



Supplement of

Cretaceous–Paleocene extension at the southwestern continental margin of India and opening of the Laccadive basin: constraints from geophysical data

Mathews George Gilbert et al.

Correspondence to: Mathews George Gilbert (georgegilbertm@gmail.com)

The copyright of individual parts of the supplement might differ from the article licence.

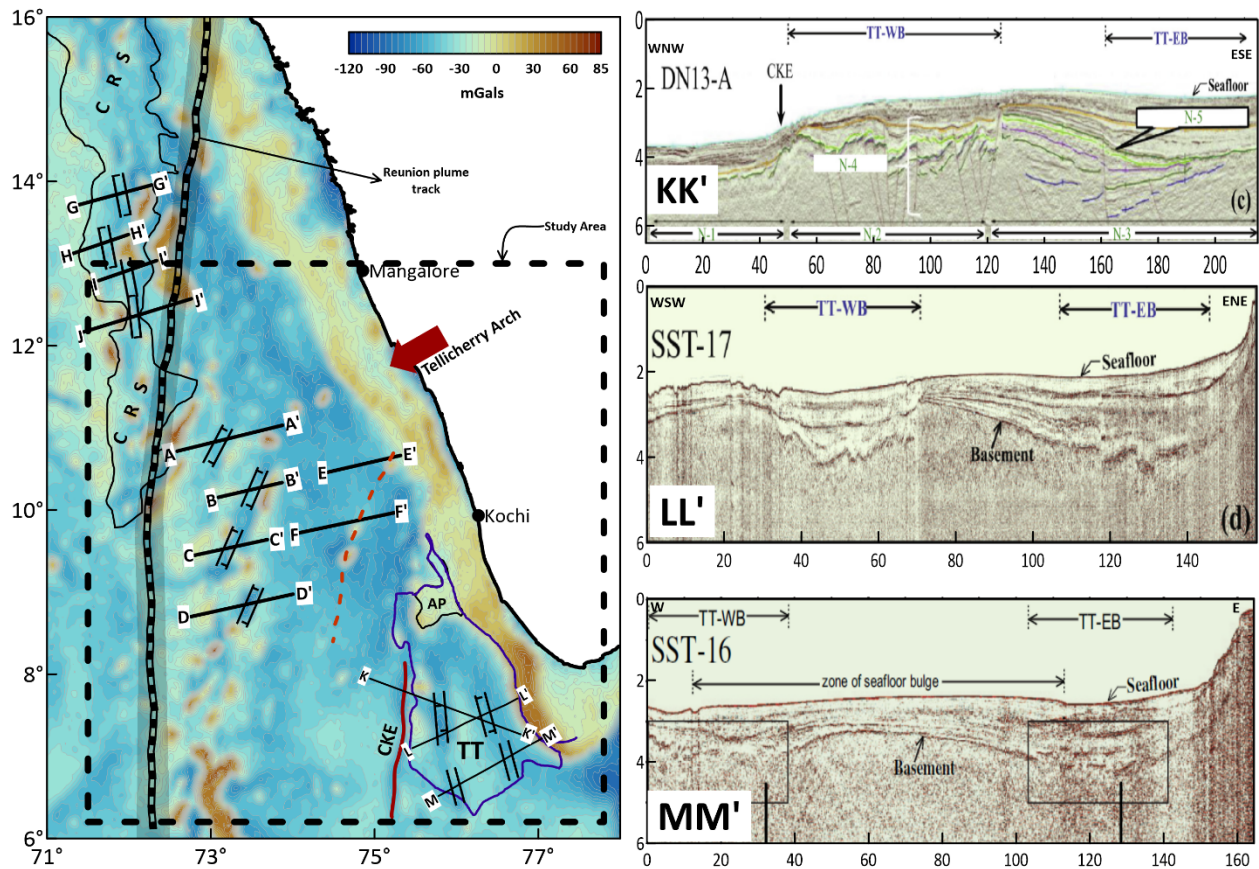


Figure S1: Satellite-derived free-air anomaly map of the study area showing the location of identified extensional features/grabens and intrusives. Black solid lines represent the location of the profiles. Seismic sections are shown on the right are compiled from Yatheesh et al, (2013) and Nathaniel (2013). The broken brown line in the centre of the basin represents the identified volcanic ridge. CKE: Chain-Kairali Escarpment; AP: Alleppey Platform; TT: Trivandrum Terrace. TT-WB and TT-EB in seismic sections KK', LL' and MM' represent Trivandrum Terrace western Basin and Trivandrum Terrace eastern Basin respectively.

