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Mendelev Rise basalts compile an acoustic basement of the North Chukchi Basin?

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The Eastern Arctic is poorly studied by offshore drilling. There are some wells drilled on the Alaska shelf, but Russian sedimentary basins are separated from Alaska basins by tectonic structures, therefore seismic complexes could not be traced confidently from Alaska to the North Chukchi Basin. Nevertheless, seismic lines in the Eastern Arctic acquired in last decade, samples from seafloor scarps on the Mendelev Rise (Skolotnev et al., in preparation) and geologic data from adjacent onshore geology allows to assume the mechanisms and timing of the Eastern Arctic Basins forming. According to data from De-Longa Islands and from sampling on the scarps of the Mendelev rise, the wide basalt volcanism was acting during ± 125 -100 Ma. The volcanism related to forming of rift basins all over the Eastern Arctic. On the seismic lines crossing the Mendelev Rise some structures that could be interpreted as volcanos and Seaward Dipping Reflectors (SDR) are identified at the base of geological section. The top of these structures are traced on the seismic lines, and continue from the Mendelev rise to the North Chukchi Basin where they are covered by clastic complexes that prograde from the territory of the Early Cretaceous Verkhoyansk-Chukotka Orogen. On this account the North Chukchi Basin started to form not earlier than in Barremian-Aptian. Continuation of Mendelev Rise into the North Chukchi Basin is confirmed by the data of magnetic anomalies. To the south of the North Chukchi Basin on the Wrangel-Gerald High the volcanic build-ups and associated intrusions are interpreted. Presence of magmatic features in this area is confirmed on the magnetic anomaly map. The volcanic horizons lay below the sedimentary cover of the North Chukchi Basin. Our main conclusion is that Mendelev Rise and North Chukchi Basin started to form nearly simultaneously during Aptian (Barremian) - Albian time and they compile connected geodynamic system.