**Geological Magazine. Nd and Pb Isotope Mapping of Crustal Domains within the Makkovik Province, Labrador. Moumblow, Arcuri, Dickin & Gower (2018).**

**Supplementary Material, Table S1:**

**Description of rock units sampled for Sm**–**Nd and Pb**–**Pb analysis**

**Big River granite**

The rocks are dominantly granite to alkali-feldspar granite, but include some quartz monzonite and quartz syenite. They are typically coarse grained and even textured, but some medium-grained granite is present locally. The rocks commonly have a seriate to K-feldspar megacrystic appearance, as shown by euhedral, sparse to abundant megacrysts up to 5 cm long. A mantled-feldspar character, displayed by plagioclase crystals mantled by K-feldspar, and blue quartz are present locally.

In thin section, plagioclase is seen as strongly zoned, relict grains enveloped by, or associated with perthitic K-feldspar. The rocks feature relict dark blue-green (sodic) amphibole that is partially pseudomorphed by olive-green biotite, an opaque oxide (typically mantled by titanite), and quartz. Apatite, zircon, allanite (commonly forming large, euhedral crystals, locally displaying multiple growth stages), and secondary epidote and white mica are also present.

**Cape Harrison metamorphic suite and Ship Head granodiorite**

TheCape Harrison metamorphic suite and spatially related Ship Head granodiorite show a wide rangeof grain sizes, textures, fabrics and compositions. Most are granodiorite and granite, with spillover into the fields for quartz monzonite, and, rarely, quartz diorite and tonalite. The granodioritic (partly quartz monzodioritic) rocks are medium to coarse grained, and massive to strongly foliated. They vary from migmatitic to homogeneous and are also characterized by amphibolite blocks, biotite-rich schlieren, incipient to extensive leucosome segregation, and enclaves of migmatitic granitoid rock that are, themselves, within a migmatitic host. The granitic (partly quartz monzonite, and rarely quartz syenite or alkali-feldspar granite) rocks are medium or coarse grained, and massive to weakly foliated. They mostly postdate the granodioritic rocks, but the polyphase nature of the unit means that such is not universally true. A sub-group shows K-feldspar seriate to megacrystic texture (megacrysts 2 by 1 cm). Both non-megacrystic and megacrystic granitoid rocks contain rafts of earlier gneissic granitoid rocks, mafic enclaves and biotitic schlieren.

In thin section, although mineral proportions vary, the rocks show overall mutual consistency. All contain relict igneous or metamorphic plagioclase, K-feldspar (microcline and perthite), and quartz. Olive-green biotite is also present in all thin sections, except three, in which it has been entirely chloritized. Blue-green hornblende is found in half of the samples, and is partly relict, having been pseudomorphed by biotite, epidote, titanite, quartz and opaque minerals. Accessory minerals include an opaque oxide (sulphide also present in four samples), apatite, zircon, titanite (typically mantling the opaque oxide), allanite, epidote, white mica and chlorite (after biotite). Garnet was recorded sporadically in field notes, but not seen in thin section. The Nd-Sm analyzed sample of Ship Head granodiorite has unusually large allanite and titanite.

**Byron Bay megacrystic granitoid unit (including South of Byron Bay granitoid rocks)**

*Megacrystic granitoid rocks.*The typical rock type is coarse-grained, massive, even textured, seriate to K-feldspar megacrystic granodiorite to quartz monzonite. The megacrysts are commonly 5 to 7 cm long, and are euhedral, zoned and show obvious simple twinning. The groundmass is also fairly coarse grained, in which strongly saussuritized plagioclase, weakly recrystallized quartz, biotite, hornblende (up to 0.7 cm), titanite and opaque minerals can all be easily recognized in hand sample. Fabric is weak or lacking. The rock contains a few northeast-aligned, amphibolite enclaves and very rare minor granitoid veins. A thin section of megacrystic rock contains plagioclase (strongly zoned and displaying saussuritized cores), microcline hostingabundant felsic inclusions,slightly recrystallized quartz, blue-green amphibole (partially pseudomorphed to olive-green biotite, epidote, chlorite, titanite and opaque oxides). Other accessory minerals are allanite (up to 1 cm long) and zircon.

*Non-megacrystic granitoid rocks.*Associatednon-megacrystic rocks are mainly medium- to coarse-grained, massive to foliated, biotite hornblende granite, alkali-feldspar granite and quartz monzonite. A thin section from these rocks is biotite-bearing alkali-feldspar granite.

**Cape Rouge granitoid rocks**

The Cape Rouge granitoid rocks are very similar to the Bryon Bay granitoid rocks and they may both belong to a single unit.

