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## Complexity of the early Archean Uivak Gneiss: insights from Tigigakyuk Inlet, Saglek Block, Labrador, Canada and possible correlations with south West Greenland

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### Abstract

The Saglek Block of Labrador comprises Eoarchean to Neoproterozoic lithologies, metamorphosed at high temperature at ca. 2.7 Ga. Here, we investigate the gneisses of Tigigakyuk Inlet, previously identified as the locality exposing the most ancient rocks in the Saglek Block. New geochronological and geochemical results reveal a multistage history. Precise magmatic emplacement ages of 3.75 to 3.71 Ga refine the age of the Uivak Gneiss. Zircon rims and neoblastic grains with low Th/U record metamorphism at ca. 3.6 and 2.8-2.7 Ga. Magmatism between these tectono-metamorphic events is recorded by the presence of meta-mafic dykes in the gneisses, gabbroic enclaves in ca. 2.7 Ga syn-tectonic granitoids, as well as by a ca. 3.56 Ga age for monzonitic gneiss in which metamorphic zircon is present as xenocrysts. Felsic (TTG) magmatism between ca. 3.75 Ga and 3.71 Ga, as well as metamorphism at both ca. 3.6 Ga and 2.8-2.7 Ga, is also recognised in the Itsaq Gneiss Complex of south West Greenland, and is restricted to the Færingehavn Terrane. Our new data enable a more rigorous correlation between these formerly conjugate parts of the North Atlantic Craton.

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