

Your query was:
"PP21D-06"

The selected databases contain **one** document matching your query:

10:05h

PP21D-06

The CCD of the Paleogene Tropical Pacific -

Results of ODP Leg 199

* **Rea, D K**

davidrea@umich.edu

Dept. Geological Sciences, Univ. of Michigan, Ann

Arbor, MI 48109-1063 United States

Wilson, P A

Southampton Oceanography Centre, Univ. of

Southampton, Southampton, SO14 3ZH United Kingdom

Lyle, M W

Dept. of Geoscience, Boise State Univ., Boise, ID

83725 United States

Janecek, T R

Antarctic Research Facility, Florida State Univ.,

Tallahassee, FL 32306 United States

Sites dilled by Leg 199 form a transect from 4.5°S to 18.5°N across the Paleogene equator. Drillsites were located atop anomaly 25, 56 m.y old, ensuring recovery of early Eocene carbonates. Many earlier DSDP and ODP Paleogene paleoceanographic efforts were confounded by the common Eocene cherts. The drilling strategy adopted by Leg 199 obviated some of these problems, with the result that we have increased amount of information regarding the Paleogene low-latitude CCD several fold. To reconstruct the CCD we have assumed simple sea-floor subsidence and that the depth of the Paleogene East Pacific Rise axis was 2750 m. Sediment loading depresses the sea floor so any complete determination of age-depth histories requires an unloading step. Results for the Leg 199 sites are comparable among the sites to ±50 m; absolute values of the paleodepths depend on the EPR axial depth assumption. Results show a shallow early Eocene CCD of 3200 m at the equator, deepening to 3600 m at 10°N. Now the CCD always deepens towards the equator, so something quite different occurred in the early Eocene. The CCD remained at these shallow levels until the end of the Eocene, with the exception of a sudden sharp downward excursion (drop/rise) of about 700 meters at 41 Ma. The large drop of the CCD at the end of the Eocene has been known since the earliest CCD studies, but completely recovered sections across this boundary are quite rare. Leg 199 recovered several complete records of this event. At the time of the Eocene/Oligocene boundary the CCD in the low-latitude Pacific fell by over 1000 meters to 4350m, the largest change in ocean paleochemistry in the entire Cenozoic. This drop occurred in two steps likely separated by one eccentricity cycle, each step occurring as rapidly as in thousands of years. A preliminary oxygen isotopic record of these materials at Site 1218 shows the CCD drop is in phase with the long recognized O-18 shift at the E/O boundary. The Neogene CCD in sub-tropical North Pacific lies at about 4600 m, about 500 meters deeper than the CCD of the sub-tropical South Pacific.

4267 Paleceanography

Paleceanography and Paleoclimatology [PP]

2002 Fall Meeting

[New Search](#)

