

U-PB GEOCHRONOLOGY OF GRANITOID ROCKS IN THE SOUTHERN PORTION OF SÃO FRANCISCO CRATON: NEW INSIGHTS ON THE PALEOPROTEROZOIC EVOLUTION OF THE MINEIRO BELT

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RESUMO: Several felsic plutonic bodies crop out in the southern portion of the São Francisco craton, tectonically associated with magmatic evolution of the Paleoproterozoic Mineiro Belt. These bodies are surrounded by the Nazareno greenstone belt and Rio das Mortes greenstone belt with U-Pb LA-ICPMS ages ranging from 2267±14 - 2223±4 Ma and 2231±5 - 2202±11 Ma, respectively. The oldest felsic plutons can exhibit strong deformation although may also show primary features, although overprinted by deformation. They are orthogneisses and metagranitic rocks that make up batholiths, with hololeucocratic to leucocratic rocks which may have porphyritic xenoliths (gneissic and metamafic rocks). Both rocks have monzogranitic composition. The orthogneisses in the region of Itutinga are cut by pegmatites which are folded likewise the orthogneisses. The Nazareno orthogneiss yields SHRIMP U-Pb zircon age of 2261±21 Ma, while the Itutinga orthogneiss U-Pb LA-ICPMS age of 2236±7 Ma. Chemically, the granitoid rocks are subalkaline, peraluminous and of calc-alkaline affinity, and resemble arc rocks. The crystallization age (U-Pb SHRIMP in zircon) from a porphyritic felsic intrusion that crosscuts the Rio das Mortes greenstone belt is 2125±21 Ma, while a equigranular granite shows an age of 2086±12 Ma. The Th/U ratios (0.4 to 0.7) of the zircon analyses suggest that the igneous nature of the crystals. This youngest age is the first record of intrusive granites in the region of the Nazareno greenstone belt, and is ca. 25 m.y. younger than the Ritópolis granite (2121±7 Ma). We believe that the youngest pluton is coeval with pegmatites that occur in the São João del Rei area, and host the Sn-Nb-Ta-Li mineralizations. The new ages for granitoid rocks are consistent with the tectonic framework of the Paleoproterozoic Mineiro belt, and also suggest the important role of two distinct magmatic pulses in the Nazareno-Itutinga area.

Keywords: *u-pb geochronology, paleoproterozoic, mineiro belt; plutonic rocks*

