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GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

DESCRIPTIVE NOTES

INTRODUCTION

The map area lies in the central part of the Boothia Uplift, a linear, positive structural feature extending northward more than 900 km from southern Boothia Peninsula through Somerset Island to the central Arctic Archipelago (Okulitch et al., 1986). The southern two-thirds of the uplift comprises a crystalline core (a salient of the Canadian Shield) and flanking unmetamorphosed, Proterozoic to Devonian sedimentary strata. The crystalline core between 71° and 74°N, some 80 km wide and consisting of high-grade metamorphic rocks of the Churchill Structural Province, was the focus of the mapping project.

Physiographically, the map area is largely an upland, with rugged seaward margins and low-relief inland areas where drift cover may be extensive. Although the best bedrock exposures are found on and near the coast, even felsenmeer-covered inland terrain, such as that north of Stanwell-Fletcher Lake on Somerset Island, is locally mappable because the surficial frost-heaved rubble faithfully reflects the underlying bedrock (Fig. 1; Sheet 1). Regional-scale, east-northeast trending, fault-controlled fractures have been eroded to form lake-filled valleys and coastal inlets and channels. Interior lowland areas include the northerly-trending, broad valleys of Stanwell-Fletcher Lake and Wrottesley River (Boothia Peninsula). These are grabens or half-grabens containing extensive deposits of post-Paleozoic sediments and drift.

LITHOLOGY

The high-grade bedrock can be divided on a first-order basis into two main units: granitoid gneiss (unit APog) of infracrustal aspect and metasedimentary and meta-igneous rocks (unit APms) of supracrustal aspect. Over large parts of the map area, these two units are interlayered so closely that they constitute a single unit (unit APgm) at 1:250 000 scale mapping.

Granitoid gneiss is the most abundant rock type in the crystalline terrane. Predominant is a brown-weathering, moderately (locally strongly) foliated, tonalitic to granodioritic gneiss, consisting of plagioclase, perthite (or antiperthite), quartz, biotite, orthopyroxene (or pseudomorphs thereof), and locally, garnet. Hornblende is common in mafic varieties of the granitoid gneiss. Although a relatively dark weathering colour is typical, some varieties of felsic gneiss weather pale grey to nearly white. Gneiss texture is typically granoblastic-polygonal but becomes increasingly distorted as foliation intensifies. Commonly intercalated with the dark gneiss is a pink, felsic gneiss, which is rich in microcline and may contain garnet and biotite-chlorite pseudomorphs of orthopyroxene. The thickness of the felsic intercalations ranges from several centimetres to tens of metres. Although the protolith of the felsic gneiss may be intrusive, evidence for its origin is not apparent as contacts with the dark gneiss are concordant and both gneiss varieties have been deformed together. Well-foliated, even mylonitic, gneiss with conspicuous platy and ribbon quartz is widespread. In shear zones, potassium has been mobilized, if not added, to form abundant microcline, which imparts a pink colour to the rock; orthopyroxene is rarely preserved. Retrogression is common in the granitoid gneiss and is marked by abundant pink microcline, altered orthopyroxene, and migmatitic networks of granite and pegmatite veins. The impression was gained during mapping that retrogression is particularly widespread in the southeastern part of the map area.

Although the granitoid gneiss has the appearance of an infracrustal, i.e. plutonic, rock or orthogneiss, several indicators suggest that it is, in part at least, of supracrustal origin, representing perhaps metamorphosed volcanic rocks and sediments of intermediate composition. These indicators include the common, intimate association of the gneiss with undoubted metasedimentary rocks and the presence of marble layers and rusty zones within the gneiss.

Supracrustal sequences are characterized by a variegated appearance and predominantly light colour, resulting from the interlayering of diverse, mostly leucocratic, rock types (Fig. 2; Sheet 2). These include metapelite such as aluminous paragneiss, metacarbonate rocks, quartzite, pyribolite and amphibolite. Aluminous paragneisses are typically rich in garnet, biotite and K-feldspar and carry in addition one or more of the minerals sillimanite, cordierite and graphite. These rocks are commonly migmatitic. Metacarbonate rocks (unit APc) include white-weathering, coarse-grained marble and calc-silicate rock with one or more of the minerals diopside, forsterite and wollastonite; the carbonate rocks are serpentinized in places. The marble layers are tectonically thinned and easily eroded, resulting in discontinuous outcrop. Pyribolite and amphibolite, which locally grade into mafic gneiss, consist of orthopyroxene and/or clinopyroxene, hornblende and plagioclase; rarely do they contain garnet. They occur in bodies ranging from thin lenses to sheets more than 100 m thick, intruded in gneiss typically of supracrustal origin. Of minor occurrence is iron-rich metasedimentary rock or iron formation (unit APif), found at only two localities on Boothia Peninsula. More common, although scattered, in supracrustal tracts is ultramafic rock (unit APu), (serpentinized metaperidotite, pyroxenite, and hornblendite) occurring as lenses, thin sheets, and boudins.

