491

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS FOR ATLANTIC COAST STATIONS

by Franklin Stearns

SPECIAL SCIENTIFIC REPORT–FISHERIES No. 491

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

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ABSTRACT

Anomalies are presented for temperature records from 27 stations located between Maine and Florida. The years 1950-59 are taken as a common base period. The records cover various spans of time since 1873.

INTRODUCTION

To estimate the gross variability of the sea-surface temperature along the Atlantic coast of the United States and to document an apparent warming trend during the present century, monthly and annual temperature anomalies were computed at 27 coast stations and light ships (fig. 1).

This paper presents graphs of the monthly temperature anomalies (fig. 2). The annual anomalies, and a geographic and temporal analysis of monthly and annual anomalies are published elsewhere (Stearns, in press).

Methods used were those of Robinson (1961), who has presented similar data for the Pacific coast of North America (Scripps Institution of Oceanography, 1960[1]). The anomalies were computed at each station from the mean of the 10 years 1950-59, to maintain consistency with Robinson's analysis (so the two coasts could be compared), and because the majority of Atlantic coast stations with recent records have most of these years in common.

Monthly sea-surface temperature anomalies at each station were computed as the difference between each monthly mean, and the monthly mean for the base period 1950-59. Positive anomalies indicate warmer conditions, negative anomalies cooler conditions, than the mean of the 1950's.

Temperature data were obtained from publications of the U.S. Coast and Geodetic Survey (1955 and 1960) and the U.S. Fish and Wildlife Service (Bumpus, 1957a and 1957b; and Day 1959a, 1959b, and 1960). Additional data for the period January 1959 to September 1960 were obtained from the files of the U.S. Coast and Geodetic Survey.

Note.--Franklin Stearns, Oceanographer, Bureau of Commercial Fisheries Biological Laboratory, Washington, D.C.

[1] Scripps Institution of Oceanography. 1960. Data report: Temperature and salinity anomaly charts for 24 Canadian and American shore stations based on a common reference period. Scripps Institution of Oceanography, Reference 60-30, 9 p. 33 figs. (Unpublished report.)

ACKNOWLEDGMENTS

Charles B. Taylor provided access to unpublished records of the Coast and Geodetic Survey, and Frances M. Fehrman performed most of the laborious computations and tabulations.

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FIGURE 1: LOCATION OF STATIONS

