Growth of monazite during prograde metamorphism

Thesis submitted in accordance with the requirements of the University of Adelaide for an Honours Degree in Geology

Brendon John Liley

November 2014

THE UNIVERSITY of ADELAIDE

GROWTH OF MONAZITE DURING PROGRADE METAMORPHISM

RUNNING TITLE: PROGRADE MONAZITE GROWTH

ABSTRACT

The reactions leading to monazite growth during progressive metamorphism are still not completely understood. This has a flow-on effect of not being able to completely and reliably link monazite U–Pb age data to specific parts of the P–T evolution of rocks. A suite of progressively contact-metamorphosed metapelites and metapsammites from Mt Stafford in central Australia were used to constrain metamorphic monazite growth mechanisms. U–Pb monazite geochronology is used to distinguish detrital (>1800 Ma) from metamorphic (<1800 Ma) monazite, and in granulite facies samples indicates that >50% of monazite is detrital. Differences in grain-separate yields are interpreted to reflect detrital and metamorphic monazite in greenschist facies samples being considerably finer-grained (<70 µm) than in granulite facies samples, since the sum of REE + Y + Th + U in samples is relatively uniform regardless of metamorphic grade. Comparatively low-Th rims on higher-Th monazite 'cores' in granulite facies samples are interpreted to reflect metamorphic monazite overgrowths on either detrital or (slightly) older metamorphic cores. Therefore, pre-existing monazite is interpreted as a major contributor to metamorphic monazite growth. Apatite—observed as inclusions in monazite—and xenotime, and possibly major silicate minerals such as plagioclase, biotite, muscovite and andalusite/sillimanite, are also interpreted to be contributors on the basis of their presence, their composition and, in the case of silicates, their vast abundance relative to monazite even if they only contain a minor amount of REEs. This study argues that pre-existing monazite is a major contributor to metamorphic monazite growth and therefore that the link between monazite growth and changes to P–T (as monitored by changes to silicate mineral assemblage) is not straightforward.

KEYWORDS

Metamorphism, Monazite, REEs, Mt Stafford, Metapelite, Psammite

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

INTRODUCTION

Monazite - [LREE,Y,Th,U,Ca][Si,P]O_4 - is a phosphate mineral that contains predominantly light rare-earth elements (LREE) as well as significant quantities of yttrium, thorium and uranium (Gebauer and Grünenfelder, 1979). Monazite occurs as an accessory mineral, primarily in aluminous metasedimentary and peraluminous igneous rocks. Monazite has been shown to grow as a metamorphic mineral during prograde (e.g. Smith and Barreiro 1999, Rubatto *et al.* 2001; Wing *et al.* 2003; Kohn & Malloy 2004; Corrie & Kohn 2008) and retrograde (Kelsey *et al.* 2003, 2007, 2008) metamorphism. Due to its typical exclusion of lead during formation, any lead that is found in monazite is interpreted as the radiogenic product of Th and U decay (Parrish 1990). Monazite is therefore one of the most commonly used minerals for determining the age of medium (~500 °C) to high (~1000 °C) temperature metamorphic processes.

In the past decade there has been and continues to be a significant effort to place monazite ages from metamorphic rocks in the context of the metamorphic pressure-temperature path. That is, to link geochronology with the physical and thermal processes of orogenesis and tectonics (e.g. Janots *et al*. 2007, 2008; Kelsey *et al*. 2008; Spear & Pyle 2010; Kali *et al.* 2010; Cubley *et al.* 2013; Korhonoen *et al.* 2011; Warren *et al.* 2011; Anderson *et al.* 2013; Rubatto *et al.* 2013; Morrissey *et al.* 2014; Yakymchuk & Brown 2014) to better constrain rates and timescales. However, despite the widespread use of monazite for the purpose of U–Pb geochronology, there is little constraint on the pressure and temperature conditions at which monazite grows because the mineral reactions that are responsible for its formation remain largely unquantified (Janots *et al.* 2007; Kelsey *et al.* 2008; Pyle and Spear 2010; Spear 2010; Stepanov *et al.* 2012). Numerous studies have inferred mineralogical relationships between monazite and various other minerals including allanite, apatite, xenotime, garnet, chlorite, biotite, andalusite, kyanite and staurolite that may be contribute elements to monazite formation (Smith & Barreiro 1990; Pyle & Spear 1999; Wing *et al.* 2003; Kohn & Malloy 2004; Corrie & Kohn 2008; Janots *et al.* 2008). These studies have been largely qualitative or semi-quantitative at best, relying primarily on petrologic observations and interpretations, and exhibiting a paucity or lack of geochemical data on trace element changes within minerals and throughout mineral assemblages that were studied. Nevertheless, they have shed important light on our understanding of monazite growth during prograde metamorphism. However, due to the absence of systematic quantification of the solid solution composition of accessory and silicate minerals as a function of metamorphic grade, there is a gap in our knowledge resulting in an insufficient understanding of mineral reactions that cause monazite growth and destruction. Ultimately, this unresolved gap in knowledge hampers our efforts to reliably and robustly link metamorphic *P–T* paths with monazite ages with the timescales and rates of tectonic processes.

In order to address some of these deficiencies, this study aims to quantify assertions made by Wing *et al.* (2003), Kohn and Malloy (2004) and, Corrie and Kohn (2008), that major silicate as well as accessory minerals are involved in the prograde growth of monazite in metamorphic rocks. The approach taken to perform this quantification and propose reaction mechanisms by which monazite grows in metasedimentary rocks is specifically centred on conducting trace element analysis to quantify the abundance and distribution of trace elements in accessory minerals as a function of metamorphic grade and rock type. The ideal rock types for this project are metamorphosed shales and (impure) sands from a contact-metamorphosed setting because they allow sequential progression of metamorphic grade to be studied and, due to their compact spatial distribution; they are also more likely to maintain compositional consistency across the entire range of metamorphic grades present. Other key criteria for rocks used in this study include a necessity that they are mineralogically responsive to changes in pressure and temperature, and that they encompass a wide range of metamorphic grades, in this case from low-grade (greenschist facies) to high-grade (granulite facies) metamorphic mineral assemblages. The sample suite used for this study is that from a well-documented contact-metamorphic setting, Mt Stafford, Arunta Region, Central Australia (Fig. 1). Rocks at Mt Stafford represent a rare example of an extremely well preserved metamorphic field gradient over a distance of approximately 10 km from greenschist through to granulite facies involving metamorphosed sands and shales (Greenfield et al. 1996, 1998; White et al 2003; Rubatto et al 2006). As such, the site represents an almost perfect natural laboratory in which a project of this kind can be undertaken.

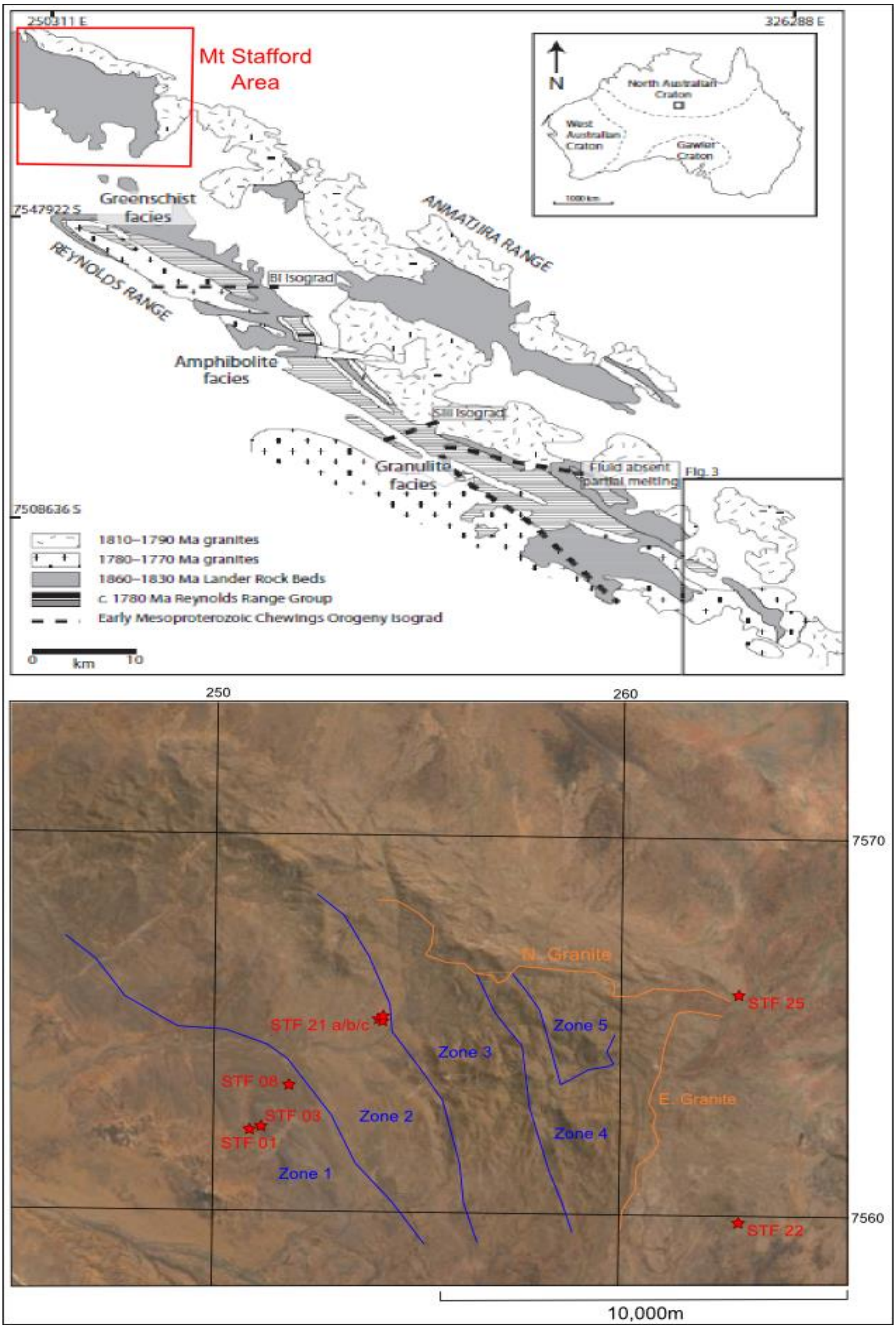

Figure 1: Location map of Mt Stafford (Bottom) including zone boundaries indicating metamorphic grade (derived from Greenfield 1997), as well as a map of the wider Reynolds-Anmatjira Ranges (Taken from Morrissey et al. 2014).

BACKGROUND AND GEOLOGICAL SETTING

Many studies have suggested possible connections between the growth and destruction of monazite with other phosphate or rare-earth element (REE) bearing minerals. It was suggested by Smith and Barreiro (1990) that allanite, another REE bearing mineral, might be a contributor of light REEs (or LREEs) to monazite growth due to its appearance in rocks upon the loss of monazite. Wing *et al.* (2003) substantiated this claim further with evidence presented that monazite disappears at the andalusite isograd, and the growth of new monazite occurs upon the disappearance of allanite at the andalusite/kyanite transition. Apatite and xenotime have similarly been suggested as contributors of Phosphorus (Janots *et al.* 2008; Bonyadi *et al*. 2011). Aluminosilicate minerals, andalusite and kyanite, as well as staurolite, an iron and aluminium bearing silicate mineral, have been inferred to be involved in monazite growth due to observations of monazite appearing or disappearing seemingly in correlation with the appearance or disappearance of these minerals (Kohn and Malloy 2004; Corrie and Kohn, 2008). Analyses of the relationship between garnet and various accessory phases in regard to the element yttrium have indicated that there is a strong chemical relationship between these minerals (Pyle and Spear, 1999). From all these studies, the mineral reactions that have been proposed to explain monazite growth include:

1. $3(REE)PO_4 + 3KAl_3Si_3O_{10}(OH)_2 + 8Ca(Fe,Mg)(CO_3)_2 + 4(Fe, Mg)CO_3 + 9SiO_2 + 2H_2O$
Mnz Ms Ank Sd Qtz

$= 3 (CaREE)(Al_2Fe)Si_3O_{12}(OH) + 3K(Fe,Mg)_3AlSi_3O_{10}(OH)_2 + Ca_5(PO_4)_3(OH) + 20CO_2$
Aln Bi Ap

2. 15(REE)PO4 + 3Fe5Al2Si3O10(OH)8 + 12CaAl2Si2O8 + 12SiO2
Mnz ChlPl Cal Qtz

$= 15 (CaREE)(Al_2Fe)Si_3O_{12}(OH) + 5Ca_5(PO_4)_3(OH) + 2H_2O + 28CO_2$
Aln Ap

3. $3\ (CaREE)(Al_2Fe)Si_3O_{12}(OH) + Ca_5(PO_4)_3(OH) + KAl_3Si_3O_{10}(OH)_2 + 4Al_2SiO_5 + 3SiO_2$
Aln Ap Ms And/Ky Qtz

$= 3(REE)PO_4 + K(Fe,Mg)_3AlSi_3O_{10}(OH)_2 + 8CaAl_2Si_2O_8 + 2H_2O$
Mnz Bi Pl

(Wing *et al.* 2003)

However, despite numerous studies making these and similar inferences, their claims have not been quantified in sufficient detail.

Mt Stafford is located at the NW end of the Anmatjira Ranges in the Palaeo- and Meso-Proterozoic Arunta Region, Northern Territory (Fig. 1). Mt Stafford provides an excellent exposure of progressively metamorphosed rocks that are derived from a common original rock unit (e.g. Greenfield *et al.* 1996; White *et al.* 2003).

The rocks of interest for this study are metamorphosed sedimentary rocks of the Mt Stafford beds that are considered to be part of the more regionally extensive Lander Formation (Claoué-Long *et al,* 2008). The Mt Stafford beds were determined to have a maximum depositional age of c.1858 Ma (Claoué-Long *et al,* 2008).

The Mt Stafford beds are composed of interbedded layers of originally sand-dominated (psammitic) and silt-dominated (pelitic) sediments, which are now metamorphosed.

The Mt Stafford beds were metamorphosed at shallow depths (very high thermal gradient conditions) at c. 1800-1830 Ma (Greenfield *et al.* 1996, 1998; Rubatto *et al,* 2001), which resulted in the formation of a low pressure-high temperature contact aureole varying from greenschist to granulite facies toward the NE (Greenfield et al. 1996, 1998). The area is divided into five zones of progressively increasing metamorphic grade across a distance of just 10 km. (Fig. 1; Greenfield et al. 1996, 1998; White et al, 2003)

Because the rocks of this area progress to higher metamorphic grade rapidly across a relatively short distance, the probability of sedimentary facies changes are likely reduced, and thus the site represents an almost perfect natural laboratory in which a project of this kind can be undertaken.

METHODS

A subset of samples was chosen from among those collected during fieldwork at Mt. Stafford upon which analyses were focussed. These samples were chosen to represent the low, medium and high grades of metamorphism in the study area (Fig. 1), and also to represent both a pelitic and a psammitic example within each grade. This selection was made in order to ensure that the analytical program contained chemical and isotopic data collected from rocks representative of the full range of metamorphic grade and rock type.

Sample Collection – Mt Stafford, Arunta Region NT

Five days of field sampling were undertaken at Mt. Stafford in April 2014. The primary objective of sampling was to collect a suite of pelitic and psammitic rocks from the progressive sequence of metamorphic grades. Samples of intrusive rocks from the north and eastern margins of Mt Stafford were also collected for the purpose of identifying emplacement ages and to thereby establish probable causation and timing of metamorphism. Samples were taken at sufficient size to ensure representative examples of outcrop were recovered. The samples were removed from outcrop using sledge and crack hammers as well as steel chisels at more resistive outcrops.

Sample Preparation – Whole-Rock Analysis

Whole-rock geochemical analysis was undertaken by Wavelength Dispersive x-ray Fluorescence (WD-XRF) spectrometry at the Earth and Environmental Department, Franklin and Marshall College, Lancaster PA, USA.

Major elements were analysed on fused discs prepared using a lithium tetraborate flux. Iron content was determined by wet chemistry method.

Sample Preparation – Thin Sections

Large field samples were reduced to manageable size using a diamond-tungsten carbide rock-saw.

For in-house sections; once cut to appropriate sizes, rock blocks were adhered to glass slides using epoxy resin. The blocks were further cut down to thin slivers less than 5mm in thickness, then ground down to a thickness less than 0.5mm using coarse lapping discs. Polishing was undertaken using sandpaper with a fine grit, then finally with 1 µm diamond paste on a cloth lap to a thickness of 30 µm.

Additional polished thin sections were prepared by Continental Instruments, India.

Sample Preparation – Resin Mounts

Large field samples were reduced to manageable size using a diamond-tungsten carbide rock-saw.

Once reduced to suitable size, samples were crushed in a jaw-crusher, then subsequently milled to a fine grade in a ring mill. Sieving was undertaken to separate a coarseness fraction between 425µm and 70µm.

Crushed and sieved material was panned manually to concentrate dense mineral grains and to eliminate those of lower density. Magnetic separation was then undertaken using a Franz Isodynamic Separator to separate fractions <0.5 A, 0.5-0.8 A and >0.8 A. Density separation in a heavy liquid (Methylene Iodide) column was applied to the 0.5-0.8 A fraction with the dense separate being preserved as that most likely to contain monazite.

Monazite fraction was mounted using epoxycure resin, then polished first using sandpaper with a fine grit, then with 1μm diamond paste on a cloth lap.

Back-scattered Electron Imaging

Thin sections and mounts were carbon coated prior to back-scattered electron (BSE) imaging. BSE Imaging of thin sections was done using a Philips XL30 FEGSEM with EDAX EDS at Adelaide Microscopy (University of Adelaide) to characterise and identify metamorphic mineral assemblages, to identify the microstructural location of monazite and other accessory mineral grains. Mosaics of BSE images were used to establish the abundance of monazite in each sample. Monazite was identified on account of its bright appearance in high contrast images, and then confirmed by use of EDAX. Images were produced with an accelerating voltage of 15kV, spot size of 5, and at a working distance of 10 μm.

Mineral Chemistry – Electron Probe Micro-analysis (Electron Microprobe)

Spot analyses of mineral compositions and elemental x-ray maps of monazite grains were obtained using a Cameca SXFive Electron Microprobe at Adelaide Microscopy (University of Adelaide). Rare-earth element concentrations in accessory minerals (e.g. monazite) were collected using a beam current of 100 nA and an accelerating voltage of

15kV. Qualitative compositional maps of P, Ca, La, Ce, Y, Th, U and Pb in monazite and associated accessory phases were undertaken using a 15kV accelerating voltage and a beam current of 100 nA.

Geochronology – LA–ICP–MS

U–Pb geochronology of monazite was undertaken using a New Wave 213 nm Nd–YAG Laser paired with an Agilent 7500cx ICP–MS at Adelaide Microscopy (University of Adelaide). Analyses were done in a Helium atmosphere, with each spot consisting of 40 s of background measurement preceding 40 s of sample ablation. Prior to each ablation, 10 s is allowed for crystal and beam stabilisation. Beam size used was 20μm, frequency of 5hz and laser intensity of 100%. Data reduction was processed using the GLITTER software (Van Achterbergh *et al.* 2001, Griffin *et al.* 2008). Common lead was not corrected for in age calculations due to the unresolvable signal interference of ^{204}Hg with the ^{204}Pb isotope peak. The spectrometry for ^{204}Pb was monitored for anomalous peaks as a proxy for common Pb, and those detected were eliminated age calculations.

OBSERVATIONS AND RESULTS

Whole rock chemistry

Tabulated whole rock compositional data for those samples used in this study are presented in Table 1, and data for all samples is presented in appendix A, and incorporates major and trace elements. A plot of SiO2 wt% vs, Al2O3 wt% for all samples (Fig. 2), readily allows for distinction between metapelitic and metapsammitic samples, with metapelites having elevated Al2O3 wt% and reduced SiO2 wt%. The sum total of REE + Y + Th+ U in each sample is relatively consistent across rock types and with increasing metamorphic grade (Table 1; Appendix A). However, at the detail of specific elements, Ce for example, is distinctly higher in STF 01 than in other samples, whereas other elements, Th for example, shows less than 10 ppm variation across all primary samples.

Heat production calculated from whole-rock concentrations of K, Th and U at 1780 Ma (based on that being the most common metamorphic age peak in monazite age data, see monazite U-Pb age data) shows no obvious trend.

Of the 41 samples collected in the field, eight samples were selected for further analysis. Of these samples, two (2) are metapelite (a third metapelite, STF 07, of amphibolite-facies grade yielded no >70 µm monazite), four (4) are metapsammite, and two (2) are igneous (representing the eastern and northern granites). The results and discussion to follow are based only on these eight samples.

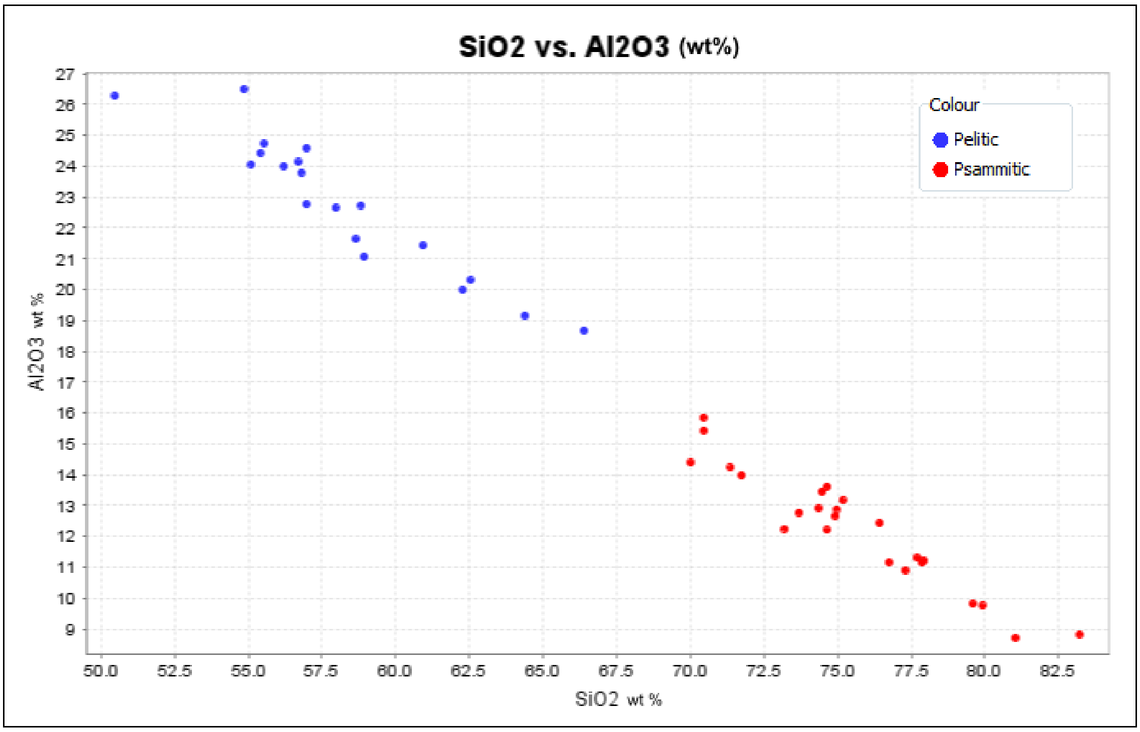

Figure 2: A comparison of SiO^2 wt% concentration vs, Al^2O^3 wt% concentration in whole rock chemistry. The data is divided distinctly into two groups, with the SiO^2 rich group being designated psammitic, and the Al^2O^3 rich group being designated the pelitic.

Specimen	STF 1	STF 3	STF-8	STF-21a	STF-21b	STF-21c	STF-22	STF-25
SiO^2	56.95	74.91	77.94	74.95	76.43	58.82	74.64	77.86
TiO^2	0.58	0.46	0.39	0.51	0.43	0.71	0.31	0.25
Al^2O^3	22.77	12.67	11.23	12.89	12.43	22.74	13.62	11.15
Fe^2O^3T	9.00	4.35	3.79	4.28	4.22	6.79	2.49	2.18
MnO	0.11	0.06	0.11	0.06	0.05	0.09	0.05	0.04
MgO	2.72	1.25	1.05	1.19	1.19	2.07	0.71	0.30
CaO	0.48	0.63	0.78	1.00	0.39	0.33	1.15	0.86
Na^2O	0.40	0.86	0.72	1.08	0.75	1.22	1.94	1.77
K^2O	5.98	3.84	3.12	2.98	3.20	6.23	4.23	4.74
P^2O^5	0.14	0.11	0.10	0.11	0.11	0.12	0.13	0.11
LOI	1.74	0.71	0.85	0.50	0.52	0.60	0.81	0.79
Total	**100.87**	**99.85**	**100.08**	**99.55**	**99.72**	**99.72**	**100.08**	**100.05**
Rb	342.1	235.3	172.2	159.9	154.3	343.0	258.9	550.3
Sr	28	35	192	67	42	75	102	42
Y	23.4	23.1	20.1	20.4	20.0	24.1	9.5	60.1
Zr	85	200	245	234	213	128	196	248
V	76	47	44	45	39	72	30	17
Ni	46	28	25	26	27	46	16	9
Cr	52	38	48	50	34	68	32	11
Nb	17.6	14.5	12.0	15.2	11.4	19.2	10.8	12.6
Ga	32.2	19.9	16.9	19.2	18.6	33.5	20.8	17.9
Cu	38	12	14	6	12	10	12	11
Zn	144	65	63	64	63	111	37	33
Co	27	11	7	9	8	17	1	<1
Ba	804	535	719	504	521	798	462	201
La	41	39	37	39	34	37	29	36
Ce	106	70	87	64	69	78	56	71
U	<0.5	1.8	0.9	1.3	2.6	1.6	<0.5	1.8
Th	39.0	34.0	31.0	29.1	36.6	31.8	25.3	65.1
Sc	15	7	4	8	6	11	3	3
Pb	11	9	15	18	8	19	17	21
Sum total: REE, Y, Th and U	209.9	167.9	176	154.7	162.2	172.5	120.3	234
Heat Production (μW/m^3)	4.35	3.99	3.31	3.27	4.34	4.22	2.95	6.57

Figure 3: Table of whole-rock compositions for samples in this study, oxides displayed in wt% and trace elements displayed in ppm. Sum total of REEs + Y + Th + U and calculated heat production in μW/m^3 for each sample is also displayed.

Petrography

STF 01 – Metapelite, Greenschist facies

Biotite and chlorite are abundant and muscovite is present in small quantities. These minerals have coarseness of (~25 μm), and do not show alignment to any obvious fabric. Quartz and poikiloblastic cordierite (~100 μm) are common, and comprise a large fraction of the mineralogy. Some coarse andalusite is present (~100 μm), which shows embayment at grain margins and minor skeletal growth features. Distinct pleochroic radiation-damage halos are present in biotite, although few of these are cored by minerals of sufficient size to be resolvable at the available magnification.

STF 03 - Metapsammite, Greenschist facies

Biotite and chlorite are abundant and muscovite is present in small quantities. These minerals have coarseness of (~25 μm), and do not show alignment to any obvious fabric. Biotite possesses distinct pleochroic radiation-damage halos. Quartz and plagioclase are common as well as some poikiloblastic andalusite. Coarse poikiloblastic cordierite (300 μm) is present.

STF 08 – Metapsammite, Amphibolite facies

Coarse grained quartz is dominant (100-700 μm), with significant interstitial platy biotite and minor chlorite. Opaque Fe-Ti oxide minerals are common, existing as inclusions within quartz, but more often at grain boundaries of major minerals. Skeletal/poikiloblastic andalusite is found in aggregates associated with micaceous minerals, especially biotite. Distinct pleochroic radiation-damage halos are present in low abundance in biotite grains.

STF 21a – Metapsammite, Granulite facies

Very coarse quartz and k-feldspar (200-500 μm) are dominant. Coarse platy biotite (100-300 μm) is common, and shows no alignment to fabric. Opaque Fe-Ti oxide minerals between (20-200 μm) are common, occurring as inclusions and at grain boundaries, with coarser grains appearing largely at grain boundaries rather than as inclusions. Skeletal aggregates of andalusite are seen commonly in association with biotite. Large pleochroic radiation-damage halos are rarely present in biotite grains, some with visible (10 μm) grains of monazite at their centres.

STF 21b – Metapsammite, Granulite facies

Coarse quartz and k-feldspar (200-500 μm) are dominant, with abundant interstitial aggregates of coarse skeletal andalusite. Coarse platy biotite grains (100 μm) are present, but not common. Finer grained biotite is seen in association with andalusite. Pleochroic radiation-damage halos are commonly present in biotite, most commonly in biotite that is in contact with andalusite. Coarse opaque Fe-Ti oxide minerals are common at grain boundaries, and some small opaque grains occur as inclusions in quartz.

STF 21c – Metapelite, Granulite facies

Very course quartz and k-feldspar (200-1000 μm) are abundant and contain many small inclusions of biotite. Interstitial aggregates of coarse skeletal andalusite are associated with fine to coarse (100-600 μm) grains of biotite. Large pleochroic radiation-damage halos are common in biotite grains. Coarse (100-150 μm) opaque minerals are rarely present at grain boundaries, with occasional grains seen at (200-250 μm) in size.

STF 22 – Eastern Granite

Very coarse (1 mm) quartz and plagioclase comprise the majority of the sample, with plagioclase exhibiting distinctive twinning features. Biotite and muscovite commonly form aggregates throughout. Anhedral and amorphous opaque Fe-Ti oxide minerals are occasionally seen at grain boundaries.

STF 25 – Northern Granite

This very coarse-grained granite displays abundant rapakivi textures at outcrop scale. Coarse to medium grained quartz and plagioclase (200-400 μm) are dominant, with occasional extremely course, potentially porphyritic plagioclase grains (>2-3 mm). Course platy muscovite (~100-300 μm) is present, but not abundant. Anhedral biotite grains (~100 μm) are seen occasionally. Few anhedral and amorphous opaque Fe-Ti oxide grains are seen, although these are rare.

Monazite Composition and monazite element maps

EPMA spots were analysed on eight samples, with a total of 495 analyses being recorded, to characterise the solid-solution composition of monazite as a function of rock-type and metamorphic grade. Elements that were analysed were; Si, P, La, Ce, Ca, O, Zr, Pb, Th, U, Y, Pr, Nd, Sm and Gd. The full dataset is located in appendix B. Low monazite yields (<50 grains) of size >70 μm were obtained by heavy liquid separation for samples STF 01, 03 and 08. High yields (approximately >300 grains) were obtained >70 μm in samples STF 21a,b and c.

STF 01 – Pelite, Greenschist facies

Monazite in this sample exhibits values for La ranging from 9.05 to 13.54 wt%, Ce ranging from 20.95 to 25.89 wt%, Y ranging from 1.39 to 3.59 wt%, Th ranging from 0.05 to 12.69 wt %, U ranging from 0.08 to 0.72 wt%, and Ca ranging from 0.19 to 1.59 wt%. (*n*=17)

STF 03 – Psammite, Greenschist facies

Monazite in this sample exhibits values for La ranging from 9.87 to 14.13 wt%, Ce ranging from 20.26 to 26.93 wt%, Y ranging from 0.01 to 1.55 wt%, Th ranging from 2.11 to 12.17 wt %, U ranging from 0.02 to 0.39 wt%, and Ca ranging from 0.08 to 1.85 wt%. (*n*=18)

STF 08 – Psammite, Amphibolite facies

Monazite in this sample exhibits values for La ranging from 7.15 to 13.25 wt%, Ce ranging from 15.50 to 24.66 wt%, Y ranging from 1.18 to 3.33 wt%, Th ranging from 3.19 to 20.08 wt %, U ranging from 0.10 to 0.71 wt%, and Ca ranging from 0.49 to 3.30 wt%. Monazites in this sample show a relatively even spread of Th concentrations, rather than including any anomalously high outlying data points. (*n*=25)

STF 21a – Psammite, Granulite facies

Monazite in this sample exhibits values for La ranging from 8.36 to 12.96 wt%, Ce ranging from 19.96 to 25.99 wt%, Y ranging from 0.14 to 4.17 wt%, Th ranging from

3.01 to 11.54 wt %, U ranging from 0.05 to 01.54 wt%, and Ca ranging from 0.18 to 1.55 wt%. (*n*=102)

STF 21b – Psammite, Granulite facies

Monazite in this sample exhibits values for La ranging from 7.49 to 13.01 wt%, Ce ranging from 20.33 to 26.37 wt%, Y ranging from 0.35 to 3.18 wt%, Th ranging from 2.63 to 13.29 wt %, U ranging from 0.03 to 1.87 wt%, and Ca ranging from 0.13 to 1.76 wt%. (*n*=85)

STF 21c – Pelite, Granulite facies

Monazite in this sample exhibits values for La ranging from 10.45 to 12.82 wt%, Ce ranging from 21.50 to 24.84 wt%, Y ranging from 1.65 to 3.97 wt%, Th ranging from 2.92 to 6.06 wt %, U ranging from 0.15 to 0.80 wt%, and Ca ranging from 0.63 to 1.15 wt%. (*n*=110)

STF 22 – Eastern Granite

Monazite in this sample exhibits values for La ranging from 8.65 to 11.21 wt%, Ce ranging from 19.73to 23.87 wt%, Y ranging from 1.23 to 3.53 wt%, Th ranging from 5.33 to 7.92 wt %, U ranging from 0.25 to 1.31 wt%, and Ca ranging from 0.87 to 1.33 wt%. (*n*=70)

STF 25 – Northern Granite

Monazite in this sample exhibits values for La ranging from 6.44 to 10.98 wt%, Ce ranging from 17.52 to 25.12 wt%, Y ranging from 1.13 to 4.83 wt%, Th ranging from

6.08 to 14.83 wt %, U ranging from 0.01 to 0.41 wt%, and Ca ranging from 0.26 to 2.17 wt%. (*n*= 60)

BSE images of monazite from sample 21c show monazite grains cored by apatite (Fig. 4). Additionally, elemental maps of monazite grains reveal highly complex internal zoning in several grains (Fig. 5 and 6). Some monazite grains show a distinct rim of lower Th around a higher Th core(s) (Fig, 5 and 6) Inclusions of apatite were identified in several monazite grains in sample 21a (Fig. 5).

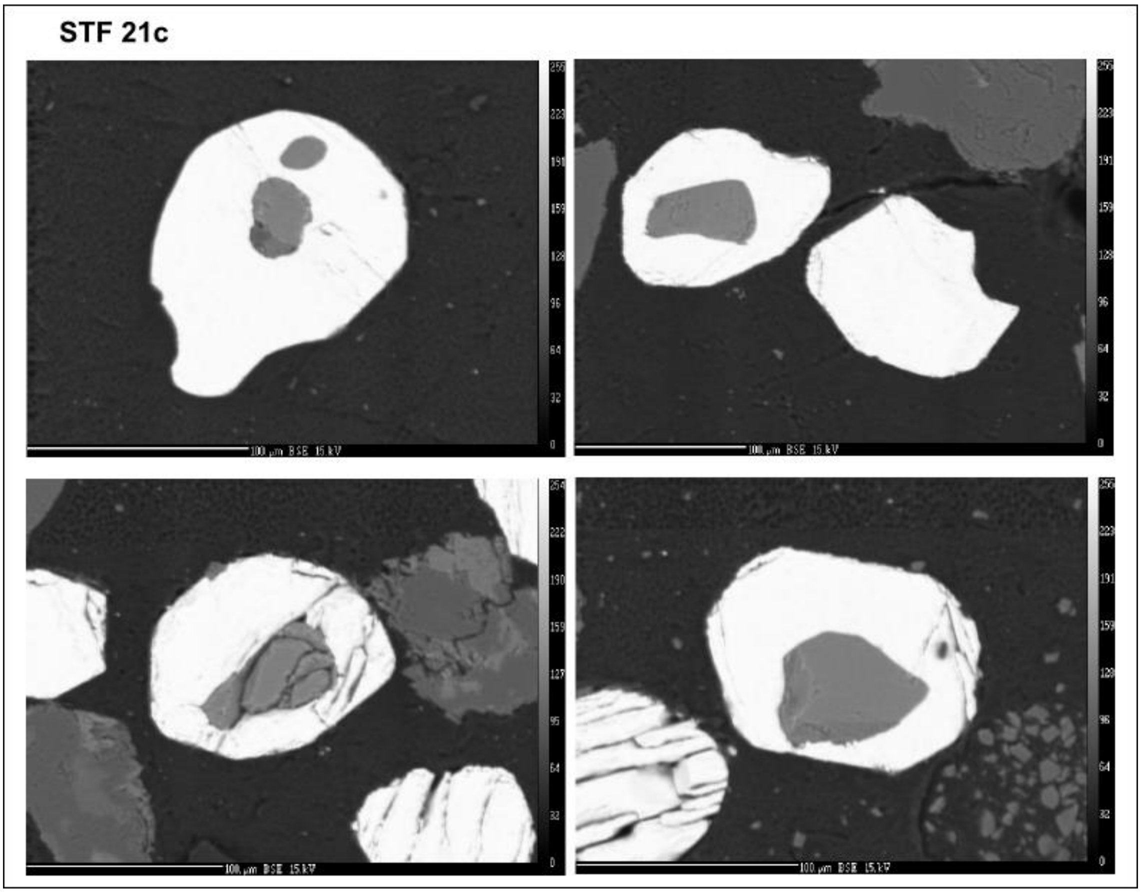

Figure 4: BSE images from sample STF 21c show cores of apatite with monazite overgrowth.

