



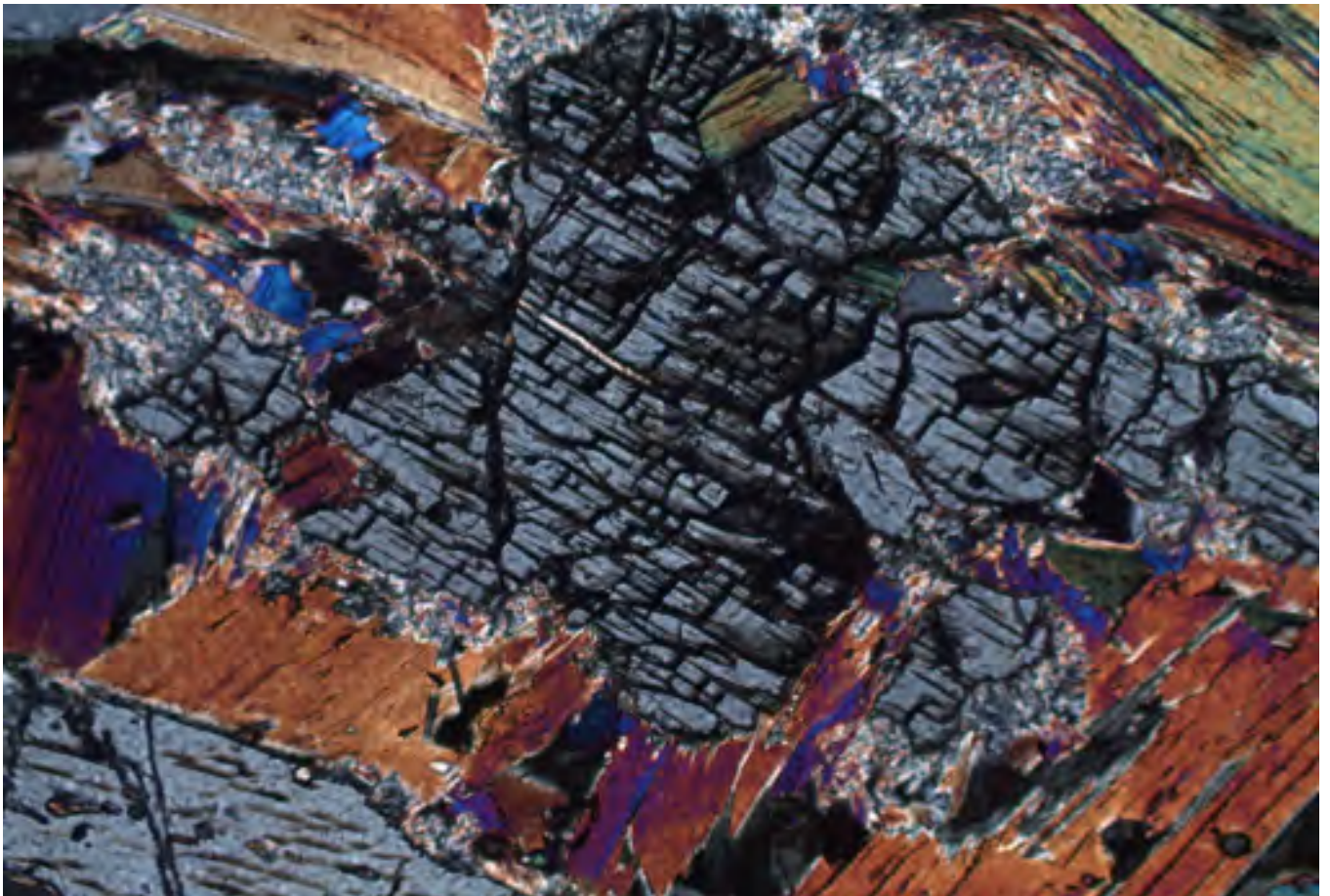
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Mineralogical, geochemical and P/T gradients toward a serpentinite body near Glen Urquhart, Scotland

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Abstract

Within the Moine metasedimentary gneiss at Glen Urquhart, Scotland, a sequence of marble, skarn and metapelitic schists are folded around a serpentinite body. The aim of this study is to investigate if any mineralogical, chemical or P/T gradients exist along a profile in metapelitic schists and gneiss toward the serpentinite and to examine the effects of fluid flow. An almost perpendicular profile through the Moine was used for comparison.

Rock samples were taken from along both profiles. Petrographic studies were performed including thin section analysis and point-counting. A different approach, used to quantify change in the progress of retrograde reactions, was point-counting of individual crystals of garnet and kyanite which were partly or entirely replaced by chlorite and muscovite. Selected thin sections were taken to Uppsala University, Uppsala for EMPA and the resulting WDS-data was used for P/T calculations using the program THERMOCALC. Parts of the samples were also crushed and milled to powder for XRF and LA-ICP-MS analysis. The presence of metacarbonates required that the main profile be analyzed using a handheld XRF analyzer. Tests of the two methods were made and the results were found to be comparable.

The K/Ti ratio in the metapelitic rocks increases toward the metacarbonates and the serpentinite. This correlates with mineralogical gradients which show that retrogression was most extensive near the contact with the metacarbonates. Metapelites which showed least evidence of retrogression minerals were found closest to the serpentinite despite this being a fluid rich rock. This might suggest that fluid fluxes were higher close to the metacarbonates and lower close to the serpentinite. P/T along profile 1 is on average lower and more even than profile 2. The P/T along profile 1 range from $6.0 \pm 1,1$ kbar and $602 \pm 22^\circ\text{C}$ at P1O to a peak of $11.6 \pm 2,1$ kbar and $708 \pm 34^\circ\text{C}$ at P1Lb. The peak in P/T along profile 1 is close to the serpentinite. This might be explained by retrograde metamorphism having progressed furthest in the contact between the gneissose metapelites and the metacarbonates and less so closer to the serpentinite thus conserving the high grade mineral assemblage and P/T.

Introduction

North of Glen Urquhart, Scotland, a serpentinite body intrudes into Moine metasedimentary rocks. Between the Moine and the serpentinite lay a complicated folded unit of metapelites and psammites together with metacarbonates (skarn and marble). Stockholm University uses the area for excursions several times a year studying bedrock geology, glaciology and geomorphology.

The aim of this study is to examine if there exists a mineralogical, geochemical or Pressure-Temperature (P/T) gradient east-west toward the serpentinite. A north-south profile was used for comparison.

Gradients are useful because they can illustrate the gradual change that would be expected in fluid-rock interactions: strongest effect being right next to the contact and a gradual diminishing of the effect away from the rock. A gradient can in this way point to the source of a change and are therefore a useful tool during analysis.

Chemistry and mineralogy can show how substantial any fluid flow has been. Fluids can change the chemistry of the rock and facilitates pro- and retrograde reactions in the rock. Mineral reaction textures show the extent of retrograde reactions at Glen Urquhart and if the minerals exist in equilibrium. Studying pressure-temperature conditions of metamorphism is also important in order to understand the metamorphic history of the rock. In this way investigations into metamorphism, chemistry, mineralogy and fluid flow of rocks at Glen Urquhart may reveal parts of its geological history.

Background

Geological background

The Great Glen Fault cuts through Scotland from Inverness on the northeast coast, across the northern highlands where it cradles the famous Loch Ness and continues all the way to Loch Linnhe in the southwest where it reaches the north west coast of Scotland (see Fig. 1). It is thought to be late Caledonian. The fault separates the Dalradian on the east side from the Moine on the west side (Johnstone et al 1989)

The Moine super-group is complicated and far from homogeneous and uniform. These metamorphic rocks were thrust up onto the Torridonian (1.2-1.0Ga) and Lewisian (2.9-1.75 Ga) along the Cambrian carbonate succession during the Ordovician, 430-420 Ma. (Johnstone et al 1989).

Glen Urquhart lies on the western side of Loch Ness to the south of Inverness on the Northern Highlands of Scotland that was deformed during the Caledonian orogeny with the closing of the Iapetus ocean and the formation of Pangea. (Johnstone et al 1989) At Glen Urquhart a serpentinite body intrudes into, or is emplaced with, Moine meta sedimentary rocks. Between the Moine and the serpentinite lay a complicated folded unit of metapelites and psammites with metacarbonates (skarn and marble). These anomalous metasedimentary rocks have been the focus of several studies often being referred to as kyanite schist, psammites and marbles.

Previous studies

One of the early studies was done by Francis (1964) in *Further petrological studies in Glen Urquhart, Inverness-shire*. He identified the area as Moine arguing against previous studies calling it Lewisian.

Francis was later disputed by Rock in a series of articles culminating with Rock et al (1986) in their study *Solid geology of the Glen Urquhart Serpentinite-Metamorphic complex and its Moine envelope, West of Loch Ness*, where Rock and others argue for a different origin of this kyanite schist and marble mix lithology. They named it Albynian and argued that it was a unit in age between the Moine and Dalradian.

N.M.S. Rock (1981-1983) also made a geological map of the area with a NW-SW synform running south through the area that is the focus of this study. The map also shows a decreasing gneissosity in the Moine away from the serpentinite. The sandstone was identified as Old Red Sandstone of Devonian age.

Brook and Rock (1983) studied pegmatites around Glen Urquhart and around the rest of the Northern Highlands. They determined the age of the intrusion to be older than the Caledonian: 428 ± 5 Ma.

Cawood et al. (2004) studied psammitic layers within the anomalous inter-layered meta-carbonate-meta-sedimentary layers directly adjacent to the serpentinite. From these samples detrital zircons were analyzed and age determined. The result corresponded with similar studies of Moine sediments and places these psammites into the upper parts of the Moine super-group



Fig. 1: Map showing Glen Urquhart, Scotland as well as the Great Glen Fault(GGF). CC-BY-SA-3.0 via Wikimedia Commons

Method

Mapping and sampling

The fieldwork consisted of two parts. The first part was a geological mapping of an approximately 2x2km large area of Glen Urquhart, Scotland. A large number of outcrops were visited near the contact with the serpentinite while less outcrops were visited further east. Visited outcrops are marked on the map (see Fig. 9). The focus was primarily the bedrock and to find or extrapolate their contacts, but some complimentary structural measurements and observations were made with a Silva compass clinometer. From this information, two profiles were drawn, one north-south and the other east-west.

The second part of the field study consisted of sampling along the profiles at as evenly-spaced intervals as the available outcrops allowed. The samples were around 1kg each. Fifteen samples were taken along profile 1 while fourteen samples were taken along profile 2. A small number of extra samples were taken outside of the profiles as references.

Petroscopic analysis and point-counting

Parts of each of the samples were cut into blocks using a diamond-saw and polished with silicon carbide on rotating discs at Stockholm University under the supervision of research technician Dan Zetterberg. The blocks were of around 2x3x1cm and were then sent to Vancouver Petrographics, Canada for polished thin section production. A Nikon petroscopic microscope was used for mineralogical analysis, while Leica microscopes were used when taking pictures of the thin sections presented within this project and for point-counting. During point-counting a thousand points were counted on each thin section.

Mineral reaction textures

One way to find out the amount of fluid flow in a rock is to quantify the extent to which the rock has undergone retrograde metamorphism. In the metapelitic rocks along profile 1 kyanite, replaced by white mica, and garnet, replaced by chlorite, are the most suitable candidates since they show obvious and measurable changes.

