



## **New U-Pb zircon geochronology of the Choma-Kalomo Block (Zambia) and the Dete-Kamativi Inlier (Zimbabwe), with implications for the extent of the Zimbabwe Craton.**

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The Choma-Kalomo Block is a north-east trending, Mesoproterozoic terrane located in southern Zambia. It is composed of as yet undated gneissic basement with a high-grade metamorphosed supracrustal metasedimentary sequence, which is intruded by hornblende granites and gneisses of the Choma-Kalomo Batholith, that is dated between ca. 1.37 and 1.18 Ga. Our new zircon U-Pb age data on metasedimentary rocks of the Choma-Kalomo Block identifies samples of different ages, with slightly different provenances. The oldest metasedimentary rock is a muscovite-biotite schist, which has only Palaeoproterozoic detrital zircons, the two age clusters around 2.03-2.02 Ga and 1.8-1.9 Ga, correspond to the ages of granitic intrusion, and metamorphism, in the Magondi Mobile Belt on the western side of the Archaean Zimbabwe Craton. The second sample is a garnetiferous paragneiss, which contains both Palaeoproterozoic (2.04 Ga), and Mesoproterozoic zircons, ca. 1.36 Ga, derived from the granites of the Choma-Kalomo Batholith. The third sample is a biotite-muscovite schist, in which the detrital zircon ages fall into four separate clusters: ca. 3.39 Ga, ca. 2.7-2.6 Ga, ca. 2.1-1.7 Ga (with a peak at ca. 1.18 Ga), and 1.55 – 1.28 Ga. The Archaean zircons in this sample are derived from the Zimbabwe Craton, while the Palaeoproterozoic samples come from the Magondi belt, and the youngest zircons come from both phases of the Choma-Kalomo Batholith. A possible connection between the Choma-Kalomo Block and the Dete-Kamativi Inlier – some 150 km to the south-east in western Zimbabwe – has been proposed on the basis of similarities in the nature of their Sn-Ta-muscovite pegmatite mineralisation. The Dete-Kamativi Inlier, which is part of the Magondi Mobile Belt, is a window into Palaeoproterozoic north-east trending belts of deformed and metamorphosed supracrustal rocks. By dating localities which we suspect form the basement to the surrounding younger sediments, along with selected pegmatites from within the inlier itself; we have concluded that the Choma-Kalomo Block and Dete-Kamativi Inlier are, in fact, coeval. Preliminary results for a number of these granites and gneisses give ages between 2.05 and 2.02 Ga; correlating well with the 2.03-2.02 Ga ages of detrital zircons from the Choma-Kalomo Block. While these basement rocks are not Archaean in age, we have identified Archaean aged zircons in both the Choma-Kalomo Block and the Dete-Kamativi Inlier, making them the Western most occurrences of Archaean granitoids, implying that the Zimbabwe Craton extends much further west under the Magondi Belt than previously thought.