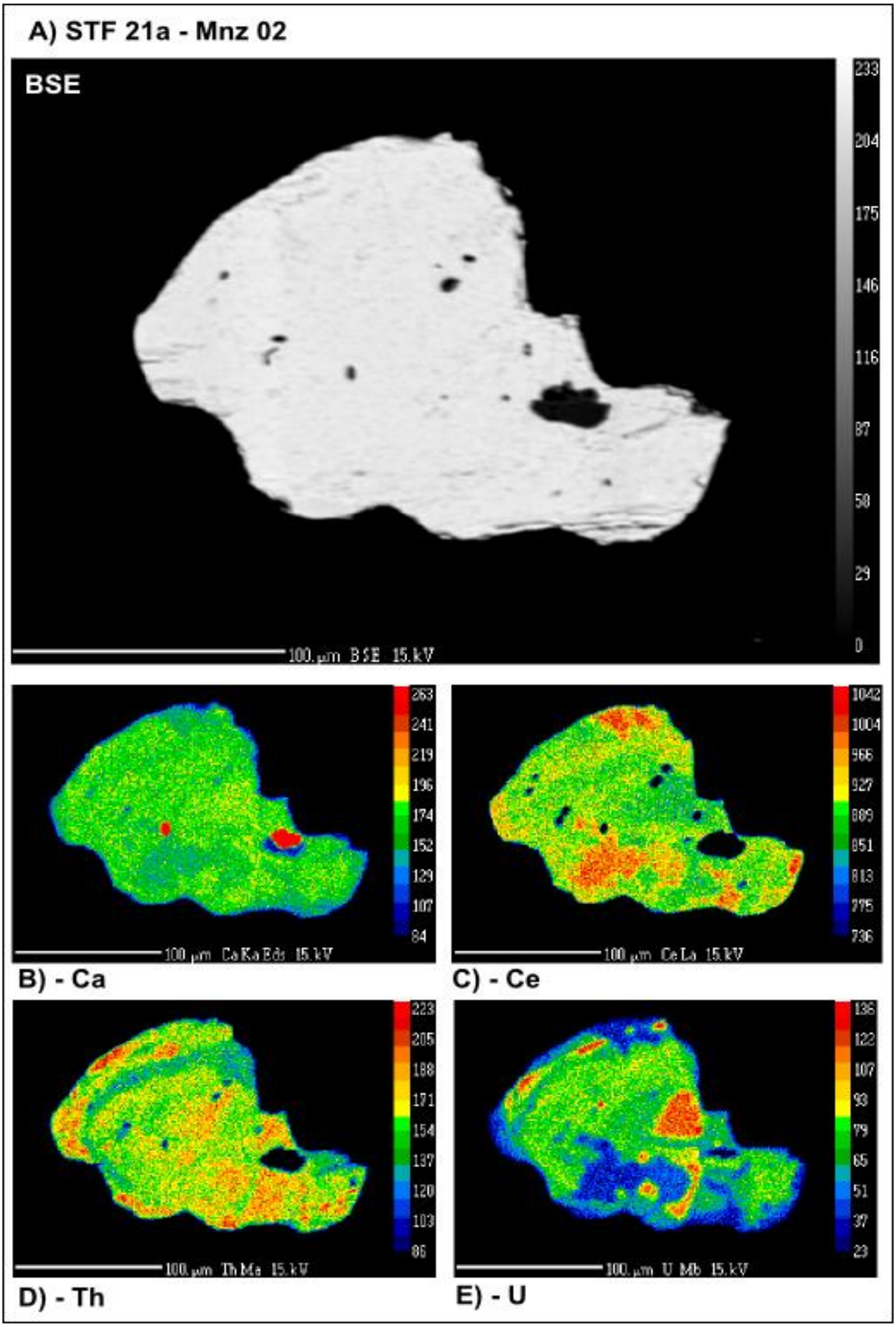

Figure 5: BSE image and elemental maps of monazite grain from granulite facies sample STF 21a. Inclusions of apatite are clearly visible in Ca map (B), rim features are visible in Th map (D).

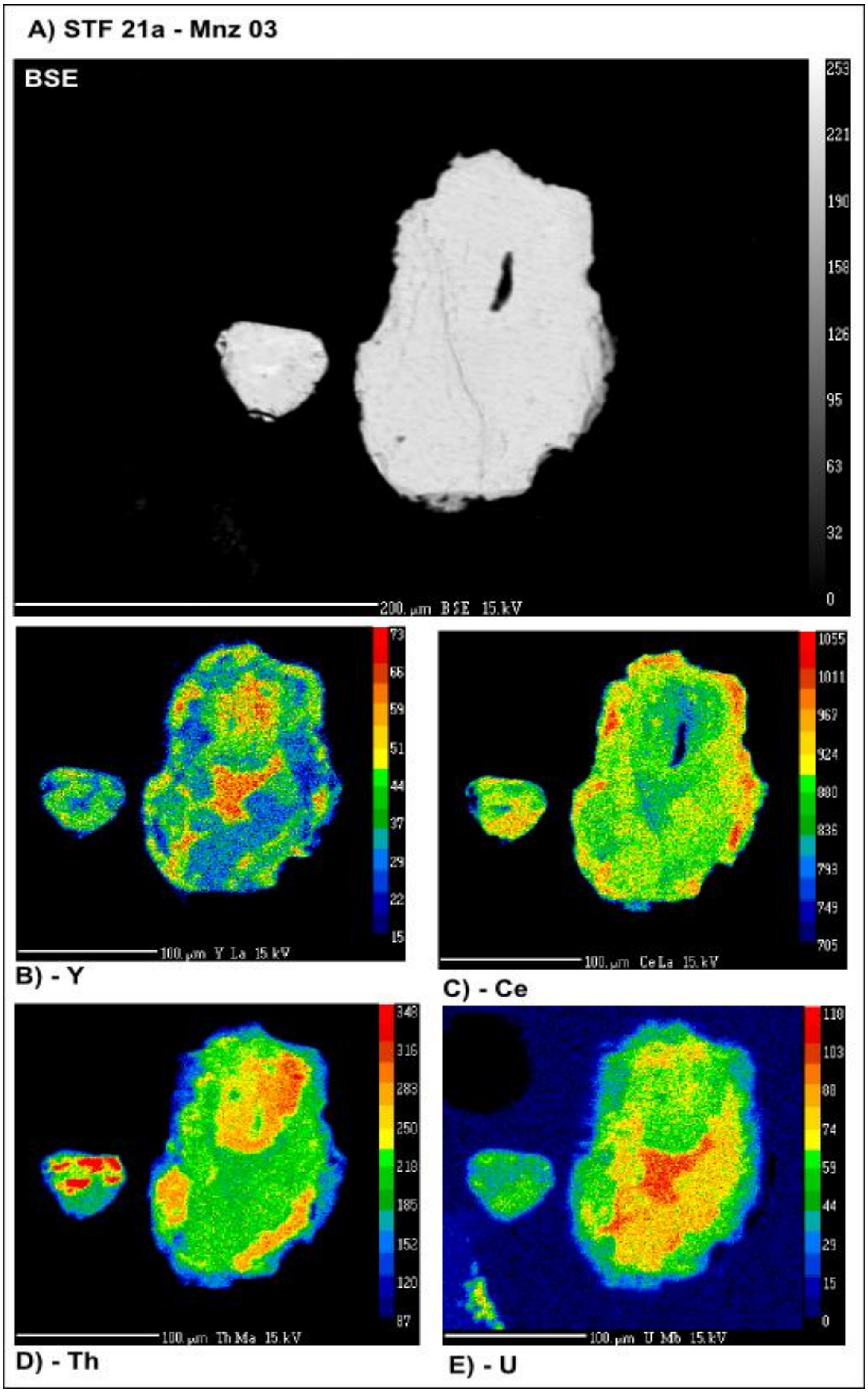

Figure 6: BSE image and elemental maps of monazite grain from granulite facies sample STF 21a. Internal grain complexity and rim features are apparent in each elemental map (B-E)

Apatite and Xenotime Composition

Apatite and xenotime were only found in sample STF 21c, where four apatite cores were found with monazite overgrowth and a single grain of xenotime was analysed. In this sample, apatite exhibits values for P ranging from 19.15 to 19.57 wt%, La ranging from 0.08 to 0.27 wt%, Ce ranging from 0.11 to 0.5 wt%, Y ranging from 0.15 to 0.33 wt%, Th ranging from 0.0 to 0.09 wt %, U ranging from 0.0 to 0.002 wt%, and Ca ranging from 37.16 to 37.86 wt%. (*n*=4)

Xenotime exhibits a value for P of 14.93 wt%, La of 0.13 wt%, Ce of 0.18 wt%, Y of 42.76 wt%, Th of 0.56 wt %, U of 0.66 wt%, and Ca of 0.18 wt%. (*n*=1)

Monazite U–Pb age data

Diagrammatic representation of LA–ICP–MS U–Pb age data for monazite is presented in Fig. 7 and 8, and analytical data are presented in appendix C. Monazite U-Pb age data was collected for the purpose of distinguishing metamorphic monazite grown during the Stafford Event (Greenfield *et al.* 1996, 1998; Rubatto *et al,* 2001), from older detrital monazite.

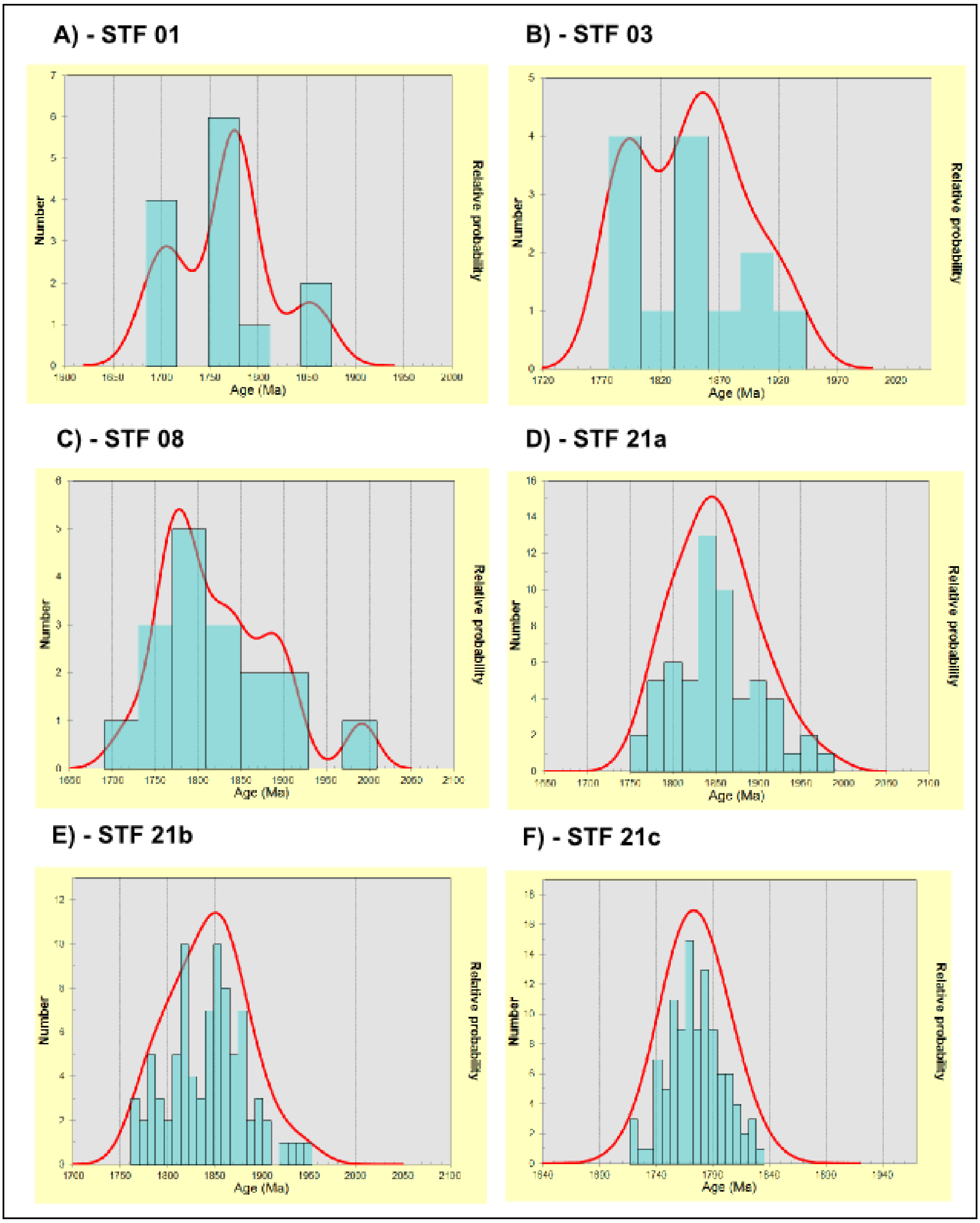

Figure 7: Histograms of monazite ages for each metamorphic sample. Relative probability curves indicate the most probable mean age of monazite grains.

STF 01 – Metapelite, Greenschist facies

Seventeen analyses were conducted on sample STF 01, four of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented a peak probability age of 1775 Ma (Fig. 7, A).

STF 03 – Metapsammite, Greenschist facies

Fifteen analyses were conducted on sample STF 03, two of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). A metamorphic age for this sample could not be calculated as the younger ages are discordant (Fig. 9, A) However, a probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which shows two peak probability ages of 1793.2 Ma and 1855.6 Ma (Fig. 7, B).

STF 08 – Metapsammite, Amphibolite facies

Eighteen analyses were conducted on sample STF 08, one of which was excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). A concordia age of 1804 ± 7.1 Ma (n=4) is estimated as the metamorphic age in this sample but is only on the basis of 4 concordant analyses as all the other analyses are older or slightly discordant (Fig. 9, B). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented three peak probability ages of 1776.8 Ma, 1886.2 Ma and 1991.2 Ma (Fig 7. C).

STF 21a – Metapsammite, Granulite facies

Sixty analyses were conducted on sample STF 21a, two of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). A concordia age of 1801.7 ± 9.2 Ma (n=19) is estimated as the metamorphic age in this sample (Fig. 9, C). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented a peak probability age of 1850 Ma (Fig 7. D).

STF 21b – Metapsammite, Granulite facies

Eighty-five analyses were conducted on sample STF 21b. A concordia age could not be calculated for this sample. However, thirty-two analyses plotted on concordia indicate an age of c. 1800 Ma (n=32) (Fig. 9, D). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented a peak probability age of 1846.12 Ma (Fig 7. E).

STF 21c – Metapelite, Granulite facies

One-hundred and ten analyses were conducted on sample STF 21c, four of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). A concordia age of 1774.4 ±1.9 Ma (n=92) is estimated for this sample (Fig. 9, E). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented a peak probability age of 1769 Ma (Fig 7. F).

STF 22 – Eastern Granite

Seventy analyses were conducted on sample STF 22, three of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). An age of

c. 1775 Ma is estimated based on the concordia age (Fig. 9, F). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented a peak probability age of 1780 Ma (Fig 8. A).

STF 25 – Northern Granite

Sixty analyses were conducted on sample STF 25, seventeen of which were excluded from final age estimates due to appreciable amounts of common lead (^{204}Pb). The data define a spread on concordia, with concordant analyses occurring at *c*. 1610 Ma, *c*. 1700 Ma and *c*. 1770 Ma (Fig. 9, G). A probability density histogram was produced using $^{206}Pb/^{207}Pb$ ages, which presented three peak probability ages of 1616.8 Ma, 1760 Ma and 1914 Ma (Fig 8. B).

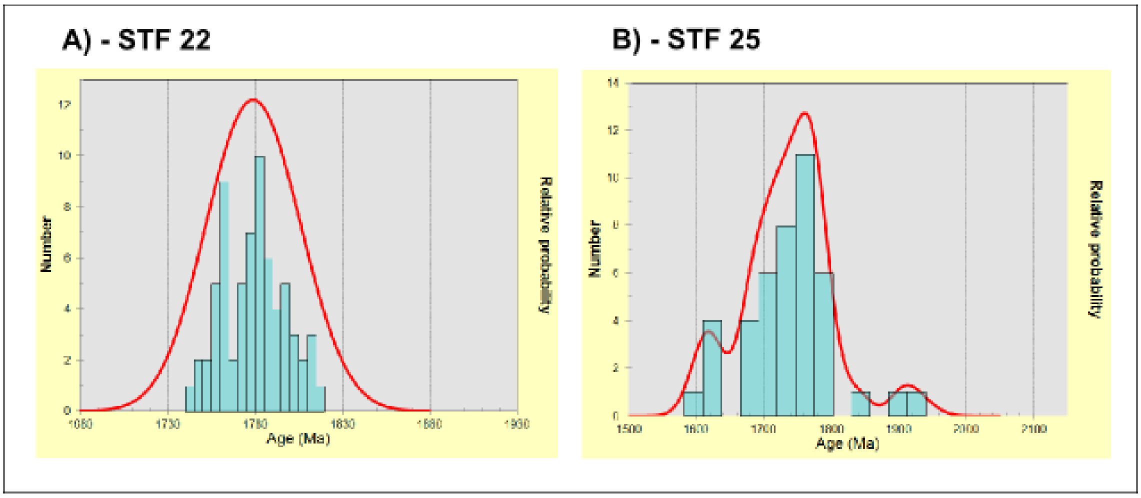

Figure 8: Histograms of monazite ages for each igneous sample. Relative probability curves indicate the most probable mean age of monazite grains.

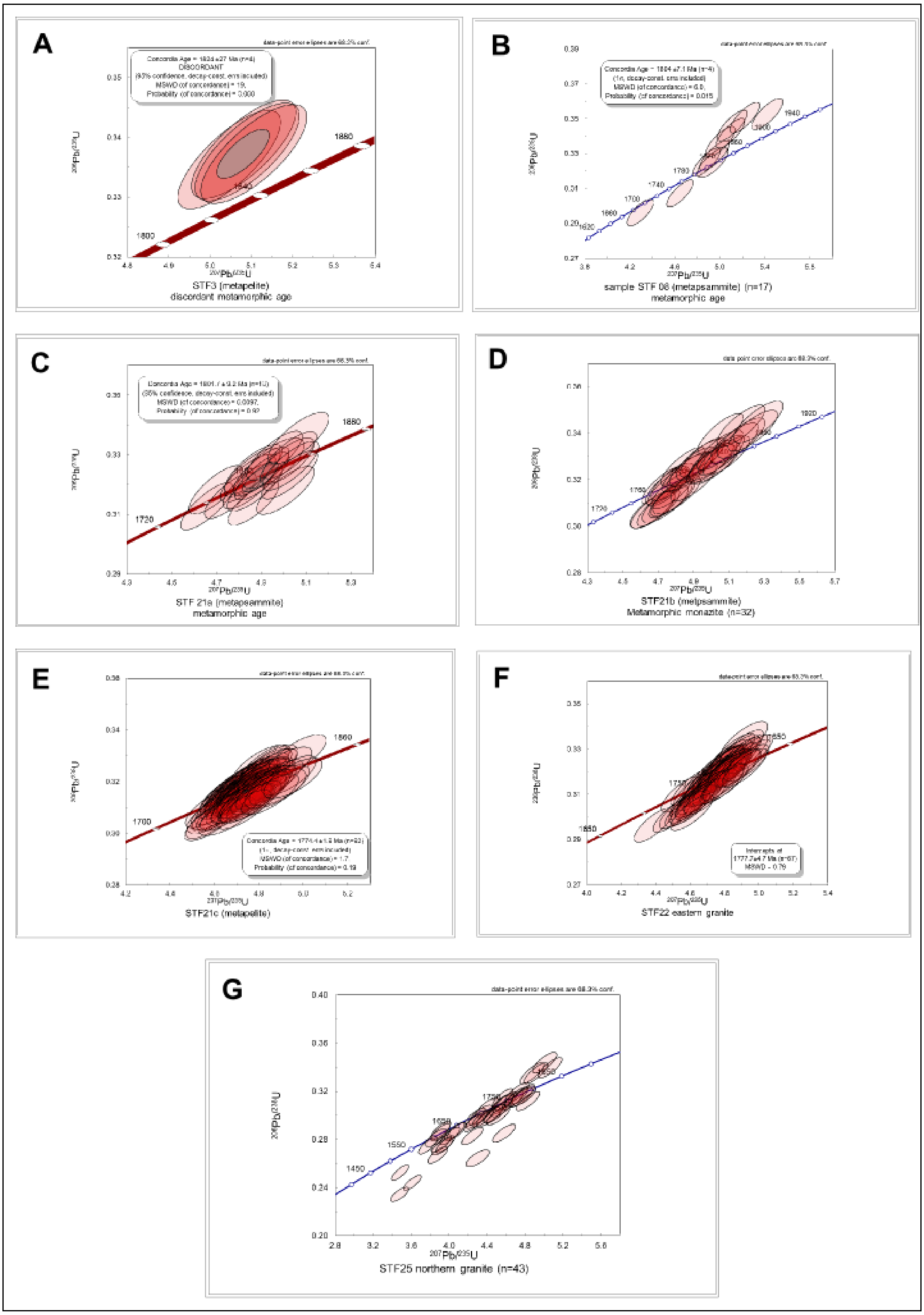

Figure 9: Concordia plots of each sample in this study.

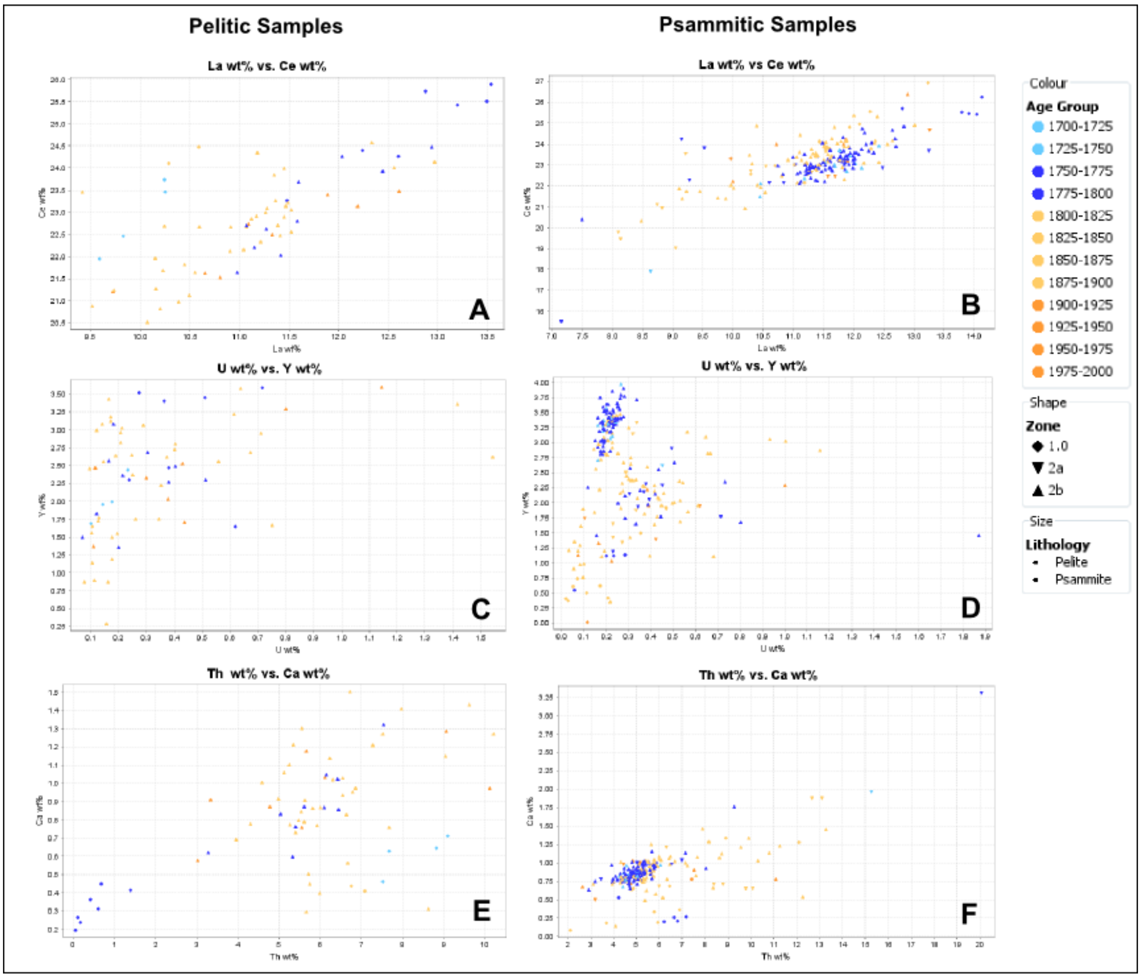

Figure 10: Comparison of wt% concentrations in element pairs; La vs. Ce, U vs Y and Th cs. Ca, in both pelitic samples and psammitic samples.

DISCUSSION

Chemical Characteristics of Detrital vs. Metamorphic Monazite

U-Pb geochronology was obtained for each monazite grain that was analysed for elemental composition using the electron microprobe. Using these datasets together, it is possible to classify grains into age groups that correspond to those grains that formed prior to the deposition of the Mt Stafford beds, which are therefore detrital, and those that formed subsequent to deposition, which therefore must be the result of the metamorphism that these rocks have experienced. The maximum depositional age constraint of c. 1858 Ma for the Mt Stafford beds is based on a study of detrital zircons

(Claoué-Long et al 2008). Therefore, using this constraint on depositional age, the threshold age for metamorphic grains is set here at 1800 Ma. Monazite compositional and age data was plotted comparing numerous elements to detect chemical differences between detrital and metamorphic grains in both pelitic samples and psammitic samples (Fig. 10). The elements used for plots shown here, Fig. 10, to identify differences between detrital and metamorphic monazite were chosen on the basis that of all analysed REEs, these are the ones that showed differences between age groupings in either metapelitic or metapsammitc rocks, or both.

Comparison of La vs. Ce for monazite in pelitic samples (Fig. 10, A) shows no particular trends, with data points from both metamorphic and detrital groups appearing to be scattered. The same comparison in psammitic samples (Fig. 10, B) reveals a relatively tight distribution of composition among metamorphic grains, whereas detrital grains show greater compositional variation. This may reflect a single reaction process being responsible for metamorphic grain growth vs. multiple sources for detrital grains.

Comparison of U vs. Y (Fig. 10, C and D) shows similar results to that above, with monazite in pelitic samples exhibiting compositional scatter, and monazite in psammitic samples exhibiting a distinct compositional cluster among most metamorphic monazite grains and compositionally diverse detrital grains.

A final comparison of Th vs. Ca (Fig. 10, E and F) again exhibits similar features. Monazite in pelitic samples shows significant compositional spread, whereas monazite in psammitic samples shows a tighter compositional cluster for metamorphic grains.

At least for psammitic samples, it seems reasonable that metamorphic monazite has been largely or wholly derived from a single metamorphic event, the *P–T* conditions of which have driven the formation of monazite of a particular composition. However, this is not to say that all metamorphic monazite necessarily grew at the same *P–T* conditions (cf. Kelsey et al. 2008). On the other hand, metamorphic monazite in pelitic samples does not show obvious chemical similarity, perhaps due to additional mineral reaction processes being viable in metapelitic rocks as *P–T* increases, or perhaps due in part to being represented by fewer monazite grains in this study.

Why is monazite more abundant in high-grade samples?

High-grade samples STF 21a, b, c, provided a significantly greater yield of monazite grains upon separation using heavy liquids than low and medium-grade samples. However, whole rock data shows that across all samples there is no major variation in the sum total of elements that form monazite (See Table 1) suggesting that there should be similar abundances of monazite in all samples, regardless of metamorphic grade. The first possibility to consider is that monazite grains in low and medium-grade samples are similarly abundant in these rocks as they are in high-grade samples, but that grains are sufficiently small that they were not captured in the 425μm–70μm fraction during sieving. If this is the case, monazite grains in high-grade samples are coarser grained than those in lower-grade samples, consistent with grain coarsening that typically occurs with increasing metamorphic grade (e.g. Powell 1987) That is, if small grains are recrystallising and/or increasing in size as a result of prograde metamorphism, a larger number of them would become coarse enough to be captured at >70μm. Element maps of large monazite grains from sample 21c show distinct internal complexity including possible rims of metamorphic overgrowth (fig. 3 and 4). These maps of monazite could show evidence that originally detrital grains have served as nuclei for metamorphic monazite to grow on during progressive metamorphism.

A second mechanism by which monazite grains in the size range 425–70µm could become more abundant with grade, is that of melt-loss from high-grade samples. (e.g. Brown 1994). If minerals other than monazite are breaking down and their elements are partitioning into melt, it follows that the total volume of non-monazite minerals diminishes with loss of melt. It has been shown, that there is no requirement that all monazite dissolve into melt by the peak of metamorphism (Kelsey *et al.* 2008; Yakymchuk and Brown 2014), and therefore monazite could potentially become concentrated in the residual granulite facies rock. However, melt loss is not interpreted to have a significant effect on concentrating monazite in the high-grade samples studied here, since the sum total of REE +Y + Th +U (Table 1) in all samples is relatively uniform regardless of metamorphic grade.

A third option, the greater yield of monazite from the high-grade samples may reflect that actual abundance of monazite (detrital + metamorphic) was greater than compared to lower-grade samples. As such, this could reflect differences in protolith composition, including trace element composition. However, whole rock geochemistry and the sum total of REE + Y + Th + U (Table 1), do not support this interpretation. In summary, the first option of grain size coarsening with metamorphic grade is the favoured interpretation for explaining the differences in grain-separate yields from low-medium-grade vs. high-grade samples.

Growth of monazite during progressive metamorphism

The aim of this study has been to determine the mechanisms and chemical contributors to monazite growth during prograde metamorphism. Greater than half (54.6%) of all monazite grains in samples for which age data was obtained were found to be detrital in origin. The large quantity of detrital monazite that must have been present in protolith should therefore be considered as a potential source of monazite-forming elements which might be recrystallised as new monazite during metamorphic processes. Additionally, apatite was identified, although in low abundance, in several low and medium grade samples, as well as being found as inclusions in monazite grains in high-grade samples STF 21a and STF 21c (Fig. 4 and 5). The textural association between apatite and monazite in high-grade samples provides support that apatite may be breaking down to contribute phosphorus as well as LREEs to the growth of monazite. Within uncertainty, the ages of monazite rims on apatite cores in STF 21c are younger than 1800 Ma, and therefore support the notion of apatite's involvement in monazite growth during metamorphism.

Xenotime was only identified in one sample, STF 21c. However, its presence could indicate that more xenotime is present in the lower-grade samples but is contained within the <70 μm fraction and thus was not readily identifiable, using same logic as above for monazite. Nevertheless, the identification of monazite in the Mt Stafford rocks suggests that xenotime could be another source of elements for the growth of metamorphic monazite.

Previous work by Smith and Barreiro (1990), Pyle and Spear (1999), Wing *et al.* (2003), Kohn and Malloy (2004), Corrie and Kohn (2008), has interpreted that major silicate minerals biotite, muscovite, garnet, plagioclase, aluminosilicates (kyanite or sillimanite), and staurolite were involved in monazite-forming reactions in amphibolite-facies schists. Whereas this has not been able to be quantified in this study, the presence of all of these minerals (andalusite is the dominant aluminosilicate in the samples investigated here) in the Mt Stafford rocks means that their role cannot be discounted. The abundance of REEs in silicate minerals is generally held to be low (e.g. Bea, 1994). However, since the abundance of these major silicate minerals is vastly greater than that of monazite, the breakdown of any of these minerals with progressive metamorphism could result in appreciable amounts of REEs being released to contribute, along with apatite, xenotime and detrital monazite, to metamorphic monazite growth.

CONCLUSIONS

This study has investigated the growth of prograde monazite using a sequence of contact-metamorphosed pelites and psammites in order to address the incompletely understood reaction mechanisms that produce metamorphic monazite. The main findings of the study are: 1) that the REE content of the rocks is relatively uniform across metamorphic grades and across rock types; 2) that monazite grain-separate yield increases with metamorphic grade, reflecting coarsening of grains with increasing metamorphic grade; 3) that detrital monazite comprises a significant proportion of the total monazite in the rocks, even at granulite-facies conditions, on the basis of U–Pb age data. This is an excellent demonstration of partial melting not resulting in significant dissolution of monazite; 4) that apatite and xenotime are present in lower-grade samples, and in higher-grade samples apatite occurs as inclusions in monazite; 5) that metamorphic monazite growth is probably dominated (or facilitated) by the breakdown of apatite and xenotime and pre-existing monazite but that pre-existing monazite can act as a nucleation site for new (metamorphic) growth of monazite; and 6) that major silicate minerals may also contribute REEs to metamorphic monazite growth due to their vastly greater abundance over monazite, despite probably having quite low REE concentrations. Overall, the role of pre-existing monazite as a major contributor to metamorphic monazite growth indicates that linking monazite growth to specific points in *P–T* space (as monitored by changes to silicate mineral assemblage) is not straightforward.

ACKNOWLEDGMENTS

My sincerest thanks to:

Supervisors -
Dr. David Kelsey,
Dr. Caroline Forbes,

Hillgrove Resources and The Playford Memorial Trust,

Adelaide Microscopy -
Dr. Benjamin Wade,
Angus Netting
Aoife McFadden,
Ken Neubauer,

Honours Coordinators-
Dr. Ros King,
Dr. Katie Howard,

Honours and Ph.D Students -
Christopher Kemp,
Jade Anderson,
Kieran Meaney.

REFERENCES

ANDERSON, J. R., KELSEY, D. E., HAND, M., COLLINS, W. J., 2013. Conductively driven, high-thermal gradient metamorphism in the Anmatjira Range, Arunta region, central Australia. *Journal of Metamorphic Geology,* vol. **31**, p. 1003-1026

BEA, F., PEREIRA, M. D., STROH, A., 1994. Mineral/leucosome trace-element partitioning in a periluminous migmatite (a laser ablation-ICP-MS study). *Chemical Geology*, vol. **117**, p. 291-312

BONYADI, Z., DAVIDSON, G. J., MEHRABI, B., MEFFRE, S., GHAZBAN, F., 2011. Significance of apatite REE depletion and monazite inclusions in the brecciated Se-Chahun iron oxide-apatite deposit, Bafq district, Iran: Insights from paragenesis and geochemistry. *Chemical Geology*, vol. **281**, p. 253-269

BROWN, M., 1994. The generation, ascent and emplacement of granite magma: the migmatite-to-crustally-derived granite connection in thickened orogens. *Earth-Science Reviews*, vol. **36**, p. 83-130

CLAOUÉ-LONG, J., EDGOOSE, C., WORDEN, K., 2008. A correlation of Aileron Province stratigraphy in central Australia. *Precambrian Research,* vol. **166**, p. 230-245

CORRIE, S. L., KOHN, M. J., 2008. Trace-element distributions in silicates during prograde metamorphic reactions: implications for monazite formation. *Journal of Metamorphic Geology*, vol. **26**, p. 451-464

CUBLEY, J. F., PATTISON, D. R. M., TINKAM, D. K., FANNING, C. M., U-Pb geochronological constraints of the timing of episodic regional metamorphism and rapid high-T exhumation of the Grand Forks complex, British Columbia. *Lithos*, vol. **156-159**, p. 241-267

GEBAUER, D., GRÜNENFELDER, M., 1979. U-Th-Pb dating of minerals. In: Jaeger, E., Hunziker, J. C., *Lectures in Isotope Geology*. Springer, Berlin Heidelberg New York, p. 105-131

GREENFIELD, J. E., CLARKE, G. L., BLAND, M., CLARK, D. J., 1996. *In-situ* migmatite and hybrid diatexite at Mt Stafford, central Australia. *Journal of Metamorphic Geology*, vol. **14**, p. 413-426

GREENFIELD, J. E., CLARKE, G. L., WHITE, R. W., 1998. A sequence of partial melting reactions at Mt Stafford, central Australia. *Journal of Metamorphic Geology*, vol. **16**, p. 363-378

GRIFFIN, W., POWELL, W., PEARSON, N., O'REILLY, S., 2008. GLITTER: data reduction software for laser ablation ICP-MS. *Laser Ablation-ICP-MS in the Earth Sciences*. Mineralogical Association of Canada Short Course Series **40**, p. 204-207

JANOTS, E., BRUNET, F., GOFFÉ, B., POINSSOT, C., BURCHARD, M., CEMIČ, L., 2007. Thermochemistry of monazite-(La) and dissakisite-(La): implications for monazite and allanite stability in metapelites. *Contributions to Mineral Petrology*, vol. **154**, p. 1-14

JANOTS, E., ENGI, M., BERGER, A., ALLAZ, J., SCHWARZ, J. -O, SPANDLER, C., 2008. Prograde metamorphic sequence of REE minerals in politic rocks of the Central Alps: implications for allanite-monazite-xenotime phase relations from 250 to 610 °C. *Journal of Metamorphic Geology*, vol. **26**, p. 509-526

KALI, E., LELOUP, P. H., ARNAUD, N., MAHÉO, G., LIU, D., BOUTONNET, E., VAN DER WOERD, J., LIU, X., LIU-ZENG, J., LI, H., Exhumation history of the deepest central Himalayan rocks, Ama Drime range: Key pressure-temperature-deformation-time constraints on orogenic models. *Tectonics*, vol. **29**, p. 1-31

KELSEY, D. E., POWEL, R., WILSON, C. J. L., STEELE, D. A., 2003. (Th+U)-Pb monazite ages from AL-Mg-rich metapelites, Rauer Group, east Antarctica. *Contributions to Mineral Petrology*, vol. **146**, p. 326-340

KELSEY, D. E., HAND, M., CLARK, C., WILSON, J. L., 2007. On the application of i*n situ* monazite geochronology to constraining *P-T-t* histories in high-temperature (>850 °C) polymetamorphic granulites from Prydz Bay, East Antarctica, *Journal of the Geological Society, London*, vol. **164**, p. 667-683

KELSEY, D. E., CLARK, C., HAND, M., 2008. Thermobarometric modelling of zircon and monazite growth in melt-bearing systems: examples using model metapelitic and metapsammitic granulites. *Journal of Metamorphic Geology*, vol. **26**, p. 199-212

KOHN, M. J., MALLOY, M. A., 2004. Formation of monazite via prograde metamorphic reactions among common silicates: Implications for age determinations. *Geochimica et Cosmochimica Acta*, vol. **68**, p. 101-113

KORHONEN, F. J., SAW, A. K., CLARK, C., BROWN, M., BHATTACHARYA, S., 2011. New constraints on UHT metamorphism in the Eastern Ghats Province through the application of phase equilibria modelling and *in situ* geochronology. *Gondwana Research*, vol. **20**, p. 764-781

MORRISSEY, L. J., HAND, M., RAIMONDO, T., KELSEY, D. E., Long-lived high-T, low-P granulite facies metamorphism in the Arunta Region, central Australia. *Journal of Metamorphic Geology*, vol. **32**, p. 25-47

PARRISH, R. R., 1990. U-Pb dating of monazite and its application to geological problems. *Canadian Journal of Earth Sciences*, vol. **27**, p. 1431-1450

POWELL, R., 1978. Equilibrium thermodynamics in petrology: an introduction, Harper & Row. London, New York. P. 284

PYLE, J. M., SPEAR, F. S., 1999. Yttrium zoning in garnet: Coupling of major and accessory phases during metamorphic reactions. *Geological Materials Research*, vol. **1**, no. 6, p. 01-49

RUBATTO, D., WILLIAMS, I. S., BUICK, I. S., 2001. Zircon and monazite response to prograde metamorphism in the Reynolds Range, central Australia. *Contributions to Mineral Petrology*, vol. **140**, p. 458-468

RUBATTO, D., HERMANN, J., BUICK, I. S., 2006. Temperature and Bulk Composition Control on the Growth of Monazite and Zircon during Low-pressure Anatexis (Mount Stafford, Central Australia). Journal of Petrology, vol. **47**, p. 1973-1996

RUBATTO, D., CHAKRABORTY, S., DASGUPTA, S., 2013. Timescales of crustal melting in the Higher Himalayan Crystallines (Sikkim, Eastern Himalaya) inferred from trace element-constrained monazite and zircon chronology. Contributions to Mineral Petrology, vol**. 165**, p. 349-372

SMITH, H. A., BARREIRO, B., 1990. Monazite U-Pb dating of staurolite grade metamorphism in politic schists. *Contributions to Mineral Petrology*, vol. **105**, p. 602-615

SPEAR, F. S., PYLE, J. M., 2010. Theoretical modelling of monazite growth in a low-Ca metapelite. *Chemical Geology*, vol. **273**, p. 111-119

STEPANOV, A. S., HERMANN, J., RUBATTO, D., RAPP, R. P., 2012. Experimental study of monazite/melt partitioning with implications for the REE, Th and U geochemistry of crustal rocks. Chemical Geology, vol. **300-301**, p. 200-220

VAN ACHTERBERG, E., RYAN, C. G., JACKSON, S. E., GRIFFIN, W. L., 2001. Data reduction software for ICPMS. In: *Laser-ablation-ICPMS in the earth sciences; principles and applications*. Mineralogical Association of Canada, Ottawa, ON, Canada.

