

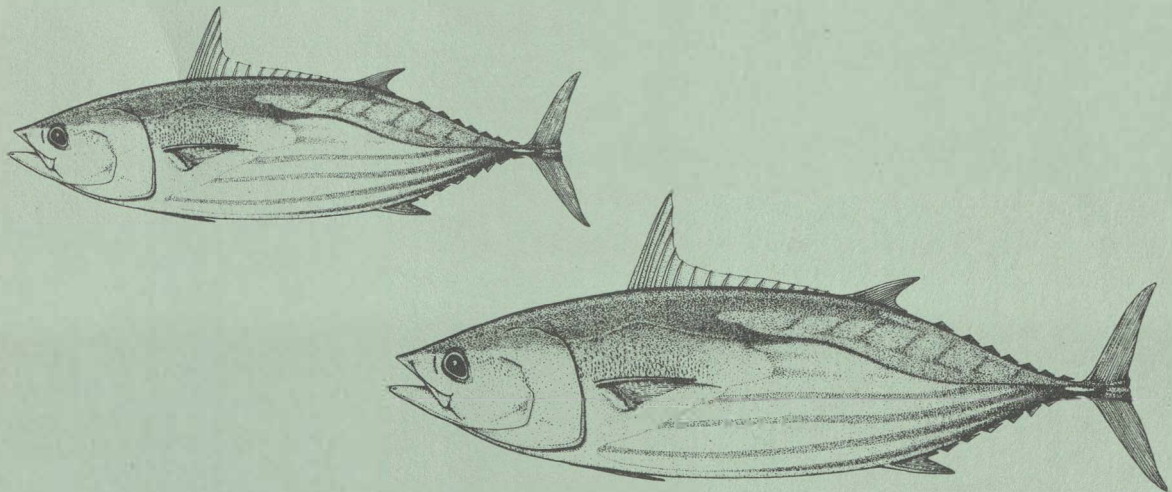
October 1974

No. 10



FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



noaa

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION / NATIONAL MARINE
FISHERIES SERVICE

**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE**

SOUTHWEST FISHERIES CENTER

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OCTOBER 1974 , No. 10



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PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) a narrative description of subsurface temperature structure for parts of the North Pacific, 4) charts of winds and pressures for the eastern North Pacific, 5) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 6) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

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The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Office of Management and Budget, August 20, 1973; this approval expires June 1976.

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ENVIRONMENTAL CHARTS ANALYZED BY:

L.Eber (Figures 4 and 6)
 F.Miller (Figures 8 and 9)
 J.Renner (Figures 1,2,3,5,7, and 15-day Supplement)
 J.F.T. Saur (Figures 10,11, and 12)

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Expendable bathythermograph and salinity observations are made by the mates and engineers of the Hawaiian Queen and Californian of Matson Navigation Co. The data are processed under supervision of D.R. McLain at the NMFS Pacific Environmental Group, Monterey, using computer facilities of the Fleet Numerical Weather Center. The project is partially supported by the National Science Foundation and the Office of Naval Research under Government Order NAonr-9-74.

Sea Surface Temperature and Environmental Conditions

L. EBER AND F. MILLER

Eastern North Pacific

Seasonal cooling was less than normal in the central portion of the eastern North Pacific, during October 1974, and somewhat greater than normal in the Gulf of Alaska and much of the area off the U.S. West Coast. Consequently, the region of negative deviations between 30° and 45° N, west of 150° W (Figure 5) was a little smaller and weaker than in the previous month. In contrast, negative deviations appeared in the Gulf of Alaska, where conditions had formally been warmer than normal, and off northern California negative deviations spread seaward to 130° W. A broad area of water with warmer than normal temperatures surrounded the central cold sector on three sides and separated it from the relatively cool regions adjacent to the North American coast. Positive deviations increased since September in the zone 45 - 50° N out to 180° W. Northeast of Hawaii, positive deviations decreased. Allowing for these changes in intensity and shape of the principal features, the overall pattern of anomalous conditions in October was similar to that in September.

The surface wind field was characterized by a strong anticyclonic circulation centered about 38° N, 138° W, associated with high pressures, 4-6 millibars above normal, extending northeastward across the Washington and British Columbia coasts (Figures 1 and 2). Pressures were below normal, farther west, by as much as 8 millibars near 43° N, 178° W. The intervening gradient gave rise to anomalous northward resultant flow which contributed to the reduced seasonal cooling in the central sector of the eastern North Pacific. Persistent southward flow occurred east of the anticyclonic center, off northern California, and was especially strong during the 1st and 3rd weeks of October. This caused a resurgence of the summer upwelling pattern which was reflected by an increase in negative deviations from normal temperatures.

Western North Pacific

Departures from normal seasonal cooling brought widespread changes in the anomalous sea surface temperature pattern in the western North Pacific. The large pool of relatively warm water which emerged east of Hokkaido and northern Honshu, Japan in September was greatly reduced in size and intensity (Figure 6). Temperature deviations decreased from above, or slightly below, normal to more than 2° F (1.1° C) below normal in much of the 30 - 40° N latitude zone, east of 160° E. Conditions in the areas west of 140° E and north of about 48° N changed from predominantly cooler than normal to warmer than normal.

Atmospheric circulation in the western North Pacific was characterized by transient anticyclonic systems during most of the month which appeared to stabilize into a pattern of westerly flow, north of 30° N, in the final week. Except for a possible association of increased cooling with high average wind speeds, which may have caused strong vertical mixing in the surface layers, there is no obvious correlation of anomalous temperature changes and surface wind patterns.

