Tuesday, March 24, 2009
POSTER SESSION I: ASTEROIDS AND COMETS
6:30 p.m. Town Center Exhibit Area

De Sanctis M. C. Lasue J. Magni G. Capria M. T. Turrini D. Coradini A.
Models of ROSETTA Target Comet 67P/Churyumov-Gerasimenko **[#1510]**
We will present the results of a new quasi three-dimensional comet evolution model for non-spherically shaped cometary nuclei. We applied this model to comet 67P/Churyumov-Gerasimenko.

Emery J. P. Cruikshank D. P. Burr D. M.
Near-Infrared Spectroscopy of Trojan Asteroids: Evidence for Two Compositional Groups **[#1442]**
We present near-infrared spectra of ~70 Trojan asteroids. No clear absorption features are detected, but the data reveal two spectral groups. These results are in agreement with other observational evidence, and we suggest the groups indicate distinct compositions.

Hibbitts C. A. Jauhari S. Hagaman S. Lisse C.
Near-Far IR Spectra of Refractory Minerals Relevant to Comets **[#1932]**
We present our results for transmission spectra from ~ 2–200 μm and derived absorption constants for these and other materials relevant to comets, including pyrrhotite, other sulfides, carbonates, and several clay minerals.

Zolotov M. Yu.
Ceres: A Case for Porous, Undifferentiated, and Non-Icy Hydrated Body **[#2329]**
As opposed to previous deductions, this work argues for a porous internal structure of Ceres without a dense core and water mantle.

Li J.-Y. McFadden L. A. A'Hearn M. F. Feaga L. M. Russell C. T. Coradini A.
De Sanctis C. Ammannito E.
UV Absorption Features of Asteroid 1 Ceres **[#2101]**
New images and spectra of asteroid Ceres at UV were obtained with HST/ACS/SBC. The absorption feature at about 280 nm in the spectrum of Ceres is confirmed.

Milliken R. E. Rivkin A. S.
Spectral Evidence for a Brucite-Carbonate Alteration Assemblage on Ceres **[#1481]**
We present a new interpretation for the 3 um hydration feature in Ceres' reflectance spectrum. The features in this wavelength region are consistent with brucite and Mg carbonate, suggesting alteration on Ceres is distinct from the chondrites.

Ostrowski D. R. Sears D. W. G. Gietzen K. M. Lacy C. H. S.
An Investigation of Phyllosilicates, C Chondrites, and C Asteroids Using Continuum Slopes of Near Infrared Spectra **[#1136]**
We have measured the near-IR spectra of five phyllosilicates heated in 100°C intervals to 1100°C. We conclude that the surfaces of C asteroids are essentially amorphous, being impact-dehydrated phyllosilicates.

Reynolds C. M. Reddy V. Gaffey M. J.
Compositional Study of 51 Nemausa: A Possible Carbonaceous Chondrite-like Asteroid **[#1285]**
This is a compositional study on the main-belt asteroid 51 Nemausa.

Cloutis E. A. Hardersen P. S. Reddy V. Gaffey M. J. Bailey D. T. Craig M. A.
Metal-Orthopyroxene and Metal-Olivine Mixtures: Spectral Reflectance Properties and Implications for Asteroid Spectroscopy **[#1332]**
The spectral reflectance properties of metal + mafic silicate mixtures indicate that mafic silicate band centers can be successfully recovered, and mafic silicate compositions derived, from analysis of the spectra.

Gietzen K. M. Lacy C. H. S. Ostrowski D. R. Sears D. W. G.
Low-Calcium and Calcium-Free Clinopyroxene Spectra and the Implications for UOC Material on Asteroids **[#1348]**
Many S asteroids have spectral bands for Ca-rich clinopyroxene, which distinguish them from most ordinary chondrites. Five low-Ca clinopyroxenes have the same spectral feature and this likens the asteroids to unequilibrated ordinary chondrites.

