

Title: First Formed Solids: Records of the Earliest Times of the Solar System

Abstract:

Meteorites and their components can be used to unravel the history of the early Solar System. Carbonaceous chondrites are meteorites that originated from undifferentiated parent bodies that formed within a few million years of the beginning of the Solar System. These meteorites contain calcium-aluminum-rich inclusions (CAIs), which are the oldest dated solids forming in our Solar System at ~4.567 billion years old and thus preserve a record of the earliest stage of Solar System formation. The radiometric dating of these CAIs and other meteoritic components provides important time constraints on the events that occurred in the early Solar System, whereas textures and microstructures in these CAIs preserve the evidence of disk processes in them. In this talk, I will discuss the results of a coordinated multi-technique approach to analysing CAIs and their components to reveal the timescales and conditions of their formation.