Mare Moscoviense a Window into the Interior of the Moon

Investigating different mare units within Mare Moscoviense we find spectral evidence for low-calcium, high pyroxene. Is it possible that this is a surface exposure of the Mg-suite?

Estimating Thorium Abundances of Basalt Ponds in South Pole Aitken Basin: Implications for the Composition of the Far Side Lunar Mantle

We use forward modeling of thorium data from the Lunar Prospector Gamma Ray Spectrometer to estimate thorium abundances of individual basalt ponds in South Pole Aitken Basin.

Searching for High-Al Mare Basalts: Mare Imbrium and Apollo 14

Clementine and Lunar Prospector data are used to search for high-Al basaltic units in Mare Imbrium that may be related to the Apollo 14 high-Al mare basalts.

UV Imaging of the Moon from the Hubble Space Telescope

Hubble Space Telescope UV observations of three targets on the Moon have been successfully acquired (Apollo 15, Apollo 17, Aristarchus). These UV and Visible wavelength images demonstrate that lunar compositional mapping can be achieved via the HST’s ACS instrument.

Radiative Transfer Modeling of Compositions of Lunar Pyroclastic Deposits

We use radiative transfer theory to model the compositions of three regional pyroclastic deposits for which high-quality spectra are available: Aristarchus, Humorum, and Sulpicius Gallus.

HST UV–Visible Observations of the Apollo 17 Landing Area

From Hubble Space Telescope (HST) Advanced Camera for Surveys High Resolution Camera (ACS/HRC) images we demonstrate the efficacy of UV imaging to map TiO₂ abundances within mature regolith in the region of the Apollo 17 landing site.

20-m Resolution Radar Studies of the Aristarchus Plateau and Reiner Gamma Formation

We are collecting 20-m resolution, dual circular-polarization, Earth-based radar images of areas on the Moon that may contain useful resources, such as pyroclastic deposits, and to address the detailed geology of enigmatic features.

Photometric Effects on Spectral Interpretations: A Lunar Case

Spectral variations due to photometry can mimic those attributed to composition in remote sensing data of planetary surfaces.

Mapping the Spatial Distribution, Mineralogy, and Geochemistry of Lunar Highlands Spectral Types

Knowledge of lunar surface mineralogy and chemistry is central to understanding the evolution of the lunar crust. Here we present and evaluate central uplift maps of predefined spectral archetypes using modeling to determine mineralogy and chemistry.
3:45 p.m. Ghent R. R. * Campbell B. A. Hawke B. R. Campbell D. B. Remote Sensing and Geologic Studies of the Southeastern Quadrant of the Moon [#1815] We report on remote sensing studies of an area extending from Tycho crater to Mare Australe, and south to the pole. We use new 70-cm Earth-based radar observations and Clementine compositional data to investigate regional stratigraphy and geology.

4:00 p.m. Hughes C. G. * Blewett D. T. Hawke B. R. Richmond N. C. Optical Maturity and Magnetic Studies of Lunar Swirls [#1230] Lunar swirls are sinuous bright markings often associated with magnetic anomalies. Optical and magnetic study of selected swirls, including a previously undescribed swirl-like feature near Airy, may lead to a better understanding of space weathering.

4:15 p.m. Lucey P. G. * Cahill J. Magnesian Rock Types in the Lunar Highlands: Remote Sensing Using Data from Lunar Prospector and Clementine [#1660] The distribution of magnesian anorthositic rocks are found to be consistent with inferences drawn from lunar meteorites. Mafic magnesian rocks are found in the PKT and SPA terranes, but are absent from the magnesian anorthosite regions.

4:30 p.m. Byrne C. J. * The Near Side Megabasin of the Moon [#1930] A very old, very large basin has been found through analysis of Clementine elevation data. Its ejecta is quantitatively modeled and accounts for the farside topography. Centered at 7°N, 21°E, it is 101 arc degrees in radius.