

Iceberg Deposition and Climate during the mid-Brunhes in the northwestern Pacific Ocean

Cire Portegies^{1,2}, Jerry F. McManus², Celeste Pallone²

¹*Southern University and A&M College*, ²*Lamont-Doherty Earth Observatory, Columbia University*

Over the last 780,000 years during the Brunhes period, there has been a sequence of glacial and interglacial intervals. Although these climatic changes have been well characterized at many varying locations, much less is known about the North Pacific Ocean, largely due to the corrosive nature of its deep waters and the resulting poor preservation of calcium-carbonate microfossils. Sediment core VM20-119, located at 47°57'00.0"N 168°43'48.0"E, was taken from relatively shallow ridge associated with the Emperor Seamount chain, making it better-suited for foraminifera research. Its depth of 2739m contributes to better preservation potential of calcium-carbonate, due to factors such as oxygen availability, in comparison to the much deeper surrounding seafloor in the northwestern Pacific. Using data gathered from VM20-119, this research is aimed to better understand patterns of climatic conditions of the northwestern Pacific region. Useful indicators of these past conditions include the relative abundance of ice-rafted debris (IRD), the abundance of the polar foraminifera species *Neogloboquadrina pachyderma* (*N. pachyderma*) and the stable oxygen isotope and carbon isotope ratios in the microfossil shells of *N. pachyderma* and benthic foraminifera. Within a sample split, both IRD and foraminifera were counted to calculate their relative abundance within the entire sample. Through comparison of this data, the goal is to determine whether iceberg discharge coincides with global and sea-surface conditions. This research will ultimately reveal the presence of icebergs and otherwise climatic conditions of the region across the last 780,000 year period.