



Onset of deep-water circulation in Eastern Arctic area

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On the base of available seismic data for Chukchi, East-Siberian Seas and Mendeleev Rise, we identify series of bottom current sedimentary structures – deep-water erosional channels, moats and drifts. Within Mendeleev Rise we observe several fault-controlled and mounded drift structures. On the Chukchi shelf edge allocate two large long living (until recent) infilled channels and series of small short-living erosional channels. In addition, short erosional event is identified in deep-water zone on slope of Kucherov Terrace.

These structures began to form contemporaneously in the separated areas of the study area and could be traced through sedimentary cover up to modern bottom relief. Similar structures with the same stratigraphic level were earlier noted for Cenozoic cover of Eurasian basin and at the foot of Lomonosov ridge, but not in the East Arctic. Synchronous formation and extensive distribution of this structures point out on global character of this event, which probably could be correlated with start of deep water circulation in Arctic (17.5 Ma).

As a result we suppose start of deep-water circulation was simultaneous in the West and East Arctic and Lomonosov ridge does not influence much on deep water circulation when it have begun. The study was funded by RFBR - projects № 18-35-00133, 18-05-70011 and 18-05-00495.