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准噶尔盆地及其周缘地区晚古生代火山机构分布与发育环境分析

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摘要:

本文收集了北疆地区已报道的145处晚古生代火山机构信息。其中,准噶尔盆地周缘32处,主要集中分布于博罗科努山、博格达山以及克拉美丽山,包括破火山口、火山穹窿、火山通道(火山颈)等多种火山机构类型;准噶尔盆地内火山机构85处,主要分布在西北缘克百断裂带和盆地腹部的四处凹陷(三南凹陷、东道海子凹陷、滴水泉凹陷和五彩湾凹陷)及七处凸起(白家海凸起、石西凸起、夏盐凸起、三个泉凸起、滴北凸起、滴南凸起和北三台凸起)。盆内火山机构分布主要受海西期断裂系控制,大致沿着NE、近EW两个方向的断裂展布,并在断裂交汇部位最为发育。由于后期改造,晚古生代火山机构普遍遭受剥蚀,且发生强烈变形和风化、淋滤改造,野外识别主要依靠残留地貌特征、火山岩相变化趋势及引爆角砾岩等特征岩性;地震识别则主要依靠地震切片、属性分析及构造趋势面分析等手段。准噶尔盆地晚古生代火山岩年龄集中于340~320Ma,300~295Ma,分别对应东、西准噶尔岛弧俯冲时期。自早石炭世至晚石炭世,准噶尔盆地及邻区火山活动具有自水下向水上、深水向浅水、陆缘向陆内转换的变化趋势。

英文摘要:

This paper collects and analyses the 145 Paleozoic volcanoes in north Xinjiang, including 32 volcanoes on the edge of Junggar Basin, which are clustered mainly in Boluokenu Mountain, Bogeda Mountain, Tuoli gold belt and Kerameili Mountain. They can be divided into 3 classes, such as calderas, volcanic domes and volcano vents (volcano necks). There are also 85 volcanoes in Junggar Basin, which are primarily in the Ke-Bai fractured zone of the northwestern margin of Junggar Basin, 3 depressions (Dongdaohaizi depression, Dishuiquan depression, Sannan depression and Wucaiwang depression) and 7 uplifts (Baijiahai uplift, Beisantai uplift, Dibeilift, Dinan uplift, Sangequan uplift, Shixi uplift and Xiayan uplift). The volcanoes inside the basin are principally controlled by Hercynian fault systems, along NE and near EW trending faults and most developed in the interjunctions of the faults. The 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 340Ma to 320Ma and from 300Ma to 295Ma, 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.

关键词: [准噶尔盆地](#) [晚古生代](#) [火山机构分布](#) [沉积环境](#)

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