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N.M. Rayner, I. Lafrance, D. Corrigan, and B. Charette

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Critical review

N. Wodicka

Authors

N.M. Rayner (Nicole.Rayner@canada.ca)
D. Corrigan (David.Corrigan@canada.ca)
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

I. Lafrance (Isabelle.Lafrance@mern.gouv.qc.ca)
B. Charette (Benoit.Charette@mern.gouv.qc.ca)
Ministère de l'Énergie et des Ressources naturelles
5700, 4e Avenue Ouest, local D-307
Québec, Quebec
G1H 6R1

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Abstract: Three strongly foliated or recrystallized samples were identified in the field as potential Archean basement and were collected for geochronology in order to compare their crystallization ages with the ages of known basement in the Superior Craton and Core Zone. A porphyritic monzonite from the thrust-bound Boullé Complex within the Rachel-Laporte Zone yields a crystallization age of 2690 ± 4 Ma. A 2696 ± 4 Ma magnetite granite of the Saffray Suite is similar in age and composition to large potassic suites of the Superior Craton. These ages stand in contrast to a younger 2668 ± 5 Ma crystallization age for a tonalite of the Wheeler Complex from a separate structural dome within the Rachel-Laporte Zone.

The ages of the Champdoré and Lhande plutonic suites are 1839 ± 6 Ma and 1835 ± 4 Ma, respectively. As these units are metamorphosed and strongly foliated, they also provide a maximum age constraint on peak Paleoproterozoic tectonothermal overprint. The post-tectonic pegmatite of the Dancelou Suite provides a 1793 ± 4 Ma constraint on the cessation of deformation in that area.

Résumé : Trois échantillons fortement foliés ou recristallisés, identifiés sur le terrain comme appartenant possiblement au socle archéen, ont été recueillis pour analyse géochronologique en vue de comparer leurs âges de cristallisation avec les âges obtenus pour le socle rocheux dans le craton du lac Supérieur et la Zone noyau. Une monzonite porphyrique provenant du Complexe de Boullé, qui se trouve dans la Zone de Rachel-Laporte et est bordé par des failles de chevauchement, a donné un âge de cristallisation de 2690 ± 4 Ma. Un granite à magnétite de 2696 ± 4 Ma provenant de la Suite de Saffray ressemble par son âge et sa composition à des suites potassiques volumineuses du craton du lac Supérieur. Ces âges contrastent avec l'âge de cristallisation plus jeune (2668 ± 5 Ma) d'une tonalite provenant du Complexe de Wheeler, dans un dôme structural distinct au sein de la Zone de Rachel-Laporte.

Les âges des suites plutoniques de Champdoré et de Lhande sont de 1839 ± 6 Ma et de 1835 ± 4 Ma, respectivement. Comme ces entités sont métamorphosées et fortement foliées, elles fournissent également une limite d'âge supérieure pour le maximum de la surimpression tectonothermique qui a eu lieu au Paléoprotérozoïque. La pegmatite post-tectonique de la Suite de Dancelou indique un âge maximum de 1793 ± 4 Ma pour la fin de la déformation dans cette région.

INTRODUCTION

Overview

This report presents a compilation of Sensitive High-Resolution Ion Microprobe (SHRIMP) U-Pb geochronological results for six plutonic samples from the Jeannin Lake region of northeastern Quebec (NTS sheet 24B and adjacent parts of 24A). The analytical work presented here utilizes samples collected during geological mapping carried out during the summer of 2015 by Quebec's Ministère de l'Énergie et des Ressources naturelles (MERN) under the five-year Churchill Camp project. Analytical support was provided through the Hudson-Ungava project of Natural Resources Canada's Geo-mapping for Energy and Minerals program (second phase, or GEM2).

Regional geology

Northern Labrador and northeastern Quebec south of Ungava Bay contain three lithotectonic domains (Fig. 1) bounded by the Superior Craton in the west and the North Atlantic Craton in the east. Deformed earliest Proterozoic rocks of the New Quebec Orogen flank the margin of the Superior Craton. The volcano-sedimentary fold-and-thrust belt of the Labrador Trough constitutes the western part of the New Quebec Orogen, while the eastern part is generally of higher metamorphic grade and is referred to as the Rachel-Laporte Zone. Further east, a common hinterland of deformed Archean and earliest Paleoproterozoic rocks known as the Core Zone is sandwiched between the Paleoproterozoic New Quebec Orogen and the Torngat Orogen to the east (e.g. Wardle et al., 2002). The Core Zone itself is a composite entity, consisting of Archean gneisses (James et al., 1996; James and Dunning, 2000), amphibolite-grade metasedimentary rocks of the Lake Harbour Group, a sequence of 2.3–1.9 Ga metaplutonic and metavolcanic rocks, and potential magmatic arc rocks represented by the 1.84–1.81 Ga De Pas Batholith (Dunphy and Skulski, 1996; James et al., 1996; James and Dunning, 2000; David et al., 2011) along the western edge of the Core Zone.

Within the New Quebec Orogen, a region of reworked Archean rocks has long been recognized immediately east of the Rachel-Laporte Zone, across the Lac Turcotte fault (Perreault and Hynes, 1990). Wardle et al. (1990) referred to these Archean rocks as the Kuujjuaq domain. Archean rocks east of the Lac Turcotte fault, far to the south along the Smallwood Reservoir (Fig. 1), were interpreted as a reactivated margin of the Superior Craton (James and Dunning, 2000). Prior to this study, few Archean rocks (Davis et al., 2014) had been characterized in the central Kuujjuaq domain, and in the absence of geochronological data these rocks were simply classified as part of the undivided Core Zone (Charette et al., 2016). The Jeannin Lake area (Fig. 2) was mapped at 1:250 000 scale during the summer of 2015

