

胡培远,李才,解超明,吴彦旺,王明,苏犁. 2013. 藏北羌塘中部桃形湖蛇绿岩中钠长花岗岩——古特提斯洋壳消减的证据. 岩石学报, 29(12): 4404-4414

藏北羌塘中部桃形湖蛇绿岩中钠长花岗岩——古特提斯洋壳消减的证据

作者	单位	E-mail
胡培远	吉林大学地球科学学院, 长春 130061	
李才	吉林大学地球科学学院, 长春 130061	licai010@126.com
解超明	吉林大学地球科学学院, 长春 130061	
吴彦旺	吉林大学地球科学学院, 长春 130061	
王明	吉林大学地球科学学院, 长春 130061	
苏犁	中国地质大学, 北京 100083	

基金项目: 本文受国家自然科学基金项目(41072166、41272240)和中国地质调查局项目(1212011121248、1212011221093)联合资助

摘要:

本文报道了羌塘中部黑脊山钠长花岗岩的锆石U-Pb定年结果和岩石地球化学资料以及锆石Hf同位素成分。野外观察表明钠长花岗岩与桃形湖蛇绿岩为侵入接触关系。样品中的锆石晶型比较完整,具典型的岩浆生长环带,未见继承的老岩浆核,结合其Th/U比值(0.41~1.06),表明为典型的岩浆成因。锆石LA-ICP-MS定年结果为 351.2 ± 1.9 Ma,表明其形成时代为早石炭世。钠长花岗岩具有较高的SiO₂含量和很高的Na₂O/K₂O比值,为准铝质-弱过铝质岩石,属于钙碱性I型花岗岩;稀土元素配分模式显示为右倾的曲线,伴随较弱的正Eu异常;微量元素蛛网图上表现出Nb、Ta、Ti负异常和Rb、Th、U、K、Pb、Zr、Hf正异常,具有岛弧花岗岩的地球化学特征;样品在构造环境判别图解上投点均落入岛弧花岗岩区。样品中锆石的 $\epsilon_{\text{Hf}}(t)$ 值为+11.56~+14.46,二阶段Hf模式年龄为432~581Ma,显示出明显的幔源特征,说明其源岩可能为俯冲消减的玄武质洋壳。黑脊山钠长花岗岩的发现,表明羌塘中部的古特提斯洋在早石炭世已经进入岛弧消减阶段。

英文摘要:

This paper reports new zircon U-Pb age and Hf-isotope, and whole-rock major and trace element data from albite granite body located in Heiji Mountain area of Longmu Co-Shuanghu-Lancang River suture zone, central Qiangtang, northern Tibetan Plateau. The albite granites intrude into Taoxinghu ophiolite. Combined with high Th/U ratios (0.41~1.06), their zircons show no euhedral crystals and have clear oscillatory zones, indicating a magmatic origin. Zircon LA-ICP-MS dating for albite granite yields a weighted mean age of 351.2 ± 1.9 Ma, suggesting that the crystallization age of Heiji Mountain albite granite body is Early Carboniferous. These granites are characterized by high SiO₂ and Na₂O/K₂O and belong to aluminous-peraluminous, calc-alkali and I-type granites. Their REE model is characterized by enrichment in light REE and positive Eu anomaly, and they are enrichment of Rb, Th, U, K, Pb, Zr and Hf, and negative anomalies of Nb, Ta, Ti. These features suggest that the albite granites were formed in island arc setting. Their zircons have positive $\epsilon_{\text{Hf}}(t)$ values (+11.56~+14.46), second stage Hf mode ages ($t_{\text{DM2}}=432\sim581$ Ma) which is older than zircon U-Pb ages, indicating they were generated by partial melting of subducting oceanic crust. The determination of Heiji Mountain albite granites indicates that the subduction of Paleo-Tethys Ocean crust in central Qiangtang had initiated at Early Carboniferous.

关键词: [青藏高原](#) [羌塘](#) [古特提斯洋](#) [岛弧花岗岩](#) [锆石U-Pb测年](#)

投稿时间: 2012-04-09 最后修改时间: 2013-01-22

[HTML](#) [查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

黔ICP备07002071号-2

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

本系统由北京勤云科技发展有限公司设计

[linezing.com](#)