

U-PB SHRIMP ZIRCON AGES OF CHARNOCKITES OF ALTO CANDEIAS INTRUSIVE SUITE, RONDÔNIA, BRAZIL: IMPLICATIONS FOR THE MAGMATISM RELATED TO THE RONDONIAN-SAN IGNACIO OROGENY

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The Alto Candeias Intrusive Suite (ACIS) is largely composed of porphyritic granites (U-Pb ages between 1346 and 1338 Ma), with lesser amounts of porphyritic charnockites and medium- to fine-grained granites. The ACIS has been interpreted as a product of inboard magmatism related to the Rondonian-San Ignacio orogeny (1370-1320 Ma). We report hereby U-Pb SHRIMP zircon ages of two samples from porphyritic charnockite facies of the ACIS: Opx-quartz monzonite (WB-731) and Opx-monzogranite (WB-305). The analyses were carried out on the SHRIMP IIa at the University of São Paulo, Brazil. The zircons are characterized by an igneous oscillatory-zoned core with variable recrystallization. Such zoning shows convoluted, blurred and ghost textures and it is surrounded by a transgressive homogeneous to faintly zone, and by a bright CL rim of variable thickness. An outer discontinuous dark CL rim occurs in some grains. Non-luminescent rounded cores are observed in some zircon grains. The analyses performed in the oscillatory-zoned cores (Th/U = 0.52 to 0.26) yield concordant ages of 1349 ± 9.4 Ma (n=7, MSWD = 1.9) for sample WB-731 and of 1330 ± 12 Ma (n = 6, MSWD = 2.4) for sample WB-305. Those ages are interpreted as the crystallization ages of the two charnockite facies. Four analyses performed in the zircon rounded cores from the WB-731 sample, yield a concordant age of 1381 ± 12 Ma (MSWD = 1.1), which is interpreted as zircon grains inherited from the source region. The rim analyses (Th/U = 0.27 to 0.18) yield concordant ages of 1337 ± 13 Ma (n = 3, MSWD = 0.47) for sample WB-731 and of 1308 ± 12 Ma (n = 5, MSWD = 0.23) for WB-305 sample. Such ages are interpreted as the recrystallization age of the magmatic zircons during the collisional stage of the Rondonian-San Ignacio orogeny (1340 – 1320 Ma).

