

## 1.96 Ga kyanite-epidote eclogites with 605 Ma granulite-facies overgrowth in the Ubendian Belt, Tanzania

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Eclogites and eclogite-facies rocks from the Ubendian–Usagaran Orogenic Belts (UUOBs) provide a clue to understand petrotectonic and geochemical processes of a Paleoproterozoic subduction zone along the Archean cratons. Previous studies have demonstrated that the both Paleoproterozoic (1.89–1.86 Ga in Ubendian/Western UUOBs and ~2.0 Ga in Usagaran/Eastern UUOBs) and Neoproterozoic (590–520 Ma) eclogites in Western UUOBs have a MORB-like geochemical affinity. Some Neoproterozoic eclogites have an arc basalt affinity, manifesting the last amalgamation of Gondwana along the suture that separated the Archean cratons of Tanzania and Bangweulu. Although the Western UUOBs has thrusts onto the Tanzania Craton around 550 Ma, no Pan-African age suture zone has so far been recognized in the Eastern UUOBs.

Recent *in-situ* zircon and monazite geochronological data reveals a poly-orogenic nature of the Western UUOBs. The Ufipa Terrane in Eastern UUOBs hosts epidote-bearing kyanite eclogites that were overprinted by a Pan-African granulite-facies regional metamorphism. Despite the high-temperature overprinting event, eclogite-facies stage kyanite and garnet preserve inclusions of prograde clinozoisite and omphacite. Zoned metamorphic zircons contain fluid inclusion-bearing cores of 1.96 Ga for a prograde eclogite-facies stage and rims of 605 Ma granulite-facies overgrowths. In contrast, kyanite-free eclogite were formed during Neoproterozoic time between 590 and 520 Ma in a Pan-African suture that separated the Tanzania Craton from the Bangweulu Craton. The Neoproterozoic eclogites have also MORB-type geochemistry and contains Cl-rich amphiboles. Development of omphacite-rich veins suggest fluid infiltration and consequent mineral precipitations during eclogite-facies metamorphism.

In this contribution, we will present new insights into the Proterozoic subduction-zone metamorphism and metamorphic evolution of the UUOBs.