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Research on Metallogenic System of Gold and Copper Deposits in the Middle Section of Eastern Tianshan, Xinjiang, China

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According to rules of the tectonic dynamics system, ore forming mechanism and ore bearing formation, the dissertation classes the Au-Cu deposits into three metallogenic systems, such as, Dananhu-Tousuquan magmatic hydrothermal Au-Cu metallogenic system under the plate-collision tectonic system in late Devonian, Aqishan-Yamansu volcanic hydrothermal Cu-Fe metallogenic system under the plate-extending tectonic system in early Carboniferous, and Kangguertage ductile shear Cu-Au metallogenic system under intraplate orogeny in early Permian. Guided by the research contents and method of metallogenic system, the dissertation expatiates the geological setting, time-space distribution characteristics, ore-forming controlling factors, typical deposits characteristics or comparison, essential elements of every metallogenic system, sets up the metallogenic model and summarizes the evolutionary process and pedigree of metallogenic system of study area.

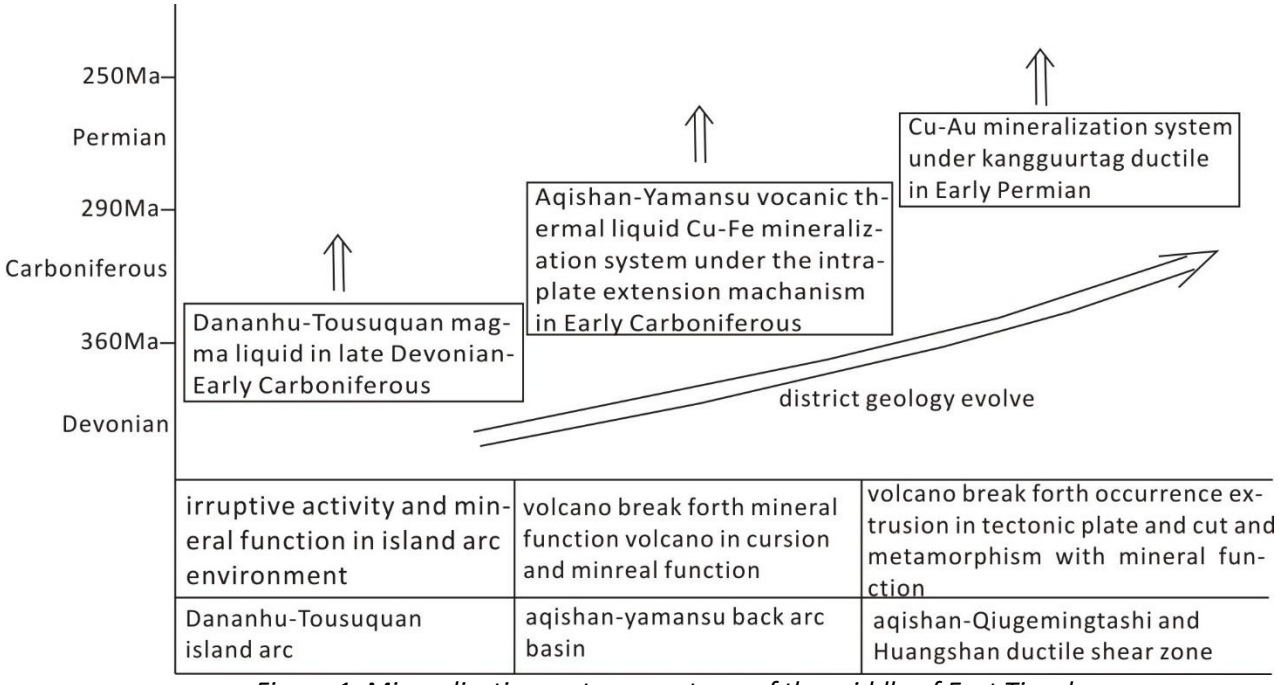

Figure 1: Mineralization system spectrum of the middle of East Tianshan

Based on above work, the mineralization spectrum of the middle of East Tianshan is set up (figure 1). From the figure, the time is from Devonian to Carboniferous to Pernian. The space is from Dananhu-Tousuquan island arc to Aqshan-Yamansu back-arc basin to Aqishan-Qiugemingtashi and Huangshan ductile shear zone. The mineralization systems inside the area include Dananhu-Tousuquan magma liquid Ag-Cu mineralization system under the plate collision mechanism in Late Devonian –Early Carboniferous, Aqishan-Yamansu volcanic thermal liquid Cu-Fe mineralization system under the

intraplate extension mechanism in Early Carboniferous and Kangguertage ductile shear –structural alteration rock Cu-Au mineralization system under intracontinental orogeny mechanism in Early Pernian. All these shows the basic time and space structure of mineralization systems in the middle of East Tianshan.

References:

[1] Cui B (2000) Geology and Prospecting 36(6): 6-8
[2] Mao J W et al. (2002) Earth Sciences 27(4): 413-424
[3] Han C M et al. (2002) Geology and Prospecting 38(5): 5-10