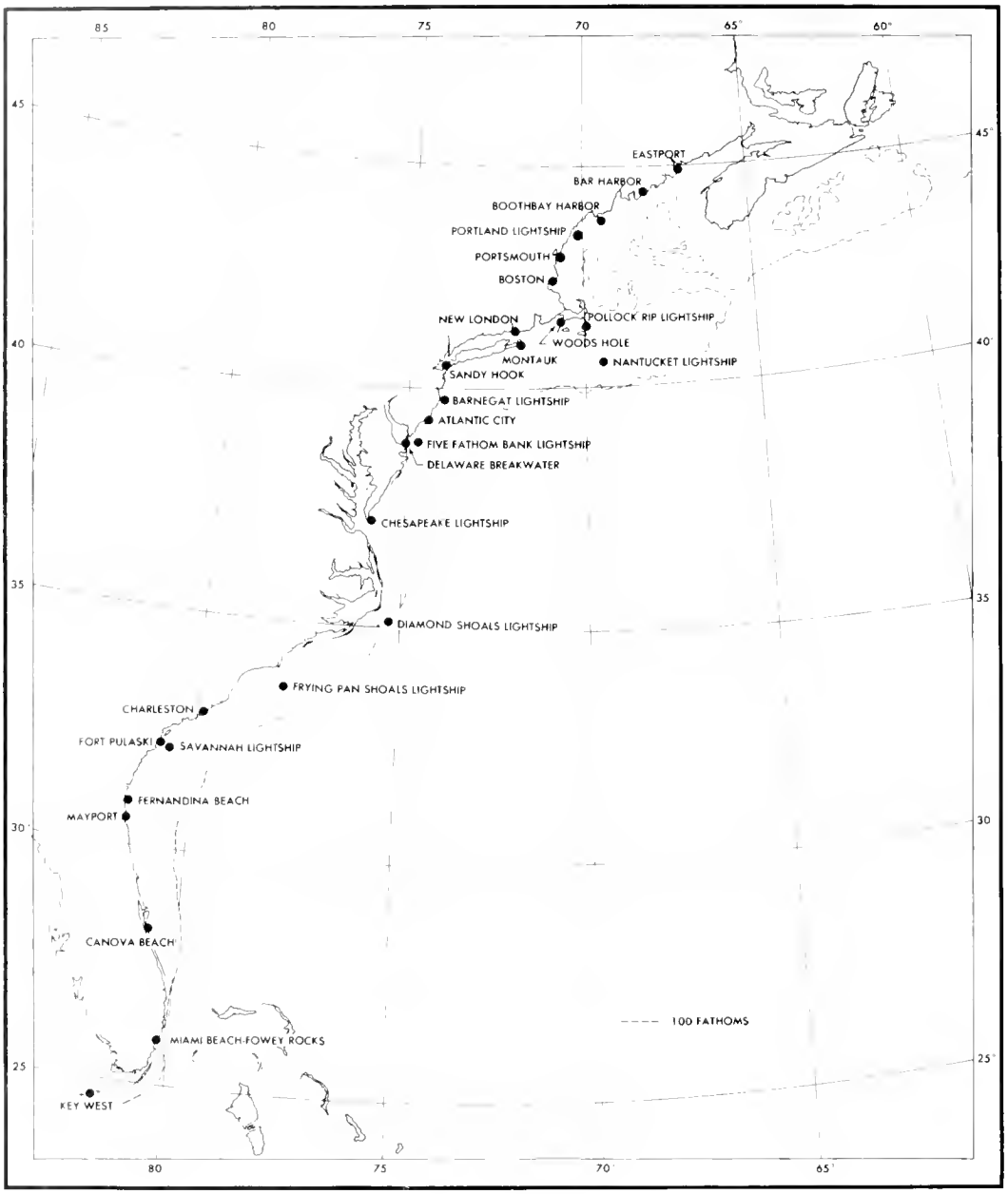
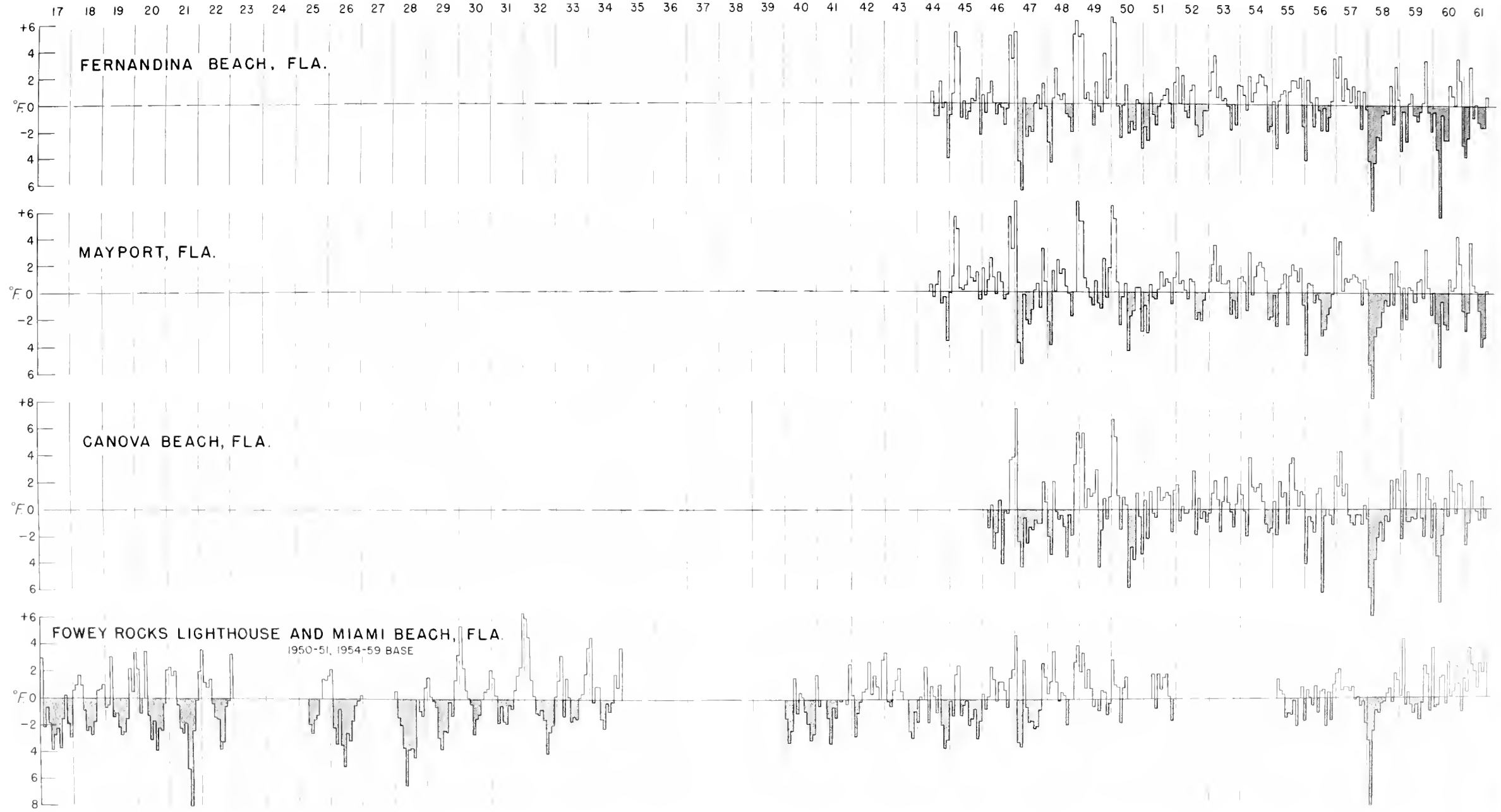


Figure 1.--Location of stations.



MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig 2-J
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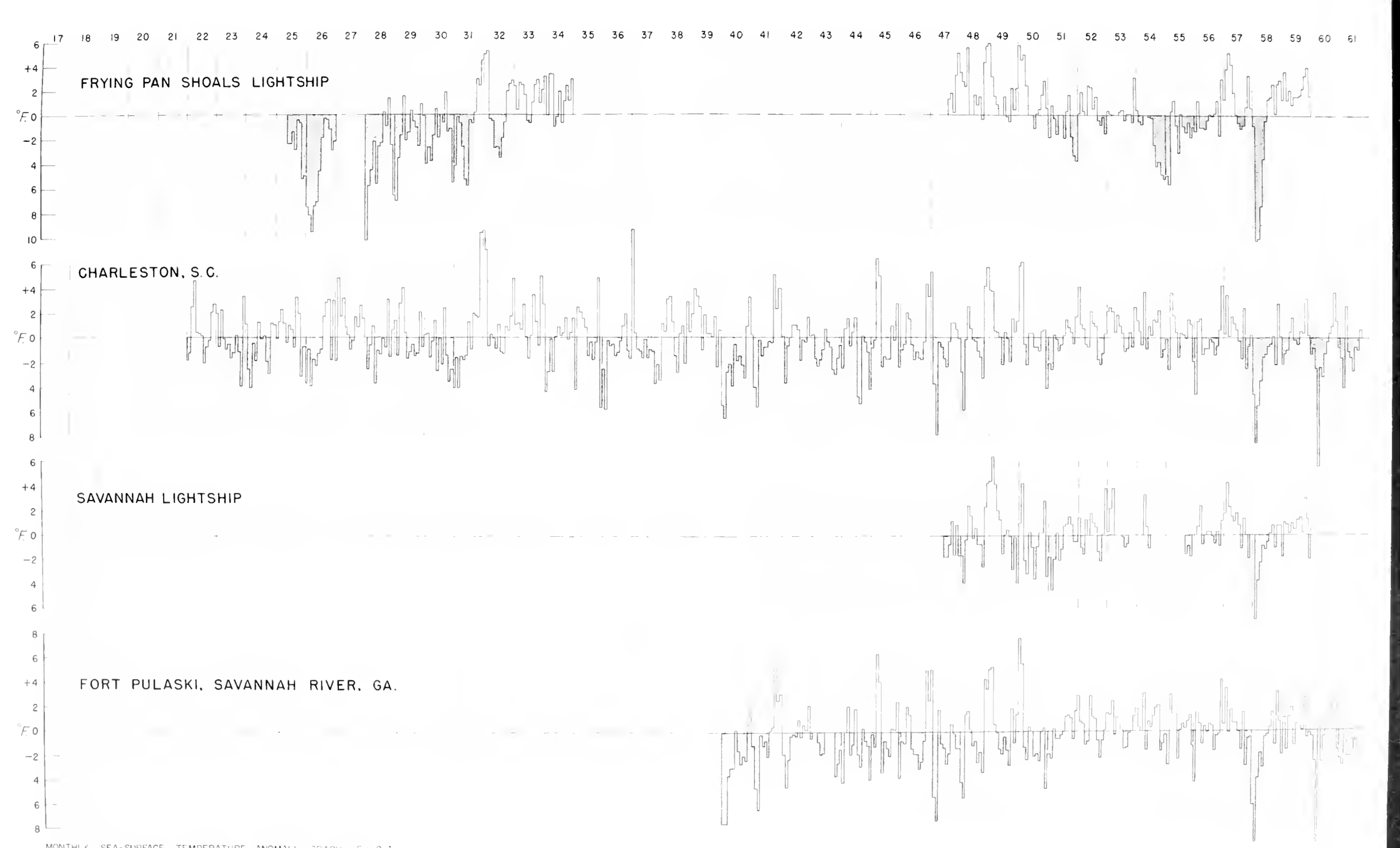

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig 2-1
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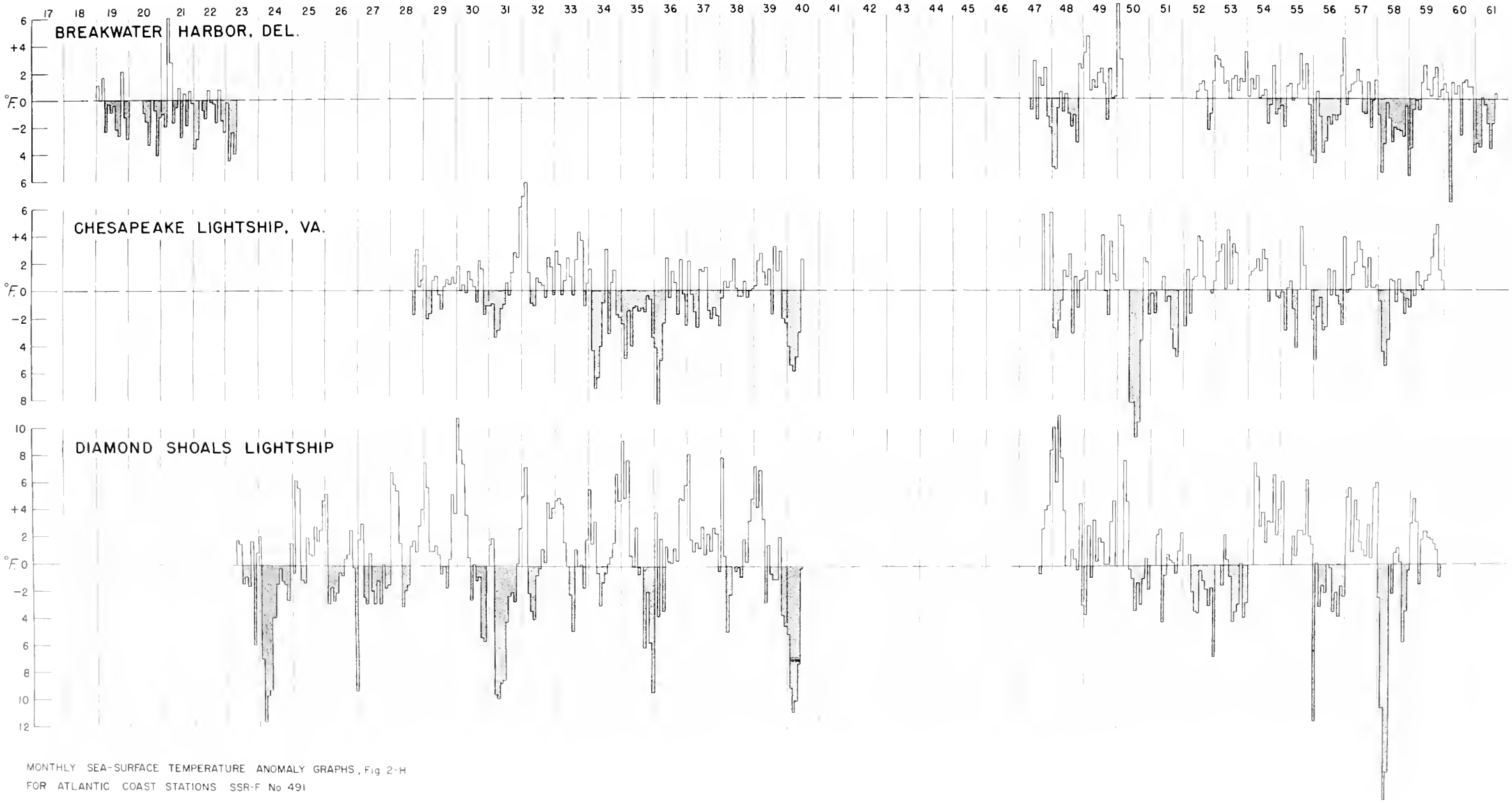