Besides amphibolite and pyribolite, which are pretectonic, intrusive rocks include two varieties of syenite (pre(?)- and syntectonic) and rapakivi granite and diabase (both post-tectonic). At Cape Bird, Somerset Island, a homogeneous, weakly foliated, brown-weathering body of hornblende-orthopyroxene-clinopyroxene-perthite syenite (unit Ps) has a largely concordant contact with gneiss. Kerr and deVries (1977) reported that the foliation in this body weakens or disappears near the contact with the well foliated gneiss and suggested that the body originated as an intrusion. The other syenite variety is a weakly foliated, dull red perthosite (unit Pp), consisting almost entirely (~ 90%) of perthite, accompanied by minor sodic clinopyroxene and accessory titanite. Perthosite occupies the cores of three fold structures on Boothia Peninsula, one of them an antiformal interference fold west of Nudlukta Lake (Fig. 3; Sheet 2). At this locality, screens of gneiss within perthosite near its (concordant) contact with the country rock indicate an intrusive origin for the perthosite (Fig. 4; Sheet 2).

Undoubtedly post-tectonic is the M'Clure Bay granite (unit Pmg), a large body of rapakivi granite outcropping in the area of M'Clure Bay, Somerset Island. Small coastal exposures of an identical rock as much as 20 km to the south suggest that the M'Clure Bay body may be larger than at first apparent. The granite is massive and porphyritic, consisting of K-feldspar phenocrysts 3–4 cm long with interstitial quartz, biotite and subordinate hornblende; the granite is finer grained at the contact with gneiss. Angular xenoliths of gneiss are found in the granite near its contact. Characteristically (for rapakivi), the granite weathers readily to grus, a coarse gravel consisting mainly of feldspar crystals (Fig. 5; Sheet 1). Northeast of M'Clure Bay, in an area of poor outcrop, an ill-defined body of anorthosite, ca. 5 km x 0.7 km, trends northeastward, mostly within the granite; no contacts were seen. The anorthosite is pale green or grey on the fresh, and white on the weathered, surface, coarse grained (grain size 5–13 mm), and composed of sericitized plagioclase (80%) and minor, heavily altered orthopyroxene(?), quartz and Fe-Ti oxide. The anorthosite is considered to be genetically related to the granite, on the basis of the well-known Proterozoic anorogenic anorthosite-rapakivi granite association (Emslie, 1978). Also thought to be cogenetic with the M'Clure Bay granite are K-feldspar-quartz porphyry dykes that occur sporadically in the crystalline terrane of northern Somerset Island, particularly in the vicinity of the granite. Because the dykes do not show up on air photographs no estimate of their abundance can be made. Most of the dykes found are only a few metres thick but a 25 m thick dyke with rapakivi-type mantled feldspar occurs on the unnamed, large island in Peel Sound, just north of 73°N. The dykes appear to lack a preferred orientation and show a range of textures and grain sizes. One variety has pink K-feldspar phenocrysts (1 cm) and smoky quartz phenocrysts (0.5 cm) in a very fine grained quartzofeldspathic matrix. Another is miarolitic and has abundant small feldspar and quartz phenocrysts and accessory fluorite.

Unmetamorphosed diabase dykes occur throughout the map area but are most abundant north of 73°N. The two main dyke trends are northwesterly and northeasterly but northerly and easterly trends are not uncommon. At least two varieties of diabase exist, one weathering black, the other (less common) brown (olivine-bearing?). The latter consistently trend northwesterly and cut easterly-trending black dykes but are themselves cut by northeasterly-trending dykes. Dykes commonly are several tens of metres thick but may outcrop only discontinuously. All diabase dykes predate the Paleozoic. The majority probably belong to the 720 Ma Franklin swarm but some may be of Mackenzie age (ca. 1270 Ma), as hypabyssal gabbro intrusions of that age are abundant in the Aston Formation (Stewart, 1987).

