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**Accretionary tectonic architecture inferred from offset magmatic age signatures between terranes of the Beishan orogenic collage in the southern Central Asian Orogenic Belt, NW China**

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Analysis of the detrital zircon geochronological record in Late Paleozoic – Early Mesozoic clastic deposits of the Beishan orogenic collage, in the Central Asian Orogenic Belt, indicates patterns of cyclical, staged Paleozoic accretionary processes. Comparison of age spectra sourced from two Beishan arc terranes reveals similar signatures offset by 40-50 million years. Samples from the southern arc terrane indicate magmatic peaks at 275, 370 and 430 Ma with a 50 m.y. hiatus from 350-300 Ma. Samples from the northern arc terrane exhibit a similar pattern yet with consistently earlier component peaks at 310, 400 and 445 Ma with a 40 m.y. hiatus from 380-340 Ma. This illustrates staged subduction initiation, ocean consumption and a progressive Silurian–Devonian north-to-south docking of the source arc terranes along two separate suture zones. Detrital geochronology of a sandstone unit (single peak at 445 Ma) within the northern suture, along with coincident tuff and pillow basalt U-Pb zircon ages ( $409 \pm 2.9$  and  $416.6 \pm 15.0$  Ma, respectively) may redefine the youngest accreted oceanic volcanic and sedimentary successions as Devonian. Late, post-collision plutonism relates to extension localized within the two suture zones. This work correlates the initiation and cessation of arc magmatism with ophiolite generation and emplacement, respectively, within two middle Paleozoic sutures. It supports regional models that assume ophiolite belts correlate to suture zones, each created in distinct, contemporaneous subduction systems between arcs within limited ocean basins, now amalgamated into the southern Central Asian Orogenic Belt.

