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Detailed mapping in the southern part of the Ilimaussaq alkaline intrusion, South Greenland

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Detailed mapping was continued during the 1975 field season in the southern part of the Ilimaussaq intrusion (Andersen *et al.*, 1973; Andersen, 1974). Work was aimed at elucidation of the age relationships between the main rock types: sodalite-foyaite, naujaite, black arfvedsonite-lujavrite and green aegirine-lujavrite.

One of us (S. A.) enlarged the detailed map of the lujavrite breccia by another 1.5 km² in the region of Agpat. The geological pattern in this area corresponds to that previously found around hill 435 m although it is now clear that two generations of green lujavrite can be distinguished in addition to the black lujavrite. The older generation of green lujavrite pre-dates the black lujavrite. In contrast, the younger generation is contemporaneous with the black lujavrite and formed from the same magma pulse. This development endorses the

findings by Demin (1970) in the region of Kangerdluarssuk and thus a general evolution scheme seems valid for the whole length of the lujavrite breccia.

One of us (J. C.) constructed a net of geodetic reference points covering the southern part of the intrusion. With a few exceptions the points are determined with an accuracy better than 5 m. The point density is highest north-west of Lakseelv with distances of a few hundred metres. In the rest of the intrusion base-lines defined by two points can generally be found within 1 km.

K. M. and P. N. spent a week mapping in detail the boundary between sodalite-foyaite and naujaite. The results have not yet been fully analysed, but the first impression is that the boundary surface can be regarded as a series of planes with slightly varying dip and strike. Locally, at least, there is indication that the banding in the naujaite is discordant with the boundary. This might indicate that rearrangements took place in the magma chamber when crystallisation changed from a foyaitic to a naujaitic stage. This is further substantiated by the knife-sharp western contact, which is replaced by the gradual transition farther to the east.

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Environmental, geochemical and ecological studies in the region around the Ilimaussaq alkaline intrusion, South Greenland

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 and Henning Sørensen

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