



## Highlights from ODP-Leg 202 studies (Southeast Pacific Paleoceanographic Transects)

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ODP Leg 202 recovered sediment records at 11 sites (1232 - 1242) in the southeast and equatorial Pacific, ranging in age from early Oligocene (~31.5 Ma) to Holocene. These sites form an east Pacific latitudinal transect from 41°S to 8°N as well as an intermediate to deepwater transect from 490 to 4070 m water depth. The recovered sediment records allow to probe the Earth's climate and biogeochemical systems on different but compatible scales: tectonic (millions of years), orbital (tens to hundreds of thousands of years) and centennial to millennial (hundreds to thousands of years). On each of these scales, the work of the Leg 202 scientific party provided new and exciting insights into a broad set of hypotheses on (1) the evolution of the South Pacific Ocean as it responds to and modulates the effects of major tectonic and climate events, such as the closure of the Isthmus of Panama, uplift of the Andes mountains, and major expansion of polar ice sheets; (2) linkage between climate and biogeochemical changes in the high latitudes and the equatorial Pacific, related to rhythmic changes in Earth's orbit; and (3) regional changes in climate and oceanography on timescales of centuries to millennia and their relationship to the interhemispheric seesaw effect. Here, we will highlight some of our results that provide a new view of Southern hemisphere climate variability across the three different timescales.