WARREN, C. J., GRUJIC, D., KELLETT, D. A., COTTLE, J., JAMIESON, R. A., GHALLEY, K. S., Probing the depths of the India-Asia collision: U-Th-Pb monazite chronology of granulites from NW Bhutan. Tectonics, vol. **30**, p. 1-24

WHITE, R. W., POWELL, R., CLARKE G. L., 2003. Prograde Metamorphic Assemblage Evolution during Partial Melting of Metasedimentary Rocks at Low Pressures: Migmatites from Mt Stafford, Central Australia. *Journal of Petrology*, vol. **44**, p. 1937-1960

WING, B. A., FERRY, J. M., HARRISON, T. M., 2003. Prograde destruction and formation of monazite and allanite during contact and regional metamorphism of pelites: petrology and geochronology. *Contributions to Mineral Petrology*, vol. **145**, p. 228-250

YAKYMCHUK, C., BROWN, M., Behaviour of zircon and monazite during crustal melting. *Journal of the Geological Society, London*, vol. **171**, p. 465-479

APPENDIX A: WHOLE-ROCK GEOCHEMISTRY

Appendix A

Specimen	SiO2	TiO2	Al2O3	Fe2O3T	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Rb	Sr	Y	Zr	V	Ni	Cr	Nb	Ga	Cu	Zn	Co	Ba	La	Ce	U	Th	Sc	Pb	REE+Y+Th+U	Heat Prod.
STF 1	56.95	0.58	22.77	9.00	0.11	2.72	0.48	0.40	5.98	0.14	1.74	**100.87**	342.1	28	23.4	85	76	46	52	17.6	32.2	38	144	27	804	41	106	0.5	39.0	15	11	209.9	4.35
STF-2a	62.52	0.59	20.30	6.59	0.19	2.13	0.29	0.38	5.92	0.09	1.75	**100.75**	340.3	185	26.6	156	84	40	73	16.1	30.7	18	100	18	829	40	90	0.7	26.8	12	16	184.1	3.47
STF-2b	55.39	0.61	24.43	8.06	0.13	2.60	0.34	0.62	6.64	0.13	2.06	**101.01**	380.7	106	34.2	118	92	42	70	16.6	34.2	37	111	17	913	45	108	0.5	33.5	14	17	221.2	4.05
STF 3	74.91	0.46	12.67	4.35	0.06	1.25	0.63	0.86	3.84	0.11	0.71	**99.85**	235.3	35	23.1	200	47	28	38	14.5	19.9	12	65	11	535	39	70	1.8	34.0	7	9	167.9	3.99
STF 4a	83.20	0.32	8.84	1.77	0.06	0.48	0.66	1.05	2.41	0.11	1.11	**100.01**	96.4	57	24.7	335	27	16	25	10.0	12.6	8	27	1	487	46	80	3.2	37.0	2	14	190.9	4.42
STF-5	57.95	0.60	22.65	7.92	0.09	2.38	0.25	0.81	6.15	0.14	0.66	**99.60**	339.1	49	28.2	102	77	45	64	16.1	32.7	21	123	23	911	42	106	0.5	35.1	15	19	211.8	4.08
STF-6	56.21	0.66	24.00	7.59	0.12	2.39	0.32	0.98	6.49	0.13	1.45	**100.34**	368.2	95	29.3	119	89	53	78	17.0	34.5	16	119	22	1002	42	119	1.1	33.7	16	1	225.1	4.25
STF-7	62.28	0.61	19.99	6.05	0.08	1.97	0.30	1.20	6.34	0.14	0.79	**99.75**	280.2	60	28.6	151	65	38	61	15.6	29.1	18	97	16	1326	45	112	1.5	30.3	12	22	217.4	4.09
STF-8	77.94	0.39	11.23	3.79	0.11	1.05	0.78	0.72	3.12	0.10	0.85	**100.08**	172.2	192	20.1	245	44	25	48	12.0	16.9	14	63	7	719	37	87	0.9	31.0	4	15	176.0	3.31
STF-9	54.83	0.64	26.49	6.32	0.09	2.11	0.37	1.44	6.46	0.16	0.89	**99.80**	366.1	42	37.0	101	86	47	72	18.3	41.2	17	89	17	1415	48	140	5.0	33.0	18	13	263.0	5.52
STF-10b	75.16	0.47	13.17	4.48	0.13	1.35	0.71	0.74	3.25	0.11	0.89	**100.46**	161.8	121	24.1	251	60	31	59	13.5	20.2	16	73	11	521	41	84	1.2	33.7	6	13	184.0	3.65
STF-11	71.74	0.56	13.98	5.25	0.08	1.58	0.53	1.03	4.37	0.11	1.01	**100.24**	232.7	167	12.8	184	67	32	76	16.5	22.0	19	89	14	735	28	66	0.5	23.5	9	19	130.8	2.84
STF-12	58.64	0.57	21.63	6.63	0.07	1.95	0.31	1.58	7.22	0.13	1.57	**100.30**	432.0	158	19.1	119	81	41	89	14.9	28.9	24	105	17	1382	38	102	0.5	22.2	12	24	181.8	3.30
STF-13	70.01	0.58	14.39	5.71	0.06	1.60	0.74	1.54	4.38	0.10	1.07	**100.18**	273.9	201	14.1	187	72	35	79	15.7	21.0	18	86	14	926	29	62	0.5	19.5	8	20	125.1	2.53
STF-16a	55.53	0.59	24.73	7.83	0.06	2.03	0.21	1.23	6.62	0.13	0.72	**99.68**	407.7	49	28.5	92	69	38	60	16.7	34.5	41	115	18	1060	42	109	0.5	35.2	13	23	215.2	4.18
STF-16b	64.38	0.58	19.16	6.22	0.09	1.93	0.22	0.90	5.57	0.13	1.30	**100.48**	349.5	94	19.6	169	76	38	68	17.7	28.2	7	93	14	706	35	82	0.5	29.6	8	19	166.7	3.54
STF-17a	74.46	0.47	13.46	4.42	0.06	1.13	0.11	0.46	4.33	0.09	1.08	**100.07**	250.2	90	15.9	235	53	27	64	12.1	20.7	15	69	9	665	37	73	0.6	30.5	5	28	157.0	3.41
STF-17b	70.45	0.60	15.44	5.85	0.07	1.67	0.19	0.51	4.38	0.12	1.07	**100.35**	273.7	80	16.7	200	69	41	81	18.6	24.7	16	80	18	677	31	69	0.5	26.0	10	16	143.2	3.03
STF-18a	60.92	0.52	21.42	4.72	0.07	1.46	0.36	1.59	8.02	0.14	0.47	**99.69**	443.3	68	16.5	95	54	35	67	14.6	28.2	6	102	8	1029	33	76	0.5	22.5	8	36	148.5	3.48
STF-18b	56.69	0.58	24.13	6.50	0.07	2.06	0.19	1.27	7.42	0.12	0.59	**99.62**	408.4	44	28.6	99	65	43	67	13.8	33.7	19	114	17	926	39	89	1.8	32.4	10	34	190.8	4.57
STF-18c dark	66.39	0.62	18.68	8.15	0.08	2.54	0.25	0.54	1.85	0.10	1.42	**100.62**	109.0	49	57.0	221	79	62	88	14.9	32.8	78	92	29	236	37	87	0.5	36.4	13	10	217.9	3.34
STF-18c light	56.96	0.45	24.59	6.86	0.08	2.06	0.21	1.12	6.52	0.13	1.21	**100.19**	379.2	75	33.9	125	79	54	86	16.5	36.8	33	138	20	923	39	95	0.5	30.6	13	33	199.0	3.81
STF-18d	70.43	0.59	15.86	6.17	0.07	1.83	0.22	0.66	3.26	0.13	0.49	**99.71**	167.8	32	28.5	198	53	40	39	16.8	24.9	12	75	19	603	39	80	1.7	42.2	8	17	191.4	4.48
STF-20	79.59	0.44	9.81	3.61	0.06	1.13	0.96	1.41	2.69	0.11	0.73	**100.54**	140.3	96	18.7	349	45	26	56	13.3	17.1	8	47	6	517	38	83	1.3	38.8	4	14	179.8	3.97
STF-21a	74.95	0.51	12.89	4.28	0.06	1.19	1.00	1.08	2.98	0.11	0.50	**99.55**	159.9	67	20.4	234	45	26	50	15.2	19.2	6	64	9	504	39	64	1.3	29.1	8	18	153.8	3.27
STF-21b	76.43	0.43	12.43	4.22	0.05	1.19	0.39	0.75	3.20	0.11	0.52	**99.72**	154.3	42	20.0	213	39	27	34	11.4	18.6	12	63	8	521	34	69	2.6	36.6	6	8	162.2	4.34
STF-21c	58.82	0.71	22.74	6.79	0.09	2.07	0.33	1.22	6.23	0.12	0.60	**99.72**	343.0	75	24.1	128	72	46	68	19.2	33.5	10	111	17	798	37	78	1.6	31.8	11	19	172.5	4.22
STF-22	74.64	0.31	13.62	2.49	0.05	0.71	1.15	1.94	4.23	0.13	0.81	**100.08**	258.9	102	9.5	196	30	16	32	10.8	20.8	12	37	1	462	29	56	0.5	25.3	3	17	120.3	2.95
STF-24	73.20	0.38	12.25	4.10	0.08	1.41	2.59	2.06	3.52	0.10	0.86	**100.55**	208.3	107	18.3	277	46	24	40	9.8	17.4	11	45	8	412	32	76	0.5	25.2	7	6	152.0	2.80
STF-25	77.86	0.25	11.15	2.18	0.04	0.30	0.86	1.77	4.74	0.11	0.79	**100.05**	550.3	42	60.1	248	17	9	11	12.6	17.9	11	33	<1	201	36	71	1.8	65.1	3	21	234.0	6.57
STF-26a	73.69	0.55	12.78	6.61	0.11	1.83	0.47	0.59	2.36	0.10	1.25	**100.34**	119.4	57	23.5	260	64	38	81	13.8	20.1	7	134	21	516	40	83	0.5	25.3	17	14	172.3	2.59
STF-26b	74.34	0.57	12.91	6.02	0.09	1.64	1.01	0.94	1.93	0.10	0.09	**99.64**	91.5	32	25.3	206	54	33	49	12.1	20.5	6	117	18	472	39	73	1.3	29.2	12	17	167.8	3.08
STF-27	74.63	0.54	12.20	4.23	0.08	1.25	0.93	1.39	3.22	0.11	1.63	**100.21**	137.1	210	19.1	340	57	29	69	12.7	18.3	8	64	9	903	39	79	1.6	31.9	5	11	170.6	3.64
STF-28 dark	50.47	1.31	26.27	13.34	0.09	4.12	0.11	0.12	0.57	0.06	1.93	**98.39**	58.7	19	31.7	178	178	71	147	32.2	42.0	13	137	53	62	50	111	1.2	48.0	23	<1	241.9	4.23
STF-28 light	56.79	0.60	23.80	7.48	0.05	2.26	0.26	1.05	6.94	0.12	1.38	**100.73**	322.8	138	20.3	126	88	55	95	14.1	30.8	8	115	21	1378	46	120	0.5	30.6	11	27	217.4	3.89
STF-29	79.91	0.43	9.75	3.21	0.08	0.84	1.44	1.46	2.03	0.09	0.65	**99.89**	75.5	196	18.9	326	39	20	61	10.2	15.3	7	41	4	648	43	79	0.5	23.7	4	15	165.1	2.40
STF 30	55.10	0.59	24.06	7.30	0.62	2.36	1.06	2.83	4.67	0.13	2.23	**100.95**	224.1	216	38.3	84	76	49	60	16.7	32.7	7	160	23	987	46	101	1.1	34.0	10	32	220.4	3.91
STF 31a	77.69	0.38	11.30	3.06	0.06	0.92	0.62	1.48	3.36	0.10	1.34	**100.31**	182.4	93	21.5	222	44	20	43	13.0	17.6	14	51	4	774	35	63	4.9	34.0	6	17	158.4	4.96
STF 31b	71.37	0.56	14.23	5.03	0.06	1.64	0.15	0.24	4.88	0.11	2.44	**100.71**	330.2	17	37.5	273	62	31	43	15.7	23.9	17	87	8	700	55	104	2.4	48.0	9	14	246.9	5.48
STF 31af	77.28	0.38	10.90	3.21	0.24	0.95	0.89	1.84	3.12	0.11	1.17	**100.09**	166.7	141	27.2	229	42	19	35	12.0	17.5	13	51	3	1118	38	82	5.2	33.0	5	16	185.4	4.93
STF-32	81.02	0.34	8.72	1.86	0.03	0.51	0.27	0.78	5.31	0.11	0.82	**99.77**	279.8	65	9.9	340	30	15	46	11.8	10.2	10	15	<1	849	30	100	0.9	36.9	2	3	177.7	4.19
STF-33	76.73	0.37	11.17	4.20	0.04	1.32	0.44	0.98	2.97	0.09	1.82	**100.13**	199.0	85	22.2	224	43	29	54	12.4	17.2	9	73	9	567	43	75	0.7	27.2	5	25	168.1	2.92
STF-33p	58.92	0.54	21.06	7.13	0.07	1.89	0.10	0.44	6.04	0.10	3.94	**100.23**	409.0	61	13.6	117	81	55	78	15.7	32.2	34	118	19	884	26	163	0.8	33.6	15	15	237.0	4.05

APPENDIX B: ELECTRON MICROPROBE ANALYSES

Data ID	Sample #	Run #	Grain ID	Zone	Lithology	Min. ID	Pb206/207	Source	Age Group	Si_wt%	P_wt%	La_wt%	Ce_wt%	Ca_wt%	O_wt%	Zr_wt%	Pb_wt%	Th _wt%	U_wt%	Y_wt%	Pr_wt%
1	STF 01	1	1	1	Pelite	Monazite	1700.5	Metam.	1700-1725	0.768409	13.3286	9.82593	22.4645	0.71246	28.0202	0.071805	0.58101	9.0964	0.177514	1.99711	2.16082
2	STF 01	1	2	1	Pelite	Monazite	1709.1	Metam.	1700-1725	0.754252	13.2444	10.2429	23.7379	0.458798	27.8715	0.096622	0.463289	7.51721	0.100501	1.69042	2.24633
3	STF 01	1	3	1	Pelite	Monazite	1779.7	Metam.	1775-1800	0.097704	14.6024	13.1998	25.4266	0.262544	28.9998	0.095936	0.068105	0.109414	0.273118	3.51723	2.26971
4	STF 01	1	4	1	Pelite	Monazite	0.1	Unkn.	0	0.861624	13.2862	9.08406	21.0868	0.863955	28.1178	0.081944	0.787585	10.5103	0.275804	2.64914	2.08685
5	STF 01	1	5	1	Pelite	Monazite	0.1	Unkn.	0	0.835866	13.2554	10.1742	23.4019	1.59862	28.2125	0.066511	0.376853	7.86589	0.084976	1.39014	2.18986
6	STF 01	1	6	1	Pelite	Monazite	1853.9	Detri.	1850-1875	0.818005	13.1736	10.5933	24.4783	0.409259	27.9212	0.084701	0.445545	7.08522	0.129376	1.76751	2.1933
7	STF 01	1	7	1	Pelite	Monazite	1764.3	Metam.	1750-1775	0.274094	14.4351	12.2425	24.4024	0.360739	28.8079	0.073979	0.213225	0.410958	0.715308	3.58925	2.2818
8	STF 01	1	8	1	Pelite	Monazite	1775.9	Metam.	1775-1800	0.186707	14.5446	12.8753	25.7407	0.31186	28.7833	0.093754	0.202296	0.605238	0.61947	1.64612	2.32067
9	STF 01	2	1	1	Pelite	Monazite	1700.5	Metam.	1700-1725	0.74275	13.4582	9.58809	21.9517	0.6462	28.1276	0.085187	0.596918	8.82453	0.231822	2.43583	2.18376
10	STF 01	2	2	1	Pelite	Monazite	1709.1	Metam.	1700-1725	0.695562	13.3473	10.2517	23.4614	0.629256	27.9573	0.083359	0.503682	7.67649	0.143231	1.95617	2.11948
11	STF 01	2	3	1	Pelite	Monazite	1779.7	Metam.	1775-1800	0.514461	13.9578	13.4919	25.5148	0.235583	28.3033	0.07504	0.0779	0.16719	0.381335	2.46521	2.19106
12	STF 01	2	4	1	Pelite	Monazite	0.1	Unkn.	0	1.11141	13.1415	10.3497	23.3146	0.471181	28.3667	0.634058	0.171391	7.48813	0.115661	2.65885	2.14352
13	STF 01	2	5	1	Pelite	Monazite	0.1	Unkn.	0	1.35079	12.4019	9.04608	20.9462	0.64167	27.4646	0.08468	0.923786	12.6933	0.387548	1.77047	2.06489
14	STF 01	2	6	1	Pelite	Monazite	1853.9	Detri.	1850-1875	0.674424	13.2954	10.2874	24.1008	0.437748	27.8405	0.075699	0.440302	6.7484	0.106396	1.64902	2.25668
15	STF 01	2	7	1	Pelite	Monazite	1764.3	Metam.	1750-1775	0.108563	14.1127	12.6031	24.2713	0.413121	28.2815	0.074558	0.17339	1.39556	0.363631	3.40256	2.19015
16	STF 01	2	8	1	Pelite	Monazite	1775.9	Metam.	1775-1800	0.262006	13.2331	11.4791	23.2621	0.448588	26.9222	0.067994	0.167346	0.68346	0.509155	3.45471	2.20742
17	STF 01	2	9	1	Pelite	Monazite	1797.3	Metam.	1775-1800	0.18754	14.4954	13.5378	25.892	0.194362	28.757	0.100401	0.032056	0.05465	0.237709	2.29675	2.39957
18	STF 03	1	1	1	Psammite	Monazite	1876.7	Detri.	1875-1900	0.338516	13.7394	11.4383	24.0917	0.651525	27.8325	0.087207	0.397236	4.88813	0.208106	0.416442	2.41674
19	STF 03	1	2	1	Psammite	Monazite	1790.6	Metam.	1775-1800	0.979167	13.0451	14.0449	25.4121	0.255245	27.8042	0.073177	0.549655	6.62894	0.283281	1.12056	2.05306
20	STF 03	1	3	1	Psammite	Monazite	1858.8	Detri.	1850-1875	0.552501	13.6496	11.5259	23.7443	0.68077	28.0093	0.09273	0.460037	6.44919	0.071027	0.740255	2.21466
21	STF 03	1	4	1	Psammite	Monazite	1844.3	Detri.	1825-1850	1.46684	12.3946	10.6986	22.9664	0.365619	27.0696	0.088097	0.539862	6.88894	0.172356	0.621637	2.19607
22	STF 03	1	5	1	Psammite	Monazite	1850.8	Detri.	1850-1875	0.650889	13.6056	11.9311	24.8047	0.333317	28.1435	0.09385	0.449548	5.79018	0.11315	0.500011	2.25525
23	STF 03	1	6	1	Psammite	Monazite	1822.4	Detri.	1800-1825	0.271152	14.1986	13.2337	26.9251	0.082939	28.4664	0.099564	0.094151	2.11414	0.019245	0.407823	2.4314
24	STF 03	1	7	1	Psammite	Monazite	1786.2	Metam.	1775-1800	0.950459	13.0488	13.916	25.4753	0.203342	27.84	0.075507	0.530462	6.80358	0.233682	1.11711	2.08472
25	STF 03	1	8	1	Psammite	Monazite	1782.4	Metam.	1775-1800	0.898464	13.2963	14.1272	26.2597	0.196324	28.1613	0.070369	0.47312	6.22453	0.201056	1.11803	2.09294
26	STF 03	1	9	1	Psammite	Monazite	1799.5	Metam.	1775-1800	1.0025	12.9426	13.793	25.5167	0.262346	27.7513	0.086134	0.618373	7.17651	0.284874	1.1373	2.00285
27	STF 03	1	10	1	Psammite	Monazite	0.1	Unkn.	0	0.547644	13.5662	9.87199	20.2638	1.85001	28.271	0.076521	1.0225	12.1676	0.395511	1.55348	1.7779
28	STF 03	1	11	1	Psammite	Monazite	1894.2	Detri.	1875-1900	0.674891	13.1397	12.1035	24.9558	0.189235	27.3979	0.076919	0.327445	5.94411	0.028455	0.366685	2.30914
29	STF 03	1	12	1	Psammite	Monazite	1850.8	Detri.	1850-1875	0.569218	12.8751	10.2999	22.566	1.33278	27.059	0.141768	0.593215	8.89946	0.069614	0.740242	2.01856
30	STF 03	2	1	1	Psammite	Monazite	1876.7	Detri.	1875-1900	0.397944	13.798	12.2743	25.5616	0.177374	27.9983	0.097367	0.211044	3.70412	0.050283	0.602179	2.3086
31	STF 03	2	2	1	Psammite	Monazite	1844.3	Detri.	1825-1850	0.686	13.4145	11.185	22.1555	1.27635	28.1195	0.079849	0.948207	12.1034	0.354402	1.49526	1.84508
32	STF 03	2	3	1	Psammite	Monazite	1786.2	Metam.	1775-1800	0.3911	13.6082	12.8072	25.7016	0.525927	27.9124	0.09456	0.392391	4.21797	0.058407	0.540064	2.20987
34	STF 03	3	2	1	Psammite	Monazite	0.1	Unkn.	0	0.261693	12.997	11.4512	24.8791	0.571883	26.2466	0.068389	0.684659	5.18365	0.094283	0.150409	1.85917
35	STF 03	3	3	1	Psammite	Monazite	1928.2	Detri.	1925-1950	0.475306	13.4006	9.95903	23.293	0.77246	27.2494	0.091317	0.602213	7.40984	0.11674	0.013446	2.22507
36	STF 08	1	1	2a	Psammite	Monazite	1783.4	Metam.	1775-1800	0.293212	13.4933	10.8456	22.1525	0.774294	27.1041	0.091008	0.372083	3.44794	0.305172	2.1506	2.21176
40	STF 08	1	5	2a	Psammite	Monazite	1841.9	Detri.	1825-1850	0.910065	13.1922	8.81951	20.9429	0.651417	28.0144	0.06459	0.824088	9.77608	0.318278	3.13975	2.16485
42	STF 08	1	7	2a	Psammite	Monazite	1881.2	Detri.	1875-1900	0.475419	13.8144	8.1359	19.4704	1.87317	28.2995	0.07673	1.09168	12.6511	0.468883	1.89789	1.96059
43	STF 08	1	8	2a	Psammite	Monazite	1796.7	Metam.	1775-1800	0.344494	14.0716	12.477	22.8751	0.989754	28.4772	0.09368	0.518135	5.85475	0.376552	2.3098	1.96178
44	STF 08	1	9	2a	Psammite	Monazite	0.1	Unkn.	0	0.733217	13.3249	8.34178	17.1263	2.2411	28.0661	0.078409	1.37956	16.0724	0.596117	2.45327	1.6055
45	STF 08	1	10	2a	Psammite	Monazite	1991.8	Detri.	1975-2000	0.160812	13.9248	13.2572	24.6601	0.496242	27.6814	0.064794	0.243703	3.19671	0.102496	1.74403	2.04408
46	STF 08	1	11	2a	Psammite	Monazite	1718.1	Metam.	1700-1725	0.722901	14.1277	8.63472	17.8955	1.96561	29.1098	0.092348	1.21638	15.2612	0.451748	2.62013	1.61897
48	STF 08	1	13	2a	Psammite	Monazite	1752.8	Metam.	1750-1775	0.252295	14.2633	9.27244	22.2734	0.722831	28.3599	0.072493	0.402935	4.35569	0.341385	1.93366	2.46374
49	STF 08	1	14	2a	Psammite	Monazite	1788.3	Metam.	1775-1800	1.54942	13.1063	10.5996	22.1276	1.03195	28.3747	0.075166	0.520697	6.98372	0.368341	2.1861	2.07018
50	STF 08	1	15	2a	Psammite	Monazite	1844.2	Detri.	1825-1850	0.721282	13.6001	10.2953	22.738	0.706682	28.2072	0.081763	0.633674	8.3769	0.229769	1.65103	2.11095
51	STF 08	2	1	2a	Psammite	Monazite	1783.4	Metam.	1775-1800	0.356605	14.2087	11.0343	22.9934	0.979109	28.9085	0.067099	0.606714	6.53553	0.493626	2.90081	2.09253
54	STF 08	2	4	2a	Psammite	Monazite	1826.1	Detri.	1825-1850	0.461706	11.0775	11.3063	22.6535	0.675409	24.2649	0.058449	0.481123	5.99157	0.231374	1.41764	2.1021
55	STF 08	2	5	2a	Psammite	Monazite	1841.9	Detri.	1825-1850	0.934328	13.1777	8.7373	21.1258	0.651852	28.1074	0.083298	0.873104	10.0903	0.336116	3.33701	2.06266
56	STF 08	2	6	2a	Psammite	Monazite	1907.9	Detri.	1900-1925	0.179622	13.9416	11.5768	22.4488	0.995184	27.9248	0.104308	0.485156	5.16692	0.422341	1.38788	2.1209
57	STF 08	2	7	2a	Psammite	Monazite	1881.2	Detri.	1875-1900	0.585719	13.7846	8.10277	19.7818	1.87663	28.5155	0.080598	1.09193	13.1076	0.466277	1.90556	1.94412
58	STF 08	2	8	2a	Psammite	Monazite	1796.7	Metam.	1775-1800	0.269241	14.1989	13.2555	23.6848	0.993717	28.6236	0.096234	0.48486	5.03869	0.451283	2.28676	1.93668
59	STF 08	2	9	2a	Psammite	Monazite	0.1	Unkn.	0	0.760242	13.4557	7.92466	16.7867	2.31263	28.4208	0.061176	1.50706	17.1843	0.613215	2.72227	1.58729
60	STF 08	2	10	2a	Psammite	Monazite	1991.8	Detri.	1975-2000	0.115733	12.9918	11.6895	22.4551	0.981392	26.4136	0.056364	0.392829	4.43351	0.618686	1.94787	1.87881
61	STF 08	2	11	2a	Psammite	Th-Si Min.	1718.1	Unkn.	0	4.66236	7.49925	4.11908	8.35915	1.73892	24.8753	0.087638	5.23028	29.5857	7.86172	2.40632	0.676424
63	STF 08	2	13	2a	Psammite	Monazite	1752.8	Metam.	1750-1775	0.228234	14.121	9.52724	23.8159	0.850998	28.5535	0.093122	0.446979	4.85844	0.393213	2.04767	2.46269
64	STF 08	2	14	2a	Psammite	Monazite	1788.3	Metam.	1775-1800	0.422781	13.5813	7.15155	15.5085	3.3005	28.1903	0.078555	1.67321	20.0801	0.714231	1.77173	1.38981
65	STF 08	2	15	2a	Psammite	Monazite	1844.2	Detri.	1825-1850	0.753377	13.5412	10.5384	22.9433	0.703947	28.1821	0.093749	0.722886	8.77239	0.272663	1.33701	2.14778
66	STF 08	2	16	2a	Psammite	Monazite	1863.9	Detri.	1850-1875	0.331319	13.0538	9.0524	19.0218	1.20824	26.1258	0.068694	0.493635	6.29246	0.286897	2.49981	1.90205
67	STF 08	2	17	2a	Psammite	Monazite	1764	Metam.	1750-1775	0.292637	14.3658	9.1459	24.2282	0.750933	28.6866	0.0958	0.318644	3.99079	0.230234	1.1821	2.46461
68	STF 08	2	18	2a	Psammite	Monazite	1805.5	Detri.	1800-1825	0.259072	13.8081	9.21646	23.5377	0.797615	27.9068	0.096158	0.398355	4.35504	0.331948	1.87792	2.42121
70	STF 21a	1	2	2b	Pelite	Monazite	1848.5	Detri.	1850-1875	0.136994	14.0093	10.9045	22.1221	1.06069	28.2761	0.05382	0.587064	5.12148	0.637749	3.57778	2.04291
71	STF 21a	1	3	2b	Pelite	Monazite	1952.4	Detri.	1950-1975	0.249968	14.0763	11.891	23.4028	0.758679	28.4422	0.067502	0.417515	5.54929	0.117081	2.46963	2.1818
72	STF 21a	1	4	2b	Pelite	Monazite	1899.8	Detri.	1875-1900	0.17236	14.2036	10.0742	20.5123	1.50186	28.5688	0.078158	1.02987	6.715	1.41684	3.36085	1.94567
73	STF 21a	1	5	2b	Pelite	Monazite	1930.2	Detri.	1925-1950	0.469766	13.7163	10.6548	21.6224	1.28796	28.2338	0.065692	0.847826	9.06878	0.435467	1.71049	1.92538
74	STF 21a	1	6	2b	Pelite	Monazite	1926	Detri.	1925-1950	0.217337	13.6076	12.1889	23.1374	0.872155	27.7074	0.062941	0.468714	4.76817	0.298833	2.32941	1.96528
75	STF 21a	1	7	2b	Pelite	Monazite	1792.6	Metam.	1775-1800	0.338527	14.1397	12.0335	24.2726	0.597262	28.535	0.087518	0.375765	5.32562	0.069939	1.49898	2.212
76	STF 21a	1	8	2b	Pelite	Monazite	1986	Detri.	1975-2000	0.741744	13.3249	9.72444	21.1973	0.974606	27.7297	0.078123	0.757736	10.1257	0.109845	1.37378	1.95362
77	STF 21a	1	9	2b	Pelite	Monazite	1835.9	Detri.	1825-1850	0.262199	13.6044	11.2828	23.0867	0.866068	27.4475	0.082904	0.465206	6.00749	0.105363	1.14082	2.07021
78	STF 21a	1	10	2b	Pelite	Monazite	1869.7	Detri.	1850-1875	0.222079	14.2537	11.2152	22.3243	1.02672	28.6504	0.08427	0.553922	6.55128	0.250842	2.37447	2.06097
79	STF 21a	1	11	2b	Pelite	Monazite	1816.7	Detri.	1800-1825	0.303383	14.0824	11.4539	23.9977	0.97237	28.3366	0.109395	0.523728	6.85266	0.156384	0.290817	2.15452
80	STF 21a	1	12	2b	Pelite	Monazite	1841.3	Detri.	1825-1850	0.208101	14.0444	9.73165	21.2358	1.4093	28.3899	0.076236	0.711835	7.96534	0.558986	2.56194	2.05734
81	STF 21a	1	13	2b	Pelite	Monazite	1868.9	Detri.	1850-1875	0.217548	14.1216	10.5506	21.6362	1.21033	28.515	0.089152	0.59789	7.28173	0.248287	2.64418	2.04736
82	STF 21a	1	14	2b	Pelite	Monazite	1913.1	Detri.	1900-1925	0.108448	14.3716	10.8043	21.5252	1.17795	28.7058	0.07407	0.693944	5.65932	0.800278	3.29062	1.94122
83	STF 21a	1	15	2b	Pelite	Monazite	1912.1	Detri.	1900-1925	0.202311	14.1164	11.0941	22.7327	1.03272	28.4961	0.083418	0.565094	6.10509	0.42925	2.53176	2.12617
84	STF 21a	1	16	2b	Pelite	Monazite	1859.4	Detri.	1850-1875	0.273056	14.1483	10.9165	22.6689	0.952901	28.4818	0.091398	0.524907	6.78703	0.103667	1.55721	2.17234
85	STF 21a	1	17	2b	Pelite	Monazite	1809.5	Detri.	1800-1825	0.623719	13.3727	9.52019	20.876	1.27166	27.8697	0.081339	0.845689	10.2092	0.345843	1.76008	1.95638
86	STF 21a	1	18	2b	Pelite	Monazite	1801.2	Detri.	1800-1825	0.322868	13.4321	10.5947	22.6624	0.77154	27.756	0.084516	0.4602	5.92023	0.142338	3.08496	2.12955
87	STF 21a	1	19	2b	Pelite	Monazite	1890.7	Detri.	1875-1900	0.388145	13.484	12.5584	24.0082	0.828858	27.7876	0.082888	0.561566	6.63816	0.260153	1.75456	1.94017
88	STF 21a	1	20	2b	Pelite	Monazite	1870.4	Detri.	1850-1875	0.132229	14.6555	11.4123	22.4719	0.913381	29.0857	0.062334	0.43796	4.99	0.287904	3.06586	2.05531
89	STF 21a	1	21	2b	Pelite	Monazite	1787.7	Metam.	1775-1800	0.179328	14.3583	11.2751	22.6136	1.04873	28.7391	0.064317	0.558099	6.15471	0.404217	2.48698	2.05075
90	STF 21a	1	22	2b	Pelite	Monazite	1842.9	Detri.	1825-1850	0.570862	12.3001	10.3895	20.9742	1.14809	26.3245	0.068316	0.96191	9.04599	0.711505	2.95346	1.58393
91	STF 21a	1	23	2b	Pelite	Monazite	1815.9	Detri.	1800-1825	0.31212	13.9729	11.3667	23.2593	0.933974	28.1902	0.079088	0.529783	6.53972	0.160485	0.870467	2.1805
92	STF 21a	1	24	2b	Pelite	Monazite	1923	Detri.	1900-1925	0.138423	14.2271	12.6089	23.4735	0.57638	28.4128	0.077232	0.350225	3.01686	0.376598	2.03084	2.26232
93	STF 21a	1	25	2b	Pelite	Monazite	1845.7	Detri.	1825-1850	0.271877	14.5492	11.262	22.9993	0.790514	29.0776	0.082575	0.453577	5.60772	0.373924	2.61736	2.0775
94	STF 21a	1	26	2b	Pelite	Monazite	1803.3	Detri.	1800-1825	0.422259	13.805	10.2015	20.8084	1.43016	28.3729	0.072422	0.830097	9.62823	0.400846	2.73128	1.9371
95	STF 21a	1	27	2b	Pelite	Monazite	1816.5	Detri.	1800-1825	0.674318	13.2885	11.1778	24.3471	0.398903	27.8005	0.085862	0.489529	5.99259	0.1938	1.54347	2.32244
96	STF 21a	1	28	2b	Pelite	Monazite	1846.2	Detri.	1825-1850	0.252147	14.1122	11.5258	23.0592	0.90525	28.558	0.104193	0.430842	5.62373	0.207175	2.82238	2.05634
97	STF 21a	1	29	2b	Pelite	Monazite	1834.1	Detri.	1825-1850	0.313829	14.0429	11.0731	22.6776	0.863706	28.6074	0.111458	0.444213	5.81955	0.163797	3.42603	2.0642
99	STF 21a	1	31	2b	Pelite	Monazite	1785.2	Metam.	1775-1800	0.251868	14.1465	11.5804	22.7924	0.873245	28.591	0.06889	0.41367	5.61243	0.181045	3.08549	2.06805
100	STF 21a	1	32	2b	Pelite	Monazite	1784	Metam.	1775-1800	0.217515	14.1692	10.9742	21.6393	1.32313	28.487	0.077672	0.661578	7.53287	0.512117	2.29796	1.93656
101	STF 21a	1	33	2b	Pelite	Monazite	1812.4	Detri.	1800-1825	0.213618	14.0859	12.965	24.1449	0.692121	28.382	0.095903	0.303106	3.95651	0.145907	2.56214	2.06058
102	STF 21a	1	34	2b	Pelite	Monazite	1833.4	Detri.	1825-1850	0.23531	13.8986	11.4691	23.1407	0.77647	28.1672	0.09351	0.343316	4.31365	0.171967	3.17891	2.07825
103	STF 21a	1	35	2b	Pelite	Monazite	1831.6	Detri.	1825-1850	0.392526	13.8923	11.4535	22.894	1.02094	28.2058	0.076031	0.486319	6.29576	0.177518	1.19164	2.17105
104	STF 21a	1	36	2b	Pelite	Monazite	1792.5	Metam.	1775-1800	0.141655	14.264	12.9386	24.4762	0.620207	28.521	0.075958	0.349529	3.27921	0.380606	2.27275	2.13585
105	STF 21a	1	37	2b	Pelite	Monazite	1815.8	Detri.	1800-1825	0.251597	14.7521	11.4869	23.2226	0.772738	29.2777	0.079455	0.351638	5.25448	0.096206	2.45467	2.13459
106	STF 21a	1	38	2b	Pelite	Monazite	1878.2	Detri.	1875-1900	0.164247	14.7598	10.1615	21.2675	1.30282	29.1395	0.082778	0.90638	5.55012	1.54344	2.61404	2.00109
107	STF 21a	1	39	2b	Pelite	Monazite	1851.5	Detri.	1850-1875	0.671223	13.2807	11.3521	23.8457	0.29497	27.7233	0.081355	0.445375	5.65522	0.125906	1.7228	2.20445
108	STF 21a	1	40	2b	Pelite	Monazite	1953.8	Detri.	1950-1975	0.090063	14.3363	11.3274	22.4982	0.911932	28.6752	0.074897	0.665203	3.34151	1.14398	3.59707	2.12674
109	STF 21a	1	41	2b	Pelite	Monazite	1886.1	Detri.	1875-1900	0.268845	14.0332	11.5215	22.5631	0.797101	28.4323	0.068514	0.441905	5.46476	0.172276	3.12544	2.07633
110	STF 21a	1	42	2b	Pelite	Monazite	1830.6	Detri.	1825-1850	0.525863	13.7573	10.151	21.9632	0.757462	28.3708	0.064622	0.604564	7.68238	0.121158	2.99138	2.15757
111	STF 21a	1	43	2b	Pelite	Monazite	1831.3	Detri.	1825-1850	0.566052	13.5488	9.41715	23.4674	0.447075	28.0615	0.071918	0.469248	5.74584	0.19086	2.63431	2.35358
112	STF 21a	1	44	2b	Pelite	Monazite	945.3	Unkn.	0	0.500363	13.811	10.3336	22.5796	1.17773	28.3792	0.080707	0.755453	8.79756	0.321607	1.64841	2.02939
113	STF 21a	1	45	2b	Pelite	Monazite	1899.4	Detri.	1875-1900	0.228193	14.2051	10.4952	21.1141	1.27175	28.5749	0.08205	0.69661	7.51592	0.351915	2.22008	2.05165
114	STF 21a	1	46	2b	Pelite	Monazite	1855.3	Detri.	1850-1875	0.547548	13.6452	11.1833	24.3425	0.502045	28.1368	0.100401	0.436539	5.71978	0.178081	1.49955	2.27131
115	STF 21a	1	47	2b	Pelite	Monazite	1856	Detri.	1850-1875	0.549851	13.6303	11.1202	22.8478	0.562703	28.2081	0.074182	0.532518	6.67493	0.211487	3.02055	2.08697
116	STF 21a	1	48	2b	Pelite	Monazite	1869.3	Detri.	1850-1875	0.365727	13.8871	12.3324	24.5801	0.731104	28.2021	0.105512	0.42777	5.40031	0.077817	0.870957	2.15907
117	STF 21a	1	49	2b	Pelite	Monazite	0.1	Unkn.	0	0.227737	14.2092	9.45719	21.2003	1.21809	28.5862	0.071261	0.737054	6.20259	0.756144	3.01672	2.08957
118	STF 21a	1	50	2b	Pelite	Monazite	1869	Detri.	1850-1875	0.271776	14.1333	11.1739	22.9197	0.84579	28.5643	0.092761	0.417823	5.53821	0.206216	2.95988	2.10219
119	STF 21a	1	51	2b	Pelite	Monazite	1767.7	Metam.	1750-1775	0.314693	14.3575	11.5925	23.6815	0.868121	28.8324	0.075345	0.501863	6.09371	0.200156	1.35924	2.2313
120	STF 21a	1	52	2b	Pelite	Monazite	1797.1	Metam.	1775-1800	0.29818	14.8185	11.0697	22.6996	0.76089	29.2554	0.090842	0.355191	5.40281	0.164333	2.56715	2.11395
121	STF 21a	1	53	2b	Pelite	Monazite	1891.5	Detri.	1875-1900	0.172433	14.1517	10.447	21.8158	1.21194	28.495	0.078807	0.597196	5.34542	0.615582	3.21887	2.09245
122	STF 21a	1	54	2b	Pelite	Monazite	1860.2	Detri.	1850-1875	1.08935	12.7811	10.2418	22.6821	0.309547	27.4815	0.099762	0.690253	8.62393	0.113334	0.893541	2.27389
123	STF 21a	1	55	2b	Pelite	Monazite	1882.3	Detri.	1875-1900	0.177342	14.2208	11.3864	22.7087	1.00436	28.471	0.078183	0.420425	4.58398	0.403211	2.80437	2.06681
124	STF 21a	1	56	2b	Pelite	Monazite	1832.2	Detri.	1825-1850	0.236327	14.1041	11.046	22.1559	1.10341	28.3671	0.084998	0.599467	5.24165	0.672962	2.68533	1.97558
125	STF 21a	1	57	2b	Pelite	Monazite	1846.9	Detri.	1825-1850	0.219095	14.0931	10.2305	21.684	1.13821	28.2408	0.10611	0.706531	6.22987	0.750706	1.67073	2.1925

