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GEOLOGICAL SURVEY OF CANADA
OPEN FILE 9225

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2025

Canada

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Canadian ThermoCHronology (CATCH) database: northern Canada compilation

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2025

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Introduction

Low-temperature thermochronometers, such as the fission track and (U-Th)/He systems, are radiometric dating methods that are sensitive to low (<~300°C) temperature regimes that are characteristic of relatively shallow depths in the Earth's crust (Fig. 1). As a result, low-temperature thermochronology (LTT) provides temporal constraints on a range of important upper crustal geological processes, such as tectonic and climatic exhumation, brittle deformation, sedimentary burial, hydrothermal fluid circulation and changes in crustal heat flow over time. The unique ability of LTT to unravel the thermal history of rocks renders these methods invaluable for assessing the geodynamic and surficial processes that have impacted Canada's bedrock throughout geologic time.

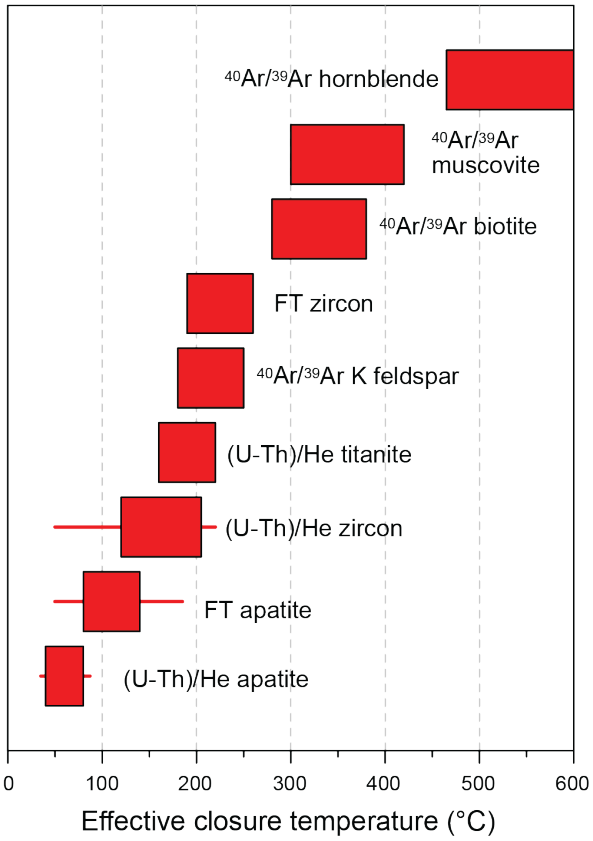


Figure 1. Closure temperatures of various thermochronometers for cooling rates from 0.1 – 100°C/m.y (red bars; modified after Reiners & Brandon 2006). Red lines indicate expanded temperature sensitivity on the basis of radiation damage (Flower et al. 2009; Guenthner et al. 2013) and mineral composition (Djimbi et al. 2015; Issler et al. 2022). Fission track and (U-Th)/He thermochronology data are captured in this compilation.

Over the last several decades, LTT methods have become increasingly popular due to continued advancements in our understanding of the physicochemical processes within mineral crystal lattices that control isotopic diffusion and damage annealing at low temperatures (Fig. 2). For example, the fission track dating method, in which damage zones, or tracks, within crystal lattices are formed due to the spontaneous fission of ^{238}U atoms, was originally pioneered in the 1960s (Price and Walker 1963; Naeser 1967; Wagner 1968), and saw increased application from the 1980s onwards following the discovery and characterization of some of the fundamental thermal, chemical and crystallographic controls on fission track annealing in apatite (e.g. Gleadow & Duddy, 1981; Green, 1980). In comparison, the (U-Th)/He method, in which ^{4}He is the radiogenic daughter product of U, Th, and Sm, was the first geochronometer applied to date zircon (Strutt 1909, 1910). These original studies determined that the calculated ages were too young to be crystallization ages due to 'leaky helium'. The (U-Th)/He method only saw renewed interest following studies that identified thermal controls on helium diffusion (Zeitler *et al.* 1987), the effects of radiogenic helium ejection on (U-Th)/He age (Farley *et al.* 1996) and laboratory-defined helium diffusion kinetics (e.g. Flowers 2009; Gautheron *et al.* 2009; Guenthner *et al.* 2013). Now, there are numerous LTT laboratories across the globe, including several in Canada, that generate thousands of analyses and hundreds of publications each year.