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig 2-H
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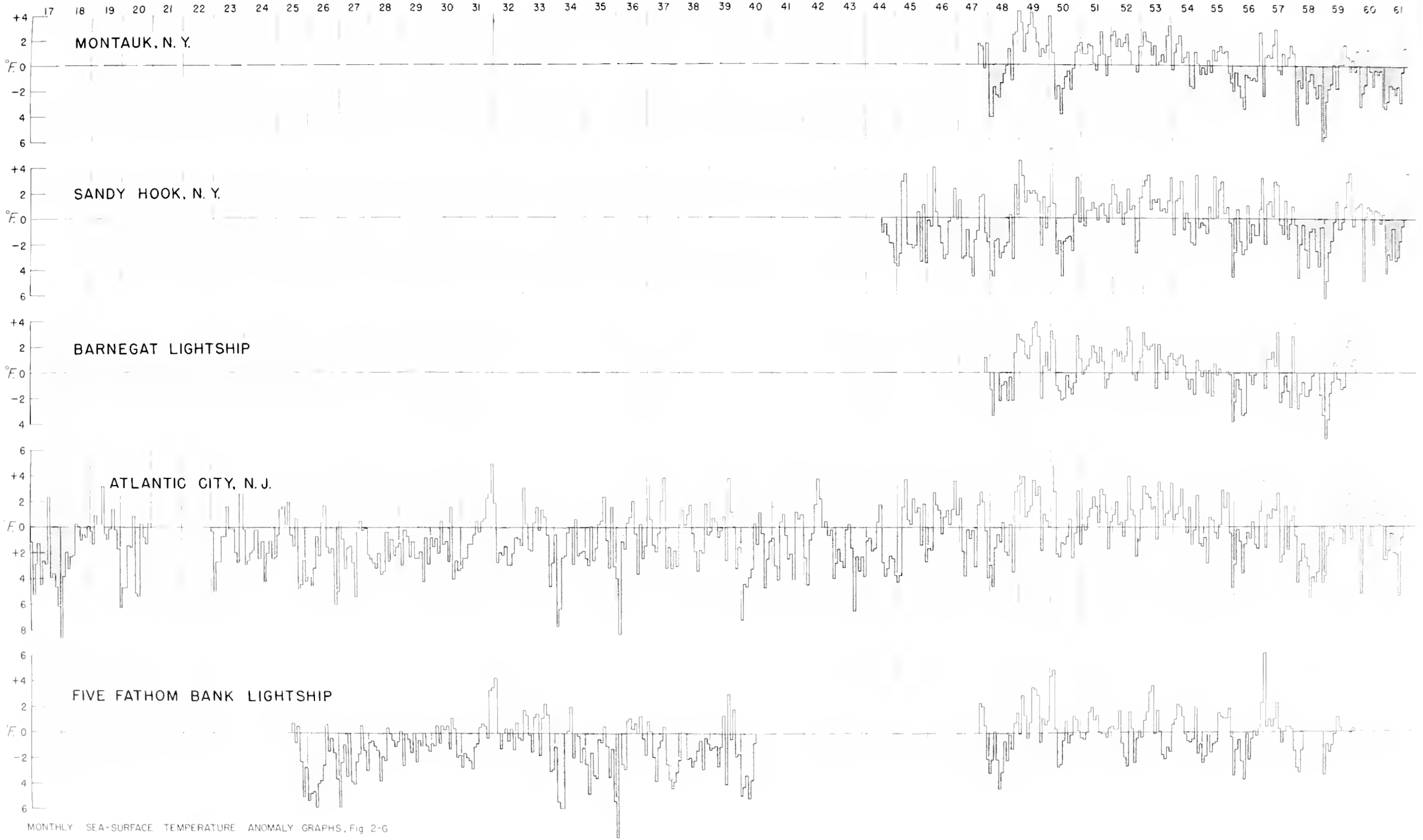

