

Thursday, March 15, 2007
POSTER SESSION II: CHONDRITES
6:30 p.m. Fitness Center

Ciesla F. J.

Cooling Off the Solar Nebula: The Origin of Moderately Volatile Element Depletions in Chondritic Meteorites [#1387]

Here we track the elemental depletions in planetesimals that form as the solar nebula cools by mass and angular momentum transport. The conditions needed to match chondrite depletions are compared to other constraints on solar nebula evolution.

Fischer-Gödde M. Wombacher F. Becker H.

Rhodium, Gold and Other Highly Siderophile Elements in Chondrites [#1625]

The abundances of Rh, Au, and other highly siderophile elements are reported for a set of chondrites from all major classes.

Tagle R. Berlin J.

Complementary Element Patterns — Is There a Genetic Relationship Between Carbonaceous and Enstatite Chondrites? [#2131]

We discuss bulk chemical element patterns of carbonaceous and enstatite chondrites and show that two chondrite groups (EH and CK) with very different petrographic characteristics have “complementary” patterns (=mirror images).

Bendersky C. Weisberg M. K. Connolly H. C. Jr. Ebel D. S.

Olivine and the Onset of Thermal Metamorphism in EH3 Chondrites [#2077]

We studied olivine in five EH3 chondrites. During metamorphism Cr is redistributed from olivine into metal and sulfide that form exsolution features. Olivine compositions in EH3s are useful for characterizing the most primitive E chondrites and classifying them into petrologic sub-types.

Rai V. K. Thiemens M. H.

Sulfur Isotopic Study of Primitive Carbon Phases from Meteorites [#1494]

Here we report high precision sulfur isotopic studies of primitive carbon phases (such as phase Q and ureilitic diamonds) from meteorites.

Garvie L. A. J. Baumgardner G. Buseck P. R.

Cross-Sectional Analysis of Carbonaceous Nanoglobules from the Tagish Lake (C2) Meteorite [#1924]

Focused ion beam thinning is used to reveal the inner structure of carbonaceous nanoglobules.

McCanta M. C. Treiman A. H. Alexander C. M. O'D. Dyar M. D.

Mineralogy and Petrography of the Amphibole-bearing R-Chondrite LAP 04840 [#2149]

We present a comprehensive study of the mineralogy of LAP 04840, discuss the similarities and differences with the other R-chondrites, and consider the implications for metamorphism on the parent body.

Dyar M. D. McCanta M. C. Treiman A. H. Sklute E. C. Marchand G. J.

Mössbauer Spectroscopy and Oxygen Fugacity of Amphibole-bearing R-Chondrite LAP04840 [#2047]

Mössbauer spectra of olivine, amphibole, mica, and whole rock from amphibole-bearing R-chondrite LAP 04840 are presented. All three minerals and the whole rock are rich in ferric iron, suggesting an oxygen fugacity of QFM+0.75 (± 0.75) log units.

Mikouchi T. Ota K. Makishima J. Monkawa A. Sugiyama K.

Mineralogy and Crystallography of LAP04840: Implications for Metamorphism at Depth in the R Chondrite Parent Body [#1928]

We report mineralogy and petrology of the LAP 04840 R chondrite by emphasizing crystallography of hornblende in this unusual chondrite. The presence of hornblende suggests high pressure and aqueous metamorphism at depth in the parent body.

Klima R. L. Pieters C. M. Sunshine J. M. Hiroi T. Bishop J. L. Lane M. D. Dyar M. D. Treiman A. H.

Coordinated Spectroscopic and Petrologic Investigation of LAP 04840: First Results of Infrared, Thermal and Raman Spectroscopy [#1710]

We present IR and Raman spectra of the amphibole-bearing R-chondrite LAP 04840 as part of a coordinated petrographic and spectroscopic investigation. Bulk spectra are dominated by olivine; amphibole can be distinguished in the near and thermal IR.