LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

QUATERNARY

Q — *Stream, deltaic, glacial and marine beach sediments (mapped only where underlying bedrock geology cannot be inferred with reasonable certainty)*

TERTIARY

Te — *EUREKA SOUND FORMATION: sandstone, conglomerate, siltstone; minor shale and coal (see note 3)*

MESOZOIC

CRETACEOUS

UPPER CRETACEOUS

KANGUK GROUP

Kk1 — *KANGUK FORMATION: dark coloured shale; minor sandstone, siltstone and mudstone*
STRAND FIORD FORMATION: basalt flows, agglomerate
BASTION RIDGE FORMATION: dark coloured shale; minor siltstone

Kh — *HASSEL FORMATION: sandstone; minor siltstone and shale*

LOWER CRETACEOUS

Kc — *CHRISTOPHER FORMATION: dark coloured shale; minor sandstone, siltstone, mudstone and pyroclastic rocks*

Ki — *ISACHSEN FORMATION: sandstone; minor shale, siltstone, and locally, pyroclastic rocks*

JURASSIC AND CRETACEOUS

UPPER JURASSIC AND LOWER CRETACEOUS

JKd — *DEER BAY FORMATION: dark coloured shale; minor siltstone, sandstone and mudstone*

UPPER JURASSIC

Ja — *AWINGAK FORMATION: sandstone, siltstone; minor shale*

LOWER, MIDDLE AND UPPER JURASSIC

Js — *SAVIK FORMATION: dark coloured shale; minor siltstone and sandstone*

J — *SAVIK and AWINGAK FORMATIONS: (Undivided)*

TRIASSIC

UPPER TRIASSIC

Trh — *HEIBERG FORMATION: sandstone, siltstone; minor shale*

MIDDLE AND UPPER TRIASSIC

Trba — *BLAA MOUNTAIN FORMATION: dark coloured shale, siltstone, light grey calcareous siltstone; minor sandstone*

LOWER TRIASSIC

Trbl — *BLIND FIORD FORMATION: siltstone; minor shale, sandstone*

INTRUSIVE ROCKS

TERTIARY

Col — *OTTO FIORD FORMATION: anhydrite, gypsum; minor limestone and shale (see note 4)*

CRETACEOUS

Gabbro, diabase and basalt dykes (solid circle indicates downthrow side of fault intruded by dyke) See note 5

Geological boundary (defined, approximate, assumed)
Bedding (inclined)
Bedding (from air photographs or observed from aircraft)
Fault (defined, approximate; solid circle indicates downthrow side)
Thrust fault (defined, assumed; teeth indicate upthrust side)
Anticline (defined; showing culmination and plunge of axis)
Syncline (defined, approximate; showing culmination and plunge of axis)
Fossil locality 116
Measured section showing approximate line of section
Boundary of Quaternary sediments
Geological boundary, fold axis or fault inferred beneath water, glacier or Quaternary sediments
Type section (see note 6) ★

Geology by R. Thorsteinsson 1963, and E.T. Tozer 1961, 1962

Compilation by R. Thorsteinsson

NOTES

1. P.E. Fricker (1963) has given a detailed account of the stratigraphy and structural geology of the area here outlined. His report is accompanied by a geological map on the scale of about one inch to one mile. (Fricker, P.E., 1963: Geology of the Expedition area, western central Axel Heiberg Island, Canadian Arctic Archipelago; Axel Heiberg Island Research Reports, McGill Univ., Montreal, Geology, No. 1).

2. Generalized interpretation of an area characterized by complex folding and faulting.

3. The structural relationship and lithology of outcrops of the Eureka Sound Formation on the southwest side of the principal ice cap differ from those on the northeast side. In the environs of Strand Fiord the Eureka Sound Formation overlies, conformably the Kanguk Formation, and consists mainly of sandstone and siltstone with minor shale, conglomerate and coal. Northeast of the ice cap the formation lies with angular unconformity on various older formations and consists mainly of conglomerate and sandstone with minor siltstone, shale and coal.

4. The Otto Fiord Formation crops out in normal stratigraphic successions in northwestern Ellesmere Island where the formation has been dated as Late Carboniferous. Intrusive bodies of the Otto Fiord Formation are especially common on Axel Heiberg Island where they cut various formations including, in some instances, the Tertiary Eureka Sound Formation. The intrusions are generally related to faults and folds formed by Tertiary earth movements and are accordingly dated as Tertiary.

5. Basic dykes and sills intrude upper Paleozoic and Mesozoic sediments of the Sverdrup Basin throughout much of Axel Heiberg Island and western Ellesmere Island. They intrude all formations older than, and including the Strand Fiord Formation, but have not been observed to intrude the Kanguk and Eureka Sound Formations. They are especially common in Mesozoic rocks that predate the Kanguk Formation, and while it is possible that more than one episode of intrusion is represented, it is probable that the vast majority of dykes and sills are Cretaceous in age.

   The larger and more conspicuous dykes are shown on the map, but sills have not been mapped.

   Sills are numerous and commonly thick (up to about 300 feet) in the Blaa Mountain and Heiberg Formations in this map-area. They are virtually absent in the Savik, Awingak, Deer Bay, Isachsen and Christopher Formations east of the Princess Margaret Range. South of Strand Fiord, however, these formations are characterized by relatively few and generally thin sills (up to about 50 feet). North of Expedition Fiord the Awingak and Isachsen Formations are commonly intruded by numerous sills. Sills are thin and rare in the Hassel and Bastion Ridge Formations

6. The map-area contains the type sections of: Bastion Ridge Formation (on Bastion Ridge), and Kanguk Formation (on east side of Kanguk River).

