. Kodama S. Hara S. Hioki K.
Preliminary Test of Accuracy of Digital Terrain Model Derived from SELENE/LISM/TC Data **[#1899]**
We evaluated the standard deviation of difference between DTMs produced from SELENE/LISM/TC data and true value of DTM which is simulated at 5–16 m and 5–25 m for highland and mare terrain, respectively.

Yokota Y. Haruyama J. Ohtake M. Matsunaga T. Honda C. Morota T. Demura H.
Hirata N. LISM Working Group
Kilometer Scale Roughness Analysis of Lunar Digital Terrain Model **[#2430]**
We demonstrate the root mean square deviation method as an indicator of topographic roughness on a kilometer scale, using stereo images from an Apollo Mapping Camera in a Digital Terrain Model, and compare three regions in the lunar highlands.

Kring D. A. Rademacher J.
Initiating the Surface Ops Phase of the Lunar Exploration Architecture with Robotic Landers and Rovers **[#1595]**
The Lunar Reconnaissance Lander and Lunar Surface Explorer provide low-cost, science- and exploration-rich solutions for multiple mission objectives in a strategy that maximizes the efficiency of the lunar exploration initiative and provides access to the greatest number of sites on the Moon.

Gibson E. K. McKay D. S. Pillinger C. T. Wright I. P. Sims M. R. Richter L.
Beagle to the Moon: An Experiment Package to Measure Polar Ice and Volatiles in Permanently Shadowed Areas or Beneath the Lunar Surface **[#1306]**
The Beagle Science Package is a flight qualified set of instruments which should be deployed to the lunar surface to answer the questions about water and volatiles present in permanently shadowed regions and/or beneath the surface.

Fagan A. Neal C. R. Salvati L. Sakimoto S. Nakamura Y. Weinberg J.
The Case for a Long-lived Global Lunar Geophysical Network — 1: Seismic Data **[#2416]**
Global seismic data along with resonant column tests on samples are required from the Moon for scientific and exploration reasons.

Neal C. R. Hood L. Huang S. Sakimoto S. Kiefer W. Weinberg J.
The Case for a Long-lived Global Lunar Geophysical Network — 2: Magnetic and Heat Flow Data **[#2428]**
A long-lived geophysical network will include a seismometer, heat-flow probe(s), and a magnetometer to investigate the lunar interior. Rationale for magnetic and heat flow data is given here.

Stillman D. E. Grimm R. E.
Dielectric Spectroscopy Mapping of Subsurface Ice on the Moon and Mars **[#1944]**
Ice has a characteristic electrical signature at low frequency that allows it to be distinguished from regolith at about 1% volumetric accuracy. Ice concentration can also be estimated as a function of depth by changing the electrode geometry.

Urquhart M. L. Mellon M. T.
A New Model for Determining Lunar Rock Abundance and Landing Hazards **[#2171]**
We present a new lunar thermal model using temperature dependent thermal inertia and an accurate ephemeris that, if coupled with anticipated data from LRO, can assist in the determination of rock abundances and associated hazards to lunar landers.