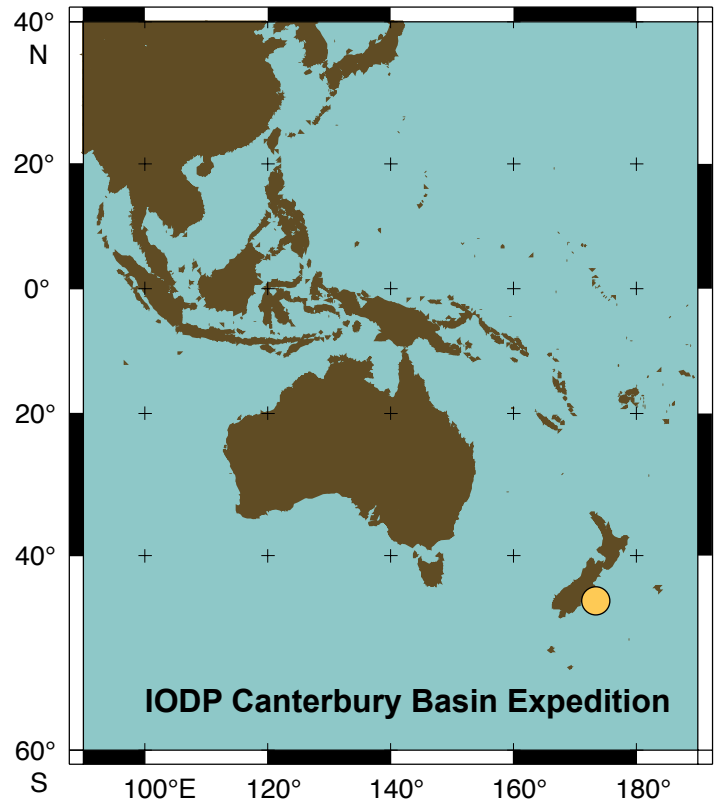


## About the Expedition

In November 2009, an international team of scientists will spend two months at sea aboard the IODP research drilling vessel *JOIDES Resolution* collecting and analyzing geological data to investigate the history of global sea level change over the last 30 million years. The expedition party will travel to the Canterbury Basin, off the eastern coast of the South Island of New Zealand, to recover sediment samples from as deep as 5,900 feet beneath the seafloor.

The expedition focuses on understanding the relative importance of global sea level versus local tectonic and sedimentary processes in controlling continental margin depositional cyclicity. The emphasis is on the last 30 million years when global sea level change was dominated by glacial/interglacial ice volume fluctuations, primarily on Antarctica. The expedition offers the opportunity for expanded study of the complex interactions between processes responsible for the preserved stratigraphic record of sequences and provides information on the early history of the Alpine Fault plate boundary. The deepest target of this expedition is the early Oligocene Marshall Paraconformity hypothesized to mark the initiation of thermohaline circulation and the proto-Antarctic Circumpolar Current.

Melting of Antarctic ice increases the volume of water in the oceans and therefore influences sea level globally. However, other processes, most notably vertical movement of the Earth's crust, can also affect sea level locally. In order to extract the global sea level signal from a sedimentary basin that has also been influenced by local processes, it is necessary to correlate results from that basin with similar data from other disparate locations. The Canterbury Basin is an ideal location for this study because it is far from sites previously drilled in global sea level exploration, primarily located in the North Atlantic. Also, Canterbury Basin sediments were laid down on the seafloor rapidly, resulting in a detailed historical record.



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