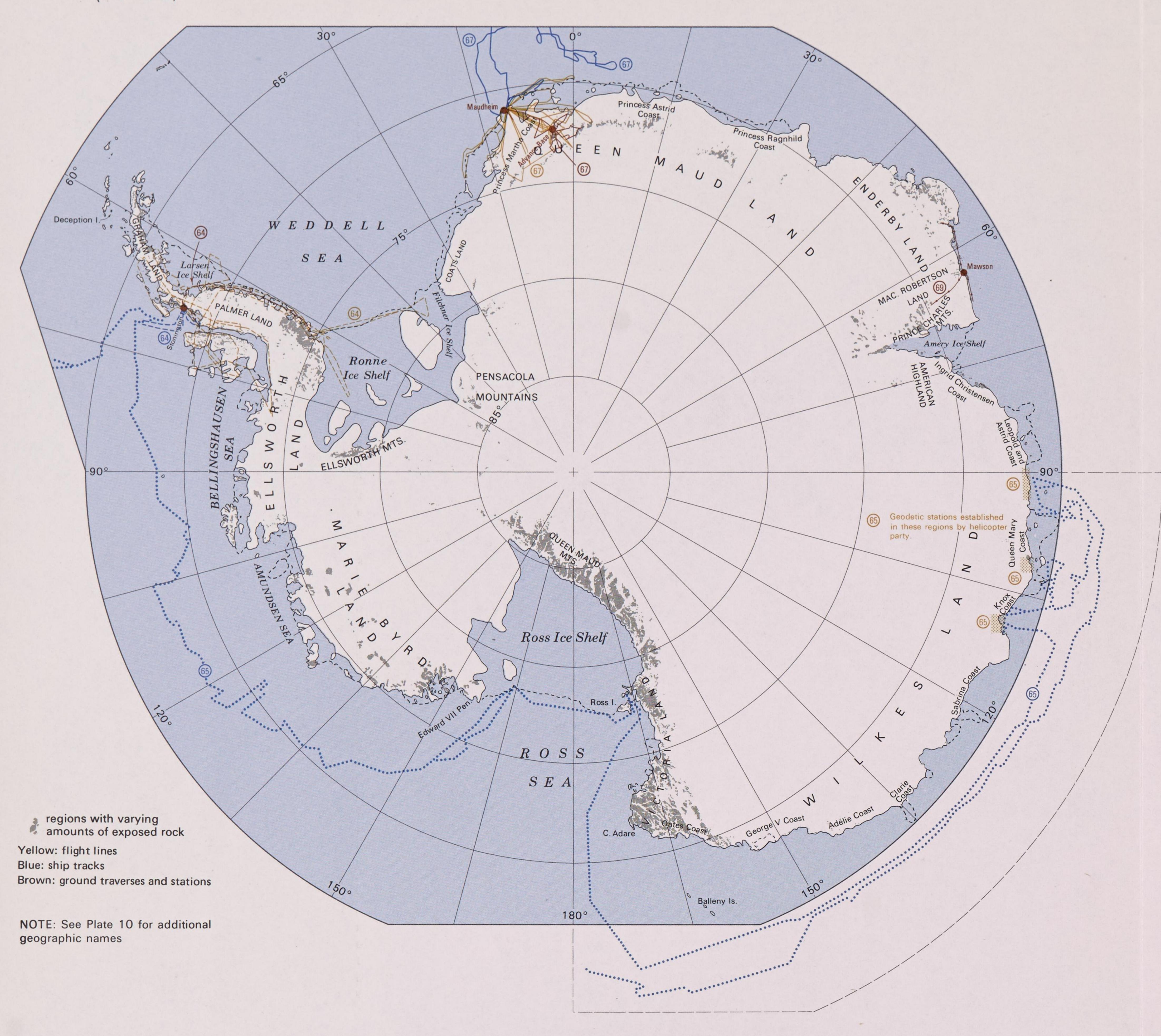