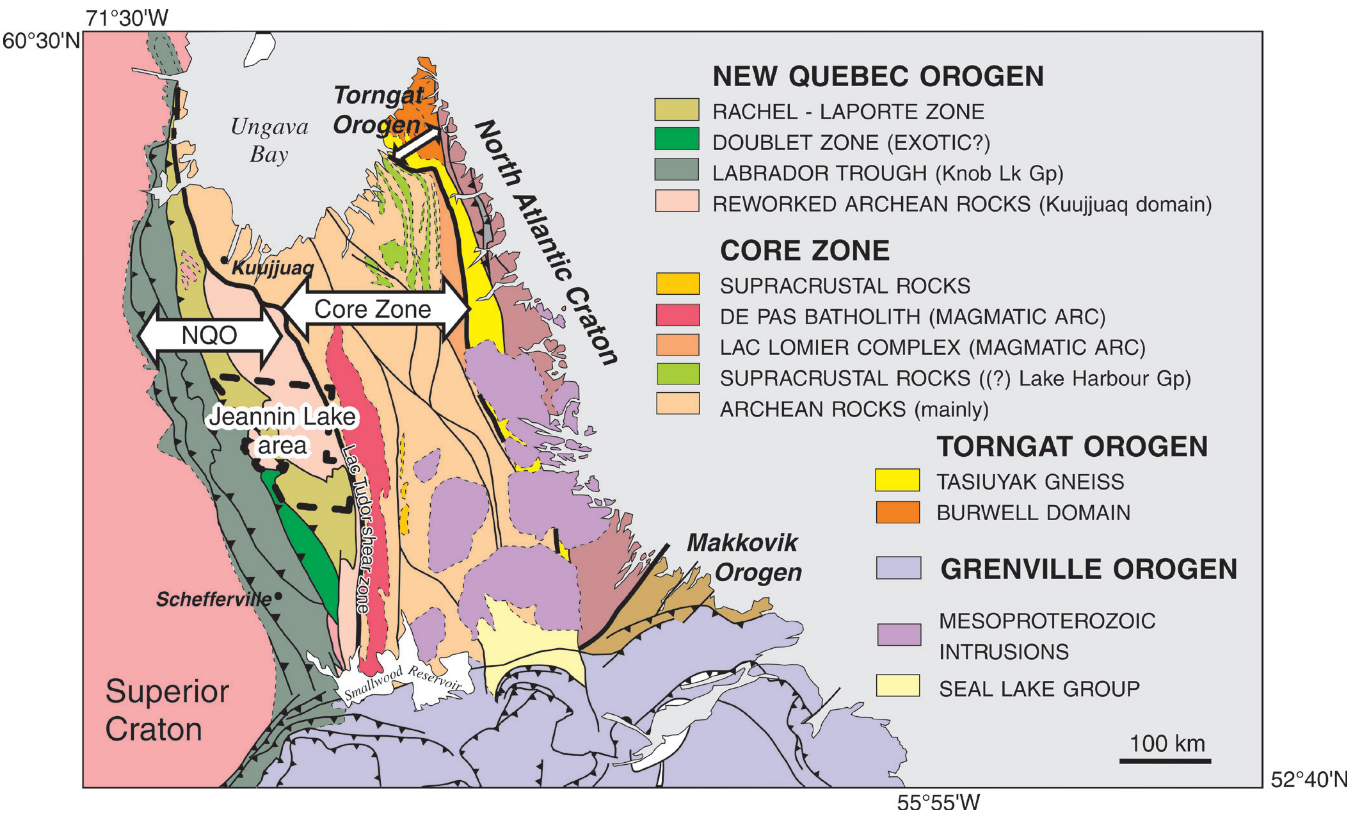

Figure 1. Simplified lithotectonic division of northeastern Quebec and Labrador. The Jeannin Lake area is shown by the dashed outline. NQO = New Quebec Orogen. *From* Corrigan et al. (2015).

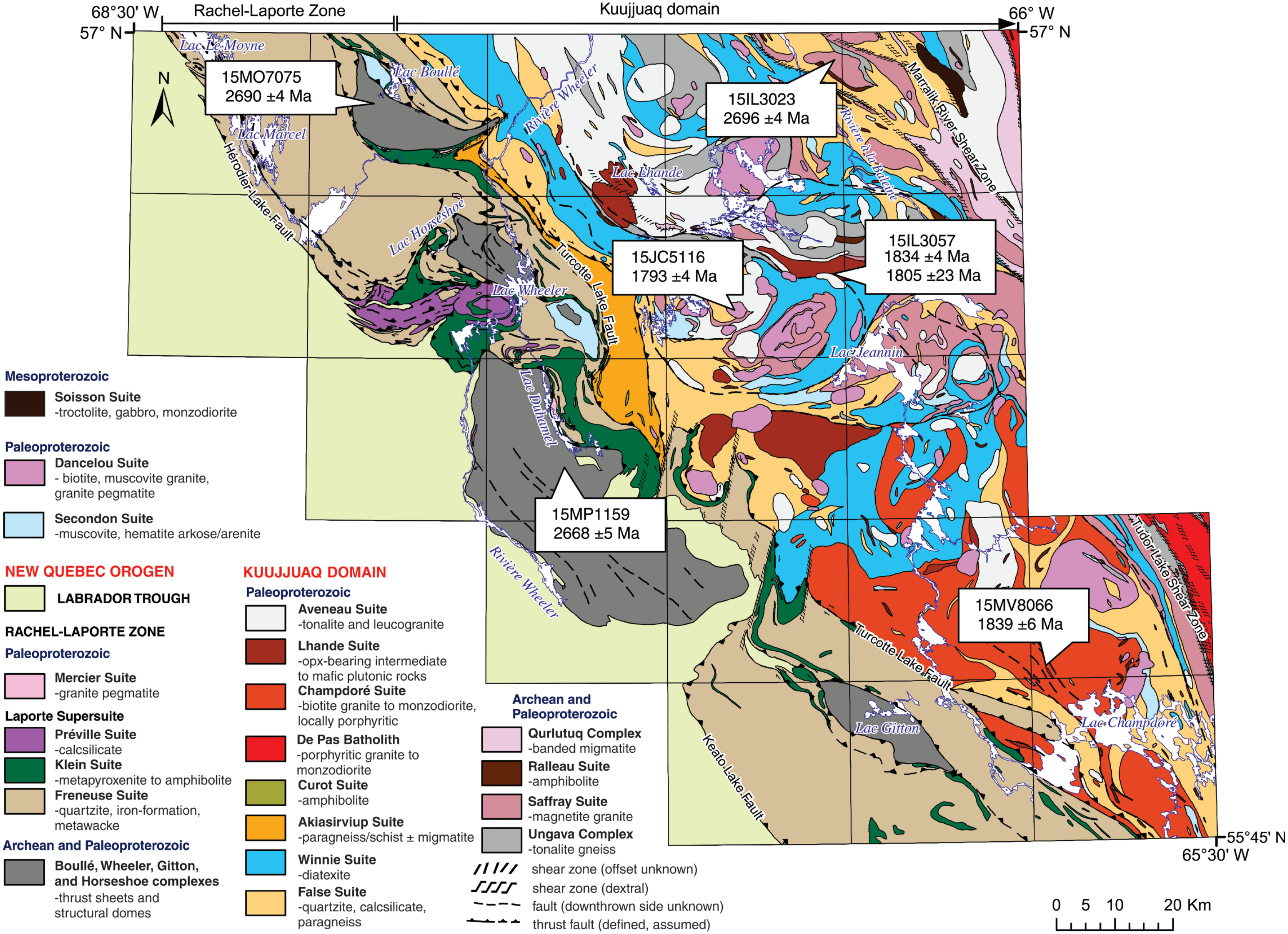

Figure 2. Simplified geological map of the Jeannin Lake area showing location and U-Pb results of samples discussed in this report. Geology by Charette et al. (2016).

(Charette et al., 2016) by the Ministère de l'Énergie et des Ressources naturelles (MERN) under the five-year Churchill Camp project. This area exposes part of the Rachel-Laporte Zone, but is primarily east of the Lac Turcotte fault and thus contributes to a fuller characterization of the Kuujjuaq domain. Here we report U-Pb results from two samples within the Rachel-Laporte Zone and four from the Kuujjuaq domain in order to test their affiliation with the Superior Craton.

This report consists of a brief summary of the U-Pb results, followed by separate sections for each sample containing lithological and zircon descriptions, detailed presentation of the geochronological results, and preferred interpretation. Age data are summarized in Table 1. A data table containing the UTM co-ordinates for each sample, all SHRIMP analytical results, and analytical notes can be found in Appendix A, which is provided both as a Microsoft® Excel® spreadsheet and as a .csv file.

ANALYTICAL PROCEDURES

Mineral separates were prepared at a commercial laboratory (Overburden Drilling Management). Samples were comminuted using electropulse disaggregation, and the heavy minerals were concentrated by passing the <1 mm portion over a Deister water shaking table and then panning the table concentrate. Zircon grains were picked from the pan concentrate.