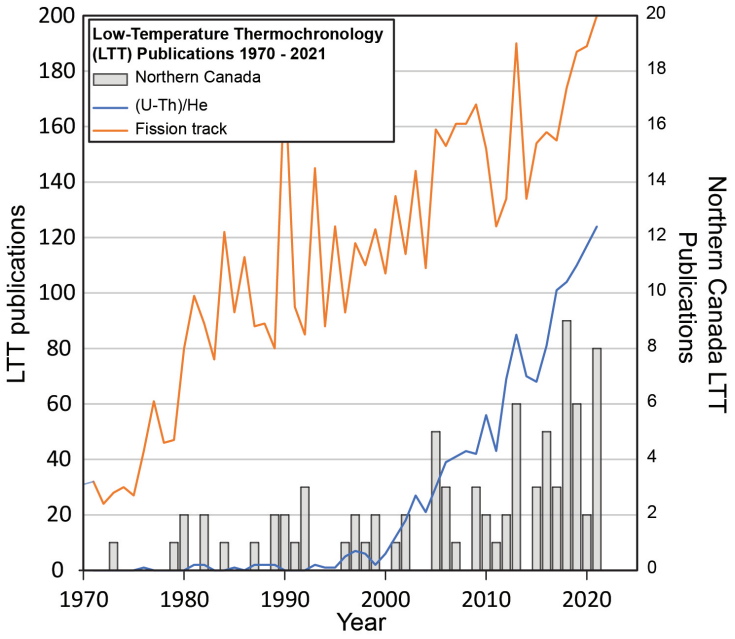


Figure 2. Charting the number of LTT publications from 1970 - 2021. The number of (U-Th)/He and fission track publications per year were extracted from Scopus.com whereas the northern Canada publications are collated in this report

In comparison with other geochronometers, such as those employing the U-Pb and K-Ar decay systems, which tend to provide robust crystallization and cooling ages, LTT methods commonly exhibit significant intrasample date dispersion related to geologic history, elevation, cooling rate, grain size and mineral composition (e.g. Carlson *et al.* 1999; Ketcham *et al.* 1999; Armstrong 2005; Reiners and Brandon 2006; Shuster *et al.* 2006). As a result, measured LTT dates are not always reflective of a cooling age and data are frequently interpreted via numerical modelling methods (Issler 1996; Ketcham 2005, 2024; Gallagher 2012, 2023) that use laboratory-defined kinetic models of thermal diffusion and annealing to understand the time-temperature implications of measured LTT data and corresponding kinetic parameters. As a result, LTT methods have unique requirements for data reporting relative to other geochronometers (Flowers *et al.* 2023a, b; Kohn *et al.* 2024), as both the analytical methods for deriving LTT dates and various metadata are important for thermal history modelling and must be captured.

Given the fact that kinetic models for annealing and diffusion are routinely updated and improved upon, and new software and codes for numerical modelling thermal histories are routinely published, the ability to re-interrogate published data through a modern lens is important to present-day and future low-temperature thermochronologists. This is an especially important consideration given the ongoing push to develop big data approaches to deriving regional geologic histories from large LTT datasets (Fox *et al.* 2014, 2016; Boone *et al.* 2023; van der Beek and Schildgen 2023). In order for LTT data to be functionally reuseable, the data need to be compiled in a purpose-built structure that accounts for the different thermochronometers, the various generations of data and the corresponding metadata. This can be extremely laborious due to the variety and volume of the required data attributes: for example, a single apatite fission track age from an older publication might only include an age and error, whereas a modern sample could have >3000 unique entries (Boone *et al.* 2023). Given the rapid increase in LTT publications (Fig. 2), unique data structures tailored to LTT are required to accommodate the volume of new analyses and associated metadata.

Although the Geological Survey of Canada's (GSC) geochronology laboratories do not produce LTT data, the GSC has facilitated production of many of the existing Canadian LTT datasets through internal research projects, external grants and access to the extensive GSC sample archives. Presently,

only apatite fission track dates are captured in a preliminary compilation (Pinet & Brake, 2018), and neither fission track nor (U-Th)/He data and metadata are collated in any database. The absence of a central database is of growing concern, given the surging popularity of these methods and their wide applicability to Canadian geoscience studies. This publication addresses this concern by providing a comprehensive compilation of all northern Canada fission track and (U-Th)/He data published from 1970-2021 (Figs. 2, 3) and marks the first step towards the GSC's new CAnadian ThermoCHronology (CATCH) database. The goal of the CATCH database is to provide the geoscience community with a *FAIR* (Findable, Accessible, Interoperable, Reuseable) tool for accessing Canadian LTT data. This publication is the first in a series of three Open Files, with the subsequent open files detailing: 1) an LTT compilation for southern Canada, as well as a compilation of all LTT thermal history models and metadata; 2) an open file detailing the CATCH database and templates for how thermochronologists can

