

Magnetostratigraphy of sediments from Ocean Drilling Program Sites 1257 to 1261 (Leg 207), Demerara Rise (Equatorial Atlantic)

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We report the result of paleomagnetic and rockmagnetic measurement of ocean sediments from Eocene to Late Cretaceous and establish a high resolution magnetostratigraphy. A continuous and thick section from Ocean Drilling Program (ODP) Sites 1257 to 1261 had been drilled on Demerara Rise, off the east coast of Surinam and French Guiana, Southern America. Lithofacies of the drilled core are divided into 5 facies, which are Nanno fossil ooze, early Oligocene to Eocene calcareous ooze or chalk, Paleocene to Campanian chalk, Santonian to Cenomanian black shale, and Albian clay to sand stone. A suite of major hiatuses occurs at middle Eocene, Lower Campanian, and upper Albian. Approximately 800 minicores collected from all the sites displayed a downward overprint induced during the ODP coring and a low temperature component that could be cancelled by up to 200C ThD step. Demagnetization behavior and rock magnetic experiments revealed that a low temperature component is carried by goethite originated diagenetic process and Viscosity Remanent Magnetization (VRM). We consider the low temperature component to be indicator of paleomagnetic polarity. In conclusion, magnetostratigraphy and biostratigraphy based on our interpretation have resolved C18n through C27r of middle Eocene to late Paleocene age, and C29r through potentially C34n of Maastrichtian-Campanian.