

**Fission-track thermochronology  
evidence on Wulonggou gold  
mineralization, eastern Kunlun  
Mountains, northern Qinghai-Tibet  
Plateau**

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Wulonggou gold ore district is located at the eastern Kunlun Mountain, northern Qinghai-Tibet Plateau. The mineralization category belongs to tectonic altered rock type. The gold mineralization is intensive and distributed mainly along the construct-zone. Fission track thermochronology has been used to constrain the mineralization histories of gold ore districts in eastern Kunlun Mountains in this work.

Five zircon fission track ages for the ore and altered rock samples range from  $235\pm 9$  Ma to  $194\pm 10$  Ma, concordant with various Rb-Sr and K-Ar isotopic ages (207.1-252.9 Ma) for the mineralization (Lu et al., 1999; Mock et al., 1999; Qian et al., 1999). Two apatite fission track ages of the ore samples are  $201\pm 7$  Ma and  $151\pm 6$  Ma respectively, which corrected ages are close to the zircon fission track ages and isotopic ages. Therefore, the FT age could present the time of mineralization thermal events. Another two apatite samples collected both from the selvage and faulted lens with  $50\pm 3$  Ma and  $45\pm 4$  Ma FT ages recorded late tectonic activities.

Mineralization thermal histories are modeled and the samples produced remarkably similar thermal paths. Polymetallogenesis could be identified. The major mineralization period was around 240~150Ma. It is the polymetallogenesis that not only prolongs the mineralization period, but also enhances mineralization degree. The mineralization temperature didn't exceed about 300°C after about 240 Ma according to the zircon fission track data. The mineralization thermal events were mainly relevant to the subduction along South-Kunlun suture and the intrasubduction along Middle-Kunlun zone at that time.

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