Thursday, May 17, 2012
ORIGIN OF THE SOLAR SYSTEM AND SMALL BODIES
2:00 p.m.   Conference Room 201

Chairs:         Taishi Nakamoto
                Carey Lisse

2:00 p.m.      Brasser R. *   Morbidelli A.
Oort Cloud and Scattered Disc Formation During a Late Dynamical Instability in the
Solar System  [#6005]
We ran numerical sims of the evolution of the OC and SD using the Nice model. The SD is more excited
than thought. About 75% of the SD is fossilised. Using a size-limited population ratio between the OC
and SD we find that it agrees with simulations.

2:10 p.m.      Higuchi A. *   Kokubo  E.
Formation and Disruption of the Oort Cloud by Stellar Encounters  [#6349]
We have investigated the effect of stellar encounters on Oort cloud formation and evolution. Using the
classical impulse approximation, we obtain the empirical expression of the half-life of the Oort cloud.

2:20 p.m.      Lisse C. M. *   Chen  C. H.   Wyatt M. C.   Morlok A.   Thebault  P.   Watson D. M.   Manoj P.
Sheehan P.   Currie T. M.   Sitko M. L.
Spitzer and IRTF Observations of η Corvi:  Evidence at ~1 Gyr for an LHB-Like Delivery of Organics
and Water-Rich KBO Material to the THZ of a Sun-Like Star  [#6351]
Spitzer and NASA/IRTF spectra of ~350 K circumstellar dust around the nearby MS star η Corvi (F2V,
1.4 ± 0.3 Gyr) show clear evidence for warm, primitive, silicate-, water- and carbon-rich dust at ~3 AU,
in the system’s Terrestrial Habitability Zone.

2:30 p.m.      Mumma M. J. *   DiSanti M A.   Bonev  B. P.   Villanueva  G. L.   Magee-Sauer K.   Gibb  E. L.
Paganini L.   Radeva Y. L.   Charnley S. B.
The Volatile Fraction of Comets as Quantified at Infrared Wavelengths — An Emerging Taxonomy and
Implications for Natal Heritage  [#6199]
In recent years, compositional surveys based on primary volatiles (native to the cometary nucleus) have
emerged. Twenty-six comets have been characterized at IR wavelengths, and we will present taxonomic
groupings based on their organic fraction.

2:40 p.m.      Weissman P. R. *   Asphaug E.   Movshovitz N.   Rosenberg E. D.
Origin and Evolution of the Sungrazing Comets  [#6413]
We dynamically model the tidal disruption and evolution of rubble pile cometary nuclei in typical
sungrazing orbits using an advanced N-body code that simulates each nucleus as ~8,000
irregularly-shaped cometesimals.

2:50 p.m.      Asphaug E.   Jutzi  M.   Movshovitz N.
Energies of Accretion and the Prevalence of Chondrite Meteorites  [#6353]
We explain our recent model for the origin of chondrules and present it in the context of chondrite parent
body evolution.

3:00 p.m.      Okamoto T. *   Nakamura A. M.   Hasegawa S.   Kurosawa K.   Ikekaki K.   Tsuchiyama  A.
Laboratory Penetration Experiments of High Velocity Projectiles into Very Porous Targets on Exotic
Origin of Dusts in Primitive Bodies  [#6065]
To understand dusts penetration into high porous bodies, we conducted impact experiments at velocities
of 2–7 km/s into high-porosity targets of 80–90% porosity.Our results indicate that dusts can only be
captured at the surface of small bodies.
3:10 p.m. Blum J. Güttler C. * Kothe S. Windmark F. Zsom A. Dullemond C. P. 
*The Early Stage of Planetesimal Formation: An Experimental Theoretical Approach* [#6246]
Laboratory experiments on collisional dust aggregation have lately been made available for the implementation into different coagulation models. This led to the discovery of the so-called ‘bouncing barrier’ which finally turned out to be beneficial.

*Early Microstructures of Asteroidal Building Blocks from 3D Petrography: A Compaction and Porosity Perspective* [#6205]
We use X-ray microtomography to examine ordinary chondrites. Quantitative and 3D visualization techniques are used to establish the nature of the physical microstructures of their asteroidal parent bodies.

3:30 p.m. Turrini D. * Coradini A. Magni G. 
*The Jovian Early Bombardment and the Primordial Evolution of Vesta and the Asteroid Belt* [#6068]
The formation and migration of Jupiter in the Solar Nebula triggered a short but violent phase of primordial bombardment. Here we show the implications of this Jovian Early Bombardment for the collisional evolution of the asteroid belt and of Vesta.

3:40 p.m. Cody G. D. * Wang Y. Kebukawa Y. Fogel M. L. Alexander C. M. O. 
*Towards a Self-Consistent Explanation of Deuterium Abundance in Organic Solids Contained Within Primitive Solar System Bodies* [#6176]
Direct analysis and laboratory experiments reveal the complex nature of D/H evolution in ET organic solids in comets and chondrites, reflecting at least three key stages where early solar system history affects change in D/H both in organics and H₂O.

3:50 p.m. Poster Viewling/Coffee Break