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## **Late Paleozoic mesoscopic tectonic deformation of the South Tian Shan**

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The South Tian Shan Orogen distributed in Uzbekistan, Tajikistan, Kyrgyzstan and China was resulted from the closure of the Turkestan Ocean and the following collision between the Tarim-Alay terrane and the Kazakh-Yili terrane during the Late Paleozoic. One controversial issue about the formation of this orogen is the subduction direction of the Turkestan Ocean. Kinematic analysis of Late Paleozoic deformation structures of the thrust-fold belt is likely a crucial method to answer this problem. Field work combined with high resolution satellite images was conducted at well outcropped locations in the South Tian Shan. Series of folds, fault zones and foliations formed during the collision and neoautochthons after collision were identified and analyzed. Deformation information of the Late Paleozoic thrust-fold belt was obtained after removing the effects of Mesozoic and Cenozoic deformation. The Late Paleozoic tectonic deformation structures of these outcrops clearly showed the shear direction of the thrust-fold belt during the collision between the Tarim-Alay terrane and the Kazakh-Yili terrane. As well as obtaining the subduction direction of the Turkestan Ocean, our data establishes a reference Late Paleozoic tectonic deformation set for the thrust-fold belt of the South Tian Shan Orogen. (This research was supported by the National Natural Science Foundation of China, 41402181)