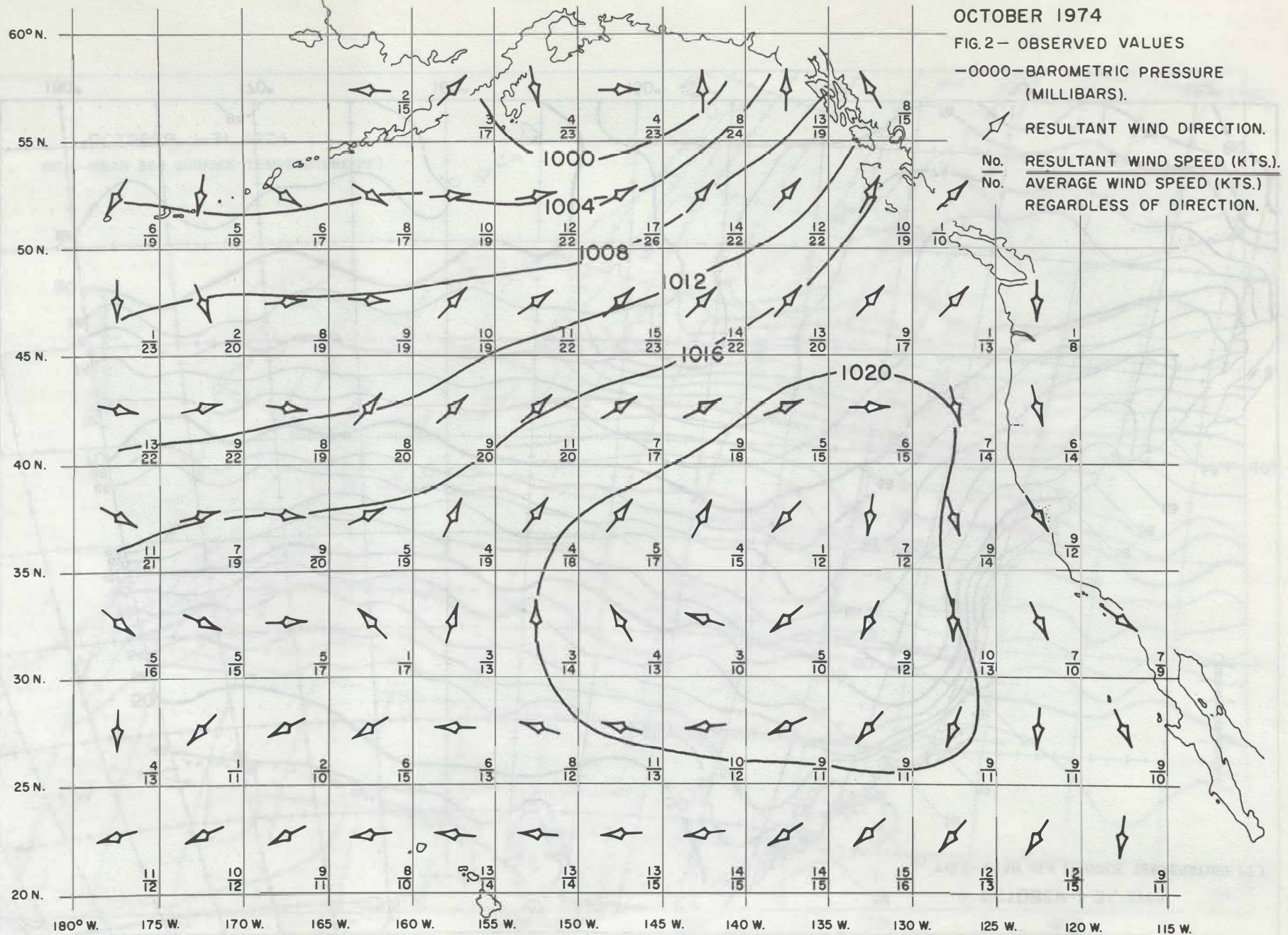
Eastern Tropical Pacific

During October, sea surface temperatures in the southern hemisphere usually reach their seasonal minimum showing very little variation from September. The equatorial ocean front remains strong in its north-south temperature gradient particularly east of 110° W.

Over most of the eastern tropical Pacific, the sea surface temperature pattern in October 1974 (Figure 8) was similar to the long-term mean pattern, and the anomalies (Figure 9) did not reflect any significant change from September 1974 in most areas. Temperatures along the coast of South America appeared to remain slightly below normal, based on a small number of ship reports. The southern hemisphere subtropical high pressure cell remained strong in October. Thus, the surface pressure gradient and surface winds were above normal along the South American coast.