For further information on the Mesoproterozoic and Phanerozoic bedrock of the map area the user is referred to Stewart (1987). The surficial geology is described by Dyke (1983, 1984).

METAMORPHISM

The entire crystalline terrane was metamorphosed in the granulite facies but is locally retrograded to varying degree. Based on several sampling traverses on both Somerset Island and Boothia Peninsula, temperatures and pressures of metamorphism were in the ranges 740°–850°C and 6–8 kbar but there are indications that higher grade conditions (≥900°C and ≥9 kbar) may have been attained locally at least (Kitsul et al., 2000). Cordierite-bearing paragneisses yield ≥650°C and <5 kbar, reflecting the retrograde formation of cordierite during decompression and cooling (Kitsul et al., 2000). More details of metamorphic mineral assemblages have been given by Blackadar (1967) and Brown et al. (1969).

GEOCHRONOLOGY

From a limited geochronological database (Frisch and Hunt, 1993), we can conclude that the orthopyroxene-bearing gneisses and associated retrograde gneisses (such as the pink, felsic gneiss) are predominantly Paleoproterozoic in age. Protolith ages range from 2.48 to ca. 2.2 Ga, metamorphic ages from 1.92 to 1.95 Ga (all ages are U-Pb ages of zircon and monazite). However, there is evidence for the existence of Archean crust on Boothia Peninsula: Sm-Nd T_{DM} ages of 2.8 Ga on a retrograde gneiss in the southeast corner of the map area and 3.0 Ga on an orthopyroxene-bearing gneiss in the Wrottesley River valley.

The meta-intrusive syenite bodies at Cape Bird and west of Nudlukta Lake have yielded zircon U-Pb ages of 1.94 Ga, supporting the inference from field relations that intrusive activity was coeval with high-grade metamorphism.

The M'Clure Bay rapakivi granite has given a concordant U-Pb age on zircon of 1708 ± 5 Ma.

Xenocrystic zircon from kimberlite of the Batty pipe, which intrudes Paleozoic strata 75 km east of the Paleozoic-Precambrian contact on Somerset Island, have been analysed by Parrish and Reichenbach (1991). Two grains yielded nearly concordant U-Pb ages of 1.93 Ma. One grain gave a 6% discordant age of 2492 Ma and is considered by Parrish and Reichenbach (1991) to be probably late Archean. This result provides further evidence of the presence, at depth at least, of Archean crust in the area of the Boothia Uplift.

STRUCTURAL GEOLOGY

The gneiss terrane of the map area is characterized by a pervasive north-south "grain", which tends to mask the terrane's structural complexity. This complexity was first recognized by R.L. Brown and I.W.D. Dalziel, who conducted three east-west structural traverses on Somerset Island in 1965 (Brown et al., 1969). Further detailed structural studies in selected areas of southern Somerset Island were made, in conjunction with lithologic mapping, by C.D.S. de Vries in 1975 and 1976 (Kerr and de Vries, 1976, 1977).

The north-south structural grain is the result of a dominant, third folding event (F_3), which produced regionally pervasive, more or less upright, north-south folds ranging from open concentric to isoclinal. Evidence for first-phase folding is generally confined to mesoscopic, tight to isoclinal structures typically preserved in hinge zones of F_2 folds (Fig. 6; Sheet 2). However, Kerr and de Vries (1977) did recognize rare macroscopic F_1 folds – always affected by later deformation – in southern Somerset Island and suggested that F_1 folding may once have been extensively developed.

A second-phase folding trending east-west is inferred from the domal or basinal structures, aligned in the north-south foliation, that are particularly common in southern Somerset Island and on Boothia Peninsula (Fig. 3; Sheet 2). These structures resulted from the interference of F_1 and F_3 folds and have the shape - from oval to elongate - was determined by the intensity of F_2 compression.

The dominant, north-south, F_3 folds range from open (Fig. 7; Sheet 1) through tight (Fig. 8; Sheet 2) to isoclinal (Fig. 9; Sheet 2). Axial planes are steep to vertical; typically, fold axes plunge 10° to 30° north but reversals occur in the F_2/F_3 interference structures. Lithological layering and platy quartz foliation parallel the F_1 axial surfaces and the severity of F_3 deformation (combined with F_1 folding?) caused transposition of originally discordant structures into parallelism (Fig. 10; Sheet 2).

