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Rock-forming and Ore-forming Ages of Bangong-Nujiang Metallogenic Belt, Tibet, China

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Bangonghu-Nujiang suture zone is an important plate boundary in northern Tibetan Plateau (Chang et al, 1973; Pan et al, 2004; Ren et al, 2005). It is the third porphyry copper belt after discovery of ERON porphyry copper belt and Gangdese porphyry copper belt in Tibet. Being represented by Duolong ore concentrating area, the west-east length is about 60km and north-south width is about 15km, with an area of about 900km², and where are distributed 9 deposits such as Duobuza porphyry copper-gold deposit, Bolong porphyry copper-gold deposit, Naruo porphyry copper-gold deposit, Nadun gold deposit, Tiegelong porphyry copper deposit, Gaerqin porphyry copper-gold deposit, Dibaonamugang porphyry copper-gold deposit, Saijiao (mineralization points). With geological exploration, it has been determined that the Duobuza, Bolong and Duolong are large-scale deposits, while Naruo porphyry copper-gold deposit and Ga'erqiong copper deposit are medium-scale deposits. Other deposits (points) are with better prospects.

In this paper, we analyzed and researched on the data by research article from network, after comprehensive research, we found that: the Duobuza, Bolong, Naruo and other porphyry copper-gold deposits within Duolong ore concentrating area are in linear distribution along NE-trending strike-slip faults. The U-Pb age of zircon of Naruo copper-gold deposit is 126.2 ± 2.7 Ma (of this study), the average age of K-feldspar of Duobuza is 118.31 ± 0.60 Ma (Zhu et al, 2012), and the U-Pb isochron age is 120.9 ± 2.4 (She et al, 2009) and 126.1 ± 1.9 Ma (Li et al, 2008), the isochron age of zircon LA-ICPMS U-Pb

of Bolong is 124.5 ± 1.1 Ma and 121.41 ± 0.61 Ma (Zhou et al, to be published); The isochron age of molybdenite of Duobuza is (118.0 ± 1.5) Ma (She et al, 2009), and the Re-Os isochron age of Bolong copper deposit is 119.4 ± 1.3 Ma (Zhu et al, 2011), from which we can see that, the diagenetic ages of Duolong ore concentration area are mainly distributed at 120 to 126Ma, and the mineralization ages are mainly concentrated from 118 to 119Ma, indicating that from 126 to 118Ma is the important period of diagenesis and mineralization within the region. According to the distribution of deposits and diagenetic age of Duolong ore concentration area, the distribution of deposits and diagenetic age are characterized of focus, offering the further confirmation that the Tethys Oceanic Basin was the oceanic basin with limitations and subducted respectively along many subduction zones. But the author of this study is more inclined to the view that the main subduction direction in the oceanic basin with limitations is north-eastward, rather than the previous view of southward or bi-directional subduction.

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Key words: Rock-forming; ore-forming; ore concentrating area; porphyry copper-gold deposit; Bangong-Nujiang Metallogenic belt; Naruo; Tibet

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