Geological cartography by the Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada, 1971

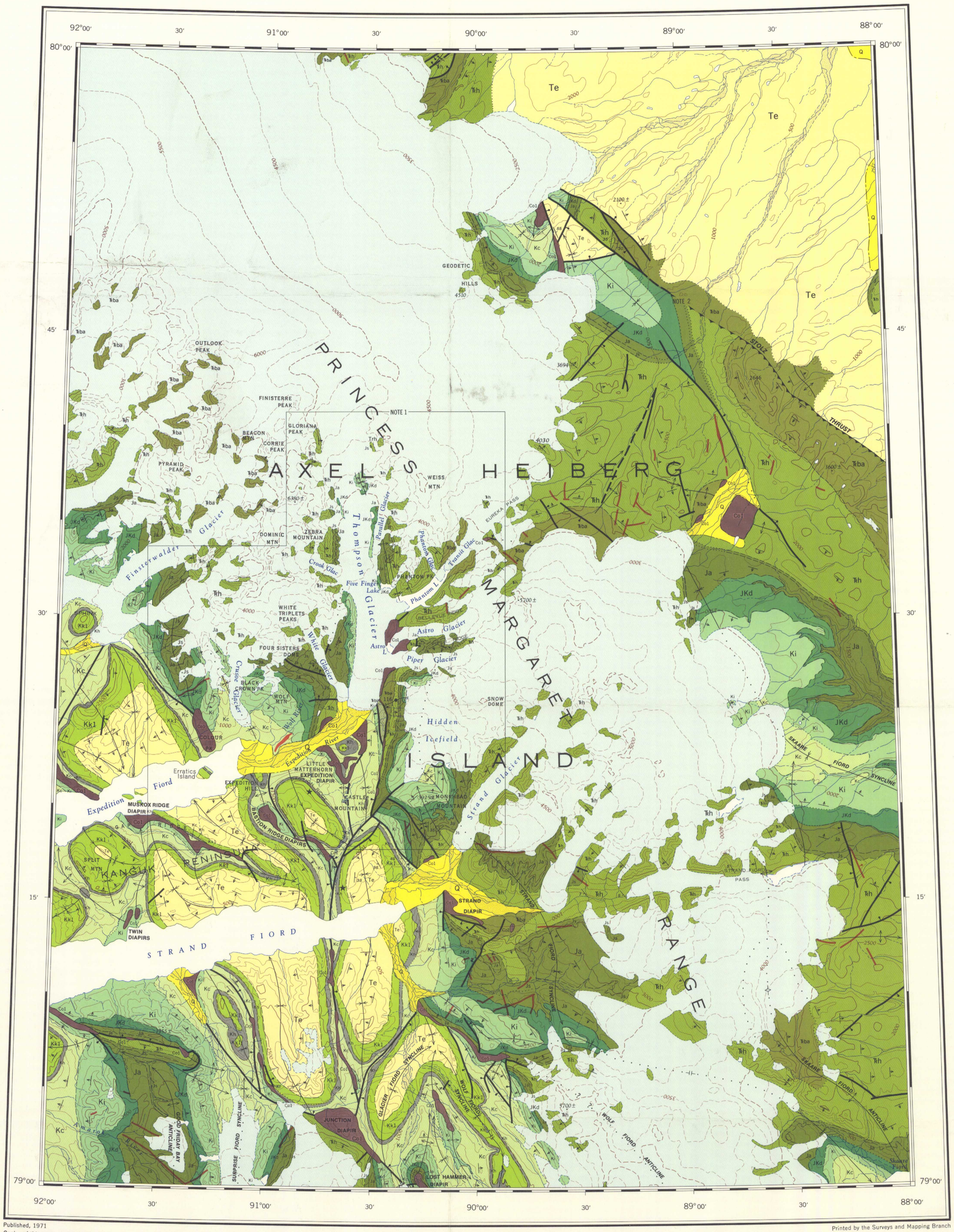
Horizontal control point △
Intermittent stream
Lake, indefinite
Dry river bed with channel
Icefield, glacier
Contours (interval 500 feet) 2500
Height in feet above mean sea-level 1445±

Topographic base-map at the same scale published by the Surveys and Mapping Branch in 1967 with revisions by the Institute of Sedimentary and Petroleum Geology, 1971

The daily change of the North Magnetic Pole causes the magnetic compass to be very erratic in this area

1301A

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES



Published, 1971
Copies of this map may be obtained from the Geological Survey of Canada, Ottawa

Printed by the Surveys and Mapping Branch

MAP 1301A

GEOLOGY

STRAND FIORD

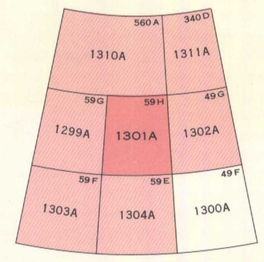
DISTRICT OF FRANKLIN

Scale 1:250,000

Miles 4 0 4 8 12 Miles

Kilometres 6 0 6 12 18 Kilometres

INDEX MAP



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

N.W.T. STRAND FIORD
1:250,000
MAP 1301A
1971

MAP 1301A
STRAND FIORD
DISTRICT OF FRANKLIN

1301A