U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
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OREGON II Cruise 89-05 (183)
9/1-29/89

INTRODUCTION

The NOAA ship OREGON II Cruise 183 was divided into three segments and extended from September 1 to September 29, 1989. Segment 1 was a 10 day cruise around the freshwater discharge plume of the Mississippi River. Segments 2 (nine days) and 3 (eight days) were standard SEAMAP ichthyoplankton surveys in the northern Gulf of Mexico. Survey modification, because of lost time from Ocean Color Image Flight (AOCI) delays and inclement weather, resulted in the net loss of 2.5 survey days and nineteen SEAMAP stations. However, a total of 112 stations, thirty-five plume and seventy-seven SEAMAP stations, were completed during this survey (Figure 1).

OBJECTIVES

1) Collect hydrographic data to ground truth AOCI flights.

2) Collect water samples for chlorophyll determinations.

3) Collect ichthyoplankton and macrozooplankton for abundance and distribution of eggs and larvae (especially of scombrids, sciaenids, and cluepids).

4) Deploy Loran C drifters to collect current/plume data.

5) Test continuous flow chlorophyll sampling system.

METHODS

During segment 1 at each CTD/STD cast water samples were taken for chlorophyll analysis. This included a surface bucket sample and a water sample every two meters to a depth of ten meters.

Stations at which the Loran C surface drifter was deployed were sampled up to six times per 24 hr. A CTD/STD profile was taken, two BNF-1 tows (lower and upper halves of the water column) and a neuston tow constituted station operations. Standard transect stations were sampled only once in this manner.

Transects completed during AOCI overflights had the following protocol: upon notification of a flight day, the OREGON II terminated current activities and began a five hour north/south

transect from the nearest offshore or inshore starting point as determined by vessel location at the time of overflight notification.

Each transect began at 0830 hrs with a full light channel array CTD cast. After that the continuous flow fluorometer and thermosalinograph monitored salinity, temperature and fluorescence to the end of the transect at 1230. CTD/STD profiles were also taken at 0915, 1000, and 1040 hrs. Average speed between stations was 10 knots. Afterwards, standard operations were resumed.

During segments 2 and 3 station protocol was in accordance with SEAMAP Operational Plans.

RESULTS

Thirty-five stations were completed during segment 1 (9/1-10/89, Figure 2). Four were AOCI ground truthing transects each having five sampling sites. Four more were Loran C surface drifter stations. The remaining twenty-seven were standard plume survey stations. A total of 724 chlorophyll samples were taken. Half were extracted with an acetone/water solution and the remainder with a 40% DMSO/acetone solution. There were eighty-two BNF-1 bongo samples, thirty-eight neuston samples, twenty-one STD profiles, forty-six CTD profiles and one XBT.

Segment 2 (9/11-21/89, Figure 3) was the start of the standard SEAMAP ichthyoplankton fall survey. Two preselected stations were aborted. Fifty stations were completed. Five stations constituted the fifth AOCI ground truthing transect. The fourth station of this transect was sampled according to SEAMAP standards. During this segment 46 double neuston tows were made. Half of the 92 samples were preserved according to SEAMAP standards and the other half in ethanol for age studies. Forty-seven surface chlorophyll samples of three replicates each were taken, twenty-two 61 cm double oblique bongo samples, six XBT's, forty-eight CTD's and ten secchi readings were made.

Segment 3 (9/22-29/89, Figure 4) was impacted heavily by weather. A 48 hr inport in Panama City, Fla. forced the cancellation of fourteen SEAMAP stations. Three more were aborted because of the closing of the Pascagoula Shipping Channel and survey time constraints. Rough weather damaged the port neuston net and frame beyond use. A total of fifty neuston samples were collected from the thirty-one SEAMAP stations completed. Thirty-one chlorophyll samples, of three replicates each, were collected, fourteen 61 cm double oblique bongos, five XBT's, twenty-eight CTD's and two secchi readings were taken.

Bongo and neuston samples from segment 1 were shared by NMFS Beaufort and Panama City Laboratories. Chlorophyll samples were divided and taken to NMFS Beaufort and the Louisiana Universities Marine Consortium (LUMCON) for analysis. Surface drifter data was shipped to NMFS Panama City Laboratory.

Bongo and neuston samples from segments 2 and 3 were returned to NMFS Mississippi Laboratories for deposition. Selected samples will be shipped to ZSIOP, Szczencin, Poland with the remainder to be processed and stored by NMFS Panama City Laboratory and Gulf Coast Research Laboratory. AOCI ground truth chlorophyll data and salinity samples were returned to NMFS Mississippi Laboratories for processing.