In order to track the amount of retrograde reactions along profile 1, manual point-counting was used on selected crystals

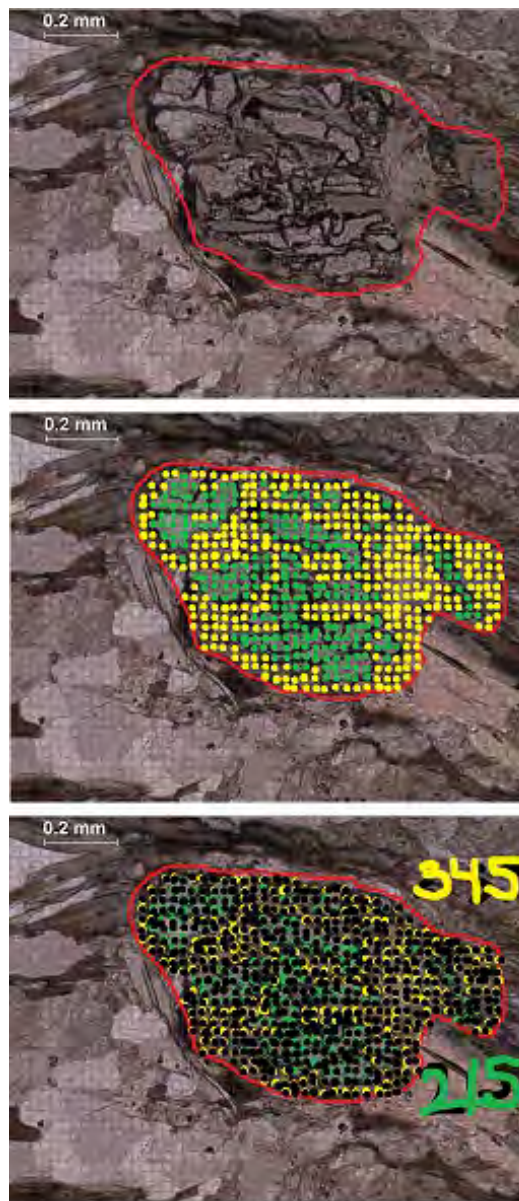


Fig. 2 Steps showing the method of determining the percent of kyanite and garnet that has undergone retrograde metamorphism. First the former crystal and the retrograde mineral aggregate is outlined and a grid superimposed. The mineral at each point is then determined and marked by color. Finally the points are counted and crossed off by black dots.

in thin sections with the suffix RT (see images in Fig. 18-28). The focus was on kyanite and garnet. When these were absent a photo of the general equilibrium and retrograde reactions was taken, without manual point-counting being done (see RTP1A and RTP1B in Fig. 19-20). When several crystals of kyanite and garnet were present, the least and most altered crystals were measured. When both garnets and kyanite existed in a single thin section both were selected.

The process of this method is straightforward and illustrated in Fig. 2. First the former crystal and the retrograde mineral aggregate is outlined and a grid superimposed. This can be done with a simple photo editing software. The mineral at each intersection of the grid is then identified and marked by different colors. Finally the points are counted and crossed off by black dots. The numbers are then converted to percent (presented in Fig. 17). This method was used on all the images shown in Fig. 18-28.

XRF preparation and analysis

After the preparation phase for thin section production, pieces of the rock samples remained. Out of these, the freshest areas, which were representative of the rock, were chosen and cut out to at least the weight of 20g. These pieces of >20g were crushed and milled into fine powder and placed into plastic jars under clean conditions.

This study uses two methods of X-Ray Fluorescence, XRF. One will be called *conventional XRF* which uses melting of a powder/flux mix after Loss On Ignition, LOI, to create glass discs. These can then be analyzed in a large, stationary Rigaku ZSX Primus II XRF-device. It measures major elements like Si, Mg, Fe and Ti.

Profile 2 was prepared for conventional XRF-analysis instructed by research engineer Runa Jacobsson. Half of the samples (beginning with RT) were prepared by Rebecka Töyrä, while the other half (samples beginning with KÅ) were prepared by Kristina Åhlgren (Åhlgren 2015).

During LOI, the samples were weighed and then heated at 105°C for 10h to remove volatiles (for example H₂O, S) on the outside of the crystal structure. They were then weighed again and heated at 1000°C for 10h to remove volatiles from within the crystal structure. 2±0.0002g of each dehydrated samples was mixed with 5±0.0002g of flux. The mix was then melted into glass disks for the conventional XRF-analysis.

The other method will be called *handheld XRF* and uses a portable device called DELTA Handheld XRF analyzer by Olympus using the GeoChem setting for both major, minor and trace elements. In contrast to the conventional XRF, the handheld XRF can be used on whole rock samples as well as on crushed samples and combines major elements with minor and trace elements in the result. A drawback is that it does not detect any elements lighter than Mg. In this study it did also not detect Mg or Al in any reliable manner and these elements will therefore not be used.

The crushed samples from profile 1, of which some contained carbonates, and a few from profile 2 were poured into plastic cups especially designed for use with the handheld XRF device. The cups consist of a tube, cap with a hole covered by a filter and at the other end a thin plastic film that is held in place with a thick ring, also made of plastic. Using the hand-held XRF means a lower cost while keeping up the quality of the resulting gradient. The two methods were compared in this study and the result presented in the graphs in Fig. 3-5.

The geochemical section show graphs where elements considered mobile (like Mn, K, Si) are normalized to titanium, which is considered immobile (as are Al and Y). (Phillips 1988) The benefit of this is twofold, as it can reveal gradients if mobile elements has decreased or accumulated while the

immobile element remained the same. The second benefit is that it helps limit the difference between more psammitic samples and the pelitic samples. In other words, it removes “the silica” by looking at ratios instead of the wt% of separate elements.

Testing the XRF-methods

Profile 1 contains metacarbonates which makes it unsuitable for conventional XRF analysis at Stockholm University since they tend to boil over during fusing. It was therefore analyzed using the handheld XRF device. In order to verify the accuracy of the handheld device it was used on random samples from profile 2. The result was then compared to that of the conventional XRF for profile 2 and elements Si, Ti and K from both approaches are presented in Fig. 3-5. The graphs illustrate how the methods overlap within error except for Si at RTP2C which lay only slightly higher. The two methods are therefore considered comparable.

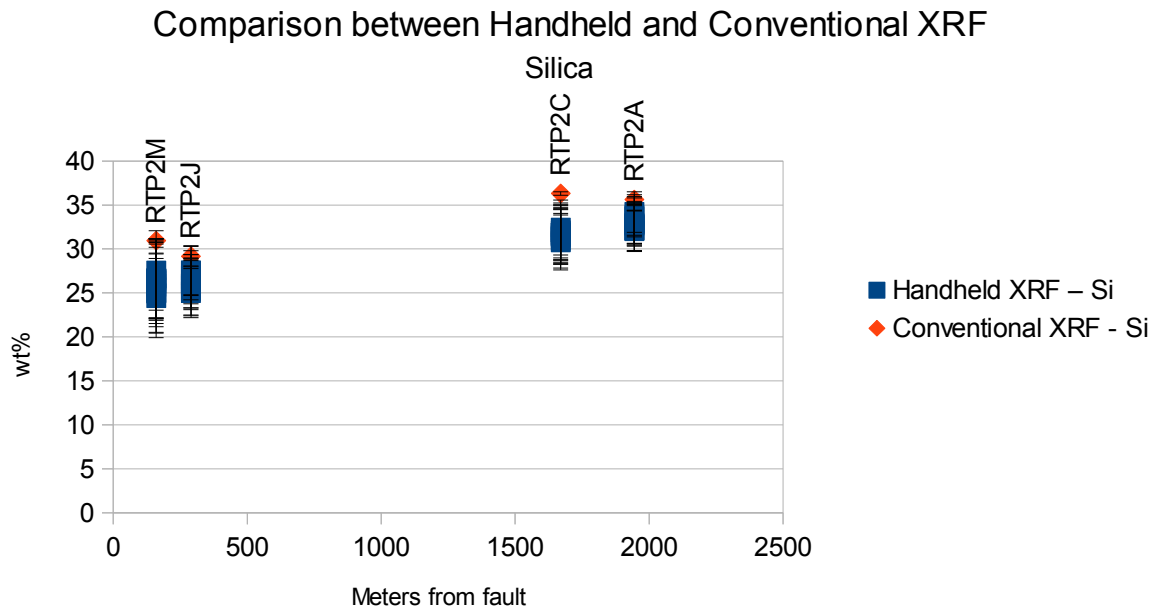


Fig. 3 Comparing the results from the conventional XRF and the handheld XRF with regards to silica content in samples from four locations along profile 2. They lay within error except RTP2C where the conventional XRF plots just above the handheld XRF.

Comparison between Handheld and Conventional XRF

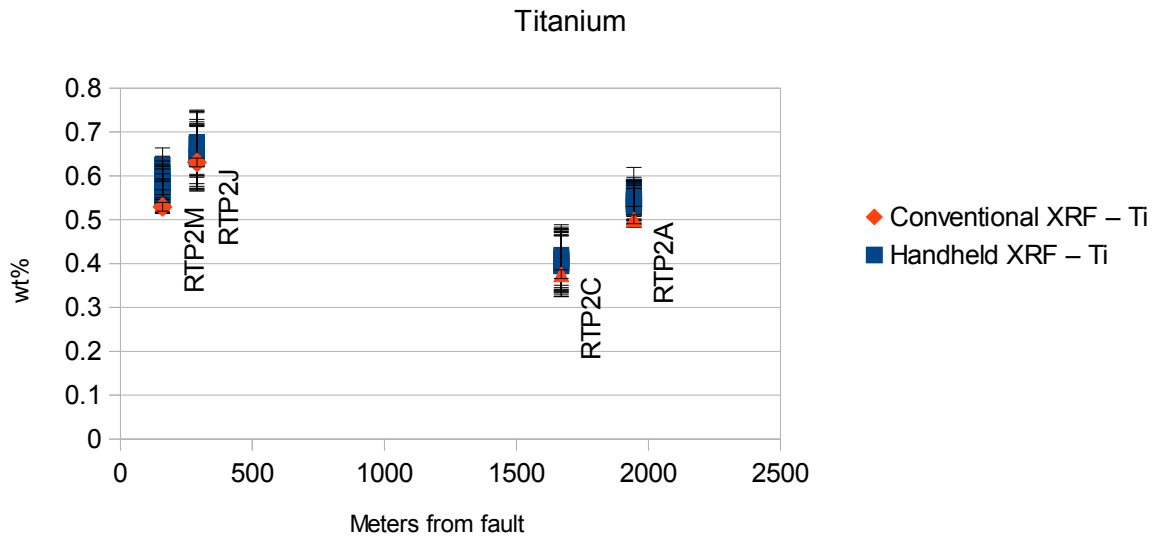


Fig. 4 Comparing the results from the conventional XRF and the handheld XRF with regards to titanium content in samples from four locations along profile 2. They plot within error of each other.

Comparison between Handheld and Conventional XRF

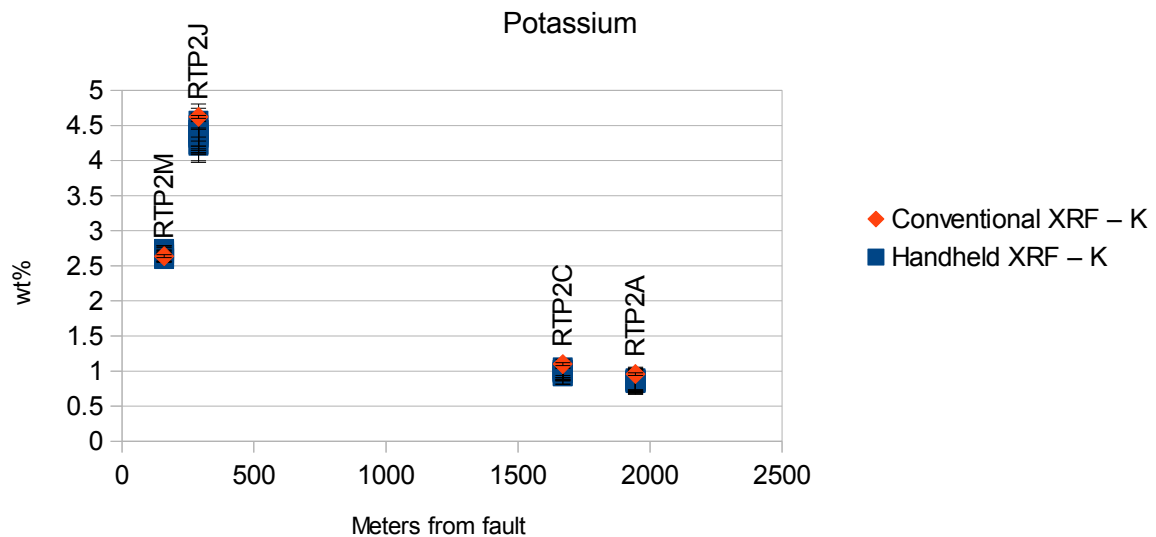


Fig. 5 Comparing the results from the conventional XRF and the handheld XRF with regards to potassium content in samples from four locations along profile 2. They plot within error of each other.