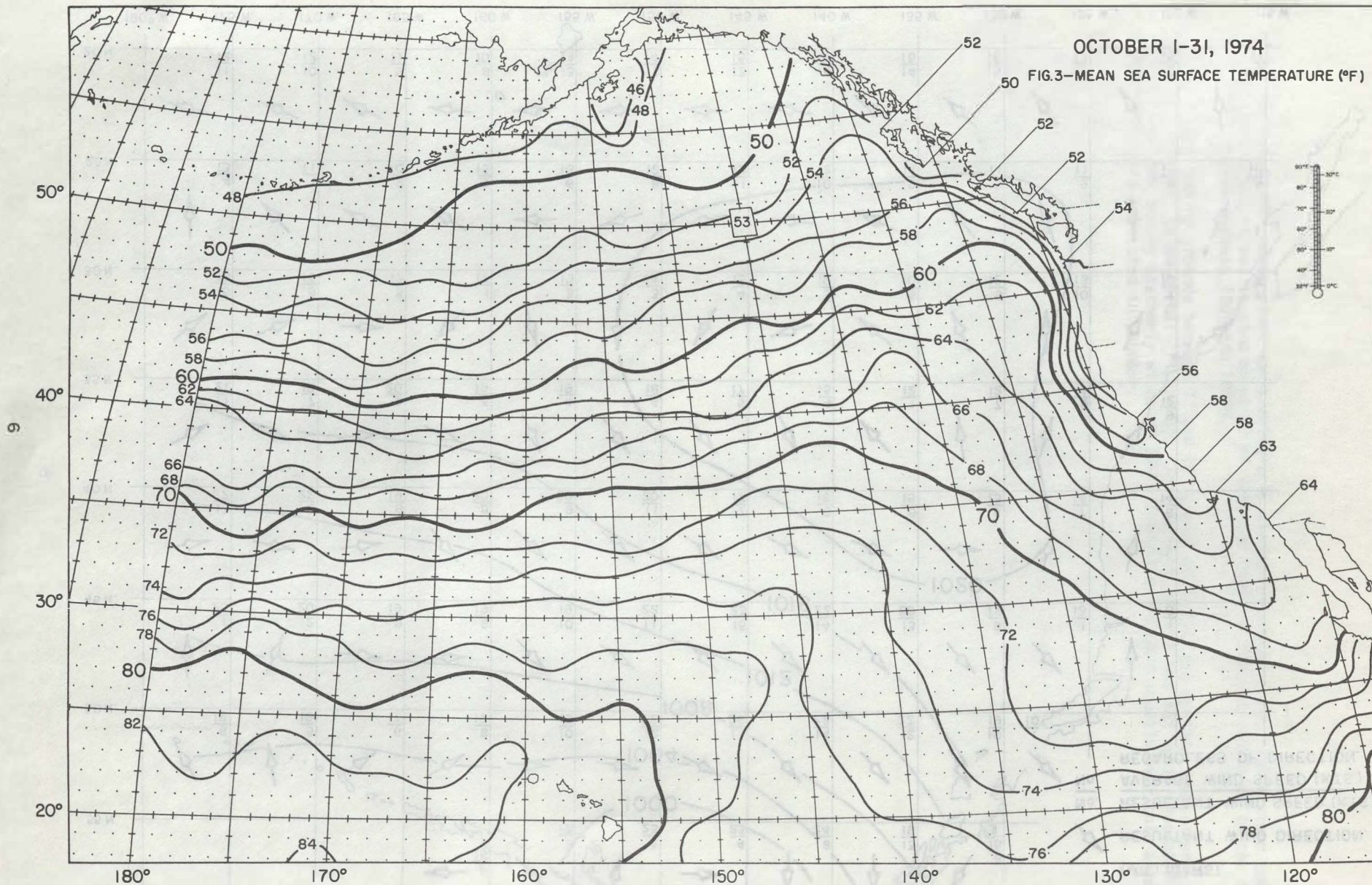
The equatorial ocean front was particularly strong in October 1974. The maximum surface temperature gradient was located about 3° of latitude north of its mean position in the area east of 90°W and also between 100° and 105°W.

In the fishing grounds between 7° and 12°N, east of 100°W, sea surface temperatures were 2-4°F (1.1-2.2°C) below normal (Figure 9). This anomaly pattern was set up in September 1974 as a result of the steady southerly winds of 12-16 knots and frequent squalls over this area. The same conditions persisted in October.



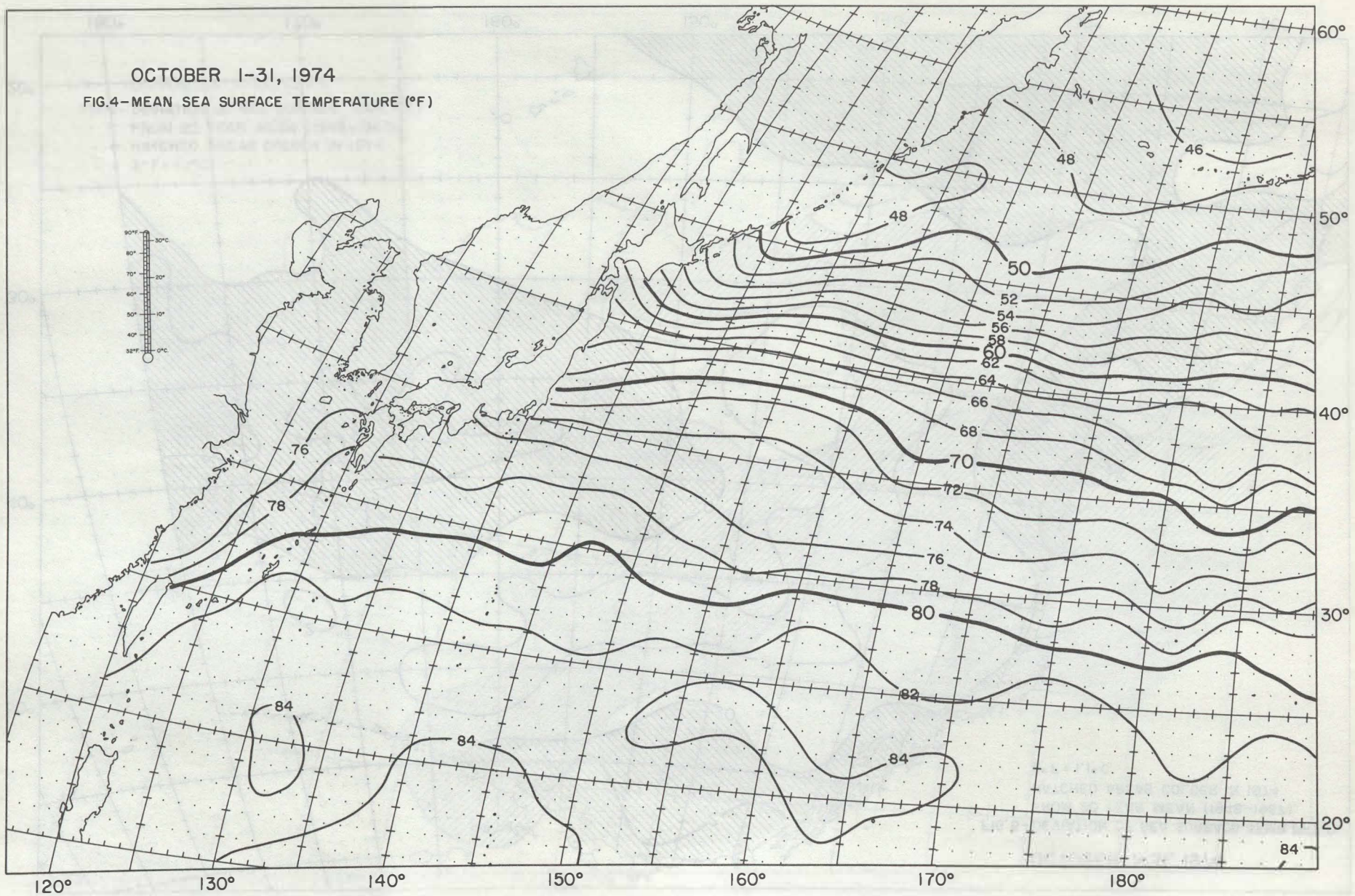
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FIG.3-MEAN SEA SURFACE TEMPERATURE (°F)