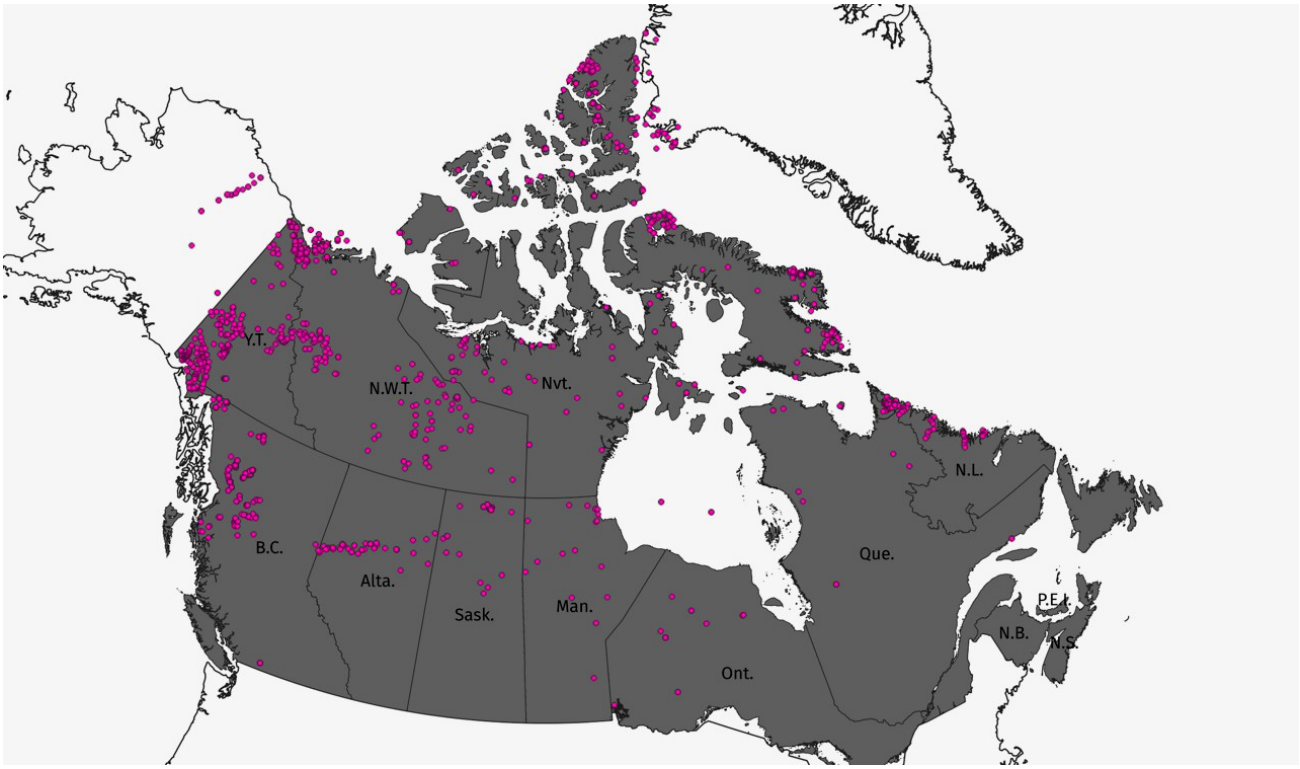


Figure 3. Locations of samples with LTT data in northern Canada. All published data are included in this report. Note: data from Alaska, Greenland and southern Canada were also extracted if included in the same publications as northern Canada LTT data.

submit their published data for curation. Data from the CATCH compilations will also be publicly accessible via the open-access *AusGeochem* data platform (https://ausgeochem.auscope.org.au).

LTT Data Extraction and Curation

Data extraction involved extensive data mining of all LTT data and associated metadata for northern Canada. Data extraction from modern publications was straightforward as most tables are digital and could be copied and pasted into a structured format such as Microsoft Excel. In the case of analogue paper reports or older pdfs without vectorized metadata, data were extracted manually or using additional data extraction steps. Every extracted row of data underwent quality control to ensure no errors occurred in conversion. At the sample level, we capture sample metadata (name, coordinates, location name and description, location type, sampling method, rock type, stratigraphic unit and elevation). For publications where sample coordinates were not provided, the locations were determined

via georeferencing (Fig. 4). This compilation also captures any international LTT data that were included in publications with Canadian LTT data. In addition to the sample, fission track and (U-Th)/He data, we also record important metadata corresponding to funding sources, chief investigator, analysts, laboratory and literature reference for all samples. The full data compilation is included in the supplementary data for this publication.

The data fields for the fission track compilation were designed to match modern data reporting requirements (Kohn *et al.* 2024). A lengthy description of each field is outside the scope of this open file, but a glossary of terms is provided in Table 1 and readers can refer to Kohn *et al*. (2024) for a detailed description of pertinent data fields in fission track thermochronology. In general, the 'FT Datapoints' tab summarizes bulk fission track (FT) data for all samples, whereas 'FT Count Data' and 'FT Single Grain' tabs capture the fission track counting statistics and corresponding age and uranium concentration for the samples for which single grain fission track data are available. A sample may have multiple entries in 'FT Data Points' if it was analyzed multiple times or reinterpreted in a subsequent publication. Individual fission track lengths, when reported, are captured in the 'FT Length Data'. When comprehensive length data are not available in publications, fission track lengths are digitized from length distribution histograms and the binned length values are reported in the 'FT Binned Length Data' (Fig. 5).

In a similar fashion to the fission track compilation, the (U-Th)/He compilation follows the thermochronology community's guidelines for data reporting (Flowers *et al.* 2023a, b). Table 2 provides a glossary of pertinent terms for our data compilation, and readers can refer to the work of Flowers *et al*. (2023a, b) for a detailed description of the (U-Th)/He method and pertinent data fields. In our compilation, the 'He Datapoints' tab includes all samples with (U-Th)/He data and references the mean (U-Th)/He date, if reported. The 'He Whole Grain' tab includes detailed information on the analyses for multi-grain or single grain aliquots.

