

Archaean mafic and ultramafic rocks within the Neoproterozoic Araçuaí Orogen at Cuieté Velho, Minas Gerais, Brazil: geotectonic implications

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In eastern Minas Gerais, geological units of the Neoproterozoic Araçuaí Orogen stretch along the eastern margin of the São Francisco Craton. They encompass the Archaean-Paleoproterozoic Pocrane Complex; the Neoproterozoic, metasedimentary Rio Doce Group; and Neoproterozoic to Cambro-Ordovician granitoids. The Metavolcanosedimentary Cuieté Velho Sequence, Pocrane Complex, outcrops north of the town of Alvarenga. The sequence comprises predominant amphibolites, and hornblende and tremolite-actinolite schists. It hosts small gold diggings and a massive sulfide occurrence. Unaltered amphibolites and hornblende schists display a MORB, tholeiitic signature, and geochemical characteristics compatible with greenstone-belt, Archaean basalts. Tremolite-actinolite schists are interpreted as metamorphosed cumulate rocks. Cogenetic mafic rocks have a Sm-Nd isochron age of 3099 ± 142 Ma, with an $\epsilon_{\text{Nd}}(T)$ of +1.1.

Other well-documented, metavolcanosedimentary sequences in the São Francisco Craton have similar geochemical features. The Cuieté Sequence represents an Archaean, greenstone-belt-type fragment, partially preserved though younger tectonic cycles. The presence of this tectonic fragment well within the Araçuaí Belt suggests that the São Francisco Paleocontinent extended at least to the proximities of the studied area. This is farther east than previously alluded to. This is corroborated by the sedimentary and metamorphic polarities preserved within the Rio Doce Group, also suggesting a westward continental provenance and tectonic domain.