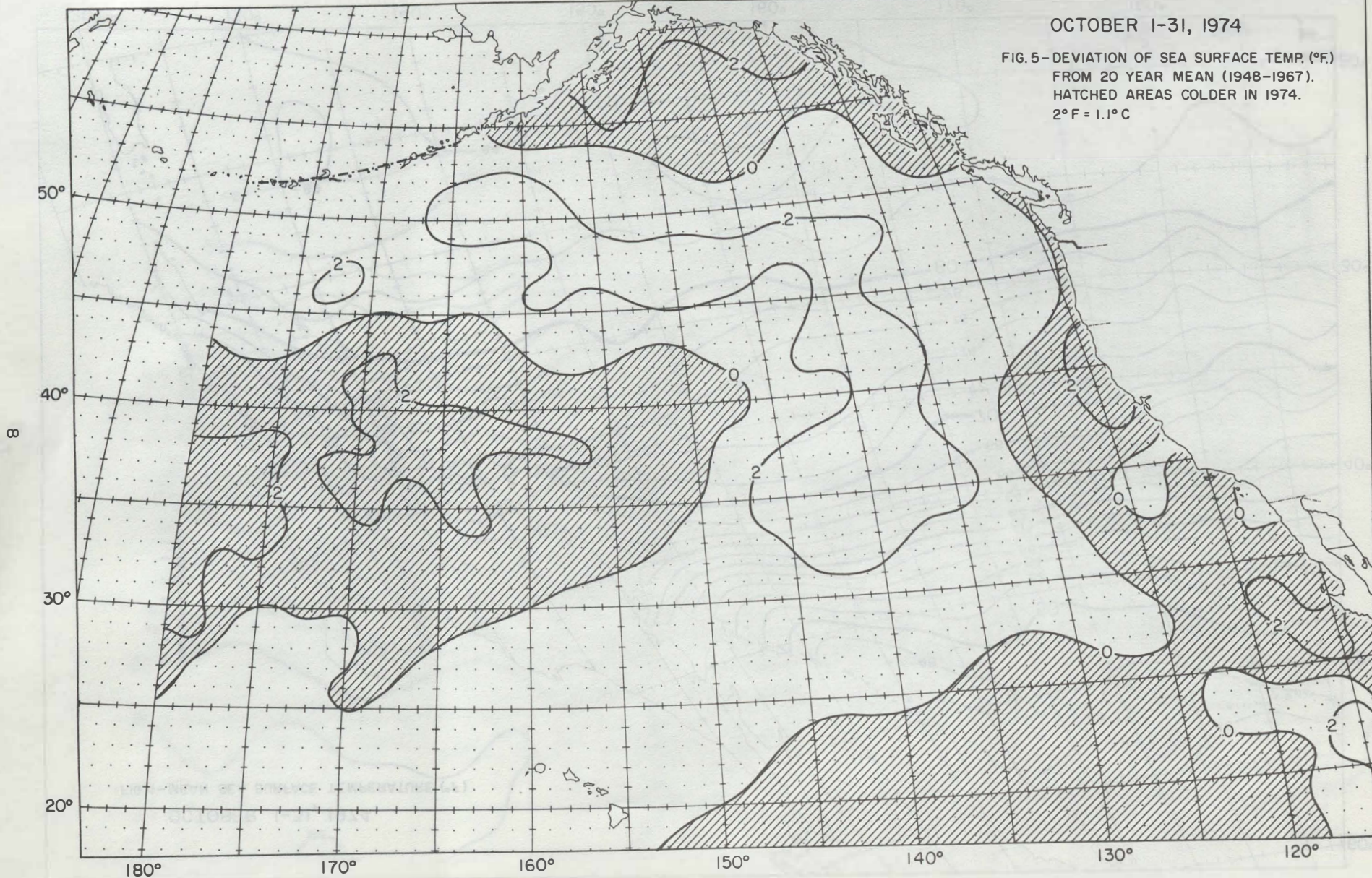
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FIG.4-MEAN SEA SURFACE TEMPERATURE (°F)



