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Zircon U-Pb dating,Geochemical Features of the Halunwusu Composite Granites at the Northern Edge of Southern Qilian,Qinghai

TAO Gang [1,*], ZHU Lidong[1], YANG Wenguang[1],LI Zhiwu[1,2] and XIE Long[1]

1 *Institute of Sedimentary Geology，Chengdu University of Technology，Chengdu，610059*
2 State Key Laboratory of Oil and Gas Reservoir Geology and Exploitation，Chengdu University of Technology，Chengdu，610059

1 Introduction

Halunwusu Composite Granites,locates in the northern margin of Belt,between the North Qaidam block and the Central Qilian block,with two phases of magmatic activities. The granites mainly consisits of the Early adamellite to granodiorite and the late granite(Fig1).

2 Result Analysis

2.1 Zircon U-Pb dating

LAICPMS zircon U-Pb analysis of the granites respectively yield a weighted mean ages of 479.8±3.3Ma and 460.6±1.8Ma,which is consistent with the outcrop geological relation and within range of 496~440Ma of the Tanjianshan Arc in the North Qaidam.

2.2 Geochemical Analysis

[1]The early adamellite to granodiorite is characterized by the mass fraction of SiO_2(62.73%~67.73%)and Al_2O_3(14.96%~16.48%),the value of A/CNK is 0.87~1.07. The late granite is characterized by the mass fraction of SiO_2(69.99%~73.88%)and Al_2O_3(13.53%~14.59%),the value of A/CNK is 1.00~1.22.The total REE contents range from 106.68×10^{-6} to 329.81×10^{-6}, the ratio of LREE/HREE is between11.87 and 28.71, and show weak anomaly of Eu(δEu=0.53~0.92),representing the fractional crystallization of the Plagioclase and K-Feldspar during magmatic evokution.With the similar trace element distribution,the enrichment of LILE(Rb,Th,K,Pb) and depletion of HSFE(Nb,Ta,P,Ti) imply the Halunwusu Composite Granites mainly derived from partial melting of crust.Otherwise,the type of the granites belongs to I-type granites.

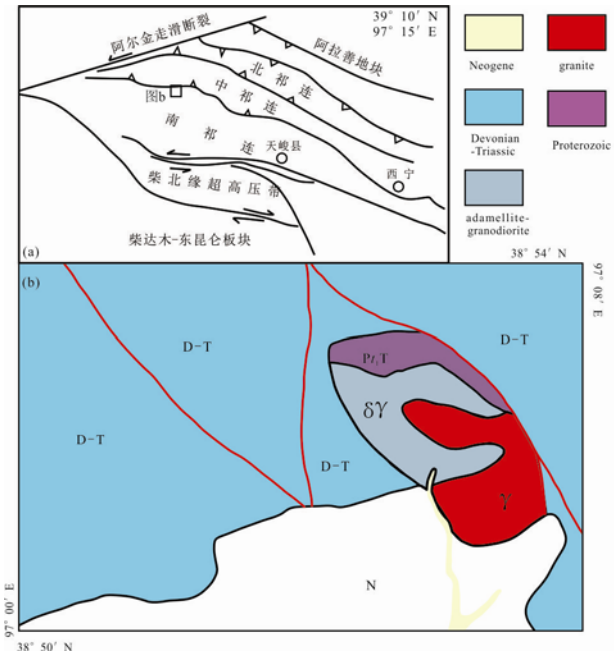


Fig1.a.geological sketch of main tectonic units around the Tibet;B.Geological sketch of the Halunwusu Composite Granites

3 Conclusion

There are many island arc instructive rocks distributing in the Tanjianshan volcanic arc belt,including the Halunwusu Composite Granites .Overal,the Halunwusu Composite Granites may forme in the island arc environment,which indicates that the North Qaidam oceanic plate was subducted northward under the Central

*Corresponding Email:taogang0428@163.com

Qilian blocks during the Early-Middle Ordovician(Huang et al.,2016,Song et al.,2014).

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