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Mo deposits in Northwest China: geology, geochemistry, geochronology and tectonic setting

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Abstract

Northwest China, covering northern Xinjiang, northern Gansu and westernmost Inner Mongolia, mainly includes Junggar Basin and its surrounding mountains such as Chinese Altay, Junggar, Chinese Tianshan and Beishan. It lies at the junction of Siberia, Tarim and Kazakhstan plates, and is a key sector of the Central Asian Orogenic Belt (CAOB), characterized by multistage Phanerozoic continental growth. Herein at least nine Mo-only or Mo-dominated, fourteen Cu-Mo, two W-Mo and one Be-Mo deposits have been discovered. These 27 deposits occur in Altay, West Jungar, West Tianshan, East Tianshan and Beishan areas, and have been formed during accretionary or collisional orogenies. The majority of the deposits are porphyry type, followed by the skarn and quartz vein types. The orebodies occur mainly as veins, lens, pods in the positions from inner intrusions through contact zones to the