

PETROLOGICAL STUDY OF SIX ANGRITES INCLUDING NEW TYPE

Keizo Yanai[1]

[1] Dept. Civil and Environ., Faculty of Engin., Iwate Univ.

Angrites are one of quite unique type of meteorites belong to achondrites group. Recently five and more meteorites are known as an achondrite angrite. New meteorite specimen 1154 has been identified as an angrite meteorite which consists of aluminous clinopyroxene fassaite, plagioclase and calcic olivine kirschsteinite. The interior of 1154 is very fine grained-homogeneous appearances. Under the polarizing-microscope the sections are characterized by the quite unique texture of a very fine grained-holocrystalline lithology which is showing some liner with irregular patterns of slightly elongated brown pyroxene(fassaite)-clear plagioclase and very well elongated dendritic olivine aggregates. This unique textual patten looks like some dendritic textures in some terrestrial igneous rocks.

Pyroxene(fassaite) is the most abundant mineral and have remarkably high FeO/MnO ratio. Olivine(kirschsteinite) is more Fe-rich with wide compositional range Fo_{4.1-35.9}. Plagioclase is remarkably homogeneous and highly calcic, over An₉₇. Bulk chemical compositions of the meteorite specimen 1154 gives 38.3%SiO₂, 0.8%TiO₂ 13.8%Al₂O₃, 23.4%FeO, 0.2%MnO, 7.1%MgO, 15.1%CaO, 0.2%P₂O₅, 1.2%FeS, under 0.1%Fe, 38ppmNi and under 30ppmCo.

The meteorite specimen 1154 with angrite composition might be belong to one of an unusual achondrite angrite for it's unique dendritic texture. Angrite1154 is clearly distinguished from all known angrites that are the Angra dos Reis(stone), LEW86010, LEW87051, Asuka-881371 and Sahara99555 angrites for their quite unique unusual textures, main minerals and mineral compositions.