Quite unique achondrite 1152: Impactite(?) with howardite composition

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The meteorite specimen 1152 is an unbrecciated-holocrystalline achondrite showing quite unique texture. The lithology of this specimen is quite differ from all known achondrite meteorites, however it might be classified to one of howardite group in chemically and mineral assemblages. The specimen 1152 is as same as mineral assemblage of the most howardites which consist manily of pyroxene and plagioclase with some olivine. It is also almost same bulk chemistry of howardite, such as typical howardite Yamato-791157 polymict breccia. The unique texture of specimen 1152 might be indicated that this specimen is "impactite" with howardite compositions.

Meteorite specimen 1152 is a rounded half piece with thiny-black fusion crust. This specimen is not terrestrial rock, but it is a quite unique meteorite specimen showing unbrecciated-holocrystalline texture with typical howardite composition. The texture of specimen 1152 is characterized by remarkably parallel alignment of well elongated pyroxene and plagioclase. This texture is differed from all know achordrites, but it is resembled to those of some terrestrial schist rocks. Except of this unique texture of the specimen 1152, it's mineral assemblages, mineral compositions and bulk chemistry are very similar to those of some howardites in HED meteorites. In general, howardites are defined as one of achondrites group meteorites, appear always as the polymict breccias which are mixtures of various grade of diogenites and eucrites components. In the early solar system, howardites have been believed to be formed by the continuous and intense impactions on the meteorite parent body such as asteroid 4 Vesta. Therefore all howardites are well known as polymict breccias with typical brecciated texture, and they are always intermediates compositionally between diogenites and eucrites. Unfortunately there are not yet recognized any holocrystalline and/or monomict type meteorite specimens with howardite compositions for such definition. The specimen 1152 is as same as mineral assemblage of the most howardites which consist mainly of pyroxene and plagioclase with some olivine It is also almost same bulk chemistry of howardite, such as typical howardite Yamato-791157 polymict breccia. The unique texture of specimen 1152 might be indicated that this specimen is "impactite" with howardite compositions.