Monday, March 21, 2016

PLANETARY DIFFERENTIATION: SO METAL

2:30 p.m. Montgomery Ballroom

Chairs: Etienne Médard
Kathleen Vander Kaaden

2:30 p.m. Duncan M. S. * Dasgupta R.
**Experimental Constraints on Carbon Solubility in Terrestrial Magma Oceans: Implications for the Efficiency of Early Carbon Cycling on Earth and Mars** [#1774]
Experiments show / Carbon in magma oceans / Degas at low P.

2:45 p.m. Steenstra E. S. * Lin Y. H.  Rai N.  Jansen M.  van Westrenen W.
**Carbon as the Dominant Light Element in the Lunar Core** [#1842]
Geochemical arguments suggest carbon, not sulfur is the dominant light element in the lunar core.

**Carbon Solubility in Si-Fe-Bearing Metals During Core Formation on Mercury** [#1474]
Mercury’s carbon / Will it go into metal? / Depends on Si.

**High Concentrations of Highly Siderophile Elements were Stripped from Earth’s Mantle by the Segregation of Exsolved Iron Sulfide Melt** [#1112]
Contrary to conventional wisdom, segregating metal increases HSE concentrations in Earth’s mantle during core formation because of effects of P, T, and S content.

3:30 p.m. Wang Z. * Laurezn V.  Petitgirard S.  Becker H.
**Earth’s Moderately Volatile Element Composition May Not Be Chondritic: Evidence from In, Cd, and Zn** [#1219]
Indium, Cd, and Zn abundances in silicate Earth and high P-T metal-silicate partitioning data are combined to discuss volatile element composition of bulk Earth.

3:45 p.m. Righter K. * Pando K.  Danielson L. R.  Humayun M.  Righter M.  et al.
**Effect of Silicon on Activity Coefficients of Siderophile Elements (P, Au, Pd, As, Ge, Sb, and In) in Liquid Fe, with Application to Core Formation** [#2116]
Measured activity coefficients in Fe-Si liquids show that high PT equilibration of Earth’s mantle with a Si-bearing core can explain mantle In, Ge, As, and Sb.

4:00 p.m. Fei Y. * Shibazaki Y.
**Compositions and Mobility of Metallic Immiscible Liquids at High Pressure and Temperature: Implications for Differentiation of Small Planetary Bodies** [#1719]
We examine melting behavior and composition of immiscible liquids in the Fe-Ni-S-O-Si system and percolative behavior of immiscible liquids in olivine matrix.

4:15 p.m. Jacobson S. A. * DeMeo F.  Morbidelli A.  Carry B.  Frost D.  et al.
**There’s Too Much Mantle Material in the Asteroid Belt** [#1895]
The ratio of crust to mantle material in the asteroid belt indicates that these bodies originate as ejecta from giant impacts on the growing terrestrial planets.

4:30 p.m. Lunning N. G. * McCoy T. J.  Corrigan C. M.
**Consequences of Hercynite Crystallization During Differentiation of CV Chondrite-Composition Parent Bodies** [#1682]
Hercynite may crystalize and segregate from silicate partial melts, keeping $^{26}$Al in planetesimal interiors during differentiation under oxidizing conditions.