

XIAO Wenjiao, 2013. Sutures in the Altaids. *Acta Geologica Sinica* (English Edition), 87(supp.): 328.

## Sutures in the Altaids

XIAO Wenjiao<sup>1,2,\*</sup>

*1 Xinjiang Research Center for Mineral Resources, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi 100029, China*

*2 State Key Laboratory of Lithospheric Evolution, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing 100029, China*

Ophiolites are remnants of vanished oceans in orogenic belts; therefore they are very important for us to define sutures and plate reconstruction. However, most ophiolites are actually ophiolitic fragments which do not have the full trinity of a classical ophiolite. Ophiolitic fragments can be formed at different tectonic settings as illustrated in the Altaids. The Altaids, records the convergence and interactions among the three orogenic systems, the Siberia and Tarim Cratons, and the Kazakhstan composite arc chain, showing multiple accretionary orogenesis.

Some ophiolites in the Altaids may be substrate of oceanic island arcs or accreted fragments. Others are blocks or slices in accretionary prisms. As ophiolites should be used to constrain the existence of ancient oceans, they pre-date the accretionary process afterward and should not necessarily represent real sutures. Some ophiolitic fragments in Central Asia such as the Tianshan predate an accretion/collision event and may reflect merely one small accretion/convergent /rifting event.

Paleomagnetic data and tectonic analysis enable us to conduct palinspastic reconstructions and can help define the real suture as a main cryptic plane separating the Tarim craton to the south and the accretionary collages to the north from the early Paleozoic to the early Triassic. During most of the Paleozoic time, the Siberia was distributed in the northwest and the Tarim Craton was in the southeast, while the Kazakhstan arc chain was in the west. The active margin of the Siberia Craton had wide accretionary complexes and accreted intraoceanic arcs and terranes, the Kazakhstan arc chain was characterized by multiple subductions, while the northern margin of the Tarim Craton remained mostly as a passive margin. The multiple convergence and accretion among these three orogenic systems generated huge orogenic collages in the late Paleozoic and even early Triassic, in which orogenic orocline of the Kazakhstan arc chain formed and parallel amalgamation of the Altai, East Junggar, and Tianshan arcs took place.

\* Corresponding author. E-mail: [wj-xiao@mail.igcas.ac.cn](mailto:wj-xiao@mail.igcas.ac.cn)