ACKNOWLEDGEMENTS

Appreciation is expressed to the officers and crew of the OREGON II for their assistance in completing the survey. Their professionalism and expertise are to be commended.

CRUISE PARTICIPANTS

Segment 1 (9/1-10/89)

NAME	TITLE	ORGANIZATION
Alonzo N. Hamilton, Jr.	Field Party Chief	NMFS Pascagoula, MS
Pat Tester	Fishery Biologist	NMFS Beaufort, NC
Larry Settle	Bio.Tech.	NMFS Beaufort, NC
Mike Dowgiallo	Fishery Biologist	NOAA Washington, DC
Allison Vieshlow	Lt. NOAA Corps	NMFS Beaufort, NC
Doug DeVries	Fishery Biologist	NMFS Panama City, Fla.
Harold Brusher	Fishery Biologist	NMFS Panama City, Fla.
John Oswald	Bio. Tech.	NMFS Panama City, Fla.
David Kushner	Bio. Tech.	NMFS Panama City, Fla.
NON-GOVERNMENT		
Nancy Bland	Cooperator	Old Dominion Univ.
Rory Toon	Cooperator	LUMCON

Segment 2 (9/11-21/89)

Alonzo N. Hamilton, Jr.	Field Party Chief	NMFS Pascagoula, Miss.
Miriam Hahn	Bio. Tech.	NMFS Pascagoula, Miss.
Perry Thompson	Fishery Biologist	NMFS Pascagoula, Miss.
Karen Mitchell	Fishery Biologist	NMFS Pascagoula, Miss.

Segment 3 (9/22-29/89)

Alonzo N. Hamilton, Jr.	Field Party Chief	NMFS Pascagoula, Miss.
Glady Reese	Fishery Biologist	NMFS Pascagoula, Miss.
Mike Russell	Fishery Biologist	NMFS Pascagoula, Miss.
Jim Benton	Fishery Biologist	NMFS Pascagoula, Miss.

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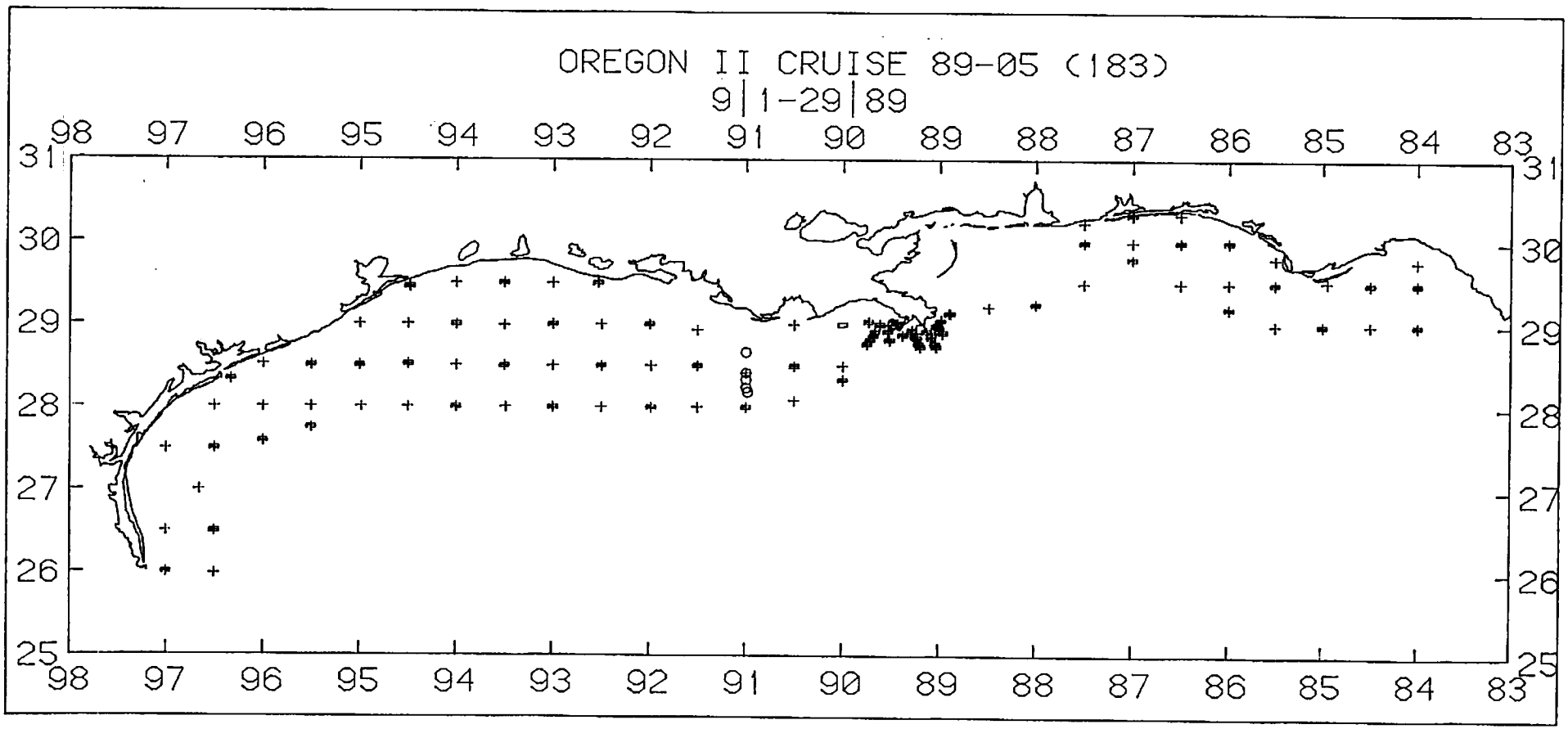