Several prominent lineaments, trending easterly, cross the crystalline terrane on southern Somerset Island and Boothia Peninsula. These are linear topographic depressions, containing lakes or inlets of the sea; probably all are faults. Based on correlation of lithologic markers and fold axial traces across them, the lineaments marked by Fitz Roy Inlet, Macgregor Laird Lake and Bellot Strait show right-lateral displacement, on the order of 2 km or so. Movement on these faults occurred mainly prior to Paleozoic time but they may have been reactivated later to a minor degree (Kerr and de Vries, 1977).

Northerly- and northwesterly-trending faults affecting Paleozoic strata in the map area were, for the most part, interpreted by Stewart and Kerr (1984) as being of normal type, in keeping with their concept of the Boothia Uplift as a horst, and reinterpreted by Okulitch et al. (1986) as reverse faults, consistent with their interpretation of the uplift as a west-directed thrust block activated during the Siluro-Devonian.

Faulting in the Paleogene produced grabens or half-grabens, which preserve the Paleogene Eureka Sound Formation and older strata, such as in the areas of Stanwell-Fletcher Lake and Wrottesley Inlet. These troughs trend northerly, in conformity with the structural grain of the basement, and their fault boundaries are likely to represent rejuvenated older structures (Kerr and de Vries, 1977).

ECONOMIC GEOLOGY

The economic potential of the map area suggested by the abundant, prominent rusty layers and zones in the crystalline rocks (Fig. 11; Sheet 2) is diminished by the high metamorphic grade, a condition not generally favourable to ore formation.

No metallic mineral showings of significant economic interest were found. However, two areas with impressive concentrations of sulphide minerals were noted on Boothia Peninsula: between the eastern ends of Nudlukta Lake and Amiturqouak Lake and west of the Wrottesley Inlet half-graben. At the former locality, two ill-defined but concordant pyrrtiferous layers, 2–4 m wide and up to 6 km long, occur in mylonitic, mafic two-pyroxene gneiss. Pyrrhotite was recognized in some of the more massive sulphide segregations.

The other locality is an area, ca. 5 km x 15 km, of rusty and gossanous supracrustal rocks, mainly paragneiss and metamafic rock, bordering the west side of the Wrottesley Inlet half-graben, just north of 71°N. As a result of heavy erosion, ochre-coloured soil is dispersed over a wide area, giving a desert-like appearance to the terrain. Chemical analysis of till in this area revealed anomalous concentrations of base metals, particularly Ni and Zn (up to 1400 ppm) (Dyke, 1980).

Graphite is a common accessory constituent of the aluminous paragneisses. Locally in garnet-sillimanite gneiss graphite occurs in centimetre-thick layers several tens of metres long.

A belt of ten intrusions of kimberlite trends northeasterly across northern Somerset Island, from a few kilometres east of the Precambrian-Paleozoic contact to the east coast (Kjarsgaard, 1996). The current exposure level of these pipes was deemed by Kjarsgaard (1996) to be that of the kimberlite root zone, suggesting the likelihood that any kimberlite pipes that intruded basement west of the Paleozoic contact have been removed by erosion.

SOME REGIONAL CONSIDERATIONS

Hoffman (1989) was the first to suggest that the crystalline core of the Boothia Uplift represents an extension of the 1.9–2.0 Ga Thelon magmatic arc, which marks what he believed to be a collision zone between the Slave craton and the Queen Maud block of the Churchill Structural Province (Rae domain) on the mainland. Hoffman based his suggestion on the distinctive aeromagnetic anomaly signatures of the Thelon zone and the Queen Maud block, which approach and parallel the Boothia Uplift, and the 1.93 age of xenocrystic zircon from the Batty pipe on Somerset Island (see above). On a sketch map of North America (Fig. 13 in Hoffman, 1989), he drew the Thelon zone as extending from the mainland northeastward to include Prince of Wales Island and Somerset Island. Subsequently, although the bulk of northern Boothia Peninsula and all of Somerset Island have not been aeromagnetically surveyed, determination of 1.9 Ga ages of intrusion and high-grade metamorphism in the Boothia Uplift led to widespread acceptance of the idea that the uplift lies partly to wholly within the Thelon zone. Various configurations of the Thelon zone in the Boothia Uplift were offered, culminating in its depiction on the Geologic Map of North America 2005 (Reed et al., 2005) as a narrow magmatic (plutonic) belt confined largely to the western side of Boothia Peninsula and southern Somerset Island and bordered by, and intercalated with, Archean-Proterozoic basement. If, as seems likely, the Thelon zone does extend to the Boothia Uplift then, in the absence of any tectonic or geochronologic boundary, the entire crystalline terrane of northern Boothia Peninsula and Somerset Island lies within its borders.

