

The Proterozoic São João del Rei Basin, southern Minas Gerais State, Brazil.

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Deposits of three superposed Proterozoic basins (São João del Rei, Carandaí and Andrelândia) crop out in the southern São Francisco Craton and adjacent mobile belts. The sedimentary record in the São João del Rei basin comprises an up to 1000m thick quartzite succession that rests on a pre-1.8Ga granite-greenstone basement and is overlain unconformably by Carandaí metapelites. Four depositional sequences are preserved in the São João Rei basin. The lowermost records the transgression of a shallow sea over an epicontinental shelf (Tiradentes shelf). Foreshore to lower shoreface facies were deposited under the influence of NE longshore currents along a NE-SW coastline. Relative sea level oscillations produced the low-stand surfaces that limit the two other shelf sequences. These are dominated by the stacking of middle shoreface deposits that grade upward, in the third sequence, to a lagoon-tidal association. The fourth sequence is a coarsening and thickening upward succession, comprising metapelites, fine and pebbly quartzites and is interpreted as a braided plain delta (Lenheiro Delta). The north directed fluvial paleo-currents demonstrate the progressive emergence towards the south of the Tiradentes shoreline. This paleo-slope reversal marks the onset of rifting and culminated with the intrusion of mafic dikes, tilting and uplift. Few Sm/Nd T_{DM} model ages of the dikes and allostratigraphic correlation with the Espinhaço Rift permit to relate the basin evolution to the Estaterian rifting.