Figure 1. Station locations during OREGON II Cruise 89-05 (183). Symbol explanation: 0 - overflight, △ - surface drifter, ▭ - bongo and + - neuston.

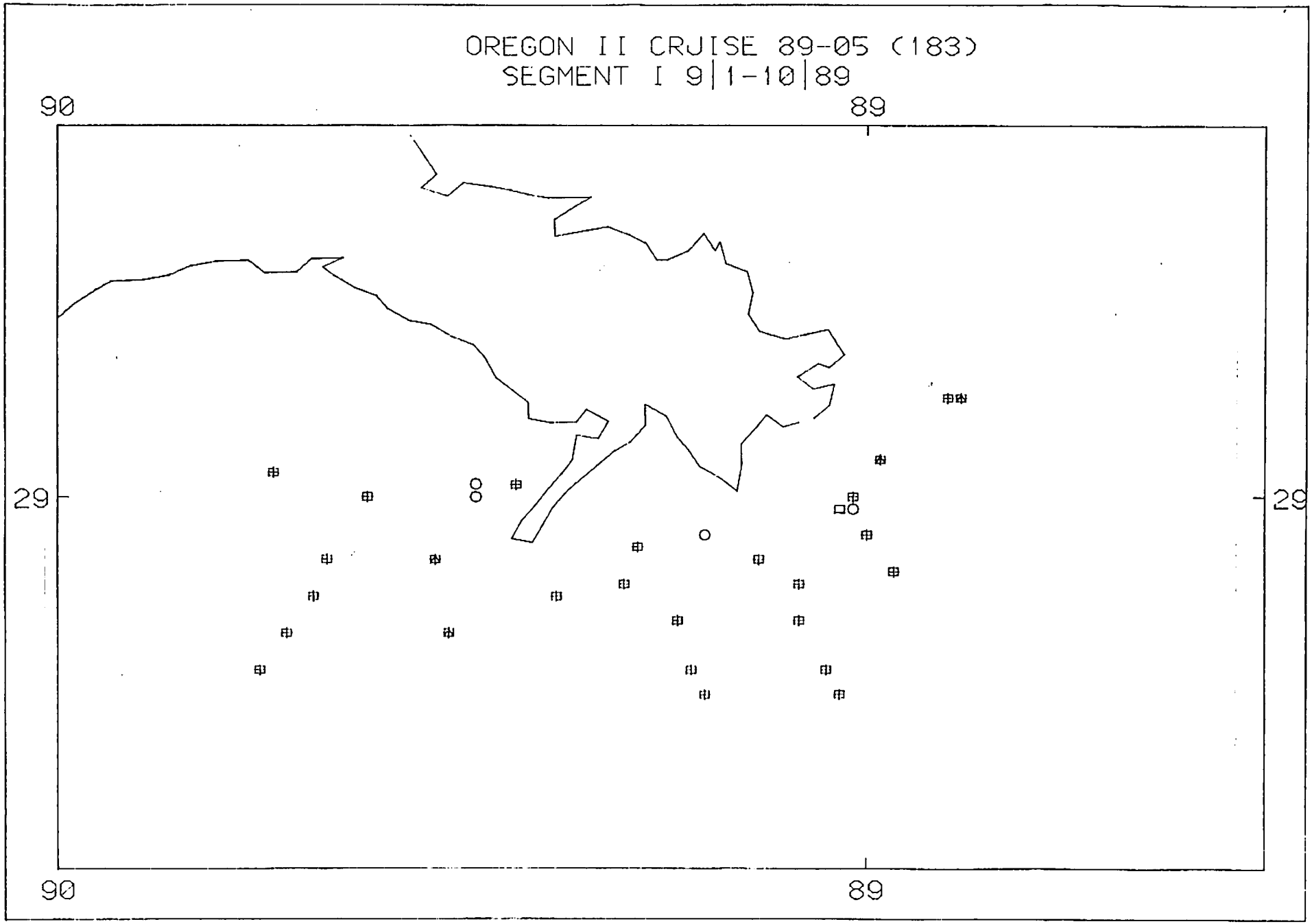

Figure 2. Segment 1 included: ground truth on AOCI