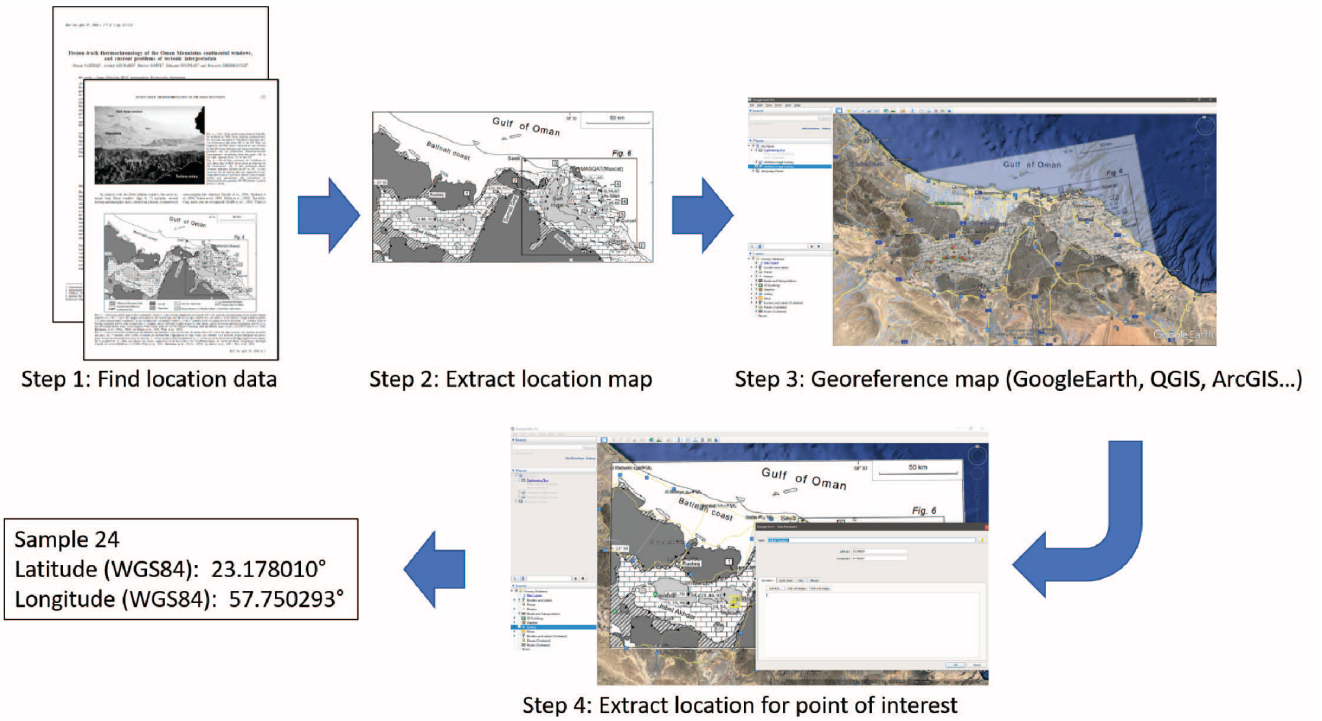


Figure 4. (previous page) Sample coordinates are not provided in many publications. To capture the most accurate location possible, we extracted the geologic maps and georeferenced the samples. In addition to location, the database captures other pertinent geologic metadata fields (lithology, stratigraphic unit, age, tectonic domain, etc.)