SHRIMP analytical procedures followed those described by Stern (1997) and Stern and Amelin (2003). Briefly, zircon grains were cast in 2.5 cm diameter epoxy mounts (along with fragments of the Geological Survey of Canada (GSC) laboratory reference zircon, z6266, with $^{206}Pb/^{238}U$ age = 559 Ma). The midsections of the zircons were exposed using 9, 6, and 1 μm diamond compound, and the internal features of the grains (such as zoning, structures, alteration, etc.) were characterized in backscattered-electron (BSE) or cathodoluminescence (CL) mode utilizing a Zeiss Evo 50 scanning electron microscope. The count rates at 11 masses including background were sequentially measured with a single electron multiplier. Offline data processing was accomplished using SQUID2 (version 2.50.11.10.15, rev. 15 Oct 2011). The 1σ external errors of $^{206}Pb/^{238}U$ ratios reported in the data table incorporate the error in calibrating reference material. Common-Pb correction utilized the Pb composition of the surface blank (Stern, 1997). Details of the analytical session, including spot size, number of scans, calibration error, and the applications of any intra-element mass-fractionation (IMF) corrections are given as a footnote in Appendix A. Isoplot v. 4.15 (Ludwig, 2003) was used to generate concordia plots and calculate weighted means.

RESULTS

15MO7075-A (GSC lab number 11887) Boullé Complex, porphyritic monzonite

A sample of K-feldspar–phyric monzonite was taken from a large outcrop in the north-central part of the Boullé Complex located in the northwestern part of the 2015 mapping area (Fig. 2). The complex is lozenge-shaped, approximately 30 km long and 8 km wide, oriented NW-SE and characterized by a strong aeromagnetic signature. It is interpreted as a thrust-bound panel within the Proterozoic units of the Rachel-Laporte Zone. The sample collected for geochronology is homogeneous, moderately to strongly deformed, partially recrystallized, and largely dark grey in colour, with pink staining on fresh surfaces (Fig. 3a). The K-feldspar phenocrysts are elongated (0.5 to 2 cm) along the foliation. Mafic minerals (hornblende+biotite) constitute 25–30% of the rock. Abundant accessory minerals are present (titanite, epidote, apatite, allanite, zircon, opaques).

Abundant pale pink ovoid zircon grains were recovered, most of which are fractured (Fig. 4a). Most exhibit faint, diffuse, concentric zoning in backscattered electron (BSE) images, with no apparent core/overgrowth relationships (Fig. 4b). Twenty-nine analyses of 28 grains were carried out, yielding dates between 2717 Ma and 2662 Ma (Appendix A). The weighted mean $^{207}Pb/^{206}Pb$ age of 27 of the analyses is 2690 ± 4 Ma (MSWD = 1.5, probability of fit = 0.041), which is interpreted as the crystallization age of the monzonite (Fig. 4c). A single slightly older analysis and a single slightly younger analysis were excluded from the mean and may reflect minor inheritance and Pb loss respectively, or may simply be scatter outside of analytical error.

Table 1. Summary of SHRIMP U-Pb results.

Metaplutonic rocks	Zone/Domain	Sample #	Metamorphic age	Crystallization age
Porphyritic monzonite (Boullé)	Rachel-Laporte	15MO7075-A		2690±4 Ma
Fine-grained tonalite (Wheeler)	Rachel-Laporte	15MP1159-A		2668±5 Ma
Pink magnetite granite (Saffray)	Kuujjuaq	15IL3023-B		2696±4 Ma
Quartz monzonite (Champdoré)	Kuujjuaq	15MV8066-A		1839±6 Ma
Diorite (Lhande)	Kuujjuaq	15IL3057-A	1805±23 Ma	1835±4 Ma
Pegmatite (Dancelou)	Kuujjuaq	15JC5116-A		1793±4 Ma

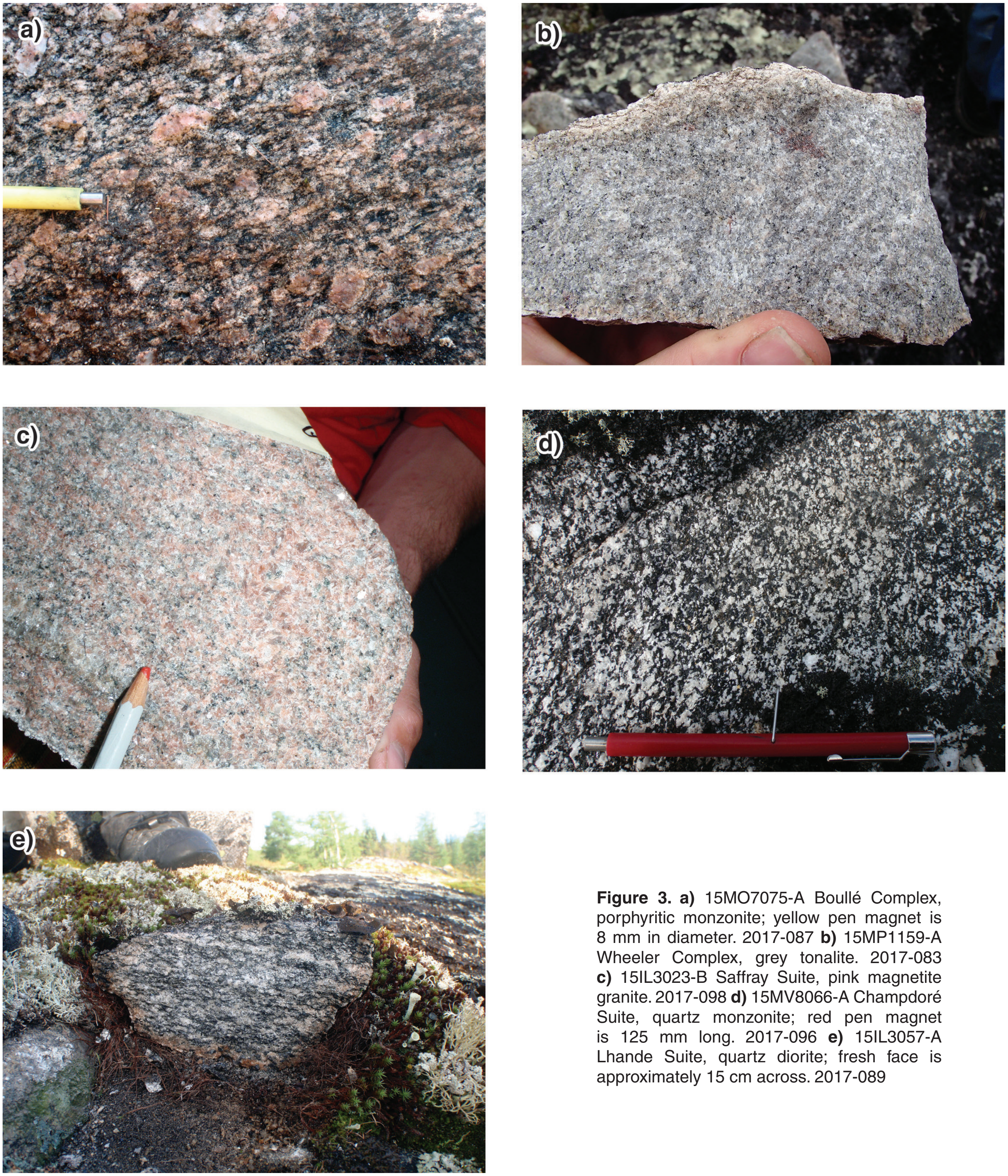

Figure 3. a) 15MO7075-A Boullé Complex, porphyritic monzonite; yellow pen magnet is 8 mm in diameter. 2017-087 **b)** 15MP1159-A Wheeler Complex, grey tonalite. 2017-083 **c)** 15IL3023-B Saffray Suite, pink magnetite granite. 2017-098 **d)** 15MV8066-A Champdoré Suite, quartz monzonite; red pen magnet is 125 mm long. 2017-096 **e)** 15IL3057-A Lhande Suite, quartz diorite; fresh face is approximately 15 cm across. 2017-089