*Megacrystic granitoid rocks.*The Cape Rouge megacrystic granitoid rocks have a composition straddling the granite, granodiorite and quartz monzonite fields. The rocks are generally coarse grained and massive or weakly foliated. The K-feldspar megacrysts are typically 3 by 2 cm, but reach up to 6 by 4 cm. They are euhedral, simple twinned, and sparse to abundant (up to 50% of the rock). Mafic enclaves, typically less than 20 by 5 cm but up to 1 m, are fairly common. All thin sections of the Cape Rouge megacrystic granitoid unit are fairly similar. Felsic minerals are largely igneous, but show patchy areas of recrystallization. Plagioclase commonly shows marked zoning, including oscillatory zoning. K-feldspar is a mixture of perthite and microcline. Quartz is only slightly recrystallized. Biotite is green-buff to buff-orange and, along with titanite and an opaque mineral, is a product of the breakdown of hornblende, now retained as blue-green relicts. Accessory minerals include an opaque oxide, apatite, titanite (partially mantling the opaque mineral), zircon and allanite. Secondary white mica, chlorite and epidote are sporadically present.

*Non-megacrystic granitoid rocks.*The rocks are coarse-grained and massive to strongly foliated granite, alkali-feldspar granite, and quartz monzonite/syenite. Large quartz crystals are a feature (up to 0.8 cm across in undeformed rocks and 2 by 0.3 cm lenticular grains in deformed equivalents). Five thin sections show the mineral assemblage to be similar to that in the Cape Rouge megacrystic granitoid unit, except that this group of rocks is: i) more leucocratic, ii) only two of the five thin sections have minor relict amphibole, and iii) three have minor fluorite and lack epidote .

**Alliuk Bight granitoid rocks (includes Brig Harbour Island unit)**

*Megacrystic granitoid rocks.*The Alliuk Bight megacrystic granitoid rocks are medium- or coarse-grainedgranite, quartz monzonite and monzonite. The rocks are seriate to megacrystic, having K-feldspar megacrysts typically 2 by 1 cm, but up to 5 by 2 cm. The megacrysts are sparse to abundant, euhedral to anhedral, may be zoned, and tend to be oriented according to the prevailing foliation. Enclaves are common in some parts of the unit and are both mafic (amphibolite, gabbro, and diorite) and felsic (granite and syenite). Nine thin sections of the Alliuk Bight megacrystic unit are all fairly similar. Felsic minerals are largely primary/relict igneous, but polygonized zones between larger igneous crystals are common. Plagioclase is weakly to strongly zoned. K-feldspar is a mixture of microcline and perthite. Biotite varies from olive-green to orange-brown and is extensively chloritized in several samples. Blue-green to dark-green amphibole (mostly relict) is present in five of the thin sections and relict clinopyroxene in one. Accessory minerals are an opaque oxide, apatite, titanite (typically mantling the opaque oxide, zircon (some with distinct rims), allanite (cores to epidote in part), and fluorite. Late-stage or secondary white mica, chlorite, and epidote are sporadically present.

*Alliuk Bight non-megacrystic granitoid rocks.*The Alliuk Bight non-megacrystic granitoid rocks are mostly granite to alkali-feldspar granite. They are coarse grained, and vary from massive to strongly foliated. Grain size exceeds 1 cm in places and K-feldspar locally over 2 cm (*i.e.,* verging on megacrystic). Only one sample was examined in thin section. It is a leucogranite, almost devoid of mafic silicates (<0.1% biotite), and having an accessory mineral assemblage that is restricted to an opaque mineral, zircon and fluorite.

**Tukialik granite**

Typical Tukialik granite is coarse grained (*ca.* 1 cm grainsize), even textured, and massive to weakly foliated. The fabric is likely primary away from its faulted southern contact where the rocks are strongly sheared. Thin sections of the Tukialik granite show it to be dominated by patch perthite (some microcline), with lesser undulose, but unrecrystallized quartz (locally blue in outcrop), and subsidiary saussuritized sodic plagioclase. The main mafic mineral is olive-green to dark-green, partly chloritized biotite. Ragged, relict, dark-green to blue-green hornblende is present in some samples. The hornblende is mostly altered to biotite, chlorite, epidote, carbonate, opaque minerals and titanite. Fluorite is seen in the majority of samples and typically forms colourless isolated grains, although purple fluorite is present as spindles in altered biotite. Other accessory minerals are an opaque oxide, apatite, titanite (zoned in places), zircon and allanite; some of these are secondary. Other secondary minerals are white mica, chlorite, and epidote.

**White Bear Lake granitoid rocks**

The White Bear Lake granitoid rocks are typically coarse-grained, strongly to very strongly foliated biotite granite. A medium-grained, sugary textured, strongly foliated granitoid rock having lenticular K-feldspars up to 1 by 0.5 cm was recorded near the eastern end of the unit.