126	STF 21a	1	58	2b	Pelite	Monazite	1779.1	Metam.	1775-1800	0.24934	13.9709	12.4433	23.9209	0.831123	28.2725	0.093707	0.376793	5.02863	0.120059	1.82183	2.09448
127	STF 21a	1	59	2b	Pelite	Monazite	1750.8	Metam.	1750-1775	0.342595	13.531	11.4152	22.0326	0.857413	27.5793	0.084344	0.516138	6.44792	0.214905	2.36122	2.04286
128	STF 21a	1	60	2b	Pelite	Monazite	1775.8	Metam.	1775-1800	0.242828	13.9795	11.1468	22.1983	1.02309	28.2842	0.077745	0.532892	6.42496	0.303458	2.68993	2.06015
129	STF 21a	2	1	2b	Pelite	Monazite	0	Unkn.	0	0.140998	14.13	11.7854	22.2432	1.20714	28.4873	0.073375	0.856618	5.3941	1.24149	3.02642	1.9235
130	STF 21a	2	2	2b	Pelite	Monazite	0	Unkn.	0	0.284868	14.1861	9.61207	21.5383	1.33307	28.6165	0.081503	0.791118	8.65694	0.431083	1.88717	2.10297
131	STF 21a	2	3	2b	Pelite	Monazite	0	Unkn.	0	0.200233	14.1822	12.1572	24.5302	0.724441	28.4437	0.080284	0.378569	4.89887	0.074831	0.961238	2.26813
132	STF 21a	2	4	2b	Pelite	Monazite	0	Unkn.	0	0.556785	14.4859	10.3103	22.8694	0.73706	29.134	0.090338	0.489411	7.05465	0.051289	2.14894	2.08843
133	STF 21a	2	5	2b	Pelite	Monazite	0	Unkn.	0	0.275539	14.0548	11.0647	23.7311	0.938308	28.4967	0.10134	0.481592	5.75124	0.190931	2.08008	2.1592
134	STF 21a	2	6	2b	Pelite	Monazite	0	Unkn.	0	0.297256	13.5712	11.3519	23.5352	0.900313	27.7949	0.084979	0.465005	5.75668	0.099647	1.77226	2.1471
135	STF 21a	2	7	2b	Pelite	Monazite	0	Unkn.	0	0.370656	13.8991	11.9711	24.0805	0.628648	28.3845	0.073278	0.502025	5.21718	0.37157	2.4134	2.13376
136	STF 21a	2	8	2b	Pelite	Monazite	0	Unkn.	0	0.468025	14.3095	12.0075	23.8885	1.01195	28.9502	0.085118	0.656558	4.12266	0.985916	1.78831	2.05194
137	STF 21a	2	9	2b	Pelite	Monazite	0	Unkn.	0	0.6663	13.3818	12.703	22.9696	0.825169	28.0757	0.08228	0.742332	8.31459	0.289969	2.12897	1.79116
138	STF 21a	2	10	2b	Pelite	Monazite	0	Unkn.	0	0.171151	14.4139	9.55056	21.0973	1.54026	28.9109	0.070987	0.963266	7.60371	1.19762	2.71456	1.99622
139	STF 21a	2	11	2b	Pelite	Monazite	0	Unkn.	0	0.223521	14.2188	11.4088	22.8756	1.04578	28.6945	0.080976	0.505483	5.66327	0.224545	2.66776	2.06028
140	STF 21a	2	12	2b	Pelite	Monazite	0	Unkn.	0	0.482827	13.7361	12.0274	24.5811	0.782821	28.3093	0.093816	0.493675	6.75495	0.113971	1.28688	2.07433
141	STF 21a	2	13	2b	Pelite	Monazite	0	Unkn.	0	0.381753	13.7451	10.5474	22.7245	0.958576	28.096	0.072595	0.591021	7.1515	0.20276	1.83102	2.11229
142	STF 21a	2	14	2b	Pelite	Monazite	0	Unkn.	0	0.425552	13.751	10.7736	22.719	1.17032	28.2738	0.097993	0.758946	8.38352	0.410977	1.48916	2.15839
143	STF 21a	2	15	2b	Pelite	Monazite	0	Unkn.	0	0.168067	14.3523	11.1455	22.2461	0.926703	28.8964	0.090638	0.519263	4.28151	0.538255	4.17482	2.03948
144	STF 21a	2	16	2b	Pelite	Monazite	0	Unkn.	0	0.227216	14.1191	11.3333	23.245	0.939916	28.5744	0.087582	0.472221	5.85324	0.264871	2.92372	2.0373
145	STF 21a	2	17	2b	Pelite	Monazite	0	Unkn.	0	0.352613	14.0499	11.587	23.264	0.82952	28.3918	0.107443	0.378304	4.57865	0.293037	2.37304	2.09242
146	STF 21a	2	18	2b	Pelite	Monazite	0	Unkn.	0	0.204802	14.0913	11.9176	23.17	0.764871	28.5075	0.085826	0.410457	5.17767	0.179143	3.11337	2.07786
147	STF 21a	2	19	2b	Pelite	Monazite	0	Unkn.	0	0.216881	14.2613	11.9072	23.3143	0.745234	28.7442	0.075538	0.389532	5.07797	0.196457	3.13054	2.06804
148	STF 21a	2	20	2b	Pelite	Monazite	0	Unkn.	0	0.264113	14.0334	12.4397	24.1668	0.757595	28.477	0.113518	0.386975	5.16221	0.139374	2.24348	2.02042
149	STF 21a	2	21	2b	Pelite	Monazite	0	Unkn.	0	0.67456	13.3285	12.1446	25.9985	0.196519	27.8847	0.088594	0.364105	4.66202	0.145228	1.33222	2.34412
150	STF 21a	2	22	2b	Pelite	Monazite	0	Unkn.	0	0.182032	13.9655	12.574	24.2758	0.727894	28.2766	0.077133	0.348712	4.18438	0.274307	2.80959	2.08472
151	STF 21a	2	23	2b	Pelite	Monazite	0	Unkn.	0	0.432064	13.8886	8.36437	19.9568	1.55709	28.3474	0.085454	1.09793	9.84968	1.00519	1.44121	2.10365
152	STF 21a	2	24	2b	Pelite	Monazite	0	Unkn.	0	0.422407	13.1329	11.7334	24.0437	0.924578	27.164	0.092669	0.474828	6.25851	0.142426	0.660471	2.16657
153	STF 21a	2	25	2b	Pelite	Monazite	0	Unkn.	0	0.282201	13.7076	12.477	24.3581	0.754403	27.8948	0.07933	0.353294	5.23065	0.051311	1.00596	2.18202
154	STF 21a	2	26	2b	Pelite	Monazite	0	Unkn.	0	0.237619	13.9712	10.3001	21.8215	1.29859	28.2642	0.077598	0.689089	6.95125	0.542151	1.63641	2.06603
155	STF 21a	2	27	2b	Pelite	Monazite	0	Unkn.	0	0.142153	14.2873	10.2102	21.4662	1.44385	28.6547	0.087948	0.780051	6.86348	0.879849	2.34381	2.05427
156	STF 21a	2	28	2b	Pelite	Monazite	0	Unkn.	0	0.233622	14.1614	11.5699	21.8224	1.13311	28.5397	0.080896	0.693715	5.3767	0.836989	2.86448	2.00204
157	STF 21a	2	29	2b	Pelite	Monazite	0	Unkn.	0	0.173449	13.9906	10.9244	22.5414	1.19454	27.9567	0.105553	0.643388	5.79882	0.632365	1.0333	2.07103
158	STF 21a	2	30	2b	Pelite	Monazite	0	Unkn.	0	1.48467	12.0787	10.0749	21.8204	0.182796	27.1426	0.081055	0.931303	11.1274	0.406372	1.6344	2.04867
162	STF 21a	2	34	2b	Pelite	Monazite	0	Unkn.	0	0.39584	13.1359	9.36612	20.4827	1.17785	26.9276	0.085	0.675619	8.23213	0.223787	2.53191	1.95475
163	STF 21a	2	35	2b	Pelite	Monazite	0	Unkn.	0	0.215882	14.2621	11.7446	22.5919	1.04041	28.6917	0.081712	0.63622	6.02137	0.558598	2.6449	2.0036
164	STF 21a	2	36	2b	Pelite	Monazite	0	Unkn.	0	0.114366	14.0644	12.0944	24.8971	1.11021	28.2329	0.085956	0.711494	4.03613	1.23126	0.98433	2.17378
165	STF 21a	2	37	2b	Pelite	Monazite	0	Unkn.	0	0.849749	12.8783	11.6084	22.0733	1.13121	27.7068	0.082352	0.865649	11.5489	0.264932	1.85904	1.79898
166	STF 21a	2	38	2b	Pelite	Monazite	0	Unkn.	0	0.243239	13.9011	10.7254	22.5338	0.965021	28.2867	0.076187	0.517762	6.21555	0.190714	2.92394	2.10332
167	STF 21a	2	39	2b	Pelite	Monazite	0	Unkn.	0	0.251161	13.6299	11.4255	23.0956	0.756004	27.5554	0.067473	0.382043	4.92451	0.122154	2.8137	1.79088
168	STF 21a	2	40	2b	Pelite	Monazite	0	Unkn.	0	0.794685	13.3194	9.10839	22.522	0.952089	27.8729	0.09778	0.806761	10.4773	0.082048	0.140755	2.30826
169	STF 21a	2	41	2b	Pelite	Monazite	0	Unkn.	0	0.410305	13.6921	10.8995	23.6956	1.14791	28.2461	0.07412	0.727535	7.89537	0.221822	1.1816	2.14297
170	STF 21a	2	42	2b	Pelite	Monazite	0	Unkn.	0	0.261874	14.0913	11.9832	24.7282	0.781747	28.6156	0.074117	0.456977	5.75858	0.088414	1.77988	2.23368
171	STF 21b	1	1	2b	Psammite	Monazite	1784.6	Metam.	1775-1800	0.180985	14.1353	11.3862	23.4153	0.876347	28.4102	0.077873	0.477029	5.64649	0.307787	2.57595	2.01832
172	STF 21b	1	2	2b	Psammite	Monazite	1842	Detri.	1825-1850	0.418542	13.7079	11.1021	23.62	0.828224	28.1433	0.08262	0.590905	7.59856	0.100337	0.987607	2.11388
173	STF 21b	1	3	2b	Psammite	Monazite	1782.6	Metam.	1775-1800	0.343996	13.8369	10.7485	22.969	0.923298	28.2192	0.074201	0.576659	8.03489	0.158053	1.45754	2.15912
174	STF 21b	1	4	2b	Psammite	Monazite	1942.6	Detri.	1925-1950	0.193178	14.1471	11.876	24.2153	0.823846	28.5056	0.08124	0.524465	5.05249	0.390136	1.95855	2.11161
175	STF 21b	1	5	2b	Psammite	Monazite	1858	Detri.	1850-1875	0.232269	14.1237	11.5427	24.0947	0.645186	28.3675	0.082223	0.362969	4.78415	0.087158	1.61264	2.16482
176	STF 21b	1	6	2b	Psammite	Monazite	1862.3	Detri.	1850-1875	0.168915	14.0858	11.2885	22.997	0.866299	28.2322	0.077343	0.455428	5.23931	0.308607	2.75006	2.03911
177	STF 21b	1	7	2b	Psammite	Monazite	1864.7	Detri.	1850-1875	0.175955	14.2535	11.3003	23.7549	0.859604	28.6833	0.073748	0.452144	5.62784	0.309135	2.64284	2.09759
178	STF 21b	1	8	2b	Psammite	Monazite	1847.9	Detri.	1825-1850	0.077826	14.1806	11.2341	22.5357	1.00853	28.3649	0.083081	0.614468	4.32707	0.933685	3.05931	1.97847
179	STF 21b	1	9	2b	Psammite	Monazite	1828.5	Detri.	1825-1850	0.268995	14.0375	11.6356	23.4297	0.982601	28.353	0.072318	0.570263	6.47023	0.371031	1.80797	2.07615
180	STF 21b	1	10	2b	Psammite	Monazite	1864.8	Detri.	1850-1875	0.096314	14.378	11.848	22.3245	1.25154	28.6798	0.058928	0.807563	5.65787	1.15843	2.87413	1.85288
181	STF 21b	1	11	2b	Psammite	Monazite	1811.1	Detri.	1800-1825	0.17703	14.068	11.4902	24.066	0.861673	28.3913	0.058238	0.50095	5.62675	0.299329	2.38997	2.00728
182	STF 21b	1	12	2b	Psammite	Monazite	1867.6	Detri.	1850-1875	0.088774	14.3359	11.5796	23.4963	0.98159	28.5132	0.096025	0.570561	5.08379	0.566373	1.84509	2.08956
183	STF 21b	1	13	2b	Psammite	Monazite	1951.7	Detri.	1950-1975	0.089793	14.4162	11.8965	23.2046	1.02426	28.6001	0.087232	0.697851	4.84394	0.999158	2.28875	1.97321
184	STF 21b	1	14	2b	Psammite	Monazite	1889.6	Detri.	1875-1900	0.181165	14.235	11.5351	23.783	0.785744	28.6332	0.084434	0.417276	5.30953	0.199679	2.81145	2.11667
185	STF 21b	1	15	2b	Psammite	Monazite	1849	Detri.	1825-1850	0.276584	13.8492	11.4328	24.1648	0.816724	27.9174	0.082781	0.436819	5.74054	0.084567	0.974779	2.08803
186	STF 21b	1	16	2b	Psammite	Monazite	1819.9	Detri.	1800-1825	0.152608	14.2924	11.7885	24.1134	1.08888	28.5332	0.07444	0.56628	6.49816	0.448932	1.95617	2.04384
187	STF 21b	1	17	2b	Psammite	Monazite	1874.3	Detri.	1850-1875	0.469501	13.6838	10.3939	24.8679	0.138351	28.0474	0.072654	0.279864	4.0919	0.032703	1.21126	2.45446
188	STF 21b	1	18	2b	Psammite	Monazite	1883.2	Detri.	1875-1900	0.410219	13.7682	10.0069	21.8898	1.12201	28.2809	0.078478	0.805618	8.7146	0.528126	2.36163	2.00729
189	STF 21b	1	19	2b	Psammite	Monazite	1875.1	Detri.	1875-1900	0.142423	14.0268	11.7313	24.0116	0.905561	28.3045	0.083891	0.456998	5.40258	0.36355	2.27036	2.01098
190	STF 21b	1	20	2b	Psammite	Monazite	1930.9	Detri.	1925-1950	0.147247	14.2908	12.8929	26.373	0.667525	28.5931	0.079814	0.321386	2.63072	0.166091	1.32246	2.13035
191	STF 21b	1	21	2b	Psammite	Monazite	1880.7	Detri.	1875-1900	0.096593	14.1426	10.4034	22.0213	1.02278	28.1579	0.064755	0.592844	5.40646	0.644812	3.09221	2.02017
192	STF 21b	1	22	2b	Psammite	Monazite	1835.6	Detri.	1825-1850	0.179367	14.1158	11.1997	23.0787	1.05074	28.403	0.079474	0.592192	6.43353	0.414091	2.28262	1.9784
193	STF 21b	1	23	2b	Psammite	Monazite	1820.5	Detri.	1800-1825	0.151036	14.0849	11.2212	23.0789	0.951121	28.1432	0.055227	0.504092	5.55132	0.369494	2.26856	2.02855
194	STF 21b	1	24	2b	Psammite	Monazite	1904.8	Detri.	1900-1925	0.41364	13.7458	10.7223	23.9744	0.901994	28.1611	0.089207	0.61207	7.51392	0.222907	1.02539	2.17104
195	STF 21b	1	25	2b	Psammite	Monazite	1878.1	Detri.	1875-1900	0.25689	13.9325	9.226	21.7366	1.28649	28.1937	0.06309	0.770031	8.15189	0.543022	2.32951	2.06852
196	STF 21b	1	26	2b	Psammite	Monazite	1818.5	Detri.	1800-1825	0.184632	13.9985	11.1376	23.2271	0.792726	28.2812	0.079088	0.407095	5.42802	0.226322	2.99901	2.13952
197	STF 21b	1	27	2b	Psammite	Monazite	1924.5	Detri.	1900-1925	0.21443	14.1437	11.8365	23.9949	0.719961	28.4424	0.07617	0.465738	4.7436	0.384067	2.21325	2.13447
198	STF 21b	1	28	2b	Psammite	Monazite	1844.8	Detri.	1825-1850	0.314324	13.958	11.224	23.1285	0.959213	28.3723	0.064341	0.602188	7.22177	0.33947	2.07417	1.97748
199	STF 21b	1	29	2b	Psammite	Monazite	1790.9	Metam.	1775-1800	0.181382	13.9565	11.9375	23.8253	0.648433	28.0827	0.072574	0.381115	4.72762	0.182806	2.80717	2.02298
200	STF 21b	1	30	2b	Psammite	Monazite	1854.9	Detri.	1850-1875	0.423456	13.5259	11.4054	23.4328	0.488185	27.8283	0.07046	0.472382	5.36333	0.252638	2.81723	2.0439
201	STF 21b	1	31	2b	Psammite	Monazite	1871	Detri.	1850-1875	0.135337	14.282	11.379	23.4146	0.986861	28.5542	0.088376	0.532051	5.80053	0.456514	2.15783	2.02558
202	STF 21b	1	32	2b	Psammite	Monazite	1841	Detri.	1825-1850	0.149814	14.2044	11.5437	23.6837	0.95641	28.5422	0.072697	0.515006	5.85093	0.416088	2.19338	2.10373
203	STF 21b	1	33	2b	Psammite	Monazite	1859.5	Detri.	1850-1875	0.141415	14.3338	12.3929	25.3196	0.751274	28.4978	0.089132	0.367427	4.571	0.218431	0.358796	2.21982
204	STF 21b	1	34	2b	Psammite	Monazite	1800.3	Detri.	1800-1825	0.181627	14.2163	11.5731	23.8522	0.886625	28.5953	0.071176	0.462741	5.73094	0.318182	2.37484	2.12944
205	STF 21b	1	35	2b	Psammite	Monazite	1789.5	Metam.	1775-1800	0.133921	14.8873	11.8258	24.3354	0.693046	29.2592	0.093733	0.364406	4.69526	0.284163	2.10523	2.07878
206	STF 21b	1	36	2b	Psammite	Monazite	1822.6	Detri.	1800-1825	0.21644	14.0403	11.5946	23.7978	0.734898	28.3989	0.080447	0.401079	5.27408	0.143015	2.88828	2.08003
207	STF 21b	1	37	2b	Psammite	Monazite	1783.8	Metam.	1775-1800	0.328402	14.0429	7.49397	20.3887	1.76155	28.4321	0.090669	1.31122	9.26841	1.87007	1.45623	2.03081
208	STF 21b	1	38	2b	Psammite	Monazite	1815.5	Detri.	1800-1825	0.163755	14.2119	11.8737	24.1255	0.796592	28.5283	0.069111	0.431182	5.03978	0.263611	2.16313	2.13112
209	STF 21b	1	39	2b	Psammite	Monazite	1817.8	Detri.	1800-1825	0.239003	13.6183	10.5334	21.7076	0.944787	27.2882	0.078717	0.467206	5.94353	0.290929	2.44161	1.94901
210	STF 21b	1	40	2b	Psammite	Monazite	1786.3	Metam.	1775-1800	0.11895	14.7007	12.1442	24.7259	0.743698	29.1331	0.088546	0.391505	4.69178	0.286113	1.73871	2.21407
211	STF 21b	1	41	2b	Psammite	Monazite	1863.2	Detri.	1850-1875	0.135127	14.1617	11.5998	23.7874	0.988664	28.4675	0.08447	0.535946	5.73575	0.439134	2.05956	2.07033
212	STF 21b	1	42	2b	Psammite	Monazite	1898.4	Detri.	1875-1900	1.19189	11.2774	10.1997	20.8965	0.532528	25.4971	0.072879	1.05676	12.2483	0.395271	1.10906	1.89074
213	STF 21b	1	43	2b	Psammite	Monazite	1850.4	Detri.	1850-1875	0.051954	13.9543	11.059	23.359	0.712221	27.8296	0.068443	0.422409	3.11442	0.610857	1.95496	2.1088
214	STF 21b	1	44	2b	Psammite	Monazite	1874.5	Detri.	1850-1875	0.162863	14.2481	11.889	24.1493	0.772971	28.6327	0.071433	0.425902	4.96849	0.272096	2.31947	2.11563
215	STF 21b	1	45	2b	Psammite	Monazite	1783.3	Metam.	1775-1800	0.215849	14.2636	12.1779	24.5182	0.706729	28.6892	0.099401	0.366068	5.03942	0.116893	2.24905	2.09315
216	STF 21b	1	46	2b	Psammite	Monazite	1851.5	Detri.	1850-1875	0.656397	13.4655	10.2761	23.463	0.656794	28.0975	0.084592	0.623094	8.34222	0.09702	1.8963	2.09687
217	STF 21b	1	47	2b	Psammite	Monazite	1819.1	Detri.	1800-1825	0.146741	14.1636	11.3705	23.5723	0.978553	28.4122	0.063307	0.554918	5.67551	0.432335	2.08878	2.01095
218	STF 21b	1	48	2b	Psammite	Monazite	1899.9	Detri.	1875-1900	0.16868	14.089	11.5136	23.9846	0.911426	28.3241	0.06005	0.515057	5.22667	0.531504	1.68434	2.06564
219	STF 21b	1	49	2b	Psammite	Monazite	1805.5	Detri.	1800-1825	0.192653	14.0318	11.3312	23.5383	0.857771	28.3493	0.07649	0.475653	5.61437	0.277864	2.66556	2.03728
221	STF 21b	1	51	2b	Psammite	Monazite	1850.3	Detri.	1850-1875	0.453701	13.6507	12.009	25.3455	0.520089	28.1231	0.087574	0.446126	6.1577	0.072096	1.20152	2.20143
222	STF 21b	1	52	2b	Psammite	Monazite	1824	Detri.	1800-1825	0.149416	14.2006	11.3807	23.5258	1.04087	28.5156	0.083026	0.60317	5.98386	0.529222	2.03542	2.08708
223	STF 21b	1	53	2b	Psammite	Monazite	1866.1	Detri.	1850-1875	0.68758	13.1897	8.4786	20.3368	1.45102	27.7066	0.068634	1.14452	13.2979	0.680196	1.09796	1.98491
224	STF 21b	1	54	2b	Psammite	Monazite	1876.6	Detri.	1875-1900	0.217558	14.0227	10.807	22.4825	1.01769	28.2601	0.075311	0.56782	6.66191	0.332116	2.38668	1.97892
225	STF 21b	1	55	2b	Psammite	Monazite	1880.4	Detri.	1875-1900	0.210243	13.9909	11.548	23.8487	0.768454	28.335	0.074737	0.41578	5.38218	0.176483	2.71136	2.03192
226	STF 21b	1	56	2b	Psammite	Monazite	1763.9	Metam.	1750-1775	0.140207	14.1364	10.9964	23.3634	1.01794	28.4068	0.062657	0.654805	5.35022	0.73334	2.34155	2.05806
227	STF 21b	1	57	2b	Psammite	Monazite	1776	Metam.	1775-1800	0.221752	14.0802	11.1872	23.5147	0.78345	28.431	0.063391	0.456067	5.67688	0.177402	2.81112	2.04596
228	STF 21b	1	58	2b	Psammite	Monazite	1816.2	Detri.	1800-1825	0.701861	13.1571	9.88334	21.376	1.02232	27.6388	0.081639	0.848189	10.3081	0.307112	1.4263	1.93877
229	STF 21b	1	59	2b	Psammite	Monazite	1878.5	Detri.	1875-1900	0.205237	14.1059	11.9094	23.8853	0.741619	28.4409	0.075705	0.390204	5.2965	0.154897	2.55705	2.0859
230	STF 21b	1	60	2b	Psammite	Monazite	1830.3	Detri.	1825-1850	0.142447	14.1615	11.2884	23.3889	1.08005	28.4299	0.089512	0.572991	5.99621	0.50366	2.00333	2.01694
231	STF 21b	1	61	2b	Psammite	Monazite	1861.7	Detri.	1850-1875	0.377122	13.839	13.0165	24.9231	0.570715	28.1804	0.085665	0.427267	5.83677	0.053806	0.901526	2.14153
232	STF 21b	1	62	2b	Psammite	Monazite	1840.7	Detri.	1825-1850	0.187395	13.2717	11.8528	23.8758	0.755713	27.2396	0.068179	0.393674	5.23706	0.170575	2.21499	2.06168
233	STF 21b	1	63	2b	Psammite	Monazite	1802	Detri.	1800-1825	0.140388	14.1707	11.2609	22.7119	0.89416	28.1	0.07383	0.479814	5.74144	0.414532	1.6367	2.11751
234	STF 21b	1	64	2b	Psammite	Monazite	1849.4	Detri.	1825-1850	0.262768	13.7455	10.4608	21.9457	1.07169	27.8502	0.087327	0.699113	7.65522	0.426869	1.76507	1.99742
235	STF 21b	1	65	2b	Psammite	Monazite	1816.5	Detri.	1800-1825	0.14947	14.1925	11.3605	23.4552	1.03721	28.4691	0.073445	0.572419	6.08996	0.494169	1.98625	2.06726
236	STF 21b	1	66	2b	Psammite	Monazite	1787.8	Metam.	1775-1800	0.154142	14.3016	11.6121	23.7126	0.954498	28.6631	0.077791	0.515036	5.78058	0.353161	2.19922	2.11801
237	STF 21b	1	67	2b	Psammite	Monazite	1764.5	Metam.	1750-1775	0.147957	13.8033	10.8288	22.5621	0.977535	27.6176	0.065167	0.452387	5.24494	0.419978	2.14304	1.99132
238	STF 21b	1	68	2b	Psammite	Monazite	1838.8	Detri.	1825-1850	0.276683	13.9285	11.6416	24.2608	0.77904	28.262	0.076805	0.479573	6.34473	0.192407	1.19571	2.1128
239	STF 21b	1	69	2b	Psammite	Monazite	1874.2	Detri.	1850-1875	0.415003	13.7759	10.0611	22.1565	1.06402	28.3667	0.082053	0.7429	8.63401	0.226349	2.9193	1.84141
240	STF 21b	1	70	2b	Psammite	Monazite	1813.6	Detri.	1800-1825	0.254609	13.9202	11.113	24.4184	0.621829	28.1765	0.073102	0.389745	5.43212	0.058003	1.34613	2.23761
241	STF 21b	1	71	2b	Psammite	Monazite	1814.3	Detri.	1800-1825	0.23807	14.139	11.818	22.8895	0.866249	28.555	0.068771	0.605469	5.428	0.666986	2.81552	2.04289
242	STF 21b	1	72	2b	Psammite	Monazite	1769.2	Metam.	1750-1775	0.190583	14.1806	11.8407	23.6653	1.1369	28.54	0.071612	0.583436	7.13669	0.386157	1.97033	1.95525
243	STF 21b	1	73	2b	Psammite	Monazite	1812.7	Detri.	1800-1825	0.284111	14.5504	10.9155	23.2179	0.880421	28.9314	0.09352	0.385703	4.80751	0.384917	2.59661	2.08491
244	STF 21b	1	74	2b	Psammite	Monazite	1850.3	Detri.	1850-1875	0.394897	13.7676	10.3201	23.0739	0.998845	28.1403	0.078414	0.557634	7.14469	0.145954	1.83257	2.10495

