In-situ observation of rapid solidification of Enstatite melts by using aero-acoustic levitation

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Rapid solidification of Enstatite (MgSiO3) was carried out to reproduce radial pyroxene texture chondrule in situ. In gravity, all samples were crystallized and had radial pyroxene texture. But in microgravity experiments using a parabolic flight crystals included glass and in containerless solidification experiments using aero-acoustic levitation only glass was formed. These results indicate the necessity for natural radial pyroxene to have a heterogeneous nucleation center.