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青藏高原冈底斯带东南部新生代多期岩浆作用及其构造意义

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摘要:

本文对拉萨地体东南缘东冈底斯带的花岗岩进行了详细的野外地质观察,基于侵入关系划分出了5期花岗岩。前4期花岗岩经历了不同程度的变形,呈片麻状构造,而最后1期花岗岩未经历变形,呈块状构造。锆石U-Pb定年揭示,5期花岗岩的形成年龄分别为63Ma、51Ma、50Ma、29Ma和26Ma。岩石学和岩石化学分析表明,前两期为花岗闪长岩,具有高的MgO(1.28%~1.84%)和CaO(3.16%~4.18%)含量,高的Mg[#]值(平均为43),中等K₂O含量(1.5%~2.53%),低的K₂O/Na₂O(0.37~0.68),为准铝质I型花岗岩。而后三期为花岗岩,其中第四期和第五期分别为浅色花岗岩脉和伟晶岩脉,具有明显低MgO(0.03%~0.27%)、Mg[#]值(2~15),低CaO(1.04%~1.6%),较高K₂O(3.75%~6.93%)、K₂O/Na₂O(0.94~2.04),弱过铝质,显示S型花岗岩特征。研究表明,前二期花岗岩在冈底斯带其它地区也有广泛分布,而后两期花岗岩仅在研究区出露,这很可能说明拉萨地体东南缘从渐新世以来经历了与冈底斯带其它地区不同的构造演化历史。

英文摘要:

In this paper, the field geological features of the Gangdese granitoids from the southeastern segment of Lhasa t errane were observed in detail, and five stages of granites were recognized based on their intrusive relation. The former four stages of granites show various degrees of deformation, whereas the latest one shows the massive structure. Zircon U-Pb dating reveals that the crystallization ages of the five stage of granites are at ca. 63Ma, 51Ma, 50Ma, 29Ma, and 26Ma, respectively. The first two stages of granites are granodiorite, have relatively high MgO (1.28%~1.84%) and CaO (3.16%~4.18%), Mg[#] (av. 43), medium K₂O (1.5%~2.53%), low K₂O/Na₂O (0.37~0.68), with features of metaluminous I-type granite. The later three stages are granite; the fourth stage of leucogranite vein and fifth stages of pegmatite vein have similar chemical composition, are characterized by have significantly low MgO (0.03%~0.27%) and Mg[#] (2~15), CaO (1.04%~1.6%), high K₂O (3.75%~6.93%) and K₂O/Na₂O (0.94~2.04), belonging to weak peraluminous, S-type granite. The former three stages of granite occur widely in the Gangdese belt, but the later two stages of granites distribute only in the eastern Himalayan syntaxis. This indicates that the southeastern segment of the Lhasa terrane may have experienced distinctly different tectonism at Oligocene from other parts of the Gangdese batholith.

关键词: [花岗岩](#) [岩石学](#) [锆石U-Pb年代学](#) [岩浆作用](#) [冈底斯带](#) [青藏高原](#)

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