LA-ICP-MS

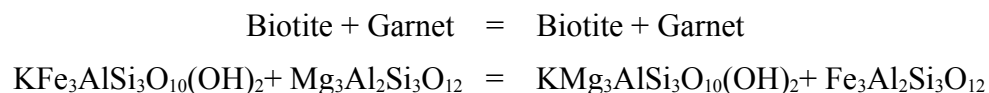
For minor and trace element (like V, Nd, As) the use of Laser Ablation Inductively Coupled Plasma Mass Spectrometry, LA-ICP-MS, was used for profile 2. After conventional XRF analysis the used glass disks were labeled and a piece of the center of each was drilled out. The pieces were mounted and fixed with epoxy in preparation for analysis. They were then placed by research engineer Cora C. Wohlgemuth-Ueberwasser inside the machine that begins by shooting a laser (in this case a New Wave 193nm excimer laser) at the mounted samples with a spot size of 150µm, repetition rate of 10 Hz and a laser energy density of 7 J/cm³.

The dislodged, ablated, particles are then transported by a carrier gas, in this case helium, to the plasma chamber of a Thermo Xseries 2 quadropole ICP-MS, where they are agitated and ionized by a plasma torch. The agitated ions are then introduced into a chamber with a mass spectrometer where they are identified.

In order to correct for instrumental drift external (NIST 612) and secondary (BCR-2) silicate standards were measured along with the samples from profile 2.

Geothermobarometry

Solid solution minerals have a chemical formula based on the pressure and temperature (usually abbreviated P/T) during their formation. Therefore the chemistry of a metamorphic mineral holds information about the metamorphic conditions during its growth and can be used as geobarometers and geothermometers. Different minerals have different sensitivities to pressure and temperature and work better for either pressure or temperature identification. One method is to measure the chemical exchange of Mg and Fe between biotite and garnet laying next to each other. (Philpotts et al 2013)



Another part of thermodynamics are retrograde reactions. Minerals formed during a certain P/T are only stable, in equilibrium with surrounding minerals, at those conditions. Outside that P/T area the minerals can, and often do, still persist in a metastable state and only partially change to the new conditions. This change requires some sort of aid or push, or all metamorphic rocks at the surface would spontaneously convert into its pre-metamorphism equivalent, e.g. a metapelite would turn to mud. Given enough time and the weathering affects of the surface, this will eventually happen, and is one of the fundamental parts of the rock cycle, but before that, rocks will exist with their half stable configuration to be examined.(Philpotts et al 2013)

Fluid flow facilitate reactions, both pro- and retrograde, and gives the mineral the required push in order to change from the metastable state to a more stable configuration. Dry dehydrated rocks of high metamorphic grade change little on its retrograde path to the surface except along highly altered paths where there has been fluid flow. Mineral reaction textures can therefore be used to map fluid flow which can be both local or on a broader scale. (Philpotts et al 2013)

EMPA

Before Electron microprobe analysis could be done, selected samples were sent to Uppsala University for carbon coating. During the analysis one setting (choosing which elements to analyze) was used for most minerals, while a setting that also detected phosphor was used for garnets. Since this was not done for all minerals, the phosphor data was ignored during subsequent thermodynamic calculations in THERMOCALC. The beam size was 2 μ m for garnets and 5 μ m for all other minerals and a beam current of 10nA and accelerating voltage 15kV was used. The continuous beam of the machine damaged minerals like biotite so when a fresh surface was chosen the beam was moved away quickly to preserve it until the analysis could begin. The micro-probe was called Jeol JXA-8530F Hyperprobe and uses Wavelength Dispersive Spectra, WDS.

During the petroscopic analysis locations on selected thin sections were photographed. The image in Fig. 6 is one of these photographs and show many minerals laying close to each other if not touching. The red dots are some of the spots chosen for electron microprobe analysis that are subsequently numbered and saved. Each analysis of a mineral gets the corresponding number and in that way it is possible to look back at a single result and know from where exactly it was taken.

Among others, spots at the garnet rim were chosen, but also moving in toward the core of the garnet. This creates a quick profile of how the chemistry, and therefore also of the change in pressure and temperature conditions during metamorphism. Each spot on the thin section that was analyzed was logged and also recorded on printed enlarged thin section photographs. At A few locations, when thin sections were hard to navigate, were plotted on images taken by backscatter electron imaging.

The electron back scatter image in Fig. 7 shows how the the minerals from Fig. 6 appeared during EMPA. In this view, the freshest surfaces were chosen on as many minerals as time allowed for, with the priority list having garnets and biotite at the top.

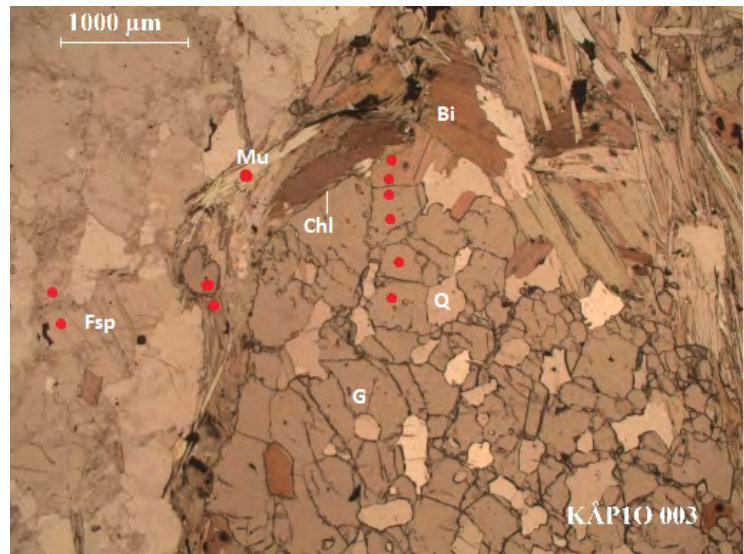


Fig. 6 Example of one location of thin section KÅPIO that was analyzed with the electron microprobe. The red dots represents points that were analyzed that were numbered and logged so that each result can be correlated to a single point on the thin section. The primary positions are those at the rims of biotite and garnet as they are touching. The freshest surfaces were chosen, e.g. cracks in the garnet were avoided.

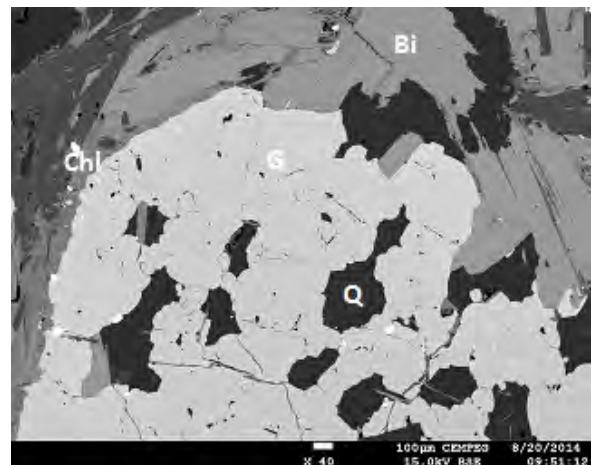


Fig. 7 A backscatter image of a large garnet at KÅPIO.

P/T calculations using THERMOCALC and AX

Calculating the thermodynamic relationship between different minerals can be complicated. The program THERMOCALC (version 333, data set 55), and its accessory program AX, by Tim Holland are ways of simplifying the calculations with the help of computers and a large dataset. (Holland, T. J. B. et al. 1998) The process of going from WDS data to a P/T estimate can be quite confusing and Fig. 8 shows a simplified chart of the entire process.

The first step is acquiring WDS-data that can then be used in the second step, the *mineral selection process* where relevant minerals are chosen. If too many minerals are chosen the program crashes and if too few are chosen there are not enough reactions to calculate P/T. The best solution is to choose a minimum of minerals, while still covering all available types, from a single location. The garnet/biotite pair is the most important for this study and was complimented by chlorite, white mica and two feldspars. Other minerals were also added to tell the program which minerals were available, for example the occurrence of quartz and aluminosilicates. Unsuccessful attempts were made on amphiboles. (Holland, T. J. B. et al. 1998) The selected minerals are copied from the WDS-data and inserted into an AX input file.

When opening AX there are three options: pressure, temperature and run. 6kbar and 550°C are the standard setting and are used for the first run to create an activity log. Once THERMOCALC has given a P/T estimate for this first activity, the new values are inserted in AX instead of the standard and a new activity log is created. This is repeated several times in order to constrain the result and is symbolized by the circular arrows in Fig. 8.

The activity log that AX creates can be used directly in THERMOCALC. Several text files lay in the program folder. For example one with the data set, another is a file that tells THERMOCALC which file to read WDS data from and a third file holds this WDS data. This last file is where the result from the AX-output file should be inserted.

THERMOCALC version 333 has several different functions. The function used most in this study was the calculations for both pressure and temperature. It is also possible to create a table of P or T depending on the other. Once a P/T calculation is chosen the program needs to be directed to the right text file in its folder. After this several settings are available, for example expected range of P/T and information about any fluid. For Glen Urquhart the calculations assume the presence of a fluid (H₂O).

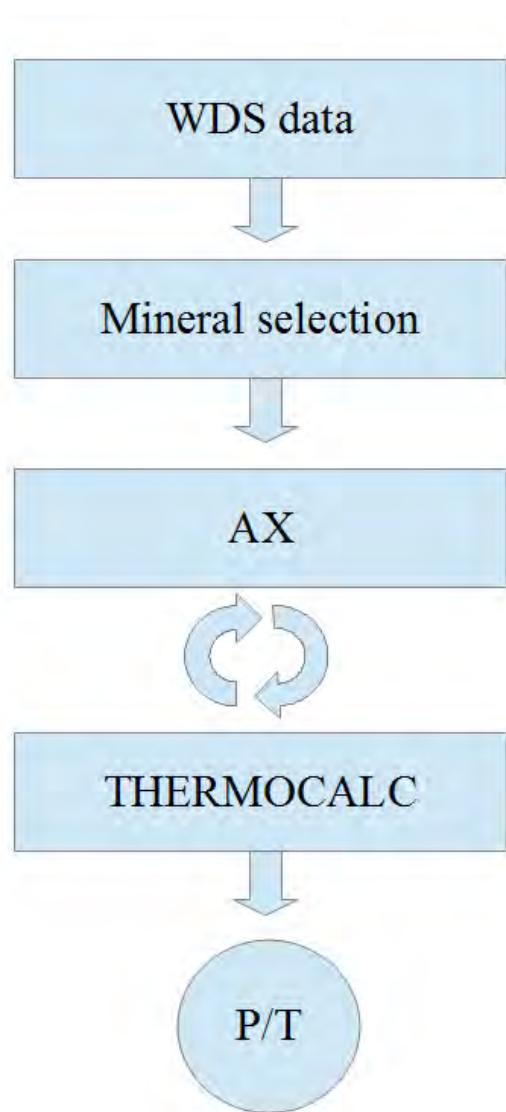


Fig. 8 The process of turning WDS-data of minerals into P/T estimates using THERMOCALC.

The result, successful or not, is shown on the screen, but THERMOCALC also creates an output file. The best fit with smallest error of these for profile 1 and 2 are presented in the appendix. For additional information about THERMOCALC and its use see Tollefson (2014).

Structural measurements

During the mapping and sampling phase some structural measurements were made of the foliation in the area east and north of the serpentinite. A Silva compass was used to make measurements of foliation planes that were later plotted on a map and on a stereonet using the program Stereonet 9.0 by Allmendinger. In the gneissose metapelite the banding was easily identified and measured. The schistosity of the reorientated platy mineral were measured in the schistose metapelites. The meta-carbonates presented the most problem because they either lacked or had a foliation that was hard to identify which is to be expected because of their increased plasticity. In skarn the foliation was more pronounced.

