Yasui M. Arakawa M.

**Mechanical Strength of Small Icy Bodies with Residual Porosity Less Than 30%** [#1618]

We did deformation experiments of ice-silica mixtures with various silica mass contents and porosities to study the strength of small icy bodies. We found that the strength became smaller as silica mass content or porosity increased.

Wakita S. Sekiya M.

**Thermal Evolution of Icy Planetesimals in the Early Solar System** [#1291]

The thermal evolution of the icy planetesimals for a wide range of parameters is numerically performed. It is found that the initial ratio of $^{26}$Al/$^{27}$Al is the key parameter for the chemical reactions to take place or not, and its timing.

Boice D. C. Martinez S. E.

**Physico-Chemical Modeling of the Coma of Comet C/2004 Q2 (Machholz)** [#2733]

Modeling is central to understand the important physical and chemical processes that operate in cometary comae. Details of these processes are presented in the inner coma of Comet Machholz, including thermodynamics and gas-phase chemistry throughout this region.

Moriarty D. Hibbitts C. A. Lisse C. M. Dyar M. D. Harlow G. Ebel D. Peale R.

**Near–Far IR Spectra of Sulfide Minerals Relevant to Comets** [#2447]

Sample preparation procedures and preliminary results from our IR spectroscopy (~2–200 µm) of sulfides relevant to comets, in support of analyzing Spitzer Space Telescope data from the Deep Impact mission.

Kohout T. Kosterov A. Haloda J. Halodova P. Zboril R.

**Magnetic Properties of Cometary Bodies and Detection Limits of the Rosetta Space Mission** [#1048]

We provide review of magnetic properties of sulphides within cometary material and model magnetic interactions of comets with interplanetary magnetic field. The results are compared to detection limits of the Rosetta space mission.

Kelley M. S. Woodward C. E. Harker D. E. Wooden D. H. Reach W. T. Fernández Y. R.

**Comet Dust Diversity in Ground-based and Spitzer Space Telescope Mid-Infrared Spectra** [#2375]

We examine the composition of comet dust from mid-infrared spectra to assess the efficiency of mixing of dust and planetesimals in the comet formation zone.

Reach W. T.

**Structure of the Zodiacal Cloud Along the Earth’s Orbit** [#1499]

Using Spitzer Space Telescope observations of the brightness of the ecliptic poles, we measured the structure of the Earth’s resonant dust ring, showing Earth is trailed by a cloud 0.2 AU away and 0.08 AU wide, along the Earth’s orbit.

Ipatov S. I.

**Delivery of Dust Particles and Small Bodies to Planets** [#1267]

The probabilities of collisions of migrating small bodies and dust particles produced by these bodies with all planets were calculated. The delivery of water and volatiles to planets is discussed based on the probabilities.

Miljkovic K. Mason N. J. Zarnecki J. C.

**Environmental Effects on Dust Around Europa** [#1346]

We investigate the effects of environmental conditions at Europa and the variations in Europa’s surface properties on the dust population around it, showing that the surface composition could be preserved in the dust ejected to orbital altitudes.