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The new Evidence of Southward Subduction of the Middle Tethys Oceanic Basin in the Weat Segment of Bangonghu-Nujiang Suture, Tibet, Nawucuo area : Zircon U-Pb LAICPMS Dating and Lithogeochemistry of arc Granites

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Through geological surveys in Tibet Nawucuo area, the authors have discovered arc granite batholiths widely distribute in the southside of the weat segment of Bangonghu-Nujiang suture. Lithogeochemical analyses indicate that the SiO₂ content of granites about 57.71% to 76.07%, belongs to acidic rock, which mainly consist of granite, granite porphyry, monzonitic granite, quartz diorite, granodiorite and diorite. The granites mainly consist of High-K calc-alkaline series. In the R1-R2 diagram which express tectonic origin, show almost all of the granites are attributed to the time area before plate collision. Trace element distribution spider diagram shows that the arc granites of the weat segment of Bangonghu-Nujiang suture possess common signature as follows: high enrichment of large lithophile elements, Rb, K, Ba and Sr; strong depletion of high field strength elements, Nb and

Ti. All the above litho- geochemical evidence indicate the granites have the basic feature of arc granite and was resulted from the magmatism of the southward subduction stage. Zircon U-Pb LA-ICPMS dating results show that the ages of arc granites batholiths form (94.5±2.9)Ma to (114.7±7.3)Ma. It illustrate that the time about southward subduction of the Middle Tethys oceanic basin can be postponed to the late of early cretaceous, and this result greatly delay the time of the previous view about the subducton(134.07±0.77)Ma. It also directly provides the new evidence of petrology and geochronology about the southward subduction of Bangong Lake-Nujiang ocean basin in North Lhasa Block.

Key words : Tibet plateau; arc granite rocks; zircon U-Pb LA-ICPMS dating; Bangonghu-Nujiang suture

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