

Relation between lodranites and acapulcoites

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Lodranites have been classified to stony-iron and acapulcoites also are as primitive achondrites. There are quite different in the both groups such as very coarse-grained lithology in lodranites and fine-grained in acapulcoites. However, meteorites belong to the both groups show unique similarities on their mineral assemblages (metal, ol, px and pl) and mineral compositions, and belong to same oxygen isotope compositions. There might be more important and more closed genetic relationship between lodranites and acapulcoites during their formation process. Recently those meteorites belong to the both groups have been classified as achondrites (Grady, 2000)

Recently 14 meteorites had been identified and classified as lodranite which is one of stony-iron meteorites group. Also 12 specimens have been as acapulcoites of the primitive achondrites group. In this presentation author give talk about lodranite subgroup and on genetic relationship with some lodranites and acapulcoites. Both lodranites and acapulcoites have been classified to different groups and also different type of meteorites for their lithology which is quite different in their grain size for long time. Nevertheless such texture, both meteorite groups are almost same mineral assemblages with holocrystalline texture in near equal granular, same mineral compositions and same oxygen isotope compositions. Lodranites might be one of igneous rocks in magma origin. In other hand, acapulcoites might also be one of metamorphic rocks formed by highly metamorphism of chondritic material. If acapulcoites is igneous (magma) origin, their unique lithology showing fine-grain crystalline texture is similar to those of some lodranites with more fine-grained lithology. Now it may not be sure that all lodranites and all acapulcoites are same origin, but some of them, in particular Yamato-791491 lodranite (Fig. 1) and ALH-78230 acapulcoite (Fig. 2), might be closed relationship in their origin. Recently those lodranites and acapulcoites have been classified as achondrites (Grady, Catalogue of Meteorites, 2000). Still more some closed genetic relationship among some of pallasites, mesosiderites, lodranites, achondrites and primitive achondrites will be expected during their formation process in the solar system evolution.

Fig.1

1mm

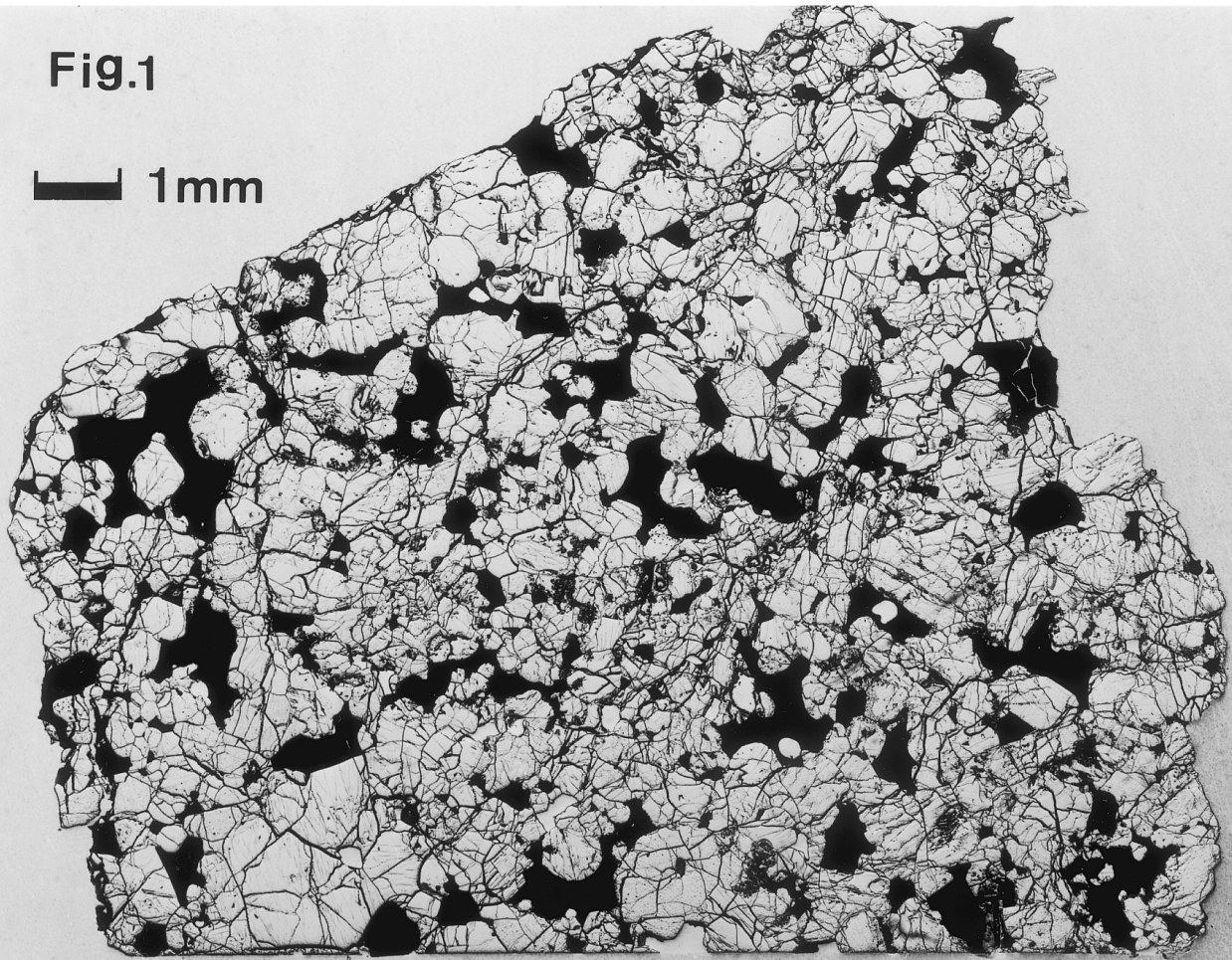


Fig.2

1 mm

