IS THE CENTRAL ARCTIC OCEAN A SEDIMENT STARVED BASIN?

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Numerous short sediment cores have been retrieved from the central Arctic Ocean, many of which have been assigned sedimentation rates implying that the Arctic basin was starved of sediments during Plio-Pleistocene times. A review of both shorter-term, through analysis of available sediment core data, and longer-term, through estimates of total sediment thickness and bedrock age, sedimentation rates unequivocally suggests that cm/ka-scale rates are pervasive in the central Arctic Ocean. This is not surprising considering the physiographic setting of the Arctic Ocean, being a small land-locked basin since its initial opening during Cretaceous times. We thus conclude that the central Arctic Ocean has not been a sediment starved basin, either during Plio-Pleistocene times or during pre-Pliocene times. Rigorous chronstratigraphic analysis permits correlation of sediment cores over a distance of ~2600 km, from the northwestern Amerasian Basin, via the Lomonosov Ridge and to the northwestern Eurasian Basin, using paleomagnetic, biostratigraphic, and cyclostratigraphic data.