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Northward motion of the Burma Terrane alongside India during the Cenozoic.

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Recent paleomagnetic data from early Late Cretaceous and late Eocene rocks from Myanmar (1,2) demonstrate that the Burma Terrane (BT) underwent an important northward translation alongside India in the Cenozoic. We present new paleomagnetic results from Paleocene to Eocene sediments that confirm the slightly southern to equatorial paleolatitudes during the Paleocene to mid Eocene. However, these paleomagnetic results imply a new paleogeography not compatible with the typical view of the geology of Myanmar as an andean-type margin above an active subduction of the Tethys/India oceanic crust below Sundaland. Most previous models proposed an active subduction below Myanmar during the Paleogene but a slab anchored in the mantle would impede the large northward motion of the BT implied by our paleomagnetic data. We thus review the geology of the BT in light of the new latitudinal constraints provided by the paleomagnetic data. The BT contains >10km thick Cenozoic basins (Central Myanmar Basins (CMBs)) recording the Cenozoic geological evolution of the BT. The CMBs were previously interpreted with sediment sources located within the Myanmar magmatic arc and to the east in Sibumasu. The numerous studies on detrital zircons from the Late Cretaceous - Paleogene sediments of the CMBs highlight a clear correlation in the distribution of the ages of the pre-Cretaceous zircons (~40% of the zircons in the sediments) with the one from the Triassic turbidites (Pana Chaung Formation) of the Indo-Burman Ranges and the Triassic sediments from the Tethyan Himalaya (Langjiexue Fm.). Thus, the source of sediments is unlikely to be in Sibumasu but proposed to be in an actively eroding north-western extension of the Indo-Burman ranges (Greater Burma block, (2)) possibly linked to the Tethyan Himalaya and consistent with a BT position within the India plate during the Cenozoic. In any case, we find little evidence for a nearby active magmatic arc in the detrital zircon record supporting the hypothesis of an active subduction below the BT. Thus this review of the geology of the BT supports a rapid northward moving BT alongside India during the Cenozoic. We will discuss the implication of this new paleogeography on the India-Asia collision models.

(1) Westerweel et al. « Burma Terrane Part of the Trans-Tethyan Arc during Collision with India According to Palaeomagnetic Data ». *Nature Geoscience* 12, no 10 (octobre 2019): 863–868. <https://doi.org/10.1038/s41561-019-0443-2>.

(2) Westerweel et al. « Burma Terrane Collision and Northward Indentation in the Eastern Himalayas Recorded in the Eocene–Miocene Chindwin Basin (Myanmar) ». *Tectonics* 39, no 10 (octobre 2020). <https://doi.org/10.1029/2020TC006413>.