

THE GEOSECS PROGRAM: 1973–1976

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Geochemical Ocean Sections (GEOSECS) is one of the major programs of the International Decade of Ocean Exploration, a multi-nation cooperative study of the world oceans during the period 1970–1980. The GEOSECS program itself began in 1967 as a plan for a series of expeditions in the Atlantic, Pacific, and Indian Oceans which would provide a framework for the application of geochemical and hydrographic measurements to the study of circulation and mixing processes in the world oceans. The concept of a large-scale geochemical ocean survey, coupled with more precise measurements of temperature, salinity, and density than had previously been attempted, has now been realized in the Atlantic and Pacific Oceans, and a brief chronology of the major steps along the way is worth setting down at this stage.

(1) The first GEOSECS intercalibration and testing station, in the Pacific Ocean ($28^{\circ}29'N$, $121^{\circ}38'W$), between September 23–30, 1969. The results from this station, “GEOSECS-I”, were published in the *Journal of Geophysical Research* (volume 75, pp. 7639–7696, 1970). The GEOSECS-I station has since been occupied three more times (November 1971, as GOGO-I; April 1972, as GOGO-II; and as the last station of Leg 10 of the Pacific GEOSECS expedition – station 347 – on June 8, 1974).

(2) The second GEOSECS intercalibration station, “GEOSECS-II”, in the Atlantic Ocean ($35^{\circ}46.5'N$, $67^{\circ}59'8'W$), between August 24 and September 2, 1970. The results of this intercalibration were reported primarily in the second cluster of GEOSECS papers, published in *Earth and Planetary Science Letters* (volume 16, pp. 47–145, 1972). This station was reoccupied in June 1972 and again as the last station of Leg 9 of the Atlantic GEOSECS expedition – station 121 – on March 30, 1973.

(3) The third GEOSECS intercalibration station, “GEOSECS -III”, in the Pacific Ocean ($17^{\circ}58'S$, $172^{\circ}01'W$) in August 1971. The results of this study were published in *Earth and Planetary Science Letters* (volume 23, pp. 63–159, 1974).

(4) The Atlantic GEOSECS expedition carried out aboard the Woods Hole Oceanographic Institution R.V. “Knorr”, July 18, 1972 to April 4, 1973. The first results of this expedition appeared in the third collection of GEOSECS papers, published in *Earth and Planetary Science Letters* (volume 23, pp. 63–159, 1974) and have been appearing in various journals since.

(5) The Pacific GEOSECS expedition carried out aboard the Scripps Institution of Oceanography R.V. “Melville”, August 22, 1973 to June 10, 1974.

In addition to the U.S. Atlantic and Pacific expeditions, scientists from Germany and Japan have carried out similar work aboard F. S. Meteor in two

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