245	STF 21b	1	75	2b	Psammite	Monazite	1848.6	Detri.	1825-1850	0.594984	13.5658	9.96703	22.0522	1.12795	28.1825	0.06645	0.772258	10.8044	0.082856	1.29337	1.98746
246	STF 21b	1	76	2b	Psammite	Monazite	1839.9	Detri.	1825-1850	0.264325	13.7066	9.7486	21.4173	1.20591	28.0094	0.069228	0.761539	9.57384	0.654453	2.82653	1.89272
247	STF 21b	1	77	2b	Psammite	Monazite	1892.6	Detri.	1875-1900	0.181444	14.1819	9.1555	21.3864	1.45905	28.6265	0.080328	0.929435	7.87174	1.00235	3.02663	2.07115
248	STF 21b	1	78	2b	Psammite	Monazite	1777.8	Metam.	1775-1800	0.259261	14.078	11.4851	24.0685	0.766663	28.4284	0.080593	0.437457	5.18489	0.25364	1.99463	2.07409
249	STF 21b	1	79	2b	Psammite	Monazite	1903.4	Detri.	1900-1925	0.924776	12.9526	9.99806	22.1943	0.772372	27.749	0.092937	0.826888	11.0906	0.073164	1.12515	1.95189
250	STF 21b	1	80	2b	Psammite	Monazite	1855	Detri.	1850-1875	0.099701	14.248	11.3767	22.8741	0.942479	28.4994	0.06798	0.553875	4.8737	0.563872	3.1805	2.03529
251	STF 21b	1	81	2b	Psammite	Monazite	1818.6	Detri.	1800-1825	0.158604	14.195	11.5108	23.8951	0.915329	28.5777	0.075891	0.484829	5.62187	0.309288	2.37191	2.08979
252	STF 21b	1	82	2b	Psammite	Monazite	1847.4	Detri.	1825-1850	0.170734	13.9875	11.6838	24.8064	0.763042	28.1411	0.090578	0.413899	5.16314	0.095289	0.753239	2.26383
253	STF 21b	1	83	2b	Psammite	Monazite	1805.9	Detri.	1800-1825	0.280705	11.5716	11.2035	23.096	0.849255	24.9288	0.057356	0.44851	5.43606	0.274697	2.18798	2.00599
254	STF 21b	1	84	2b	Psammite	Monazite	1855.1	Detri.	1850-1875	0.791622	13.1618	9.44881	21.7348	1.23005	27.8647	0.072483	0.895812	11.277	0.179419	1.09849	1.96254
255	STF 21b	1	85	2b	Psammite	Monazite	1851.4	Detri.	1850-1875	0.379486	13.7449	9.11102	21.8612	1.33255	28.1875	0.069899	0.819992	9.91452	0.264359	1.90451	2.08499
256	STF 21c	1	1	2b	Psammite	Monazite	1744.8	Metam.	1725-1750	0.294311	13.8984	11.1847	22.3285	0.863519	28.2856	0.086139	0.41023	5.23959	0.201218	3.56307	2.06419
257	STF 21c	1	2	2b	Psammite	Monazite	1770.5	Metam.	1750-1775	0.250792	13.7405	11.9225	23.0361	0.789111	28.0309	0.078421	0.399912	4.68743	0.243659	3.31032	2.02709
258	STF 21c	1	3	2b	Psammite	Monazite	1781.8	Metam.	1775-1800	0.202195	14.3626	11.7688	23.2063	0.830048	28.9197	0.071227	0.406206	5.07182	0.223137	3.37064	2.0402
259	STF 21c	1	4	2b	Psammite	Monazite	1759	Metam.	1750-1775	0.25871	14.5872	11.7849	23.6468	0.852945	29.3083	0.07608	0.399431	4.77875	0.251063	3.40864	2.00694
260	STF 21c	1	5	2b	Psammite	Monazite	1771.3	Metam.	1750-1775	0.270481	14.4149	11.5209	22.1959	0.919802	28.9714	0.090344	0.447332	5.28477	0.216162	3.49168	2.03342
261	STF 21c	1	6	2b	Psammite	Monazite	1745.1	Metam.	1725-1750	0.268262	14.2906	11.7627	23.7043	0.833916	28.9239	0.089022	0.364141	4.61789	0.186772	3.18973	2.07584
262	STF 21c	1	7	2b	Psammite	Monazite	1772.2	Metam.	1750-1775	0.245474	14.5228	12.3223	23.5712	0.790284	29.2021	0.071379	0.391597	4.41708	0.202123	3.48139	2.0592
263	STF 21c	1	8	2b	Psammite	Monazite	1749.6	Metam.	1725-1750	0.266172	14.3792	12.0231	23.0709	0.814145	28.8589	0.0763	0.345735	4.24893	0.184154	3.30302	2.09782
264	STF 21c	1	9	2b	Psammite	Monazite	1790.2	Metam.	1775-1800	0.263137	13.9298	11.9921	23.4283	0.93542	28.3926	0.09449	0.370945	4.88208	0.185492	2.94023	2.12467
265	STF 21c	1	10	2b	Psammite	Monazite	1796.4	Metam.	1775-1800	0.250249	14.1158	11.7585	23.2562	0.883803	28.6621	0.064024	0.409073	5.10141	0.170754	3.18442	2.06671
266	STF 21c	1	11	2b	Psammite	Monazite	1756.8	Metam.	1750-1775	0.242342	14.327	11.276	22.6674	0.861789	28.9441	0.080189	0.429161	5.35212	0.261764	3.7355	2.0466
267	STF 21c	1	12	2b	Psammite	Monazite	1770.9	Metam.	1750-1775	0.217534	13.9924	12.5523	23.6907	0.766557	28.3677	0.078568	0.339222	4.17742	0.174464	3.02223	2.12962
268	STF 21c	1	13	2b	Psammite	Monazite	1774	Metam.	1750-1775	0.29596	13.9008	11.8776	23.451	0.884211	28.3868	0.077335	0.399148	4.73975	0.205866	3.03247	2.06662
269	STF 21c	1	14	2b	Psammite	Monazite	1807.2	Detri.	1800-1825	0.280724	13.5076	11.0141	23.0133	1.01552	27.8014	0.082306	0.433082	5.51994	0.226871	3.15768	2.06269
270	STF 21c	1	15	2b	Psammite	Monazite	1771.5	Metam.	1750-1775	0.261971	13.8518	11.7727	23.4119	0.801909	28.2247	0.097397	0.3938	4.77847	0.189614	2.99759	2.08602
271	STF 21c	1	16	2b	Psammite	Monazite	1780.8	Metam.	1775-1800	0.230489	13.6039	12.0839	23.5222	0.835596	27.9725	0.08893	0.371921	4.67504	0.238249	3.33576	2.02157
272	STF 21c	1	17	2b	Psammite	Monazite	1817.8	Detri.	1800-1825	0.191384	13.633	12.5634	23.9854	0.727919	27.8509	0.06371	0.341461	4.29621	0.189594	2.85033	2.02114
273	STF 21c	1	18	2b	Psammite	Monazite	1783.2	Metam.	1775-1800	0.335641	13.5198	11.2915	22.3779	0.999492	27.8561	0.078754	0.462985	5.27887	0.249022	3.37294	1.96152
274	STF 21c	1	19	2b	Psammite	Monazite	1797.9	Metam.	1775-1800	0.217332	14.5482	12.0108	23.2866	0.766079	29.0909	0.078235	0.36074	4.64038	0.20512	3.20117	2.09021
275	STF 21c	1	20	2b	Psammite	Monazite	1765.1	Metam.	1750-1775	0.252804	14.1726	11.4664	22.6719	0.861595	28.7486	0.071867	0.419066	5.35668	0.250689	3.65171	2.02332
276	STF 21c	1	21	2b	Psammite	Monazite	1788	Metam.	1775-1800	0.197413	14.1038	11.9081	23.4784	0.814962	28.6194	0.085289	0.385383	4.9839	0.209718	3.27988	2.04101
277	STF 21c	1	22	2b	Psammite	Monazite	1763.8	Metam.	1750-1775	0.319779	14.1643	11.6325	22.7624	0.892137	28.7432	0.072399	0.410984	5.24216	0.215053	3.36044	2.03815
278	STF 21c	1	23	2b	Psammite	Monazite	1779.5	Metam.	1775-1800	0.254481	14.1121	12.0094	23.0744	0.913968	28.6781	0.078411	0.443585	5.0134	0.239829	3.40983	2.07629
279	STF 21c	1	24	2b	Psammite	Monazite	1758.9	Metam.	1750-1775	0.229762	14.1082	11.6773	23.3586	0.828545	28.5993	0.069191	0.394691	4.9372	0.186373	3.23232	2.04606
280	STF 21c	1	25	2b	Psammite	Monazite	1763.8	Metam.	1750-1775	0.237993	14.3139	11.2021	22.996	0.813388	28.9449	0.075581	0.401877	5.1255	0.174073	3.74085	2.13927
281	STF 21c	1	26	2b	Psammite	Monazite	1742.4	Metam.	1725-1750	0.569501	13.745	11.5298	23.1439	0.953987	28.4033	0.093801	0.381167	4.57268	0.18634	3.28313	1.97229
282	STF 21c	1	27	2b	Psammite	Monazite	1763.7	Metam.	1750-1775	0.293872	13.978	12.0462	23.5691	0.854429	28.419	0.093705	0.357471	4.29782	0.184935	3.02137	2.01819
283	STF 21c	1	28	2b	Psammite	Monazite	1754.7	Metam.	1750-1775	0.327294	13.85	12.3032	24.0691	0.810621	28.342	0.094499	0.32713	4.0888	0.190083	2.85569	2.12777
284	STF 21c	1	29	2b	Psammite	Monazite	1720.9	Metam.	1700-1725	0.225044	13.6464	11.9455	23.4345	0.836167	27.9366	0.076536	0.379711	4.61376	0.218706	3.06853	2.05607
285	STF 21c	1	30	2b	Psammite	Monazite	1795.6	Metam.	1775-1800	0.220241	13.6533	11.5301	22.7892	0.864306	27.9994	0.074505	0.439411	5.32735	0.266802	3.40798	2.05006
286	STF 21c	1	31	2b	Psammite	Monazite	1774.7	Metam.	1750-1775	0.231846	14.4404	11.5725	23.2657	0.764383	29.0469	0.077243	0.384859	4.92238	0.224523	3.46127	2.13642
287	STF 21c	1	32	2b	Psammite	Monazite	1778.4	Metam.	1775-1800	0.4959	14.3759	12.016	23.5785	0.825497	29.2192	0.078006	0.356648	4.55152	0.149962	3.03964	2.10753
288	STF 21c	1	33	2b	Psammite	Monazite	1780.9	Metam.	1775-1800	0.272901	14.3371	11.6179	23.1834	0.891269	28.9592	0.064509	0.393317	5.19907	0.186016	3.30654	2.06565
289	STF 21c	1	34	2b	Psammite	Monazite	1721.1	Metam.	1700-1725	0.253443	14.0539	11.8315	23.227	0.809858	28.511	0.085053	0.363112	4.6172	0.244114	3.34706	2.05446
290	STF 21c	1	35	2b	Psammite	Monazite	1752	Metam.	1750-1775	0.357728	14.108	11.8118	23.1689	0.919633	28.7164	0.086835	0.361275	4.46789	0.174375	3.32838	2.05943
291	STF 21c	1	36	2b	Psammite	Monazite	1754.9	Metam.	1750-1775	0.255445	14.2822	11.2053	22.7129	0.844835	28.9108	0.046591	0.426973	5.31358	0.226631	3.848	2.01889
292	STF 21c	1	37	2b	Psammite	Monazite	1777.3	Metam.	1775-1800	0.236077	14.0625	12.6907	24.249	0.780224	28.5151	0.071022	0.315468	3.99007	0.218385	2.85431	2.061
293	STF 21c	1	38	2b	Psammite	Monazite	1782.7	Metam.	1775-1800	0.191613	14.2471	11.9466	23.5697	0.746745	28.7473	0.097085	0.342522	4.45731	0.216515	3.41285	2.04727
294	STF 21c	1	39	2b	Psammite	Monazite	1773.7	Metam.	1750-1775	0.377506	14.0404	11.3786	22.8879	1.15327	28.6228	0.098256	0.534623	5.68355	0.43624	2.55438	2.1029
295	STF 21c	1	40	2b	Psammite	Monazite	1749.5	Metam.	1725-1750	0.30906	14.0106	12.4196	23.9223	0.860342	28.51	0.08411	0.342056	4.44444	0.162041	2.69983	2.05479
296	STF 21c	1	41	2b	Psammite	Monazite	1767	Metam.	1750-1775	0.206048	14.2539	12.1342	23.7595	0.782592	28.8087	0.0846	0.347155	4.3049	0.233216	3.29527	2.06528
297	STF 21c	1	42	2b	Psammite	Monazite	1766.5	Metam.	1750-1775	0.209842	14.1355	11.2064	22.5492	0.92046	28.689	0.07096	0.490374	5.77123	0.336635	3.70813	2.00803
298	STF 21c	1	43	2b	Psammite	Monazite	1769.5	Metam.	1750-1775	0.376229	13.8644	11.2893	23.0535	1.00466	28.4308	0.084843	0.383944	4.80807	0.219071	3.34327	2.02961
299	STF 21c	1	44	2b	Psammite	Monazite	1753.2	Metam.	1750-1775	0.215748	13.9901	11.4956	23.1587	0.857036	28.4705	0.06524	0.396607	5.02925	0.194318	3.53518	2.09623
300	STF 21c	1	45	2b	Psammite	Monazite	1776.2	Metam.	1775-1800	0.265395	13.9382	11.7933	23.3324	0.834091	28.3951	0.095186	0.42497	4.81232	0.219118	3.18594	2.06527
301	STF 21c	1	46	2b	Psammite	Monazite	1803.5	Detri.	1800-1825	0.252817	14.0989	12.2908	23.7871	0.770516	28.6422	0.082275	0.358378	4.46282	0.192237	3.06549	2.03799
302	STF 21c	1	47	2b	Psammite	Monazite	1781.7	Metam.	1775-1800	0.369139	13.8405	11.0665	22.5794	0.997474	28.5026	0.098722	0.48237	5.55565	0.266566	3.79468	1.96771
303	STF 21c	1	48	2b	Psammite	Monazite	1786.6	Metam.	1775-1800	0.303183	14.0341	11.4499	23.0205	0.928959	28.6515	0.096107	0.427393	5.29032	0.226915	3.36963	2.15364
304	STF 21c	1	49	2b	Psammite	Monazite	1816.9	Detri.	1800-1825	0.239154	14.0798	11.501	23.2465	0.852536	28.618	0.076126	0.403435	5.22385	0.198579	3.29691	2.04824
305	STF 21c	1	50	2b	Psammite	Monazite	1797	Metam.	1775-1800	0.248	14.0452	11.2636	22.933	0.824993	28.5882	0.069674	0.410726	5.22773	0.251331	3.5899	2.07822
306	STF 21c	1	51	2b	Psammite	Monazite	1814	Detri.	1800-1825	0.209367	13.2948	11.5735	23.1746	0.794243	27.4013	0.069477	0.381668	4.56423	0.205384	3.17453	2.0416
307	STF 21c	1	52	2b	Psammite	Monazite	1804.9	Detri.	1800-1825	0.25639	13.9139	11.8415	23.2374	0.902253	28.3405	0.077794	0.386069	5.07351	0.20857	3.03577	2.10616
308	STF 21c	1	53	2b	Psammite	Monazite	1808.6	Detri.	1800-1825	0.200151	14.1698	12.3568	24.1612	0.762987	28.6346	0.086932	0.322028	4.33441	0.20484	2.79187	2.09462
310	STF 21c	1	55	2b	Psammite	Monazite	1804.6	Detri.	1800-1825	0.329958	14.0146	11.4393	22.9975	0.911541	28.6207	0.092255	0.423063	5.222	0.228461	3.35006	2.0791
311	STF 21c	1	56	2b	Psammite	Monazite	1809	Detri.	1800-1825	0.351478	14.0735	11.3921	22.7621	1.00651	28.7207	0.09218	0.441062	5.529	0.246526	3.45504	2.01575
312	STF 21c	1	57	2b	Psammite	Monazite	1800.8	Detri.	1800-1825	0.314883	13.8737	11.3644	22.8268	1.03782	28.4283	0.090906	0.483748	5.78643	0.300353	3.24552	1.9456
313	STF 21c	1	58	2b	Psammite	Monazite	1776.7	Metam.	1775-1800	0.694076	13.97	11.3662	22.9408	0.912055	28.9329	0.082968	0.385917	4.66457	0.253456	3.60165	2.11457
314	STF 21c	1	59	2b	Psammite	Monazite	1827.7	Detri.	1825-1850	0.246209	14.2466	12.3452	24.0433	0.740117	28.769	0.079617	0.308128	4.01647	0.190278	3.07709	2.03648
315	STF 21c	1	60	2b	Psammite	Monazite	1800.8	Detri.	1800-1825	0.20488	14.3704	11.7611	23.2426	0.803243	28.9356	0.076991	0.385541	4.95468	0.262599	3.46803	2.05676
316	STF 21c	2	1	2b	Psammite	Monazite	1725.2	Metam.	1750-1775	0.265478	13.9409	11.674	22.9609	0.847471	28.2449	0.076714	0.387005	4.90047	0.192894	3.02296	1.98071
317	STF 21c	2	2	2b	Psammite	Monazite	1762	Metam.	1750-1775	0.311058	14.0076	11.2733	22.8317	0.944723	28.5214	0.081062	0.384817	5.0656	0.16454	3.41484	2.10296
319	STF 21c	2	4	2b	Psammite	Monazite	1764	Metam.	1750-1775	0.264192	14.1507	11.9958	23.2425	0.869558	28.6981	0.08228	0.373394	4.46188	0.204171	3.53069	2.07183
320	STF 21c	2	5	2b	Psammite	Monazite	1761.4	Metam.	1750-1775	0.24561	14.0741	11.8524	23.0338	0.843691	28.5202	0.080425	0.362576	4.5285	0.189195	3.5215	2.12086
321	STF 21c	2	6	2b	Psammite	Monazite	1736.6	Metam.	1750-1775	0.307099	13.964	11.2172	22.8258	0.870107	28.4535	0.081603	0.393871	4.84439	0.260188	3.55275	2.02533
322	STF 21c	2	7	2b	Psammite	Monazite	1771.6	Metam.	1750-1775	0.434199	14.0594	11.3652	22.2729	0.902473	28.6606	0.061654	0.467782	5.58666	0.241046	3.36343	2.0097
324	STF 21c	2	9	2b	Psammite	Monazite	1749.2	Metam.	1750-1775	0.193619	14.2347	11.8607	22.7845	0.834118	28.6658	0.092391	0.387298	5.0676	0.225607	3.31406	2.01647
325	STF 21c	2	10	2b	Psammite	Monazite	1785.8	Metam.	1775-1800	0.23975	14.3687	12.3411	23.5883	0.715661	28.9107	0.09173	0.33735	4.66903	0.176472	2.85442	2.17877
327	STF 21c	2	12	2b	Psammite	Monazite	1801.4	Detri.	1800-1825	0.241932	14.3395	12.1699	23.1086	0.7847	28.835	0.0793	0.364786	4.46922	0.2072	3.36667	2.04432
328	STF 21c	2	13	2b	Psammite	Monazite	1823.2	Detri.	1800-1825	0.260163	14.2036	11.4145	22.9955	0.823902	28.7397	0.083024	0.384739	4.9607	0.21373	3.41049	2.13737
329	STF 21c	2	14	2b	Psammite	Monazite	1756.6	Metam.	1750-1775	0.321922	14.1991	11.2384	22.6228	0.880272	28.8084	0.072539	0.388235	5.34796	0.202136	3.63732	2.04231
330	STF 21c	2	15	2b	Psammite	Monazite	1766.2	Metam.	1750-1775	0.22608	14.0854	11.7715	23.377	0.765802	28.5417	0.062087	0.370112	4.49545	0.230002	3.26131	2.1103
331	STF 21c	2	16	2b	Psammite	Monazite	1763.7	Metam.	1750-1775	0.223644	14.0855	11.5301	23.0013	0.861112	28.5849	0.082127	0.402952	5.19159	0.277245	3.42626	2.10529
332	STF 21c	2	17	2b	Psammite	Monazite	1791.8	Metam.	1775-1800	0.239462	14.1926	11.6158	22.8745	0.891425	28.701	0.083046	0.417143	5.11275	0.209785	3.33047	2.1136
333	STF 21c	2	18	2b	Psammite	Monazite	1772.1	Metam.	1750-1775	0.201523	14.0266	11.6018	22.8591	0.77184	28.3512	0.065081	0.39148	5.05788	0.191572	3.217	2.01166
334	STF 21c	2	19	2b	Psammite	Monazite	1770.8	Metam.	1750-1775	0.3328	14.0298	11.6497	22.7163	0.863659	28.494	0.083127	0.387505	4.92018	0.210984	3.31065	2.0387
335	STF 21c	2	20	2b	Psammite	Monazite	1771.6	Metam.	1750-1775	0.213985	14.2039	12.8294	24.8413	0.629318	28.4875	0.094564	0.286398	2.92436	0.332269	1.64828	2.17569
336	STF 21c	2	21	2b	Psammite	Monazite	1824.4	Detri.	1800-1825	0.258827	14.1582	11.6074	23.3248	0.812133	28.699	0.090606	0.421452	4.86438	0.205579	3.3263	2.09141
337	STF 21c	2	22	2b	Psammite	Monazite	1788.2	Metam.	1775-1800	0.233805	13.86	11.8476	23.2983	0.843104	28.2295	0.091366	0.365525	5.02444	0.190663	3.03528	2.08484
338	STF 21c	2	23	2b	Psammite	Monazite	1782.4	Metam.	1775-1800	0.283967	14.1017	11.3059	22.89	0.8276	28.6472	0.082133	0.411433	5.01214	0.207473	3.64006	2.06547
339	STF 21c	2	24	2b	Psammite	Apatite	2806.4	Unkn.	0	0.095545	19.1544	0.161544	0.237378	37.8575	40.1625	0.102604	0.000545	0.0524	0.002234	0.151588	0.026945
340	STF 21c	2	25	2b	Psammite	Monazite	1790.8	Metam.	1775-1800	0.2249	14.1559	11.4258	22.843	0.963034	28.4935	0.069495	0.482736	5.2968	0.506499	2.66268	2.04887
341	STF 21c	2	26	2b	Psammite	Xenotime	1719.9	Unkn.	0	0.275105	14.9333	0.134172	0.184056	0.176513	32.0959	0	0.238452	0.562886	0.663896	42.7595	0.080992
342	STF 21c	2	27	2b	Psammite	Monazite	1743	Metam.	1725-1750	0.256503	14.061	10.4594	22.1216	0.971847	28.6017	0.063057	0.524899	6.06255	0.266952	3.9696	2.06995
343	STF 21c	2	28	2b	Psammite	Monazite	1753.8	Metam.	1750-1775	0.258191	13.9973	11.8643	23.1217	0.876328	28.4516	0.084537	0.400836	4.80876	0.226027	3.40183	1.97761
344	STF 21c	2	29	2b	Psammite	Monazite	1749.1	Metam.	1725-1750	0.321607	14.1397	11.6846	23.0205	0.883893	28.7388	0.084179	0.399799	5.04468	0.20646	3.30582	2.01432
345	STF 21c	2	30	2b	Psammite	Monazite	1740.8	Metam.	1725-1750	0.227244	14.0161	12.1348	22.8463	0.762076	28.3725	0.06408	0.331564	4.51934	0.220044	3.41554	2.04532
346	STF 21c	2	31	2b	Psammite	Monazite	1766.8	Metam.	1750-1775	0.24212	14.2527	11.9863	22.8568	0.803265	28.7198	0.062	0.377689	4.66786	0.233052	3.5137	1.95743
347	STF 21c	2	32	2b	Psammite	Monazite	1743.3	Metam.	1725-1750	0.180038	12.57	10.4504	21.4997	0.670058	25.8771	0.09523	0.317066	4.41858	0.189075	3.37216	2.03705
348	STF 21c	2	33	2b	Psammite	Monazite	1738.5	Metam.	1725-1750	0.24232	14.3217	11.6968	22.9405	0.879387	28.8524	0.078281	0.426644	5.04861	0.162569	3.28769	2.05114
349	STF 21c	2	34	2b	Psammite	Monazite	1755.2	Metam.	1750-1775	0.241634	14.1662	12.6985	23.9017	0.7416	28.5852	0.079006	0.304501	3.93615	0.163006	2.92694	2.02613
350	STF 21c	2	35	2b	Psammite	Monazite	1758.2	Metam.	1750-1775	0.17184	14.2548	12.2055	23.9948	0.964052	28.54	0.090916	0.522921	3.90515	0.801419	1.67155	2.16739
351	STF 21c	2	36	2b	Psammite	Monazite	1790.3	Metam.	1775-1800	0.248806	14.0082	11.9005	23.3103	0.887712	28.4617	0.090508	0.417938	5.04444	0.183342	3.04998	2.00273
352	STF 21c	2	37	2b	Psammite	Monazite	1782.4	Metam.	1775-1800	0.255176	14.2178	11.1116	22.664	0.842181	28.7883	0.07253	0.453626	5.61268	0.184247	3.59297	2.10352
353	STF 21c	2	38	2b	Psammite	Monazite	1808	Detri.	1800-1825	0.204094	14.2572	12.6497	24.1537	0.711782	28.7404	0.080448	0.301887	3.94846	0.165837	2.97386	2.08179
354	STF 21c	2	39	2b	Psammite	Monazite	1785.2	Metam.	1775-1800	0.204815	14.1751	12.6449	24.6667	0.749186	28.4423	0.083657	0.357883	3.19118	0.445409	1.76682	2.19606
355	STF 21c	2	40	2b	Psammite	Monazite	1780.2	Metam.	1775-1800	0.258897	14.2952	11.1023	22.0959	0.948601	28.8856	0.077829	0.522927	5.81168	0.280027	3.76429	2.0224
356	STF 21c	2	41	2b	Psammite	Monazite	1767	Metam.	1750-1775	0.2412	14.8816	11.4886	23.1269	0.749703	29.5512	0.072756	0.37975	4.89116	0.183128	3.36045	2.07766
357	STF 21c	2	42	2b	Psammite	Monazite	1792.6	Metam.	1775-1800	0.266352	14.3898	11.3235	22.8926	0.865421	29.003	0.084372	0.412037	5.15547	0.210629	3.41827	2.04815
358	STF 21c	2	43	2b	Psammite	Monazite	1829.8	Detri.	1825-1850	0.231348	14.4548	12.419	23.1392	0.808247	28.995	0.070496	0.365882	4.32279	0.230953	3.43454	2.00713
359	STF 21c	2	44	2b	Psammite	Monazite	1790.8	Metam.	1775-1800	0.292539	14.4232	11.783	23.4466	0.882643	29.098	0.087702	0.399168	4.87775	0.216155	3.17759	2.10842
360	STF 21c	2	45	2b	Psammite	Monazite	1738.6	Metam.	1725-1750	0.269326	14.1823	11.8882	22.6925	0.817521	28.5759	0.085251	0.414152	5.04545	0.226684	3.10032	2.05478
361	STF 21c	2	46	2b	Psammite	Apatite	0	Unkn.	0	0.112774	19.3805	0.266389	0.497258	37.1624	40.2899	0.111405	0.012279	0.077732	0	0.223163	0.057265
362	STF 21c	2	47	2b	Psammite	Monazite	1790.8	Metam.	1775-1800	0.317472	14.2825	11.3999	22.2521	0.978996	28.8999	0.099035	0.410232	5.39257	0.23054	3.54355	2.05828
363	STF 21c	2	48	2b	Psammite	Apatite	0.1	Unkn.	0	0.044357	19.5713	0.07557	0.228558	37.7748	40.6347	0.115777	0.003948	0.092903	0.002364	0.325795	0.05057

364	STF 21c	2	49	2b	Psammite	Monazite	1756.8	Metam.	1750-1775	0.27917	14.2358	11.1267	22.2192	0.967985	28.8684	0.071251	0.504226	5.74409	0.278978	3.90243	1.98516
365	STF 21c	2	50	2b	Psammite	Apatite	4159.4	Unkn.	0	0.051567	19.5429	0.083452	0.10906	37.6662	40.4743	0.116224	0.006253	0	0	0.218754	0
366	STF 22	1	1	:. Granit	Igneous	Monazite	1801.6	Igneous	0	0.142087	13.9793	10.8871	22.908	1.14224	27.994	0.062695	0.688276	6.1908	0.758308	2.05849	1.92666
367	STF 22	1	2	:. Granit	Igneous	Monazite	1763.7	Igneous	0	0.283248	13.8488	9.87868	22.3518	1.06138	28.0404	0.067444	0.659266	7.31451	0.396714	2.17113	2.11712
368	STF 22	1	3	:. Granit	Igneous	Monazite	1753.3	Igneous	0	0.271013	13.8536	10.2707	22.6702	1.07055	28.0946	0.078355	0.635888	7.08469	0.434014	2.25306	2.00594
369	STF 22	1	4	:. Granit	Igneous	Monazite	1784.3	Igneous	0	0.287309	13.6836	9.67793	21.9722	1.0811	27.9313	0.078392	0.647728	7.53338	0.323188	2.86011	2.09623
370	STF 22	1	5	:. Granit	Igneous	Monazite	1790	Igneous	0	0.224961	14.0376	9.9425	22.4692	1.02152	28.3254	0.074855	0.561161	6.88094	0.278728	2.74219	2.01092
371	STF 22	1	6	:. Granit	Igneous	Monazite	1779.6	Igneous	0	0.274112	13.6761	9.71844	20.891	1.1179	27.3343	0.068163	0.804232	5.64328	0.812071	2.78612	1.96028
372	STF 22	1	7	:. Granit	Igneous	Monazite	1805.4	Igneous	0	0.302137	13.8967	9.52196	21.8476	1.15397	28.2284	0.07567	0.74015	7.72356	0.450206	2.7678	2.01716
373	STF 22	1	8	:. Granit	Igneous	Monazite	1765.3	Igneous	0	0.295567	13.9782	9.48639	21.8277	1.09335	28.3082	0.075975	0.644616	7.42971	0.377144	2.99088	1.94958
374	STF 22	1	9	:. Granit	Igneous	Monazite	1775.2	Igneous	0	0.279497	13.9343	9.58998	21.8041	1.00152	28.1753	0.06898	0.563345	6.86107	0.343066	3.3326	1.93045
375	STF 22	1	10	:. Granit	Igneous	Monazite	1810	Igneous	0	0.271273	13.9153	9.85339	22.3763	1.0697	28.1665	0.060849	0.654255	7.23042	0.396091	2.40526	2.07063
376	STF 22	1	11	:. Granit	Igneous	Monazite	1770.5	Igneous	0	0.330434	13.798	9.26758	21.6525	1.10545	28.0689	0.062773	0.694066	7.92171	0.331156	2.88984	2.07299
377	STF 22	1	12	:. Granit	Igneous	Monazite	1780.3	Igneous	0	0.305165	13.8999	9.88136	22.2789	1.02903	28.1035	0.082534	0.609018	6.97846	0.366146	2.50272	2.03233
378	STF 22	1	13	:. Granit	Igneous	Monazite	1781.6	Igneous	0	0.267959	13.8616	9.69592	21.677	1.32947	28.1199	0.080907	0.942466	7.3345	1.30936	2.88373	1.88772
379	STF 22	1	14	:. Granit	Igneous	Monazite	1783.9	Igneous	0	0.148238	13.7602	10.317	20.6965	0.938513	27.1297	0.07917	0.48379	5.32516	0.31808	2.92722	1.88987
380	STF 22	1	15	:. Granit	Igneous	Monazite	1804	Igneous	0	0.21598	13.584	10.0358	21.5454	1.0992	27.0606	0.085981	0.640717	6.84649	0.462985	1.22782	2.00999
381	STF 22	1	16	:. Granit	Igneous	Monazite	1780.5	Igneous	0	0.174951	13.9787	11.053	22.632	0.990866	27.9358	0.077866	0.474821	5.7958	0.296519	2.1909	1.9439
382	STF 22	1	17	:. Granit	Igneous	Monazite	1763.3	Igneous	0	0.275336	13.8416	9.43145	21.5265	1.00249	28.0758	0.058696	0.579206	6.89894	0.33593	3.52877	2.01894
383	STF 22	1	18	:. Granit	Igneous	Monazite	1788.2	Igneous	0	0.277549	13.519	9.47512	21.0056	1.02799	27.1234	0.080384	0.6212	6.93343	0.415194	2.20011	1.9547
384	STF 22	1	19	:. Granit	Igneous	Monazite	1790.1	Igneous	0	0.233852	13.8327	9.48634	21.197	1.09332	27.7962	0.065059	0.710571	6.69349	0.600281	3.01384	1.9827
385	STF 22	1	20	:. Granit	Igneous	Monazite	1784.8	Igneous	0	0.243036	13.7744	9.70969	21.137	1.03827	27.46	0.070712	0.67104	6.76024	0.606765	2.03125	2.01654
386	STF 22	1	21	:. Granit	Igneous	Monazite	1762.6	Igneous	0	0.248639	13.6021	9.26553	20.8344	0.90989	27.2269	0.058168	0.520134	6.17495	0.296971	3.2892	1.86636
387	STF 22	1	22	:. Granit	Igneous	Monazite	1773.5	Igneous	0	0.247374	14.2514	11.2051	23.8738	0.9347	28.7445	0.091151	0.530195	5.73573	0.29764	2.46896	2.08367
388	STF 22	1	23	:. Granit	Igneous	Monazite	1785.8	Igneous	0	0.302633	13.7382	9.76755	22.2305	1.06383	27.8713	0.076512	0.622703	7.20476	0.347955	2.2014	2.05064
389	STF 22	1	24	:. Granit	Igneous	Monazite	1775.1	Igneous	0	0.259505	13.9203	10.5833	23.0276	1.12279	28.1159	0.07752	0.664938	7.13088	0.550928	1.41698	2.02538
391	STF 22	1	26	:. Granit	Igneous	Monazite	1776.6	Igneous	0	0.264239	13.3845	9.49313	20.9233	1.03508	26.8984	0.062134	0.621671	7.10634	0.294395	2.21368	1.82842
392	STF 22	1	27	:. Granit	Igneous	Monazite	1757.2	Igneous	0	0.263929	13.253	8.95859	19.7327	0.943	26.4851	0.068038	0.566746	6.8017	0.333695	2.74273	1.80741
393	STF 22	1	28	:. Granit	Igneous	Monazite	1784.7	Igneous	0	0.237628	13.1385	8.6509	19.7344	0.92967	26.1322	0.063878	0.519659	6.66048	0.28817	2.75404	1.84201
394	STF 22	1	29	:. Granit	Igneous	Monazite	1760.9	Igneous	0	0.236561	13.9731	9.86076	22.0376	1.1296	28.1553	0.057445	0.685388	7.08055	0.549657	2.45571	2.01059
395	STF 22	1	30	:. Granit	Igneous	Monazite	1784	Igneous	0	0.276267	13.3086	8.95503	20.2506	0.958825	26.6245	0.063379	0.605246	6.84865	0.340859	2.78436	1.86396
396	STF 22	1	31	:. Granit	Igneous	Monazite	1770.6	Igneous	0	0.318783	13.8052	9.15163	21.4196	1.11751	28.0127	0.06623	0.653336	7.7276	0.360855	3.00159	2.06576
397	STF 22	1	32	:. Granit	Igneous	Monazite	1763.2	Igneous	0	0.280839	14.0682	9.58522	22.0989	1.05781	28.4714	0.068767	0.585748	7.30294	0.325139	2.97832	2.11166
398	STF 22	1	33	:. Granit	Igneous	Monazite	1757.2	Igneous	0	0.270516	13.7599	9.39649	21.8116	1.03296	27.9222	0.074819	0.602013	7.18095	0.311835	2.9272	2.10898
399	STF 22	1	34	:. Granit	Igneous	Monazite	1740.2	Igneous	0	0.232697	13.9678	10.1742	22.3894	0.872444	28.1695	0.065537	0.534265	5.74103	0.346522	3.23221	2.02714
400	STF 22	1	35	:. Granit	Igneous	Monazite	1746.2	Igneous	0	0.184032	13.9088	10.8123	22.5473	1.07679	27.8818	0.089141	0.654307	5.94586	0.667717	2.09891	1.96387
401	STF 22	1	36	:. Granit	Igneous	Monazite	1759.8	Igneous	0	0.266497	13.899	10.2131	22.8338	1.07656	28.1657	0.092784	0.638363	7.2344	0.428244	2.03188	2.06364
402	STF 22	1	37	:. Granit	Igneous	Monazite	1795.1	Igneous	0	0.282763	13.906	9.73152	22.2076	1.0543	28.0586	0.07283	0.632543	7.2038	0.42108	2.26852	2.06241
403	STF 22	1	38	:. Granit	Igneous	Monazite	1764.2	Igneous	0	0.277994	13.8366	10.0222	22.6451	1.07136	28.0363	0.087114	0.665236	7.16151	0.422425	2.0203	2.05041
404	STF 22	1	39	:. Granit	Igneous	Monazite	1772.6	Igneous	0	0.280762	13.8813	9.68043	22.2465	1.03857	28.1806	0.083975	0.670195	7.10531	0.40954	2.66812	2.12127
405	STF 22	1	40	:. Granit	Igneous	Monazite	1779.5	Igneous	0	0.294587	13.9869	9.40045	21.7746	1.23374	28.331	0.072781	0.807994	7.8012	0.714273	2.82725	1.93294
406	STF 22	1	41	:. Granit	Igneous	Monazite	1755.2	Igneous	0	0.303457	13.7967	9.52292	22.0261	1.18042	28.0334	0.071871	0.733141	7.77264	0.527058	2.56587	1.99639
407	STF 22	1	42	:. Granit	Igneous	Monazite	1815.7	Igneous	0	0.180412	13.6581	9.30507	20.5327	1.09403	27.2277	0.07768	0.59408	6.82753	0.335145	2.89239	1.79886
408	STF 22	1	43	:. Granit	Igneous	Monazite	1781.9	Igneous	0	0.28026	13.8143	9.94284	22.4687	1.05426	27.9734	0.069502	0.636747	7.36971	0.402334	2.1141	2.07064
409	STF 22	1	44	:. Granit	Igneous	Monazite	1772.2	Igneous	0	0.152306	14.1319	10.7915	22.8344	1.07685	28.2837	0.07275	0.611478	5.9601	0.584883	2.28148	2.05377
410	STF 22	1	45	:. Granit	Igneous	Monazite	1763.8	Igneous	0	0.305202	13.8389	9.40612	21.5314	1.07602	28.0785	0.076538	0.656507	7.49632	0.332411	3.10492	2.05589
411	STF 22	1	46	:. Granit	Igneous	Monazite	1758.3	Igneous	0	0.167027	14.0933	10.4904	22.2544	1.05523	28.1561	0.065947	0.638152	5.97338	0.880345	2.50572	1.96561
412	STF 22	1	47	:. Granit	Igneous	Monazite	1753.6	Igneous	0	0.291173	13.1076	9.39247	21.4284	0.990035	26.9653	0.076657	0.597766	6.88027	0.332143	3.22199	1.9549
413	STF 22	1	48	:. Granit	Igneous	Monazite	1762.4	Igneous	0	0.300951	13.7787	9.46357	22.0752	1.05637	28.0732	0.071098	0.639387	7.41619	0.359965	3.01876	2.04403
414	STF 22	1	49	:. Granit	Igneous	Monazite	1764.6	Igneous	0	0.291236	13.932	9.67963	21.9401	1.03408	28.2318	0.073252	0.634444	7.11995	0.397329	3.07663	1.97359
415	STF 22	1	50	:. Granit	Igneous	Monazite	1749.3	Igneous	0	0.273968	13.8765	9.83432	22.3478	0.91842	28.0698	0.099162	0.522906	6.4067	0.274835	3.00502	2.02685
416	STF 22	1	51	:. Granit	Igneous	Monazite	0	Igneous	0	0.233096	14.0663	9.88167	22.1487	1.16047	28.2905	0.084596	0.597483	7.50524	0.28038	2.32159	1.95336
417	STF 22	1	52	:. Granit	Igneous	Monazite	0	Igneous	0	0.310904	13.8064	9.51297	22.0674	1.07865	28.0438	0.063648	0.615503	7.39729	0.306182	2.78696	2.1179
418	STF 22	1	53	:. Granit	Igneous	Monazite	1799.9	Igneous	0	0.286348	13.8744	9.64437	22.1935	1.06196	28.1614	0.111122	0.609783	7.03688	0.325749	2.83372	2.06862
419	STF 22	1	54	:. Granit	Igneous	Monazite	1802	Igneous	0	0.296288	13.8661	9.62123	22.0179	1.02165	28.1369	0.085672	0.622774	7.02126	0.367798	2.94096	2.0226
420	STF 22	1	55	:. Granit	Igneous	Monazite	1793	Igneous	0	0.19873	13.8867	10.3856	22.6108	1.15796	27.9717	0.087997	0.685769	6.49056	0.727302	1.9437	2.02266
421	STF 22	1	56	:. Granit	Igneous	Monazite	1787	Igneous	0	0.218963	14.1274	10.5742	22.768	1.24494	28.4002	0.068248	0.772658	7.01273	0.925588	1.66255	2.01084
423	STF 22	1	58	:. Granit	Igneous	Monazite	1810.4	Igneous	0	0.195149	13.6747	9.96928	21.7634	1.21139	27.5431	0.086239	0.817942	6.37328	1.11478	2.71769	1.82135
424	STF 22	1	59	:. Granit	Igneous	Monazite	1798.4	Igneous	0	0.184333	14.1138	10.7703	22.4428	0.981863	28.3123	0.088069	0.514309	5.75532	0.324674	3.03007	2.03094
425	STF 22	1	60	:. Granit	Igneous	Monazite	1775.4	Igneous	0	0.252513	13.6861	9.08012	20.6443	1.14457	27.461	0.083269	0.842927	6.40737	1.2242	3.31378	1.87241
426	STF 22	1	61	:. Granit	Igneous	Monazite	1775.7	Igneous	0	0.168379	13.2759	9.39881	19.9129	1.06734	26.3498	0.069768	0.620074	5.97783	0.693291	2.75462	1.8046
427	STF 22	1	62	:. Granit	Igneous	Monazite	1787.5	Igneous	0	0.293228	13.7157	9.4248	21.867	1.0531	27.8146	0.060586	0.602595	7.21191	0.321043	2.69617	2.07303
429	STF 22	1	64	:. Granit	Igneous	Monazite	1786.7	Igneous	0	0.270345	13.2407	8.87178	20.0218	0.930136	26.5555	0.046581	0.574572	6.54443	0.331148	3.22229	1.84056
430	STF 22	1	65	:. Granit	Igneous	Monazite	1795.2	Igneous	0	0.285013	13.5439	9.0177	20.4885	1.03616	27.0778	0.06152	0.624609	7.15995	0.354377	2.68667	1.85758
431	STF 22	1	66	:. Granit	Igneous	Monazite	1789.4	Igneous	0	0.227254	13.6383	10.0419	20.8843	1.21294	27.1819	0.08508	0.748107	7.07246	0.898527	1.3863	1.97765
432	STF 22	1	67	:. Granit	Igneous	Monazite	1768.8	Igneous	0	0.196542	13.9978	10.3807	22.3155	1.18552	28.1051	0.077195	0.651654	5.87943	0.970495	2.2972	1.99454
433	STF 22	1	68	:. Granit	Igneous	Monazite	8000	Igneous	0	0.399464	13.4532	9.62581	22.0133	0.989891	27.5498	0.073528	0.544843	6.58969	0.249165	2.71477	2.0141
434	STF 22	1	69	:. Granit	Igneous	Monazite	1806.8	Igneous	0	0.315896	14.5735	9.4167	22.3933	1.10509	29.3209	0.068779	0.622616	7.76239	0.331605	2.99921	2.13866
435	STF 22	1	70	:. Granit	Igneous	Monazite	1782.7	Igneous	0	0.287503	13.8915	9.66483	22.078	1.04116	28.0616	0.086906	0.647704	7.10412	0.402607	2.49672	2.06546
436	STF 25	1	1	ı. Granit	Igneous	Monazite	1720.2	Igneous	0	1.07709	12.6485	8.81364	21.1089	0.54634	27.1814	0.073064	0.782103	11.2665	0.142245	1.43921	2.04393
437	STF 25	1	2	ı. Granit	Igneous	Monazite	1770.2	Igneous	0	0.581419	13.098	6.44178	18.8564	0.98998	26.3184	0.065171	0.726463	9.72496	0.215456	2.11934	1.90243
438	STF 25	1	3	ı. Granit	Igneous	Th-Si Min.	1508.2	Igneous	0	4.24061	8.03793	3.19114	7.54242	0.72634	24.8855	4.26808	0.332172	28.2621	0.153524	2.5421	1.12525
439	STF 25	1	4	ı. Granit	Igneous	Th-Si Min.	1774.8	Igneous	0	4.42883	6.24724	2.30845	6.53782	0.758366	23.6887	3.27066	0.118522	34.2276	0.653408	7.72736	0.555535
441	STF 25	1	6	ı. Granit	Igneous	Monazite	1379.3	Igneous	0	0.915869	12.5223	9.41332	21.849	0.585358	26.525	0.066734	0.541506	9.07675	0.106739	1.6088	1.89432
442	STF 25	1	7	ı. Granit	Igneous	Monazite	1720.2	Igneous	0	0.907717	12.666	9.74593	21.8499	0.40736	26.8346	0.069816	0.58454	9.15419	0.107431	1.32896	2.06963
443	STF 25	1	8	ı. Granit	Igneous	Monazite	1696.6	Igneous	0	0.775829	12.3567	9.13223	20.9085	0.573492	25.8835	0.084893	0.687746	8.8391	0.15639	1.68984	1.85384
444	STF 25	1	9	ı. Granit	Igneous	Monazite	1746.7	Igneous	0	0.566115	12.8958	7.82377	18.2901	1.13395	26.5953	0.074085	0.831187	10.361	0.327355	3.63622	1.62578
447	STF 25	1	12	ı. Granit	Igneous	Xenotime	1772.2	Igneous	0	0.12904	15.0922	0.081368	0.037936	0.053536	31.242	0	0.237727	0.510289	0.67257	40.1598	0.030046
450	STF 25	1	15	ı. Granit	Igneous	Xenotime	1767.8	Igneous	0	0.271117	14.6008	0.161779	0.319735	0.10861	31.0278	0.207592	0.070574	2.19971	0.44046	39.5938	0
451	STF 25	1	16	ı. Granit	Igneous	Monazite	1726.9	Igneous	0	0.899732	12.485	8.92385	20.1291	0.392943	26.225	0.067689	0.635467	9.00469	0.109056	1.75406	2.06187
453	STF 25	1	18	ı. Granit	Igneous	Monazite	1678.9	Igneous	0	0.849121	12.5627	8.2462	18.9263	0.799595	26.4517	0.082341	0.661154	11.0838	0.22268	2.26861	1.87679
457	STF 25	1	22	ı. Granit	Igneous	Monazite	1775.8	Igneous	0	0.434664	13.6572	7.38229	17.5205	2.16619	27.5879	0.064036	1.27214	12.8661	0.355235	1.99209	1.64478
460	STF 25	1	25	ı. Granit	Igneous	Monazite	1675.5	Igneous	0	0.718955	13.0187	10.1391	24.0611	0.410433	27.3772	0.05942	0.483402	7.52849	0.035274	1.38036	2.20071
461	STF 25	1	26	ı. Granit	Igneous	Monazite	1604.3	Igneous	0	0.691585	12.9153	10.0669	21.4083	0.267473	26.7956	0.070218	0.455448	8.61674	0.11966	1.64217	2.13325
462	STF 25	1	27	ı. Granit	Igneous	Monazite	1758.7	Igneous	0	0.804125	12.6847	8.51382	18.9831	0.658008	26.3991	0.080243	0.756199	10.244	0.142852	2.12591	1.88706
465	STF 25	1	30	ı. Granit	Igneous	Monazite	1709.8	Igneous	0	1.1383	11.9275	8.3093	19.6569	0.576115	25.9956	0.06588	0.820611	12.5114	0.299443	1.93938	1.8157
466	STF 25	1	31	ı. Granit	Igneous	Monazite	1787.4	Igneous	0	0.531626	13.274	8.06678	18.7259	1.44673	27.0166	0.072432	0.971787	11.3638	0.149572	1.50402	1.83054
467	STF 25	1	32	ı. Granit	Igneous	Monazite	1700.1	Igneous	0	0.48	13.5017	7.56269	17.852	1.26207	27.8376	0.062993	0.950241	10.9317	0.373328	4.8348	1.83805
468	STF 25	1	33	ı. Granit	Igneous	Monazite	2164.3	Igneous	0	0.888929	12.4616	9.40132	22.539	0.558151	26.8814	0.079701	0.783977	11.3939	0.064267	1.64065	1.96127
469	STF 25	1	34	ı. Granit	Igneous	Monazite	1756.9	Igneous	0	0.503653	13.2035	8.69948	20.8453	1.14102	27.3746	0.074332	0.840963	10.7984	0.161278	1.9047	2.01674
470	STF 25	1	35	ı. Granit	Igneous	Monazite	0.1	Igneous	0	0.710474	12.8415	10.183	23.151	0.472121	27.1464	0.067377	0.613785	9.30286	0.104538	1.6679	2.02916
471	STF 25	1	36	ı. Granit	Igneous	Monazite	1905.2	Igneous	0	0.768869	12.554	8.85336	21.225	0.956576	26.5511	0.086363	0.733087	10.2808	0.176705	1.65003	1.89815
475	STF 25	1	40	ı. Granit	Igneous	Monazite	1794.6	Igneous	0	0.397655	13.3736	7.86988	19.7995	1.71571	27.4514	0.085863	0.899803	11.8238	0.406361	2.09159	1.83567
476	STF 25	1	41	ı. Granit	Igneous	Monazite	1716.2	Igneous	0	0.792206	12.5574	9.15059	22.8988	0.710395	26.7021	0.125232	0.173997	9.11167	0.251571	1.12786	2.04795
477	STF 25	1	42	ı. Granit	Igneous	Monazite	1627.9	Igneous	0	0.97921	12.4308	9.98002	22.9832	0.40685	26.5135	0.091462	0.665121	7.51116	0.164317	1.74097	1.95906
483	STF 25	1	48	ı. Granit	Igneous	Monazite	1797.3	Igneous	0	0.821098	12.9773	9.30618	22.3799	0.727453	27.4251	0.071425	0.748011	10.659	0.114885	1.72973	1.98616
484	STF 25	1	49	ı. Granit	Igneous	Monazite	0.1	Igneous	0	0.878271	12.799	9.04688	22.6471	0.497715	27.1131	0.079868	0.571197	9.47227	0.056528	1.60772	2.02082
485	STF 25	1	50	ı. Granit	Igneous	Monazite	1724.9	Igneous	0	0.649673	13.1802	10.9774	25.1174	0.264783	27.4444	0.067324	0.422103	6.0806	0.121179	1.63467	2.12771
486	STF 25	1	51	ı. Granit	Igneous	Monazite	1928.7	Igneous	0	1.39356	11.8967	8.89089	21.7531	1.28444	26.7607	0.05483	0.604473	10.42	0.144053	1.96025	1.74021
488	STF 25	1	53	ı. Granit	Igneous	Monazite	6226.6	Igneous	0	0.73379	13.0387	9.85897	24.1999	0.388917	27.3863	0.081973	0.494557	7.10523	0.038386	1.35869	2.14524
490	STF 25	1	55	ı. Granit	Igneous	Monazite	542.8	Igneous	0	1.01555	12.7462	9.82265	23.9283	0.640903	27.4058	0.082124	0.364848	8.53331	0.013085	1.431	2.00504
491	STF 25	1	56	ı. Granit	Igneous	Monazite	1736.5	Igneous	0	0.716454	13.2148	8.5504	19.233	1.64772	27.8005	0.073199	1.05614	14.8264	0.301578	2.17561	1.64513
492	STF 25	1	57	ı. Granit	Igneous	Xenotime	1755.3	Igneous	0	2.73843	9.61548	2.37379	6.14209	0.403441	26.51	1.01087	0.107343	19.1757	0.566094	21.502	0.279259
493	STF 25	1	58	ı. Granit	Igneous	Monazite	0.1	Igneous	0	0.840768	12.2658	9.75308	22.5153	0.555687	26.2203	0.134186	0.629209	7.70942	0.113283	1.66717	2.02888
495	STF 25	1	60	ı. Granit	Igneous	Monazite	1696.7	Igneous	0	0.723377	12.8431	8.30837	20.0637	0.926334	26.8696	0.07643	0.7751	10.9467	0.205326	2.22631	1.88372