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Figure 6. Deformed lenses of metamafite, interpreted to be relicts of F_1 folding, in orthopyroxene tonalite gneiss, north of Macgregor Laird Lake, Somerset Island. View northward.

Figure 7. Open fold in a supracrustal sequence, cut by a brown-weathering diabase dyke, in the felsenmeer terrain northeast of Stanwell-Fletcher Lake, Somerset Island (see also Figure 1). View northeastward.

Figure 1. View westward over the felsenmeer-covered upland terrain of Somerset Island. Although outcrop is scarce to absent, fold structures and diabase dykes are clearly visible (see also Figure 7). Note the excellent bedrock exposures along the coast. NAPL T431L-138

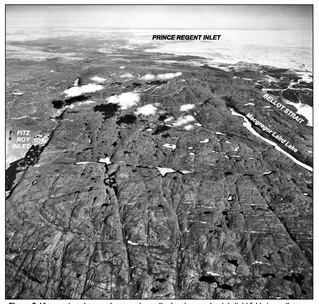


Figure 8. View eastward across large-scale, north-plunging, moderately tight folds in southern Somerset Island. NAPL T437L-157

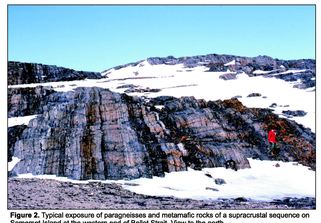


Figure 2. Typical exposure of paragneisses and metamafic rocks of a supracrustal sequence on Somerset Island at the western end of Bellot Strait. View to the north.

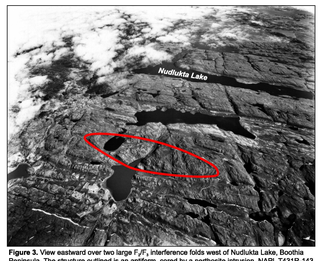


Figure 3. View eastward over two large F_2/F_3 interference folds west of Nudlukta Lake, Boothia Peninsula. The structure outlined is an antiform, cored by a perthosite intrusion. NAPL T431R-143

