

Title: " Oxygen isotope systematics of chondrules: regional heterogeneity of oxygen isotope reservoirs in the solar nebula"

Abstract:

Chondrules are igneous spherules composed mainly of olivine, pyroxene, glass, and FeNi metal and are observed in most chondritic meteorites. Chondrules have formed by transient heating and rapid cooling, ~ 2 – 4 Myr after the oldest Ca–Al-rich inclusions (CAIs). Since chondrule-like objects were observed in cometary samples such as particles returned from comet Wild2, it is considered that chondrules were widely distributed from the inner Solar System to the Kuiper belt regions. Thus, chondrules are essential for understanding of the material evolution in the early Solar System. In this talk, I review recent high-precision SIMS analyses of chondrules in primitive chondrites and discuss difference in oxygen isotope systematics of chondrules among various types of chondrites, which may reflect regional heterogeneity of oxygen isotope reservoirs in the solar nebula.