Burbine T. H. Buchanan P. C. Dolkar T. Binzel R. P.
Pyroxene Mineralogies of Near-Earth Vestoids **[#1922]**
We determine the mineralogies of seven near-Earth asteroids that have reflectance spectra similar to howardites, eucrites, and diogenites (HEDs). All of these observed near-Earth V-type asteroids have pyroxene mineralogies consistent with eucrites or howardites.

Chapman C. R. Enke B. Merline W. J. Nesvorný D. Tamblyn P. Young E. F.
Reflectance Spectra of Members of Very Young Asteroid Families **[#2258]**
We present SpeX infrared spectra for members of the dynamically young Datura, Iannini, Karin, and Veritas asteroid families (plus Koronis and Themis family controls). S-types are space-weathered on timescales of a few million years.

Fauerbach M. Marks S. A. Behrend R. Bernasconi L. Bosch J.-G. Conjat M. Rinner C. Roy R.
Shape Models of Minor Planets 242 Kriemhild and 287 Nephthys **[#1279]**
Lightcurve inversion of photometry has been shown to be a viable source to obtain information about physical attributes like rotation period, shape and spin axis orientation for asteroids. We will present results for 242 Kriemhild and 287 Nephthys.

Takeuchi H. Miyamoto H. Oku M.
Distributions and Morphological Characteristics of Bright Spots on Boulders Covering the Surface of Asteroid Itokawa **[#1566]**
We scrutinized the highest-resolution images of the asteroid Itokawa to identify 387 bright spots on the surfaces of 123 boulders. Our preliminary results indicate ~90% of these bright spots are formed as results of micrometeoroid impacts.

Dachev Ts. P. Semkova J. V. Maltchev S. Tomov B. Matviichuk Yu. N. Koleva R. Benghin V. Chernykh I. Shurshakov V. Petrov V. Angelis G. De.
Radiation Environment Study During Phobos Sample Return Mission by Charged Particle Telescope Liulin-Phobos **[#1297]**
This paper describes the Liulin-Phobos experiment, which will be flown onboard the future Phobos – Soil sample return mission to the satellite of Mars – Phobos. The main goal is the investigation of the radiation environment and doses on the path and on Phobos surface.

Hamelin M.
Surface and Near Surface Dynamics on Phobos: Possible Grooves Formation by Impact Ejecta **[#1764]**
The motion of a test mass on an ellipsoidal model of Phobos is computed and compared with the grooves patterns around Stickney. It is shown that trajectories are not generally down slope and that a gliding mass can take off over some distance.

Ipatov S. I. A'Hearn M. F.
Deep Impact Ejection from Comet Tempel 1 as a Triggered Outburst **[#1022]**
Results of our studies of velocities and rates of ejection testify that the Deep Impact collision with Comet 9P/Tempel 1 was a trigger of a large outburst that had a local peak of ejection at about 10 seconds and a sharp decrease at ~60 s.

Doressoundiram A. Roques F. Boissel Y.
Probing the Radial Distribution of the Kuiper Belt Using Stellar Occultations **[#1074]**
We conducted a survey for serendipitous occultations. We report on 19 hours of fast-photometry data. We run a complex procedure to analyse the lightcurve. The results bring strong constraints on the Kuiper Belt structure.

McEachern F. M. Cuk M. Stewart S. T.
Dynamical Evolution of the Hungaria Asteroids **[#2554]**
In this study we investigate some 30 of the largest Hungaria asteroids for which taxonomic classes have been assigned, specifically to shed light on their possible dynamical histories.

Bradley P. A. Plesko C. S. Weaver R. P. Clement R. R. C. Guzik J. A.
Pritchett-Sheats L. A. Huebner W. F.
Modeling the Dynamic Response of an Asteroid or Comet to a Nuclear Deflection Burst **[#2314]**
The most technically feasible method of deflecting a Potentially Hazardous Object is a nuclear stand-off burst. We show results from our initial models that use bursts ranging from 1 to 1000 kt on 100 meter diameter targets of various compositions.