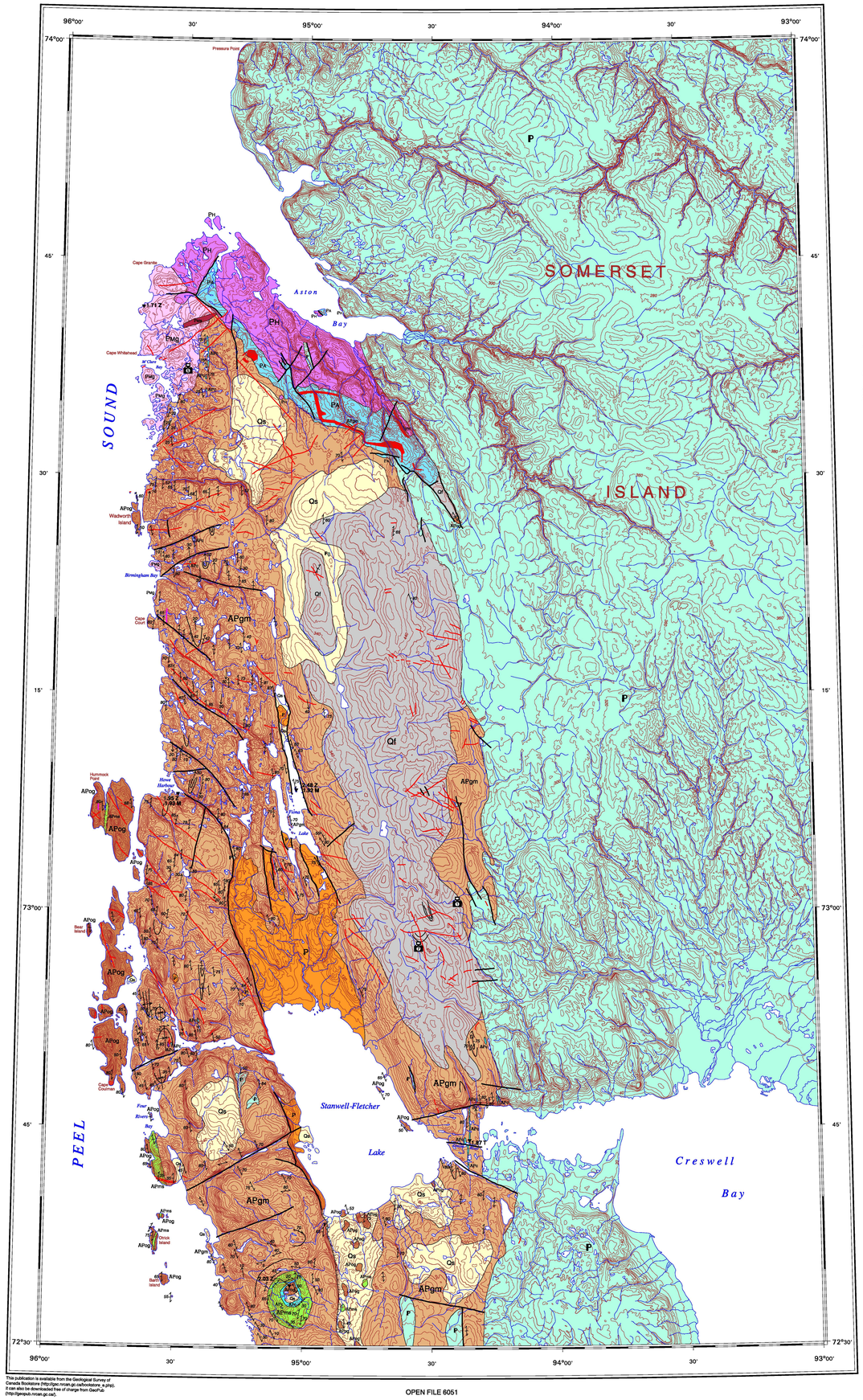
Figure 9. Large, north-trending isoclinal fold, north of Kangirlukutaak Inlet, Boothia Peninsula.

Figure 4. Screens of mafic gneiss (country rock) in weakly gneissic perthosite, at the north end of the intrusion pictured in Figure 3. The screens are roughly concordant with the intrusive contact.

Figure 10. A discordant mafic layer (metamorphosed dyke?) in mylonitic orthopyroxene gneiss has been transposed into near concordance by F_3 deformation, north of the west end of Amturyouak Lake, Boothia Peninsula. View northward.

Figure 5. M'Clure Bay granite weathered to grus.

Figure 11. View northward over rusty gneisses north of Levesque Harbour, Boothia Peninsula. Bellot Strait is visible in the distance.



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LOCATION MAP

LEGEND

This legend is common to Sheet 1 and 2.
Coloured legend blocks indicate map units that appear on this map.
Not all symbols shown in the legend appear on this map.

QUATERNARY

- Qs — *Stream, deltaic, glacial, and marine beach sediments (mapped only where underlying bedrock geology could not be inferred with reasonable certainty).*
- Qf — *Felsenmeer, mantling, and derived from, gneiss.*

PALEOGENE

- P — *EUREKA SOUND FORMATION: sandstone, siltstone, shale, minor conglomerate.*

PALEOZOIC

- P — *Sedimentary rocks: mainly limestone, dolostone, sandstone, siltstone, shale, and conglomerate.*

MESOPROTEROZOIC AND NEOPROTEROZOIC

- *Diabase dyke.*

MESOPROTEROZOIC

- PH — *HUNTING FORMATION: dolostone, minor shale, siltstone, and sandstone.*
- *Gabbro sills and plugs.*
- PA — *ASTON FORMATION: quartz sandstone, minor shale, siltstone, and conglomerate.*

PALEOPROTEROZOIC

M'Clure Bay granite
- *K-feldspar-quartz porphyry dyke.*
- Pma — *Anorthosite; pale green or grey on fresh surface, white on weathered surface; coarse-grained.*
- Pmg — *Granite; pink; coarse-grained, massive to K-feldspar-phyric; extensively weathered to grus.*
- Ps — *Two-pyroxene syenite; brown-weathering; medium-grained, weakly to moderately foliated; consisting of perthite, orthopyroxene, clinopyroxene, and minor quartz.*
- Pp — *Perthosite; dull red; medium-grained, weakly foliated; consisting of perthite (>90%), minor Na-clinopyroxene and accessory titanite.*

ARCHEAN AND/OR PALEOPROTEROZOIC

NOTE: relative ages of Archean and/or Paleoproterozoic map units are uncertain.