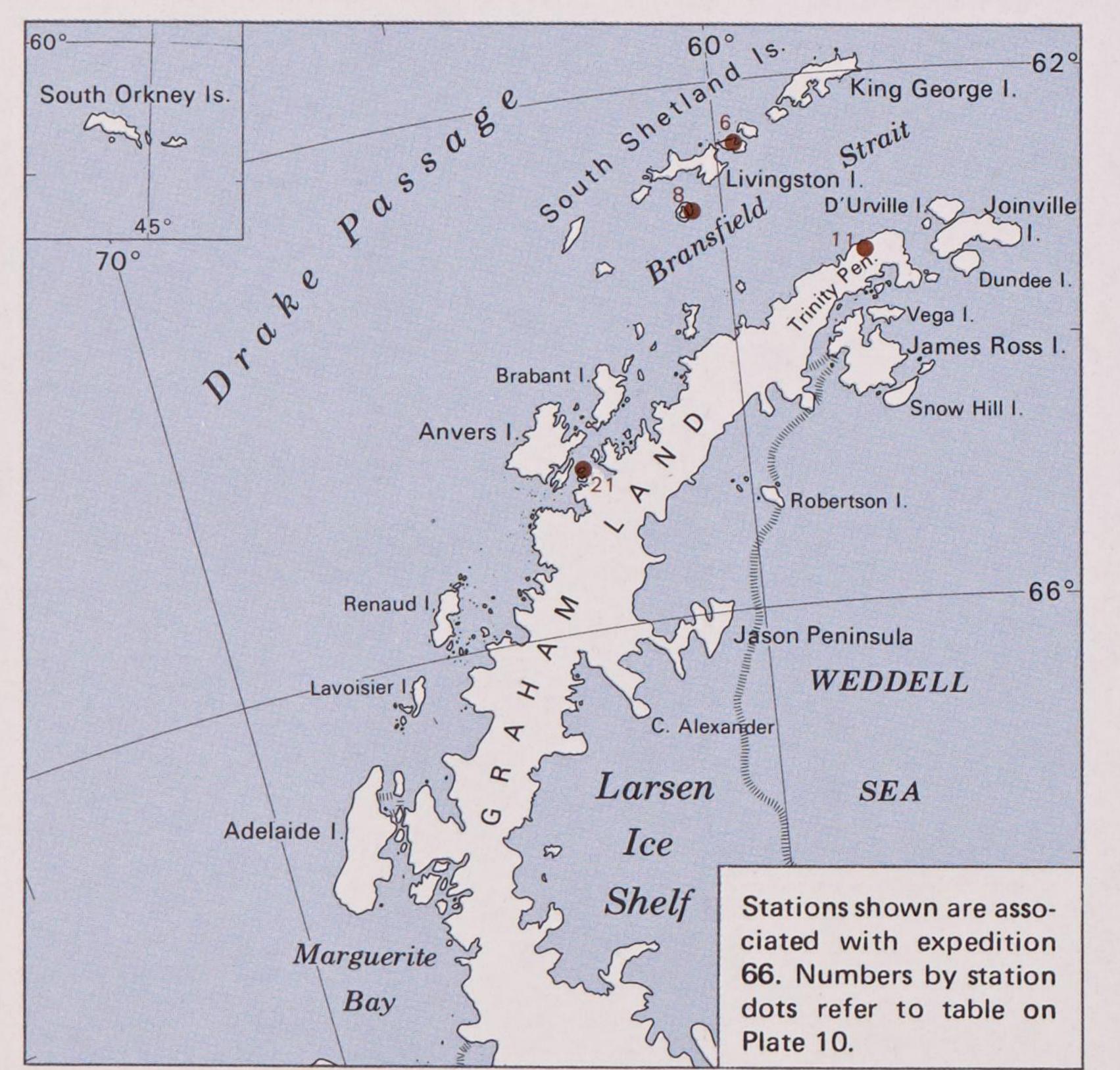
