

Monday, March 18, 2013

[M101]

SPECIAL SESSION:

PLANETARY DIFFERENTIATION ACROSS THE SOLAR SYSTEM

8:30 a.m. Waterway Ballroom 1

Chairs: Lindy Elkins-Tanton
Bruce Bills

- 8:30 a.m. Bottke W. F. * Asphaug E.
[*On the Origin and Evolution of Differentiated Planetesimals*](#) [#1672]
Hit and run collisions were common among differentiated objects in the terrestrial planet region. Some surviving fragments were captured within the main belt.
- 8:45 a.m. Tarduno J. A. * Cottrell R. D.
[*Paleomagnetism of the Springwater Pallasite: Further Evidence for a Dynamo in the Main Group Pallasite Parent Body*](#) [#2801]
Paleointensity data from the Springwater pallasite support evidence for a parent-body dynamo and pallasite formation far from a core-mantle boundary.
- 9:00 a.m. Gattacceca J. * Weiss B. P. Gounelle M. Lima E. A. Rochette P.
[*More Evidence for a Partially Differentiated CV Parent Body from the Meteorite Kaba*](#) [#1721]
A paleomagnetic study of the CV chondrite Kaba brings more evidence for a partially differentiated CV parent body.
- 9:15 a.m. Kruijer T. S. * Touboul M. Fischer-Gödde M. Bermingham K. Kleine T. et al.
[*Resolution of Small Differences in the Time of Metal Segregation in Iron Meteorite Parent Bodies*](#) [#1920]
Using Pt-W-isotope correlations we obtained pre-exposure $^{182}\text{W}/^{184}\text{W}$ for the major iron meteorite groups (IIAB, IIIAB, IVA) that are unaffected by cosmic rays.
- 9:30 a.m. McCoy T. J. * Gardner-Vandy K. G.
[*Asteroid Partial Melting at the Solar System's Snow Line*](#) [#2481]
Parent body size and water:rock ratio are critical parameters in understanding hybrid metal-silicate-ice differentiation models.
- 9:45 a.m. Rivkin A. S. *
[*Spectroscopy and Asteroid Interiors: Judging a Book when all you have is its Cover*](#) [#2737]
Beauty's not skin deep. Asteroids' inner natures can be seen from here.
- 10:00 a.m. Burbine T. H. *
[*What Do the Heliocentric and Size Distributions of V-Types tell us About Igneous Differentiation in the Asteroid Belt?*](#) [#2637]
The heliocentric and size distributions of V-types imply that Vesta-like differentiation occurred on multiple parent bodies of roughly similar sizes.
- 10:15 a.m. Bland P. A. * Travis B. J. Dyl K. A. Schubert G.
[*Giant Convecting Mudballs of the Early Solar System*](#) [#1447]
In studying the hydrothermal evolution of primitive asteroids we have assumed that they were lithified. Disregarding this assumption solves a number of problems.
- 10:30 a.m. Castillo-Rogez J. C. * Frank E. A. Walsh K. J.
[*Physical and Chemical Differentiation of Large Icy Asteroids as a Function of Origin: Application to Ceres*](#) [#2767]
We search for markers of icy asteroid origin to be sought for by the Dawn spacecraft.

- 10:45 a.m. Sarid G. * Stewart S. T.
[*Hold On to Your Volatiles — Early Preservation In Evolving Icy Planetesimals*](#) [#1467]
We examine volatile species survival in ice-rock objects, in relation with its relative collisional and thermochemical evolution.
- 11:00 a.m. McKinnon W. B. * Bland M. T.
[*Differentiation of Large Outer Solar System Satellites: Implications for Core Chemistry, Internal Structure, and Non-Hydrostatic Gravity*](#) [#2983]
The evolutionary paths to differentiation taken (or avoided) by large icy moons are quite different from those of the terrestrial planets and major asteroids.
- 11:15 a.m. Sotin C. * Reynard B.
[*Onset of Convection and Differentiation in the Hydrated Cores of Icy Moons*](#) [#1436]
Numerical simulations suggest that the inner part of hydrated cores dehydrates. For large values of internal heating, convection can start in the outer core.
- 11:30 a.m. Rubin M. E. * Desch S. J. Neveu M.
[*Thickness of Undifferentiated Crust on Kuiper Belt Objects Experiencing Rayleigh-Taylor Instabilities*](#) [#2559]
We investigate the role of Rayleigh-Taylor instabilities in overturning the crust of KBOs. We conclude that small KBOs can retain an undifferentiated crust.