

PRINT ONLY: MOON

Abdrakhimov A. M. Ivanov M. A. Basilevsky A. T. Dickson J. L. Head J. W. III Zuber M. T. Smith D. E. Mazarico E. Neish C. D. Bussey D. B. J.

[*The Luna-Glob Candidate Landing Region: Geological Mapping Based on the Lunar Reconnaissance Orbiter Data*](#) [#1331]

The new regional detailed geologic map was made using recent LRO data for the Luna-Glob mission. The most probable unit that could be sampled by the lander is a feldspathic Imbrian highland plains-forming material, resembling the Cayley Formation.

Anosova M. O. Nazarov M. A. Demidova S. I. Kostitsyn Yu. A. Ntaflos Th. Brandstätter F.

[*Trace Element Chemistry of a Silicon-Bearing Association in the Dhofar 280 Lunar Meteorite*](#) [#1079]

Trace elements were measured in silicon-bearing objects of the Dhofar 280 lunar meteorite. Such objects are enriched in volatiles and elements that can be easily reduced. The volatile elements could be condensed from an impact-generated vapor.

Berezhnoy A. A. Kozlova E. A. Shevchenko V. V.

[*Stability of Volatile Species at the Poles of the Moon*](#) [#1396]

Areas of thermal stability of Ca, Mg, and Na deposits are estimated. Complex species NH_3 , C_2H_4 , CH_3OH , and CH_4 can be destroyed during meteoroid bombardment. Polar species with maximal content in the impact-produced cloud are proposed.

Cortés J. Trigo-Rodríguez J. M. Llorca J.

[*The Lunar Breccia NWA 2700: Origin, Description, and Its UV to NIR Reflectance Spectrum*](#) [#1455]

We present here a precise UV to NIR reflectance spectra of NWA 2700. We wish to explore the relation between the mineralogy, the size of the grains, and the reflectance. Interesting links between lunar soil mineralogy and reflectance are found.

Grumpe A. Wöhler C.

[*Image-Based Construction of Lunar Digital Elevation Models of very High Lateral Resolution*](#) [#2597]

This abstract describes a method to create Digital Elevation Models (DEMs) of high lateral resolution from imagery of high lateral resolution and DEMs of lower lateral resolution.

Kaydash V. G. Shkuratov Y. G.

[*Phase-Ratio Imagery Identification of the Surface Altered in the Apollo-16 Landing Site*](#) [#1484]

The phase ratio technique reveals the photometric anomalies in the vicinity of the Apollo 16 landing site. We interpret them as surface smoothing caused by the engine jets of the lander and regolith loosening by astronauts and the vehicles.

Khisina N. R. Wirth R. Riede D.

[*Oriented Chromite-Diopside Symplectic Inclusions in Lunar Olivine from the "Luna-24":*](#)

[*Hydrogenation-Dehydrogenation as a Mechanism of Simplectic Formation?*](#) [#1068]

Diopside-chromite symplectitic lamellae in olivine from the "Luna-24" soil are studied with FIB/TEM and FE-EMPA and suggested to be formed by two-step solid-state reaction involving exsolution, oxidation, cellular decomposition, and dehydrogenation.

Krishna Sumanth T. Nagasubramanian V. Radhadevi P V. Sudheer Reddy D. Solanki S S. Jyothi M V. Saibaba J. Geeta Varadan

[*Comparison of DEMs from Terrain Mapping Camera Images with LOLA*](#) [#2026]

DEMs generated from the TMC camera are compared with LDEM-256. TMC DEMs are of high quality and accurate, which enables the construction of three-dimensional models. They are representative of the stability of the platform and the potential of CH-1 for accurate lunar referencing.

Lena R. Phillips J.

[*Lunar Domes in Cauchy Region: Morphometry and Mode of Emplacement*](#) [#1005]

We provide an analysis of four domes located in Mare Tranquillitatis, near Rima Cauchy, termed as C14-17.

Liu D. Li L.

[*An Improved Radiative Transfer Model for Estimating Mineral Abundance of Immature and Mature Lunar Soils*](#) [#2011]

Introduce an improved Hapke's radiative transfer model to estimate the mineral abundance of both immature and mature lunar soils.

Lu Ya. Shevchenko V. V.

[*Current Events on the Moon: LROC and Chang'E-2 Data*](#) [#1207]

Slope movements of material in lunar craters are investigated based on remote spectral studies carried out onboard the Clementine spacecraft, and data obtained during the large-scale survey onboard the LRO and Chang'e-2 spacecrafts.

Mitrofanov I. G. Golovin D. V. Kozyrev A. S. Litvak M. L. Malakhov A. A. Sanin A. B.

