



## **Middle to late Paleozoic rotations in Kazakhstan's strongly curved magmatic belts**

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Eastern Kazakhstan contains subduction-related volcanic belts of Devonian and late Paleozoic age, which are strongly curved into a horseshoe-shaped form open to the southeast. Subduction polarity is towards the external parts of these curved structures, presenting a plate-tectonic enigma as to how the area became continentalized during the gradual disappearance of an internal ocean basin in middle to late Paleozoic times. Paleomagnetic results of Silurian, Devonian, and Permian age indicate that vertical-axis rotations are very common and that pre-deformational configurations of the magmatic arcs were very different from those of today. Moreover, the rotations seem to have occurred in (at least) two phases, one pre-Permian and the other during Late Permian to Early Triassic times. The latter set of rotations is attributed to sinistral megashearing between Siberia and Baltica in the final approach of Uralian mountain building. Subtracting these rotations from the total magnitude of declination deviations yields the pattern of the earlier phase of rotations, which turns out to be *grosso modo* that of an orocline. Thus, in the Devonian the magmatic arc was rather straight and NW-SE trending, with subduction towards the SW.