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Tectonic transition associated with Kazakhstan Orocline in the Late Paleozoic: magmatic archives of western Chinese Tianshan

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Kazakhstan accretionary system was a principle component of the Central Asian Orogenic Belt (CAOB) that is one of the largest accretionary orogens on earth. The Kazakhstan composite continent could have been established in the Early Paleozoic by the Kazakhstan accretionary system in the form of progressively amalgamations of diverse tectonic units, such as continental ribbon, accretionary prim, oceanic remnant and arc material. Subsequently, the composite continent was bended to form a spectacular U-shaped architecture that probably occurred in the Late Paleozoic. The western Chinese Tianshan is situated on the south wing of the Kazakhstan Orocline, featured by extensive magmatim, intense deformation and voluminous mineralization. Our new geochronological and geochemical data suggest a noticeable magmatic gap between Late Devonian and Early carboniferous and contrasting magma sources of these magmatic rocks. The significant shifts correspond to the tectonic transition from terrane amalgamation to mountain bending in the Early Paleozoic.

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