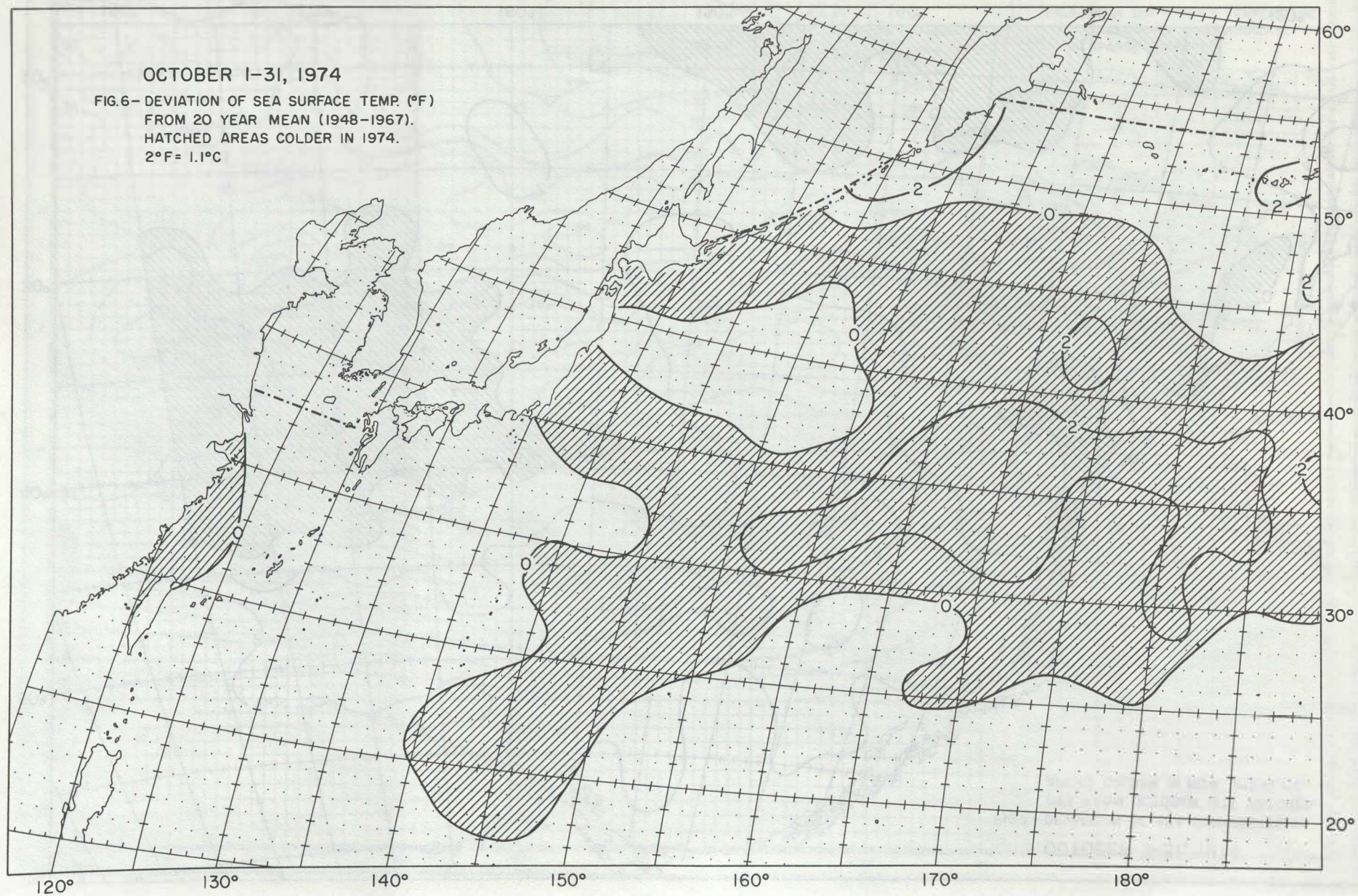
OCTOBER 1-31, 1974

FIG. 5-DEVIATION OF SEA SURFACE TEMP. (°F.)
FROM 20 YEAR MEAN (1948-1967).
HATCHED AREAS COLDER IN 1974.
2°F = 1.1°C