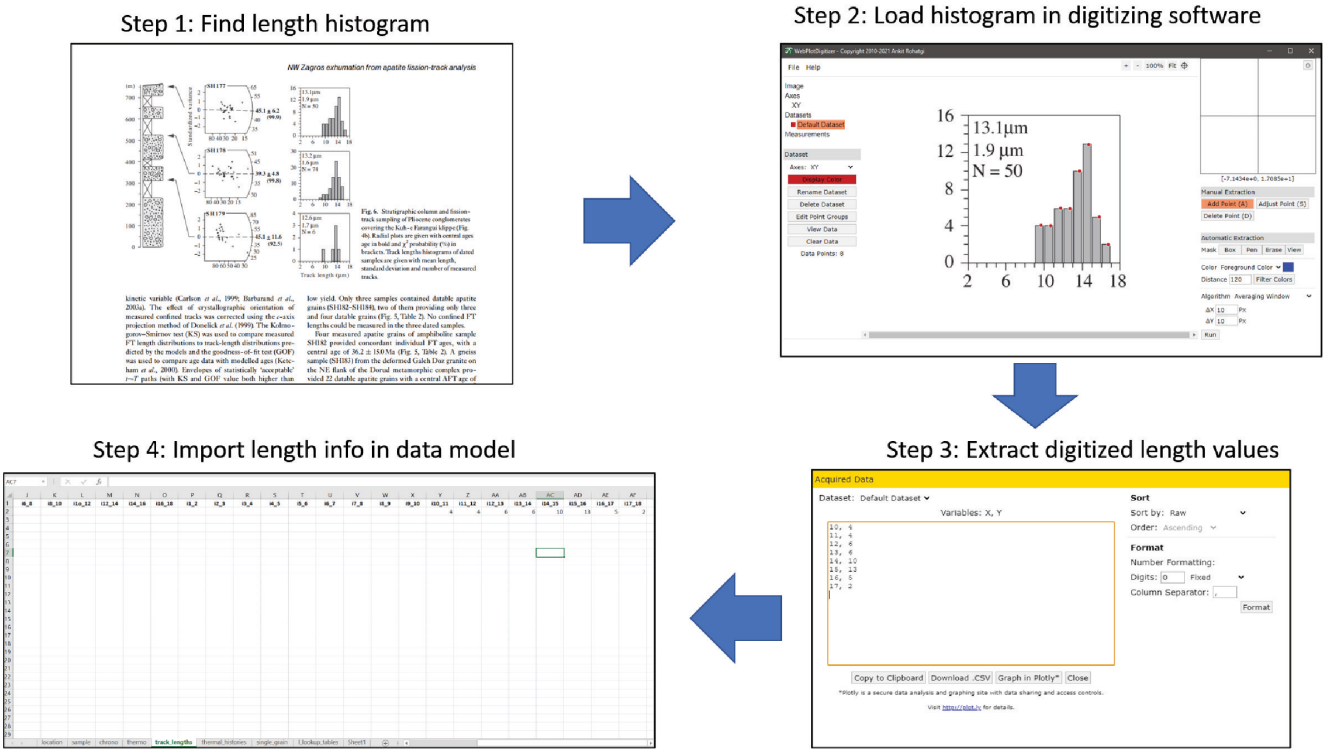


Figure 5. In many older publications the individual measured fission track lengths are only provided as histograms. That information, together with additional information such as kinetic parameters, are essential for modelling thermal histories, so the binned data were digitally extracted from figures in the publications.

Table 1. Glossary of terms for fission track data compilation

FIELD	UNIT	DESCRIPTION
FT Datapoints		
Sample Name		*ID of sample analysed*
Mineral Name		*Mineral type analysed*
FT Age Equation		*The equation used to determine FT age*
FT U Determination Technique		*Analytical method used to measure uranium concentrations for FT age determinations*
Mount ID		*ID of analytical batch, allowing related unknown and secondary reference material results to be linked*
Number of Grains		*Total number of single grains analysed*
rhod	cm^{-2}	*ρd - Mean dosimeter track density*
nd		*Nd - Total number of dosimeter tracks*
rhoS	cm^{-2}	*ρs - Mean spontaneous track density*
ns		*Ns - Total number of spontaneous tracks*
rhoi	cm^{-2}	*ρi - Mean induced track density*
ni		*Ni - Total number of induced tracks*
U/Ca Ratio		*Average U/Ca ratio of analysed grains*
U (ppm)	ppm	*Average U content of analysed grains*
U Standard Error (ppm)	ppm	*Standard deviation of average U content of analysed grains*
chi2pct	%	*P(χ2) - Chi-square test to statistically test the null-hypothesis that the analysed grains belong to one age population*
Dispersion		*Measure of dispersion of single grain ages, ranging from 0 to 1*
Mean Age (Ma)	Ma	*FT mean age*
Mean Age Error (Ma)	Ma	*FT mean age uncertainty*
Central Age (Ma)	Ma	*FT central age*
Central Age Error (Ma)	Ma	*FT central age uncertainty*
Pooled Age (Ma)	Ma	*FT pooled age*
Pooled Age Error (Ma)	Ma	*FT pooled age uncertainty*
Age Error Type		*FT age uncertainty type*
Population		*Distinguishes separate populations within the same sample*
Population Type		*Type of fission track population*
MTL	µm	*Mean confined fission Track Length*
MTL 1se	µm	*Standard error of mean confined track length*
Number of Tracks		*Number of tracks measured*
MTL std Dev	µm	*Standard deviation of mean confined fission track length*
Dpar	µm	*Mean etch pit diameter parallel to crystallographic c-axis*
DPar Standard Error	µm	*Standard error of etch pit diameter parallel to crystallographic c-axis*
Dper	µm	*Mean etch pit diameter perpendicular to crystallographic c-axis*
Dper Standard Error	µm	*Standard error of etch pit diameter perpendicular to crystallographic c-axis*
rmr0		*Mean rmr0 of analysed grains, a parameter corresponding to annealing resistance of an apatite grain of certain composition (Carlson et al., 1999; Ketcham et al., 2007)*
rmr0 Standard Deviation		*Standard deviation of rmr0*
rmr0 Equation		*The equation used to determine the rmr0 and κ parameters*
Etchant		*Etchant chemical composition*
Etching Time	seconds	*Duration of etching*
Etching Temp	°C	*Temperature minerals were etched at*
Zeta Calibration	yr/cm^2	*ζ Calibration - Zeta for EDM or LA-ICP-MS zeta-calibrated fission track ages*
Zeta Error	yr/cm^2	*Zeta uncertainty for EDM or LA-ICP-MS zeta-calibrated fission track ages*
Zeta Error Type		*Zeta-calibration uncertainty type*
dosimeter		*Dosimeter glass used for analysis (only relevant for EDM and population fission track methods)*
Irradiation Reactor		*Name of irradiation reactor for EDM and population age determinations*
Neutron Dose		*Thermal neutron dose during sample irradiation (This parameter is only required for fission track ages determined using the Population Method)*
Description		*Additional information about analysis or data upload*
Cf Irradiation		*Was the sample irradiated with 252Cf?*
Reference		*ID for any particular publication*
FT Count Data		
Sample Name		*ID of sample analysed*
Grain Name		*ID of the individual grain dated*
rhoS	cm^{-2}	*ρs - Spontaneous track density*
ns		*Ns - Number of spontaneous tracks*
rhoi	cm^{-2}	*ρi - Induced track density*
Ni		*Number of induced tracks*
Area	cm^2	*Total area of counting region*
Dpar	µm	*Mean etch pit diameter parallel to crystallographic c-axis*
Population		*Distinguishes separate populations within the same sample*
Mineral Name		*Mineral type analysed*