overflights, location of surface drifter stations. Refer to FIgure 1 for symbol explanation.

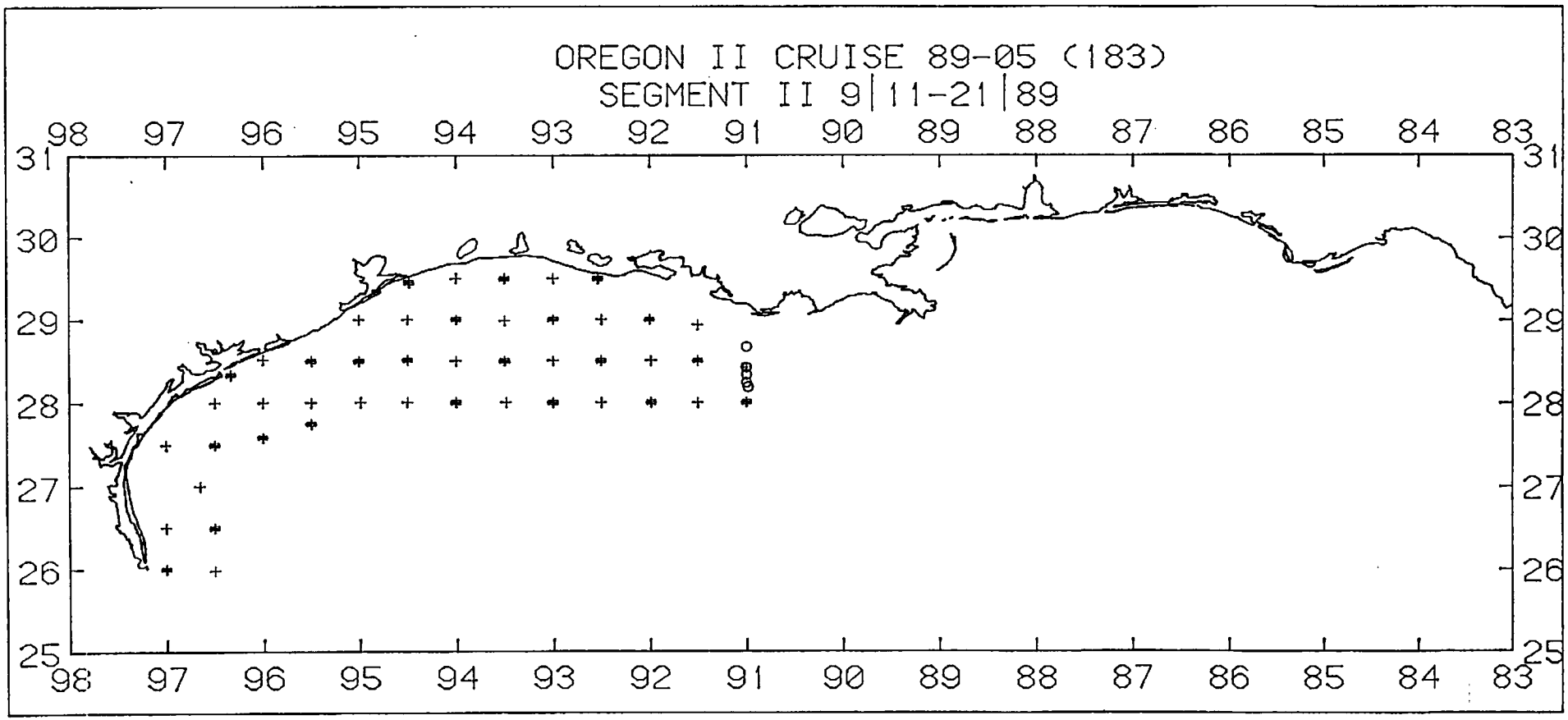

Figure 3. Segment 2 plot of SEAMAP and AOCI overflight stations. Refer to Figure 1 for symbol explanation.