- APg — *Granite; red; massive; interpreted to be of anatectic origin.*
- APag — *Amphibolite facies granitoid gneiss with biotite and rare pseudomorphs after orthopyroxene; interpreted to be, in part at least, retrograded from granulite facies.*
- APif — *Metamorphosed silicate facies iron formation: garnetite and orthopyroxene-quartz-garnet rock on Arnedeckee Island; orthopyroxene-magnetite-quartz rock on Boothia Peninsula.*
- APu — *Ultramafic rock: metaperidotite (commonly serpentinized), pyroxenite, hornblendite; occurring as lenses, sheets, and boudins, typically associated with supracrustal rocks.*
- APgm — *Orthopyroxene-bearing granitoid gneiss and supracrustal rocks interlayered on a scale of tens to hundreds of metres.*
- APc — *Marble and calc-silicate rocks; commonly coarse-grained and white-weathering; containing one or more of diopside, forsterite, and wollastonite; locally serpentinized.*
- APms — *Supracrustal rocks: pelitic garnet- and biotite-rich gneiss, commonly with one or more of sillimanite, cordierite and graphite; commonly rusty-weathering and migmatitic; subordinate pyribolite, marble, calc-silicate gneiss, quartzite, and orthopyroxene-bearing granitoid gneiss.*
- APog — *Orthopyroxene-bearing granitoid gneiss; generally well-foliated (with platy quartz) but locally almost massive; commonly with biotite and subordinate garnet and/or hornblende; locally with abundant, concordant, pink, granitic to pegmatitic layers and sheets, which commonly contain garnet and pseudomorphs after orthopyroxene, or mafic schlieren; locally retrograded to pink- to red-weathering, microcline-rich gneiss; subordinate metasedimentary rocks, including pelitic gneiss, marble and calc-silicate rocks, and pyribolite.*

- *Geological boundary, approximate*
- *Gneissosity, schistosity (horizontal, inclined, vertical, dip unknown)* — 80
- *Lineation, fold axis* — 30
- *Fault*
- *Fault line scarp*
- *Antiform*
- *Synform*
- *Antiform (overturned)*
- *Synform (overturned)*
- *Gneissosity, schistosity, general trend* — SRZ
- *Sulphide-rich zone, horizon*
- *Location of radiometrically dated sample; age in Ga*
  Z: zircon U-Pb; M: monazite U-Pb; T: titanite U-Pb; S: Sm-Nd T_{DM} — 1.84 T
- *Location of field photograph with corresponding figure number*

Author: T. Frisch

Geological compilation by T. Frisch, 2009

Geology of Precambrian crystalline terrane by T. Frisch, 1986, 1987, 1990, 1992, with contributions by M.R. Digel, R.K. Herd, H.A.I. Sandeman, F.C. Taylor, and E.J. Williams. Additional sources: Kerr and de Vries (1976,1977); C.D.S. de Vries (unpub. work, 1975,1976); Stewart and Kerr (1984). Compilation and interpretation by T. Frisch.
Geology of Aston and Hunting formations and Phanerozoic bedrock geology generalized after (Stewart and Kerr, 1984) with additions by T. Frisch.
Geology of Quaternary deposits adapted from GSC Maps 1555A and 1570A (Dyke, 1983,1984).

Digital cartography by D. Viner, Data Dissemination Division (DDD)

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Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Digital base map from data compiled by Geomatics Canada, modified by DDD

Proximity to the North Magnetic Pole causes the magnetic compass to be useless in this area

Elevations in metres above mean sea level

OPEN FILE 6051

GEOLOGY

PRECAMBRIAN GEOLOGY OF NORTHERN BOOTHIA PENINSULA AND SOMERSET ISLAND

NUNAVUT

Scale 1:250 000/Échelle 1/250 000

kilometres 5 0 5 10 15 20 kilomètres

Universal Transverse Mercator Projection
North American Datum 1983
Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983

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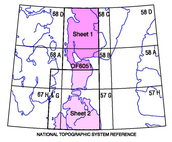

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FEUILLET 1 DE 2

Sheet 1 of 2, Geology

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