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Contrasting tectonometamorphic styles in the Ungava Orogen, Nunavik, Québec; Testing the Paleoproterozoic Paired Metamorphic belt hypothesis

The Ungava Orogen formed during the Paleoproterozoic Trans-Hudson Orogeny in response to the collision between the Churchill upper plate and the Archean Superior Craton. The hinterland of the Ungava Orogen exposes the contact between the upper plate Narsajuaq domain and lower plate Kovik domain along the Kovik tectonic window. The recent discovery of eclogite within the Kovik domain indicates that it is one of the earliest examples high-pressure crustal rocks known on Earth, whereas the Narsajuaq domain records widespread granulite facies metamorphism. Whether these two tectonometamorphic styles were contemporaneous and coeval with the formation of major mineral deposits in the region, remains an open question. To help close this knowledge gap, the current project seeks to investigate the extent and timing of metamorphism in the lower and upper plates of the Ungava Orogen. The project involves helicopter-supported field work and laboratory work, including mineral chemistry by µ-XRF, EPMA, LA-ICP-MS and isotopic analysis by MC-ICP-MS and TIMS.