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig 2-G
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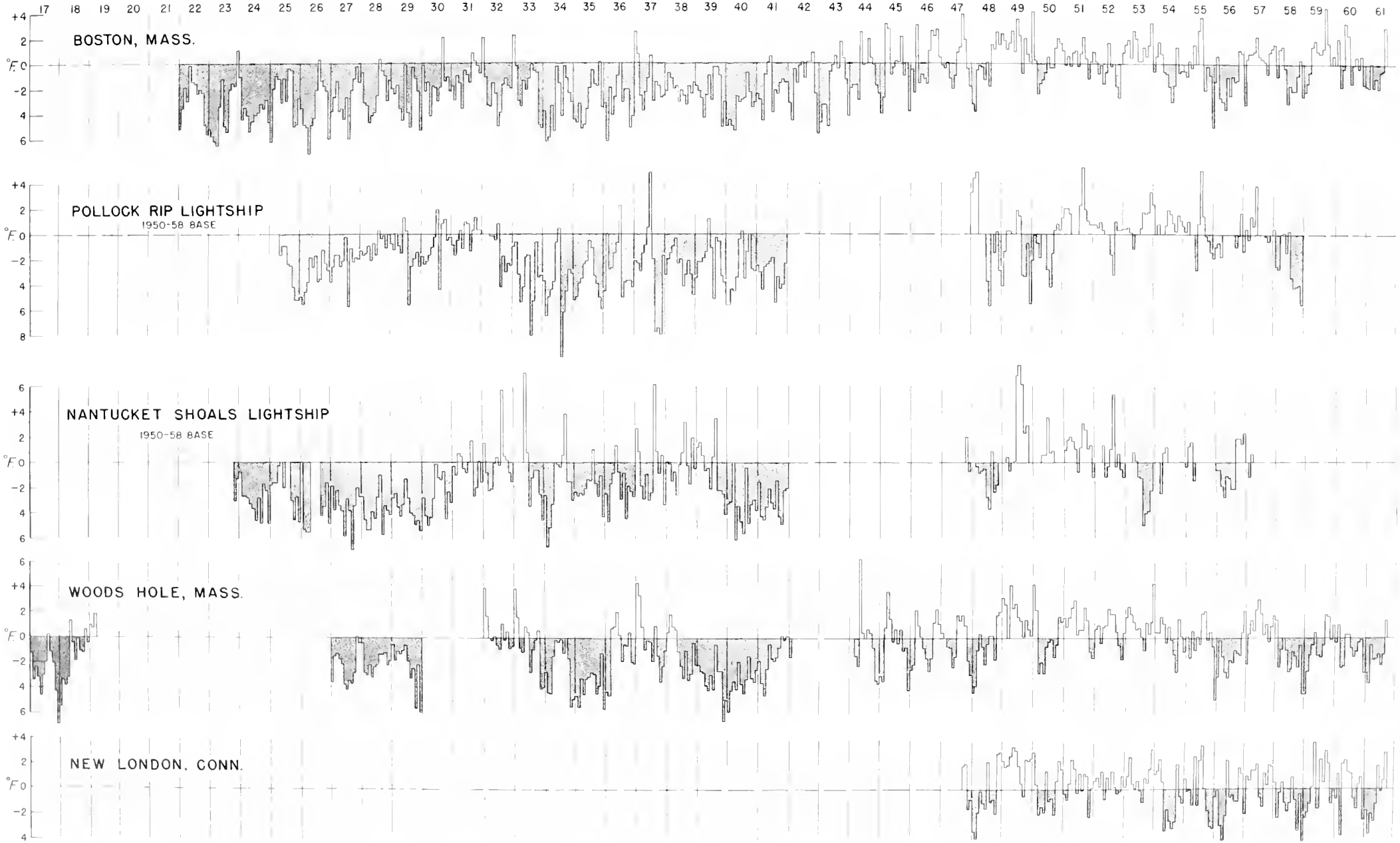

