Abstracts of the Papers Printed or to be Printed

AEROPHOTOGRAMMETRY AND MAPPING IN THE VICINITY OF THE ONGUL ISLANDS*

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南極地域における地図作製について*

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The project on photogrammetry planned by the Geographical Survey Institute in the early part of 1956, consisted of two operations, aerial survey and ground survey, the former was aerial photographing of the Japanese station and its vicinity, and latter was the determination of the geographical positions of the stations, which was established by means of astronomical observation and triangulation.

1. Astronomical observation and triangulation. Nine control points including one astronomical point were established in East Ongul Island, during Feb. 1957. Using a Wild T2 theodolite for solar observation, the Geographical position of Syowa station was determined as 39°35′24″E and 69°00′22″S.

2. Flights for photography. On the first Expedition 1956–57, nine flights were made by a Cessna 180 aircraft, along the eastern and western coast line of Lützow-Holm Bay. For this purpose, a Fairchild K 17C camera was used for vertical photographs and a Williamson F24 camera for oblique. The altitude of all flights for vertical photographs were 5,000–6,000 feet. Totally, the narrow strip zone of 2,000 flying miles in length has been covered by 750 sheets of vertical photographs and 450 sheets of oblique photographs.

On the third expedition 1958–59, one flight for photography was made along Prince Olav Coast from 42°20′E to 39°30′E, keeping an altitude of 9,000 feet. For this flight, the Beaver aircraft, in which was installed a RMK 11.5/18 camera, was used with floats. The photographed area was a strip zone, about 2.7 miles in width and 80 miles in length, covered by 180 sheets of vertical photographs.

3. Mapping compilation. The mapping work was caraied out in the Geographical Survey Institute. "Syowa Base" (1:1,000 scale) and "East Ongul Island" (1:5,000 scale) was compiled by using a Wild A8 stereoplotting machine in 1957. Besides, the west part of the Prince Olav Coast, between 40°E and 42°30′E were compiled in two sheets (1:100,000) in 1959. As the control points for determinations of geodetic positions and of mean scales on a series of photographs, four astronomical points which were observed by the first wintering party, were effectively used. From this plotting, the coast line worked out by H. E. Hansen and others will be somewhat corrected. (Fig. 1)

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** Geographical Survey Institute. Member of the Japanese Antarctic Research Expeditions, 1956–57 and 1957–58.

*** Geographical Survey Institute. Member of the Japanese Antarctic Research Expedition, 1958–59.

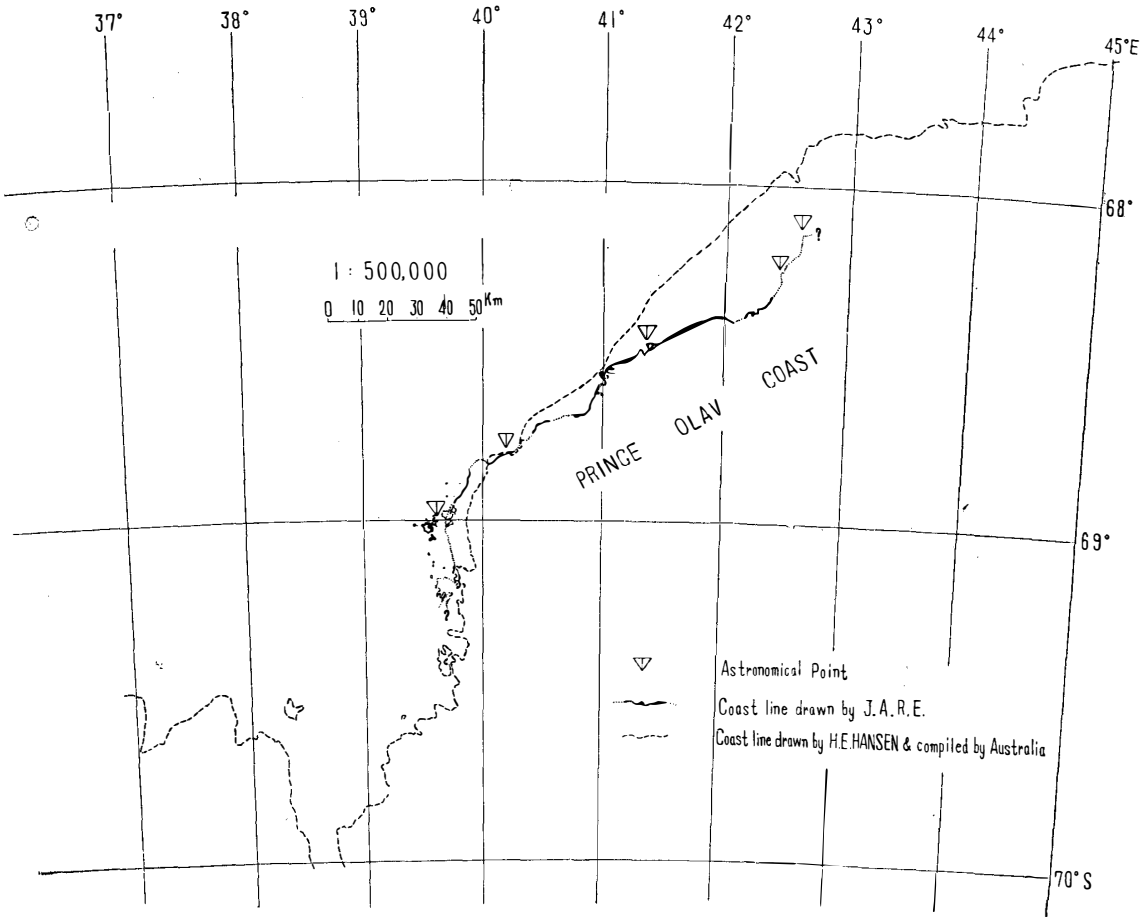

Fig. 1. Coast line corrected.

GRAVITY MEASUREMENTS BY THE JAPANESE ANTARCTIC RESEARCH EXPEDITION*

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南極地域における重力測定について*

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Precise gravity values at Singapore and Cape Town were determined referring to the Geographical Survey Institute, Chiba, Japan, by means of a GSI pendulum apparatus in the second expedition, 1957–58. This gravity tie between Chiba-Singapore-Cape Town make a part of the international gravimetric nets planned by the International Gravimetric Commission.

Unfortunately, we could not make pendulum observations at Syowa Base in Antarctica. The gravity value at Syowa Base, however, was determined with a Worden gravimeter on the

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** Geographical Survey Institute. Member of the Japanese Antarctic Research Expedition, 1957–58.

*** Geographical Survey Institute. Member of the Japanese Antarctic Research Expeditions, 1957–58 and 1959–60.