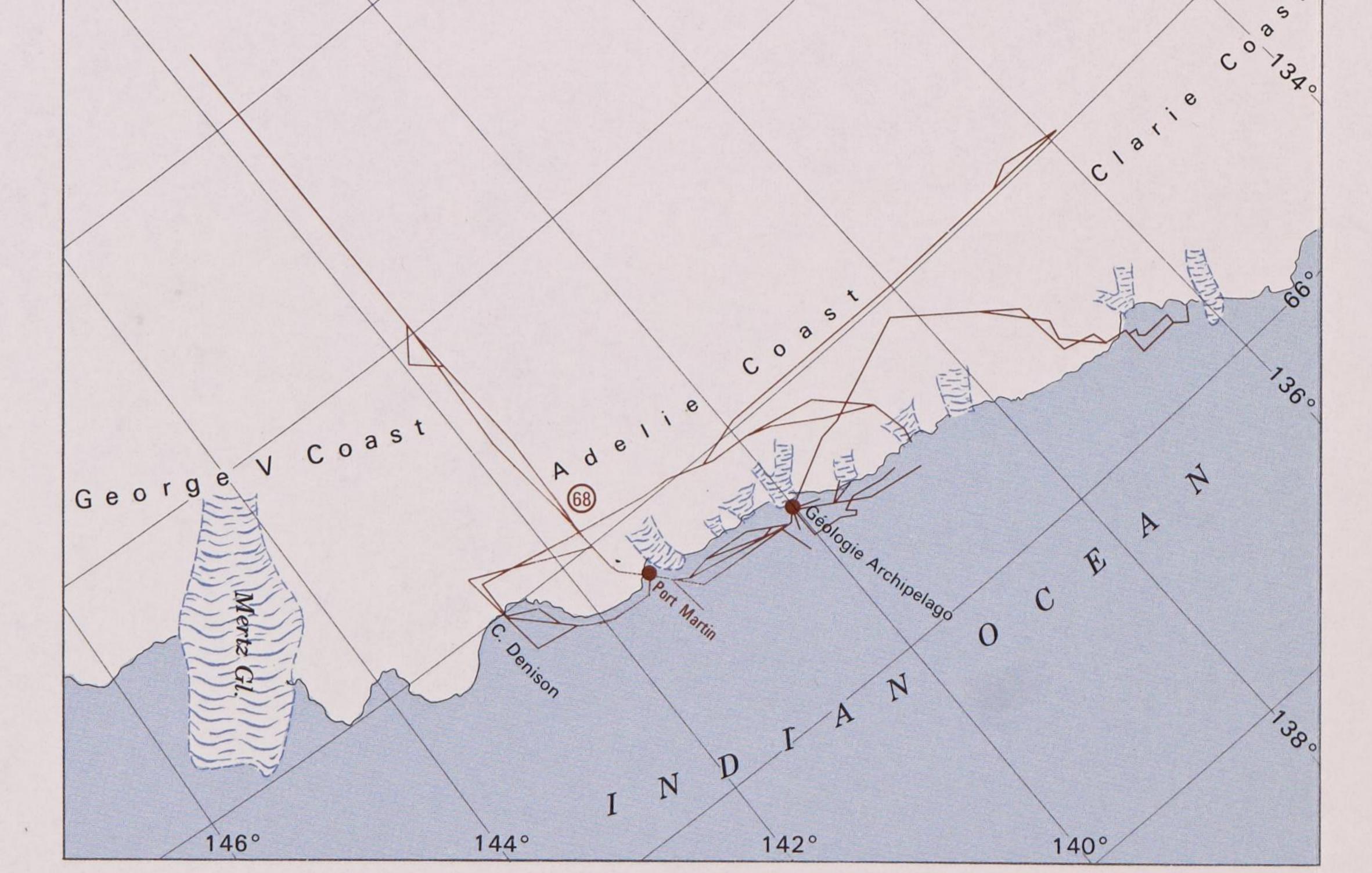
FOLIO 19-HISTORY





