# The distribution and tectonic framework of Late Paleozoic volcanoes in the Junggar basin and its adjacent area, NW China

X. Mao and J.H. Li

School of Earth and Space Sciences, Peking University, Beijing, China (maoxiang.pku@163.com)

We analyse the distribution and characteristics of 145 late Paleozoic volcanoes in north Xinjiang, NW China, including 32 volcanoes on the edge of the Junggar basin. These volcanoes are clustered and can be divided into calderas, volcanic domes, and volcanic necks. There are also 85 volcanoes inside the Junggar basin, which are dominantly distributed in the Ke-Bai fractured zone of the northwestern margin of Junggar Basin, 4 depressions (Dongdaohaizi Depression, Dishuiquan Depression, Sannan Depression and Wucaiwan Depression) and 7 uplifts (Baijiahai uplift, Beisantai uplift, Dibei uplift, Dinan uplift, Sangequan uplift, Shixi uplift and Xiayan uplift). The volcanoes inside the basin are principally controlled by Hercynian Fault Systems, along NE and nearly EW trending faults and most developed in the interjunctions of the faults. The long modification by late-stage weathering and leaching made the volcanoes difficult to identify. Remaining volcanic landforms, changing trends of the volcanic lithofacies and the typical volcanic rock, such as the crypto- explosive breccia, are the typical marks of the late Paleozoic volcanoes in the field; and the concealed volcanic edifices are identified by the techniques of seismic identification, such as seismic slicing, analysis of the attribute and tectonic trend plane. The ages of the volcanic rocks are focused on from 340 Ma to 320Ma and from 300 Ma to 295 Ma, corresponding to the subducting periods of West Junggar and East Junggar. From early Carboniferous to late Carboniferous, the volcanic activities in Junggar Basin and its adjacent areas show a variation trend from undersea to continental, from deep water to shallow water and from continental margin to intracontinental.