Result

Geological mapping of bedrock

The result of the mapping can be seen in Fig. 9. It corroborates Rock (1981-1983), with regards to the folding and rock-types and also identifies a large fault to the north where The Old Red Sandstone has been juxtaposed on top of the Moine metasediments. In the fault zone lay a breccia and the metapelite at the contact show slickensides indicating movement. There is a gradual color change (from white to red) in the metapelites along profile 2 toward the fault that is discussed by Åhlgren (2015).

Profile 2 runs north-northwest through metapelites until it reaches a conglomerate which Rock (1981-1983) identifies as Old Red Sandstone. The area is classified as gneissose with the one exception at P2N which is schistose. Profile 1 on the other hand crosses several different lithologies including serpentinite, marble, skarn and metabasalt. The metapelites occur at both ends of the profile but have different texture. The metapelites at the eastern end of the profile are similar to most of profile 2 and gneissose. The metapelites that lay interlayered with the metacarbonates are schistose, like P2N. For a cross section view of the area see Fig. 51.

Petrographic analysis

The result from the mineral identification part of the petrographic analysis are presented in the table in Fig. 10-11. This confirmed the lithological differences observed during the field study that P1O-D, F, K-M are metapelites, interrupted by a metabasalt at P1E and metacarbonates at P1G-J, with P1I being a marble and the rest skarn. The profile ends at the serpentinite at P1N.

The result from point-counting showing the mineral mode along profile 1 is presented in Fig. 12 and show that P1A, B, K and Lb need to be reclassified as psammites. Profile 2 was counted by Kristina Åhlgren and is presented in Fig. 13.

The mineral mode of Profile 1 is also presented graphically in Fig. 14. The next graph (Fig. 15) show only the metapelites+psammites. In Fig. 16 retrograde minerals muscovite and chlorite are grouped together against all other minerals and show the variation in percent retrograde minerals along profile 1. There is an upward gradient in the gneissose metapelites from P1O to P1F toward the contact with the metacarbonates. In the metacarbonates the highest percentage in retrograde minerals is at P1G creating slopes on either sides of P1F. From P1H onward to P1M the levels are flat and low and show no difference between metapelites or metacarbonates.

The next part still focuses on retrograde metamorphism, but instead of mineral mode of entire thin sections, looks at the mineral reaction textures of individual mineral crystals. Point-counting of minerals that have undergone partial retrograde metamorphism using the method described in Fig. 2 gives a percentage that is presented in the table in Fig. 17. This corroborates the result from mineral mode of retrograde minerals in Fig. 16 with a peak at RTP1C-RTP1F and flat result with limited retrograde reaction textures in the metapelites closest to the serpentinite. The images used for point-counting are presented in Fig. 18-28.

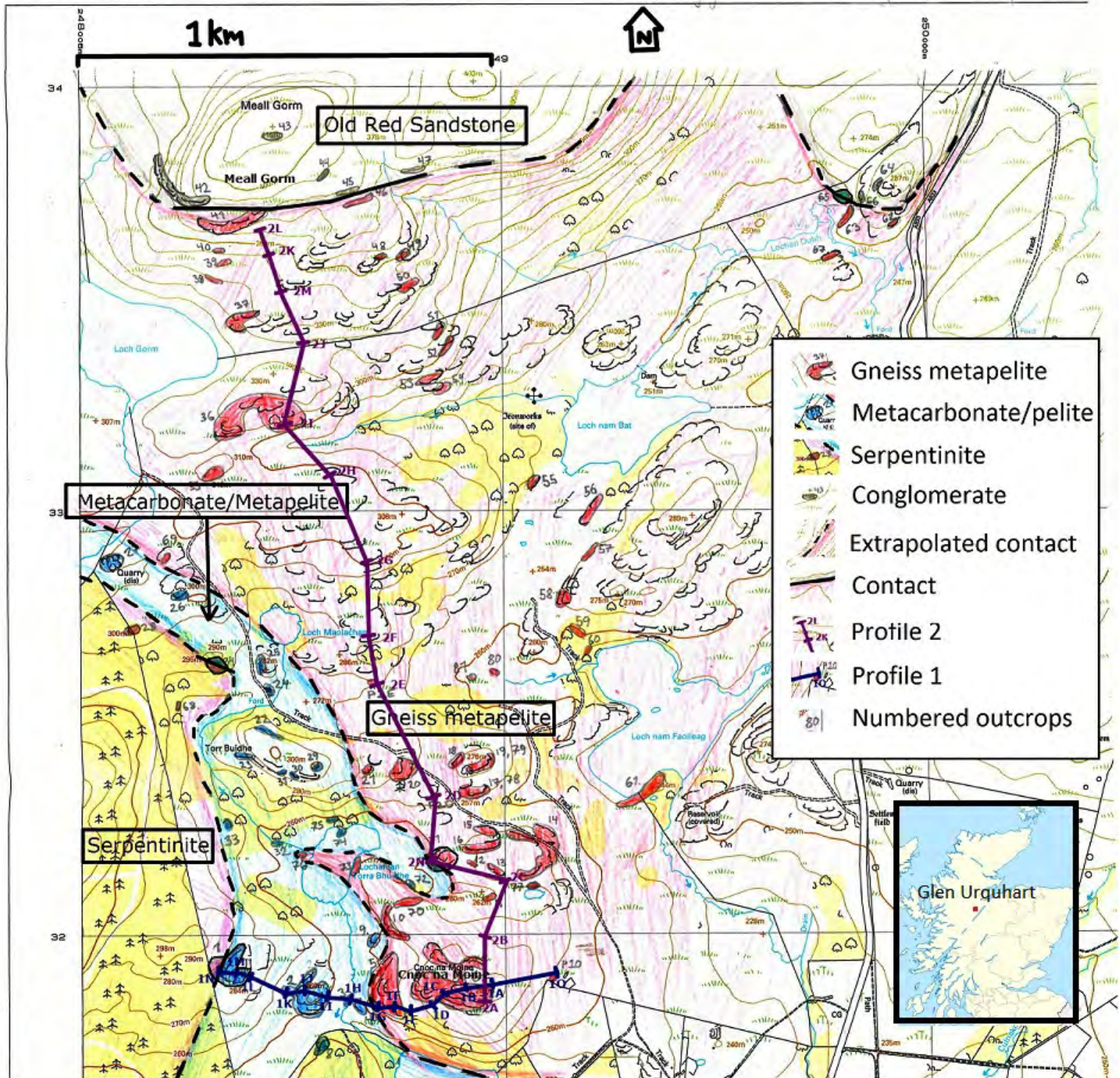


Fig. 9 See image description on the next page and for an image of only the profiles see the appendix.

Fig 8. This map shows rocktype, numbered outcrops, profile 1 (blue line) and profile 2 (purple line). Profile 2 runs north-south through metapelitic gneiss until it reaches the conglomerate of the Old Red Sandstone at a hill called Meall Gorm. Profile 2 is approximately 2,5 times longer than profile 1.

Profile 1, runs east-west and cuts across several different rock types. In the east lay a large area of metapelitic gneiss with distinct banding. From the first point at P1O farthest to the east, profile 1 continues up over a large hill called Cnoc na Moine. At the western slope of Cnoc na Moine a small mafic igneous rock intrudes into the metapelites (P1E). Moving west along the profile the outcrops become metacarbonates (skarn and marble) inter-layered with metapelitic schist. In a small valley the schistose metapelite lay above marble right across from serpentinite. The profile terminates at the serpentinite body with P1N.

The stratigraphic relationship of the rock types were observed at the contacts between them. At for example P2N the gneiss was above the schist. At P2L the sandstone was above the gneiss. At P1O/P1M the metacarbonates lay above the serpentinite.

Inset map CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>), via Wikimedia Commons

Profile 1	Quartz	Garnet	Felspars	Biotite	Muscovite	Chlorite	Kyanite	Rutile	Others	Amphibole	Calcite	Px
RTP1O	X	X	X	X	X	X		X	X			
KAP1O	X	X	X	X	X	X	X	X	X			
RTP1A	X		X	X	X	X		X	X			
KAP1A	X		X	X	X	X		X	X			
RTP1B	X		X		X	X		X	X			
KAP1B	X		X	X		X		X	X			
RTP1C	X		X	X	X	X		X	X			
KAP1C	X		X	?	X	X		X	X			
RTP1D	X	X	X	X	X	X	X	X	X			
KAP1D	X	X	X	X	X	X		X	X			
RTP1E	X		X					X		X		
KAP1E	X		X					X		X		
RTP1F	X		X		X	X		X				
KAP1F	X		X	?	X	X		X				
RTP1G	X			X	X	X				X		
KAP1G	X			X	X	X				X		
RTP1H	X		?							X		
KAP1H	X									X		
RTP1I	X				X					X	X	X
KAP1I	X				X					X	X	X
RTP1J	X				X					X	X	
KAP1J				X								
RTP1K	X		X	X		X	X	X	X			
KAP1K	X		X	X	X	X		X	X			
RTP1La	X		X	X	X	X	X		X			
KAP1La	X		X	X	X	X	X		X			
RTP1Lb	X		X	X	X	X	X	X	X			
KAP1Lb	X	X	X	X	X	X	X	X	X			
RTP1M	X		X	X	X	X	X		X			
KAP1M	X		X	X	X	X	X		X		?	

Fig. 10 P1O-D, F, K-M are metapelites. P1E is an amphibole-rich metabasalt. P1G-J are metacarbonates. P1N is the serpentinite and consists mostly of serpentine, talc and remnant mafic minerals.

Profile 2	Quartz	Garnet	Felspars	Biotite	Muscovite	Chlorite	Al ₂ SiO ₅	Rutile	Others	Amphibole	Calcite	Px
RTP2A	X			X	X	X		X	X			
KAP2A	X	X	X	X	X	X			X			
RTP2B	X	X	X	X		X		X	X			
KAP2Ba	X	X	X	X	X	X		X	X			
KAP2Bb	X	X	X	X		X		X	X			
RTP2C	X		X	X	X				X			
KAP2C	X		X	X	X				X		?	
RTP2N	X		X	X	X	X	X	X	X			
KAP2N	X		X	X	X	X		X	X			
RTP2D	X	X	X	X	X				X			
KAP2D	X	X	X	X	X	X			X			
RTP2E	X	X	X	X	X	X			X			
KAP2E	X	X	X	X	X	X		X	X			
RTP2F	X		X	X	X	X		X	X			
KAP2F	X		X	X	X	X			X			
RTP2G	X		X	X	X				X			
KAP2G	X	X	X	X	X				X			
RTP2H	X	?	X	X		X			X			
KAP2H	X		X	X	X				X		?	
RTP2I	X	X	X	X	X	X			X			
KAP2I	X	X	X	X	X	X			X			
RTP2J	X	X	X	X	X	X			X			
KAP2J	X	X	X	X	X	X			X			
RTP2K	X	X	X		X	X			X			
KAP2K	X	X	X		X	X			X			
RTP2M	X		X	X	X	X			X			
KAP2M	X		X	X	X	X			X			
RTP2L	X		X	X	X	X			X		X	
KAP2L	X		X	X	X	X			X			
RT74a	X		X			X				X		
KA74a	X		X		?	X				X	?	
RK74b	X					X				X	?	

Fig. 11 Profile 2 consists of metapelites. At the bottom of the table lay thin sections from extra sample locations that can be seen on the map. They are metacarbonates, skarn. The conglomerate was not analyzed in thin section since it is more evident in hand specimens.

