

Accepted Manuscript

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PII: S0301-9268(17)30426-6

DOI: <https://doi.org/10.1016/j.precamres.2018.05.026>

Reference: PRECAM 5098

To appear in: *Precambrian Research*

Received Date: 22 July 2017

Revised Date: 24 April 2018

Accepted Date: 20 May 2018

Please cite this article as: F. Chemale Jr., V.A. Ramos, M. Naipauer, T.J. Girelli, M. Vargas, Age of basement rocks from the maurice ewing bank and the falkland/malvinas plateau, *Precambrian Research* (2018), doi: <https://doi.org/10.1016/j.precamres.2018.05.026>

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AGE OF BASEMENT ROCKS FROM THE MAURICE EWING BANK AND THE FALKLAND/MALVINAS PLATEAU

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ABSTRACT

The Maurice Ewing Bank is located east of the Falkland/Malvinas Islands and is one of the most intriguing regions of southern Gondwana. The interaction of several microplates with major cratonic areas resulted in complex displacements between Paleozoic and Cretaceous times. Here, we present combined U-Pb and Lu-Hf zircon isotopic analyses of the Maurice Ewing Bank basement to constrain the age and tectonic setting to aid in paleogeographic reconstruction. The high-grade paragneisses in the bank present dominant Late Mesoproterozoic detrital zircon age distributions with populations at 1032 ± 12 Ma, 1068 ± 16 Ma and 1233 ± 8 Ma and juvenile signature (positive $\epsilon_{\text{Hf}_{\text{t}}}$ values). The gneisses are cut by anatectic pink granite crystallized at 1006 ± 13 Ma which formed after syn-collisional high-grade metamorphism and shows juvenile and some crustal component ($\epsilon_{\text{Hf}_{\text{t}}} = +1.6$ to -3). The Maurice Ewing Bank basement rocks have same Stenian age and dominant juvenile signature as the arc-related basement rocks from the Falkland/Malvinas Islands and are probably part of the same continental plateau of the South America continent. This new finding enables future reconstructions in paleogeographic models where the basement of the Falkland/Malvinas Islands and the Maurice Ewing Bank formed a single block during

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