Noble S. K.  Pieters C. M.  Hiroi T.
Extracting Quantitative Data from Lunar Soil Spectra [#1255]
Using the LSCC suite of lunar soils, we found that the modified Gaussian modal can be utilized to extract quantitative data from high quality spectra. The model is sensitive to pyx abundance and even the relative portion of high-Ca and low-Ca pyx.

Gunderson K.  Whitby J.  Thomas N.
Visible and NIR BRDF Measurements of Lunar Soil Simulant [#1781]
We present visible and NIR BRDF measurements of JSC-1 lunar soil simulant under normal illumination and at near-zero phase angles for emission angles of 0° to 85°.

Wentworth S. J.  Robinson G. A.  McKay D. S.
Space Weathering of Intermediate-Size Soil Grains in Immature Apollo 17 Soil 71061 [#2301]
We are beginning a new study of space weathering of intermediate-size individual mineral grains from lunar soils. A major goal is to correlate the evidence for space weathering observed in studies of the surfaces of samples with evidence at higher resolution (TEM) using cross-sections.

Buono A.  Brophy J.  Schieber J.  Basu A.
Experimental Production of Pure Iron Globules from Melts of Lunar Soil-Compositions [#2066]
Experimental melting of lunar soil compositions in a hydrogen atmosphere reduces the melt and produces submicron sized immiscible globules of pure iron. It is unnecessary to invoke vapor deposition to explain pure iron globules in lunar agglutinates.

Starukhina L. V.
Adhesion Forces Between Regolith Particles: Constraints on the Conditions of Electrostatic Lofting of Dust [#1343]
Sticking forces between regolith particles are the main obstacle for particle detachment from the surface under any applied force. E.g., at electrostatic potential ~10 volts either particles <~0.1 µm or extremely loosely bound particles can be lofted.

Wilson T. L.  Wilson K. B.
Regolith Sintering: A Solution to Lunar Dust Mitigation? [#1422]
A concept for lunar dust mitigation is presented that supports early deployment of large telescopes on the Moon. The technology involves plasma spraying and epoxy developed from a study using JSC simulant, and is compared with regolith sintering.

Stubbs T. J.  Vondrak R. R.  Farrell W. M.
Impact of Lunar Dust on the Exploration Initiative [#2277]
Apollo astronauts encountered many problems on the Moon caused by lunar dust. Advances in space physics should now permit a better understanding of lunar surface charging and dust transport, thus allowing us to better tackle dust-related issues.

Pike W. T.  Standley I. M.  Banerdt W. B.
A High-Sensitivity Broad-Band Seismic Sensor for Shallow Seismic Sounding of the Lunar Regolith [#2002]
There is a renewed interest in techniques for characterizing the surface and shallow subsurface (0–10s of meters depth) of the Moon. Seismic techniques are ideal for determining geomechanical properties. We present a seismic sensor which is optimized for lunar exploration requirements.