DESCRIPTIVE NOTES

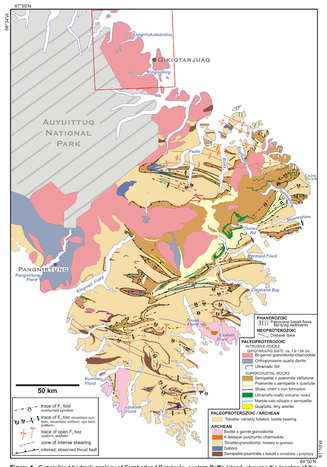
The Qikiqtarjuaq map sheet, northernmost Cumberland Peninsula, Baffin Island, is dominated by relatively homogeneous, variably foliated monzogranite, charnockite and granodiorite. These rocks form a plutonic belt that extends some 300 km from Pangnirtung to Qikiqtarjuaq (Figure 1a) and includes the spectacular peaks and domes of Auyuittuq National Park. Domination of this belt as the Qikiqtarjuaq plutonic suite is based on the extensive exposures of compositionally similar rock types, that yield similar U-Pb ages between ca. 1880 and 1894 Ma from six localities across the peninsula. The suite is ~35 my older than the 1845-1865 Ma Cumberland batholithic complex (Whalen et al., 2010) exposed to the west and formerly predicted to underlie this region.

The Qikiqtarjuaq plutonic suite comprises two main phases. Within the map sheet, pale grey-pink weathering, granodiorite to monzogranite (unit Pgd; Figure 2a) contains 10–15% biotite and diagnostic isolated clusters of dark red garnet (Figure 2b). These rocks may be quartz and/or K-feldspar porphyritic and they only rarely contain magnetite. An age of ca. 1891 Ma (N. Rayner, unpublished data, 2011) was obtained from southern Broughton Island, close to the Inuit community of Qikiqtarjuaq. This age is identical to an age of 1889±3 Ma obtained from this phase further to the southwest (Rayner et al., 2012). Lesser, brown weathering, high-grade monzogranite-charnockite (unit Pmz) containing up to 15% orthopyroxene, variably retrogressed to biotite, forms the highland of Broughton Island, and is exposed south of Kangirtukutaaruluq Fiord (Figure 2c, 2d), and elsewhere. Although this phase was not dated in this map sheet, it yielded an U-Pb age of 1894±5 Ma (Rayner et al., 2012) from Aulatsivik Point, northeast of Pangnirtung.

Rocks older than the Qikiqtarjuaq plutonic suite were recognized at two localities. North of Kangirtukutaaruluq Fiord, grey weathering diorite-quartz diorite (unit PAdr) is cut by granitic sills of the Qikiqtarjuaq plutonic suite. The dioritic host rocks are strongly foliated to gneissic and may represent basement into which the Qikiqtarjuaq plutonic suite was emplaced, however, their age is uncertain. At the head of Kangirtukutaaruluq Fiord, a 40m wide pendant of supracrustal rocks hosted by brown-weathering oxidized charnockite is distinguished by bright white-weathering marble and calc-silicate components (unit $P\epsilon_{cc}$; Figure 2c).

In general, plutonic rocks exposed across this map sheet display a single penetrative foliation (Figure 2b, 2d) with a weak preferred extension. This moderately to strongly developed flattening foliation strikes NW-SE and dips moderately (55-50°) to shallowly (25-14°) to the northwest. In the southernmost part of the map sheet, however, two generations of foliation were recognized. At this locality, a southeast-striking, southwest-dipping foliation is overprinted and crenulated by a northeast-striking, northeast-dipping foliation, described above. These overprinting relationships suggest that the regional fabric observed across this map sheet is S_{2a}, that S_{2a} is restricted to the south and that regional penetrative deformation was imposed after ca. 1880 Ma.

A northwest-trending, linear magnetic anomaly (Figure 3) transects the map sheet, and likely corresponds to a poorly exposed Neoproterozoic gabbro dyke of the ca. 723 Ma Franklin swarm.


67°55'N
QIKIQTARJUAQ
Auyuittuq National Park
PANGNIRTUNG
Pangnirtung Fiord
Kangirtukutaaruluq Fiord
Kingnait Fiord
Qualidlua Bay
Nettilling Fiord
Tarr Inlet
Sylvia Grinnell River
Coronation Fiord
Clyde River
Patricia Bay
Padloping Island
Cumberland Sound
Navy Board Inlet
Baffin Island
50 km
PHANEROZOIC
Cenozoic
Basalt flows, flood basalts, intrusive equivalents
NEOPROTEROZOIC
723 Ma Diabase dyke
PALEOPROTEROZOIC
2200-1800 Ma
Qikiqtarjuaq SuITE ca. 1.9-1.88 Ga
Bi-garnet granodiorite-charnockite
Orthopyroxene quartz diorite
Ultramafic SILLS
PALEOPROTEROZOIC / ARCHEAN
Semipelite ± garnet ± sillimanite ± graphite metasediments
Psammite ± semipelite ± quartzite
Shale, chert, iron formation
Ultramafic-mafic volcanic rocks
Quartzofeldspathic paragneiss
Quartz diorite gneiss
PALEOPROTEROZOIC / ARCHEAN
Trondhjemite, granodiorite, tonalite
ARCHEAN
Biotite ± garnet granodiorite
K-feldspar porphyritic charnockite
Biotite granodiorite ± biotite ± garnet
Tonalite
Gneissic granite
Gneissic granodiorite
Gneissic tonalite
Gneissic monzogranite
Gneissic granodiorite ± biotite ± garnet
Gneissic tonalite
Gneissic monzogranite
Gneissic granodiorite