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Tectonic Map of the Ellesmerian and Eurekan deformation belts on Svalbard, North Greenland and the Queen Elizabeth Islands (Canadian Arctic)

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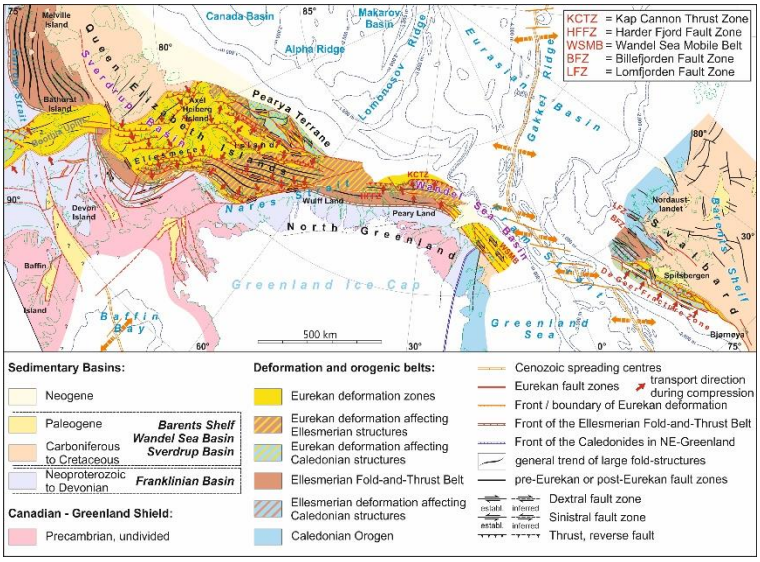
The tectonic map presented here shows the distribution of the major post-Ellesmerian and pre-Eurekan sedimentary basins, parts of the Caledonian Orogen, the Ellesmerian Fold-and-Thrust Belt, structures of the Cenozoic Eurekan deformation, and areas affected by the Eurekan overprint. The present continental margin of North America towards the Arctic Ocean between the Queen Elizabeth Islands and Northeast Greenland and the present west margin of the Barents Shelf are characterized by the Paleozoic Ellesmerian Fold-and-Thrust Belt, the Cenozoic Eurekan deformation, and, in parts, the Caledonian Orogen. In many areas, the structural trends of the Ellesmerian and Eurekan defor-mations are more or less parallel, and often, structures of the Elles-merian Orogeny are affected or reactivated by the Eurekan defor-mation. While the Ellesmerian Fold-and-Thrust Belt is dominated by orthogonal compression and the formation of wide fold-and-thrust zones on Ellesmere Island, North Greenland and Spitsbergen, the Eurekan deformation is charac-terized by a complex network of regional fold-and-thrust belts (Spitsbergen, central Ellesmere Island), large distinct thrust zones (Ellesmere Island, North Greenland) and a great number of strike-slip faults (Spitsbergen, Ellesmere Island). The Ellesmerian Fold-and-Thrust Belt was most probably related to the approach and docking of the Pearya Terrane (northernmost part of Ellesmere Island) and Spitsbergen against the north margin of Laurasia (Ellesmere Island/North Greenland) in the earliest Carboniferous. The Eurekan deformation was related to plate tectonic movements during the final break-up of Laurasia and the opening of Labrador Sea/Baffin Bay west, the Eurasian Basin north, and the Norwegian/Greenland seas east of Greenland.



The tectonic map presented here shows the German contribution to the Tectonic Map of the Arctic 1:5,000,000 (TeMAr) as part of the international project "Atlas of geological maps of Circumpolar Arctic at 1:5,000,000 scale". The compilation of TeMAr is organized by the A.P. Karpinsky Russian Geological Research Institute (VSEGEI) in St. Petersburg in cooperation with institutions in Canada, Denmark, Germany, Norway, Russia, Sweden, and USA. The compilation of the map is supported by the International Union of Geological Sciences (IUGS) and the Commission for the Geological Map of the World (CGMW) (UNESCO).