TIME VARIATIONS IN THE DISTRIBUTION OF PHYSICAL PROPERTIES ALONG 145°W IN THE REGION OF THE PACIFIC EQUATORIAL UNDERCURRENT

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ABSTRACT

During May 1969 - May 1970, five detailed hydrographic sections were made along 145°W across the Pacific Equatorial Undercurrent. STD casts were made every 20 miles between 3°N and 3°S. The data from these cruises have been analyzed. Results show notable time variations in the distributions of properties in the region of the Undercurrent.

Thermocline spreading was prominent from June to November. In February there was least spreading, with no troughing of the lower isotherms. Geostrophic calculations showed no geostrophic Undercurrent in this month. The temperature structure was roughly symmetrical about the equator in June and February. In August, November, and April, the asymmetrical distributions of mass were conducive to transequatorial thermohaline transfer. Evidence of this transfer in the water above the thermocline was shown by the extension of high salinity water across the equator.

The STD detected transient cores of salinity in the high and low-salinity tongues. The main core of the high-salinity tongue, usually present just south of the

equator, was not found in the June section.

The surface-layer thickness varied considerably. Upwelling was indicated in June, August, and April. In the water below the thermocline, the distributions of properties also varied. The thermostad of the 13 C water was observed in all sections.