APPENDIX C: MONAZITE GEOCHRONOLOGICAL DATA

Appendix C

Sample	Run #	Grain ID	Pb207/Pb206	1s	Pb207/U235	1s	Pb206/U238	1s	Err Correction	Err% 7-6	Err% 6-238	Err% 7-235	Pb207/Pb206	1S	Pb206/U238	1s	Pb207/U235	1s	Pb204	Pb206	Pb207	U238
STF 03	1	MNZ01C	0.1148	0.00124	5.38072	0.08454	0.3403	0.00535	0.763834987	1.080139	1.5721422	1.571165	1876.7	19.36	1888.1	25.73	1881.8	13.45	40	244943	29255	1124175
STF 03	1	MNZ02C	0.10947	0.00129	5.09083	0.08356	0.33759	0.00539	0.735440835	1.178405	1.5966113	1.641383	1790.6	21.28	1875.1	25.95	1834.6	13.93	26	146096	16633	681601
STF 03	1	MNZ03C	0.11366	0.00127	5.0934	0.08297	0.32538	0.00524	0.762103122	1.117368	1.6104247	1.628971	1858.8	20.08	1815.9	25.51	1835	13.83	31	142260	16756	698430
STF 03	1	MNZ04R	0.11276	0.00129	5.42034	0.08913	0.34911	0.00562	0.753014471	1.144023	1.6098078	1.644362	1844.3	20.63	1930.3	26.87	1888.1	14.1	20	191513	22391	874783
STF 03	1	MNZ05R	0.11316	0.00131	5.53698	0.09162	0.35523	0.00576	0.750460658	1.157653	1.6214847	1.654693	1850.8	20.76	1959.5	27.42	1906.4	14.23	38	230150	27154	1040107
STF 03	1	MNZ06R	0.1114	0.00154	5.37599	0.09555	0.35051	0.00566	0.671673658	1.382406	1.6147899	1.777347	1822.4	24.94	1937	27.02	1881	15.22	12	88754	10294	397724
STF 03	1	MNZ07R	0.10921	0.00125	5.08258	0.08338	0.33804	0.00544	0.752067572	1.144584	1.609277	1.640505	1786.2	20.82	1877.2	26.2	1833.2	13.92	13	214907	24439	1012632
STF 03	1	MNZ08R	0.10898	0.00122	5.04744	0.08235	0.33628	0.00544	0.762622495	1.119471	1.6176995	1.63152	1782.4	20.25	1868.7	26.25	1827.3	13.83	21	226560	25732	1081567
STF 03	1	MNZ09R	0.11001	0.00129	5.1071	0.08483	0.33724	0.00545	0.744251189	1.172621	1.6160598	1.661021	1799.5	21.16	1873.4	26.26	1837.3	14.1	12	241852	27663	1146192
~~STF 03~~	~~1~~	~~MNZ10R~~	~~-0.08242~~	~~0.23303~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~#VALUE!~~	~~-282.735~~	~~#VALUE!~~	~~#VALUE!~~	~~0.1~~	~~2352.77~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~0~~	~~4~~	~~0~~	~~0~~
STF 03	1	MNZ11R	0.11592	0.00183	5.62997	0.10979	0.3525	0.00592	0.630700806	1.578675	1.6794326	1.950099	1894.2	28.06	1946.5	28.22	1920.7	16.81	93	99787	12107	457217
STF 03	1	MNZ12R	0.11316	0.00148	5.36673	0.0941	0.34459	0.00564	0.704347453	1.307883	1.6367277	1.753395	1850.8	23.39	1908.7	27.06	1879.6	15.01	3	70366	8241	327540
STF 03	2	MNZ01-II	0.11643	0.00153	5.44502	0.09873	0.33995	0.0057	0.719067328	1.314094	1.6767172	1.813216	1902.1	23.47	1886.4	27.42	1892	15.55	7	328980	39310	1594684
~~STF 03~~	~~2~~	~~MNZ02-II~~	~~-0.22218~~	~~0.16765~~	~~-3.95236~~	~~4.49055~~	~~0.15152~~	~~0.20945~~	~~-0.83802539~~	~~-75.4568~~	~~138.23258~~	~~-113.617~~	~~0.1~~	~~0~~	~~909.5~~	~~1172.53~~	~~NaN~~	~~*******~~	~~16~~	~~0~~	~~19~~	~~0~~
STF 03	2	MNZ03-II	0.11813	0.00148	5.68411	0.1003	0.3492	0.00581	0.734408475	1.252857	1.663803	1.764568	1928.2	22.23	1930.8	27.74	1929	15.24	3	88771	10757	416433
STF 08	1	MNZ01	0.10904	0.00117	4.8855	0.08096	0.32513	0.00538	0.790066808	1.073001	1.6547227	1.657149	1783.4	19.48	1814.7	26.17	1799.8	13.97	11	338465	37937	1713731
STF 08	1	MNZ02	0.1083	0.00113	5.09965	0.08393	0.34176	0.00565	0.799947484	1.043398	1.6532069	1.645799	1770.9	19	1895.1	27.15	1836	13.97	34	298659	33142	1439937
STF 08	1	MNZ03	0.10816	0.00116	5.22661	0.087	0.3507	0.00583	0.792164896	1.072485	1.6623895	1.664559	1768.6	19.53	1937.9	27.81	1857	14.19	28	204302	22695	962893
STF 08	1	MNZ04	0.11163	0.00123	5.42605	0.09143	0.35276	0.00589	0.784278503	1.101854	1.6696904	1.685019	1826.1	19.92	1947.8	28.05	1889	14.45	0	97102	11128	455804
STF 08	1	MNZ05	0.11261	0.00125	5.66868	0.09597	0.36538	0.00609	0.781793597	1.110026	1.6667579	1.692987	1841.9	20.01	2007.6	28.76	1926.6	14.61	13	211879	24430	960096
STF 08	1	MNZ06	0.11681	0.00128	5.28542	0.08925	0.32842	0.00548	0.786987379	1.095797	1.6685951	1.688608	1907.9	19.56	1830.7	26.6	1866.5	14.42	0	522039	62417	2638553
STF 08	1	MNZ07	0.11508	0.00121	5.44156	0.0908	0.34314	0.00574	0.801969853	1.051442	1.6727866	1.668639	1881.2	18.81	1901.8	27.54	1891.4	14.31	0	336371	39617	1633943
STF 08	1	MNZ08	0.10984	0.00118	4.64955	0.07827	0.30719	0.00515	0.795539001	1.07429	1.6764869	1.683389	1796.7	19.38	1726.9	25.41	1758.2	14.07	0	347078	39034	1887066
~~STF 08~~	~~1~~	~~MNZ09~~	~~-0.1077~~	~~0.16382~~	~~-1.21382~~	~~2.1591~~	~~0.09266~~	~~0.04713~~	~~-0.61290351~~	~~-152.108~~	~~50.863371~~	~~-177.876~~	~~0.1~~	~~456.67~~	~~571.2~~	~~278.06~~	~~NaN~~	~~*******~~	~~55~~	~~0~~	~~6~~	~~0~~
STF 08	1	MNZ10	0.12242	0.0013	6.04168	0.10193	0.35815	0.00603	0.801504492	1.061918	1.6836521	1.687114	1991.8	18.74	1973.4	28.63	1981.9	14.7	7	633295	79272	2967690
STF 08	1	MNZ11	0.10522	0.0013	4.29622	0.07743	0.29632	0.00501	0.75156868	1.235507	1.6907397	1.802282	1718.1	22.59	1673	24.92	1692.6	14.84	36	8942487	952413	50480696
STF 08	1	MNZ12	0.11601	0.00132	5.5397	0.09666	0.34653	0.00591	0.782730227	1.137833	1.70548	1.74486	1895.6	20.38	1918	28.32	1906.8	15.01	25	356552	42472	1743054
STF 08	1	MNZ13	0.10722	0.00118	5.11618	0.08813	0.34626	0.00588	0.793073825	1.100541	1.6981459	1.722574	1752.8	20.01	1916.7	28.16	1838.8	14.63	23	142851	15648	696510
STF 08	1	MNZ14	0.10934	0.00124	4.95497	0.08649	0.32887	0.00563	0.784986911	1.134077	1.7119226	1.74552	1788.3	20.53	1832.9	27.3	1811.7	14.75	0	164134	18399	847677
STF 08	1	MNZ15	0.11275	0.00135	5.53071	0.09889	0.356	0.00609	0.766627456	1.197339	1.7106742	1.788016	1844.2	21.57	1963.2	28.97	1905.4	15.38	0	247080	28442	1175803
STF 08	1	MNZ16	0.11398	0.00189	4.73494	0.09975	0.30167	0.00532	0.645800396	1.658186	1.7635164	2.106679	1863.9	29.59	1699.6	26.37	1773.4	17.66	0	118195	13619	665418
STF 08	1	MNZ17	0.10789	0.00123	5.00833	0.08813	0.33686	0.00579	0.785414764	1.14005	1.7188149	1.759668	1764	20.63	1871.6	27.92	1820.7	14.89	13	192880	21297	976850
STF 08	1	MNZ18	0.11037	0.0014	4.94009	0.09118	0.32483	0.00563	0.750496127	1.268461	1.7332143	1.845715	1805.5	22.94	1813.3	27.38	1809.1	15.59	12	201389	22729	1059212
STF 21a	1	MNZ01	0.11577	0.00124	5.48229	0.09035	0.34358	0.00563	0.787606536	1.071089	1.6386286	1.648034	1892	19.17	1903.9	27.01	1897.8	14.15	2	644794	76399	3061571
STF 21a	1	MNZ02	0.11302	0.00122	5.22847	0.08692	0.33566	0.00553	0.787320679	1.079455	1.6475004	1.662437	1848.5	19.47	1865.8	26.7	1857.3	14.17	8	492658	56992	2406779
STF 21a	1	MNZ03	0.11975	0.0013	5.58454	0.09352	0.33839	0.00561	0.787802849	1.085595	1.6578504	1.674623	1952.4	19.34	1878.9	27	1913.7	14.42	22	576928	70724	2810355
STF 21a	1	MNZ04C	0.11628	0.00127	5.67089	0.0956	0.35387	0.00589	0.78751748	1.092191	1.664453	1.685802	1899.8	19.54	1953	28.06	1926.9	14.55	8	1288152	153366	6031916
STF 21a	1	MNZ05R	0.11827	0.00131	5.70305	0.09718	0.3499	0.00586	0.785189489	1.107635	1.6747642	1.704	1930.2	19.76	1934.1	28	1931.8	14.72	0	557018	67461	2651767
STF 21a	1	MNZ06	0.11799	0.00132	5.54963	0.09541	0.34129	0.00575	0.784155099	1.118739	1.6847842	1.719214	1926	19.96	1892.9	27.65	1908.3	14.79	12	601931	72742	2953447
STF 21a	1	MNZ07	0.10959	0.00131	5.06796	0.08968	0.33557	0.00572	0.763838041	1.195365	1.7045624	1.769548	1792.6	21.63	1865.3	27.59	1830.8	15.01	15	85565	9605	429274
STF 21a	1	MNZ08	0.12202	0.00143	6.24241	0.11022	0.37123	0.00634	0.772821615	1.171939	1.7078361	1.765664	1986	20.72	2035.2	29.83	2010.4	15.45	14	165203	20652	753199
STF 21a	1	MNZ09	0.11224	0.00133	5.35724	0.09543	0.34638	0.00595	0.7712197	1.184961	1.7177666	1.781328	1835.9	21.25	1917.3	28.5	1878	15.24	0	202966	23342	997102
STF 21a	1	MNZ10	0.11435	0.00136	5.33469	0.09586	0.33854	0.00585	0.77299209	1.189331	1.7280085	1.796918	1869.7	21.34	1879.7	28.17	1874.4	15.37	12	244055	28601	1233351
STF 21a	1	MNZ11	0.11105	0.00122	5.01733	0.07924	0.3279	0.00511	0.754899789	1.098604	1.558402	1.579326	1816.7	19.74	1828.2	24.8	1822.3	13.37	0	195352	22203	921179
STF 21a	1	MNZ12	0.11257	0.00115	4.86665	0.07483	0.31378	0.00488	0.78185216	1.021587	1.5552298	1.537608	1841.3	18.38	1759.3	23.94	1796.5	12.95	6	604280	69870	2987354
STF 21a	1	MNZ13	0.1143	0.00119	5.07842	0.07885	0.32249	0.00504	0.776672355	1.04112	1.5628392	1.552648	1868.9	18.59	1801.9	24.57	1832.5	13.17	15	219023	25689	1057568
STF 21a	1	MNZ14C	0.11714	0.00122	5.36227	0.08345	0.3322	0.00519	0.776941339	1.041489	1.5623119	1.556244	1913.1	18.59	1849.1	25.11	1878.9	13.32	12	1232898	148296	5777220
STF 21a	1	MNZ15R	0.11708	0.00122	5.30753	0.08318	0.32904	0.00518	0.779962487	1.042023	1.5742767	1.567207	1912.1	18.59	1833.7	25.13	1870.1	13.39	23	639746	76948	3050860
STF 21a	1	MNZ16	0.1137	0.0012	5.24096	0.08255	0.33455	0.00528	0.775958441	1.055409	1.5782394	1.575093	1859.4	18.93	1860.4	25.52	1859.3	13.43	12	98588	11510	462844
STF 21a	1	MNZ17	0.11061	0.00114	5.02789	0.07888	0.32992	0.00521	0.785643258	1.030648	1.5791707	1.568849	1809.5	18.69	1838	25.28	1824	13.29	14	206177	23411	984323
STF 21a	1	MNZ18	0.11011	0.00118	4.8474	0.07736	0.31953	0.00508	0.773688368	1.071656	1.5898351	1.595907	1801.2	19.31	1787.4	24.84	1793.2	13.43	0	99976	11280	494972
STF 21a	1	MNZ19	0.11569	0.00127	5.36748	0.08706	0.33672	0.00537	0.767209301	1.097761	1.5947969	1.62199	1890.7	19.66	1870.9	25.9	1879.7	13.88	8	238811	28223	1123606
STF 21a	1	MNZ20	0.1144	0.00119	5.42331	0.08621	0.34408	0.00549	0.78669964	1.04021	1.5955592	1.58962	1870.4	18.71	1906.3	26.32	1888.5	13.63	4	221130	25918	1021108
STF 21a	1	MNZ21	0.1093	0.00114	4.76313	0.07598	0.31631	0.00506	0.786849305	1.043001	1.5996965	1.59517	1787.7	18.94	1771.7	24.77	1778.4	13.39	17	276026	30893	1390394
STF 21a	1	MNZ22	0.11267	0.00118	5.44314	0.08718	0.35064	0.00563	0.786746169	1.047306	1.6056354	1.601649	1842.9	18.8	1937.6	26.86	1891.7	13.74	4	603779	69692	2754151
STF 21a	1	MNZ23	0.11101	0.00124	5.36614	0.08851	0.35088	0.00567	0.766146396	1.117016	1.6159371	1.649417	1815.9	20.2	1938.8	27.07	1879.5	14.12	33	123504	14036	564193
STF 21a	1	MNZ24	0.11779	0.00125	5.54723	0.08991	0.34178	0.00552	0.784902062	1.061211	1.615074	1.620809	1923	18.88	1895.2	26.51	1907.9	13.94	3	223146	26849	1049519
STF 21a	1	MNZ25	0.11284	0.0012	5.21905	0.08496	0.33566	0.00544	0.785679306	1.063453	1.6206876	1.627882	1845.7	19.11	1865.7	26.24	1855.7	13.87	0	222446	25639	1068635
STF 21a	1	MNZ26	0.11024	0.00114	4.9036	0.07986	0.32279	0.00529	0.799687124	1.034107	1.6388364	1.628599	1803.3	18.7	1803.4	25.76	1802.9	13.74	0	219748	24728	1111583
STF 21a	1	MNZ27	0.11104	0.00117	5.10156	0.08366	0.33338	0.00548	0.794069318	1.053674	1.6437699	1.639891	1816.5	18.99	1854.7	26.48	1836.4	13.92	0	124839	14168	612467
STF 21a	1	MNZ28	0.11288	0.00117	5.02864	0.0821	0.32327	0.0053	0.799328503	1.036499	1.6394964	1.632648	1846.2	18.67	1805.7	25.83	1824.2	13.83	10	213532	24619	1080148
STF 21a	1	MNZ29	0.11213	0.00129	5.34783	0.09158	0.34607	0.00574	0.767521734	1.15045	1.658624	1.71247	1834.1	20.76	1915.8	27.48	1876.5	14.65	0	300775	34309	1428521
STF 21a	1	MNZ30	0.11401	0.00119	5.2398	0.08592	0.33349	0.00548	0.797839672	1.043768	1.6432277	1.639757	1864.3	18.78	1855.3	26.51	1859.1	13.98	2	186884	21778	918069
STF 21a	1	MNZ31	0.10915	0.00118	4.96024	0.0825	0.32973	0.00545	0.787451831	1.081081	1.6528675	1.663226	1785.2	19.53	1837.1	26.4	1812.6	14.05	6	124476	13857	620175
STF 21a	1	MNZ32	0.10908	0.00121	4.8418	0.08111	0.32215	0.00532	0.777705106	1.109278	1.6514046	1.675203	1784	20.05	1800.2	25.96	1792.2	14.1	6	419384	46885	2138884
STF 21a	1	MNZ33	0.11079	0.0012	4.87269	0.08122	0.31911	0.00528	0.787338828	1.08313	1.6546019	1.666841	1812.4	19.56	1785.4	25.79	1797.5	14.04	6	111810	12654	576058
STF 21a	1	MNZ34	0.11208	0.0012	5.32025	0.08817	0.34444	0.00569	0.790647506	1.070664	1.6519568	1.657253	1833.4	19.2	1908	27.29	1872.1	14.17	12	207576	23785	991423
STF 21a	1	MNZ35	0.11197	0.00134	5.16763	0.09015	0.33495	0.00562	0.756108637	1.196749	1.6778624	1.744513	1831.6	21.46	1862.3	27.15	1847.3	14.84	12	262191	30115	1300051
STF 21a	1	MNZ36	0.10958	0.0012	4.90078	0.08236	0.32448	0.00539	0.785275694	1.09509	1.6611193	1.680549	1792.5	19.82	1811.6	26.22	1802.4	14.17	13	165707	18541	843075
STF 21a	1	MNZ37	0.111	0.00126	5.22619	0.08924	0.3416	0.0057	0.774148736	1.135135	1.6686183	1.707554	1815.8	20.49	1894.3	27.41	1856.9	14.55	0	91013	10331	441171
STF 21a	1	MNZ38	0.11489	0.00126	5.36745	0.0904	0.33894	0.00564	0.785492562	1.096701	1.6640113	1.684226	1878.2	19.58	1881.6	27.14	1879.7	14.42	5	581822	68301	2840606
STF 21a	1	MNZ39	0.11321	0.00155	5.28849	0.09827	0.33897	0.00566	0.703643027	1.369137	1.6697643	1.858186	1851.5	24.63	1881.7	27.26	1867	15.87	0	189356	21525	914509
STF 21a	1	MNZ40	0.11984	0.00132	5.61167	0.09485	0.33976	0.00566	0.784665981	1.101469	1.6658818	1.690228	1953.8	19.57	1885.5	27.23	1917.9	14.57	20	813599	99772	3967199
STF 21a	1	MNZ41	0.1154	0.00122	5.45539	0.08997	0.34317	0.0057	0.796020475	1.057192	1.6609844	1.649195	1886.1	18.94	1901.9	27.37	1893.6	14.15	14	167702	19974	807995
STF 21a	1	MNZ42	0.11191	0.00118	5.24688	0.08633	0.34037	0.00565	0.796504328	1.054419	1.6599583	1.645359	1830.6	19	1888.5	27.17	1860.3	14.03	10	95597	11036	463843
STF 21a	1	MNZ43	0.11195	0.0012	5.03229	0.08327	0.32633	0.00541	0.790580335	1.071907	1.657831	1.654714	1831.3	19.27	1820.6	26.32	1824.8	14.02	0	224595	25919	1136181
~~STF 21a~~	~~1~~	~~MNZ44~~	~~0.07058~~	~~0.0175~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~#VALUE!~~	~~24.79456~~	~~#VALUE!~~	~~#VALUE!~~	~~945.3~~	~~439.01~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~184~~	~~0~~	~~0~~	~~0~~
STF 21a	1	MNZ45	0.11626	0.00125	5.39023	0.08974	0.33653	0.0056	0.791365498	1.075176	1.6640418	1.664864	1899.4	19.15	1869.9	27.02	1883.3	14.26	15	245232	29314	1207342
STF 21a	1	MNZ46	0.11344	0.00132	5.19437	0.08935	0.33231	0.00559	0.766281687	1.163611	1.6821642	1.720132	1855.3	20.8	1849.5	27.03	1851.7	14.65	0	120900	14114	605227
STF 21a	1	MNZ47	0.11349	0.00128	5.25037	0.08964	0.33573	0.00565	0.778740938	1.127853	1.6828999	1.707308	1856	20.27	1866.1	27.25	1860.8	14.56	0	157807	18435	784009
STF 21a	1	MNZ48	0.11433	0.00129	5.00947	0.08552	0.31802	0.00532	0.777313439	1.128313	1.6728508	1.707167	1869.3	20.22	1780.1	26	1820.9	14.45	0	445933	52129	2328290
~~STF 21a~~	~~1~~	~~MNZ49~~	~~-0.00301~~	~~0.01665~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~#VALUE!~~	~~-553.156~~	~~#VALUE!~~	~~#VALUE!~~	~~0.1~~	~~0~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~85~~	~~17~~	~~0~~	~~0~~
STF 21a	1	MNZ50	0.11431	0.00126	5.18859	0.08763	0.3294	0.0055	0.784638353	1.102266	1.6697025	1.688898	1869	19.71	1835.5	26.69	1850.7	14.38	4	156767	18354	790502
STF 21a	1	MNZ51	0.10811	0.00113	4.65847	0.07716	0.31269	0.00523	0.802869591	1.045232	1.6725831	1.656338	1767.7	19.01	1753.9	25.69	1759.8	13.85	13	259355	28938	1382744
STF 21a	1	MNZ52	0.10986	0.00147	4.95404	0.09128	0.32719	0.00559	0.718475073	1.338067	1.7084874	1.842537	1797.1	24.16	1824.7	27.13	1811.5	15.57	20	522345	59192	2678802
STF 21a	1	MNZ53	0.11574	0.0015	5.47249	0.10019	0.34293	0.00589	0.734962171	1.296008	1.7175517	1.830794	1891.5	23.14	1900.7	28.25	1896.3	15.72	9	704185	84178	3471168
STF 21a	1	MNZ54	0.11375	0.00137	5.2058	0.0913	0.33202	0.00562	0.756313092	1.204396	1.6926691	1.753813	1860.2	21.54	1848.1	27.21	1853.6	14.94	17	118277	13853	595854
STF 21a	1	MNZ55	0.11515	0.00122	5.38101	0.08941	0.33907	0.00568	0.798391381	1.059488	1.6751703	1.661584	1882.3	18.94	1882.2	27.36	1881.8	14.23	21	452186	53975	2226494
STF 21a	1	MNZ56	0.11201	0.00121	5.1417	0.08588	0.33308	0.00557	0.791102275	1.080261	1.6722709	1.670265	1832.2	19.42	1853.3	26.94	1843	14.2	16	521146	60414	2604296
STF 21a	1	MNZ57	0.11292	0.00129	5.29252	0.09055	0.34003	0.00573	0.773783916	1.142402	1.6851454	1.710905	1846.9	20.46	1886.8	27.55	1867.7	14.61	26	360341	42151	1771171
STF 21a	1	MNZ58	0.10879	0.00123	4.8608	0.08267	0.32419	0.00544	0.776134389	1.130619	1.6780283	1.700749	1779.1	20.57	1810.1	26.5	1795.5	14.32	0	108622	12243	557998
STF 21a	1	MNZ59	0.10711	0.00118	4.69863	0.07915	0.31831	0.00535	0.785668654	1.101671	1.6807515	1.684534	1750.8	19.95	1781.4	26.17	1767	14.1	0	210902	23487	1107203
STF 21a	1	MNZ60	0.10859	0.00128	4.86652	0.08457	0.32518	0.00549	0.763627195	1.178746	1.6882957	1.737792	1775.8	21.41	1815	26.71	1796.5	14.64	6	202657	22777	1042072
STF 21b	1	MNZ01	0.10911	0.00113	4.75916	0.07803	0.31657	0.00522	0.801650853	1.035652	1.6489244	1.639575	1784.6	18.74	1773	25.56	1777.7	13.76	19	436871	48659	2269971
STF 21b	1	MNZ02	0.11262	0.00122	5.3552	0.08939	0.34511	0.00571	0.787584052	1.083289	1.6545449	1.669219	1842	19.53	1911.2	27.39	1877.7	14.28	0	80003	9189	381279
STF 21b	1	MNZ03	0.10899	0.00113	4.84637	0.0799	0.32271	0.00534	0.802993931	1.036792	1.6547365	1.648657	1782.6	18.83	1802.9	26.01	1793	13.88	25	536510	59619	2742434
STF 21b	1	MNZ04	0.11909	0.00127	5.40254	0.09	0.32922	0.00544	0.793461927	1.06642	1.6523905	1.665883	1942.6	19	1834.6	26.38	1885.3	14.27	8	578902	70121	2893404
STF 21b	1	MNZ05	0.11361	0.0012	5.37058	0.08955	0.34309	0.00572	0.799337144	1.056245	1.667201	1.667418	1858	18.91	1901.5	27.45	1880.2	14.27	15	188953	21897	914691
STF 21b	1	MNZ06	0.11389	0.00123	5.11831	0.08603	0.3262	0.00543	0.791612321	1.079989	1.6646229	1.680828	1862.3	19.38	1820	26.4	1839.1	14.28	5	260190	30184	1321492
STF 21b	1	MNZ07	0.11404	0.00126	5.14632	0.08776	0.32753	0.00547	0.785898812	1.104875	1.670076	1.705296	1864.7	19.8	1826.4	26.54	1843.8	14.5	0	731068	84457	3705231
STF 21b	1	MNZ08	0.11298	0.00119	5.16528	0.08676	0.33182	0.00557	0.803264814	1.053284	1.6786209	1.679677	1847.9	18.87	1847.2	26.96	1846.9	14.29	0	866254	99758	4368636
STF 21b	1	MNZ09	0.11178	0.00123	5.08797	0.08716	0.33037	0.00558	0.790859415	1.100376	1.6890153	1.71306	1828.5	19.83	1840.2	27.05	1834.1	14.54	0	190396	21709	967932
STF 21b	1	MNZ10	0.11404	0.00122	5.10331	0.08689	0.32477	0.00549	0.80120542	1.0698	1.6904271	1.70262	1864.8	19.2	1813	26.7	1836.7	14.46	0	990186	114976	5131748
STF 21b	1	MNZ11	0.11071	0.00128	5.01339	0.08922	0.32854	0.00568	0.78318612	1.156174	1.728861	1.779634	1811.1	20.85	1831.3	27.55	1821.6	15.06	4	195617	22001	1020652
STF 21b	1	MNZ12	0.11422	0.00123	5.10541	0.0888	0.32436	0.00558	0.806281474	1.076869	1.7203108	1.739331	1867.6	19.32	1811	27.18	1837	14.77	6	499208	57809	2639999
STF 21b	1	MNZ13	0.11969	0.00137	5.66224	0.1002	0.34329	0.00589	0.784722372	1.144624	1.7157505	1.769618	1951.7	20.33	1902.5	28.26	1925.6	15.27	2	645455	78167	3204447
STF 21b	1	MNZ14	0.11562	0.00134	5.2867	0.09477	0.33181	0.00575	0.784376799	1.158969	1.7329194	1.792612	1889.6	20.76	1847.1	27.83	1866.7	15.31	0	385850	45161	2000117
STF 21b	1	MNZ15	0.11305	0.00131	5.27134	0.09405	0.33835	0.00585	0.782851183	1.158779	1.7289789	1.784176	1849	20.76	1878.7	28.19	1864.2	15.23	20	94698	10835	480181
STF 21b	1	MNZ16	0.11125	0.00146	5.02104	0.09483	0.3275	0.00573	0.74232142	1.31236	1.7496183	1.888653	1819.9	23.68	1826.3	27.8	1822.9	15.99	0	365724	41149	1924341
STF 21b	1	MNZ17	0.11464	0.00143	5.26978	0.09695	0.33353	0.00577	0.757451792	1.247383	1.7299793	1.839735	1874.3	22.37	1855.5	27.88	1864	15.7	15	88190	10146	451230
STF 21b	1	MNZ18	0.11521	0.00145	5.26513	0.09773	0.33156	0.00575	0.756272517	1.258571	1.7342261	1.856174	1883.2	22.55	1845.9	27.85	1863.2	15.84	4	310346	35905	1605602
STF 21b	1	MNZ19	0.1147	0.00162	5.09354	0.09976	0.32228	0.00567	0.716300195	1.41238	1.7593397	1.958559	1875.1	25.22	1800.8	27.62	1835	16.62	17	291234	33550	1559237
STF 21b	1	MNZ20	0.11831	0.00146	5.29998	0.09679	0.32505	0.0056	0.759686799	1.234046	1.7228119	1.826233	1930.9	21.91	1814.3	27.25	1868.9	15.6	36	823113	98187	4321103
STF 21b	1	MNZ21	0.11506	0.00136	5.29317	0.0954	0.33381	0.00574	0.775705539	1.181992	1.7195411	1.802323	1880.7	21.14	1856.8	27.75	1867.8	15.39	0	658088	76020	3365663
STF 21b	1	MNZ22	0.11222	0.00135	5.00843	0.09102	0.32384	0.00558	0.770341047	1.202994	1.7230731	1.817336	1835.6	21.65	1808.5	27.18	1820.7	15.38	2	359712	40492	1898017
STF 21b	1	MNZ23	0.11129	0.00142	5.00611	0.09331	0.32642	0.00566	0.750748404	1.275946	1.7339624	1.863922	1820.5	23	1821	27.51	1820.4	15.77	5	335287	37492	1760443
STF 21b	1	MNZ24	0.1166	0.00144	5.50763	0.10119	0.34275	0.00594	0.76220009	1.234991	1.7330416	1.837269	1904.8	22.08	1899.9	28.53	1901.8	15.79	7	123756	14540	619197
STF 21b	1	MNZ25	0.11489	0.00151	5.44755	0.10287	0.34406	0.00596	0.739691329	1.314301	1.732256	1.888372	1878.1	23.51	1906.2	28.6	1892.4	16.2	0	441394	50717	2193985
STF 21b	1	MNZ26	0.11116	0.00129	4.78384	0.08282	0.31228	0.00526	0.769461472	1.160489	1.6843858	1.731245	1818.5	20.89	1751.9	25.86	1782.1	14.54	6	73453	8340	392211
STF 21b	1	MNZ27	0.11789	0.00131	5.69702	0.09773	0.35069	0.00592	0.786932672	1.111205	1.6881006	1.715458	1924.5	19.79	1937.9	28.25	1930.9	14.82	17	365692	44048	1749044
STF 21b	1	MNZ28	0.11279	0.00121	5.19921	0.08822	0.33444	0.00563	0.798575607	1.07279	1.6834111	1.696796	1844.8	19.31	1859.9	27.22	1852.5	14.45	11	458948	52775	2302308
STF 21b	1	MNZ29	0.10949	0.00123	5.15575	0.08797	0.34172	0.00574	0.779958236	1.12339	1.6797378	1.70625	1790.9	20.4	1894.9	27.58	1845.3	14.51	10	148599	16719	724623
STF 21b	1	MNZ30	0.11342	0.00128	5.11307	0.08833	0.32708	0.00552	0.781849301	1.128549	1.6876605	1.727534	1854.9	20.23	1824.2	26.8	1838.3	14.67	11	269293	31066	1379050
STF 21b	1	MNZ31	0.11444	0.00138	5.07889	0.09117	0.32212	0.0055	0.764036767	1.205872	1.7074382	1.795077	1871	21.64	1800.1	26.8	1832.6	15.23	0	491759	57023	2578792
STF 21b	1	MNZ32	0.11255	0.00126	4.99054	0.08713	0.32175	0.0055	0.790253923	1.119502	1.7094017	1.745903	1841	20.19	1798.3	26.82	1817.7	14.77	7	344879	39536	1820379
STF 21b	1	MNZ33	0.11371	0.00124	5.09908	0.08732	0.32545	0.00551	0.794983412	1.090493	1.6930404	1.712466	1859.5	19.61	1816.3	26.8	1836	14.54	6	347376	40338	1798318
STF 21b	1	MNZ34	0.11006	0.0012	4.78363	0.08132	0.31546	0.00532	0.792699956	1.090314	1.6864262	1.699964	1800.3	19.72	1767.5	26.09	1782	14.28	0	287705	32489	1530749
STF 21b	1	MNZ35	0.10941	0.00126	4.88001	0.08588	0.32365	0.00554	0.780247871	1.151631	1.7117256	1.759832	1789.5	20.79	1807.5	26.96	1798.8	14.83	0	219955	24502	1153509
STF 21b	1	MNZ36	0.11141	0.00127	5.23781	0.09219	0.34111	0.00582	0.784128793	1.139934	1.7061945	1.760087	1822.6	20.56	1892	27.99	1858.8	15.01	0	1274999	144195	6339908
STF 21b	1	MNZ37	0.10906	0.00116	4.95291	0.08414	0.32955	0.0056	0.804049614	1.063635	1.6992869	1.698799	1783.8	19.22	1836.2	27.18	1811.3	14.35	16	1789787	200267	9205691
STF 21b	1	MNZ38	0.11098	0.00132	5.13409	0.09107	0.33575	0.00573	0.767089363	1.189403	1.706627	1.773829	1815.5	21.45	1866.2	27.65	1841.8	15.07	28	201618	22867	1014315
STF 21b	1	MNZ39	0.11112	0.00133	4.74199	0.08567	0.30962	0.00534	0.77119333	1.196904	1.7246948	1.806625	1817.8	21.59	1738.9	26.3	1774.7	15.15	25	434542	49076	2398872
STF 21b	1	MNZ40	0.10921	0.00123	4.89815	0.08523	0.32555	0.00555	0.78640337	1.12627	1.7048072	1.740045	1786.3	20.49	1816.8	27.01	1801.9	14.67	0	191739	21451	997798
STF 21b	1	MNZ41	0.11394	0.00127	5.28245	0.09165	0.33655	0.00578	0.79157882	1.114622	1.7174268	1.73499	1863.2	19.98	1870	27.9	1866	14.81	0	815078	95745	4138196
STF 21b	1	MNZ42	0.11619	0.00127	5.5196	0.09728	0.34469	0.00602	0.805972318	1.093037	1.7464969	1.762447	1898.4	19.49	1909.2	28.84	1903.7	15.15	26	417195	49398	2103011
STF 21b	1	MNZ43	0.11314	0.00121	5.17492	0.09011	0.33191	0.00576	0.810755265	1.069471	1.7354102	1.741283	1850.4	19.22	1847.6	27.87	1848.5	14.82	24	609736	70366	3175949
STF 21b	1	MNZ44	0.11465	0.0014	5.45378	0.09999	0.34515	0.00601	0.767794295	1.221108	1.7412719	1.833407	1874.5	21.89	1911.4	28.81	1893.3	15.73	15	201821	23369	1007343
STF 21b	1	MNZ45	0.10904	0.00124	4.93825	0.08763	0.32862	0.00571	0.790511018	1.137197	1.7375692	1.774515	1783.3	20.58	1831.7	27.68	1808.8	14.98	0	158940	17644	833814
STF 21b	1	MNZ46	0.11321	0.00137	5.29408	0.0955	0.33945	0.0059	0.767155092	1.21014	1.7381058	1.803902	1851.5	21.78	1884	28.42	1867.9	15.41	11	129721	15096	656899