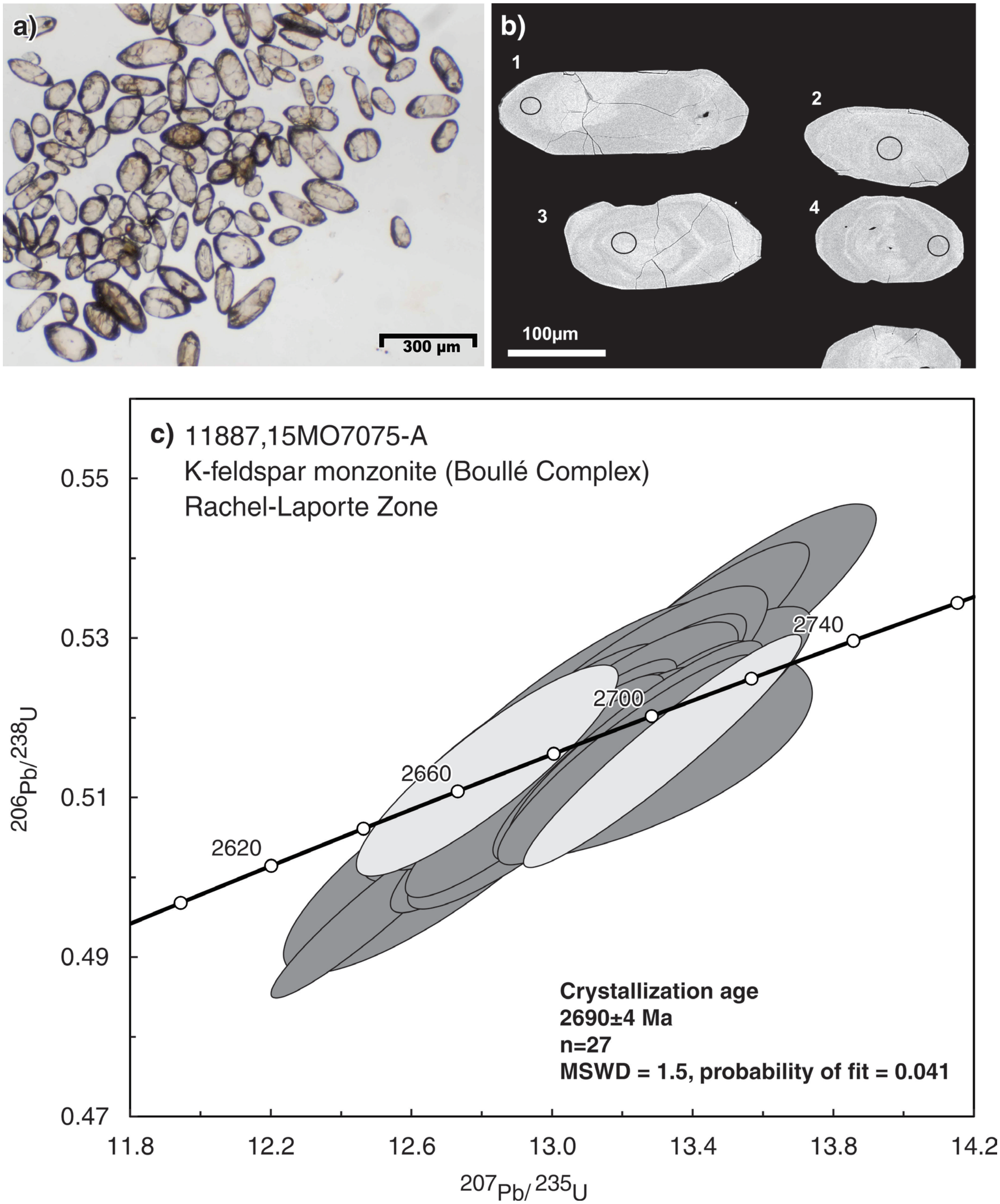

Figure 4. Sample 15MO7075-A. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-088 **b)** Representative BSE images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-093 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. Dark grey ellipses indicate the analyses that were pooled to determine the crystallization age (light grey ellipses excluded from the calculation). *See* text for discussion.

15MP1159-A (11889) Wheeler Complex, grey tonalite

A sample of grey tonalite was collected from an outcrop in the east-central part of the Wheeler Complex (Fig. 2). This 60 km long by 20 km wide complex is interpreted as a structural dome oriented NW-SE at the boundary between the Rachel-Laporte Zone to the east and the Labrador Trough to the west. In addition to tonalite, the Wheeler Complex includes orthogneiss, gabbro, and granite. The dated sample is texturally heterogeneous, with a medium-grained, K-feldspar–poor (2%) component and a fine-grained component slightly richer in K-feldspar (8%). Mafic minerals (chlorite and epidote) make up 10% of the rock and are concentrated in millimetre-scale clusters giving it a mottled appearance. The tonalite is weakly foliated and recrystallized (Fig. 3b).

Abundant pale pink elongate prismatic zircon grains were recovered (Fig. 5a). Cathodoluminescence imaging reveals well developed concentric zoning (Fig. 5b). No core/overgrowth relationships were observed in the CL images. Nineteen analyses were carried out on 19 individual zircon grains, yielding dates between 2687 Ma and 2617 Ma (Appendix A). The weighted mean $^{207}Pb/^{206}Pb$ age of 18 of these analyses is 2668 ± 5 Ma (MSWD = 1.2, probability of fit = 0.22), which is interpreted as the crystallization age of the tonalite (Fig. 5c). The youngest analysis was excluded from the calculation, and may represent a minor component of Pb loss.

15IL3023-B (11888) Saffray Suite, pink magnetite granite

A sample was collected from a large outcrop that consists of decimetre- to metre-scale alternating bands of quartz-monzonite gneiss and pink granite, both assigned to the Saffray Suite (Fig. 2). The Saffray Suite potassic intrusions are associated with strong positive aeromagnetic anomalies oriented E-W to SE-NW. An age of 2695 ± 4.3 Ma (Davis et al., 2014) was obtained from a quartz-monzonite gneiss near Saffray Lake. The sample collected and dated in this study, which belongs to the pink-granite phase, is homogeneous, foliated, and medium-grained (Fig. 3c).