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig 2-F
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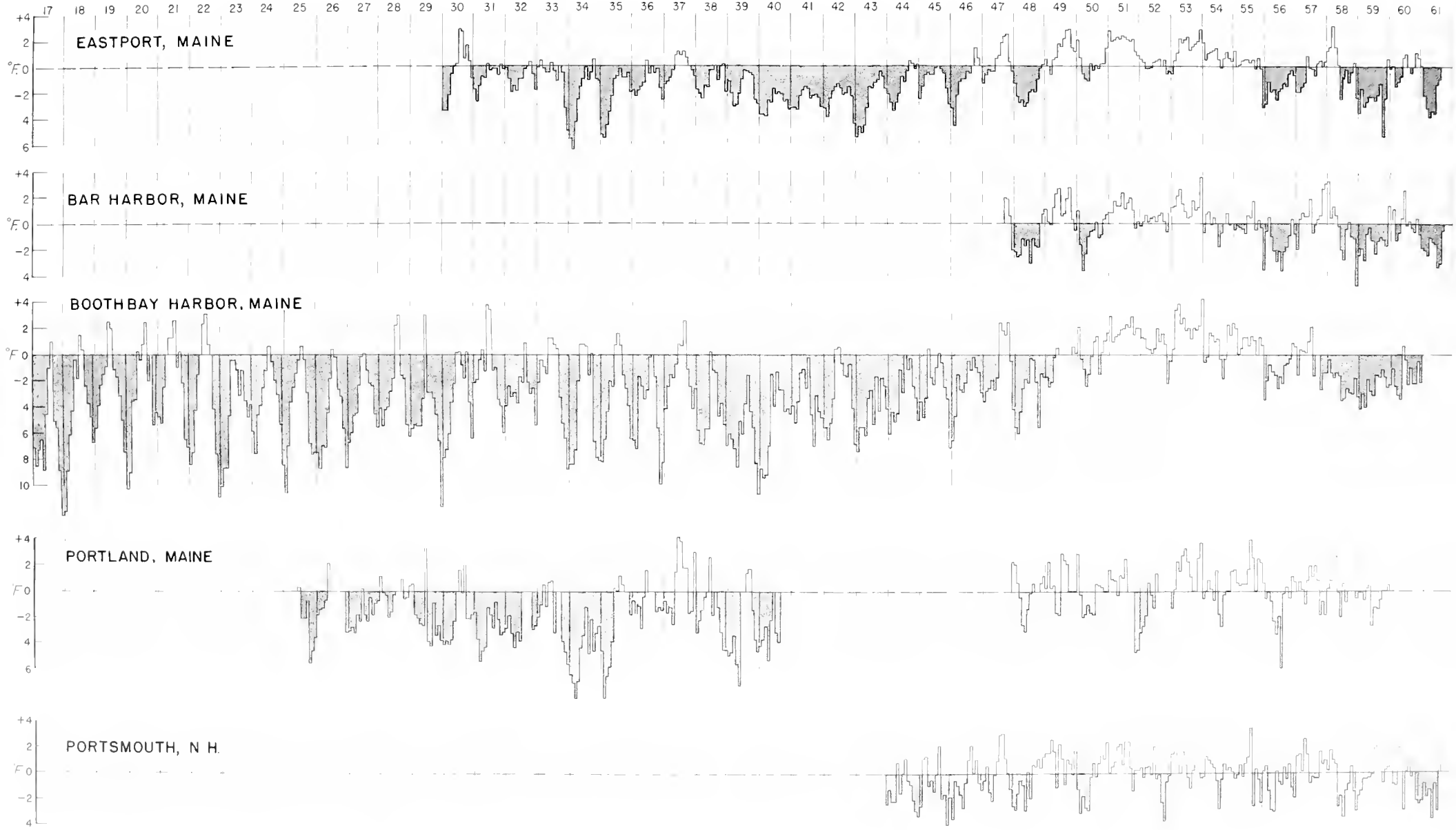

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig. 2-E
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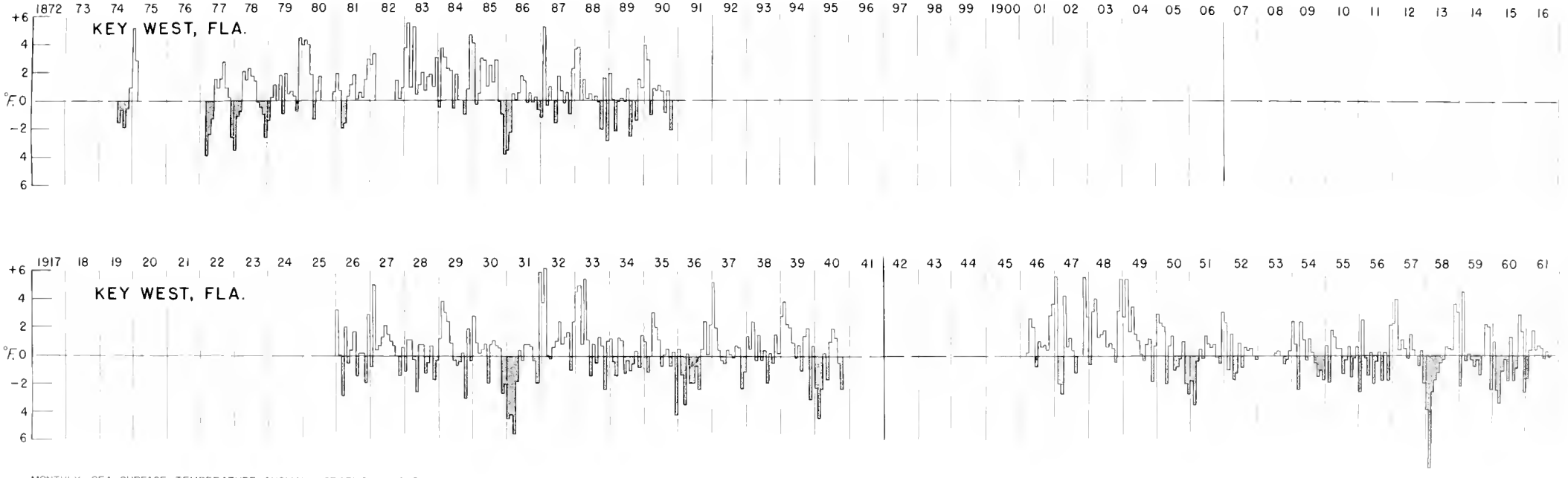

