Thursday, March 22, 2012
POSTER SESSION II: LUNAR MAPPING
6:00 p.m. Town Center Exhibit Area

Petro N. E. Bleacher J. E. Gaddis L. R. Garry W. B. Lam F.
ArcGIS Digitization of Apollo Surface Traverses **[#2512]**
The Apollo lunar traverses produced a large volume of data, photos, audio, film, and the samples themselves. Data created during Apollo exist in several locations. We are digitizing available traverse data to centralize this wealth of information.

De Rosa D. Bussey D. B. J. Cahill J. T. S. Crawford I. Hackwill T. Neukum G. van Gasselt S. Lutz T. Witte L. McGovern A. Carpenter J.
Characterisation of Potential Landing Sites for the European Space Agency's Lunar Lander Project **[#1585]**
The European Space Agency's Lunar Lander mission targets highly illuminated locations at the South Pole. Several parallel studies are being carried out in order to characterise the illumination conditions and the hazard distributions at these sites.

Kokhanov A. Karachevtseva I. Oberst J. Gläser Ph. Wählisch M. Robinson M. S.
Cartography Support and Assessment of Candidate Landing Sites for the "Luna-Glob" Mission **[#1756]**
For cartography support of future landing mission LUNA-GLOB was development a geodatabase using data obtained by LRO. For characterization of the surface we created some examples of maps: slope, roughness, and hill-shaded relief in various scales.

Clegg R. N. Jolliff B. L.
Photometric Analysis of the Apollo Landing Sites **[#2030]**
Apollo lander rocket exhaust caused an increase in reflectivity in areas surrounding the LMs. We use photometric characteristics to explore soil parameters that could account for differences in reflectivity of blast zones vs. undisturbed regions.

Kirk R. L. Howington-Kraus E. Becker T. L. Cook D. Barrett J. M. Neish C. D. Thomson B. J. Bussey D. B. J.
Progress in Radargrammetric Analysis of Mini-RF Lunar Images **[#2772]**
Geometric errors that distorted our topomaps from Mini-RF data have been resolved. We are making controlled radar mosaics and DTMs of Constellation regions of interest at low/mid latitudes, and preparing for large controlled mosaics of the poles.

Lee E. M. Weller L. A. Richie J. O. Redding B. L. Shinaman J. R. Edmundson K. L. Archinal B. A. Hare T. M. Fergason R. L. Astrogeology Science Center Programming Team
Controlled Polar Mosaics of the Moon for LMMP by USGS **[#2507]**
Controlled polar mosaics of the Moon were produced by USGS in support of the Lunar Mapping and Modeling Project for lunar exploration activities. Mosaics consist of images taken by Lunar Reconnaissance Orbiter Camera (LROC) Narrow Angle Cameras.

Haruyama J. Hara S. Hioki K. Iwasaki A. Morota T. Ohtake M. Matsunaga T. Araki H. Matsumoto K. Ishihara Y. Noda H. Sasaki S. Goossens S. Iwata T.
Lunar Global Digital Terrain Model Dataset Produced from SELENE (Kaguya) Terrain Camera Stereo Observations **[#1200]**
A lunar global digital terrain model (DTM) dataset has been produced from the SELENE (Kaguya) Terrain Camera (TC) stereo data of 10-m spatial resolution.

Mattson S. Ojha L. Ortiz A. McEwen A. S. Burns K.
Regional Digital Terrain Model Production with LROC-NAC **[#2630]**
We describe the production of Digital Terrain Models (DTM) from LROC-NAC images for science use and for the Lunar Mapping and Modeling Project (LMMP) done at the University of Arizona. To date the UA has completed seven science and five regional LMMP DTM mosaics.

Stopar J. D. Robinson M. S. Speyerer E. J. Burns K. Gengl H. LROC Team
Regolith Characterization Using LROC NAC Digital Elevation Models of Small Lunar Craters **[#2729]**
NAC DEMs provide morphometry of large populations of small craters. Such observations are used to assess morphometric variability of craters (30 < D < 300m) due to terrain and degradation with implications for populations of small secondary craters.

Laura J. R. Miller D. Paul M. V.
AMES Stereo Pipeline Derived DEM Accuracy Experiment Using LROC-NAC Stereopairs and Weighted Spatial Dependence Simulation for Lunar Site Selection **[#2371]**
An accuracy assessment of AMES Stereo Pipeline derived DEMs for lunar site selection using weighted spatial dependence simulation and a call for outside AMES derived DEMs to facilitate a statistical precision analysis.

Waller D. A. Boyd A. K. Speyerer E. J. Robinson M. S.
Constructing NAC Polar Maps that Optimize Lunar Surface Illumination **[#2531]**
Due to the high incidence angle at the lunar poles, local topography and Sun azimuth drastically affect the amount of illuminated surface imaged by LRO Narrow Angle Cameras. Techniques are proposed to optimize polar surface illumination.

