Craig M. A.  Cloutis E. A.  Bailey D. T.   
The Effects of Grain Size, <45–1000 µm, on the Reflectance Spectrum of Planetary Analogs from 0.35–2.5 µm [#1356]  
The spectral reflectance properties of three common planetary materials are presented here (basalt, olivine, orthopyroxene). Five different grain sizes have each been spectrally characterized from 0.35–2.5 µm.  

Kelley M. S.  Gaffey M. J.  Reddy V.   
Near-IR Spectroscopy and Possible Meteorite Analogs for Asteroid (253) Mathilde [#2366]  
Recent near-IR spectroscopic data for asteroid 253 Mathilde, a NEAR spacecraft flyby target, show that it has undergone an alteration process very similar to CI1 or CM2 carbonaceous chondrites, and has a surface dominated by phyllosilicate minerals.  

McFadden L. A.  Ebel D. S.  Loeffler M. J.  Boesenberg J.  Baragiola R. A.   
Infrared Spectroscopy of Eucrite Juvinas Under Vacuum: IR Absorption of Water and Organic Species [#2390]  
Laboratory spectra of Juvinas in the IR under controlled environment shows absorptions due to water and C-H species.  

Honda T.  Nakamura A. M.  Mukai T.   
Laboratory Measurements of Opposition Surge from Simulated Asteroid Surfaces [#1530]  
We performed measurements of the opposition surge by simulated surfaces of asteroids. The trend between the surge amplitude and the relative reflectance of the surface is similar to those found in the results of observation of asteroids.  

Comparison of the Bidirectional Reflectance of a Well-Characterized Powder with Predictions of Models Based on the Equation of Radiative Transfer [#1321]  
The bidirectional reflectance of a powder of spherical particles predicted by exact numerical solutions of the radiative transfer equation are more forward scattering than laboratory measurements, because the particles are more backscattering in a regolith than when isolated.  

Cloutis E. A.  Craig M. A.  Bailey D. T.   
Bidirectional Reflectance Properties of Orthopyroxene [#1300]  
Bidirectional reflectance spectra of powdered samples of orthopyroxenes measured at a wide variety of phase angles show variations in overall reflectance and slopes, but this mineral remains recognizable on the basis of the persistence of its characteristic absorption bands.  

McCoy T. J.  Corrigan C. M.  Sunshine J. M.  Bus S. J.  Gale A.   
Does Spectroscopy Provide Evidence for Widespread Partial Melting of Asteroids?: II. Pyroxene Compositions [#1631]  
Calibrations of pyroxene composition from spectra overestimate the FeO concentration and suggest partial melting. Band II centers for Eros and Itokawa likely reflect mixing high-Ca and low-Ca pyroxenes of ordinary chondrite compositions.  

Burbine T. H.  Greenwood R. C.  Buchanan P. C.  Franchi I. A.  Smith C. L.   
Reflectance Spectra of Mesosiderites: Implications for Asteroid 4 Vesta [#2119]  
Oxygen isotopic data argues that HEDs and mesosiderites may be from the same parent body. A spectral survey of mesosiderites was done to determine their spectral properties in the visible and near-infrared and compare to HEDs.
We use high-resolution HED spectra and detailed compositional analyses to derive formulas for determining their average pyroxene mineralogies.

We present a program designed to find basaltic asteroids in the main belt, thus providing an estimate for the distribution of such objects. This has important implications for constraining the accretion history of small bodies in the solar system.

We report the results of ground-based moderate-resolution spectroscopic observations of six S-class asteroids covering the ~330–600 nm wavelength range which we have previously analyzed using IUE spectra and ground-based photometry for UV/blue effects of space weathering.

We present new near-infrared (0.8–2.5 µm) spectroscopy of 40 Trojan asteroids.

We present the results from a photometric survey to detect asynchronous binary NEAs. (7088) Ishtar is the second binary NEA detected by the survey.

This paper describes one-dimensional numerical models of heating, melting, differentiation and water loss in 100–1000 km ice/rock planetesimals.

Five meteoroid streams of apparent asteroidal nature have been identified in the IAU_MDC photographic meteor database. Two streams contain substreams, composed of two or more meteoroids sharing the same orbit; only one asteroid, apparently associated with one stream, has been identified.