Abundant pale pink to pale brown ovoid zircon grains were recovered and mounted for SHRIMP analysis (Fig. 6a). Their highly fractured nature is apparent in plain light photomicrographs and in BSE images. Most grains exhibit faint, diffuse concentric zoning in BSE images (Fig. 6b). A minority of grains either appear entirely unzoned or exhibit unzoned, fractured rims surrounding a faintly zoned core (e.g. grains 23 and 24). Thirty-three analyses were carried out on 31 zircon grains yielding dates between 2721 Ma and 1934 Ma (Appendix A). The weighted mean $^{207}Pb/^{206}Pb$ age of the oldest 23 results is 2696 ± 4 Ma (MSWD = 1.8, probability of fit = 0.012) which is tentatively interpreted as the crystallization age of the magnetite granite (Fig. 6c). The 10 analyses excluded from the calculation of the mean are either from unzoned crystals or from rims; however, these do not yield a distinct age cluster. Most analyses are only slightly younger than the mean (n = 7 between 2662–2577 Ma), with one analysis at ca. 2.3 Ga and two nonreproducible replicate analyses on grain 30 yielding dates of 1.93 and 2.07 Ga. This suggests that this sample experienced a Paleoproterozoic overprint that resulted in partial recrystallization of zircon but not new, distinct growth.

The 2696 Ma age of the majority of the zircon from this magnetite granite is identical to the interpreted age of the host quartz-monzonite gneiss. There are two possible interpretations of this result. One is that the 2696 Ma zircons in the pink magnetite granite are inherited from the host gneiss and thus do not constrain its crystallization age. The best estimate of the crystallization age in this case would be 1.93 Ga as a maximum age, as we can only constrain the zircon recrystallization event to sometime after the age of the youngest zircon. Alternatively, the 2696 Ma zircon confirms an Archean crystallization age for both the granite *and* host gneiss phases of the Saffray Suite. This is our preferred interpretation and is supported by the fact that this age is known from other post-tectonic large potassic intrusions just to the west of the New Quebec Orogen in the Superior Craton (Simard et al., 2008).

15MV8066-A (11892) Champdoré Suite, quartz monzonite

The sample was collected from a large heterogeneous outcrop consisting of compositionally variable granoblastic rocks assigned to the Champdoré Suite, located in the southern half of the Kuujjuaq domain (Fig. 2). The Champdoré Suite consists primarily of granodiorite, quartz monzodiorite, and monzogranite which have been variably recrystallized. An age of 1837 ± 2 Ma was determined from a porphyritic granite, a subordinate phase in the suite (N. Wodicka, pers. comm., 2017). A second sample of homogeneous but strongly recrystallized hornblende-biotite quartz monzonite was collected for geochronology (Fig. 3d). The close spatial association of well foliated or gneissic rocks with other less deformed phases that still preserve igneous textures suggests a single magmatic unit that has heterogeneously distributed strain.

Abundant pale pink, well faceted, stubby to elongate prismatic zircon grains were recovered (Fig. 7a). These exhibit faint concentric zoning in BSE images (Fig. 7b). Twenty-two analyses were carried out on 21 individual zircon grains, yielding dates between 1879 and 1808 Ma (Appendix A). The weighted mean $^{207}Pb/^{206}Pb$ age of all analyses is 1839 ± 6 Ma (n = 22, MSWD = 1.6, probability of fit = 0.0051), which is interpreted as the crystallization age of the foliated quartz monzonite (Fig. 7c).

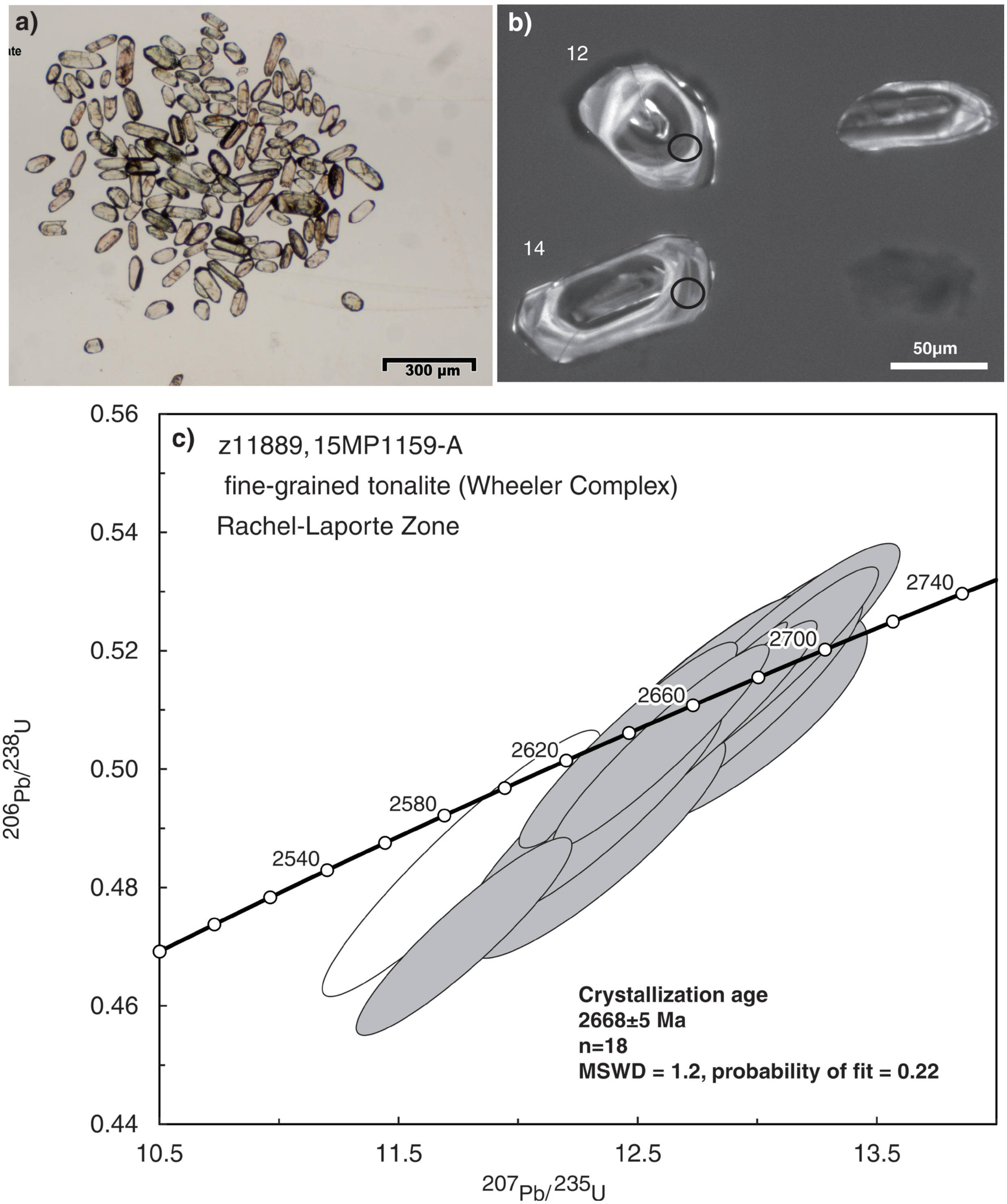

Figure 5. Sample 15MP1159-A. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-091 **b)** Representative CL images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-090 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. Grey ellipses indicate the analyses that were pooled to determine the crystallization age (white ellipse excluded from the calculation). *See* text for discussion.