Wagner R. V. Speyerer E. J. Mahanti P. Danton J. Robinson M. S.
Pointing Corrections for the Lunar Reconnaissance Orbiter Narrow Angle Cameras **[#2372]**
Temperature-dependent pointing corrections have been derived for the Lunar Reconnaissance Orbiter's Narrow Angle Camera system. The new corrections improve the absolute pointing by 25%, and eliminate the offset between the left and right cameras.

Speyerer E. J. Wagner R. Robinson M. S. Becker K. Anderson J. Thomas P. Brylow S.
Characterizing the Geometric Distortion of the Lunar Reconnaissance Orbiter Wide Angle Camera **[#2505]**
The Wide Angle Camera (WAC) is currently acquiring synoptic views of nearly the entire Moon each month. In-flight calibration measurements and improved distortion models are improving the accuracy of map projected images.

Epps A. D. Wingo D. R.
Integrating LROC-NAC, LOLA, and LROC-WAC Derived Illumination Mosaic for Preliminary North Pole Rover Mission Planning **[#2700]**
Describes a methodology for using LRO data sets to identify potential rover driving routes from high-illumination regions on the rim of Whipple Crater to low-illumination craters on the floor of Peary.

Fortezzo C. M. Hare T. M.
Digital Renovation of the 1:5,000,000-Scale Lunar Geologic Map Series **[#2623]**
Digital renovations of the 6 1:5,000,000-scale lunar geologic maps continues with the completion of the near-side, and north and south poles. This year we are beginning the far side maps and should make them available by mid-2012.

Trang D. Gillis-Davis J. J. Hawke B. R. Issacson P. J. Spudis P. D.
The Geology of the Plato Region of the Moon **[#1792]**
The Plato region is anomalous because it shows a radar dark halo, more mature regolith than the surrounding highlands, and a spectral red spot. We used various remote sensing datasets to determine the sequence of events that formed the anomalies.

Zhang F. Zou Y. L. Zheng Y. C. Fu X. H.
Mapping Homogeneous Mare Basalt Units in the Aristarchus Quadrangle Using Clementine Spectral Parameters **[#1133]**
In our work, multi-dimensional spatial distribution of several Clementine spectral parameters was used to identify and determine basalt units, which related to the composition of the lunar interior and its thermal evolution.

Kim K. J. Dohm J. M. Williams J.-P. Ruiz J. Hare T. M. Hasebe N. Yamashita N. Karouji Y. Kobayashi S. Hareyama M. Shibamura E. Kobayashi M. d'Uston C. Gasnault O. Forni O. Reedy R. C.
GIS-Based Geological Investigation of the South Pole-Aitken Basin Using Kaguya (SELENE) Gamma-Ray Spectrometer **[#1391]**
This study confirms that the elemental signatures of major elements of SPA are key evidences in unraveling geological history of SPA when these elemental signatures obtained from Kaguya GRS are represented with respect to stratigraphic information.

Dworzanczyk A. R. Mest S. C.
Results from Scientific Characterization and Traverse Development of the Apollo 15 and Copernicus Crater Regions of Interest **[#2345]**
The Apollo 15 and Copernicus Crater Regions of Interest were studied and traverses across each region planned in order to determine the relative scientific value of each Region of Interest as defined by the Constellation Program Office.

Ling Z. C. Zhang J. Liu J. J.
An Empirical Nonuniformity Correction of Chang'E-1 IIM Data **[#2213]**
We have obtained an empirical model of nonuniformity correction of the IIM data using 15 spectrally homogenous standard lines. When the correction is applied on IIM data, it yields an obvious improvement for the line direction homogeneity of the IIM data.

Hao W. F. Li F.
The Communication Accessibility of the Lunar Rover Based on Lunar DEM Derived from Kaguya/Selene **[#1278]**
The mathematical model can be established to study the communication accessibility affected by topography. Therefore, the Antarctic Great-Wall station is chosen as a deep space tracking station and the feasibility is simulated and analyzed.

Yu S. R. Wu Y. Z. Tang Z. S.
The Check of Topographic Correction Methods Based on CE-1 IIM **[#1446]**
Topographic relief affects the reflectance spectra. Topographic correction can reduce this effect. The visual and statistical assessments of the topographic correction results indicate that C-correction and improved C-correction yield the best result.

Mazarico E. Neumann G. A. Rowlands D. D. Smith D. E. Zuber M. T.
Topography of the Lunar Poles and Application to Geodesy with the Lunar Reconnaissance Orbiter **[#2423]**
We use the large number of LRO tracks intersecting at the poles to construct high-resolution topographic maps from LOLA data. A special adjustment technique is used that enables geodetic accuracy assessment and improved orbit reconstruction.

Byrne C. J.
Modeling the Moon's Topographic Features **[#1118]**
Models of all lunar features that are 200 km or larger, based on Kaguya LALT data, are combined to model the current topography of the Moon in great detail.