Profile 1	Quartz	Garnet	Feldspars	Biotite	Muscovite	Chlorite	Kyanite	Rutile	Amphibole	Calcite	Other
RTP1O	33.8	2.3	40.2	13.8	1.7	7.8		0.4			
RTP1A	54.3		30.2	12.9	1.9			0.3			0.4
RTP1B	38.5		48.3	0.1	1.9	9.8		1.1			0.3
RTP1C	55.4		25.1	5.2	3.7	9.5		0.9			0.2
RTP1D	29.1	3.6	24.9	7.7	18.3	12.8	1.4	1			1.2
KAP1E			23.7	0.1				0.7	74.9		0.6
RTP1F	45.3		0.3		26.6	25.9	0.9	0.8			0.2
RTP1G	8.2			14.1		31.5			45.4		0.8
RTP1H	11.4				2.9	3.4			81	0.4	0.9
RTP1I	0.5				4	2.5			27	65.2	0.8
RTP1J	45.2		0.4			6.4			31.2	11.2	0.4
RTP1K	50.8		34.6	10.6	0.1	2.9	0.3	0.5			0.2
RTP1La	35.5	0.2	17.7	32.5	2.7	7	4.2	0.2			
RTP1Lb	51.4		38	6.7	0.1	0.8	2.9				0.1
RTP1M	37.7		32.7	21.4	1.3	4.7	1.8				0.4

Fig. 12 Result from point-counting showing mineral mode along profile 1. P1A, B and K have a higher than 80% feldspar+quartz and can be classified as psammites.

Profile 2	Quartz	Garnet	Feldspars	Biotite	Muscovite	Chlorite	Kyanite	Rutile	Amphibole	Calcite	Other
KAP2A	39.8	47.8	11.3	0.5	0.3	0.2					0.1
KAP2Ba	54.9	40.1	1.2	0.5	0.3	2.7		0.2			0.1
KAP2Bb	32.9	41.8	6.1	1.3	0.0	17.6		0.3			
KAP2C	52.8	41.5	4.9		0.5			0.3			
KAP2N	20.3	59.5	12.3	6.8	0.9			0.2			
KAP2D	32.1	59.9	7.0	0.1	0.1	0.3					0.5
KAP2E	32.9	54.7	8.1	0.1	0.4	2.5		0.3			1.0
KAP2F	42.3	48.3	8.5	0.2	0.5						0.2
KAP2G	35.1	53.7	10.1	0.1	0.6	0.4					
KAP2H	40.4	45.2	10.2		3.1						1.1
KAP2I	32.6	36.1	19.0	0.1	10.3	1.8					0.1
KAP2J	18.2	61.9	12.9		4.8	0.1					2.1
KAP2M	38.6	22.0	3.3	15.2	19.2			1.0			0.7
KAP2K	21.5	47.8	0.3	25.5	3.0	0.2					1.7

Fig. 13 Result from point-counting showing mineral mode along profile 2 courtesy of Kristina Åhlgren.

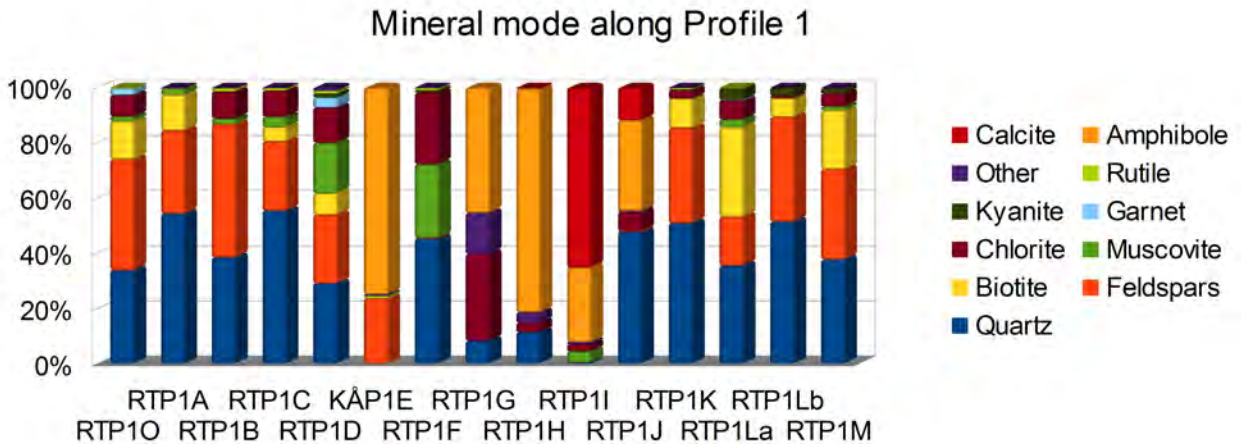


Fig. 14 This graph show the mineral mode along profile 1 with all rock-types included.

Mineral mode of metapelites along profile 1

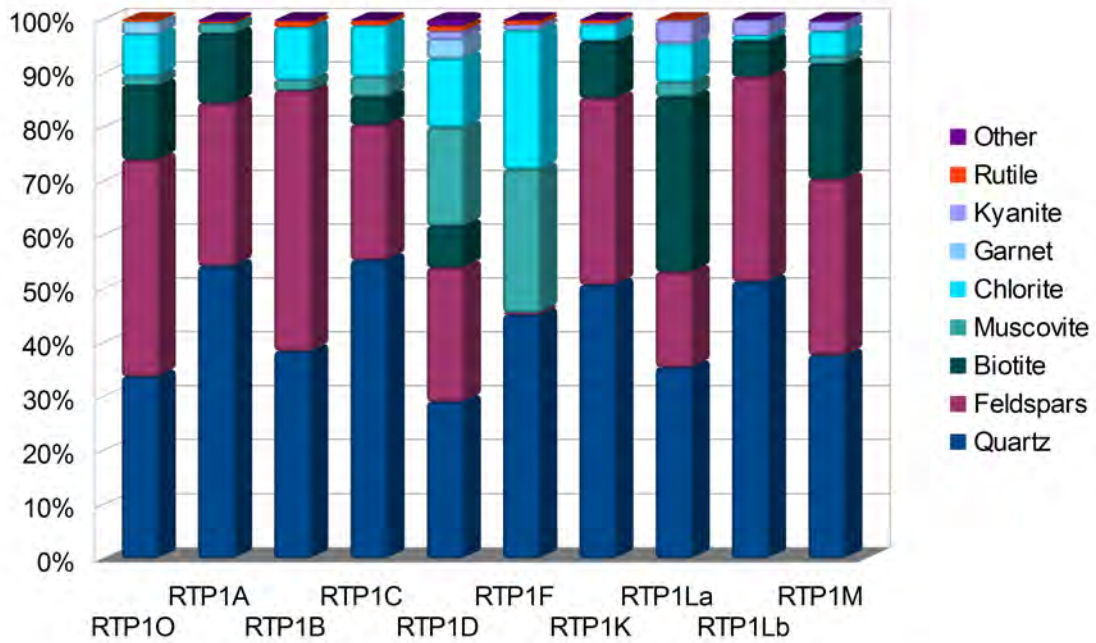


Fig. 15 This graph only show the mineral mode of metapelites+psammites.

Mineral mode retrograde minerals

Chlorite and white mica vs all other minerals

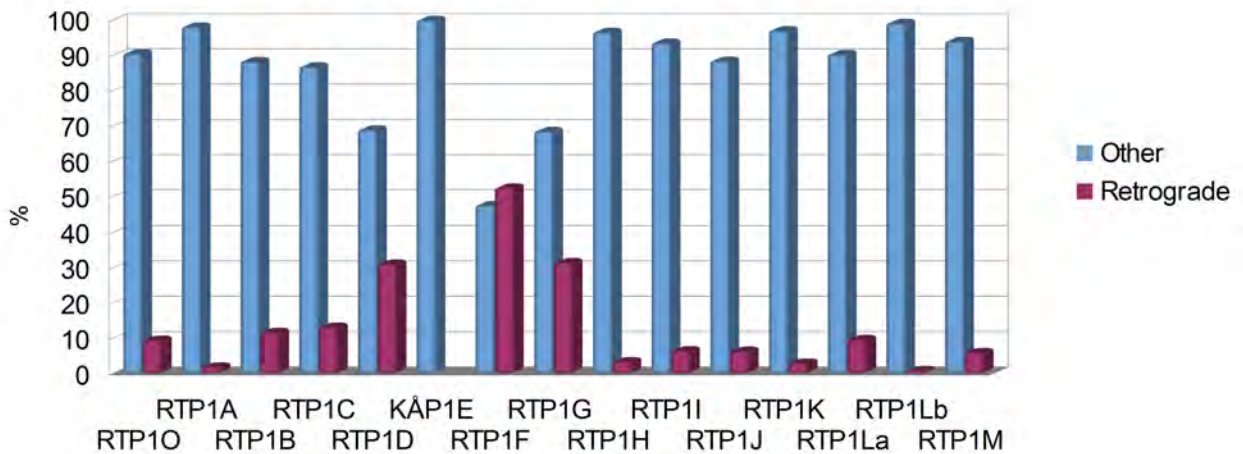


Fig. 16 Mineral mode of retrograde minerals along profile 1. PIE is a metabasalt, PIG-J are metacarbonates and the rest metapelites.

Retrograde reaction texture		
From:	Garnet	Kyanite
RTP1O	33-62%	
RTP1A		
RTP1B		
RTP1C		100%
RTP1D	37%	76-88%
RTP1F		100%
RTP1K		
RTP1La		29-46%
RTP1Lb		18-32%
RTP1M		29-31%

Fig. 17 This table list the amount of retrograde metamorphism that has occurred in garnet and kyanite along profile 1.

RTP1O

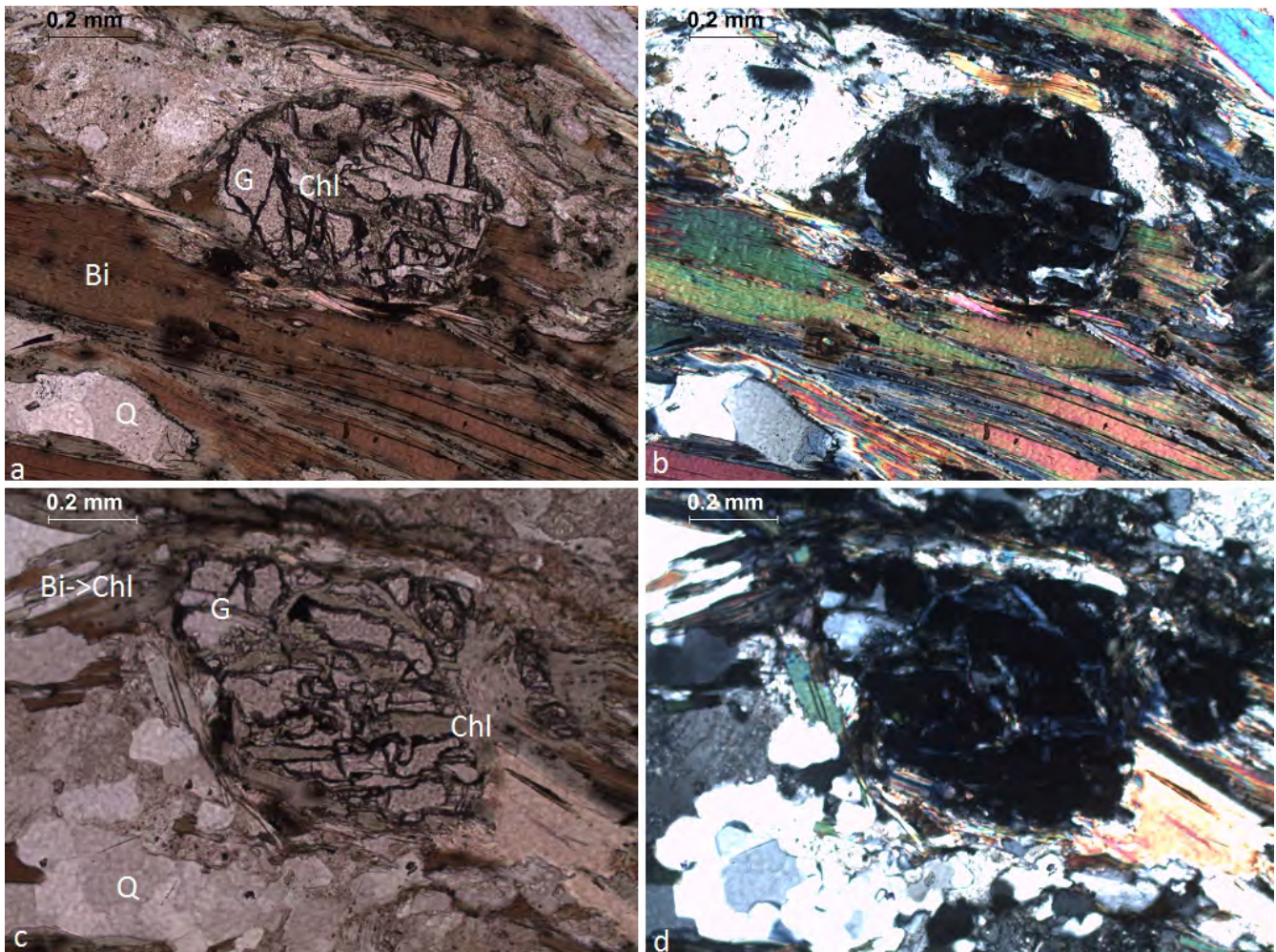


Fig. 18 Thin section from RTP1O showing two garnets in plain polarized light, PPL, (a,c) and cross polarized light, XPL, (b,d). Top garnet is 33% retrograded while the bottom garnet is 62% retrograded.