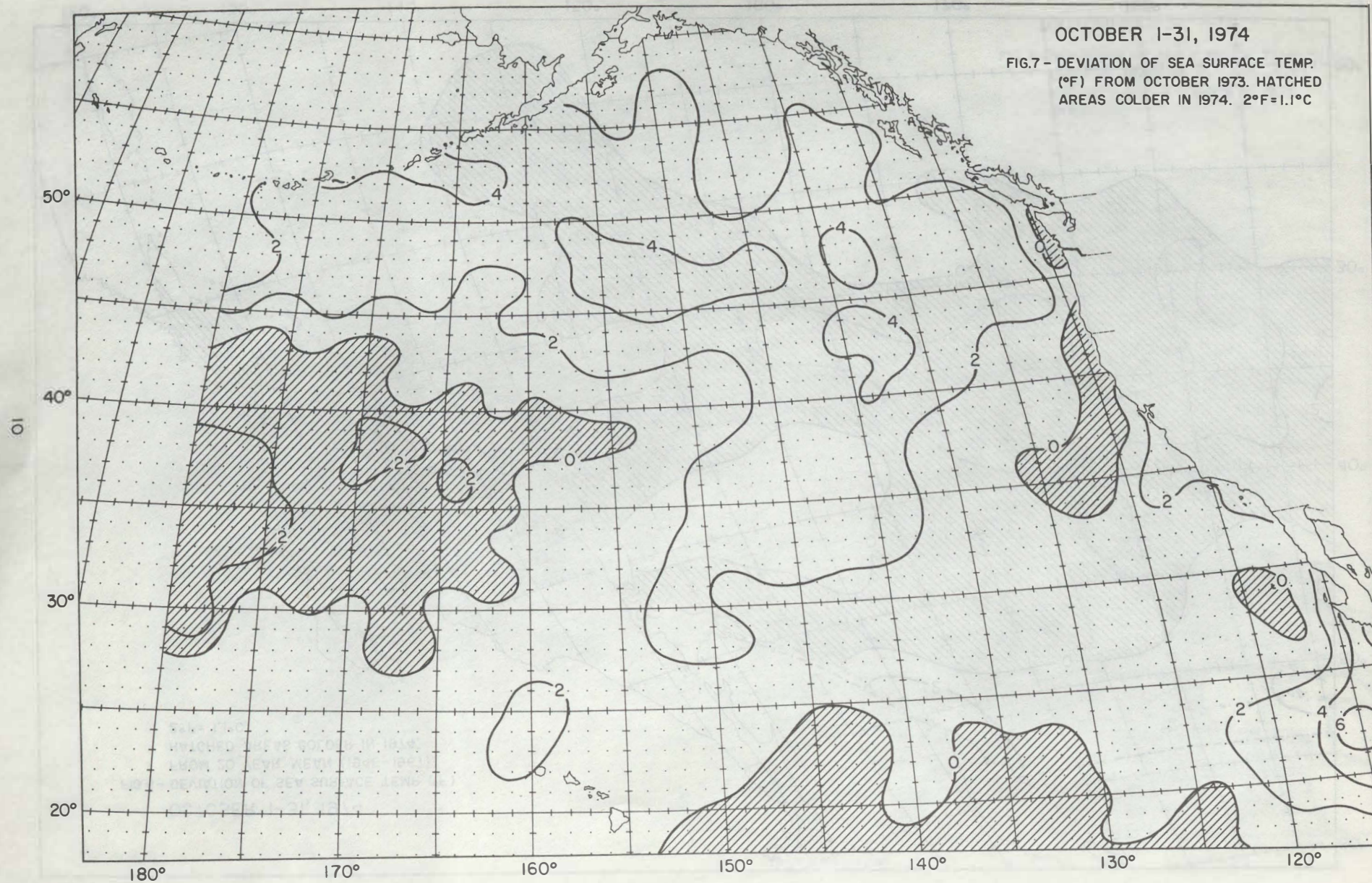
OCTOBER 1-31, 1974

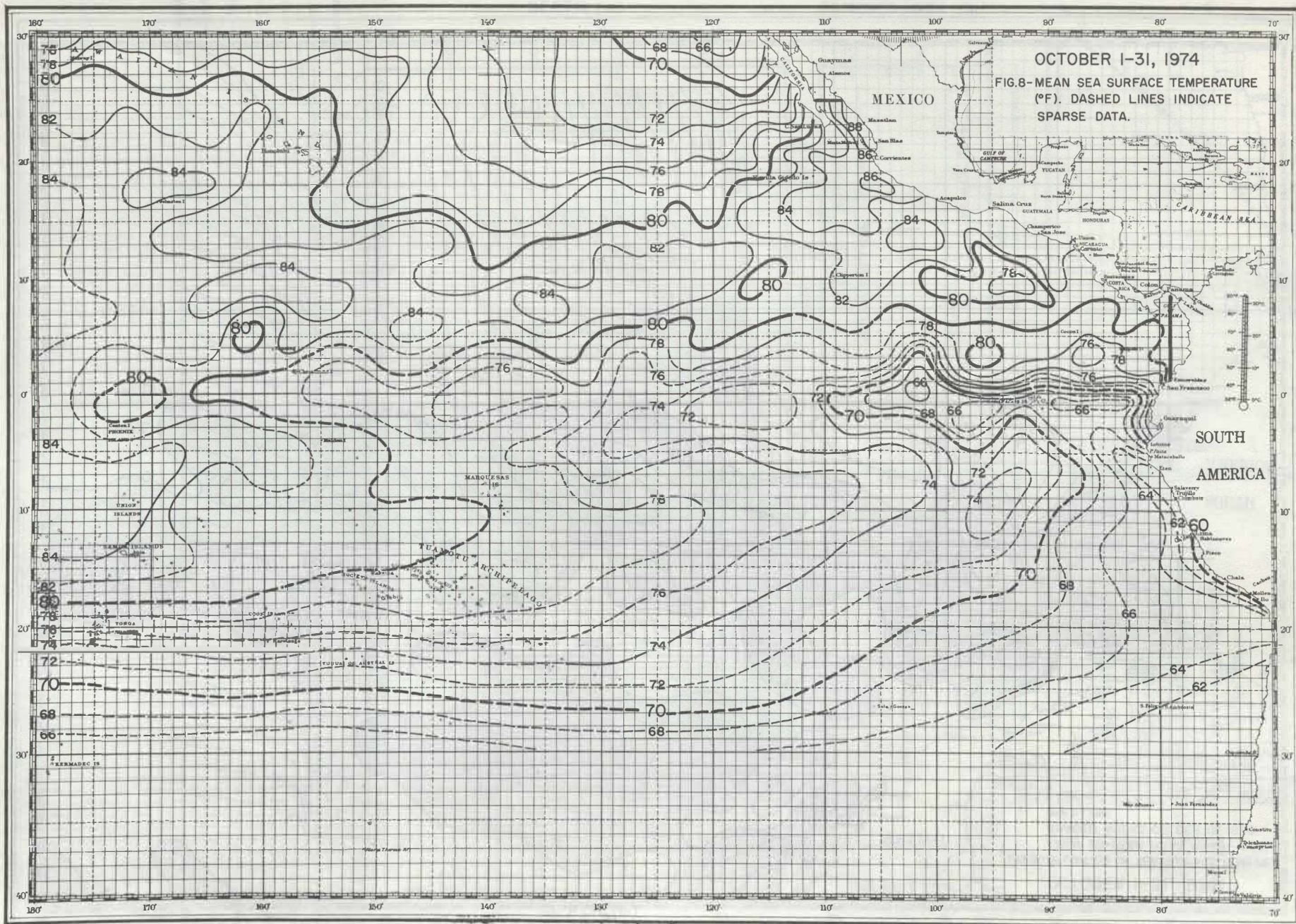
FIG.6- DEVIATION OF SEA SURFACE TEMP. (°F)
FROM 20 YEAR MEAN (1948-1967).
HATCHED AREAS COLDER IN 1974.
2°F = 1.1°C



