

THE FINAL WEST GONDWANA SUTURE? THE ARAGUAIA BELT, BRAZIL.

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Significant geological investigation has focused on the Pampean, Paraguay and Araguaia belts after a recent hypothesis suggested that they form the suture of the Clymene Ocean and the final amalgamation of the supercontinent Gondwana. This proposed ocean is located between the Amazon craton and the various craton blocks forming Gondwana (Congo-São Francisco, Goiás, Rio Apa, Paranapanema, Rio de la Plata). Here we present initial field geology and geochronological results from several campaigns to the Araguaia Belt. The belt is composed of metamorphosed pelites, psammite with minor carbonate associations, mafic and ultramafic rocks and granite intrusions. Gneissic domes punctuate the eastern portion of the belt. We present mapping work coupled with LA-ICPMS and SHRIMP U-Pb ages from regional sections across the belt. These data indicate that the existing stratigraphy and nomenclature of the belt, originally based essentially on the metamorphic grade of the metasedimentary successions, requires reconsideration since age spectra of detrital zircons do not follow the previous stratigraphic scheme. Age peaks vary between 545-724 Ma, 772 Ma, 1880-2100 Ma and 2856 Ma for the western belt and 578-784 Ma, 910-1175 Ma, 1529 Ma, 1885-2171 Ma, 2565 Ma and 2847 Ma for the eastern belt, with likely provenance from the Amazon craton, Goiás massif and arc, Paranapanema, São Francisco craton and granitic bodies within the Araguaia Belt itself. Detrital zircons as young as 549 ± 5 Ma and 529 ± 16 Ma were found in the western pelitic sequence and a robust age of 540 ± 3 Ma for the Ramal da Lontra granite has been calculated. These ages indicate a close overlap of sedimentation and tectonics in the Araguaia belt with the late Ediacaran and Cambrian ages for sedimentation and orogenesis found in the Paraguay and Pampean belts further south, indicating a coeval evolution of these Amazon Craton margins during transition from Neoproterozoic to Cambrian times. Yet, contrary to the other belts, the Araguaia belt presents several ultramafic-mafic bodies aligned parallel to the belt elongation which correspond to ophiolitic units and therefore mark the ancient suturing at the core of the West Gondwana.