

**Palaeozoic stratigraphy and tectonic correlation
of the Chinese and Kyrgyz South Tian Shan**

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The Palaeozoic tectonics and evolution of Tianshan remain poorly understood despite extensive studies during the last decade. Major uncertainties remain in such problems as 1 - number and position of ancient convergent margins and sutures, 2 - polarity of subduction systems, 3 - timing of subduction and collision episodes, and 4 - structural and stratigraphic correlation of the Kyrgyz and Chinese sectors of the belt. Our biostratigraphic, chronological and structural studies in the Chinese South Tianshan provide new insights for improved tectonic reconstructions.

1. Biostratigraphic data, zircon dating and geochemistry delineate two parallel belts of Silurian arc-related rocks. The northern arc extends along the southern margin of the Central Tianshan and continues into southern Kazakhstan and the Kyrgyz Tianshan. The southern arc (Haidu arc) was presumably connected with a south-dipping subduction zone and evolved since the early Silurian at ~439 Ma to the Early Devonian. Most likely it was originally built on the Tarim continental margin and was separated from the craton by a back-arc basin in the late Silurian.

2. Our biostratigraphic study documents continuous sedimentation within a broad area in the axial part of the South Tianshan from the late Silurian and Early Devonian to the early and late Pennsylvanian. This delineates a microcontinent including the above Haidu arc that was wedged between Kazakhstan and Tarim in the Pennsylvanian.

3. A middle Palaeozoic (pre-Carboniferous) structural unconformity that was considered as a major feature of the entire Chinese Tianshan, is not confirmed for a major part of the South Tianshan. The unconformity exists only in marginal parts of the belt, i.e. in the Central Tianshan in the North and on the NE Tarim craton in the South. In the latter case the age of deformation and metamorphism is constrained by stratigraphic data from Devonian to middle Pennsylvanian, which does not contradict previous Ar-Ar dating. Metamorphic rocks occur in complex relationships with tectonic sheets of unmetamorphosed sediments, ranging in age from Silurian to Pennsylvanian, that were thrust from the north during the latest Palaeozoic.

4. The biostratigraphic and structural data also reveal major top-to-south thrusts in the Chinese South Tianshan with allochthons of Devonian carbonates thrust over late Palaeozoic turbidites. The time of deformation is constrained as late Pennsylvanian to early Permian, based on the age of synkinematic olistostromes and early Permian ages of ca. 285-275 Ma for post-kinematic granitoid plutons that intrude the thrust package. An episode of large-scale southward thrusting in the late Carboniferous and early Permian represents the main structural event in both the Kyrgyz and Chinese sectors of the belt and reflects final amalgamation of the Tarim and Kazakhstan continents.