OCTOBER 1-31, 1974

FIG.7 - DEVIATION OF SEA SURFACE TEMP.
(°F) FROM OCTOBER 1973. HATCHED
AREAS COLDER IN 1974. 2°F=1.1°C





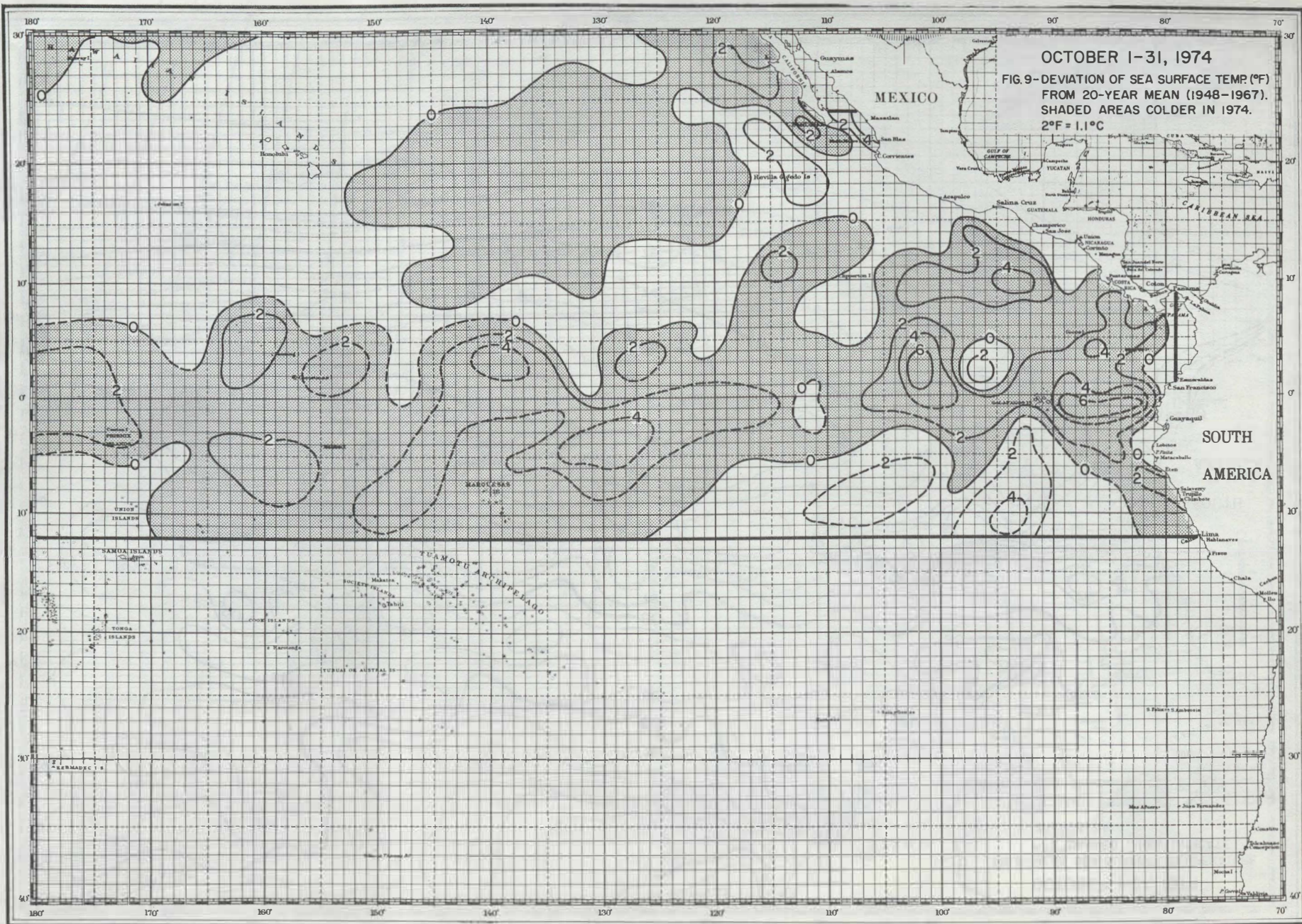


FIGURE 10

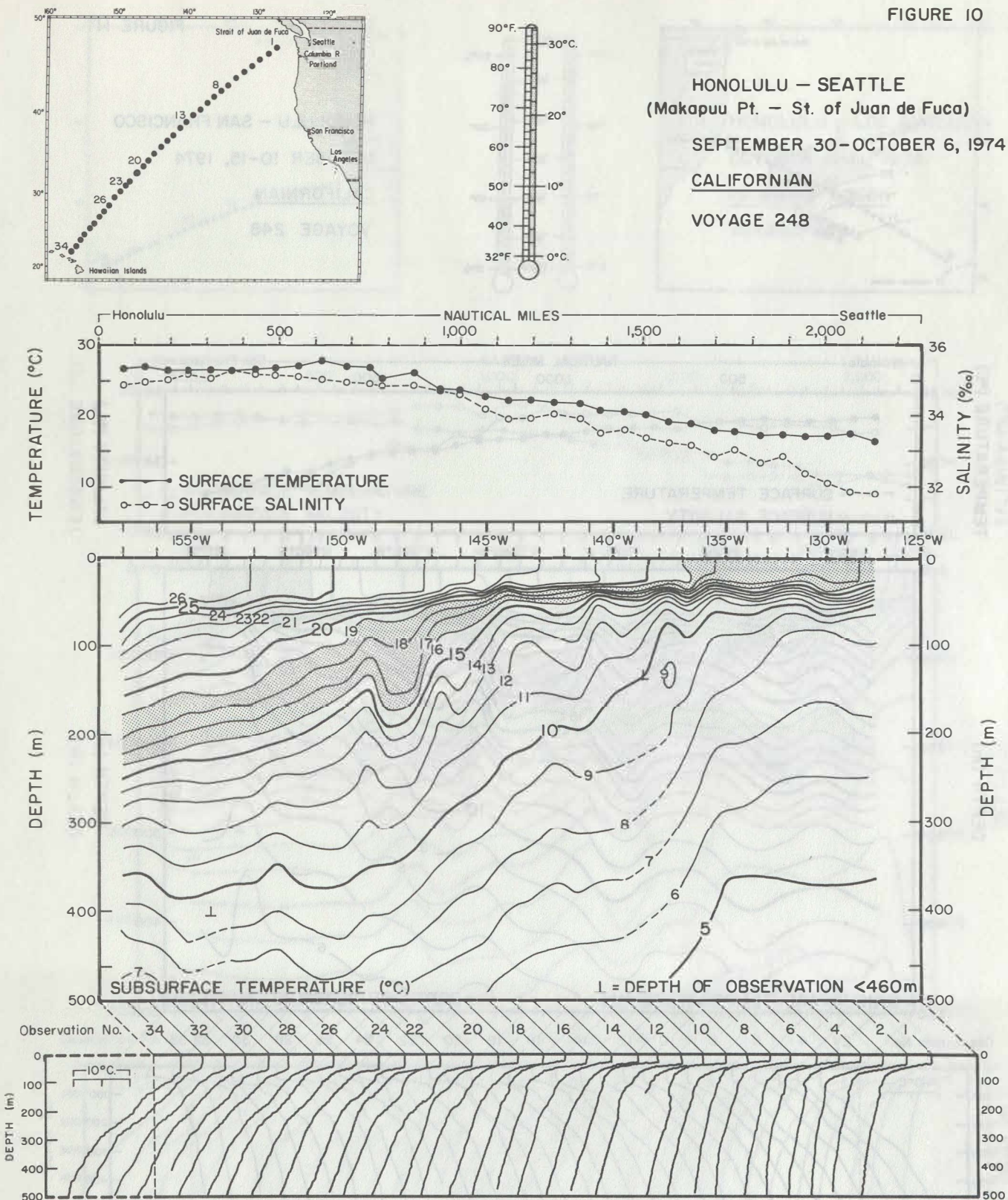
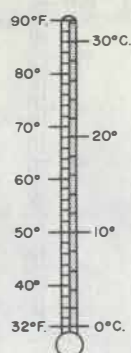
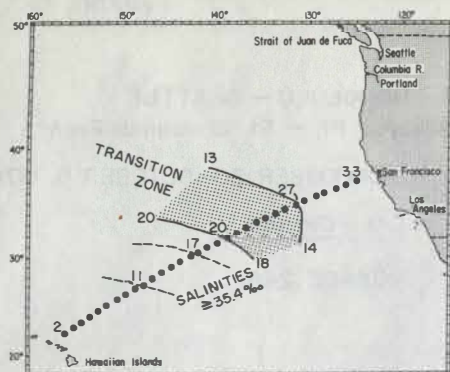