RTP1A

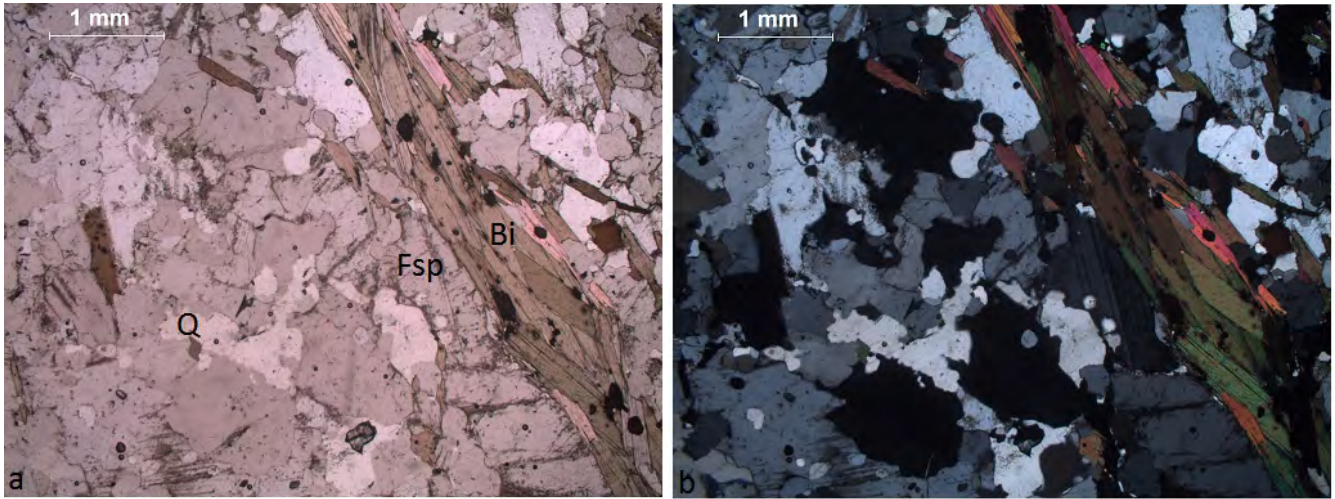


Fig. 19 The thin section from RTP1A lack both garnet and kyanite. The biotite show little retrograde reactions, while feldspars are somewhat affected.

RTP1B

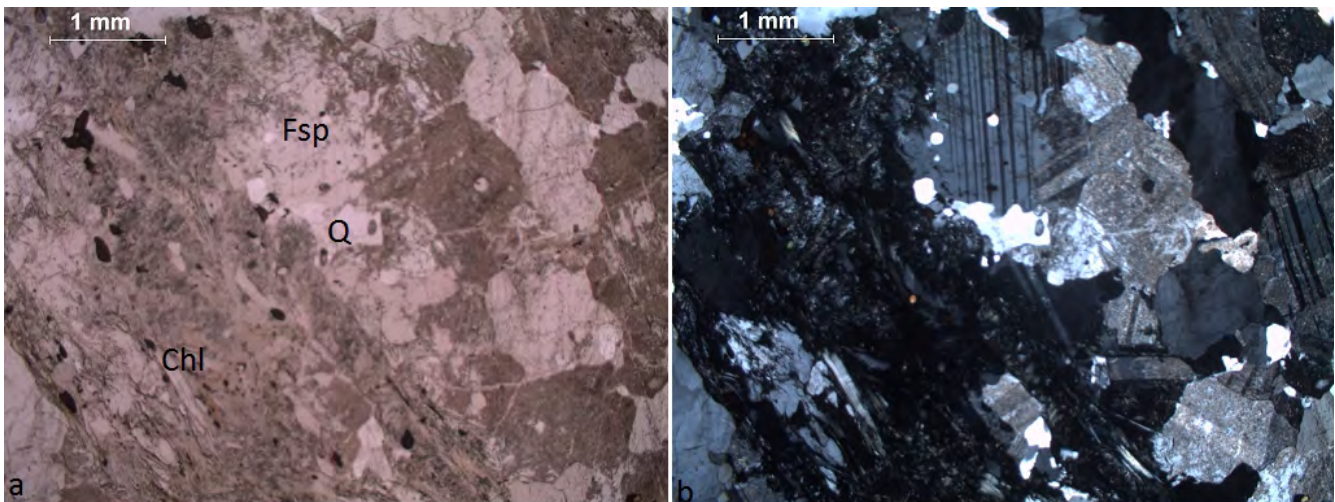


Fig. 20 Thin section RTP1B show retrograding feldspar and a patch of Chlorite indicating retrograde reactions.

RTP1C

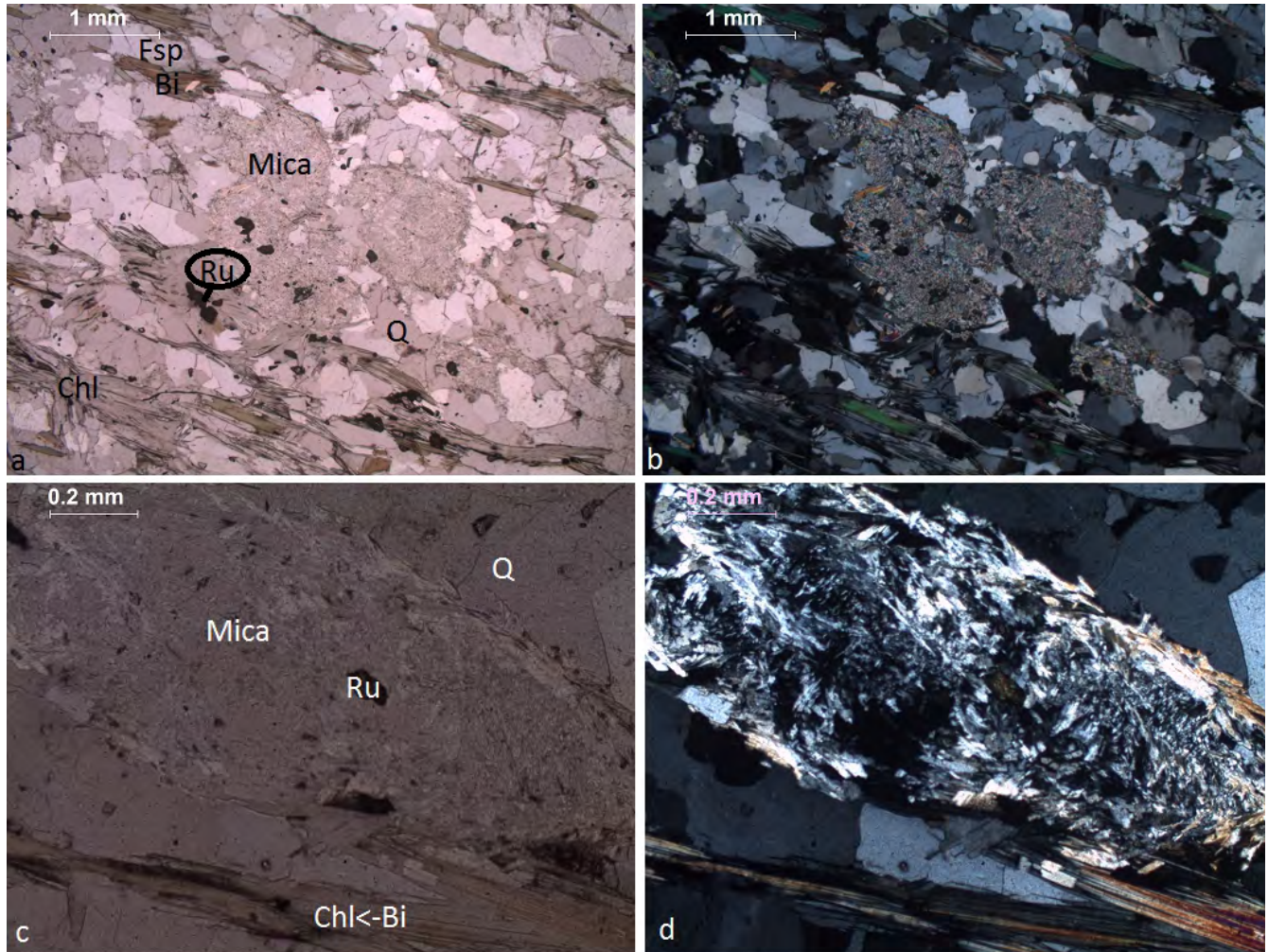


Fig. 21 RTP1C show patches of fine grained white mica that has completely (100%) retrograded unknown crystals. Kyanite retrogrades to white mica in other samples and the shape in c,d is elongate, fitting the kyanite crystal shape.

RTP1D

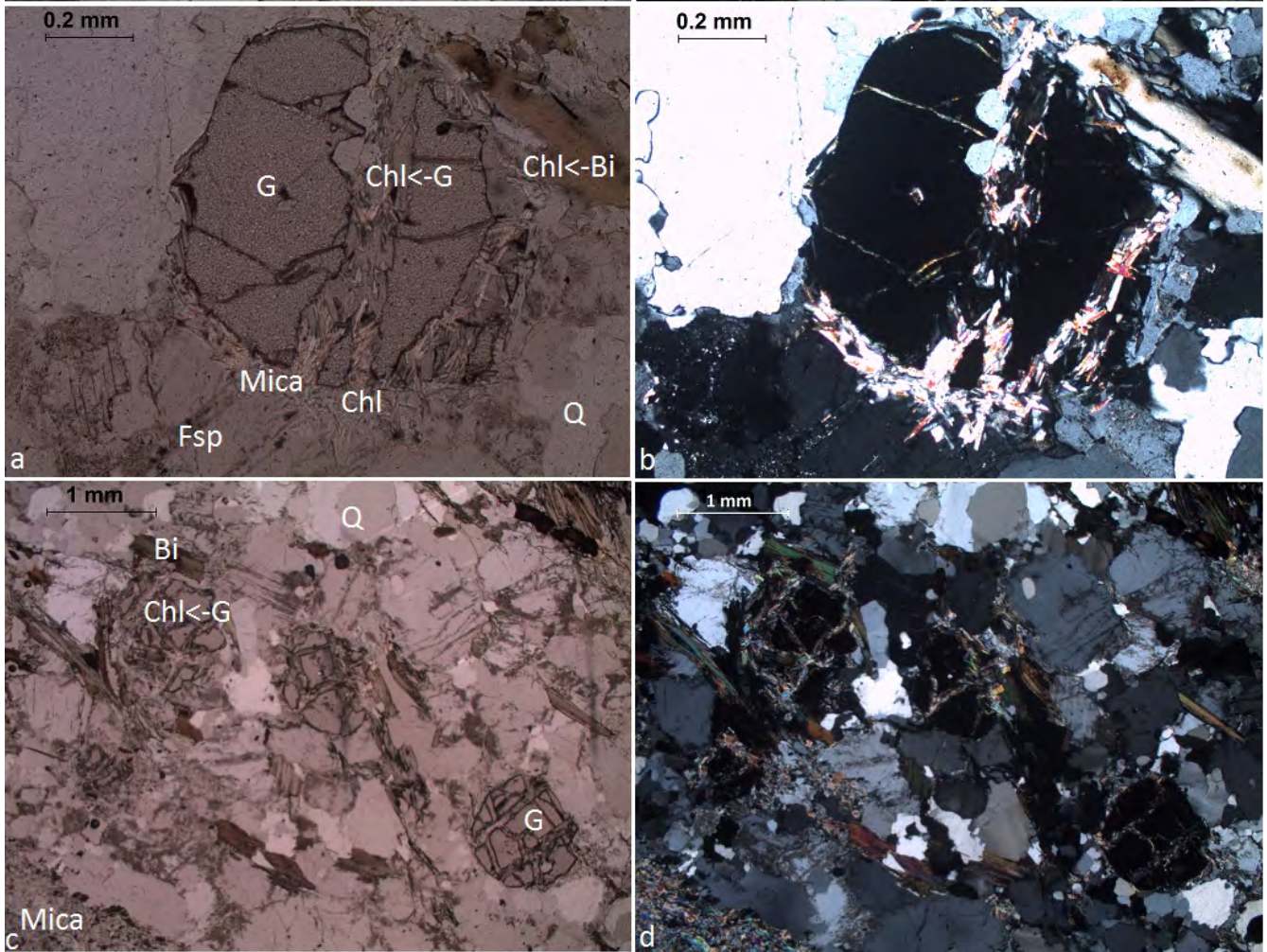


Fig. 22 RTP1D is rich in garnet and kyanite. The garnet in a,b show 37% retrograde reaction textures. Garnet has retrograded into both white mica and chlorite. Nearby biotite has partially reformed to chlorite.