[*Solar Water Permafrost: Is It Detected on the Moon? Is It Expected on the Mercury?*](#) [#2083]

In addition to neutron data from LRO for the Moon, the data from MESSENGER should be studied for testing and understanding the physical origin of polar water ice deposits at the Moon and at Mercury.

Moggi-Cecchi V. Caporali S. Pratesi G. Franchi I. A. Greenwood R. C.

[*NWA 6687: A New Lunar Meteorite from Northwest Africa*](#) [#2710]

NWA 6687 is a new meteorite recovered in Northwest Africa. The presence of medium-grained inclusions with intersertal texture, oxygen isotopic data and various minerochemical features suggest a classification as lunar feldspathic breccia.

Nazarov M. A. Demidova S. I. Ntaflos Th. Brandstätter F.

[*Native Silicon, Fe-Silicides and a Condensate Lithology in the Dhofar 280 Lunar Meteorite*](#) [#1073]

Native silicon and Fe-silicides were found in the lunar meteorite Dhofar 280. The phases associate with a Si-rich melt. The association could be formed by condensation of an impact-induced vapor, remelted and mixed with the host rock.

Petrova N. K. Abdulmyanov T. R. Hanada H.

[*Inverse Problem of the Lunar Physical Libration by Observing Stars from the Lunar Surface*](#) [#1027]

Method of solution of the inverse problem is suggested. The dependence of accuracy of libration angles on the measuring error of selenographic coordinates of stars is estimated. Their sensitivity to deformability of the Moon is verified.

Radhadevi P V. Sudheer Reddy D. Saibaba J. Geeta Varadan

[*Suitability of LOLA DEMs for Processing TMC Images of Chandrayaan-1*](#) [#2303]

In this paper, we study the impact of height error in combination with view angle of the TMC cameras on planimetric accuracy. Our study reveals that height errors in LDEM-256 is minimum and is suitable for processing TMC data.

Saran S. Das A. Mohan S. Chakraborty M.

[*Scattering Properties of Jackson Crater in the Lunar Far Side*](#) [#1234]

Scattering properties of the lunar farside crater "Jackson" have been analyzed using Mini-SAR data of Chandrayaan-1 mission supported by high-resolution optical datasets from the NAC of the LRO.

Shevchenko V. V.

[*Interstellar Matter on the Moon*](#) [#1275]

We know that other stars have circumstellar clouds of dust or icy bodies that may be analogous to the Kuiper Belt in the solar system. So, we propose that dust particles may be brought to the Moon by a giant comet from another star system.

Shkuratov Y. G.

[Forgotten Solar-Wind Iron Implanted in Lunar Regolith](#) [#1286]

The SW-Fe suggests an additional source of npFe₀ in the lunar regolith. This source can be important, since much more volatile helium-3, having lower SW-concentration than SW-Fe, is nevertheless detected in the lunar regolith and suggested as a fuel.

Sinitsyn M. P.

[Correlations of Hydrogen Concentration and Surface Formations on the Moon According to the Lunar Prospector Neutron Spectrometer](#) [#1108]

As a result of neutron spectrometer LEND new information was received about distribution of thermal and epithermal neutrons on the lunar surface. In this paper, we propose to compare some of the correlations found earlier LPNS device with new data.

Sposetti S. Lena R. Iten M.

[Detection of Meteoroidal Impacts on the Moon](#) [#1012]

During our surveys carried out on February 11, 2011, and April 9–10, 2011, four impacts were simultaneously recorded by two independent and distant (13 km apart) observatories.

Svetsov V. V. Pechernikova G. V. Vityazev A. V.

[A Model of Moon Formation from Ejecta of Macroimpacts on the Earth](#) [#1808]

We suggest a statistical model of Moon formation, assuming that initially thin prelunar swarm of particles grows due to capture of material ejected after impacts of large planetesimals on growing Earth. Numerical simulations of impacts are made.

Thomas-Keprta K. L. Clemett S. J. Ross D. K. Le L. McKay D. S. Gibson E. K. Gonzalez C.

[Indigenous Carbon Embedded in Apollo 17 Volcanic Black Glass Surface Deposits](#) [#2561]

We report for the first time the identification of arguably indigenous carbonaceous matter present within surface deposits of a black glass grain collected on the rim of Shorty Crater during the Apollo 17 mission.

Todd N. S. Lofgren G. E.

[Apollo Lunar Sample Photograph Digitization Project Update](#) [#2860]

Update on the progress and availability of data from a 4-year data restoration project effort to digitize photographs of the Apollo lunar rock samples and create high resolution digital images.

Wöhler C. Grumpe A.

[Correction of Chandrayaan-1 M³ Lunar Hyperspectral Image Data with Respect to Local Topography](#) [#1906]

In this study we propose an empirical method to correct Chandrayaan-1 M³ hyperspectral image data with respect to the local topography based on a digital elevation model (DEM) of high lateral resolution.