STF 21b	1	MNZ47	0.1112	0.00139	4.80581	0.08885	0.31362	0.00546	0.759084017	1.25	1.7409604	1.848804	1819.1	22.54	1758.5	26.78	1785.9	15.54	0	417265	46869	2289302
STF 21b	1	MNZ48	0.11629	0.00133	5.2617	0.09318	0.32839	0.00568	0.786760371	1.143692	1.7296507	1.770911	1899.9	20.47	1830.6	27.56	1862.7	15.11	10	492247	58549	2574732
STF 21b	1	MNZ49	0.11037	0.00125	4.67236	0.08262	0.30722	0.00534	0.791483539	1.132554	1.7381681	1.768271	1805.5	20.39	1727	26.32	1762.3	14.79	9	201108	22697	1129964
STF 21b	1	MNZ50	0.11533	0.00144	5.10226	0.09415	0.32104	0.00559	0.759079466	1.248591	1.741216	1.845261	1885.1	22.39	1794.8	27.28	1836.5	15.67	6	190454	22246	1020730
STF 21b	1	MNZ51	0.11313	0.00144	5.41583	0.10045	0.34733	0.00609	0.752476657	1.272872	1.7533758	1.854748	1850.3	22.79	1921.8	29.13	1887.4	15.9	27	91213	10515	453676
STF 21b	1	MNZ52	0.1115	0.00124	4.90463	0.08632	0.31919	0.00555	0.79799738	1.112108	1.7387763	1.75997	1824	20.06	1785.7	27.11	1803.1	14.84	8	501879	57367	2718479
STF 21b	1	MNZ53	0.11413	0.00135	5.05031	0.0905	0.32108	0.00556	0.775138439	1.182862	1.7316557	1.791969	1866.1	21.13	1795	27.13	1827.8	15.19	27	592172	69009	3168161
STF 21b	1	MNZ54	0.11479	0.00136	5.15749	0.09246	0.326	0.00565	0.774683595	1.184772	1.7331288	1.792733	1876.6	21.17	1819	27.46	1845.6	15.25	0	444100	52131	2340607
STF 21b	1	MNZ55	0.11504	0.00175	5.31053	0.10703	0.33526	0.00598	0.685613615	1.52121	1.7836903	2.01543	1880.4	27.16	1863.8	28.87	1870.6	17.22	0	59871	7065	308816
STF 21b	1	MNZ56	0.10788	0.00113	5.05453	0.08532	0.3398	0.0058	0.809660477	1.04746	1.7068864	1.687991	1763.9	19.04	1885.7	27.89	1828.5	14.31	12	2147148	240012	10741908
STF 21b	1	MNZ57	0.1086	0.00118	4.75414	0.08115	0.31747	0.00542	0.797436506	1.086556	1.7072479	1.706933	1776	19.78	1777.4	26.5	1776.8	14.32	0	157033	17612	838580
STF 21b	1	MNZ58	0.11102	0.0013	5.17178	0.0893	0.33795	0.00568	0.764127395	1.17096	1.680722	1.726678	1816.2	21.09	1876.8	27.36	1848	14.69	19	108651	12386	533847
STF 21b	1	MNZ59	0.11491	0.00119	5.14609	0.08601	0.32484	0.0055	0.810594989	1.035593	1.6931412	1.671366	1878.5	18.54	1813.3	26.75	1843.7	14.21	7	321302	38071	1668662
STF 21b	1	MNZ60	0.11189	0.00116	5.13081	0.08592	0.33264	0.00563	0.810446747	1.036733	1.6925204	1.674589	1830.3	18.68	1851.2	27.26	1841.2	14.23	28	330853	38146	1679746
STF 21b	1	MNZ61	0.11384	0.00128	5.25236	0.09038	0.33469	0.00571	0.784714505	1.124385	1.7060564	1.72075	1861.7	20.13	1861.1	27.56	1861.2	14.68	7	50466	5917	254686
STF 21b	1	MNZ62	0.11253	0.00117	5.10075	0.08582	0.32883	0.00558	0.810720223	1.039723	1.6969255	1.682498	1840.7	18.75	1832.7	27.08	1836.2	14.28	16	792714	91826	4079751
STF 21b	1	MNZ63	0.11016	0.00122	5.05122	0.08646	0.33272	0.00565	0.789045695	1.10748	1.6981245	1.711666	1802	19.95	1851.5	27.34	1828	14.51	0	184360	20910	935123
STF 21b	1	MNZ64	0.11307	0.00123	5.5128	0.09505	0.35369	0.00608	0.800374955	1.087822	1.7190195	1.724169	1849.4	19.55	1952.2	28.96	1902.6	14.82	16	369874	43093	1788787
STF 21b	1	MNZ65	0.11104	0.00117	5.06102	0.08577	0.33068	0.00564	0.807970406	1.053674	1.7055764	1.694718	1816.5	18.99	1841.7	27.31	1829.6	14.37	17	409422	46776	2103186
STF 21b	1	MNZ66	0.1093	0.00121	5.17135	0.08983	0.34322	0.00591	0.795173194	1.107045	1.7219276	1.737071	1787.8	20.07	1902.2	28.35	1847.9	14.78	4	232994	26191	1161196
STF 21b	1	MNZ67	0.10791	0.00116	4.84309	0.08267	0.32566	0.00555	0.801387846	1.07497	1.7042314	1.706968	1764.5	19.49	1817.3	27	1792.4	14.37	0	218842	24290	1140431
STF 21b	1	MNZ68	0.11242	0.00125	5.24847	0.09167	0.33878	0.00585	0.795104585	1.111902	1.7267843	1.746604	1838.8	20	1880.8	28.16	1860.5	14.9	14	224018	25849	1134348
STF 21b	1	MNZ69	0.11464	0.00126	5.61279	0.0975	0.35527	0.00611	0.797873706	1.099093	1.7198187	1.737104	1874.2	19.76	1959.7	29.07	1918.1	14.97	3	194994	22928	938507
STF 21b	1	MNZ70	0.11086	0.00129	5.26942	0.09291	0.3449	0.00593	0.776991572	1.16363	1.7193389	1.763192	1813.6	21.04	1910.2	28.41	1863.9	15.05	3	108181	12334	533567
STF 21b	1	MNZ71	0.11091	0.00114	5.00119	0.08438	0.32721	0.00559	0.816809745	1.02786	1.708383	1.687198	1814.3	18.55	1824.8	27.13	1819.5	14.28	14	370892	42211	1930382
STF 21b	1	MNZ72	0.1082	0.00121	4.73608	0.08327	0.31763	0.00551	0.79507494	1.118299	1.7347228	1.758205	1769.2	20.27	1778.2	26.95	1773.6	14.74	11	279478	30923	1516289
STF 21b	1	MNZ73	0.11081	0.00116	4.70401	0.07939	0.30804	0.00523	0.808796726	1.046837	1.6978315	1.687709	1812.7	18.94	1731.1	25.8	1768	14.13	7	305916	34843	1681925
STF 21b	1	MNZ74	0.11313	0.00125	5.10867	0.08714	0.32763	0.00555	0.788764763	1.104924	1.6939841	1.705728	1850.3	19.87	1826.9	26.93	1837.5	14.48	0	106089	12347	544243
STF 21b	1	MNZ75	0.11302	0.00127	5.11609	0.08951	0.32845	0.00566	0.790710359	1.123695	1.7232455	1.749578	1848.6	20.18	1830.9	27.46	1838.8	14.86	0	89421	10325	465460
STF 21b	1	MNZ76	0.11248	0.00121	4.95224	0.08496	0.31947	0.00546	0.80266739	1.075747	1.7090807	1.715587	1839.9	19.38	1787.1	26.68	1811.2	14.49	6	466144	53697	2483543
STF 21b	1	MNZ77	0.11582	0.0013	5.04361	0.08825	0.316	0.00544	0.791007862	1.122431	1.721519	1.749739	1892.6	20.04	1770.2	26.65	1826.7	14.83	0	511499	60645	2770146
STF 21b	1	MNZ78	0.1087	0.00123	4.78181	0.08117	0.31915	0.00532	0.773908351	1.131555	1.6669278	1.697474	1777.8	20.56	1785.6	26.02	1781.7	14.26	6	304167	34061	1578020
STF 21b	1	MNZ79	0.11651	0.00142	5.45936	0.09806	0.33999	0.00588	0.761627833	1.21878	1.7294626	1.796181	1903.4	21.7	1886.6	28.28	1894.2	15.41	0	61713	7363	309564
STF 21b	1	MNZ80	0.11342	0.00121	5.01304	0.08474	0.32071	0.00542	0.800800921	1.066831	1.6900003	1.690391	1855	19.18	1793.2	26.44	1821.5	14.31	0	548370	63798	2877332
STF 21b	1	MNZ81	0.11117	0.00121	4.77268	0.08141	0.31153	0.00528	0.795132732	1.088423	1.6948608	1.70575	1818.6	19.64	1748.3	25.96	1780.1	14.32	13	357531	40793	1936483
STF 21b	1	MNZ82	0.11295	0.00142	5.47415	0.10082	0.35169	0.00615	0.755969792	1.257193	1.7486991	1.841747	1847.4	22.57	1942.6	29.31	1896.5	15.81	6	94455	10886	462720
STF 21b	1	MNZ83	0.1104	0.00139	4.66996	0.0836	0.30689	0.00518	0.739416607	1.259058	1.6879012	1.790165	1805.9	22.7	1725.4	25.56	1761.9	14.97	0	358022	40431	1944538
STF 21b	1	MNZ84	0.11343	0.00137	4.92923	0.08909	0.31536	0.00544	0.767143423	1.207793	1.7250127	1.807382	1855.1	21.71	1767	26.65	1807.3	15.26	7	255041	29343	1381063
STF 21b	1	MNZ85	0.1132	0.00128	5.11099	0.08767	0.32764	0.00552	0.778949307	1.130742	1.684776	1.715323	1851.4	20.32	1826.9	26.81	1837.9	14.57	18	117900	13693	601840
STF 21c	1	MNZ01	0.10676	0.00115	4.85175	0.07647	0.32958	0.00516	0.764914559	1.077182	1.565629	1.576132	1744.8	19.61	1836.4	25.02	1793.9	13.27	10	134860	14900	638090
STF 21c	1	MNZ02	0.10827	0.00117	4.72165	0.07444	0.31627	0.00495	0.763398808	1.080632	1.5651184	1.576568	1770.5	19.57	1771.5	24.24	1771.1	13.21	15	159161	17815	784671
STF 21c	1	MNZ03	0.10895	0.00118	4.77433	0.0756	0.31783	0.00498	0.763661874	1.083066	1.5668754	1.583468	1781.8	19.72	1779.1	24.34	1780.4	13.29	16	153133	17228	751147
STF 21c	1	MNZ04	0.10759	0.00117	4.77009	0.07561	0.32156	0.00503	0.761614511	1.087462	1.5642493	1.585085	1759	19.7	1797.3	24.54	1779.6	13.31	8	191183	21217	926772
STF 21c	1	MNZ05	0.10832	0.00119	4.72981	0.07541	0.3167	0.00496	0.758486498	1.098597	1.5661509	1.594356	1771.3	20	1773.6	24.27	1772.5	13.36	26	172803	19287	850422
STF 21c	1	MNZ06	0.10678	0.00119	4.70642	0.07556	0.31969	0.00501	0.753475391	1.114441	1.5671432	1.605467	1745.1	20.32	1788.2	24.45	1768.4	13.45	23	153521	16873	748365
STF 21c	1	MNZ07	0.10837	0.00122	4.75839	0.07666	0.31847	0.00499	0.749353716	1.125773	1.5668666	1.611049	1772.2	20.42	1782.2	24.38	1777.6	13.52	20	168406	18764	823950
STF 21c	1	MNZ08	0.10704	0.00121	4.70035	0.07602	0.31851	0.00499	0.74834799	1.130419	1.5666698	1.617326	1749.6	20.51	1782.5	24.38	1767.3	13.54	0	190203	20909	930346
STF 21c	1	MNZ09	0.10945	0.00126	4.72513	0.07701	0.31315	0.00491	0.741439957	1.151211	1.5679387	1.629796	1790.2	20.83	1756.2	24.08	1771.7	13.66	29	162148	18207	806604
STF 21c	1	MNZ10	0.10982	0.00128	4.80895	0.07895	0.31764	0.00498	0.737166462	1.165544	1.5678126	1.641731	1796.4	21.11	1778.2	24.35	1786.5	13.8	26	149136	16784	731278
STF 21c	1	MNZ11	0.10746	0.00126	4.7565	0.07837	0.32107	0.00503	0.734961406	1.172529	1.5666366	1.64764	1756.8	21.27	1795	24.55	1777.3	13.82	1	182184	20041	883665
STF 21c	1	MNZ12	0.1083	0.00131	4.61056	0.07704	0.30882	0.00485	0.72314573	1.209603	1.5704941	1.670947	1770.9	21.94	1734.9	23.86	1751.2	13.94	20	114864	12720	579147
STF 21c	1	MNZ13	0.10848	0.00131	4.71177	0.07876	0.31509	0.00494	0.723826772	1.207596	1.567806	1.671559	1774	21.92	1765.7	24.22	1769.3	14	0	166938	18497	824868
STF 21c	1	MNZ14	0.11047	0.00135	4.81758	0.08092	0.31636	0.00496	0.718830306	1.222051	1.5678341	1.679681	1807.2	21.98	1771.9	24.29	1788	14.12	13	196251	22120	965677
STF 21c	1	MNZ15	0.10833	0.00135	4.69847	0.07972	0.31464	0.00494	0.711526779	1.246192	1.5700483	1.696723	1771.5	22.54	1763.5	24.21	1767	14.2	17	161034	17779	796613
STF 21c	1	MNZ16	0.10888	0.0012	4.72301	0.07473	0.31481	0.00486	0.751662057	1.102131	1.5437883	1.582254	1780.8	20.03	1764.3	23.83	1771.3	13.26	30	178396	19880	871262
STF 21c	1	MNZ17	0.11112	0.00132	4.93798	0.08105	0.32251	0.00502	0.725242607	1.187905	1.5565409	1.641359	1817.8	21.44	1802	24.46	1808.8	13.86	59	52319	5955	250044
STF 21c	1	MNZ18	0.10903	0.00122	4.58388	0.07313	0.30512	0.00474	0.747757268	1.118958	1.5534872	1.595373	1783.2	20.22	1716.7	23.4	1746.3	13.3	17	170685	19079	864373
STF 21c	1	MNZ19	0.10991	0.00123	4.7406	0.07602	0.31303	0.00487	0.749461709	1.119097	1.5557614	1.603594	1797.9	20.3	1755.6	23.92	1774.4	13.45	10	159583	17998	789718
STF 21c	1	MNZ20	0.10795	0.00122	4.67488	0.07531	0.3143	0.00491	0.746711028	1.130153	1.5622017	1.61095	1765.1	20.44	1761.8	24.06	1762.8	13.48	27	161593	17914	798436
STF 21c	1	MNZ21	0.10932	0.00124	4.67769	0.07574	0.31056	0.00486	0.746700366	1.134285	1.564915	1.619175	1788	20.6	1743.5	23.91	1763.3	13.55	8	156585	17594	784974
STF 21c	1	MNZ22	0.10788	0.00123	4.83145	0.07854	0.32506	0.0051	0.745783037	1.140156	1.5689411	1.625599	1763.8	20.67	1814.4	24.82	1790.4	13.68	7	171695	19053	824406
STF 21c	1	MNZ23	0.10881	0.00125	4.74577	0.07752	0.31656	0.00498	0.743920931	1.148791	1.5731615	1.633455	1779.5	20.84	1772.9	24.39	1775.4	13.7	2	176936	19822	874598
STF 21c	1	MNZ24	0.10758	0.00126	4.77333	0.07895	0.32203	0.00509	0.738670994	1.171221	1.5805981	1.653982	1758.9	21.27	1799.7	24.8	1780.2	13.88	21	119255	13220	580930
STF 21c	1	MNZ25	0.10787	0.00127	4.65249	0.0772	0.31305	0.00496	0.737448621	1.177343	1.5844114	1.659327	1763.8	21.32	1755.7	24.33	1758.7	13.87	15	136434	15178	685435
STF 21c	1	MNZ26	0.10662	0.00127	4.68644	0.07848	0.31905	0.00507	0.734789833	1.191146	1.5890926	1.674619	1742.4	21.75	1785.1	24.77	1764.8	14.01	12	117293	12908	579655
STF 21c	1	MNZ27	0.10787	0.00129	4.67222	0.07835	0.31443	0.00501	0.733686989	1.195884	1.5933594	1.676933	1763.7	21.6	1762.4	24.55	1762.3	14.03	15	154958	17267	779054
STF 21c	1	MNZ28	0.10734	0.00128	4.66213	0.07834	0.31531	0.00503	0.736111614	1.192473	1.5952555	1.680348	1754.7	21.6	1766.8	24.65	1760.5	14.05	2	226880	25179	1140380
STF 21c	1	MNZ29	0.10538	0.00128	4.60151	0.07816	0.31701	0.00508	0.730678139	1.214652	1.6024731	1.698573	1720.9	22.15	1775.1	24.84	1749.5	14.17	0	166996	18210	837021
STF 21c	1	MNZ30	0.10977	0.00134	4.70649	0.08037	0.31127	0.005	0.730238118	1.220734	1.6063225	1.707642	1795.6	22.11	1746.9	24.57	1768.4	14.3	25	184186	20940	942629
STF 21c	1	MNZ31	0.10852	0.00113	4.60942	0.07189	0.30821	0.00482	0.777731654	1.041283	1.5638688	1.559632	1774.7	18.95	1731.9	23.75	1751	13.01	9	179407	20035	908255
STF 21c	1	MNZ32	0.10874	0.00116	4.78705	0.07561	0.31944	0.00501	0.770331942	1.066765	1.5683696	1.57947	1778.4	19.42	1787	24.49	1782.6	13.27	3	140784	15752	689149
STF 21c	1	MNZ33	0.10889	0.00115	4.63048	0.07302	0.30857	0.00485	0.775003685	1.056112	1.5717665	1.576942	1780.9	19.24	1733.6	23.89	1754.8	13.17	6	127085	14237	645397
STF 21c	1	MNZ34	0.10539	0.00114	4.55461	0.07262	0.31359	0.00494	0.767150479	1.081697	1.5753053	1.594429	1721.1	19.77	1758.4	24.26	1741	13.27	10	208967	22655	1046476
STF 21c	1	MNZ35	0.10718	0.00115	4.7315	0.07527	0.32033	0.00506	0.770958158	1.072961	1.579621	1.590827	1752	19.4	1791.4	24.69	1772.8	13.33	2	131784	14527	647453
STF 21c	1	MNZ36	0.10735	0.00116	4.7202	0.07548	0.31905	0.00505	0.769389324	1.080578	1.582824	1.599085	1754.9	19.54	1785.1	24.67	1770.8	13.4	1	136070	15023	672656
STF 21c	1	MNZ37	0.10868	0.00118	4.71498	0.07573	0.3148	0.00499	0.768570898	1.085756	1.5851334	1.606157	1777.3	19.69	1764.3	24.48	1769.9	13.46	12	136143	15215	683577
STF 21c	1	MNZ38	0.109	0.00119	4.73203	0.07641	0.31502	0.00501	0.768051133	1.091743	1.5903752	1.61474	1782.7	19.82	1765.3	24.55	1772.9	13.54	10	142526	15973	716691
STF 21c	1	MNZ39	0.10846	0.0012	4.7724	0.07771	0.31927	0.00509	0.764450709	1.106399	1.5942619	1.628321	1773.7	20.12	1786.2	24.87	1780.1	13.67	29	103923	11588	516739
STF 21c	1	MNZ40	0.10703	0.00119	4.6889	0.07676	0.31787	0.00508	0.764037921	1.111838	1.5981376	1.637058	1749.5	20.22	1779.3	24.84	1765.3	13.7	13	124037	13647	620808
STF 21c	1	MNZ41	0.10807	0.00121	4.72117	0.07749	0.317	0.00508	0.761983023	1.119645	1.6025237	1.64133	1767	20.3	1775	24.84	1771	13.75	5	148004	16439	744437
STF 21c	1	MNZ42	0.10804	0.00122	4.62997	0.07663	0.31096	0.00499	0.760426612	1.129211	1.604708	1.655086	1766.5	20.58	1745.4	24.55	1754.7	13.82	16	198995	22094	1022587
STF 21c	1	MNZ43	0.10822	0.00128	4.7777	0.08071	0.32034	0.00517	0.744483642	1.182776	1.6139102	1.689307	1769.5	21.43	1791.4	25.22	1781	14.18	0	131902	14668	659400
STF 21c	1	MNZ44	0.10725	0.00124	4.71861	0.07928	0.31923	0.00515	0.754241123	1.156177	1.6132569	1.680156	1753.2	21	1785.9	25.17	1770.5	14.08	1	132456	14596	665953
STF 21c	1	MNZ45	0.10861	0.00126	4.81786	0.08119	0.32185	0.0052	0.753730563	1.160114	1.6156595	1.685188	1776.2	21.06	1798.8	25.38	1788	14.17	0	138050	15404	689923
STF 21c	1	MNZ46	0.11025	0.00122	4.87494	0.08135	0.32076	0.00521	0.774480198	1.106576	1.6242674	1.668738	1803.5	19.95	1793.4	25.41	1797.9	14.06	0	153158	17080	772304
STF 21c	1	MNZ47	0.10894	0.00121	4.73084	0.07905	0.31504	0.00512	0.773243191	1.110703	1.6251905	1.670951	1781.7	20.07	1765.5	25.09	1772.7	14.01	8	164452	18128	845034
STF 21c	1	MNZ48	0.10923	0.00121	4.79818	0.08028	0.31867	0.00518	0.774817888	1.107754	1.625506	1.673134	1786.6	20.09	1783.2	25.33	1784.6	14.06	22	178463	19733	907351
STF 21c	1	MNZ49	0.11106	0.00126	4.73376	0.07998	0.30921	0.00504	0.766953191	1.134522	1.6299602	1.689566	1816.9	20.44	1736.8	24.81	1773.2	14.16	10	105359	11850	552527
STF 21c	1	MNZ50	0.10986	0.00123	4.74769	0.07995	0.31354	0.00511	0.772166291	1.119607	1.6297761	1.683977	1797	20.31	1758.1	25.07	1775.7	14.12	20	162881	18127	843120
STF 21c	1	MNZ51	0.11089	0.00125	4.77928	0.08076	0.31269	0.0051	0.77010342	1.127243	1.6310083	1.689794	1814	20.38	1753.9	25.05	1781.3	14.19	3	159094	17879	826457
STF 21c	1	MNZ52	0.11033	0.00126	4.8224	0.08191	0.31712	0.00518	0.765722079	1.142028	1.6334511	1.698532	1804.9	20.63	1775.6	25.35	1788.8	14.29	23	138461	15488	709848
STF 21c	1	MNZ53	0.11056	0.00127	4.80071	0.08188	0.31505	0.00515	0.764265746	1.148698	1.6346612	1.705581	1808.6	20.79	1765.5	25.25	1785	14.33	0	133811	15005	691106
STF 21c	1	MNZ54	0.1102	0.00127	4.74003	0.081	0.31208	0.00511	0.763580745	1.15245	1.6374007	1.70885	1802.8	20.86	1750.9	25.09	1774.3	14.33	12	158498	17723	827107
STF 21c	1	MNZ55	0.11031	0.00129	4.84293	0.08323	0.31855	0.00522	0.75833023	1.169432	1.6386752	1.718588	1804.6	21.1	1782.6	25.52	1792.4	14.46	0	139937	15669	716035
STF 21c	1	MNZ56	0.11058	0.0013	4.75209	0.08192	0.31181	0.00511	0.756674191	1.175619	1.6388185	1.723873	1809	21.2	1749.6	25.13	1776.5	14.46	0	157815	17721	825659
STF 21c	1	MNZ57	0.11008	0.0013	4.83046	0.08353	0.31841	0.00523	0.755812237	1.180959	1.6425364	1.729235	1800.8	21.35	1781.9	25.56	1790.2	14.55	0	184092	20586	944007
STF 21c	1	MNZ58	0.10864	0.0013	4.72258	0.08211	0.31544	0.00518	0.750877604	1.196613	1.6421506	1.738668	1776.7	21.67	1767.4	25.41	1771.3	14.57	0	177030	19544	917111
STF 21c	1	MNZ59	0.11173	0.00136	4.85211	0.08515	0.31514	0.00519	0.745693975	1.21722	1.6468871	1.754907	1827.7	21.92	1766	25.44	1794	14.77	0	123066	13978	638706
STF 21c	1	MNZ60	0.11009	0.00135	4.79658	0.0844	0.31619	0.00521	0.74283396	1.226269	1.6477434	1.759587	1800.8	22.09	1771.1	25.52	1784.3	14.78	0	155496	17409	805034
STF 21c	2	MNZ01-II	0.10562	0.0013	4.6075	0.08007	0.31662	0.00517	0.735004323	1.230827	1.6328722	1.737819	1725.2	22.48	1773.2	25.31	1750.6	14.5	4	107633	11663	550019
STF 21c	2	MNZ02-II	0.10777	0.00136	4.65064	0.08154	0.31321	0.00512	0.724637133	1.261947	1.634686	1.753307	1762	22.78	1756.5	25.14	1758.4	14.65	24	90791	10049	469011
STF 21c	2	MNZ03-II	0.10854	0.00139	4.59976	0.08139	0.30757	0.00504	0.72013797	1.280634	1.6386514	1.76944	1775	23.29	1728.7	24.82	1749.2	14.76	3	79232	8842	416812
STF 21c	2	MNZ04-II	0.10789	0.00133	4.8486	0.08424	0.32617	0.00532	0.733868436	1.232737	1.6310513	1.737409	1764	22.38	1819.8	25.88	1793.4	14.63	0	138124	15338	685193
STF 21c	2	MNZ05-II	0.10773	0.00137	4.71249	0.08285	0.31746	0.00519	0.721311342	1.271698	1.6348516	1.758094	1761.4	22.96	1777.3	25.39	1769.5	14.73	4	109528	12159	558251
STF 21c	2	MNZ06-II	0.10628	0.00134	4.57122	0.07999	0.31213	0.0051	0.724354335	1.26082	1.6339346	1.749861	1736.6	22.88	1751.2	25.04	1744	14.58	22	146247	16034	758140
STF 21c	2	MNZ07-II	0.10834	0.00139	4.7999	0.08467	0.32152	0.00526	0.717641152	1.282998	1.6359791	1.763995	1771.6	23.22	1797.2	25.64	1784.9	14.82	0	128580	14386	647098
STF 21c	2	MNZ08-II	0.10898	0.00142	4.75796	0.08477	0.31683	0.00519	0.712665558	1.302991	1.6381025	1.781646	1782.4	23.68	1774.3	25.39	1777.5	14.95	0	110572	12458	564711
STF 21c	2	MNZ09-II	0.10701	0.00139	4.80998	0.08536	0.32617	0.00533	0.712496208	1.298944	1.6341172	1.774644	1749.2	23.49	1819.8	25.92	1786.6	14.92	1	153644	17017	762234
STF 21c	2	MNZ10-II	0.10918	0.00145	4.82641	0.08668	0.32078	0.00525	0.704281777	1.328082	1.6366357	1.795952	1785.8	24.06	1793.5	25.64	1789.5	15.11	15	122458	13853	617744
~~STF 21c~~	~~2~~	~~MNZ11-II~~	~~1.41013~~	~~10.77745~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~#VALUE!~~	~~764.2877~~	~~#VALUE!~~	~~#VALUE!~~	~~5715.9~~	~~2284.14~~	~~NaN~~	~~NaN~~	~~NaN~~	~~NaN~~	~~0~~	~~1~~	~~12~~	~~0~~
STF 21c	2	MNZ12-II	0.11012	0.0015	4.65579	0.08462	0.30678	0.00503	0.693996069	1.36215	1.6396114	1.817522	1801.4	24.58	1724.9	24.81	1759.3	15.19	0	124680	14257	657661
STF 21c	2	MNZ13-II	0.11145	0.00154	4.89406	0.08962	0.31864	0.00523	0.688371125	1.381786	1.6413507	1.831199	1823.2	24.87	1783.1	25.56	1801.2	15.44	11	120820	13997	613591
STF 21c	2	MNZ14-II	0.10745	0.00125	4.73046	0.08013	0.31939	0.00525	0.757428728	1.163332	1.6437584	1.693916	1756.6	21.01	1786.8	25.66	1772.7	14.2	13	114089	12744	584000
STF 21c	2	MNZ15-II	0.10802	0.00128	4.81172	0.08239	0.32318	0.00532	0.751695079	1.184966	1.6461415	1.712278	1766.2	21.49	1805.3	25.91	1786.9	14.39	0	147547	16520	746657
STF 21c	2	MNZ16-II	0.10787	0.00118	4.75641	0.07581	0.31994	0.005	0.759987531	1.093909	1.562793	1.593849	1763.7	19.79	1789.4	24.44	1777.2	13.37	15	156298	17286	761405
STF 21c	2	MNZ17-II	0.10954	0.00121	4.77533	0.07676	0.3163	0.00497	0.75870879	1.104619	1.5712931	1.607428	1791.8	20.06	1771.6	24.32	1780.6	13.5	17	122924	13816	607637
STF 21c	2	MNZ18-II	0.10837	0.00122	4.85488	0.07888	0.32507	0.00514	0.753710321	1.125773	1.5811979	1.624757	1772.1	20.38	1814.4	25.01	1794.5	13.68	15	128633	14341	622845
STF 21c	2	MNZ19-II	0.10829	0.00122	4.71798	0.077	0.3161	0.00501	0.755090887	1.126604	1.5849415	1.632054	1770.8	20.47	1770.6	24.53	1770.4	13.67	14	142297	15848	709998
STF 21c	2	MNZ20-II	0.10834	0.0013	4.73292	0.08036	0.31707	0.00508	0.737041645	1.199926	1.6021699	1.697895	1771.6	21.81	1775.4	24.85	1773.1	14.23	21	268995	29861	1349702
STF 21c	2	MNZ21-II	0.11153	0.00161	4.87646	0.09139	0.3174	0.00511	0.6662359	1.443558	1.6099559	1.874105	1824.4	25.96	1777	25.01	1798.2	15.79	20	143546	16255	717396
STF 21c	2	MNZ22-II	0.10933	0.00136	4.97494	0.08657	0.33023	0.00535	0.728112521	1.24394	1.620083	1.740121	1788.2	22.6	1839.5	25.9	1815.1	14.71	1	91829	10313	446211
STF 21c	2	MNZ23-II	0.10898	0.00157	4.83024	0.09033	0.3216	0.0052	0.667416684	1.440631	1.6169154	1.870093	1782.4	26.15	1797.5	25.37	1790.2	15.73	0	113752	12863	562840
~~STF 21c~~	~~2~~	~~MNZ24-II~~	~~0.19759~~	~~0.00548~~	~~10.97061~~	~~0.31929~~	~~0.40305~~	~~0.00787~~	~~0.403960241~~	~~2.77342~~	~~1.9526113~~	~~2.910412~~	~~2806.4~~	~~44.61~~	~~2183.1~~	~~36.18~~	~~2520.6~~	~~27.08~~	~~19~~	~~2484~~	~~504~~	~~9889~~
STF 21c	2	MNZ25-II	0.10948	0.0014	4.91081	0.0867	0.32548	0.00528	0.718100211	1.278772	1.6222195	1.765493	1790.8	23.18	1816.4	25.68	1804.1	14.89	7	149713	16923	739479
STF 21c	2	MNZ26-II	0.10532	0.00121	4.88094	0.08129	0.33642	0.00541	0.754197422	1.14888	1.6081089	1.665458	1719.9	20.95	1869.4	26.11	1799	14.03	13	283949	30667	1350976
STF 21c	2	MNZ27-II	0.10665	0.00111	4.74163	0.07598	0.32269	0.00521	0.790679767	1.040788	1.6145527	1.602403	1743	19.02	1802.8	25.38	1774.6	13.44	2	158405	17465	790373
STF 21c	2	MNZ28-II	0.10729	0.00112	4.6682	0.0747	0.31581	0.00509	0.7887623	1.0439	1.6117286	1.600189	1753.8	18.95	1769.3	24.94	1761.6	13.38	5	149338	16582	760486
STF 21c	2	MNZ29-II	0.10701	0.00113	4.64628	0.0744	0.31517	0.00507	0.783565576	1.055976	1.6086556	1.601281	1749.1	19.07	1766.1	24.87	1757.6	13.38	11	134163	14865	683464
STF 21c	2	MNZ30-II	0.10653	0.00113	4.69903	0.07539	0.32019	0.00515	0.781992353	1.060734	1.60842	1.604374	1740.8	19.33	1790.7	25.17	1767.1	13.43	1	116930	12921	586121
STF 21c	2	MNZ31-II	0.10806	0.00116	4.78091	0.07751	0.32112	0.00516	0.778869432	1.073478	1.6068759	1.621239	1766.8	19.54	1795.2	25.2	1781.6	13.61	0	171656	19054	857228
STF 21c	2	MNZ32-II	0.10667	0.00114	4.67114	0.07492	0.31787	0.00511	0.778515309	1.068717	1.6075754	1.603891	1743.3	19.45	1779.3	24.98	1762.1	13.41	0	116333	12895	586163
STF 21c	2	MNZ33-II	0.10639	0.00114	4.74225	0.07606	0.32357	0.00519	0.776844754	1.071529	1.6039806	1.60388	1738.5	19.54	1807.1	25.28	1774.7	13.45	12	117741	13019	581840
STF 21c	2	MNZ34-II	0.10737	0.00116	4.82682	0.07747	0.32633	0.00524	0.77354958	1.080376	1.6057365	1.60499	1755.2	19.55	1820.5	25.44	1789.6	13.5	15	115726	12944	566881
STF 21c	2	MNZ35-II	0.10754	0.00115	4.67968	0.07474	0.31592	0.00505	0.776038331	1.06937	1.598506	1.597118	1758.2	19.37	1769.8	24.76	1763.6	13.36	10	214541	24001	1083123
STF 21c	2	MNZ36-II	0.10945	0.0013	4.6572	0.07961	0.30877	0.00501	0.747039527	1.187757	1.622567	1.709396	1790.3	21.57	1734.7	24.69	1759.6	14.29	0	115306	12890	602112
STF 21c	2	MNZ37-II	0.10898	0.0012	4.75107	0.07755	0.31628	0.00504	0.767216695	1.101119	1.5935247	1.632264	1782.4	19.97	1771.6	24.68	1776.3	13.69	15	114445	12693	574461
STF 21c	2	MNZ38-II	0.11052	0.00126	4.74486	0.0792	0.31151	0.00501	0.758608685	1.140065	1.6082951	1.669175	1808	20.63	1748.1	24.63	1775.2	14	6	106860	12038	548953
STF 21c	2	MNZ39-II	0.10915	0.00126	4.5835	0.07684	0.30467	0.00491	0.754162491	1.154375	1.6115797	1.676448	1785.2	20.91	1714.4	24.27	1746.3	13.97	20	278813	31146	1467978
STF 21c	2	MNZ40-II	0.10885	0.00122	4.71334	0.07752	0.31416	0.00503	0.761837678	1.120808	1.601095	1.644694	1780.2	20.3	1761.2	24.67	1769.6	13.78	2	148166	16515	751942
STF 21c	2	MNZ41-II	0.10807	0.00123	4.67339	0.07711	0.31374	0.00501	0.754711894	1.138151	1.5968636	1.64998	1767	20.62	1759.1	24.61	1762.5	13.8	3	100236	11105	508091

