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The four Archean crustal segments of São Francisco Craton, Bahia, Brazil, and their Paleoproterozoic collision.

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THE ARCHEAN BLOCKS

Each aforementioned segment is well discriminated by Sm-Nd model ages as well as the distribution in the εNd x εSr diagram, supporting their distinct origin and evolution. In the **Gavião Block** two groups of TTG rocks (3.4-3.2 and 3.2-3.1Ga) constituted the early continental crust (Martin *et al*. 1991). The greenstone belts have been formed with basal komatiites, pyroclastic rocks, chemical exhalative sediments and tholeiitic basalts with pillow-lava (3.1Ga). The granitic/granodioritic/migmatitic crust (2.8-2.7Ga) is interpreted as products of partial melting of the TTG (Santos Pinto 1996). Calc-alkaline volcanics (2.6Ga), granite (2.5Ga) and mafic ultra-mafic (2.4Ga), besides phyllites and grawackes occur associated to the Archean greenstone belts (Marinho 1991). The **Itabuna-Salvador-Curaçá Belt** is composed by three tonalite/trondhjemites groups with 2.7-2.6Ga. These rocks are interpreted as resulting of the tholeiitic oceanic crust melting. Reequilibrated in the granulite facies, also include charnockite bodies and stripes of intercalated metasediments and ocean-floor/back-arc gabbros and basalts, originated from mantle sources. Monzonites (2.4Ga) with an essentially shoshonitic affinity occur in this Belt. The island-arcs, back-arc basins and subduction zones were the predominant environments during the construction of this Belt (Barbosa et al. 2012). The **Jequié Block** is characterized by migmatites with supracrustal inclusions (with 3.0-2.8Ga) and granodiorític–granitic intrusions (with 2.8-2.7Ga). The **Serrinha Block** with orthogneisses and migmatites (c.a. 2.9 Ga, which represent the basement of Paleoproterozoic greenstone belts, described ahead.

THE PALEOPROTEROZOIC COLLISION

During the Paleoproterozoic (c.a.2.3-2.0Ga) these four crustal segments collided resulting in the formation of an important mountain belt**.** The evidences of this collision are found studying the pre-and syntectonic Paleoproterozoic rocks of this block. In the **Gavião Block** it was identified: (i) the Jacobina Group where the siliciclastic metassediments contain detrital zircons (2.1Ga) and (ii) the Areião Formation constituted of arkoses and sands also contain detrital zircons (2.1-2.2Ga). In the **Itabuna-Salvador-Curaçá Belt**, the most important paleoproterozoic lithologies are: (i) tonalites and trondhjemites, with zircons dated approximately 2.1Ga; (ii) Caraiba norites and Medrado gabbros, both with ages slightly older than 2.0Ga; (iii) and syntectonic granites dated about 2.1Ga. In the **Serrinha Block**, occurs the Greenstone Belts Rio Itapicuru and Capim, formed from back-arc basins where: (i) the lower unit of basaltic lava (2.2Ga) is constituted by tholeiitic basalts and maffic tuffs; (ii) the intermediate unit is formed mainly by andesites to calcalkaline dacites (2.1Ga) and (iii) the upper unit is composed by pelites. These Paleoproterozoics greenstone belts are essentially different from the Archean greenstone belts of the Gavião Block mainly because they lack significant komatíitic volcanic rocks. The Paleoproterozoic collision occurred with the movement of the four blocks in the NW-SE sense. The hight grade metamorphism possesses average pressures of 7kbar and temperatures of about 850°C, with its peak occuring at about 2.0Ga (Barbosa et al. 2012). Along the Itabuna-Salvador-Curaçá Belt, this metamorphism reached the granulite grade. PTt diagrams elaborated for these metamorphites show a trajectory of the metamorphism of the clock-wise type, confirming the collision context.

Charnockitic bodies with ages of about 2.1Ga intruded the Jequié Block, in all the other blocks, granitic bodies, in general with peraluminose characteristics. With a major concentration in the NE of Bahia, these granites exhibit, in general, ages of about 2.0 Ga.

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