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Tue_280_GG-2_1479 - Holocene Climate Evolution off Northern Victoria Land, East Antarctica

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Regionally representative records of how the Antarctic climate system evolved through the Holocene are an essential component of understanding the processes that drive the Antarctic climate. We present a high-resolution multi-proxy record of Antarctic paleoclimate evolution during the last 7,200 yr from a sediment core retrieved by the RV/IB *Araon* from Robertson Bay, a previously unstudied sector of the Victoria Land Margin. Using diatom assemblages, bulk sediment geochemistry, and the magnetic properties of RS15-GC57, we reconstruct Holocene climate variability at the interface between the East Antarctic Ice Sheet and the Southern Ocean.

A rapid transition at ~3,500 cal yr BP, constrained using novel ramped pyrolysis ^{14}C dating, is evident in all environmental proxies and is coincident with the Hypsithermal-Neoglacial transition recorded in sediment cores from Adélie Land, the Ross Sea, and the Antarctic Peninsula. A sea ice-associated diatom assemblage characterizes a discrete interval from 700 cal yr BP to modern, suggesting an environmental response to the Little Ice Age at the northern margin of the EAIS. High frequency (80-350yr) environmental variations, attributed to solar variability in previous marine Antarctic studies, are superimposed onto these millennial scale regional trends. Preliminary analysis suggests that changes in westerly wind stress and the upwelling of Circumpolar Deep Water were a primary driver of late Holocene climate dynamics in the Antarctic.