STF 21c	2	MNZ42-II	0.10959	0.00126	4.7069	0.07782	0.31163	0.00495	0.749122777	1.14974	1.5884222	1.653317	1792.6	20.75	1748.7	24.35	1768.5	13.85	6	115075	12872	584095
STF 21c	2	MNZ43-II	0.11186	0.00146	4.95548	0.08768	0.32137	0.00514	0.704112289	1.305203	1.5994026	1.769354	1829.8	23.47	1796.4	25.07	1811.8	14.95	29	117038	13296	576297
STF 21c	2	MNZ44-II	0.10948	0.00131	4.78391	0.08054	0.31703	0.00506	0.735006124	1.196566	1.5960635	1.68356	1790.8	21.64	1775.2	24.76	1782.1	14.14	14	133144	14980	665557
STF 21c	2	MNZ45-II	0.1064	0.00142	4.70923	0.08381	0.32122	0.00522	0.696206108	1.334586	1.6250545	1.779696	1738.6	24.28	1795.7	25.48	1768.9	14.91	0	144750	16133	724230
STF 21c	2	MNZ47-II	0.10948	0.00125	4.80207	0.07924	0.31827	0.00508	0.753075496	1.141761	1.5961291	1.650122	1790.8	20.71	1781.3	24.85	1785.3	13.87	17	148263	16718	740048
STF 21c	2	MNZ48-II	-0.00622	0.05011	NaN	NaN	NaN	NaN	#VALUE!	-805.627	#VALUE!	#VALUE!	0.1	0	NaN	NaN	NaN	NaN	4	0	1	0
STF 21c	2	MNZ49-II	0.10746	0.00127	4.58664	0.07671	0.30969	0.00495	0.739781557	1.181835	1.5983726	1.672466	1756.8	21.4	1739.2	24.35	1746.8	13.94	2	146379	16246	750531
STF 21c	2	MNZ50-II	0.47305	0.02714	36.75296	1.95091	0.56384	0.02171	0.246746211	5.737237	3.8503831	5.308171	4159.4	82.43	2882.5	89.51	3686.9	52.47	54	1178	579	3329
STF 22	1	MNZ01	0.11014	0.00124	4.87775	0.08581	0.32165	0.00558	0.792436946	1.12584	1.7348049	1.759213	1801.6	20.4	1797.8	27.22	1798.4	14.82	11	230225	25999	1232483
STF 22	1	MNZ02	0.10787	0.00111	4.81247	0.08208	0.32378	0.00559	0.820276815	1.029016	1.7264809	1.705569	1763.7	18.66	1808.2	27.24	1787.1	14.34	0	393373	43622	2093960
STF 22	1	MNZ03	0.10725	0.00112	4.74211	0.08106	0.32087	0.00553	0.814944682	1.044289	1.7234394	1.709366	1753.3	18.87	1794	27	1774.7	14.33	30	369873	40712	1981736
STF 22	1	MNZ04	0.1091	0.00118	4.80772	0.08311	0.31978	0.00553	0.804342537	1.081577	1.7293139	1.728678	1784.3	19.61	1788.7	26.99	1786.2	14.53	25	361206	40522	1942255
STF 22	1	MNZ05	0.10944	0.00112	4.80298	0.08147	0.31854	0.00548	0.820646755	1.023392	1.7203491	1.696239	1790	18.6	1782.6	26.78	1785.4	14.26	11	498738	56079	2686525
STF 22	1	MNZ06	0.10881	0.00112	4.7438	0.08046	0.3164	0.00543	0.818077584	1.029317	1.716182	1.696109	1779.6	18.7	1772.1	26.6	1775	14.22	0	417800	46691	2261745
STF 22	1	MNZ07	0.11036	0.00119	4.88865	0.08417	0.32156	0.00552	0.803308613	1.078289	1.7166314	1.721743	1805.4	19.55	1797.4	26.94	1800.3	14.51	18	532612	60349	2831687
STF 22	1	MNZ08	0.10796	0.0012	4.87724	0.08478	0.3279	0.00564	0.793446392	1.111523	1.7200366	1.738278	1765.3	20.13	1828.2	27.37	1798.3	14.65	9	320277	35463	1669455
STF 22	1	MNZ09	0.10856	0.00113	4.88939	0.08313	0.32691	0.0056	0.814023253	1.040899	1.7130097	1.700212	1775.2	18.98	1823.4	27.2	1800.4	14.33	21	309723	34482	1617631
STF 22	1	MNZ10	0.11065	0.00123	4.78645	0.08326	0.31402	0.00539	0.793159108	1.111613	1.7164512	1.739494	1810	20.11	1760.4	26.46	1782.5	14.61	30	283962	32157	1543395
STF 22	1	MNZ11	0.10828	0.00114	4.76074	0.081	0.31914	0.00546	0.809617774	1.052826	1.7108479	1.701416	1770.5	19.1	1785.5	26.68	1778	14.28	2	320153	35556	1710497
STF 22	1	MNZ12	0.10886	0.00119	4.81949	0.08299	0.32138	0.0055	0.797270042	1.093147	1.7113697	1.721966	1780.3	19.82	1796.5	26.82	1788.3	14.48	19	331935	37023	1757577
STF 22	1	MNZ13	0.10894	0.00122	4.54245	0.07899	0.30266	0.00517	0.789054601	1.119883	1.7081874	1.738929	1781.6	20.36	1704.5	25.6	1738.8	14.47	5	454530	50612	2551433
STF 22	1	MNZ14	0.10907	0.00115	4.92777	0.08386	0.32796	0.0056	0.808719542	1.054369	1.7075253	1.701784	1783.9	19.2	1828.5	27.17	1807	14.36	0	285865	31951	1482310
STF 22	1	MNZ15	0.11028	0.0012	4.79534	0.08252	0.31567	0.0054	0.798905298	1.088139	1.7106472	1.720837	1804	19.74	1768.5	26.44	1784.1	14.46	10	313677	35460	1690099
STF 22	1	MNZ16	0.10887	0.00115	4.82741	0.08183	0.32195	0.00547	0.806292682	1.056306	1.6990216	1.695112	1780.5	19.26	1799.3	26.68	1789.7	14.26	10	307009	34260	1614107
STF 22	1	MNZ17	0.10784	0.00115	4.69971	0.08021	0.31638	0.00541	0.805169857	1.066395	1.709969	1.706701	1763.3	19.24	1772	26.49	1767.2	14.29	4	284263	31392	1529760
STF 22	1	MNZ18	0.10933	0.00114	4.70574	0.0796	0.31251	0.00532	0.811234939	1.042715	1.7023455	1.691551	1788.2	18.99	1753	26.15	1768.3	14.17	0	432709	48564	2351587
STF 22	1	MNZ19	0.10944	0.00114	4.63722	0.07857	0.30764	0.00524	0.812021621	1.041667	1.7032896	1.694334	1790.1	18.95	1729.1	25.85	1756	14.15	0	622923	69859	3441897
STF 22	1	MNZ20	0.10912	0.00115	4.60907	0.07839	0.30664	0.00524	0.808934762	1.053886	1.7088442	1.700777	1784.8	19.14	1724.1	25.85	1750.9	14.19	17	768201	86093	4267052
STF 22	1	MNZ21	0.1078	0.00112	4.78976	0.08135	0.32256	0.00552	0.814335336	1.038961	1.7113095	1.698415	1762.6	18.9	1802.2	26.9	1783.1	14.27	11	257116	28406	1359450
STF 22	1	MNZ22	0.10845	0.00115	4.80583	0.08202	0.32173	0.00551	0.807654714	1.060396	1.7126162	1.706677	1773.5	19.23	1798.2	26.87	1785.9	14.34	8	250671	27863	1329047
STF 22	1	MNZ23	0.10918	0.00119	4.65028	0.08013	0.30923	0.00531	0.799259108	1.089943	1.7171685	1.723122	1785.8	19.71	1736.9	26.14	1758.3	14.4	2	600665	67385	3319383
STF 22	1	MNZ24	0.10855	0.00121	4.67706	0.08168	0.31282	0.0054	0.793985912	1.114694	1.7262323	1.746396	1775.1	20.29	1754.6	26.5	1763.1	14.61	14	373451	41624	2046801
STF 22	1	MNZ25	0.10956	0.00122	4.57851	0.07957	0.30357	0.00521	0.792213546	1.113545	1.7162434	1.737902	1792.1	20.18	1709	25.74	1745.4	14.48	6	555304	62295	3118592
STF 22	1	MNZ26	0.10863	0.00115	4.6523	0.07983	0.3109	0.00535	0.810230942	1.058639	1.7208106	1.715925	1776.6	19.29	1745.1	26.3	1758.7	14.34	3	279614	31168	1541486
STF 22	1	MNZ27	0.10749	0.00117	4.68208	0.08089	0.31627	0.00545	0.801022547	1.088473	1.7232112	1.727651	1757.2	19.64	1771.5	26.69	1764	14.46	13	340833	37638	1848258
STF 22	1	MNZ28	0.10912	0.00119	4.815	0.0835	0.32037	0.00553	0.801359334	1.090543	1.7261292	1.734164	1784.7	19.77	1791.5	26.99	1787.5	14.58	2	266903	29883	1430527
STF 22	1	MNZ29	0.1077	0.00126	4.83157	0.08603	0.32583	0.00564	0.77835999	1.169916	1.730964	1.780581	1760.9	21.22	1818.1	27.41	1790.4	14.98	13	898903	99332	4734641
STF 22	1	MNZ30	0.10908	0.00126	4.77338	0.08472	0.31793	0.0055	0.78304335	1.155116	1.7299406	1.774843	1784	20.88	1779.6	26.92	1780.2	14.9	15	346951	38647	1875251
STF 22	1	MNZ31	0.10828	0.0011	4.75694	0.0768	0.31881	0.00524	0.805701802	1.015885	1.6436122	1.614483	1770.6	18.39	1783.9	25.63	1777.3	13.55	0	525172	58628	2703855
STF 22	1	MNZ32	0.10784	0.00113	4.7023	0.07736	0.3164	0.00525	0.798924531	1.047849	1.659292	1.645152	1763.2	18.95	1772.1	25.73	1767.6	13.77	8	371153	41330	1940364
STF 22	1	MNZ33	0.10748	0.0012	4.38965	0.07409	0.29641	0.00495	0.7789329	1.116487	1.6699841	1.687834	1757.2	20.14	1673.5	24.61	1710.4	13.96	43	346773	38455	1939126
STF 22	1	MNZ34	0.10649	0.00117	4.55082	0.07696	0.31006	0.00523	0.788414497	1.098695	1.6867703	1.691124	1740.2	20.04	1741	25.72	1740.3	14.08	4	349864	38618	1889122
STF 22	1	MNZ35	0.10684	0.00108	4.60816	0.07612	0.31299	0.00527	0.816487583	1.010857	1.6837599	1.651852	1746.2	18.45	1755.4	25.86	1750.7	13.78	8	461956	50927	2478635
STF 22	1	MNZ36	0.10764	0.00114	4.62219	0.07809	0.31154	0.0053	0.804894717	1.059086	1.7012262	1.689459	1759.8	19.21	1748.3	26.05	1753.3	14.1	4	368401	41066	2002901
STF 22	1	MNZ37	0.10974	0.00113	4.63454	0.07783	0.30646	0.00522	0.814764434	1.029707	1.7033218	1.679347	1795.1	18.69	1723.3	25.77	1755.5	14.03	42	396371	44965	2197498
STF 22	1	MNZ38	0.1079	0.00114	4.74266	0.08097	0.31896	0.00548	0.809741165	1.056534	1.7180838	1.70727	1764.2	19.19	1784.6	26.77	1774.8	14.32	0	379154	42250	2032513
STF 22	1	MNZ39	0.1084	0.00112	4.668	0.07935	0.31252	0.00539	0.818042568	1.03321	1.7246896	1.699871	1772.6	18.77	1753.1	26.46	1761.5	14.22	0	449082	50293	2469833
STF 22	1	MNZ40	0.10881	0.00115	4.86499	0.08411	0.32448	0.00564	0.814160636	1.056888	1.7381657	1.728883	1779.5	19.26	1811.6	27.45	1796.2	14.56	3	512621	57613	2735028
STF 22	1	MNZ41	0.10737	0.00116	4.78157	0.08461	0.32319	0.00574	0.81430552	1.080376	1.7760451	1.769502	1755.2	19.57	1805.3	27.95	1781.7	14.86	2	394271	43668	2155175
STF 22	1	MNZ42	0.11099	0.00119	4.91994	0.0869	0.32166	0.0057	0.816369062	1.072169	1.7720575	1.766282	1815.7	19.39	1797.9	27.79	1805.7	14.91	2	237181	27079	1299944
STF 22	1	MNZ43	0.10895	0.00113	4.83078	0.0843	0.32175	0.0057	0.826130999	1.037173	1.7715618	1.74506	1781.9	18.78	1798.3	27.79	1790.3	14.68	7	357955	40216	1964807
STF 22	1	MNZ44	0.10838	0.00113	4.6852	0.08187	0.31372	0.00556	0.824590823	1.042628	1.772281	1.747417	1772.2	18.87	1759	27.26	1764.6	14.62	24	423761	47348	2385492
STF 22	1	MNZ45	0.10787	0.00123	4.80626	0.08676	0.32335	0.00574	0.797265694	1.140261	1.7751662	1.805146	1763.8	20.66	1806.1	27.96	1786	15.17	0	380959	42190	2076683
STF 22	1	MNZ46	0.10755	0.00114	4.78733	0.08429	0.32303	0.00574	0.820483136	1.059972	1.7769247	1.760689	1758.3	19.17	1804.5	27.96	1782.7	14.79	18	1049572	116566	5753845
STF 22	1	MNZ47	0.10727	0.00119	4.85015	0.08695	0.32809	0.00584	0.807196055	1.10935	1.7799994	1.792728	1753.6	20.08	1829.1	28.36	1793.6	15.09	0	275013	30344	1484416
STF 22	1	MNZ48	0.10779	0.00119	4.89632	0.08723	0.32963	0.00585	0.807262966	1.103999	1.7747171	1.781542	1762.4	19.92	1836.6	28.34	1801.6	15.02	10	317319	35178	1698517
STF 22	1	MNZ49	0.10792	0.00127	4.79907	0.08772	0.32271	0.00574	0.787394846	1.176798	1.7786867	1.827854	1764.6	21.26	1803	27.99	1784.7	15.36	0	568567	62990	3110945
STF 22	1	MNZ50	0.10702	0.00136	4.9144	0.09225	0.33323	0.00593	0.759706004	1.270791	1.7795517	1.877137	1749.3	23.04	1854	28.68	1804.7	15.84	20	234778	25732	1238418
STF 22	1	MNZ51	0	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0
STF 22	1	MNZ52	0	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0
STF 22	1	MNZ53	0.11003	0.00116	4.93958	0.08631	0.32574	0.00565	0.816662519	1.054258	1.7345122	1.747315	1799.9	19.14	1817.7	27.49	1809	14.76	3	258019	28685	1370595
STF 22	1	MNZ54	0.11016	0.00119	4.69302	0.08252	0.3091	0.00537	0.809072286	1.080247	1.7373018	1.758356	1802	19.46	1736.3	26.43	1766	14.72	4	383313	42638	2145471
STF 22	1	MNZ55	0.10961	0.00117	4.95381	0.08676	0.32792	0.0057	0.812893746	1.067421	1.7382288	1.751379	1793	19.29	1828.3	27.67	1811.5	14.8	15	530317	58859	2801816
STF 22	1	MNZ56	0.10926	0.00117	4.63567	0.08067	0.3078	0.00532	0.809399525	1.07084	1.7283951	1.740202	1787	19.34	1729.9	26.23	1755.7	14.53	13	406765	45099	2276847
STF 22	1	MNZ57	0.11082	0.00124	4.61324	0.08201	0.30209	0.00526	0.797975339	1.118932	1.741203	1.777709	1812.8	20.17	1701.7	26.06	1751.7	14.84	37	261473	29387	1499439
STF 22	1	MNZ58	0.11067	0.00125	4.8074	0.08634	0.31517	0.00551	0.797210325	1.129484	1.7482628	1.795981	1810.4	20.4	1766.1	27.03	1786.2	15.1	26	687915	77059	3797015
STF 22	1	MNZ59	0.10994	0.00124	4.74534	0.08492	0.31316	0.00546	0.796479082	1.127888	1.7435177	1.789545	1798.4	20.41	1756.3	26.78	1775.3	15.01	30	299611	33251	1656813
STF 22	1	MNZ60	0.10857	0.00116	4.60763	0.08031	0.3079	0.00533	0.810851497	1.068435	1.7310815	1.742978	1775.4	19.44	1730.3	26.26	1750.7	14.54	0	392350	43260	2197595
STF 22	1	MNZ61	0.10858	0.00113	4.49669	0.07233	0.30053	0.00486	0.79182747	1.040707	1.617143	1.608516	1775.7	18.87	1693.9	24.09	1730.4	13.36	0	533404	59312	2861750
STF 22	1	MNZ62	0.10929	0.00118	4.83861	0.07867	0.32137	0.00518	0.777624539	1.079696	1.6118493	1.62588	1787.5	19.65	1796.4	25.27	1791.6	13.68	9	330182	36934	1647521
STF 22	1	MNZ63	0.10981	0.00118	4.60413	0.07592	0.30426	0.00499	0.786520551	1.074583	1.6400447	1.648954	1796.3	19.41	1712.4	24.66	1750	13.76	0	372029	41761	1996445
STF 22	1	MNZ64	0.10924	0.00116	4.59063	0.07535	0.30498	0.00499	0.790071222	1.061882	1.6361729	1.641387	1786.7	19.22	1715.9	24.66	1747.6	13.68	13	346472	38644	1853033
STF 22	1	MNZ65	0.10975	0.00118	4.68056	0.07759	0.3095	0.0051	0.788421874	1.075171	1.6478191	1.657708	1795.2	19.41	1738.3	25.1	1763.8	13.87	11	335201	37557	1776843
STF 22	1	MNZ66	0.1094	0.00117	4.71202	0.07843	0.31256	0.00517	0.79230124	1.06947	1.6540824	1.664467	1789.4	19.45	1753.3	25.38	1769.4	13.94	14	438524	48991	2310287
STF 22	1	MNZ67	0.10818	0.00117	4.73458	0.07943	0.31761	0.00528	0.79033851	1.081531	1.6624162	1.677657	1768.8	19.66	1778.1	25.83	1773.4	14.06	20	409219	45192	2132314
STF 22	1	MNZ68	22.44853	*********	0	0	0	0	#DIV/0!	#VALUE!	#DIV/0!	#DIV/0!	8000	0	0	0	0	0	0	0	0	0
STF 22	1	MNZ69	0.11045	0.00127	4.92963	0.0853	0.32389	0.00541	0.771899553	1.149842	1.6703202	1.730353	1806.8	20.77	1808.7	26.35	1807.3	14.61	17	492330	55100	2521020
STF 22	1	MNZ70	0.109	0.00126	4.83656	0.08445	0.32195	0.00544	0.774082177	1.155963	1.6897034	1.746076	1782.7	21.02	1799.3	26.5	1791.3	14.69	15	396122	43997	2060936
STF 25	1	MNZ01	0.10533	0.00105	4.56739	0.0718	0.31445	0.0051	0.805606635	0.996867	1.6218795	1.572014	1720.2	18.23	1762.6	25.01	1743.3	13.1	14	226323	24892	1164704
STF 25	1	MNZ02	0.10825	0.00111	4.56945	0.07354	0.30635	0.00499	0.799524567	1.025404	1.6288559	1.609384	1770.2	18.58	1722.7	24.61	1743.7	13.41	6	311363	34518	1650130
STF 25	1	MNZ03	0.094	0.33471	NaN	NaN	NaN	NaN	#VALUE!	356.0745	#VALUE!	#VALUE!	1508.2	2504.78	NaN	NaN	NaN	NaN	33	0	0	0
STF 25	1	MNZ04	0.10853	0.00108	4.67756	0.07407	0.31259	0.00511	0.809235569	0.995117	1.6347292	1.583518	1774.8	18.07	1753.5	25.12	1763.2	13.25	63	536100	60805	2800636
STF 25	1	MNZ05	0.04682	0.02424	NaN	NaN	NaN	NaN	#VALUE!	51.77275	#VALUE!	#VALUE!	39.7	919.2	NaN	NaN	NaN	NaN	4602	299433	121228	1512333
STF 25	1	MNZ06	0.08785	0.16595	NaN	NaN	NaN	NaN	#VALUE!	188.9015	#VALUE!	#VALUE!	1379.3	1829.36	NaN	NaN	NaN	NaN	0	12	12	0
STF 25	1	MNZ07	0.10533	0.00112	4.26743	0.07058	0.29408	0.00486	0.793169209	1.063325	1.6526115	1.653923	1720.2	19.43	1661.9	24.2	1687.1	13.6	49	253089	27288	1414741
STF 25	1	MNZ08	0.104	0.00112	4.28196	0.0712	0.29886	0.00493	0.788623004	1.076923	1.6496018	1.66279	1696.6	19.74	1685.7	24.49	1689.9	13.69	10	172194	18268	945921
STF 25	1	MNZ09	0.10687	0.00115	4.57285	0.07627	0.31058	0.00512	0.789500914	1.076074	1.6485286	1.667888	1746.7	19.57	1743.6	25.17	1744.3	13.9	0	478210	51909	2524982
STF 25	1	MNZ10	0.99404	11.2992	NaN	NaN	NaN	NaN	#VALUE!	1136.695	#VALUE!	#VALUE!	5229	2771.04	NaN	NaN	NaN	NaN	6	1	19	0
STF 25	1	MNZ11	0.1058	0.0012	5.013	0.08525	0.34383	0.00567	0.771109055	1.134216	1.6490708	1.700578	1728.2	20.68	1905.1	27.2	1821.5	14.4	57	1110995	119284	5291027
STF 25	1	MNZ12	0.10837	0.0011	5.07064	0.0834	0.33959	0.00569	0.813243011	1.015041	1.6755499	1.644763	1772.2	18.52	1884.7	27.37	1831.2	13.95	1	685075	76750	3370667
STF 25	1	MNZ13	0.10779	0.0011	4.47854	0.07376	0.30152	0.00505	0.811368417	1.020503	1.6748474	1.646965	1762.3	18.44	1698.8	24.99	1727	13.67	65	665079	73853	3682899
STF 25	1	MNZ14	0.10721	0.00115	4.60995	0.07776	0.3121	0.00522	0.79611667	1.072661	1.6725409	1.686786	1752.5	19.43	1751	25.62	1751.1	14.07	42	424342	46243	2262398
STF 25	1	MNZ15	0.10811	0.00118	4.49301	0.0769	0.30164	0.00509	0.793855098	1.091481	1.687442	1.711547	1767.8	19.85	1699.5	25.2	1729.7	14.21	100	372576	40978	2072508
STF 25	1	MNZ16	0.10572	0.0011	4.88251	0.08366	0.33527	0.00578	0.816773284	1.040484	1.7239837	1.713463	1726.9	18.96	1863.9	27.88	1799.2	14.44	0	286286	30859	1466874
STF 25	1	MNZ17	0.10652	0.00108	4.91883	0.08324	0.33516	0.00574	0.822723827	1.013894	1.7126149	1.692272	1740.6	18.52	1863.3	27.73	1805.5	14.28	25	496086	54023	2532547
STF 25	1	MNZ18	0.103	0.00107	4.01418	0.06854	0.28286	0.00486	0.816090191	1.038835	1.7181645	1.707447	1678.9	19.1	1605.8	24.44	1637.1	13.88	54	137822	14515	835109
STF 25	1	MNZ19	0.36154	0.6442	0	0	0	0	#DIV/0!	178.1822	#DIV/0!	#DIV/0!	3756.3	1489.08	0	0	0	0	0	0	0	0
STF 25	1	MNZ20	0.16839	0.90819	0	0	0	0	#DIV/0!	539.3373	#DIV/0!	#DIV/0!	2541.7	2799.19	0	0	0	0	0	0	0	0
STF 25	1	MNZ21	0.02634	0.03757	0	0	0	0	#DIV/0!	142.6348	#DIV/0!	#DIV/0!	0.1	738.34	0	0	0	0	0	33	13	0
STF 25	1	MNZ22	0.10859	0.00115	4.71603	0.08138	0.31535	0.00543	0.811273635	1.059029	1.7218963	1.725604	1775.8	19.16	1767	26.61	1770.1	14.46	54	816659	90077	4445801
STF 25	1	MNZ23	0.03259	0.05156	0	0	0	0	#DIV/0!	158.208	#DIV/0!	#DIV/0!	0.1	1295.78	0	0	0	0	21	0	0	11
STF 25	1	MNZ24	-0.3053	1.97563	0	0	0	0	#DIV/0!	-647.111	#DIV/0!	#DIV/0!	0.1	5948.55	0	0	0	0	114	3	0	0
STF 25	1	MNZ25	0.10281	0.00122	3.92138	0.07113	0.2767	0.00488	0.780307794	1.186655	1.7636429	1.813902	1675.5	21.79	1574.7	24.65	1618.1	14.68	36	91082	9616	574720
STF 25	1	MNZ26	0.09894	0.00118	3.91684	0.07047	0.28761	0.00497	0.772059102	1.192642	1.7280345	1.799154	1604.3	22.11	1629.6	24.89	1617.2	14.55	5	124960	12531	743366
STF 25	1	MNZ27	0.10758	0.0012	4.72477	0.08334	0.31895	0.00554	0.797065484	1.115449	1.7369494	1.763895	1758.7	20.19	1784.6	27.05	1771.6	14.78	0	226498	24798	1225118
STF 25	1	MNZ28	0.10698	0.00121	4.55009	0.08127	0.30867	0.00541	0.795853139	1.131053	1.7526809	1.786119	1748.5	20.54	1734.2	26.66	1740.2	14.87	136	214905	23487	1212445
STF 25	1	MNZ29	0.10416	0.00112	4.40179	0.07703	0.30673	0.00533	0.809915862	1.075269	1.7376846	1.74997	1699.6	19.71	1724.6	26.31	1712.7	14.48	28	359777	38163	2031972
STF 25	1	MNZ30	0.10474	0.00133	4.33621	0.08084	0.30029	0.00529	0.756124137	1.269811	1.7616304	1.864301	1709.8	23.26	1692.7	26.21	1700.3	15.38	83	178678	19108	1033601
STF 25	1	MNZ31	0.10928	0.00113	4.78605	0.08042	0.31774	0.00535	0.811039117	1.034041	1.6837666	1.6803	1787.4	18.76	1778.7	26.19	1782.5	14.11	15	286273	31789	1514241
STF 25	1	MNZ32	0.10419	0.00108	3.96315	0.06657	0.27595	0.00465	0.81020131	1.036568	1.6850879	1.679724	1700.1	18.96	1570.9	23.47	1626.7	13.62	7	498577	52797	3034216
STF 25	1	MNZ33	0.13502	0.15345	NaN	NaN	NaN	NaN	#VALUE!	113.6498	#VALUE!	#VALUE!	2164.3	1245.05	NaN	NaN	NaN	NaN	0	0	0	0
STF 25	1	MNZ34	0.10746	0.00115	3.61502	0.06145	0.24405	0.00412	0.80047802	1.070166	1.6881787	1.699852	1756.9	19.43	1407.7	21.37	1552.8	13.52	35	174050	19049	1199649
STF 25	1	MNZ35	0.01847	0.02293	NaN	NaN	NaN	NaN	#VALUE!	124.1473	#VALUE!	#VALUE!	0.1	0	NaN	NaN	NaN	NaN	83	83705	11854	509068
STF 25	1	MNZ36	0.11663	0.00132	4.58599	0.07964	0.28522	0.00486	0.783737414	1.131784	1.7039478	1.736593	1905.2	20.24	1617.6	24.36	1746.7	14.48	110	156414	18644	925780
STF 25	1	MNZ37	0.10278	0.00109	4.06058	0.06902	0.28665	0.00486	0.804868495	1.060518	1.6954474	1.699757	1675	19.44	1624.7	24.34	1646.4	13.85	26	138349	14461	814862
STF 25	1	MNZ38	0.10324	0.00112	4.08233	0.06988	0.28688	0.00487	0.797529277	1.084851	1.6975739	1.711768	1683.2	19.97	1625.9	24.38	1650.8	13.96	31	91012	9579	535130
STF 25	1	MNZ39	0.11246	0.00119	4.83579	0.08212	0.31201	0.0053	0.805920882	1.058154	1.6986635	1.698171	1839.5	18.98	1750.6	26.02	1791.1	14.29	140	486489	55832	2638007
STF 25	1	MNZ40	0.10971	0.00118	4.76351	0.08131	0.315	0.00535	0.800494802	1.075563	1.6984127	1.706935	1794.6	19.43	1765.3	26.25	1778.5	14.32	65	395139	44324	2123182
STF 25	1	MNZ41	0.10511	0.00118	4.29758	0.07474	0.29667	0.00506	0.787747608	1.122633	1.7055988	1.739118	1716.2	20.57	1674.8	25.17	1692.9	14.33	36	51826	5545	295583
STF 25	1	MNZ42	0.10021	0.00107	3.48871	0.05956	0.25261	0.00429	0.803397815	1.067758	1.6982701	1.707221	1627.9	19.78	1451.9	22.09	1524.7	13.47	30	157946	16135	1057641
STF 25	1	MNZ43	0.09929	0.00113	3.91309	0.06818	0.28597	0.00488	0.782405766	1.13808	1.7064727	1.742357	1610.8	21	1621.4	24.48	1616.4	14.09	15	63222	6407	374291
STF 25	1	MNZ44	0.10903	0.00126	4.24959	0.07461	0.28279	0.00485	0.778510157	1.155645	1.7150536	1.755699	1783.3	20.91	1605.4	24.37	1683.7	14.43	47	87405	9748	524897
STF 25	1	MNZ45	0.01273	0.10519	NaN	NaN	NaN	NaN	#VALUE!	826.3158	#VALUE!	#VALUE!	0.1	1924.75	NaN	NaN	NaN	NaN	0	24	1	0
STF 25	1	MNZ46	0.09974	0.00113	3.78046	0.06616	0.27504	0.00473	0.786910892	1.132946	1.7197499	1.750052	1619.3	20.94	1566.4	23.91	1588.6	14.05	23	173823	17751	1078272
STF 25	1	MNZ47	0.10783	0.00134	3.4834	0.06278	0.23445	0.00402	0.751376234	1.242697	1.7146513	1.802262	1763.1	22.57	1357.8	21.02	1523.5	14.22	117	151411	16735	1092591
STF 25	1	MNZ48	0.10987	0.00143	4.78542	0.08868	0.31607	0.00546	0.737879248	1.301538	1.7274654	1.853129	1797.3	23.44	1770.5	26.72	1782.3	15.56	0	105374	11669	565221
STF 25	1	MNZ49	-0.76298	2.54131	NaN	NaN	NaN	NaN	#VALUE!	-333.077	#VALUE!	#VALUE!	0.1	6034.23	NaN	NaN	NaN	NaN	9	0	0	0
STF 25	1	MNZ50	0.1056	0.00127	3.88496	0.06962	0.26697	0.0046	0.766560204	1.202652	1.72304	1.792039	1724.9	22	1525.4	23.42	1610.6	14.47	55	88341	9526	563485
STF 25	1	MNZ51	0.11817	0.00161	4.30513	0.08162	0.2644	0.00461	0.722734439	1.362444	1.7435703	1.895878	1928.7	24.19	1512.3	23.48	1694.3	15.62	221	132628	15900	855734
STF 25	1	MNZ52	0.01989	0.02884	NaN	NaN	NaN	NaN	#VALUE!	144.9975	#VALUE!	#VALUE!	0.1	134.62	NaN	NaN	NaN	NaN	41	0	0	0
STF 25	1	MNZ53	2.04806	12.60734	NaN	NaN	NaN	NaN	#VALUE!	615.5747	#VALUE!	#VALUE!	6226.6	1773.38	NaN	NaN	NaN	NaN	0	0	15	0
STF 25	1	MNZ54	0.10946	0.00129	4.52375	0.08068	0.29993	0.0052	0.775811385	1.178513	1.7337379	1.783476	1790.5	21.35	1691	25.79	1735.3	14.83	103	91482	10269	523315
STF 25	1	MNZ55	0.05835	0.01729	NaN	NaN	NaN	NaN	#VALUE!	29.63153	#VALUE!	#VALUE!	542.8	542.54	NaN	NaN	NaN	NaN	0	0	0	0
STF 25	1	MNZ56	0.10627	0.00118	4.36153	0.07642	0.29788	0.00512	0.795485303	1.110379	1.7188129	1.752137	1736.5	20.23	1680.8	25.45	1705.1	14.47	41	155618	16778	893381
STF 25	1	MNZ57	0.10737	0.00141	4.42122	0.08305	0.2988	0.00521	0.739512209	1.313216	1.7436412	1.878441	1755.3	23.84	1685.3	25.86	1716.3	15.55	127	157016	17120	901599
STF 25	1	MNZ58	-0.05054	0.14406	NaN	NaN	NaN	NaN	#VALUE!	-285.042	#VALUE!	#VALUE!	0.1	1498.46	NaN	NaN	NaN	NaN	16	0	0	10
STF 25	1	MNZ59	0.09978	0.00132	3.86775	0.07288	0.28137	0.00491	0.736829429	1.32291	1.7450332	1.8843	1620	24.39	1598.3	24.72	1607	15.2	15	176670	17948	1079530
STF 25	1	MNZ60	0.104	0.00134	3.92994	0.07306	0.2743	0.00476	0.745073952	1.288462	1.7353263	1.859061	1696.7	23.48	1562.6	24.09	1619.9	15.05	0	191045	20129	1192562