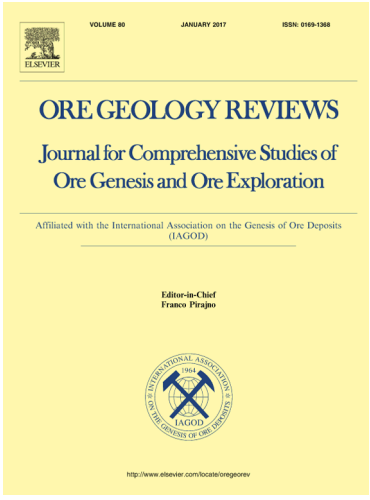

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Hydrothermal processes at the Axi epithermal Au deposit, western Tianshan: Insights from geochemical effects of alteration, mineralization and trace elements in pyrite

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Abstract

As the largest low-sulfidation (LS) epithermal deposit in the Tulasu basin, western Tianshan, NW China, the Axi gold deposit has a poorly understood geologic history. It is not clear whether hydrothermal mineralization occurred during a single event or multiple events. In this paper, new data consist of whole rock geochemistry and mass-change calculations for hydrothermal alteration. LA-ICP-MS trace element analysis of pyrite was conducted in order to develop a comprehensive metallogenic model. The pyrite-sericite-quartz alteration at the Axi deposit is characterized by replacement of plagioclase and mafic phenocrysts by sericite, quartz, pyrite (py1), smectite, and illite, indicating slightly acidic and reducing conditions during the early ore stage. Medium

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