

### CHONDRULES IN INTERPLANETARY DUST

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Morphologically intact chondrules of the type present in the major chondrite classes (OCs and CCs) are on average too large (~1 mm) to be abundantly present among micrometeorites (50-500 μm) and stratospheric dust particles (5-10 μm). Consequently, we found only 2 chondrules in a collection of about 300 micrometeorites. However, because chondrules have large masses (mg) they should melt during atmospheric entry and, therefore, some former chondrules should be present among the cosmic spherules. Because the primary mineral association has been destroyed during spherule formation only some bulk chemical features resistant to alterations during melting can be used to identify spherules of chondrule provenance. By means of decoupled Ir and Ni abundances, commonly observed in chondrules, we identified 12 of the 17 cosmic spherules analyzed by INAA to possibly be of chondrule descent. Similarly, 6 out of 11 unmelted coarse-grained crystalline micrometeorites bear the refractory siderophile element signature of chondrules. Thus, the non-hydrous portion of our micrometeorite population apparently has experienced processes very similar to those involved in chondrule formation.

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