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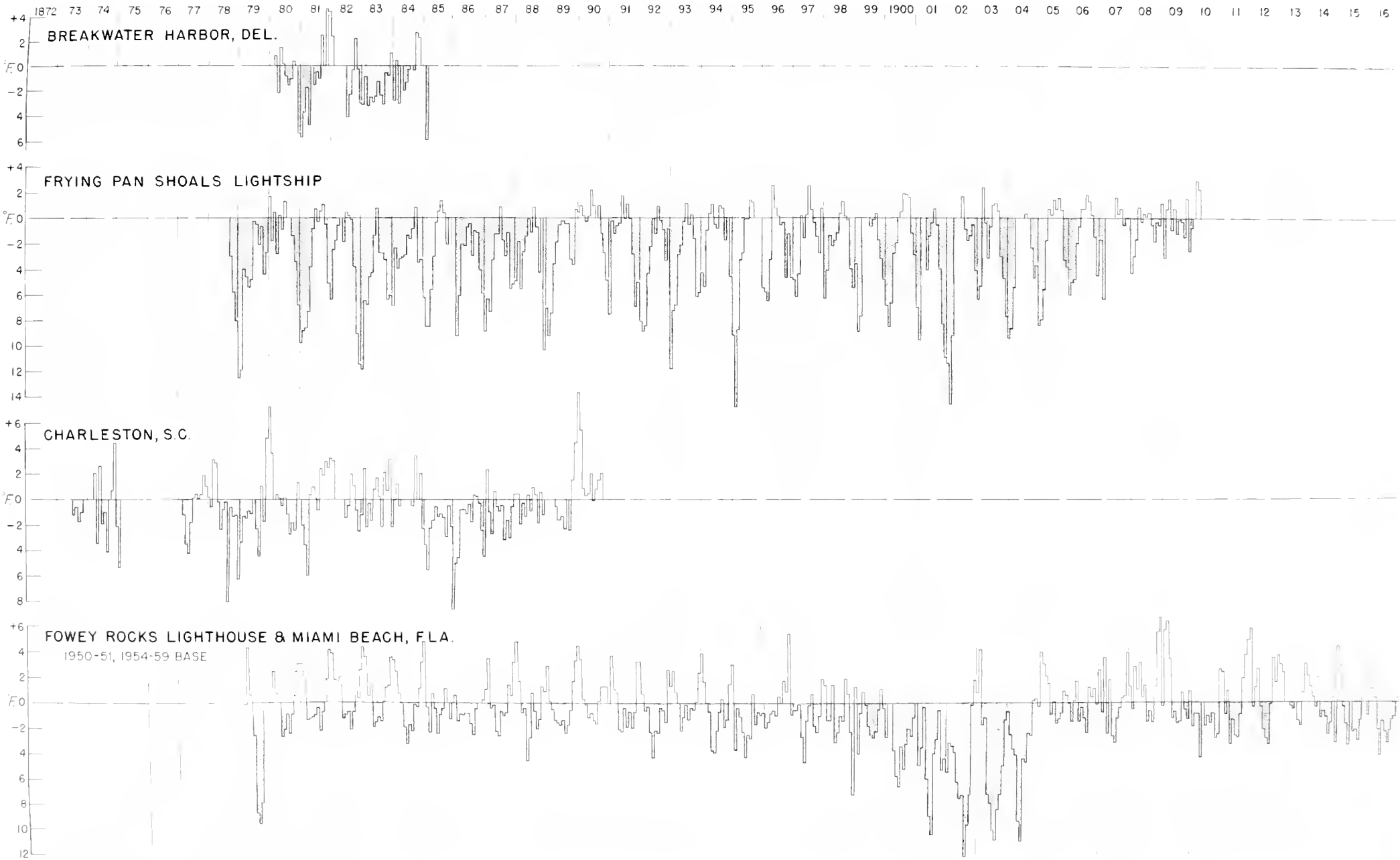

MONTHLY SEA-SURFACE TEMPERATURE ANOMALY GRAPHS, Fig. 2-C
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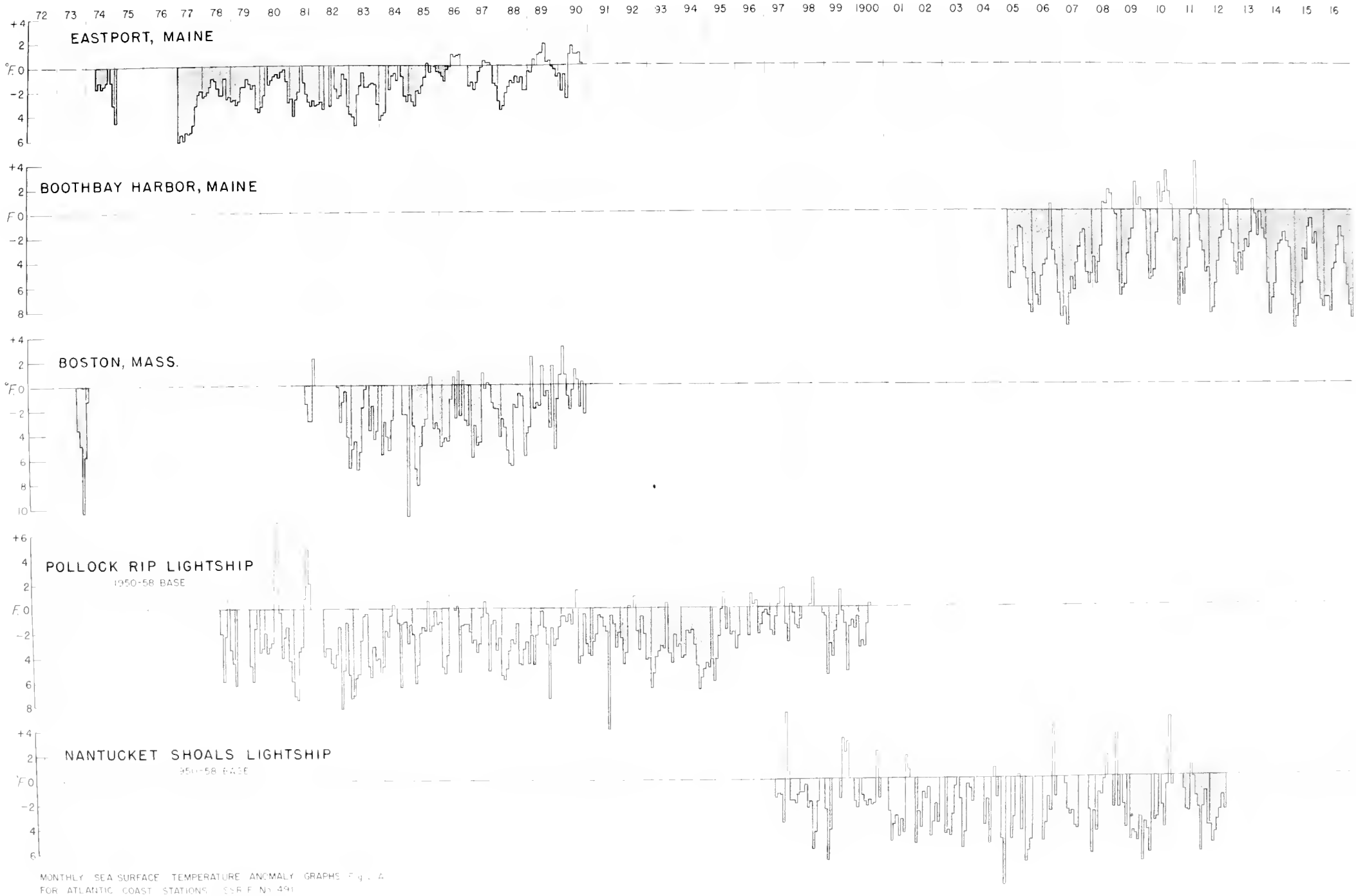

