ARCHEAN vs PALEOPROTEROZOIC CRUSTAL EVOLUTION OF THE LAJE, MUTUIPE, BREJÕES AND SANTA INÊS REGION, JEQUIÉ COMPLEX, BAHIA, BRAZIL.

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Dome-and-basin structures were reported in the granulitic Jequié Complex. Previous studies demonstrated that these domains are composed of charnockitic intermediate-Ti domes surrounded by charnockites high and low Ti, heterogeneous granulites and supracrustals rocks. The supracrustal enclaves in the heterogeneous granulites would represent the oldest rocks. Heterogeneous granulites exhibit 207Pb/206Pb minimum ages of ca 2.6Ga and Rb-Sr isochron age at 2.7Ga. The high-Ti and low-Ti charnockites, respectively, were dated by SHRIMP on zircon at 2.8 and 2.7Ga. Intermediate-Ti charnockites have complex zircons displaying inherited cores and minimum evaporation ages ca 2.55 Ga. All rocks have a restricted range of Nd depleted model ages between 3.0 and 3.2Ga. Doming is constrained at ca 2.05-2.03Ga by monazite dating (cooling 750°C) from the intrusive charnockites intermediate-Ti and by monazite from garnet-cordierite synchronous bearing magmas. The age of the granulite metamorphism is ca 2.0 Ga. These data lead to the conclusion that charnockitic doming was contemporaneous (or late) with the granulitic metamorphism. Geochemical modelling shows that the high-Ti and low -Ti charnockites differentiated through fractional crystallisation. In contrast, intermediate-Ti charnockites are directly produced by partial melting of a source similar to the high-Ti charnockite. Computer models indicate that both high-Ti and low-Ti charnockites formed, respectively, by 30% and 20% fractional crystallisation of a plagioclase, hornblende, clinopyroxene and accessories cumulate. In addition, ENd (T) ranging between 0 and - 4, point out that these rocks were generated either by (i) melting of a crust-contaminated depleted mantle source or (ii) by melting of an enriched mantle source.