Three thin sections are available. All have plagioclase, K-feldspar (mainly microcline) and quartz. Biotite is orange-brown in one sample and lacks accessory minerals, except for secondary titanite, chlorite, epidote and white mica. Biotite isolive-green in the other two samples, which alsohave an opaque oxide, apatite, zircon, allanite and fluorite.

**Lake Michael megacrystic granitoid rocks (including East Lake Michael granitoid rocks)**

The Lake Michael megacrystic granitoid rocks are medium- to coarse-grained granodiorite, granite and quartz monzonite. Textural variability displayed results from heterogeneous deformation, producing rocks that were recorded as moderately, strongly, or very strongly foliated, or mylonitic. Quartzofeldspathic segregations, indicating incipient migmatization, add to the fabric mix locally. The K-feldspar megacrysts are mostly fairly small (2 by 1 cm), but reach up to 4 by 2 cm. With increasing severity of deformation, they vary from euhedral, to augen, to lensoid. Lenticular K-feldspar megacryst stretching is matched by very elongate quartz.

Ten thin sections all contain plagioclase, K-feldspar (microcline and perthite), quartz, olive-green to buff-brown biotite, an opaque oxide, apatite, titanite, allanite and epidote (titanite mantles the opaque mineral and epidote mantles allanite). Thin sections from six localities have amphibole, which is typically blue-green, but some dark-blue-green sodic amphibole is present in two samples. Epidote, allanite, titanite, biotite and an opaque mineral are partially the product of amphibole breakdown.

**Smokey area granitoid rocks**

Granitoid rocks in the Smokey area are quartz diorite, quartz monzodiorite, quartz monzonite, tonalite and granodiorite, and, rarely, granite. They are mostly medium to coarse grained (some fine-grained rocks are also present), and moderately to strongly foliated, grading into well-banded gneiss. Mylonitic shear zones are present. Many of the rocks are seriate to mildly megacrystic, giving the rocks a knotted surface appearance. The megacrysts range from euhedral to lenticular augen. Typical size is 1.5 by 1 cm but up to 4 by 2 cm was recorded. Garnet is common, up to about 4 mm in diameter.

The mineral assemblage in all (seven) sections includes plagioclase, microcline, quartz, olive-green to orange-brown biotite, blue-green to green amphibole, an opaque oxide, apatite, titanite (mantling the opaque phase), zircon, allanite (in part cores to epidote), and white mica. Relict igneous feldspar is present, but the fabric is typically recrystallized, planar and well defined. Garnet is present in one sample.

**White Bear Islands granitoid rocks**

The White Bear Islands granitoid rocks form part of the White Bear Islands granulite complex, which also includes remnants of metasedimentary gneiss. The granitoid rocks are divided into three groups, namely i) dioritic, quartz dioritic and minor tonalitic gneiss, ii) jotunitic to charnockitic gneiss, and iii) pyroxene monzonitic gneiss. The dioritic to tonalitic gneiss is characterized by a simple melanocratic–leucocratic banding, which has been infiltrated by medium-grained leucosome. Some leucosome is host to large hornblende crystals. Typically, these gneisses are very well banded and have associated biotite hornblende amphibolitic lenses. The jotunitic to charnockitic gneiss is more commonly foliated than gneissic, having fabric defined by oriented feldspars and lenses of mafic minerals, but augmented by foliation-parallel, pyroxene-bearing pegmatitic rocks.

Thin sections include dioritic, monzodioritic, granodioritic and granitic gneiss. Typical mineral assemblages include plagioclase, microcline, quartz, olive-green biotite, epidote and accessory allanite, opaque oxides, titanite and zircon.

**Walker Lake quartz monzonite**

The Walker Lake unit is a coarse-grained quartz monzonite with compositional variations that include monzonite, monzodiorite and granite. The rocks are mostly massive, but foliated varieties occur locally. A seriate to locally K-feldspar megacrystic texture is commonly developed.

Of the 13 thin sections prepared one is monzodiorite, three are monzonite, seven are quartz monzonite, and two are granite. Common to all samples are plagioclase, K-feldspar, quartz and biotite. All felsic minerals form large relict primary grains surrounded by recrystallized aggregates. In some samples, plagioclase shows normal and oscillatory zoning, emphasized by secondary clinozoisite or white mica. Primary K-feldspar occurs as stringlet perthite, but large areas are now microcline, as is all recrystallized groundmass K-feldspar. Aggregates of biotite, epidote, titanite, and opaque minerals have replaced amphibole, although blue-green relict hornblende remains in some samples. Biotite (olive-green), titanite and opaque oxides also occur as primary phases. Apatite, allanite (cores to epidote) and zircon are characteristic accessory minerals. Secondary chlorite (from biotite) and white mica (from biotite and K-feldspar) are widespread. Garnet was found in two thin sections.