



## **Extensional structures of the Central Arctic Submarine Elevation Complex**

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The whole set of modern data indicates that the morphostructures of the Central Arctic Submarine Rise Complex constitute an integrated complex block of the continental crust.

The seismic stratigraphic interpretation of the MCS data within the Central Arctic Submarine Elevation Complex, based on the seismostratigraphic markers certified by drilling and on the continuous tracing of the Pre-Cenozoic unconformities from the North Chukchi Trough to the Podvodnikov Basin, led us to the following conclusions: Depocenters of the Podvodnikov sedimentary basin and the Chukchi sedimentary basin contain not only Cretaceous units, but also Jurassic sediments. The latter do not extend broadly to the rest of the Central Arctic Submarine Elevation Complex area.

As underwater morphostructures, the uplifts of the Central Arctic Submarine Elevation Complex probably formed in Miocene.

The main factor influencing the tectonic evolution of the Central Arctic Submarine Elevation Complex morphostructures is rift extension of the continental crust, which is indicated by two phases of Cretaceous HALIP volcanism. The most obvious signs of rift extension on the MCS sections are recorded on the Lomonosov Ridge, the Mendeleev Rise, the Chukchi Plateau and on their slopes into the sedimentary Podvodnikov and Chukchi Basins. At the same time depocenters of these sedimentary basins, made of Jurassic sediments, are characterized by almost undisturbed layering of all sedimentary units.

The Jurassic sediments are a relic of the Elsmirian structural stage, which has been preserved in the Central Arctic Submarine Elevation Complex depression from the pre-oceanic stage of evolution. Apparently, the Jurassic deposits were subjected to intense rifting processes only on the Central Arctic Submarine Elevation Complex and the depression edges which separate them. In the depocenters of the sedimentary Podvodnikov and the Chukchi Basins, which are structurally connected with the shelf, deposits of the Jurassic unit were extremely affected by riftogenic processes.

Evidently, the tectonic evolution (submergence relative to the surrounding rises) of sedimentary basin depocenters were more influenced by compensating mechanics, rather than extension of the crust.