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Overview of the Geology of Cuba

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1 Abstract

Cuba is the largest island in the Greater Antilles (GA) and has been part of the North American Plate (NOAM) since Upper Eocene time. It is separated from other GA islands by the North Caribbean Transform Fault System which defines the present boundary between the NOAM and the Caribbean Plate (CARIB).

The GA began to form ~135 Ma ago, after the breakup of Pangea, in the leading edge of CARIB, due to subduction of Proto-Caribbean lithosphere (NOAM) beneath CARIB until collision with the Bahamian platform in the Middle to Late Eocene time (~48 to 40 Ma). Between the Maastrichtian and the Late Eocene the Cayman spreading ridge and the Oriente transform formed and western CARIB was transferred to NOAM.

The geology of Cuba is dominated by three lithotectonic units, which reflects its evolution as a Cretaceous-Paleogene convergent margin: (1) deformed (para)autochthonous NOAM Jurassic and Cretaceous continental margin and basin sections and Paleocene-Eocene synorogenic foredeep; (2) ophiolite complexes and serpentinite mèlanges and ~135 to 47 Ma magmatic arc suite interbedded with or overlain by Latest Cretaceous-Paleogene synorogenic strata; and (3) (neo)autochthonous late Upper Eocene to Recent deposits which unconformably overlie the two older units.

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