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PETROCHEMICAL CHARACTERISTICS OF SOME ULTRAMAFIC GRANULITES IN ONGUL ISLANDS, EAST ANTARCTICA (ABSTRACT)

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Ultramafic granulites in the East and West Ongul Islands area can be grouped into at least two types, A (free from plagioclase and garnet) and B (with plagioclase and/or garnet). Type A tends to occur as massive isolated blocks or pods and type B as concordant sheets. Both of the types with different mode of occurrence and mineralogy show different petrochemical characteristics from each other. Type A is relatively rich in MgO and poor in Al_2O_3, K_2O and TiO_2 as compared with type B. Judged from the mode of occurrence and petrochemical characters, both types of ultramafic granulites as a whole are inferred to have been originated from the rocks intimately related with cumulate complexes. Type A is poorer in such incompatible elements as Ti and K than type B, so the degree of partial melting to give birth to the original rocks of the former is rather higher than the case of the latter. Moreover, it is worthy of note that most of the metabasites in the Prince Olav Coast, which are free from orthopyroxene, are plotted in the compositional range of type B here defined, and orthopyroxene-bearing extraordinary ones are plotted out of the range. More detailed investigations on the mode of occurrence, classification and the spatial distribution of ultramafic rocks in the Lützow-Holm Complex will contribute to the knowledge on their origin and the tectonic setting of the Complex.

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