FIELD	UNIT	DESCRIPTION
FT Single Grain		
Sample Name		*ID of sample analysed*
U (ppm)	ppm	*Average U content of analysed grains*
FT Age	Ma	*Fission track age*
Age Error (Ma)	Ma	*Fission track age uncertainty*
Age Error Type		*FT age uncertainty type*
rmr0		*Mean rmr0 of analysed grains, a parameter corresponding to annealing resistance of an apatite grain of certain composition (Carlson et al., 1999; Ketcham et al., 2007)*
Grain Name		*ID of the individual grain dated*
Population		*Distinguishes separate populations within the same sample*
Mineral Name		*Mineral type analysed*
FT Length Data		
Etching Time	seconds	*Duration of etching*
Grain Name		*Name or lab number of individual grain analysed*
Track Type		*Type of track measurement (e.g., semi-track, confined track-in-track, confined track-in-cleavage)*
Apparent Length	µm	*Apparent length measured parallel to grain surface*
Corrected Z Depth	µm	*Distance in z-direction between track end points, corrected for refractive index of analysed mineral*
Azimuth	°C	*Azimuth of track*
Dip	°C	*Dip of track*
c Axis Angle	°C	*Angle of fission track to crystallographic c-axis*
Dpar	µm	*Modal etch pit diameter parallel to crystallographic c-axis*
Dper	µm	*Modal etch pit diameter perpendicular to crystallographic c-axis*
rmr0		*Parameter corresponding to annealing resistance of an apatite grain of certain composition (Carlson et al., 1999; Ketcham et al., 2007)*
Comment		*Additional information about analysis or data upload*
TrackID		*Lab number*
Mineral Name		*Mineral type analysed*
FT Binned Length Data		
Sample Name		*Unique name to identify this data entry within the database, useful when uploading associated data (e.g., single grain data)*
DparAvg	µm	*Modal etch pit diameter parallel to crystallographic c-axis*
0x1		*Number of measured confined tracks in 0 to 1 micron bin*
1x2		*Number of measured confined tracks in 1 to 2 micron bin*
2x3		*Number of measured confined tracks in 2 to 3 micron bin*
3x4		*Number of measured confined tracks in 3 to 4 micron bin*
4x5		*Number of measured confined tracks in 4 to 5 micron bin*
5x6		*Number of measured confined tracks in 5 to 6 micron bin*
6x7		*Number of measured confined tracks in 6 to 7 micron bin*
7x8		*Number of measured confined tracks in 7 to 8 micron bin*
8x9		*Number of measured confined tracks in 8 to 9 micron bin*
9x10		*Number of measured confined tracks in 9 to 10 micron bin*
10x11		*Number of measured confined tracks in 10 to 11 micron bin*
11x12		*Number of measured confined tracks in 11 to 12 micron bin*
12x13		*Number of measured confined tracks in 12 to 13 micron bin*
13x14		*Number of measured confined tracks in 13 to 14 micron bin*
14x15		*Number of measured confined tracks in 14 to 15 micron bin*
15x16		*Number of measured confined tracks in 15 to 16 micron bin*
16x17		*Number of measured confined tracks in 16 to 17 micron bin*
17x18		*Number of measured confined tracks in 17 to 18 micron bin*
18x19		*Number of measured confined tracks in 18 to 19 micron bin*
19x20		*Number of measured confined tracks in 19 to 29 micron bin*
Comment		*Additional information about analysis or data upload*

Table 2. Glossary of terms for (U-Th)/He data compilation

FIELD	UNIT	DESCRIPTION
		FT Datapoints
Sample Name		*ID of sample analysed, usually assigned by sample collector*
Mineral		*Mineral type analysed*
Mean Uncorrected He Age	Ma	*Mean uncorrected He age*
Mean Corrected He Age	Ma	*Mean corrected He age*
Mean Corrected He Age Uncertainty	Ma	*Uncertainty of mean corrected He age*
Reference		*ID for any particular publication*
		FT Datapoints
Sample Name		*ID of sample analysed, usually assigned by sample collector*
AliquotID		*Name or lab number of analysed aliquot (if available)*
Number of Aliquots		*Number of grains in aliquot (only relevant for multi-grain aliquots)*
Aliquot Type		*The type of aliquot analysed, i.e., single-grain, multi-grain or unknown*
Aliquot Length	µm	*Length of analysed grain(s) (average value for multi-grain aliquots)*
Aliquot Width	µm	*Width of analysed grain(s) (average value for multi-grain aliquots)*
Aliquot Morphology		*Morphology of analysed aliquot grain(s)*
Aliquot Mass	mg	*Estimated aliquot mass*
Aliquot Mass Error	mg	*Uncertainty of estimated aliquot mass*
4He Amount	ncc	*Absolute He content of aliquot*
4He Concentration	nmol/g	*4He concentration of aliquot*
4He Concentration Error	nmol/g	*4He concentration uncertainty of aliquot*
U Concentration	ppm	*Uranium (238U + 235U) concentration of aliquot, calculated as µg/g*
U Concentration Error	ppm	*Uncertainty of Uranium (238U + 235U) concentration of aliquot, calculated as µg/g*
U Concentration Error Type		*Uncertainty type*
U Amount	ng	*Absolute amount of Uranium (238U + 235U) in aliquot*
U Amount Error	ng	*Uncertainty of absolute amount of Uranium (238U + 235U) in aliquot*
U Amount Error Type		*Uncertainty type*
Th Concentration	ppm	*Thorium (232Th) concentration of aliquot, calculated as µg/g*
Th Concentration Error	ppm	*Uncertainty of Thorium (232Th) concentration of aliquot, calculated as µg/g*
Th Concentration Error Type		*Uncertainty type*
Th Amount	ng	*Absolute amount of Thorium (232Th) in aliquot*
Th Amount Error	ng	*Uncertainty of absolute amount of Thorium (232Th) in aliquot*
Th Amount Error Type		*Uncertainty type*
Sm Concentration	ppm	*Samarium (147Sm) concentration of aliquot, calculated as µg/g*
Sm Concentration Error	ppm	*Uncertainty of Samarium (147Sm) concentration of aliquot, calculated as µg/g*
Sm Concentration Error Type		*Uncertainty type*
eU	ppm	*Effective uranium concentration*
eU Error	ppm	*Effective uranium concentration uncertainty*
eU Error Type		*Uncertainty type*
Th/U		*Thorium/Uranium ratio*
RSV	µm	*Average equivalent spherical radius of analysed aliquot, computed as the radius of a sphere with an equivalent surface area to volume ratio as analysed aliquot*
FT		*Mass-weighted mean alpha ejection correction (FT) of aliquot*
Uncorrected He Age	Ma	*Uncorrected He age*
Uncorrected He Age Error	Ma	*Total analytical uncertainty on uncorrected He age (before FT correction). This should include the propagated uncertainties on the absolute amounts of daughter and parent. See Section 7 in Flowers et al. (2022) for guidance.*
Uncorrected He Age Error Type		*Uncertainty type*
Corrected He Age	Ma	*FT corrected He age*
TAU	Ma	*Total analytical uncertainty on corrected He age (FT corrected). This should include the propagated uncertainties on the absolute amounts of daughter and parent. See Section 7 in Flowers et al. (2022) for guidance.*
TAU Error Type		*Uncertainty type*
Mineral		*Mineral type analysed*
Comment		*Additional information about analysis or data upload*

