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EL NIÑO SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC ADVISORY 87/10

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Sea surface temperature anomalies in the equatorial Pacific from the date line eastward to near the Galapagos Islands were generally between 1°C and 3°C during September. These anomalies are as large now as at any other time during the current warm episode. The highest sea surface temperatures (>30°C) were found slightly south of the equator near and just to the east of the date line. This region has exhibited enhanced atmospheric convection since late 1986.

The equatorial 850 mb easterly winds continued to be weaker than normal during September. The subtropical jet stream in the South Pacific remained stronger than normal and shifted to the east of its normal position. Equatorial upper tropospheric easterly anomalies prevailed at most longitudes.

For more than a year the sea level pressure at Darwin, Australia has been above normal. The September anomaly is +1.5 mb, nearly the same as in the previous two months. At the same time, the sea level pressure anomaly at Tahiti has remained negative, and the Southern Oscillation Index has also remained negative (September value is -1.1).

The ocean general circulation model being run in a diagnostic mode at the CAC indicates that the thermocline is near or slightly deeper than normal in the eastern equatorial Pacific and shallower than normal in the western and central equatorial Pacific. This is consistent with the dynamic height of the sea surface being lower in the west and higher in the east with respect to the period immediately prior to the current warm episode.

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Tropical Pacific Drifting Buoys (Fig. A1) D. Hansen, AOML, Miami

Drifting buoys released in the tropical Pacific Ocean for the EPOCS and TOGA Programs continue to report positive SST anomalies of 1 to 2 degrees C over much of the eastern and central Pacific. West of the dateline SST is near normal. The South Equatorial Current has accelerated westward, exceeding 75 cm/sec near the equator in the central Pacific. Elsewhere surface currents appear to be near normal, but few near-equatorial observations were obtained from the western Pacific.

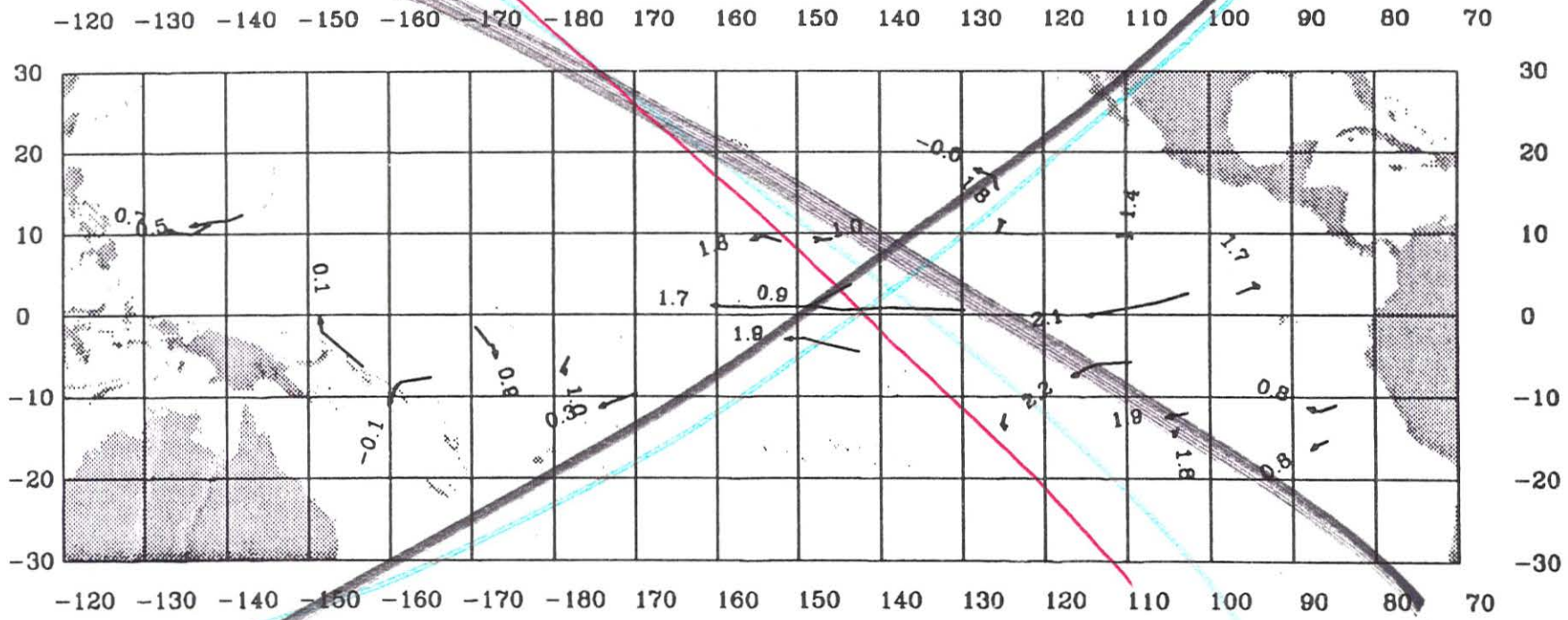

FIGURE A1 - Drifting buoy observations in the tropical Pacific Ocean during September 1987. Linear segments of trajectories indicate weekly displacements of drifters drogued to follow movement of water at a depth of 10 to 20 m. Numbers near the head of each vector indicate the SST anomaly (on 30 September) relative to the COADS/ICE climatology (CDB, 9/86). These SST anomalies are momentary values, subject to short term variations of a few tenths of a degree C.