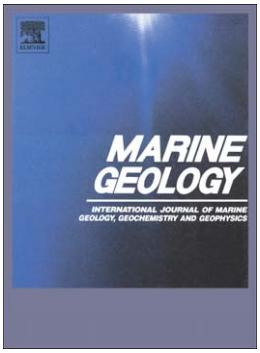

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M.V. Ramana, Maria Ana Desa, T. Ramprasad

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Re-examination of geophysical data off Northwest India: Implications to the Late Cretaceous plate tectonics between India and Africa

M. V. Ramana[1], Maria Ana Desa*,[2] and T. Ramprasad[2]

[1] Mauritius Oceanographic Institute, Victoria Avenue 230 427 4434 Mauritius

[2] CSIR-National Institute of Oceanography, Dona Paula, Goa, India-403 004

* Corresponding author, Email: mdesa@nio.org

Tel: 91-832-2450428 Fax: 91-832-2450609

ABSTRACT

The Gop and Laxmi Basins lying off Northwest India have been assigned ambiguous crustal types and evolution mechanisms. The Chagos-Laccadive Ridge (CLR) complex lying along the southwest coast of India has been attributed different evolutionary processes. Late Cretaceous seafloor spreading between India and Africa formed the Mascarene Basin, and the plate reconstruction models depict unequal crustal accretion in this basin.

Re-interpretation of magnetic data in the Gop and Laxmi Basins suggests that the underlying oceanic crust was accreted contemporaneously from 79 Ma at slow half spreading rates (0.6 to 1.5 cm/yr) separating the Seychelles-Laxmi Ridge complex from India. The spreading ridge became extinct at 71 Ma in the central region between 19-20°N and 65.5-67°E, and at 68.7 Ma in the Gop Basin. Extinction progressed southwards with time until 64.1 Ma at ~14.5°N in the Laxmi Basin. This spreading probably limited the seafloor spreading in the northern Mascarene Basin,