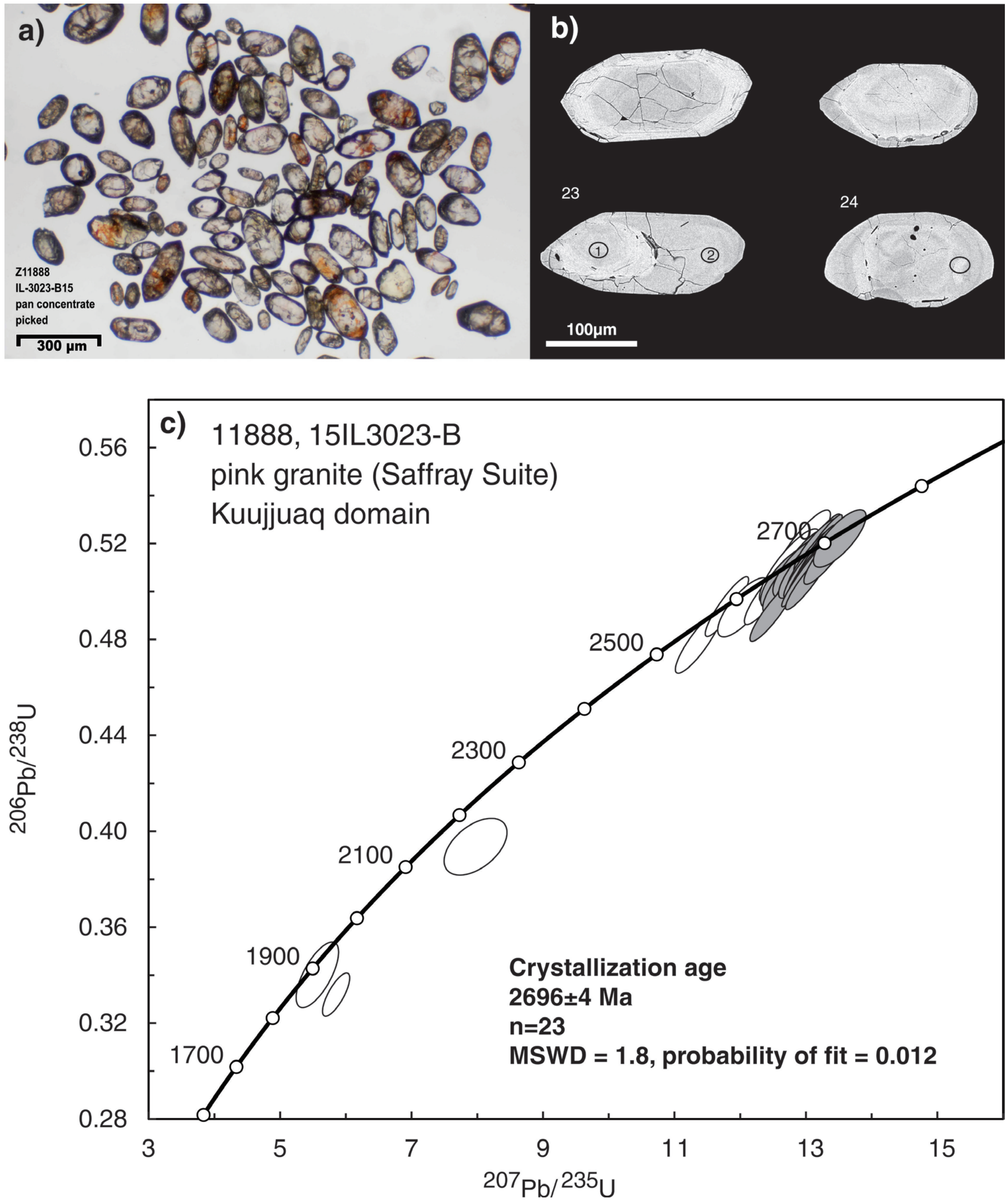

Figure 6. Sample 15IL3023-B. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-085 **b)** Representative BSE images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-082 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. Grey ellipses indicate the analyses that were pooled to determine the crystallization age (white ellipses excluded from the calculation). *See* text for discussion.

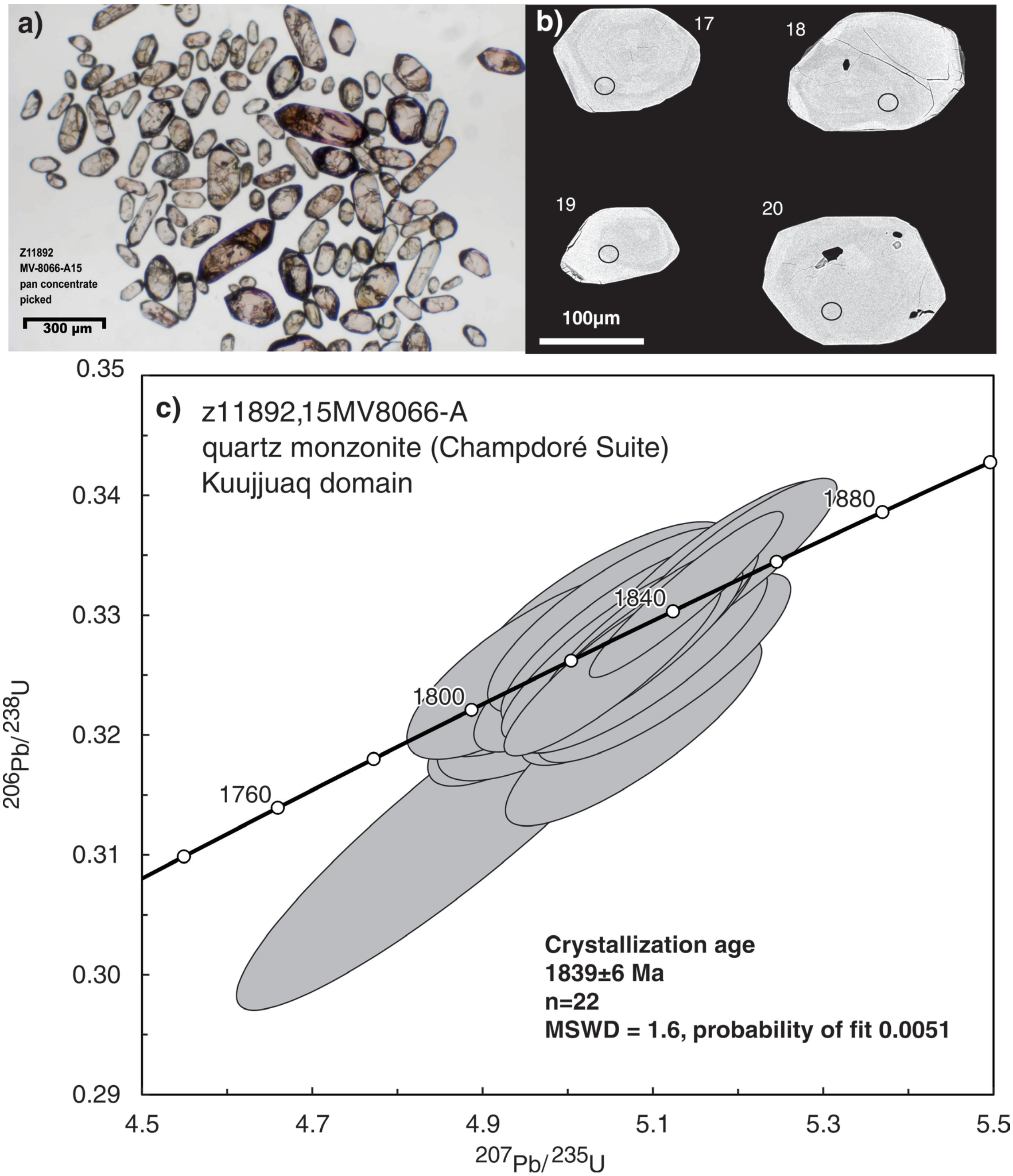

Figure 7. Sample 15MV8066-A. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-092 **b)** Representative BSE images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-094 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. All analyses were pooled to determine the crystallization age. *See* text for discussion.