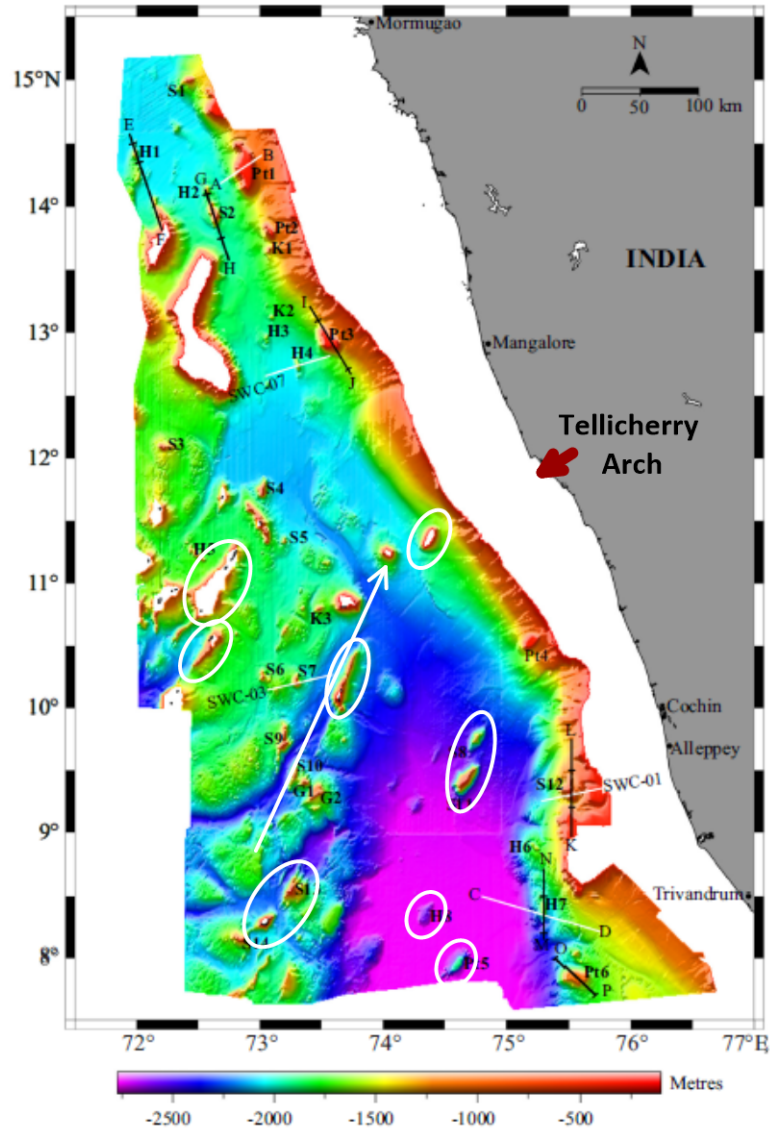


Figure S2: The is high resolution bathymetry map presented by Bijesh et al., 2018 where the elongation of the features towards the south of Tellicherry Arch is clearly seen.

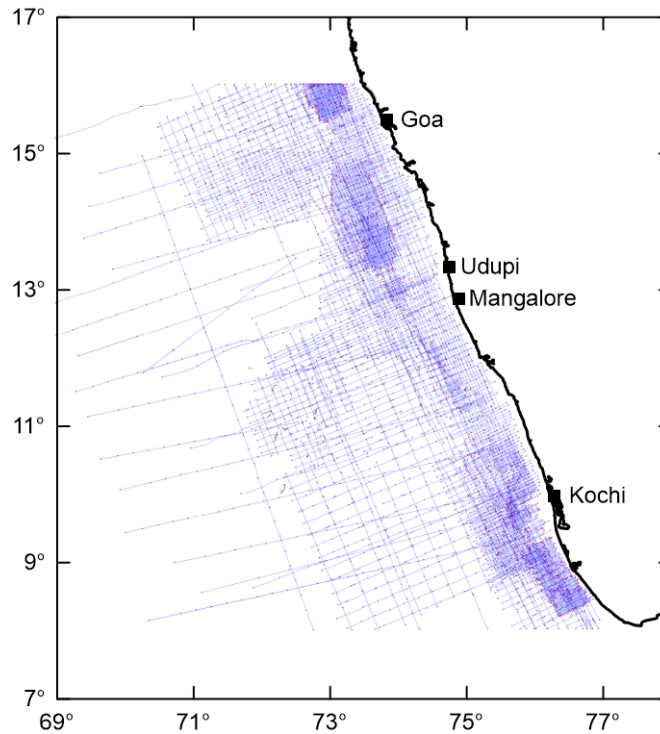


Figure S3: The seismic profiles used to prepare the Two-way time (TWT) maps. (Reproduced from Unnikrishnan et al., 2023).

References:

Bijesh, C. M., Kurian, P. J., Yatheesh, V., Tyagi, A., & Twinkle, D. (2018). Morphotectonic characteristics, distribution and probable genesis of bathymetric highs off southwest coast of India. *Geomorphology*, 315, 33-44.

Nathaniel, D.: Hydrocarbon potential of sub-basalt Mesozoics of deepwater Kerala Basin, India, in: 10th Biennial International Conference & Exposition Kochi, pp. 1–7, 2013.

Unnikrishnan, P., Gilbert, M., and Radhakrishna, M.: Crustal structure along the Kerala-Konkan Basin, southwest continental margin of India, using multi-channel seismic and gravity modelling: Implications on India-Madagascar rifting and basin evolution, *Journal of Asian Earth Sciences*, 242, 105 504, 2023.

Yatheesh, V., Kurian, P. J., Bhattacharya, G., and Rajan, S.: Morphotectonic architecture of an India–Madagascar breakup related anomalous submarine terrace complex on the southwest continental margin of India, *Marine and Petroleum geology*, 46, 304–318, 2013.