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俄罗斯阿尔泰-Sayan地区Aksug斑岩Cu-Mo体系的地质与地球化学特征

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摘要:

The Aksug deposit, located in Altay-Sayan region of Russia, is one of the largest porphyry Cu-Mo deposits in Southern Siberia. The ore-bearing porphyries of the Aksug porphyry Cu-Mo system were formed in post-collisional environment. Geochemically they belong to calc-alkaline and high K-calc-alkaline series. Rocks are characterized by enrichment of LILE and depletion of HSF and HREE, showing the importance of subduction-related components in magma generation. Large plutonic intrusions that host porphyry systems have been formed during collision. The origin of porphyritic rocks is dominantly the mantle with lower crustal contribution. The mainly economically important Cu-Mo mineralization is closely related to a porphyry series in time and space, being emplaced towards the end of magmatic activity. Though the emplacement of plutonic and ore-bearing porphyry complexes took place in different geodynamic environments, both complexes are characterized by certain similarity in geochemical composition, alkalinity, trace element content, Sr isotopic composition. This fact evidently indicates a common deep-seated magmatic source (at the lower crust-upper mantle level). Low initial $^{87}\text{Sr}/^{86}\text{Sr}$, sulfur isotopic characteristics and presence of PGE-Co-Ni mineralization in associated pyrite-chalcopyrite ores suggest that mantle source of chalcophile elements was of high importance in porphyry Cu-Mo mineralization of the Aksug deposit.

英文摘要:

The Aksug deposit, located in Altay-Sayan region of Russia, is one of the largest porphyry Cu-Mo deposits in Southern Siberia. The ore-bearing porphyries of the Aksug porphyry Cu-Mo system were formed in post-collisional environment. Geochemically they belong to calc-alkaline and high K-calc-alkaline series. Rocks are characterized by enrichment of LILE and depletion of HSF and HREE, showing the importance of subduction-related components in magma generation. Large plutonic intrusions that host porphyry systems have been formed during collision. The origin of porphyritic rocks is dominantly the mantle with lower crustal contribution. The mainly economically important Cu-Mo mineralization is closely related to a porphyry series in time and space, being emplaced towards the end of magmatic activity. Though the emplacement of plutonic and ore-bearing porphyry complexes took place in different geodynamic environments, both complexes are characterized by certain similarity in geochemical composition, alkalinity, trace element content, Sr isotopic composition. This fact evidently indicates a common deep-seated magmatic source (at the lower crust-upper mantle level). Low initial $^{87}\text{Sr}/^{86}\text{Sr}$, sulfur isotopic characteristics and presence of PGE-Co-Ni mineralization in associated pyrite-chalcopyrite ores suggest that mantle source of chalcophile elements was of high importance in porphyry Cu-Mo mineralization of the Aksug deposit.

关键词: [Porphyry Cu-Mo deposits](#) [Aksug](#) [Siberia](#) [Russia](#)

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