Northern Canada LTT – Compilation and Discussion

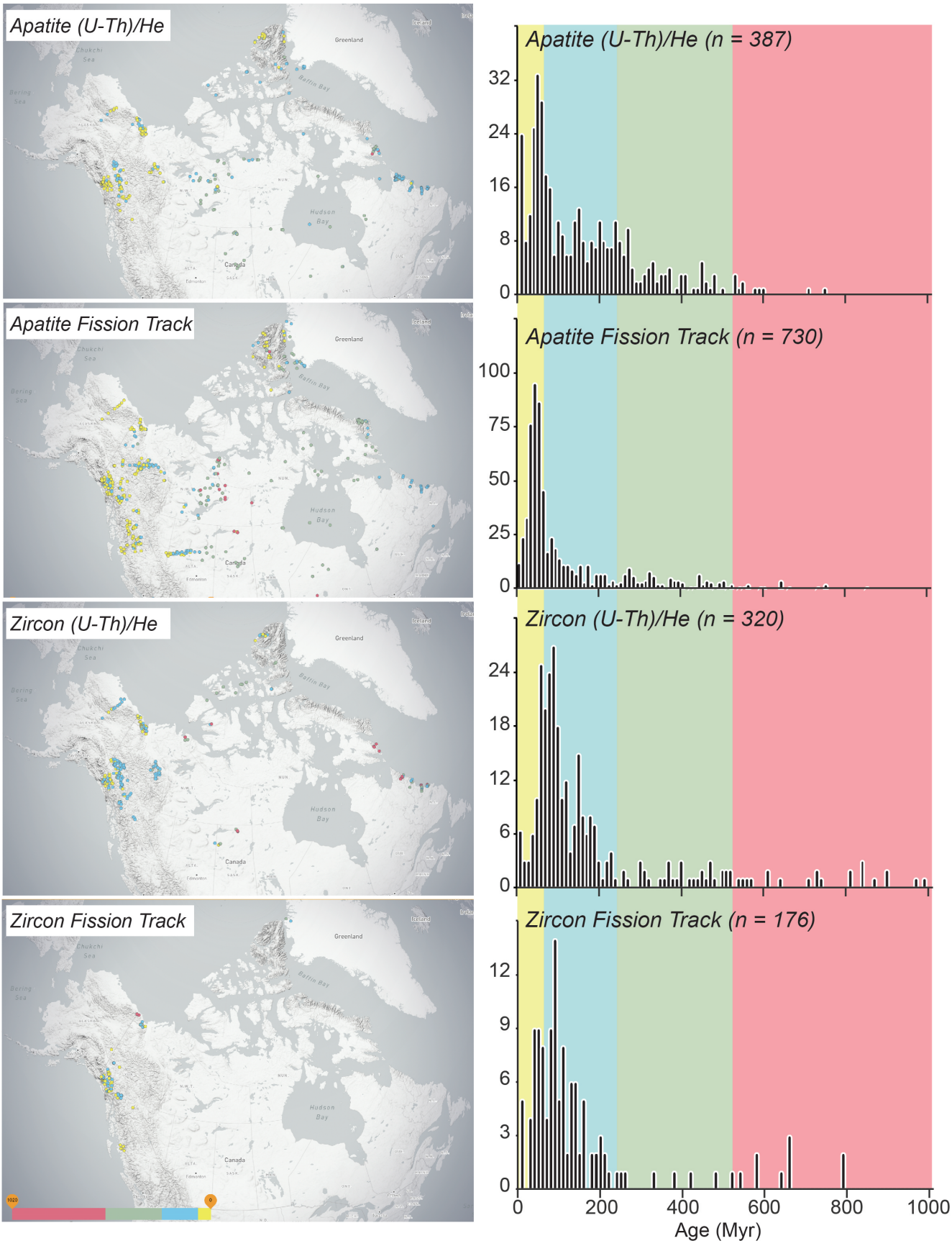
This compilation captures data from 91 different data sources and includes 996 fission track datapoints and 762 (U-Th)/He data points from 1,427 unique samples (Fig. 3). These data are further divided into 16,277 single grain fission track measurements, 27,848 fission track length measurements and 3,230 aliquots of (U-Th)/He data. In Figure 6 the distribution of zircon fission track, zircon (U-Th)/He, apatite fission track and apatite (U-Th)/He data are displayed as a function of age (Precambrian, Paleozoic, Mesozoic, Cenozoic) alongside histograms of the age distributions. In the case of the (U-Th)/He data, where mean ages are not always provided for a sample, Figure 6 displays ages calculated from the single grain ages; while these ages do not properly account for intrasample date-dispersion, they provide a graphical representation of broader trends in the northern Canadian LTT compilation.