Bibliographic numerals given with historical summaries refer to the text section headed, "Bibliographic Sources," Bold-face numerals indicate sources of expedition data given on the maps.



Ice shelf limits on the maps are not necessarily in accord with conditions at the time of the expeditions shown.

United States (Ronne Antarctic Re-64)1947-1948 64 search Expedition)

(64) Leader: Cdr. Finn Ronne, USNR

Sponsors: American Geographical Society, Office of Naval Research, Air Force, and other private donors and government agencies

Ship: Port of Beaumont, Texas Planes: Twin-engine Beech C-45, Noorduyn C-64, and Stinson L-5

Purpose: Scientific investigation and geographical exploration Bibliography: 17, 200, 201, 202

Finn Ronne's expedition was the only privately organized expedition after 1938, and the first expedition during which women wintered in Antarctica. Ronne, who had previously been second-in-command of the East Base party during Operation Highjump, made his main camp at the former East Base on Stonington Island. The party arrived in March 1947 and evacuated the base in February 1948. The modern aircraft flew over more than 1,500,000 km² and the party obtained more than 14,000 trimetrogon photographs of the coast of the Weddell Sea and southern Antarctic Peninsula. Weather observations, critical for flight operations, were a significant part of the scientific program of the expedition. The chief meteorologi cal work was carried out at the main base, the Cape Keeler Advance Base on the Larsen Ice Shelf along the east coast of the Peninsula, and a pleateau weather station twenty-five miles east of Stonington Island. Synoptic meteorological observations were taken over a period of seventy-four days. A major journey in cooperation with the British was made across the plateau of the Peninsula and along its east coast. The party set out on October 9 and by late October it had crossed the plateau to the ice shelf along the east coast. Travel southward was rapid because of the comparatively smooth surface of the shelf ice and the lightness of the loads, a result of air support furnished by the Americans. A plane-table survey was carried out along the coast with control established by astronomical fixes at 80-km intervals. The journey also produced collections of lichens, mosses, rocks, and seaweeds. The sledging party reached 74°47'S, 62°22′W; and headed back to camp, arriving on January 16, 1948. Other studies involved glaciology and geology in the Marguerite Bay area, hourly tidal readings at the main base, magnetic observations, and seismographic measurements of earth movements and the relation of minor earth vibrations to weather changes.

United States (Operation Windmill) 1947-1948 65 Leader: Cdr. Gerald L. Ketchum, USN Sponsor: United States Navy Ships: Edisto and Burton Island Planes: Ship-based helicopters Purpose: To secure ground control data for the aerial photography of Operation Highjump Bibliography: 17, 131, 166, 228

The expedition was intended in part to secure ground control for the aerial photography of Operation Highjump. In addition, there were scientific and exploratory objectives, and the Navy hoped to train personnel, and to test experimental equipment under polar conditions.

The two icebreakers cruised along the coast of East Antarctica, establishing a total of seventeen geodetic stations by the use of ship-based helicopters. They stopped first along Wilhelm II and Queen Mary Coasts, the Haswell Islands, and the Gillies Islands. They then skirted the pack ice in search of an approach to the ice-free region of the Bunger Hills, which had been discovered the previous year during Operation Highjump. The Edisto finally penetrated the extremely heavy pack ice to reach the edge of the Shackleton Ice Shelf at a point about 65 km from land. Helicopters from the Burton Island then flew in and transported the exploring party from an operating base on the shelf ice to the shore. This was the first time that helicopters were used as a primary means of transportation in Antarctica. Geodetic stations were established in the Bunger Hills and to the east along the Knox and Budd Coasts after which the icebreakers proceeded to Ross Island, Little America, Peter I Island, and Stonington Island, where the Ronne expedition was just completing its stay.

Geological work was conducted on the ice-free areas of the Bunger Hills, the Windmill Islands, Peter Island, and, in cooperation with a geologist from the Ronne expedition, on the islands around Adelaide Island. Biological investigations were also made, particularly on the Windmill Islands.

Leaders: Capts. Toro, Navarrete, Fontaine, Dávison, Whittaker, Costa, and Bofil, and Cdrs. Tisné and Wiegand Sponsor: Chilean government

