



Terminal magmatic activities along the Solonker suture zone in the southern Central Asian Orogenic Belt: New insights from the end-Permian magmatic record

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A compilation of U-Pb age, geochemical and isotopic data for granitoid plutons in the southern Central Asian Orogenic Belt (CAOB), enables evaluation of the interaction between magmatism and orogenesis in the context of Paleo-Asian oceanic closure and continental amalgamation. These constraints, in conjunction with other geologic evidence, suggest that following consumption of the ocean, collision-related calc-alkaline granitoid and mafic magmatism occurred at 255 to 251 Ma along the Solonker-Xar Moron suture zone. The linear end-Permian magmatism is interpreted as in a setting of continental contraction and crustal thickening, probably as a result of slab break-off. Crustal anatexis slightly post-dated the earliest phases of collision, producing adakite-like granitoids with some S-type granites during the Early-Middle Triassic (ca. 251-245 Ma). Between 235 and 220 Ma, the local tectonic regime switched from compression to extension, probably caused by regional lithospheric extension and orogenic collapse. The proposed collision-related magmatism from the southern CAOB is thus a prime example of minor, yet tell-tale linking magmatism with orogenic contraction and collision in an archipelago-type accretionary orogen.