

**Friday, March 19, 2004**  
**EARLY SOLAR SYSTEM CHRONOLOGY**  
**8:30 a.m. Salon C**

**Chairs: M. Wadhwa**  
**D. A. Papanastassiou**

- 8:30 a.m. Wadhwa M. \* Foley C. N. Janney P. E. Spivak-Birndorf L.  
*Mg Isotopic Systematics in Eucrites: Implications for the  $^{26}\text{Al}$ - $^{26}\text{Mg}$  Chronometer* [#1843]  
 We present high precision Mg isotopic analyses of several eucrites. Based on these results, and comparisons with Mn-Cr and Pb-Pb systematics in these meteorites, we present the implications for the viability of the  $^{26}\text{Al}$ - $^{26}\text{Mg}$  system as a chronometer.
- 8:45 a.m. Ito M. \* Ganguly J. Stimpfl M.  
*Diffusion Kinetics of Cr in Olivine and  $^{53}\text{Mn}$ - $^{53}\text{Cr}$  Thermo-Chronology of Early Solar System Objects* [#1324]  
 We have determined the Cr diffusivity in olivine as a function of temperature at controlled  $f\text{O}_2$  condition, and applied these data to evaluate the thermochronology (closure temperature, age and cooling rate) of olivine in pallasite.
- 9:00 a.m. Kleine T. Mezger K. Palme H. \* Münker C.  
*The W Isotope Composition of Eucrite Metals: Constraints on Timing and Cause of the Thermal Metamorphism of Eucrites* [#1230]  
 We present new W isotope data for eucrite metals that for the first time allow precise dating of the thermal metamorphism of eucrites.
- 9:15 a.m. Srinivasan G. \* Whitehouse M. J. Weber I. Yamaguchi A.  
*U-Pb and Hf-W Chronometry of Zircons from Eucrite A881467* [#1709]  
 Measurement of  $^{182}\text{Hf}$  abundance in zircons whose age has been determined using U-Pb system. This study presents the first result in which a mineral isochron for Hf-W is reported.
- 9:30 a.m. Huss G. R. \* Tachibana S.  
*Clear Evidence for  $^{60}\text{Fe}$  in Silicate from a Semarkona Chondrule* [#1811]  
 A radiating-pyroxene chondrule from Semarkona shows clear excesses of  $^{60}\text{Ni}$  correlated with Fe/Ni, implying the presence of live  $^{60}\text{Fe}$  when it formed. An initial  $^{60}\text{Fe}/^{56}\text{Fe}$  ratio of  $\sim 2.4 \times 10^{-7}$  implies  $(^{60}\text{Fe}/^{56}\text{Fe})_0$  for the solar system of  $\sim 5 \times 10^{-7}$ .
- 9:45 a.m. Moynier F. \* Télouk P. Blichert-Toft J. Albarède F.  
*The Isotope Geochemistry of Nickel in Chondrites and Iron Meteorites* [#1286]  
 Ni in ordinary chondrites becomes isotopically heavier in the order LL, L, H. This trend reflects mass-dependent fractionation during vaporisation. No strong  $^{60}\text{Ni}$  anomaly is detected. Segregation of the Earth's core started after the decay of  $^{60}\text{Fe}$ .
- 10:00 a.m. BREAK
- 10:15 a.m. Mostefaoui S. \* Lugmair G. W. Hoppe P.  
*In-Situ Evidence for Live Iron-60 in the Early Solar System: A Potential Heat Source for Planetary Differentiation from a Nearby Supernova Explosion* [#1271]  
 We report in-situ  $^{60}\text{Ni}$ -excesses in two minerals in Bishunpur. The inferred  $^{60}\text{Fe}$  abundance is the highest measured in a meteorite. It gives the first evidence for a supernova origin of  $^{60}\text{Fe}$ , which served as a heat source for planetary differentiation.

- 10:30 a.m. Chen J. H. \* Papanastassiou D. A. Wasserburg G. J. Ngo H. H.  
*Endemic Mo Isotopic Anomalies in Iron and Carbonaceous Meteorites* [#1431]  
Iron meteorites, carbonaceous meteorites and Ca-Al-rich inclusions show endemic isotope anomalies in molybdenum which correlate also with ruthenium effects.
- 10:45 a.m. Dauphas N. \* Foley N. Wadhwa M. Davis A. M. Göpel C. Birck J.-L.  
Janney P. E. Gallino R.  
*Testing the Homogeneity of the Solar System for Iron (54, 56, 57, and 58) and Tungsten (182, 183, 184, and 186) Isotope Abundances* [#1498]  
The solar nebula was homogenized at a planetary scale at the 0.2 and 0.5 level for  $^{56}\text{Fe}$  and  $^{58}\text{Fe}$ , respectively. Preliminary results seem to indicate the presence of a s-process tungsten component in leaching experiments of primitive meteorites.
- 11:00 a.m. Chaussidon M. \* Robert F. McKeegan K. D.  
*Li and B Isotopic Variations in Allende Type B1 CAI 3529-41: Traces of Incorporation of Short-lived  $^7\text{Be}$  and  $^{10}\text{Be}$*  [#1568]  
Allende CAI 3529-41 contains Li and B isotopic variations due to the in-situ decay of short-lived  $^7\text{Be}$  and  $^{10}\text{Be}$ . Thus CAI precursors were irradiated by the early Sun and no presolar component is required to explain  $^{10}\text{Be}$  in CAIs.
- 11:15 a.m. Gounelle M. \* Shu F. H. Shang H. Glassgold A. E. Rehm K. E. Lee T.  
*The Origin of Short-lived Radionuclides and Early Solar System Irradiation* [#1829]  
Using the irradiation model developed by Gounelle et al. (2001), we can reproduce the abundance of  $^7\text{Be}$  measured by Chaussidon et al. (2004, this conference). We also provide a tentative explanation for the hibonite grains that show a decoupling between  $^{26}\text{Al}$  and  $^{10}\text{Be}$  (Marhas et al. 2002).
- 11:30 a.m. Papanastassiou D. A. \* Chen J. H. Wasserburg G. J.  
*More on Ru Endemic Isotope Anomalies in Meteorites* [#1828]  
We present evidence for well-defined and resolved endemic isotope anomalies in Ru, consistent with an s-process deficit. Primitive meteorites, CAIs, and planetary differentiates (irons) show these effects and evidence of preserved isotope heterogeneities.
- 11:45 a.m. Lin Y. Guan Y. \* Leshin L. A. Ouyang Z. Wang D.  
*Evidence for Live  $^{36}\text{Cl}$  in Ca-Al-rich Inclusions from the Ningqiang Carbonaceous Chondrite* [#2084]  
From the observed  $^{36}\text{S}$  excesses in sodalite in calcium-aluminum-rich inclusions, we report the first direct evidence of the presence of  $^{36}\text{Cl}$  in primitive meteorites. The inferred  $(^{36}\text{Cl}/^{35}\text{Cl})_0$  ratios range from  $\sim 5 \times 10^{-6}$  to  $\sim 1 \times 10^{-5}$ .