Ships: Various frigates, transport vessels, oil tankers, and

Purpose: Territorial claim, scientific investigations, and military objectives

Bibliography: 51, 178, 179, 183, 184

annual expeditions to the Antarctic. The first such expedition set out early in 1947 and by February 22 a meteorological station-later called Arturo Prat had been established on Greenwich Island. This station was operated by the Chilean Army. The following year a second Chilean station was set up on an unnamed islet at 63°19'S, 57°52'W near Cape Legoupil. In February 1948 the President of Chile, Gabriel González Videla, and a large party including the President's wife and daughters visited both stations. At an official ceremony the new station was named Base Militar General O'Higgins. This station was controlled by the Chilean Navy. During the ensuing years the established bases were resupplied and two additional stations were set up: Base Presidente González Videla, inaugurated in March 1951 at Paradise Harbor, and Base Presidente Pedro Aguirre Cerda was established on Deception Island in February 1955. Both stations were controlled by the Chilean Air Force. Scientific work accomplished by these expeditions was limited. In addition to meteorological observations some hydrographic work was accomplished each summer in the vicinities of the stations, as well as during the cruises of the resupply vessels. Biological and geological collections were sometimes made in the vicinity of the camp and auroral phenomena were recorded.

(66) 1947-1955

Planes: Seaplanes, used for reconnaissance

Starting in 1947, the Chilean government sent



Helicopter and icebreaker participating in Operation Windmill. Photo No. 80-G-619762 in the National Archives.

Norwegian-British-Swedish Antarcti 1949-1952

Leader: Capt. John Giaever Sponsors: Norsk Polarinstitutt; government grants from Norway, the United Kingdom, and Sweden; Norske Geografiske Selskab, Royal Geographical Society, and Svenske Sällskapet för Anthropologi och Geografi

Ship: Norsel Planes: RAF Auster, and Beechcraft plane of Swedish Air Purpose: Scientific research and surveying

Bibliography: 91, 94, 197, 198, 209, 252

On this expedition, specific scientific investigation was given priority over general geographic observation. Each party was led by a scientific specialist, whose responsibility was to do as much work as possible in his own field.

The expedition arrived in the Antarctic in January 1950. After preliminary aerial reconnaissance, a site was chosen on the ice shelf near Cape Norvegia, and Maudheim, the main base, was established there. The party brought with it not only dogs and sledges but also three American-built tracked vehicles, known as weasels. With the help of the weasels an advance base was set up at a site 310 km southeast of Maudheim at the foot of an isolated and prominent nunatak. During the expedition's first summer, two research parties traveled from the advance base into the mountains of the region: a glaciological party, and a combined geological and survey party which spent five and a half months on the trail.

By the end of the second summer, geological and survey parties had examined all known mountain and nunataks north of approximately 73°50'S between 02°E and 12°W, and triangulated this area; toward the end of the expedition aerial surveys extended the coverage. An exploration party made some eighty soundings on the inland ice to determine the depth to bedrock.

At Maudheim surface meteorological observations were taken every three hours from 6:00 a.m. until midnight and a radiosonde balloon released each day. Extensive studies of the radiation balance between the atmosphere and the ice were carried out and weather reports were transmitted to Cape Town. A special igloo was built for round-the-clock magnetic observations; auroral photos were also taken. A coring device was used to provide samples of ice to a depth of 100 m so that the physical characteristics of the ice sheet could be studied, and a 13-m pit was dug to study the snow and névé. A network of stakes was set up over 25 km² near Maudheim to determine relative ice movement.

In February 1951 one of the weasels, while making a test journey, plunged over an ice cliff. Three of the four men on it were killed. This left the expedition without an expert mechanic, and resulted in a reduction in the use of diesel engines during the

68 1949-1953 Leaders: André Liotard, Michel Barré, Mario Marret Sponsor: Expéditions Polaires Françaises Ships: Commandant Charcot and Tottan Purpose: Scientific investigation, geographical exploration, and territorial claim Bibliography: 57, 73, 127, 128, 135, 181

Paul-Emile Victor obtained the agreement of the French government in February 1940 to organize two scientific expeditions, one to Greenland and one to Antarctica. After an unsuccessful attempt to penetrate the Antarctic pack ice during the 1948-1949 Antarctic summer, a second and successful attempt was made the following year. The expedition arrived off the little-known Adélie Coast in January 1950 and set up a base which they named Port Martin. The primary purpose of the expedition was to undertake scientific research; it also sought to demonstrate French sovereignty over 'Adélie Land,' the wedgeshaped sector extending from the Adélie Coast to the South Pole. Installations at Port Martin included an astronomical observatory, a seismological hut, and a meteorological tower, in addition to accommodations for eleven men and support facilities.