15IL3057-A (11891) Lhande Suite, quartz diorite

A sample was collected from a large outcrop of quartz diorite from the central part of the Kuujjuaq domain (Fig. 2). The Lhande intrusive suite varies compositionally from mafic to felsic and consists of orthopyroxene-bearing leucogabbro, monzogabbro, quartz diorite, tonalite, and granite. The Lhande Suite intrusions range from 1 km to 20 km in length. The dated unit is a medium-grained, homogeneous, foliated quartz diorite with a salt-and-pepper speckled appearance (Fig. 3e).

Abundant pale brown, highly fractured, subrounded elongate zircon grains were recovered (Fig. 8a). In BSE images these are characterized by grain interiors that are fractured and altered but preserve concentric zoning (Fig. 8b). These altered interior regions have a slightly stronger (brighter) BSE response compared to unzoned rims, suggesting that they are higher in U. Twenty-five analyses of 23 individual zircon grains were analyzed, yielding dates between 2529 Ma and 1668 Ma (Appendix A). Dates older than 1850 Ma are only recorded in one grain (#116), for which two replicate analyses give nonreproducible ages of 2316 Ma and 2529 Ma (Fig. 8c). The weighted mean $^{207}Pb/^{206}Pb$ age of the high-U zoned zircon is 1835 ± 4 Ma (n = 17, MSWD = 0.84, probability of fit = 0.64), which is interpreted as the crystallization age of the quartz diorite. The weighted mean $^{207}Pb/^{206}Pb$ age of the low-U zircon rims, 1805 ± 23 Ma (n = 6, MSWD = 0.88, probability of fit = 0.50), is statistically indistinguishable from the older age. It may reflect an episode of metamorphism and recrystallization.

The crystallization age for the Lhande Suite is coeval with that determined for a recrystallized quartz monzonite of the Champdoré Suite (15MV8066-A), which returned a crystallization age of 1839 ± 6 Ma.

15JC5116-A (11890) Dancelou Suite, pegmatite

This sample was collected from a large outcrop of pegmatitic granite within the central-west part of the Core Zone (Fig. 2). It is part of the Dancelou Suite, which consists of kilometre-scale medium-grained to pegmatitic granite plutons distributed across the Core Zone. Two Paleoproterozoic ages were determined for the granitic phase of the Dancelou Suite north of this study area (N. Wodicka, pers. comm., 2017). The results reported here are from the pegmatitic phase.

The zircons recovered from sample 15JC5116-A are primarily pale to medium brown elongate (aspect ratio up to 6:1) prisms (Fig. 9a). In BSE images, the highly altered nature of these grains becomes apparent, where dark grey (low BSE response) alteration zones highlight the oscillatory zoning of the zircon (Fig. 9b). This alteration feature is common in high-U zircon from pegmatite, and such altered zircon typically contain high levels of common Pb. Fifteen SHRIMP analyses were carried out on unaltered domains from 15 zircon grains. The weighted mean $^{207}Pb/^{206}Pb$ age of 1793 ± 4 Ma (MSWD = 2.5, probability of fit = 0.002) is interpreted as the crystallization age of the pegmatite (Fig. 9c). One young analysis was excluded from the calculation of the weighted mean as it may record a small amount of Pb loss. This age confirms that the granitic rocks of the Dancelou Suite are post-tectonic and some of the youngest known phases in the Kuujjuaq domain. They are known to cut both Archean and Paleoproterozoic host rocks.

SUMMARY OF RESULTS

Three strongly foliated or recrystallized samples were identified in the field as potential Archean basement and were collected for geochronology in order to compare their crystallization ages with the ages of known basement in the Superior Craton and Core Zone (Fig. 2). A porphyritic monzonite from the thrust-bounded Boullé Complex within the Rachel-Laporte Zone (sample 15MO7075) yields a crystallization age of 2690 ± 4 Ma. The similarities in its composition, structural style, and age with comparable rocks to the west of the New Quebec Orogen suggest that this panel may represent a nappe of the Superior Craton transported as a thrust sheet within the Rachel-Laporte Zone during the New Quebec Orogeny. Likewise, a 2696 ± 4 Ma magnetite granite of the Saffray Suite (sample 15IL3023) is similar in age and composition to large potassic suites of the Superior Craton. This sample from east of the Lac Turcotte fault supports the hypothesis that a component of the Archean crust in this region is likely a portion of the Superior Craton that was rifted, then tectonically uplifted and exhumed (Wardle et al., 2002). However, zircon isotope systematics from the magnetite granite of the Saffray Suite, unlike those from the coeval Boullé Complex sample, record a Paleoproterozoic overprint presumed to be related to the Trans-Hudson Orogeny. The crystallization ages of the Boullé Complex and Saffray Suite stand in contrast to a younger 2668 ± 5 Ma crystallization age for a tonalite of the Wheeler Complex (sample 15MP1159) from a separate structural dome within the Rachel-Laporte Zone. To date, tonalites younger than 2.7 Ga have not been recognized in the Superior Craton proximal to the New Quebec Orogen, but have been identified in the Core Zone within the Orma domain (James et al., 2003) on the shores of the Smallwood Reservoir (Fig. 1).

The ages of the Champdoré and Lhande plutonic suites are 1839 ± 6 Ma and 1835 ± 4 Ma, respectively, coeval with the emplacement of the 1.81–1.84 Ga De Pas Batholith (Dunphy and Skulski, 1996; James et al., 1996; James and Dunning, 2000; David et al., 2011). As these units are strongly foliated, they also provide a maximum age constraint on peak Paleoproterozoic tectonothermal overprint. Moreover, the fact that metaplutonic rocks of De Pas Batholith composition and age occur in the Kuujjuaq domain, west of the Lac Tudor shear zone, brings into question the hypothesis that

