CROSS SECTION OF NORTHERN TRINIDAD

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ABSTRACT

A model of the structure of Trinidad, from the northern shelf to the Central Range, is presented as a cross section drawn to a depth of 15 km. The section is constrained by surface and well data, gravity onland seismic profiles, seismicity, and especially, the structure and uplift histories of the Northern and Central Ranges. Some on-strike similarity is assumed so that better known structures from eastern Trinidad and eastern Venezuela are used in interpretation.

Structural features include: (1) continental crust below the entire section; (2) Northern Range schists in a south-thinning flat wedge thrust south above a melange sole and with a tip below the Northern Basin; (3) imbricate stack of Paleogene and Cretaceous shelf strata below the wedge and above an evaporite-coated detachment and ancient crystalline basement; (4) Central Range (CR) shown as a multistage thrust belt; the CR was an early Miocene toe of the imbricate stack to the north, then a late Neogene triangle zone above a major detachment that propagated at depth southward below southern Trinidad. The Northern Basin is deformed by backthrusting north onto the Northern Range wedge. No vertical strike slip fault of large displacement-rate exists. The structures reflect Neogene NS contraction. EW components of slip must be taken up at depth by oblique slip on the major flat faults.