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A CAMBRIAN OROCLINE IN THE HEART OF SOUTH AMERICA; GEOCHRONOLOGICAL AND PALEOMAGNETIC CONSTRAINTS FROM THE PARAGUAI BELT

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The Paraguai belt of central Brazil is the central portion of a large suture zone that separates the Amazon craton from the other South American cratons. A recent compilation of geochronological data from the Paraguai belt, the Araguaia belt to the north, and the Pampean belt along the W margin of the Rio de la Plata craton to the south indicate that these belts were active in the latest Ediacaran to late Cambrian times (Tohver *et alii* Gondwana Research 2011). A recent paleomagnetic study of the Paraguai belt indicates that secondary paleomagnetic directions vary along strike, indicating that the 90 degree curvature of this belt is a secondary feature. The timing of the development of the Paraguai belt orocline is constrained by comparison to a 525 Ma reference direction, which overlaps the remagnetized directions from the central hinge zone, presumably an unrotated portion of the Paraguai belt. Independent constraints on the maximum age for the remagnetization are provided by dating of authigenic clay from remagnetized carbonates. This fine-grained clay is considered to be genetically linked to the remagnetization process and is dated by the ⁴⁰Ar/³⁹Ar encapsulation to at least 528 +/- 28 Ma, interpreted as maximum age due to the presence of older, detrital clay. These data indicate that deformation of the Paraguai belt is younger than middle Cambrian, indicating that the suturing of Western Gondwana was not complete until the early Paleozoic.