Mendybaev R. A.    Richter F. M.    Davis A. M.  
Reevaluation of the Åkermanite-Gehlenite Binary System [#2268]
Experiments were conducted to reevaluate 65+ years old data for the Åk-Ge binary system. The liquidus position from our experiments is consistent with the previous results, while the solidus is shifted by up to 20°C to lower temperatures for gehlenitic compositions.

Faure F.  
Oswald Ripening of Ca-rich Pyroxene. Implication on the Very Late Cooling History of Chondrule Mesostasis [#1624]
New experimental method of Oswald ripening established on the segmentation of dendritic pyroxene previously crystallized can be used to precise the very late cooling history of chondrule mesostasis.

Zega T. J.    Stroud R. M.  
Here we describe a new technique for creating transmission-electron-microscope samples of earth and planetary materials.

Rumble D.    Miller M. F.    Franchi I. A.    Greenwood R. C.  
Variations in the Oxygen Three-Isotope Terrestrial Fractionation Line Revealed by an Inter-Laboratory Comparison of Silicate Mineral Analyses [#1416]
An inter-laboratory comparison of analytical results for the slopes of Terrestrial Fractionation Lines (TFL) measured on a group of quartz and a separate group of garnet samples shows good agreement between laboratories. However, the slopes of the TFL’s for each mineral group differ slightly.

Wilson T. L.    Mittlefehldt D. W.  
Is Q for Quantum? From Quantum Mechanics to Formation of the Solar System [#1386]
The Q-phase carrier of entrapped planetary noble gases has not been identified. Endohedral carbon cages are viable candidates, and we argue that quantum effects have now become relevant to an ultimate understanding of Q-phase in cosmochemistry.

Yasuda S.    Nakamoto T.  
Possible Size of Porphyritic Chondrules in Shock-Wave Heating Model [#1674]
We examined that the possible size of porphyritic chondrules due to the stripping of the liquid surface by solving the heat conduction equation with the viscosity variation, and found that the shock-wave heating model is consistent with observations.

Chen J. H.    Papanastassiou D. A.  
Nickel Isotope Investigation by MC-ICP-MS and PTIMS [#1997]
We present high precision data for Ni isotopes in meteorites, by both MC-ICP-MS and TIMS.

Papanastassiou D. A.    Chen J. H.  
Comparison of MC-ICP-MS and NTIMS Ru Endemic Isotope Anomalies in Meteorites [#1976]
We obtained MC-ICP-MS data for Ru and compare with TIMS results. There is complete agreement for the endemic Ru effects, at $^{100}$Ru.

DeCarli P. S.    Xie Z.    Sharp T. G.  
Modeling the Impact Histories of Veined Chondrites [#1950]
Studies of the mineralogy of melt veins in chondrites constrain the pressure range of the vein-forming shock event. Heat flow calculations constrain the minimum shock pressure duration. The Autodyn(TM) wave propagation code was used to model impacts on a chondrite parent body.
In this study we investigate the effects of shock on pyroxene redox ratio. Shock has the potential to increase pyroxene Fe$^{3+}$ content, requiring caution to be exercised when applying redox dependent oxybarometers to shocked samples.

V partitioning into pyroxene is only partly controlled by $f_O^2$.

We perform hydrodynamic simulations of molten silicate dust particles in the framework of the shock-wave heating model for chondrule formation. We simulate the deformation of rapidly rotating molten droplets exposed to the high-velocity gas flow.

Only few chondrule bulk compositions exist. I use a computer model to verify whether 2D bulk data obtained from thin sections are representative for the 3D bulk. Results of the model are verified by serial sectioning of meteorite thick sections.

We propose a new viewpoint for the study of the depletion of siderophile elements in natural chondrules, based on the theoretical calculation of the separation of melted chondrules and iron spheres at the time of chondrule formation.