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## No continuous suture between Kudi and Oyttag: new evidence from geochronology and geochemistry data

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A lateral continuity between belts of mafic and ultramafic Paleozoic rocks found in the West Kunlun of Northern Tibet and comparable rocks, known from an outcrop in the Chinese North Pamir, has long been proposed. This led to the concept of an originally generally straight, E–W trending Oyttag–Kudi suture zone. In turn, this paleogeographic model formed a key constraint for the hypothesis, that the Pamir has indented 300 km northward with respect to Tibet during the Cenozoic. We show, that the arc volcanic rocks found in the North Pamir are distinguishable from the units known from the West Kunlun.

The North Pamir is dominated by Paleozoic arc volcanic rocks. We present new geochemical and geochronological data to give a holistic view of an early to mid-Carboniferous arc complex. This belt was previously identified as an intraoceanic arc in the northeastern North Pamir. Our data yields evidence for a gradual lateral change towards the west into a Cordilleran-style arc in the Tajik North Pamir. Large leucocratic granitoid intrusions are hosted in part by Devonian to Carboniferous oceanic crust and the metamorphic Kurguvad basement block of Ediacaran age (maximum deposition age) in Tajikistan. LA-ICP-MS U–Pb dating of zircons, together with whole rock geochemistry derived from tonalitic to granodioritic intrusions, reveal a major Viséan to Bashkirian intrusive phase between 340 and 320 Ma ago.

The West Kunlun experienced two major intrusive phases, connected with arc-volcanic activity — a first phase during Proto-Tethys closure in Ordovician and Silurian times and a second phase connected to the Triassic Paleo-Tethys closure. The Carboniferous arc-volcanic phase in the North Pamir clearly postdates Paleozoic arc-magmatic activity in the West Kunlun by ~100 Ma. This observation, along with geochemical evidence for a more pronounced mantle component in the Carboniferous arc-magmatic rocks of the North Pamir, disagrees with the common model of a continuous Kunlun belt from the West Kunlun into the North Pamir. Moreover, Paleozoic oceanic units younger than and west of Tarim cratonic crust challenge the idea of a continuous cratonic Tarim-Tajik continent beneath the Pamir.