FIGURE 11



HONOLULU - SAN FRANCISCO

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CALIFORNIAN

VOYAGE 248

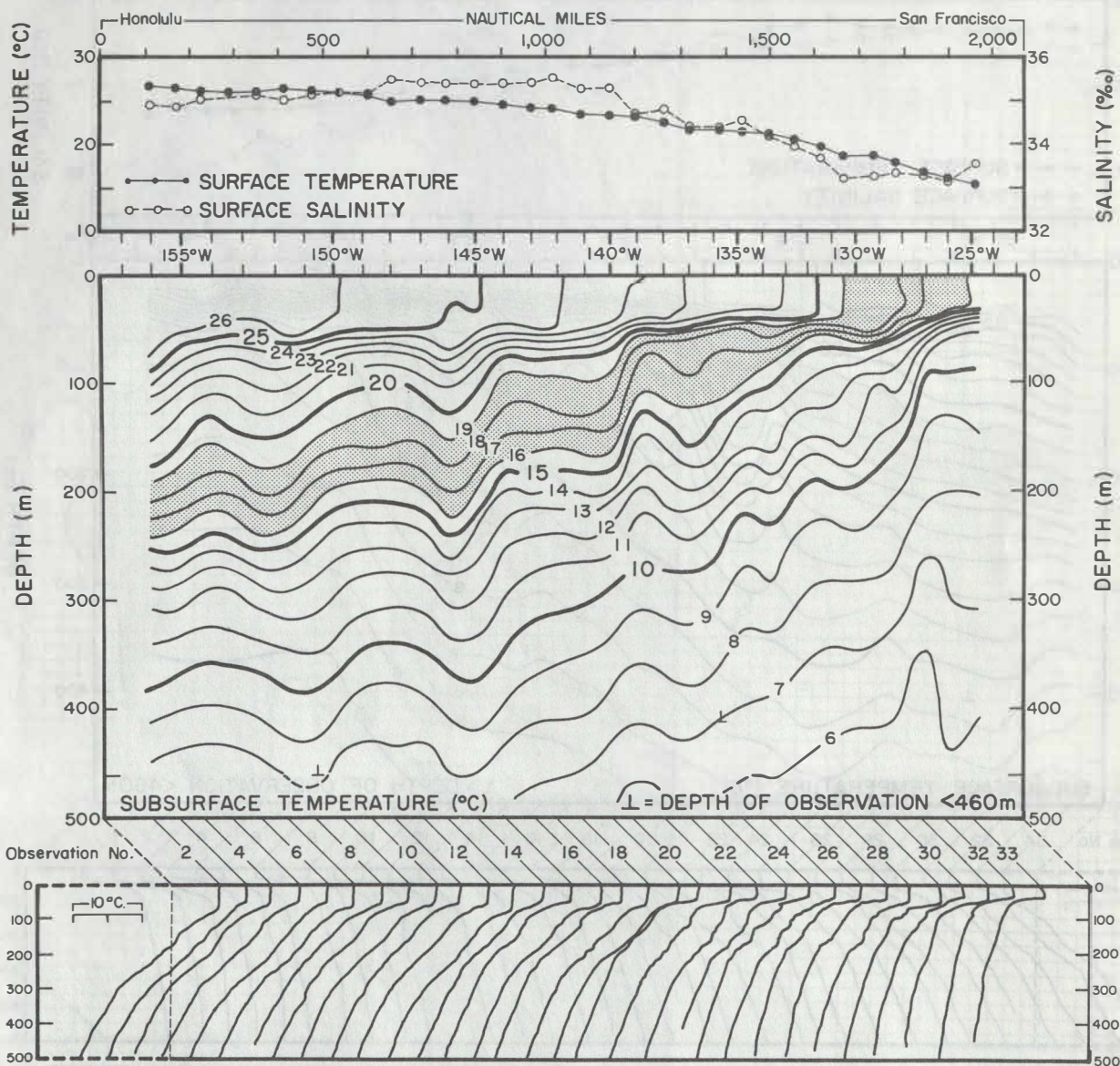
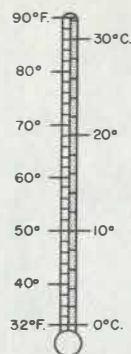
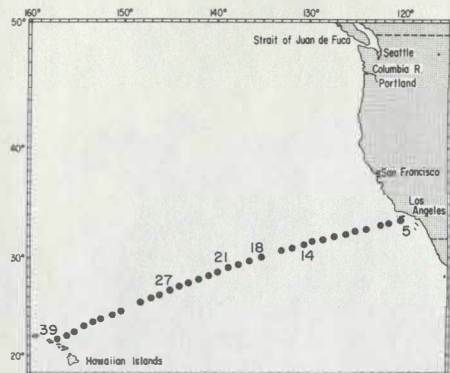


FIGURE 12



HONOLULU - LOS ANGELES

OCTOBER 6-11, 1974

HAWAIIAN QUEEN

VOYAGE 148

