

Figure F1. Overview map showing the Indian Ocean (<https://www.geoma-papp.org>; GMRT-Global Multi-Resolution Topography; Ryan et al., 2009) with investigated DSDP, ODP, and IODP drill sites (white circles) of Legs 22, 115, 116, 119, 120, 121, 183, 153 and Expeditions 354 and 362 that were sampled and analyzed for this publication.

Figure F2. Glass-shard compositional ranges of marine tephtras sampled in 25 deep drilling sites of the Indian Ocean (normalized to 100 wt% anhydrous compositions). A. Total alkalis vs. silica diagram showing the volcanic rock classification after Le Maitre et al. (2002). Most samples follow a basaltic to rhyolitic trend.

Note the separate trend of trachybasaltic to trachytic glass shards. Presumably arc-derived tephtras (red circles) are constrained to andesitic, dacitic, and rhyolitic compositions, whereas ocean island-derived tephtras (black circles) also contain more primitive and alkali-enriched compositions. B. Potassium vs. silica diagram showing the classifications after Peccerillo and Taylor (1976) into calc-alkaline, high-K calc-alkaline, and shoshonitic magmatic series. Presumably arc-derived tephtras are limited to the high-k and normal calc-alkaline magmatic series; ocean island-derived tephtras additionally fall into the shoshonitic magmatic series.