The meteorological program the first year included surface observations taken eight times daily, pilot balloon ascents, and a special study of the blizzards so prevalent in this region. The party collected lichens and marine organisms.

The expedition was equipped with weasels as well as with dogs and sledges and made many journeys over the sea ice and the ice sheet. During one of these trips an emperor penguin rookery was discovered in the Géologie Archipelago; journeys were made to Cape Denison, the camp site of the 1911-1914 Australasian Antarctic Expedition; an inland supply

ANTARCTIC MAP FOLIO SERIES depot was established; astronomical controls were obtained along the coast for cartographic correlations with aerial photographs of the U.S. Navy Operation Highjump; and the longest journey of the year was made by dog sledge westward along latitude 67°S.

In January 1951 a relief party was brought in by the Commandant Charcot. The second year's scientific program was chiefly an intensification of the earlier research; limited hydrographic work was carried out with the expedition's boat, the Skødern, until she sank at her moorings during a storm. During the 1951 winter, a party devoted a full week to the study of emperor penguin behavior in the newly discovered rookery, and another week was spent at Cape Denison to obtain magnetic observations for comparison with those made by the Australian party

In November 1951 an attempt to reach the South Magnetic Pole by weasel was unsuccessful because of mechanical problems, but magnetic observations were taken during the trip; the South Magnetic Pole was estimated to be less than 150 km south of Port

A 300-km weasel journey was successfully carried out in December 1951 to obtain glaciological observations and seismic soundings, and a dog-sledge party completed a reconnaissance of the coast to the

The Port Martin base burned in January 1952 before the relief ship Tottan had departed. The scientific data were saved by the combined efforts of the 1951 wintering party and the relief party aboard the Tottan. A depot hut on Pétrel Island in the Géologie Archipelago was supplemented by others and a small party was established here for the coming

The main objective for the year was to study emperor penguins; in addition, tidal observations were made, the sea ice was studied, and a limited meteorological program was carried out. A major western journey by weasel and dog sledge was also undertaken for astronomical control and survey. The base was evacuated and the program discontinued in January 1953.

Australian National Antarctic Research 69 1954-1955 Leader: Phillip G. Law Sponsor: Australian Department of External Affairs,

Antarctic Division Ship: Kista Dan

Purpose: Scientific investigation and geographical exploration Bibliography: 42, 124, 125

In 1947-1948, the first Australian National Antarctic Research Expedition in the Wyatt Earp had established scientific stations on Heard and Macquarie Islands. But unfavorable pack-ice conditions had kept the expedition from reaching George V Coast in Antarctica, where the party had hoped to reoccupy the magnetic station established in 1911 and locate a suitable site for a new scientific station. In January 1954, the second Australian National Antarctic Research Expedition set out with the objective of establishing a station on the coast of Mac.Robertson Land. The Kista Dan, an ice breaker, successfully penetrated the pack ice and Mawson station was established at 67°36'S, 62°53'E, a site selected with the help of aerial reconnaissance.

After leaving a ten-man party at Mawson, the Kista Dan moved eastward. A brief landing was made at Vestfold Hills and a party went ashore on an island nearby to obtain magnetic and solar observations; aerial photographs were obtained during a reconnaissance flight in one of the Austers. The ship then headed back to Melbourne.

The scientific program carried out by the staff at Mawson included observations in glaciology, meteorology, ionospheric physics, and seismology; geologic and botanical collections were made; and bird sightings were recorded. The staff had at its disposal three weasels, another small tractor, and dog sledges. Journeys included a winter one to Scullin Monolith to determine its location by solar observation and to collect rock specimens. During the 1954-1955 summer a trip to the west resulted in the sighting of an emperor penguin rookery, the exploration and charting of Edward VIII Bay, and the collection of geologic specimens. During a journey by weasel to the interior of the continent, the party sighted and named the Prince Charles Mountains, which were first seen during the flights of Operation Highjump (1946-1947).

The party returned to Australia in February 1955 when the Kista Dan brought a new party to Mawson; the station was active from that time through the period of the International Geophysical Year.