

## Regional-scale Cambrian remagnetization of Neoproterozoic carbonates from the São Francisco basin, Brazil

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The São Francisco basin (central Brazil) comprises a typical Neoproterozoic glacial sequence overlain by carbonates (Salitre and Bambuí units) which covers ca. 300.000 km<sup>2</sup> of the São Francisco craton. These sediments were partially deformed as a consequence of tectonic activity along the encircling Brasiliano-Pan African fold belts, whose peak metamorphic conditions were attained between 600 and 550 Ma. Combined paleomagnetic and U-Pb and Pb-Pb geochronological studies have been carried out in carbonates from the undeformed areas of the basin.

Most of the Pb-Pb and U-Pb ages obtained on Salitre and Bambuí carbonates are coeval or younger than the tectonic activity on the marginal fold belts, and range from 550 to 500 Ma. Only two <sup>207</sup>Pb-<sup>206</sup>Pb isochron ages from the basal unit of the Bambuí Group are older than 600 Ma, and may thus represent the time of deposition. The most reliable one indicates 762 ± 29 Ma as the depositional age for cap carbonates from the southern part of the basin (Babinski & Kaufman, this volume).

Rock magnetic and paleomagnetic results in the Salitre and Bambuí units are similar for the whole basin surface. Magnetic properties are typical of remagnetized carbonates, and include: wasp-waisted hysteresis loops, contradictory Lowrie-Fuller and Cisowski tests, and anomalously high hysteresis ratios. Magnetic directions in both units are northeast, and highly positive, giving paleomagnetic poles at (28°N, 321°E,  $\square 95=4.9^\circ$ ) for Salitre and (30°N, 321°E,  $\square 95=3.8^\circ$ ) for Bambuí with overlapping confidence circles. These poles fall into the ~520 Ma sector of the Gondwana apparent polar wander path, and coincide with the high-quality Ntonya Ring pole (West Africa), dated at 522 ± 13 Ma.

Our data support a widespread resetting of the isotope and magnetic systems, which affected synchronously the whole basin at ca. 520 Ma. Additional support for a short remagnetization event is given by the single polarity directions found along the whole sedimentary sequence (ca. 100 meters thick), and the low dispersion of magnetic components. We suggest that paleomagnetic data and most of Pb-Pb and U-Pb isochron ages record a regional-scale gravity-driven fluid migration event, in the aftermath of the Brasiliano-Pan African collision.