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Kerguelen Plateau Drift Deposits: outstanding high-resolution chronicle of Cenozoic climatic and oceanographic changes in the southern Indian Ocean

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Kerguelen Plateau (KP), one of the world's largest Large Igneous Provinces, is located in a key region in the southern Indian Ocean. Its complex topography has a strong influence on pathways of water masses within the Antarctic Circumpolar Current (ACC) and the Antarctic Bottom Water (AABW). Thick sediment packages deposited on top and around KP are a high-fidelity recorders of significant modifications in pathways and intensities of water masses flowing across the KP during the Cenozoic. Already the previously ODP spot cored sedimentary sequences demonstrated their outstanding potential as a far-field monitor for the evolution of the Antarctic Ice Sheet, for the climate variability in the Warmhouse World of the middle to late Eocene, for changes in ocean circulation, and for migration of the Polar Frontal System. Here we propose to revisit KP and recover a complete, multiple-hole drilled, carbonate rich sedimentary successions from Labuan and Ragatt Basin area by an IODP Expedition. Only high-quality drilled, undisturbed new material will allow studying the interaction of climatic and tectonic changes of the last 66 million years and provide important information on the formation and dynamics of the Antarctic ice sheet due to the unique location of the KP.