

THE ASSEMBLY OF PANNOTIA AND GONDWANA SUPERCONTINENTS: A PALEOMAGNETIC APPROACH

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Two Precambrian supercontinents (Gondwana and Pannotia) may have been formed after Rodinia's break-up at around 750 Ma. The time of their complete assembly and their paleogeographic configuration is still disputable, and has been investigated by comparing the paleomagnetic poles from their cratonic units. A rigorous selection of paleomagnetic poles from South America and West Africa between 750 and 500 Ma allowed the construction of a coherent apparent polar wander path (APWP) from 600 Ma to 500 Ma after rotation of South America to Africa in a pre-drift configuration. Paleomagnetic poles older than 600 Ma are scattered suggesting that the assembly of West Gondwana was attained at around 600 Ma. The APWP for South America and West Africa is in accordance with Meert's (1995) APWP for the East Gondwana between 550 and 500 Ma, indicating that the Gondwana supercontinent was completely assembled by that time. Two poles from Africa with ages at ca. 580 Ma, Dokhan volcanics and the Northern Cameroon volcanics (this paper), define the 600-550 Ma segment of the West Gondwana APWP. The hypothesis of Pannotia supercontinent, comprising Gondawana, Laurentia, Baltica and Siberia, is reinforced by the coincidence between these two poles and the 580 Ma mean paleomagnetic pole for Laurentia rotated to the Pannotia configuration.