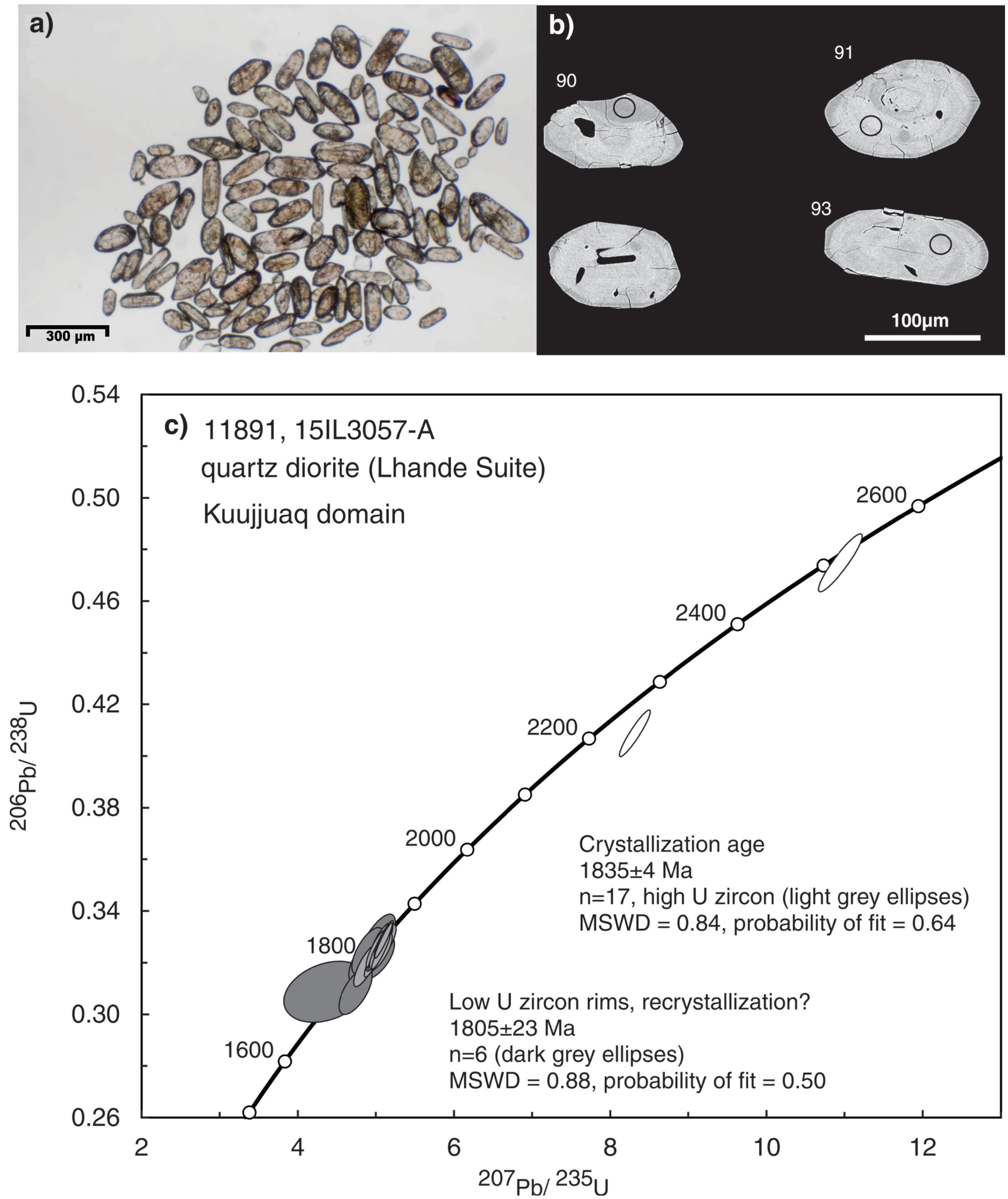

Figure 8. Sample 15IL3057-A. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-086 **b)** Representative BSE images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-084 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. Dark grey and light grey ellipses indicate the analyses that were pooled to determine the crystallization age and metamorphic age respectively. White ellipses excluded from the calculation. *See* text for discussion.

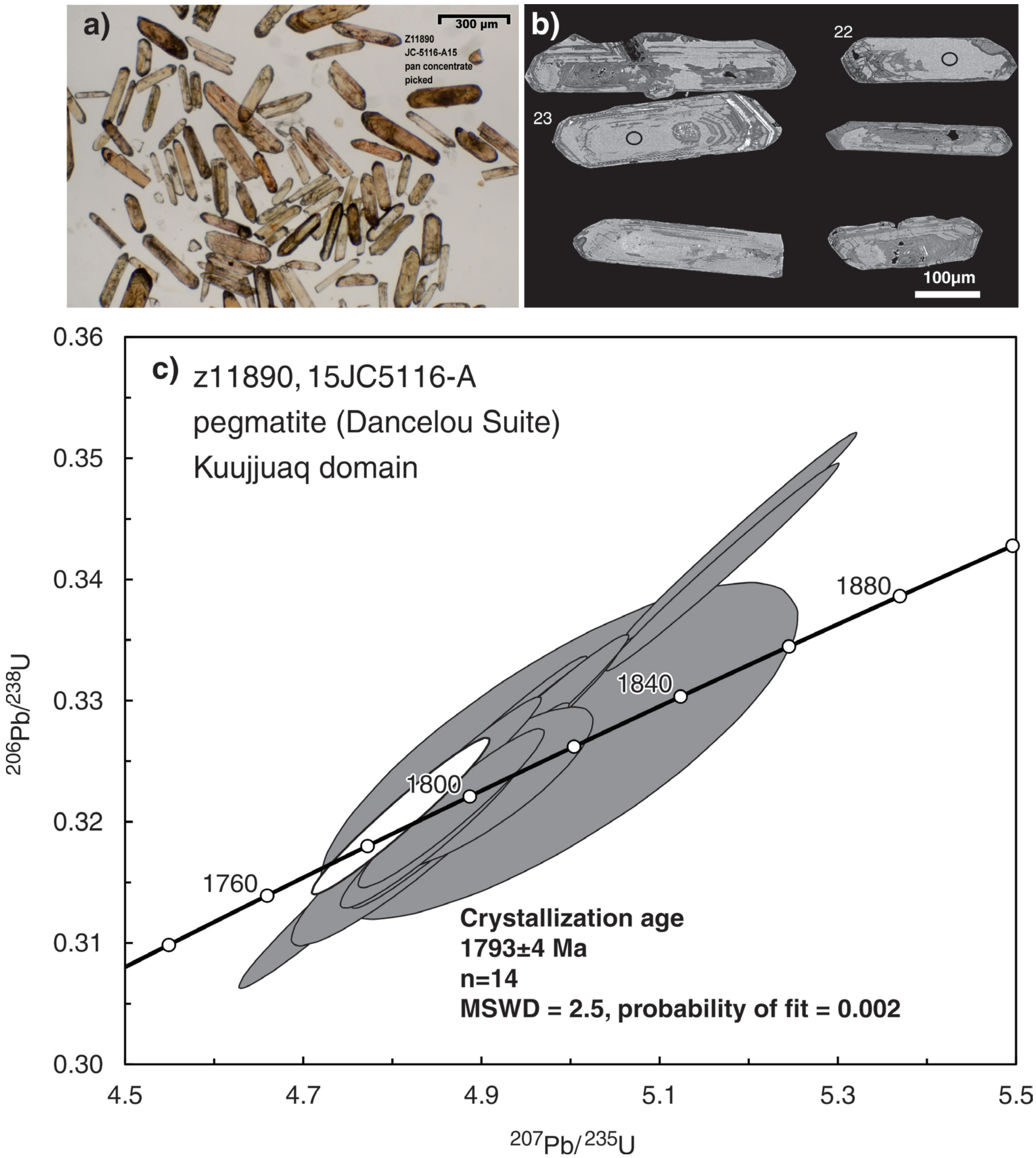

Figure 9. Sample 15JC5116-A. **a)** Plain-light photomicrograph of the zircons mounted for SHRIMP analysis. 2017-095 **b)** Representative BSE images of dated zircon. Black ellipses show analysis sites. Grain numbers correspond to the results given in Appendix A. 2017-097 **c)** Concordia diagram illustrating U-Pb SHRIMP results. Error ellipses are at the 95% confidence level. Analysis indicated by the white ellipse was excluded from the calculation of the crystallization age. *See* text for discussion.

the latter represents the site of past subduction (suture) that would have generated the batholith (e.g. van der Leeden et al., 1990; Dunphy and Skulski, 1996; James and Dunning, 2000).The post-tectonic pegmatite of the Dancelou Suite provides a 1793 ± 4 Ma constraint on the cessation of deformation in that area.

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