

KOU Linlin and ZHANG Sen, 2014. Chronological Study of Tectonism and Mineralization in Wulonggou Gold Deposit, Eastern Kunlun. *Acta Geologica Sinica* (English Edition), 88(supp. 2): 738-739.

Chronological Study of Tectonism and Mineralization in Wulonggou Gold Deposit, Eastern Kunlun

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Three ductile-brittle shear belts occur in the Wulonggou gold deposit, which is the largest gold deposit in the eastern Kunlun Orogen. They are in sequence of Yanjingou ductile-brittle shear、Yingshigou-hongqigou ductile-brittle shear and Sandaoliang-kushuiquan ductile-brittle shear from northwest to southeast. Main gold deposit (gold point) is controlled by the ductile-brittle shear.

Author achieved fifteen data with wall rocks and the ores of the ductile-brittle shear. The eight ore samples of the metallogenic epoch ,which come from Hongqigou、Dachaigou、Heishishan et al, is used to measure with the alpha quartz activation (HAESRDQ) method by the Chengdu University of Technology. The two samples of the ductile-brittle shear Deformation Time is used to measure with Ar-Ar method by the Guangzhou Institute, which come from Yanjingou and Dachaigou ductile-brittle shear. The five samples of reaction material source is used to measure with Pb isotope determination by the geological and physical geological academy of Sciences Chinese, which come from Hongqigou、Sandaoliang、Yingshigou et al.

1 Ductile Deformation Termination Early Indo-Chinese

In the study area, the acquisition sample YJG09-1 of Ar- Ar come from Yanjingou is quartz biotite schist, which tests for single mineral mica, and ductile extensional end time. From the test of biotite Ar- Ar plateau age results, is 242.72 ± 1.69 Ma, which On behalf of the ultrahigh pressure metamorphism time, and reflect the early metallogenic hydrothermal alteration (DAI Mo et al., 1991).

The apatite fission track and the zircon fission track is an Effective Tool of Study on upper crust rocks exhumation process (WANG An et al., 2010). The cooling of the age, the hot liquid rise to shallow to cooling, namely in the peeling uplift age. According to Yuan Wanming

(2000) in the red flag ditch the ore sample the zircon fission track age (YUAN Wanming et al., 2000; Yuan Wanming et al., 2000), zircon fission track ages from 197 ~235 Ma.

2 Syntectonic Alkaline Magmatite Activity Age

In the study area, the acquisition sample DCG07-05 of Ar- Ar come from Dongchagou is biotite adamellite, which tests for single mineral Potash Feldspar, and The rock is the product with alkaline magmatism associated with the extension. Potassium feldspar Ar- Ar plateau age of 247.36 ± 1.12 Ma. It On behalf of the syntectonic with formation of Wulonggou - Golmud metamorphic core complex of magmatite ductile deformation constraint age earlier, is the sge of formation with Wulonggou - Golmud metamorphic-magmatic core complex extensional tectonic period of alkaline magmatite activities (ZHANG Dequan et al., 2005; Wang YJ et al., 2005; Wang Z H et al., 2000).

3 A mineral Source Age

In the study area, author collected five samples of lead isotope, which is Pyrite, chalcopyrite, galena, and stibnite. In $^{206}\text{Pb}/^{204}\text{Pb}$ - $^{207}\text{Pb}/^{204}\text{Pb}$ diagram above the samples fall in the mixed area of crust and mantle, the area of lead is mainly a product of mantle source material and on the different degree of contamination of crustal material.

Lead isotope age represents the source area of mineral, from the above we can see Pb isotopic ages mode in this area is concentrated in 153 Ma~282 Ma, explained that the mineral source area of the age for this period.

4 Mineralization Age

Because of Wulonggou gold body and its adjacent area widespread auriferous quartz veins are closely associated

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with gold mineralization, it can determine the metallogenic epoch in this area used Alpha quartz activation dating (HAESRDQ).

5 Conclusion

Dating data of previous and the author obtained, Ductile deformation generally end in 240Ma \pm (at the end of the Middle Triassic); The provenance of gold mineralization in the age of 235~197Ma(from Late Indo-China to Early Yanshan); Mineralization age is 91~21Ma(from late yanshanian to early-middle himalayan).

Keywords: ductile-brittle shear belts, ^{40}Ar - ^{39}Ar age, gold deposit, eastern Kunlun

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