The majority of the zircon and apatite (U-Th)/He (ZHe, AHe) and apatite fission track (AFT) data from northern Canada detail cooling related to Mesozoic and younger tectonic systems, such as the Eocene Eurekan Orogeny along the northern Arctic margin (e.g. Arne *et al.* 1998, 2002; Vamvaka *et al.* 2019; Powell and Schneider 2022), and the Mesozoic to Eocene northern Canadian Cordillera (e.g. Knight *et al.* 2013; Powell *et al.* 2016, 2020; Bigot-Buschendorf *et al.* 2019; Enkelmann *et al.* 2019; McKay *et al.* 2021; Kellett *et al.* 2023). Compared to the AFT, ZHe and AHe data, there are relatively few zircon fission track (ZFT) dates, many of which represent detrital populations. For example, Precambrian ZFT ages correspond with detrital data from a Neoproterozoic to Cambrian assemblage in the British Mountains of northern Yukon (Bigot-Buschendorf *et al.* 2019) whereas many Cretaceous to Miocene ages are from glacial-fluvial drainage studies along the border between British Columbia, Yukon and Alaska (Enkelmann and Falkowski 2021). The few ZFT data from bedrock samples are also located in southwestern Yukon and northwestern British Columbia and detail cooling related to Mesozoic terrane accretion (e.g. Enkelmann *et al.* 2017).

If LTT are abundant for the younger orogens, there is a notable paucity of data from other geologically important regions. For example, the relative absence of LTT data in the Arctic Islands results in poor quantitative constraints on the timing and magnitude of: 1) burial and exhumation in the Franklinian Basin and Sverdrup Basin; and 2) circum-Arctic tectonic events such rifting and seafloor spreading associated with the opening of the Arctic Ocean. Similarly, LTT data are mostly absent across the Canadian Shield. The few existing studies (e.g. Willett *et al.* 1997; Issler *et al.* 1999; Flowers *et al.* 2006a, 2009; Kohlmann 2010, Ault *et al.* 2013) suggest that the 'stable' cratonic interior is fairly dynamic through deep geologic time, subsiding and unroofing in response to far-field stresses.

Another insight from Figure 6 is that few studies present multiple thermochronometers for each sample. This is potentially due to the fact that LTT data acquisition is time consuming and expensive, and that few laboratories are equipped for both fission track and (U-Th)/He analysis. Moreover, many studies have shown that the temperature sensitivity of the LTT methods can overlap depending on mineral composition and thermal history (Guenthner *et al.* 2013; McDannell *et al.* 2019; Powell *et al.* 2020; Issler *et al.* 2022) causing some researchers to consider complimentary thermochronometers redundant. However, the absence of multi-chronometer samples may also result in studies that provide an incomplete record of upper crustal thermal histories, or statistical leveling issues between datasets. Studies that combine ZFT, ZHe, AFT and AHe would be particularly useful in the Canadian Shield as cratonic rocks provide a natural laboratory to test how well experimental studies of diffusion and annealing are extrapolated though deep time.

Figure 6. (next page) Illustrating the distribution of LTT data, and their corresponding ages, for the northern Canada LTT compilation. Thermochronometers are plotted in order of increasing temperature sensitivity. Samples on the map are coloured corresponding to their age (red = Precambrian, green = Paleozoic, blue = Mesozoic, yellow = Cenozoic)


Apatite (U-Th)/He
Apatite Fission Track
Zircon (U-Th)/He
Zircon Fission Track
Greenland
Hudson Bay
Canada
Apatite (U-Th)/He (n = 387)
Apatite Fission Track (n = 730)
Zircon (U-Th)/He (n = 320)
Zircon Fission Track (n = 176)
0
200
400
600
800
1000
Age (Myr)

Conclusions

This open file details a comprehensive compilation of low temperature thermochronology data from northern Canada. This compilation is the first step towards the Geological Survey of Canada's Canadian ThermoCHronology (CATCH) database. Subsequent publications will detail a compilation of data from southern Canada, thermal histories for all Canadian samples, and templates for uploading data from future publications to the CATCH database.

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