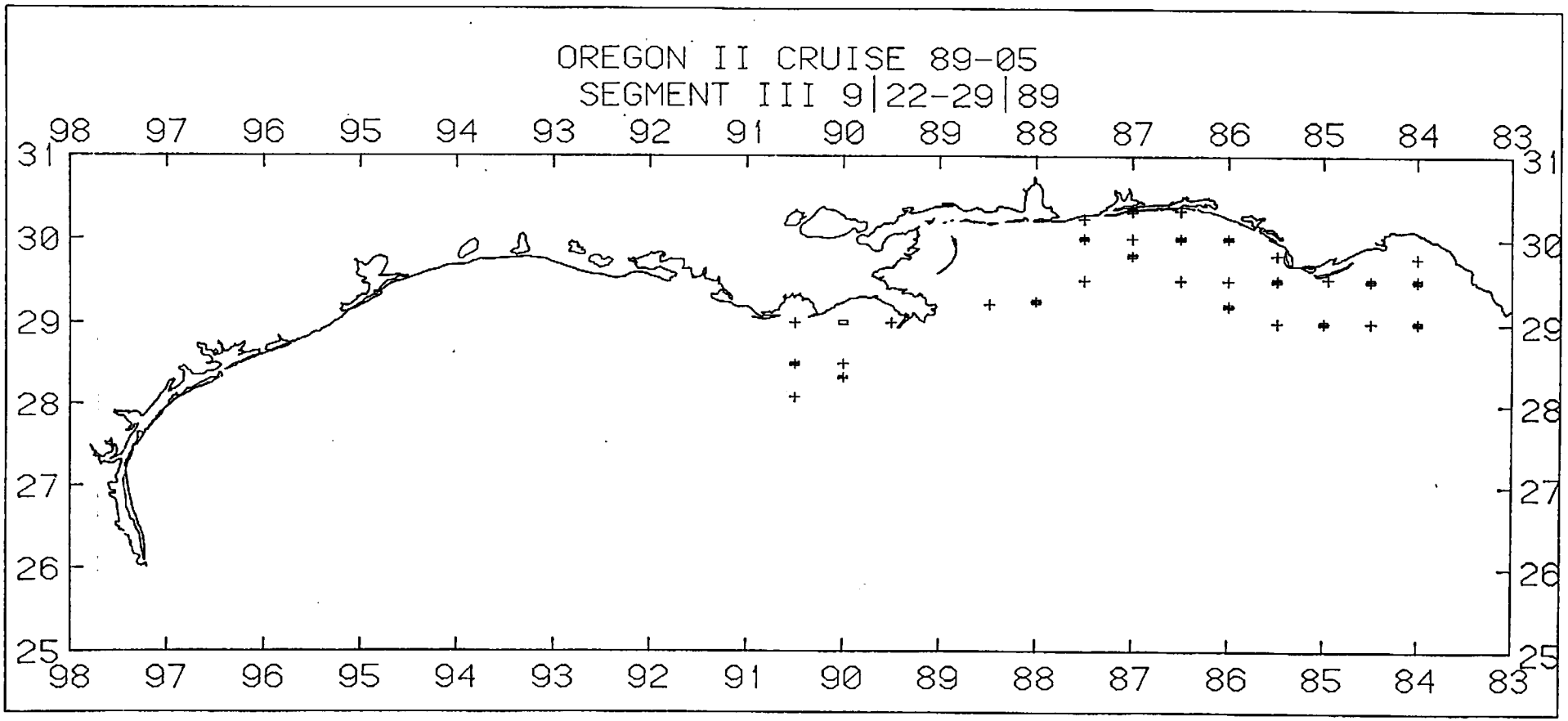

Figure 4. Segment 3 plot of SEAMAP stations. Refer to Figure 1 for symbol explanation.