Thursday, July 30, 2015
VOLATILES IN THE SOLAR SYSTEM
8:30 a.m. Stanley Hall Room 105

Chairs: **Frederic Moynier**
Henner Busemann

8:30 a.m. Moynier F. * Pringle E. Hezel D.
Zn Isotopes in Chondrites, Chondrules, and Matrix: Origin of the Volatile Element Depletion in Chondrites **[#5205]**
The variations of Zn isotope ratios among carbonaceous chondrites show that the volatile element depletion in solar system material occurred in the solar nebula. We will also present the Zn isotopic composition of chondrules and matrix from carbonaceous chondrites.

8:45 a.m. Wiederhold J. G. Schönbächler M. *
The History of Volatile Elements in the Solar System: Mercury Isotope Systematics in Chondrites and Eucrites **[#5176]**
New Hg isotope and concentration data reveal Hg heterogeneites indicating a multistage evolution for Hg in the analyzed meteorites. The data shows nucleosynthetic homogeneity for Hg isotopes.

9:00 a.m. Williams J. T. * Sharp Z. D. Lewis J. A. Shearer C. K. McCubbin F. M. Agee C. B.
Using Chlorine Isotopes to Track the Composition of Ice Incorporated into Chondrite Parent Bodies **[#5309]**
Evidence for an isotopically light chlorine solar nebula and use of chlorine isotopes as a unique view into the composition of ice incorporated into chondrite parent bodies.

9:15 a.m. Meshik A. P. * Pravdivtseva O. V. Burnett D. S. Hohenberg C. M.
Primitive Terrestrial Xenon: A Relation to Refined Composition of Solar Wind **[#5371]**
Refined xenon isotopic analyses of solar wind delivered by Genesis Mission and experiments demonstrating modification of apparent fission yields due to chemical fractionating of Xe precursors are probably two essential ingredients to understand primordial terrestrial xenon.

9:30 a.m. Gilmour J. D. * Crowther S. A.
Characterising Phase Q and the Q-Process with Iodine and Xenon **[#5255]**
Iodine-xenon systematics constrain the incorporation mechanism and loss during processing of Q-Xe and Xe-P3, and indicate their relationship to one another.

9:45 a.m. Crowther S. A. * Gilmour J. D.
The Iodine-Xenon System In Achondrites **[#5242]**
The geochemical behaviour of Pu, I and Xe contributed to the volatile reservoirs of terrestrial planets. We report I-Xe data from NWA 7325 and compare to other achondrites, which indicate a range of behaviours during early igneous activity.

10:00 a.m. Amari S. * Messenger S. Clemett S. J. Meshik A.
Identification of Q from Saratov (L4) **[#5127]**
We examined organic matter and C and N isotopic ratios in Q-rich fractions from Saratov (L4). We found three spots with $^{14}N/^{15}N$ ratios that are identical to that of Jupiter (435 ± 57), and high N and O contents. We concluded that these spots represent Q.

10:15 a.m. Holinger S. Riebe M. Clay P. L. Gilmour J. D. Ruzie L. Kuga M. Maden C. Busemann H. *
Online Etching of a Neutron-Irradiated Acid-Resistant Residue of Allende — Clues to the Character and Origin of Phase Q? **[#5227]**
The online etching noble gas study of the n-irradiated HF/HCl-residue of Allende yields a late I-Xe age, little Q-gas and a delayed gas release compared to an unirradiated residue run. First data for a larger Vigarano residue might also be presented.

10:30 a.m. Ciesla F. J. * Yokochi R.
Developing Quantitative Models for the Trapping of Noble Gases in Amorphous Ice **[#5072]**
Amorphous ice traps. / But how much does it take in? / Models will tell us.

10:45 a.m. Righter K. * Pando K. M. Danielson L. R.
The Combined Strength of Thermodynamics and Comparative Planetology: Application of Activity Models to Core Formation in Terrestrial Bodies **[#5277]**
We combine our new data on the effect of Si and C on metal-silicate partitioning of volatile elements Ge, In, As, and Sb with previous results to produce a model that can be applied to any terrestrial body.

11:00 a.m. Murty S. V. S. * Ghosh S.
Primordial ($^{40}Ar/^{36}Ar$) Ratio: New Results from Dyalpur Ureilite **[#5024]**
Primordial $^{40}Ar/^{36}Ar$ ratio has been determined from a combustion study of the acid residue of Dyalpur ureilite. Blank has been improved by careful experimentation, which resulted in a value of 1.1*10(E-4) for the primordial value of $^{40}Ar/^{36}Ar$.

11:15 a.m. McCoy T. J. * Bullock E. S.
Volatile-Rich Phases in Aubrites: Clues to Understanding the Mineralogy of Mercury? **[#5280]**
Roedderite, albite and djerfisherite occur in aubrites, hosting Na, K, S and Cl. Albite and djerfisherite have been implicated on Mercury. Does roedderite occur on Mercury as well, requiring peralkaline melts on the innermost planet?