



Cretaceous-Palaeogene development of Labrador Sea and Davis Strait

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The Labrador Sea and Baffin Bay are small oceanic basins that developed when the North American and Greenland plates separated during the Paleocene and Eocene. An initial period of stretching in the Early Cretaceous formed sedimentary basins now preserved under the continental shelves and around the margins of the oceanic crust. The basins subsided thermally during the Late Cretaceous and a second episode of tectonism took place during the latest Cretaceous and early Paleocene, prior to the onset of sea-floor spreading in the mid-Paleocene. Around the northern Labrador Sea, Davis Strait and in southern Baffin Bay, voluminous picrites and basalts were erupted at and shortly after the commencement of sea-floor spreading. Volcanism occurred again in the early Eocene at the same time as sea-floor spreading commenced in the northern North Atlantic, east of Greenland. Farther southeast, along the Labrador and southern West Greenland margins, oceanic crust is separated from continental crust by highly stretched but non-magmatic transition zones which developed prior to sea-floor spreading. A complex transform zone (the Ungava Transform) extends from northern Labrador Sea through the Davis Strait along the southeastern Baffin Island margin. This transform zone developed during sea-floor spreading in the late Paleocene and early Eocene, and includes slivers of Late Paleocene oceanic crust.