

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

Rosiek M. R. Cook A. C. Robinson M. S. Watters T. R. Archinal B. A. Kirk R. L. Barrett J. M.
A Revised Planet-Wide Digital Elevation Model of the Moon [#2297]
Work in progress on revising a lunar DEM that was generated from Clementine UVVIS along track stereo coverage. The 1 km/pixel "planet-wide" (35% coverage) DEM can supply local topographic details and profiles to ± 100 m relative height accuracy within a regional area of the Moon.

Weller L. Becker T. Archinal B. Bennett A. Cook D. Gaddis L. Galuszka D. Kirk R.
Redding B. Soltesz D.
USGS Lunar Orbiter Digitization Project: Updates and Status [#2092]
We report on the Lunar Orbiter global mosaic construction progress and provide updates on the very high resolution data digitization effort.

Archinal B. A. Rosiek M. R. Kirk R. L. Hare T. L. Redding B. L.
Final Completion of the Unified Lunar Control Network 2005 and Topographic Model [#1904]
A new Unified Lunar Control Network has been completed and released, unifying the previous ULCN and the Clementine LCN. Since point locations were solved for in three dimensions, this also comprises a new global topographic model for the Moon.

Mest S. C.
Updated Geologic and Geomorphic Maps of the Lunar North and South Poles [#1842]
Updated digital geologic maps of the lunar north and south polar regions (poleward of 70°) are being produced at 1:1M scale using post-Lunar Orbiter data. The scientific results of this study will be useful in planning future missions to the Moon.

Williams J. G. Boggs D. H. Ratcliff J. T.
Lunar Mantle and Fluid Core Results and Inner Core Possibilities [#2004]
New data improves lunar science results. A fluid core and tidal dissipation are inferred from dissipation effects on rotation. Detection of core-mantle boundary flattening gives additional evidence for a fluid core. An inner core may be detectable.

Hikida H. Wiczorek M. A.
Crustal Thickness of the Moon: New Constraints from Gravity Inversions Using Polyhedral Shape Models [#1547]
A new method is presented for estimating crustal thickness from gravity and topography on the Moon. Analytically calculating the exterior gravitational field for a set of arbitrarily shaped polyhedra inverts relief along the crust-mantle interface.

Bulow R. C. Johnson C. L. Bills B. G.
Tidal Stress and Deep Moonquake Occurrence [#1479]
We investigate the relationship between tidal stress and deep moonquakes by performing a search over possible failure plane orientations to determine the stress state that best fits moonquake occurrence. We consider shear and normal stress and rates, demeaned stress, and ambient stress.

Nakamura Y.
Within-Nest Hypocenter Distribution and Waveform Polarization of Deep Moonquakes and Their Possible Implications [#1160]
Cross-spectral analysis of deep moonquake signals from 27 selected nests all show highly restricted distribution of hypocenters in each nest. Signal polarization for some nests suggests varying slip direction with changing tidal stress.

Cahill J. T. Lucey P. G. Le Mouelic S.

Apollo 17 Landing Site: Evaluating a Joint UVVIS-NIR FeO Algorithm that Nullifies Topographic Shading Effects on Lunar Reflectance Spectra [#1967]

Apollo 17 landing site FeO maps are computed from Clementine image cubes with corrected and uncorrected photometry using UVVIS (Lucey et al., 2000) and UVVIS-NIR (Le Mouelic et al., 2000) algorithms to quantify the statistical correlation between them.

Williams D. R. Schultz A.

Lunar Data Project — Interim Report on Restoration of Apollo Data [#1357]

The Lunar Data Project is an ongoing effort at NSSDC to put relevant, scientifically important Apollo data into accessible digital form for use by researchers and mission planners. We report on the progress made since last year and future plans.