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作者	单位	E-mail
<a href="#">刘冬冬</a>	<a href="#">造山带和地壳演化教育部重点实验室, 北京大学地球与空间科学学院, 北京 100871</a>	
<a href="#">郭召杰</a>	<a href="#">造山带和地壳演化教育部重点实验室, 北京大学地球与空间科学学院, 北京 100871</a>	<a href="mailto:zjguo@pku.edu.cn">zjguo@pku.edu.cn</a>
<a href="#">张志诚</a>	<a href="#">造山带和地壳演化教育部重点实验室, 北京大学地球与空间科学学院, 北京 100871</a>	
<a href="#">吴朝东</a>	<a href="#">造山带和地壳演化教育部重点实验室, 北京大学地球与空间科学学院, 北京 100871</a>	

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摘要:

准噶尔盆地南缘沿巴音沟蛇绿岩带北侧发育一套晚古生代(原下二叠统)阿尔巴萨依组中基性、酸性火山岩夹火山碎屑岩。采用锆石SHRIMP U-Pb定年方法,对其中流纹岩进行定年,得到年龄为 $307.2 \pm 1.3$  Ma (MSWD=1.2),表明原定为早二叠世的阿尔巴萨依组火山岩的确切喷发时间为晚石炭世。地球化学分析表明,阿尔巴萨依组火山岩为钙碱性和高钾钙碱性系列,富集轻稀土(LREE),轻重稀土有一定程度的分馏,富集大离子亲石元素(LILE),亏损Nb、Ta等高场强元素,流纹岩有Ba、Sr、P、Eu、Ti的异常。阿尔巴萨依组火山岩的 $\epsilon_{Nd}(t)$ 值在+4.21~+7.79之间,显示源区富集特征。晚石炭世阿尔巴萨依组火山岩、火山碎屑岩与后碰撞A型花岗岩在岩石学、地球化学特征方面相似,表明两者应有相似的构造背景,都为后碰撞伸展环境。阿尔巴萨依组还发育一套火山沉积地层,表明准噶尔南缘沉积作用在晚石炭世已经开始,开始沉积盆地的类型应为伸展断陷盆地。

英文摘要:

Latest Paleozoic (former Early Permian) volcanic rocks of Arbasay Formation are represented by typical intermediate-basic, acidic volcanic rocks and pyroclastic rocks, in south margin of Junggar basin, northern to Bayingou ophiolite belt. By means of SHRIMP zircon U-Pb dating, the age of Arbasay volcanic rocks is  $307.2 \pm 1.3$  Ma (MSWD=1.2), which indicates that Arbasay volcanic rocks were erupted in Late Carboniferous, not Early Permian. The volcanic rocks are characterized by enrichment in LREE and LILE, belonging to calc-alkaline and high-K calc-alkaline series, and have obviously negative anomaly in Nb, Ta. Specially, rhyolites have Ba, Sr, Eu, P and Ti anomalies. Positive  $\epsilon_{Nd}(t)$  (+4.21~+7.79) suggests a depleted mantle-related source. The geochemistry characteristics of Arbasay Formation rhyolites are similar to post-collisional A-type granites widely distributed in North Xinjiang (Junggar basin, Yili Block), which implies they should have the same geologic setting. A suite of volcanic sedimentary rocks in Arbasay Formation manifests that deposition in southern margin area of Junggar basin started at Late Carboniferous. With the similarity between Arbasay volcanic rocks, pyroclastic rocks and post-collisional granites in petrology and geochemistry, the proto-type of Late Paleozoic southern Junggar basin should be extensional depression basin.

关键词: [准噶尔南缘](#) [古生代晚期火山岩](#) [锆石SHRIMP定年](#) [地球化学特征](#) [后碰撞](#) [伸展断陷盆地](#)

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主办单位: 中国矿物岩石地球化学学会

单位地址: 北京9825信箱/北京朝阳区北土城西路19号

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