

Friday, March 27, 2009
EARLY SOLAR SYSTEM CHRONOLOGY
8:30 a.m. Waterway Ballroom 5

- Chairs:** Gary Huss
Audrey Bouvier
- 8:30 a.m. Meyer B. S. * Huss G. R.
[*Galactic Chemical Evolution and the Steady-State Abundances of Short-lived Radioactivities in the Interstellar Medium* \[#1756\]](#)
Simple models that treat the build up of the galactic disk by metal-poor infall can provide useful information on the steady-state abundances of short-lived radioactivities in the interstellar medium. Details of such models are presented.
- 8:45 a.m. Huss G. R. * Meyer B. S.
[*Galactic Chemical Evolution and the Abundances of Short-lived Radionuclides Inherited by the Solar System from the Interstellar Medium* \[#1957\]](#)
We discuss the implications of a realistic model of galactic chemical evolution for the origin of the short-lived nuclides in the early solar system. A late addition of newly synthesized material, probably from a stellar source, is clearly required.
- 9:00 a.m. Leya I. * Schönbächler M. Halliday A. N.
[*Titanium Isotopes in CAIs — Heterogeneities in the Early Solar System* \[#1480\]](#)
We present Ti isotope data for CAIs from Allende and Efremovka. The new data demonstrate that n-rich isotopes, e.g., ^{50}Ti , ^{62}Ni , and ^{96}Zr , are correlated in CAIs and that the n-rich addition was heterogeneously distributed in the early solar system.
- 9:15 a.m. Yin Q.-Z. * Yamashita K. Yamakawa A. Tanaka R. Jacobsen B. Ebel D.
Hutcheon I. D. Nakamura E.
 [*\$^{53}\text{Mn}\$ - \$^{53}\text{Cr}\$ Systematics of Allende Chondrules and epsilon \$^{54}\text{Cr}\$ —Cap Delta \$^{17}\text{O}\$ Correlation in Bulk Carbonaceous Chondrites* \[#2006\]](#)
New Allende chondrules ^{53}Mn - ^{53}Cr date suggest they formed at 4567.5 Ma ago, removing the age gap with CAIs. Strong correlation of nuclear anomalies of $\epsilon^{54}\text{Cr}$ with $\Delta^{17}\text{O}$ from the same samples suggests nucleosynthetic origin of oxygen anomalies may still be viable.
- 9:30 a.m. Mishra R. K. Goswami J. N. * Tachibana S. Huss G. R. Rudraswami N. G.
[*Fe-Ni and Al-Mg Isotope Systematics in Chondrules from Unequilibrated Ordinary Chondrites* \[#1689\]](#)
Fe-Ni and Al-Mg isotope systematics study was carried out on Unequilibrated ordinary chondrites which suggest supernova as the plausible source of ^{60}Fe ejected simultaneously with ^{26}Al .
- 9:45 a.m. Tachibana S. * Huss G. R. Nagashima K.
[*Ion Microprobe Study of \$^{60}\text{Fe}\$ - \$^{60}\text{Ni}\$ System in Ferromagnesian Pyroxene Chondrules in Krymka \(LL3.1\) by Multicollection* \[#1808\]](#)
We report our first multi-collection ion-microprobe data for the ^{60}Fe - ^{60}Ni systems in ferromagnesian pyroxene-rich chondrules from Krymka (LL3.1). Three measured chondrules showed excesses of ^{60}Ni , but the ^{60}Fe - ^{60}Ni systems may have been disturbed.
- 10:00 a.m. Connolly H. C. Jr.* Young E. D. Huss G. R. Nagashima K. McDonough W. F. Ash R. D.
Beckett J. R. Tonui E. McCoy T. J.
[*Supra-Canonical \$^{26}\text{Al}\$ Detected by In Situ LA-MC-ICPMS and SIMS Techniques: But What Does It All Mean?* \[#1993\]](#)
We report a comprehensive study of a CAI from Allende to address the role of analytical artifacts and test interpretations of supra-canonical $^{26}\text{Al}/^{27}\text{Al}$ data. Agreement between LA-MC-ICPMS and SIMS techniques for the ^{26}Al - ^{26}Mg system is demonstrated.

- 10:15 a.m. Ito M. * Messenger S.
[High Precision Magnesium Isotopic Measurement of CAI Minerals with Low Al/Mg Ratio from Allende Utilizing a NanoSIMS 50L Ion Microprobe](#) [#1740]
We report high-precision Mg isotopic measurements in melilite, spinel and fassaite in an Allende CAI by a NanoSIMS 50L with four Faraday cups in multidetection in order to evaluate the chronology of complex history of CAIs in the early solar system.
- 10:30 a.m. Wadhwa M. * Janney P. E. Krot A. N.
[Evidence of Disturbance in the \$^{26}\text{Al}\$ - \$^{26}\text{Mg}\$ Systematics of the Efremovka E60 CAI: Implications for the High-Resolution Chronology of the Early Solar System](#) [#2495]
We report results of a laser ablation MC-ICPMS study of the Efremovka E60 CAI. Our data indicate that the ^{26}Al - ^{26}Mg systematics in E60 are disturbed and we present the chronological implications of this finding.
- 10:45 a.m. Kleine T. * Bourdon B. Irving A. J.
[Hf-W Chronology of the Angrite Parent Body: Timing of Accretion, Core Formation and Magmatism](#) [#2403]
We present Hf-W isochrons for angrites and compare the Hf-W ages to those obtained from the Pb-Pb, Al-Mg and Mn-Cr chronometers. The Hf-W data are furthermore used to estimate the timescale for the accretion and earliest differentiation of the angrite parent body.
- 11:00 a.m. Shukolyukov A. * Lugmair G. W. Irving A. J.
[Mn-Cr Isotope Systematics of Angrite Northwest Africa 4801](#) [#1381]
We studied the Mn-Cr isotope systematics of the angrite Northwest Africa and calculated a $^{53}\text{Mn}/^{55}\text{Mn}$ ratio of $(0.96 \pm 0.04) \times 10^{-6}$ at the time of isotope closure. These data combined with a precise absolute Pb-Pb age allow to use this meteorite as an absolute time marker.
- 11:15 a.m. Bouvier A. * Wadhwa M.
[Synchronizing the Absolute and Relative Clocks: Pb-Pb and Al-Mg Systematics in CAIs from the Allende and NWA 2364 CV3 Chondrites](#) [#2184]
A Pb-Pb internal isochron of a type-B CAI from the NWA 2364 CV3 chondrite gives an absolute age of 4568.6 ± 0.2 Ma which contrasts with previous internal Pb-Pb ages of CAIs from Allende and Efremovka. Al-Mg systematics are also reported for CV3 CAIs.
- 11:30 a.m. Qin L. * Alexander C. M. O'D. Carlson R. W. Horan M. F.
[Understanding Various Contributions to the Chromium Isotopic Composition of Meteorites, and Their Implications for Mn-Cr Chronology](#) [#1672]
We show here that both nucleosynthetic effects and cosmogenic effects can contribute to the variations observed in Cr isotopic composition of meteorites. These suggest caution in use of the Mn-Cr chronometer.