

General circulation of materials in the solar nebula

Hisayoshi Yurimoto^{1*}

¹Hokkaido Univ.

Distribution of oxygen isotope anomalies in the solar system has been interpreted by protoplanetary disk dynamics of water ice and water vapor (Yurimoto and Kuramoto, 2004). It seems to be that CAIs formed at the inner edge of solar nebula and chondrules formed in the gas disk (Itoh and Yurimoto, 2003). Elemental fractionation of Mg, Si and Fe among meteorite groups has been interpreted by matrix, CAI and chondrule formation in the inner solar nebula and outward transport of materials in the protoplanetary disk (Yurimoto and Kuramoto, 1998). Matrices of primitive chondrites consists of mechanical mixture of all kinds of constituents found in chondrites (Kunihiro et al., 2005). A comet contains high temperature materials (McKeegan et al., 2006; Nakamura et al. 2008). A cosmic symplectite (COS) has been found in a primitive chondrite (Sakamoto et al., 2007). These observation suggest that material circulation occurred over the whole solar nebula. In the talk, we discuss the mechanism of the general material circulation recorded in the primitive materials.