

## **U-Pb GEOCHRONOLOGY OF THE PRECAMBRIAN MAGMATIC AND METAMORPHIC EVENTS WITHIN THE CALEDONIAN AND VARISCAN STRUCTURES OF TIEN SHAN**

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Tien Shan thrust-fold belt was formed mainly during Caledonian and Variscian events. The present communication analyzes the recent isochrone U-Pb data and demonstrates that large blocks of Precambrian rocks are embedded in the Paleozoic framework of the Tien Shan. The oldest rocks of Tien Shan are highly metamorphosed amphibolitic schists and gneisses of the Kujlu Formation outcropped in the Variscian structures of the Middle Tien-Shan. Relict granulitic zircons of the amphibolitic schists fit into an isochrone of  $2610 \pm 50$  m.y. The later metamorphic zircons from the gneiss outcropped within the same formation revealed the younger age of  $1987 \pm 30$  m.y.

Magmatic rocks intruded the gneiss were dated as: plagiogranite –  $1967 \pm 30$ ; granodiorite –  $1280-1,350$  m.y.; leicogranite –  $830 \pm 20$  m.y.; stocks of granodiorite and monzonite –  $730 \pm 15$  m.y. The metamorphic rocks are overlaid by thick felsic volcanics with ages ranging from  $1280 \pm 40$  through  $830 \pm 20$  to  $687 \pm 15$ . Alkaline basalt intruded the felsic volcanics was dated as  $590 \pm 20$  m.y. The oldest metamorphic event in Caledonides of the North Tien Shan is dated as  $2156 \pm 50$  m.y. Magmatic rocks revealed the following ages: granodiorite –  $1900 \pm 50$ , gneiss and metamorphosed rhyolite –  $1380 \pm 50$ ; granodiorite, plagiogranites and gneiss –  $1100 \pm 30$ ,  $1140 \pm 40$  m.y.; diorite, gabbro, plagiogranite –  $948 \pm 30$ ; granite and diorite –  $725 \pm 20$ ; monzodiorite, tonalite –  $629 \pm 4$ ,  $673 \pm 30$ ; gabbro, diorite –  $591 \pm 18$  m.y. The pronounced difference between the spectrums of the geochronological dates in the Northern and the Middle Tien Shan is related to the difference in geological history of the two large thrust-fold belts. The Precambrian of the Variscan Middle Tien Shan resembles the rocks of Tarim and South Chinese platforms. The Precambrian of Caledonic Northern Tien Shan is correlated with North China and Sibyrea.