

## **Pb-Pb zircon ages for the Zambezi Belt, Zimbabwe: evidence for terrane accretion and orogenic reactivation.**

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Single zircon Pb-Pb evaporation ages have been obtained from a variety of rock types along the central Zambezi Belt in Zimbabwe and Mozambique, with the aim to constrain the Neoproterozoic accretionary and structural-metamorphic history of the belt.

Tectonic units in the belt comprise Archean (2600 Ma) and Paleoproterozoic (2200 Ma) gneisses intruded by (syn-tectonic) 1000-1050 Ma granites, 850-900 Ma layered mafic-ultramafic units, 750-800 Ma alkaligranites and 500-550 Ma late-tectonic pegmatites. Linked to structural-metamorphic constraints these ages have been interpreted as follows:

- 1) The main compressional Zambezi Belt orogeny, which led to the juxtaposition of Archean, Paleoproterozoic and Mesoproterozoic crustal fragments, occurred around 1000 Ma as part of the formation of Rodinia. This event was accompanied by high-P metamorphism.
- 2) Between 850-750 Ma collapse of the 1000 Ma Zambezi Belt led to N-S or NE-SW extension of the belt. This process was accompanied by the formation of a crustal-scale low-angle detachment, the intrusion of large volumes of granite and exhumation of older eclogitic rocks, which experienced amphibolite facies metamorphic overprints. Extension did probably not result in full continental break-up.
- 3) Around 550-500 Ma a collisional event associated with the formation of Gondwana resulted in renewed burial and metamorphic recrystallisation of the Zambezi Belt and the adjacent craton margin.