The Dahongshan iron oxide – copper deposit: evidence for Neoproterozoic mineralisation in south west China

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Proterozoic rocks exposed along the western margin of the South China Block host at least 43 individual iron oxide and copper (gold) mineral occurrences. Most major deposits such as those at Dongchuan and Yimen are hosted in late Mesoproterozoic to earliest Neoproterozoic sedimentary rocks. The Dahongshan deposit differs as it is hosted in Paleoproterozoic (ca 1675 Ma) meta-volcanosedimentary rocks. The metabasalts are intensely altered with unusual enrichment of elements usually thought of as immobile (e.g. Nb, Ta, Zr, Hf, P_2O_5 and TiO_2). $^{40}Ar/^{39}Ar$ dating of rocks from these deposits suggests mineralisation occurred at between ca. 780 - 800 Ma during a period of plume related magmatism on the South China Block.