

Towards Microgravity Experiments for Planetary Sciences

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Preliminary experiments in microgravity have been started to understand the thermal environments at the early state of pre-solar nebula. Attempts have been focused on the formation of (1)chondrules (2)presolar dusts via evaporation, condensation and crystallization. Since these materials are crystallized without any crucibles or holders, very large supersaturated condition can easily be achieved. In order to perform these experiments, fast dynamic light scattering (FDLS) and real-time phase-shift interferometry (RPSI) would be applied, the former of which is used to measure the time dependent diameter of dust (>nm) and the latter of which is used to measure the temperature and the concentration of gases around melt or dusts. Preliminary results will be given.

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