GROUPING OF YAMATO HED METEORITES BASED ON ^{26}Al CONTENTS AND CHEMICAL COMPOSITIONS.

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When the meteorite enters to atmosphere of the Earth, sometimes single meteoritic body is often broken to several pieces called meteorite shower. Therefore number of meteorite falls is not equal to number of meteorite pieces. Pairing of meteorite is important information to discuss the frequency of meteorite falls. There are many studies about pairing of Antarctic HED meteorites. [1] and [2] studied pairing of Yamato Eucrites and Howardites based on chemical compositions of their constituent minerals. [3] and [4] discussed about grouping of Yamato Eucrites based on ^{81}Kr ages. [5] discussed about pairing of Yamato Eucrites using ^{14}C ages.

Grouping for 47 Yamato HED meteorites is discussed in this study based on ^{26}Al contents and their major chemical compositions (Na, Mg, Al, Ca, Ti, Mn, Fe). ^{26}Al content data of 46 Antarctic HED meteorites were previously obtained from [6]. A new data of ^{26}Al content in Y-82082 (Eucrite) was obtained by AMS analysis. Chemical compositions of 47 Yamato HED meteorite samples were analyzed by Instrumental neutron activation analysis (INAA).

^{26}Al contents in 6 Yamato howardites were from 60 to 89 dpm/kg. They were grouped into 3 groups. ^{26}Al contents in 26 Yamato Eucrites were from 64 to 100 dpm/kg. These Eucrites were grouped into 8 groups. ^{26}Al contents in 15 Yamato diogenites were from 54 to 90 dpm/kg. These diogenites were grouped into 5 groups.

According to ^{26}Al contents and chemical compositions in those of samples in this work, Yamato howardites may be grouped into 5 groups, Yamato eucrites may be grouped into 9 groups and Yamato diogenites may be grouped into 6 groups.

The result in this work shows that HED meteorites might fall 20 times on the Yamato mountains region, Antarctica.

However, one polymict eucrite and two howardites do not give consistent ^{26}Al contents for different fractions from same meteorite block. These fractions also do not give consistent values of chemical composition. These cases may be explained with production rate of ^{26}Al. ^{26}Al is produced by nuclear reaction between cosmic-ray and major element of meteorites, such as Si and Al. Therefore to discuss pairing and frequency of meteorite falls, howardites and polymict eucrites need to solve relation between ^{26}Al contents and chemical composition of their specimens.

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