

## **NEW AGE CONSTRAINTS ON PROTEROZOIC OROGENIC EVENTS IN CENTRAL AND SOUTHERN AFRICA**

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In Central and Southern Africa, Proterozoic crustal evolution is related to the Palaeoproterozoic Ubendian, Mesoproterozoic Kibaran-Irumide-Lurio and Neoproterozoic Katangan-Damara orogenies. Recent single-zircon SHRIMP U-Pb dating studies have provided a new geochronological framework for Proterozoic orogenesis in this region. The basement rocks in the Central African Copperbelt comprise an Ubendian magmatic arc terrain of calc-alkaline granitoids and associated metavolcanics (Lufubu Schists), which have been dated at between 1991 and 1874 Ma. The 2049 Ma Mkushi gneisses of central Zambia are considered part of the magmatic arc. The Muva quartzites, overlying this basement, have detrital zircons ranging in age from 3.18 Ga to 1.941 Ga, the latter age being the maximum age for the Muva. The Nchanga Granite, dated at  $877 \pm 11$  Ma, gives a maximum age for the nonconformably overlying Katangan Sequence. The basal Katangan Roan Supergroup contains detrital zircons dated at ca. 880 Ma and 2.0-1.8 Ga. The newly recognised Ngamiland Belt (1234 to 1019 Ma) of NW Botswana and Namibia may form a link with Mesoproterozoic terrains of Namaqualand, South Africa, where Ubendian, Kibaran and Namaquan episodes have been delineated. Granite gneisses of the Gladkop and Little Namaqualand suites have emplacement ages of 2.02-1.82 Ga and 1.22-1.17 Ga respectively, with metamorphic overprinting at 1.06 Ga. The Namaquan episode, dated at 1.06-1.03 Ga, was a period of crustal thickening and magmatism, which was responsible for and coeval with the peak of metamorphism. Low pressure granulite-facies metamorphism resulted from advective heating and crustal thickening by magmatic intrusions over a 30 Ma period.