MONTHLY SEA SURFACE TEMPERATURE ANOMALY GRAPHS Fig. 4
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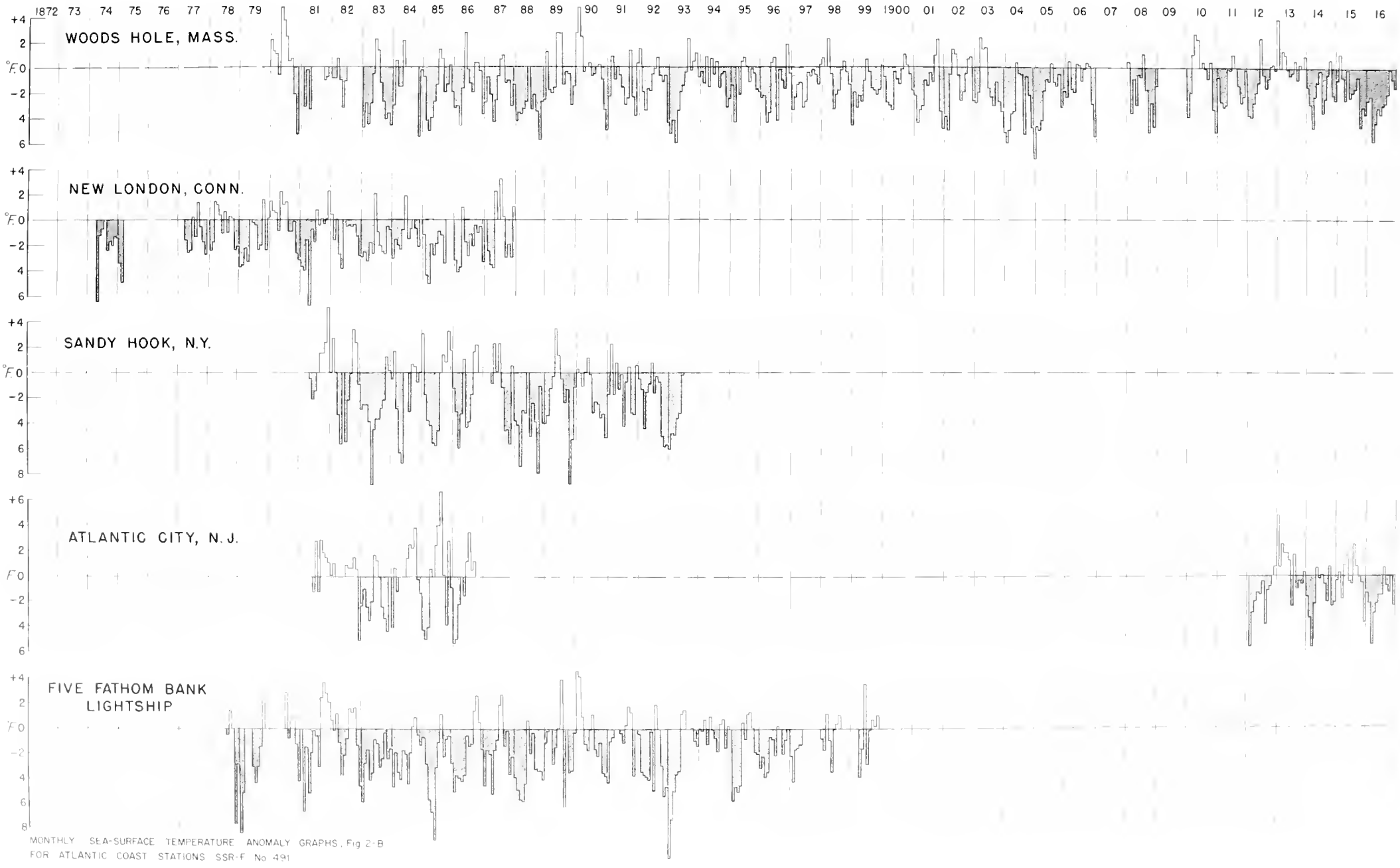

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