RTP1D Kyanite

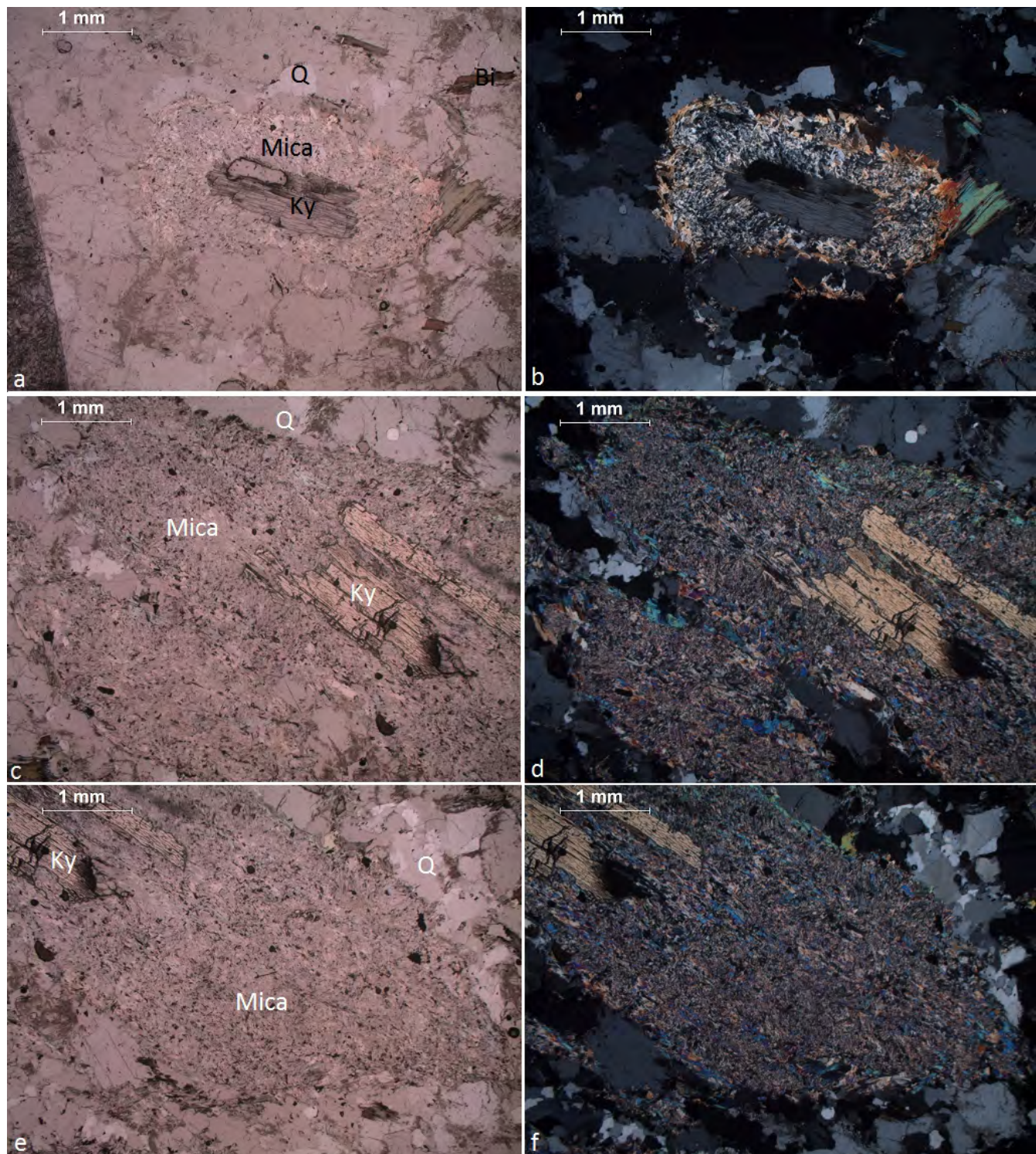


Fig. 23 RTP1D is kyanite and garnet rich. Two crystals are presented in this figure: a smaller crystal in a,b and a larger crystal in c-f. The crystal in c-f was too large to be photographed in one shot and had to be split into two and was point-counted that way. Kyanite a-b is 76% retrograded while kyanite c-f is 88% retrograded.

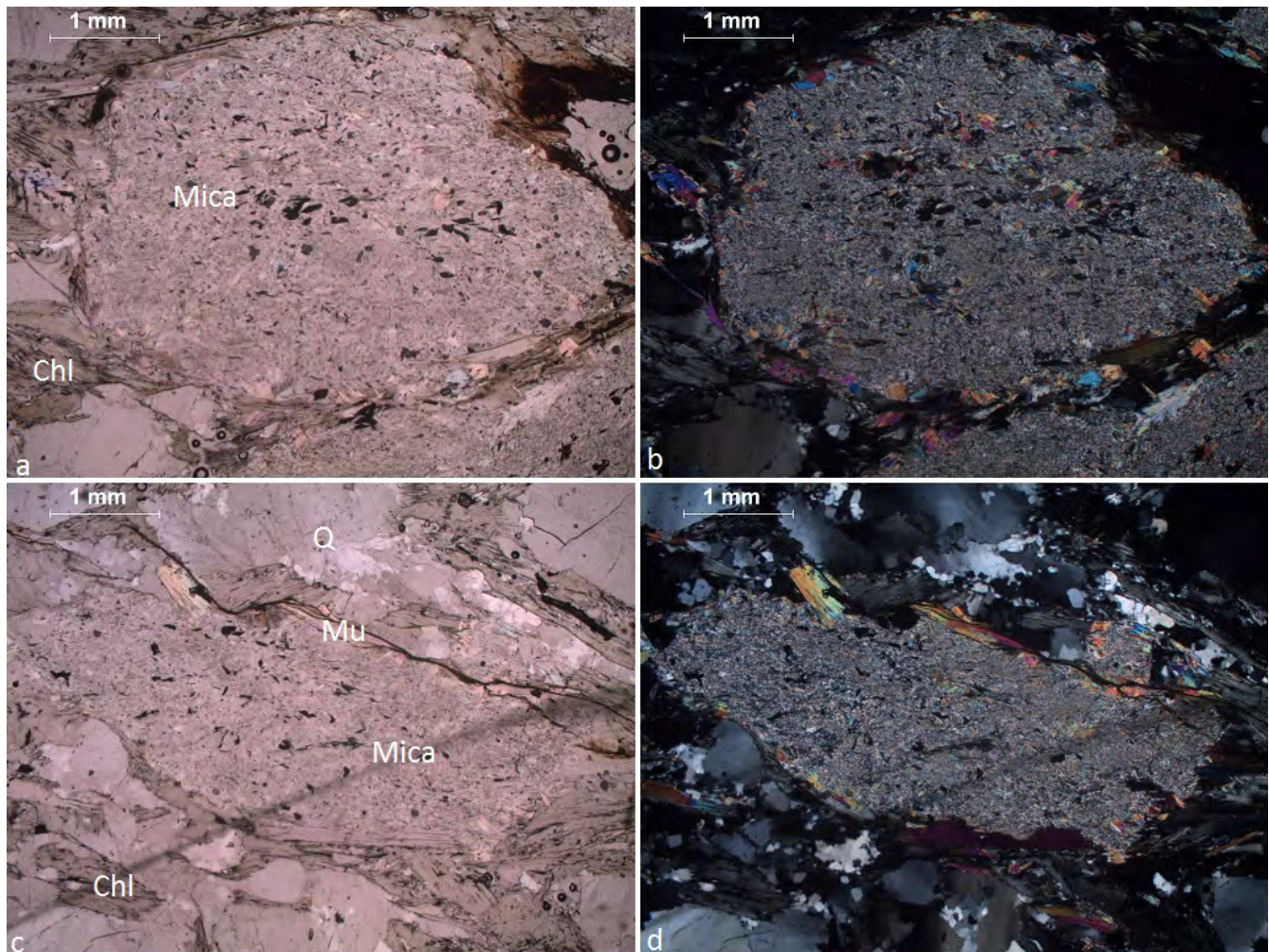


Fig. 24 RTP1F show 100% retrograded former crystals. The fine grained white mica matrix is the same as seen when kyanite retrogrades in other thin sections. The shape in c-d is also consistent with the shape of a kyanite crystal.

RTP1K

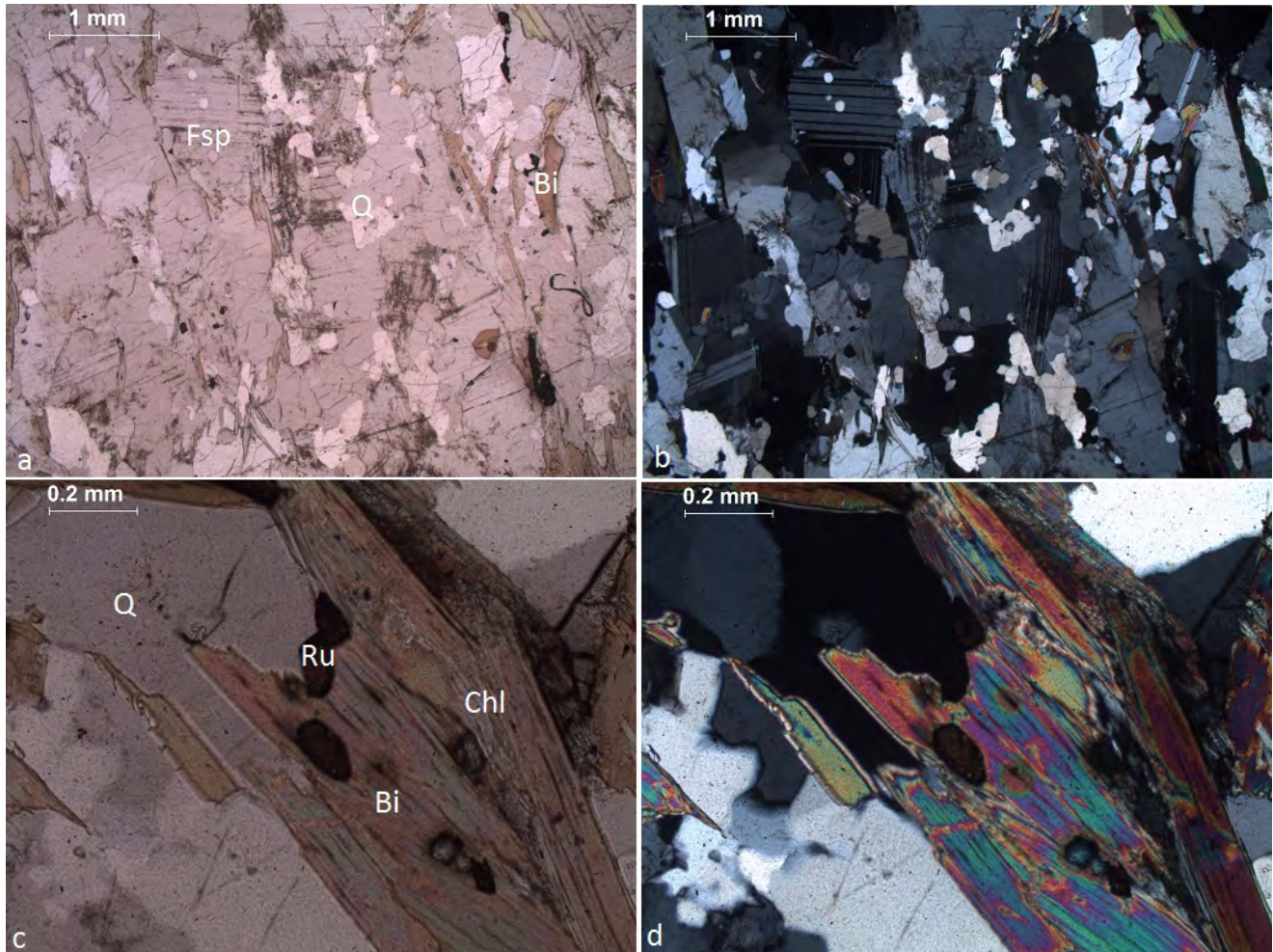


Fig. 25 These images from the thin section RTP1K show retrograde reaction textures in feldspars(a-b) and biotite (c-d). The biotite has a thin reaction rim and has in other locations formed chlorite.

RTP1La



Fig. 26 The kyanite in photograph a-b has been 29% retrograded while c-d has been 46% retrograded.

RTP1Lb

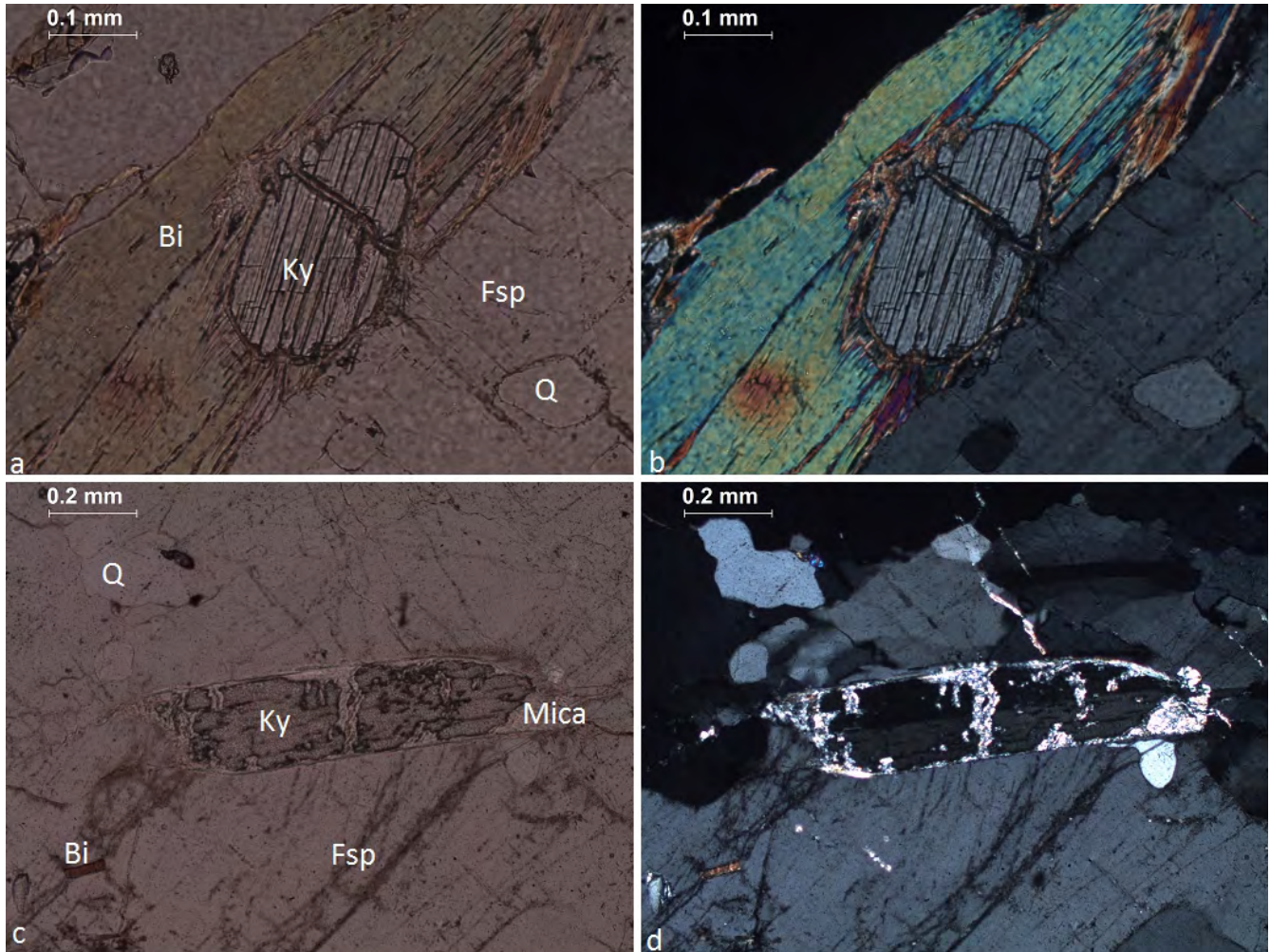


Fig. 27 At RTP1Lb the kyanite in a-b has been 18% retrograded while c-d has been 32% retrograded.

RTP1M

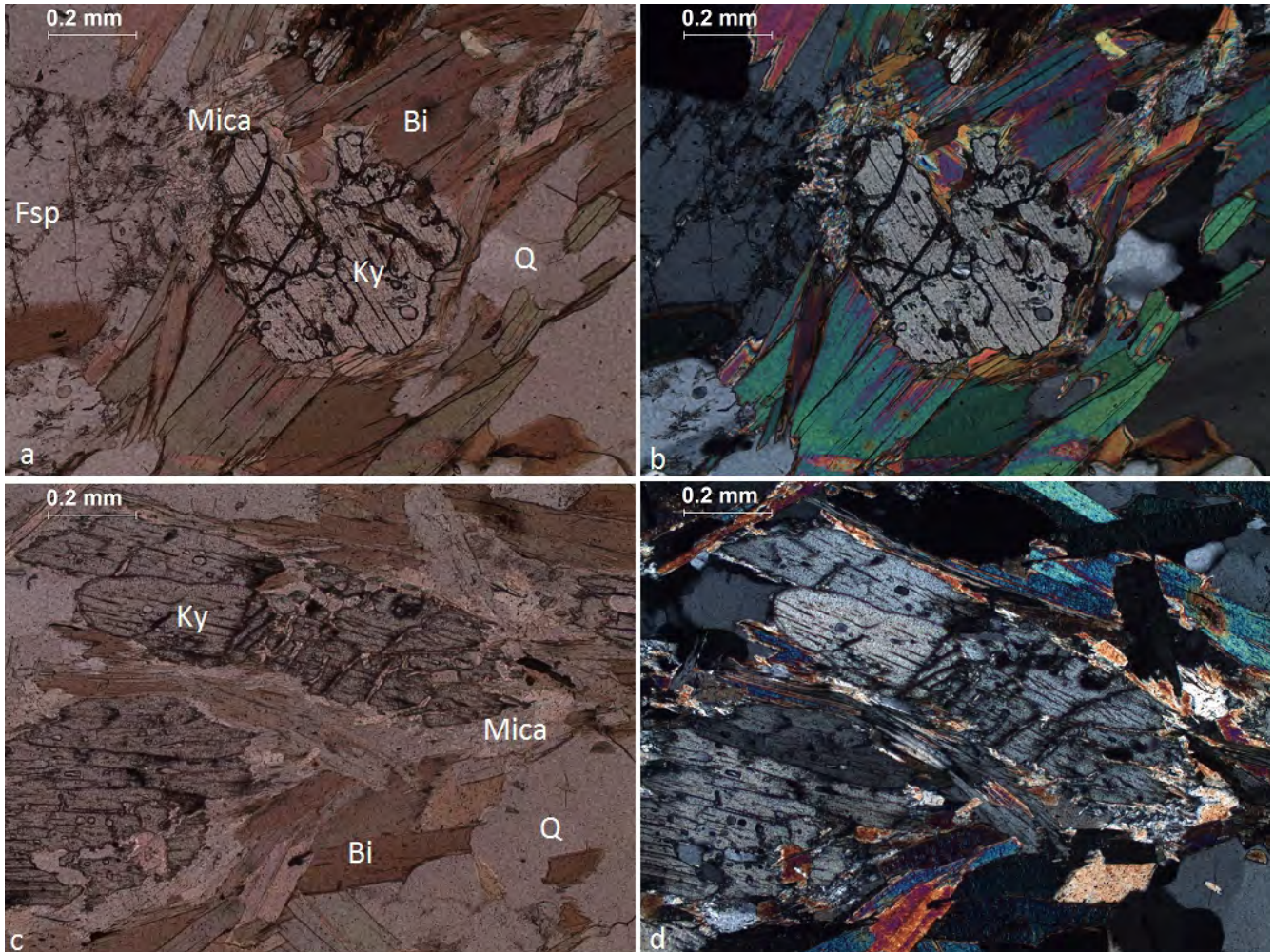


Fig. 28 In the thin section from RTP1M the kyanite has been retrograded 31% (a-b) and 29% (c-d).

XRF-analysis

The variation in lithology along profile 1, that are presented in the result in previous sections, makes any geochemical comparisons difficult and moves the focus of this study to the petrographic analysis. Since a geochemical analysis was performed the result will be presented and briefly discussed. For the complete data from LA-ICP MS and XRF see appendix.

The difference between lithologies can be great and distort changes resulting from fluid flow. This is illustrated in Fig. 29 where any small variation in calcium would be obscured by the high values in the metacarbonates and metabasalt. Therefore only the bulk rock chemistry of the metapelites will be used.

The result from mineral mode (see table in Fig. 12) show that P1A-B, K and Lb are psammites and plot high on the graph in Fig. 30 showing the variations in silica along profile 1. To remove the effect of variations in silica, element will be normalized to Titanium which is considered immobile. Three elements have been chosen to be presented here: K, Mn and Y (Fig. 31-34).

Fig. 31 show K/Ti along profile 1. There are two gradients in the metapelites, one up toward the serpentinite, from P1K to P1M, and another up toward the metacarbonates, from P1B to P1F. This is compared to the first 900 meters of profile 2 (that intersect profile 1 between points P1A and P1B) in Fig. 32. K/Ti in profile 1 show greater variation than along profile 2 which lay relatively flat with no gradient.

Mn/Ti along profile 1 (Fig. 33) show large error and small values. Most values lay flat with three peaks: P1O, P1D and one of P1M. KÅP1M lay much higher than RTP1M despite being sampled from the same location and rock unit. P1O and P1D are garnet rich and since manganese is high in garnet a resulting high in the bulk rock chemistry is to be expected. Garnets were identified in hand-samples from location P1M, but were not seen in thin section. Garnets can have been in the rock sample-powder used for the XRF-analysis. There are therefore no visible gradient in Mn/Ti along profile 1.

The Yttrium content was shown normalized to Titanium in Fig. 34. They were chosen because they are both considered immobile and any ratio between them should therefore be indicative of the protolith and not be affected by fluid flow. The graph show small variations between 0.01-0.02, that they cluster together at very low values and mostly fall within error of each other.

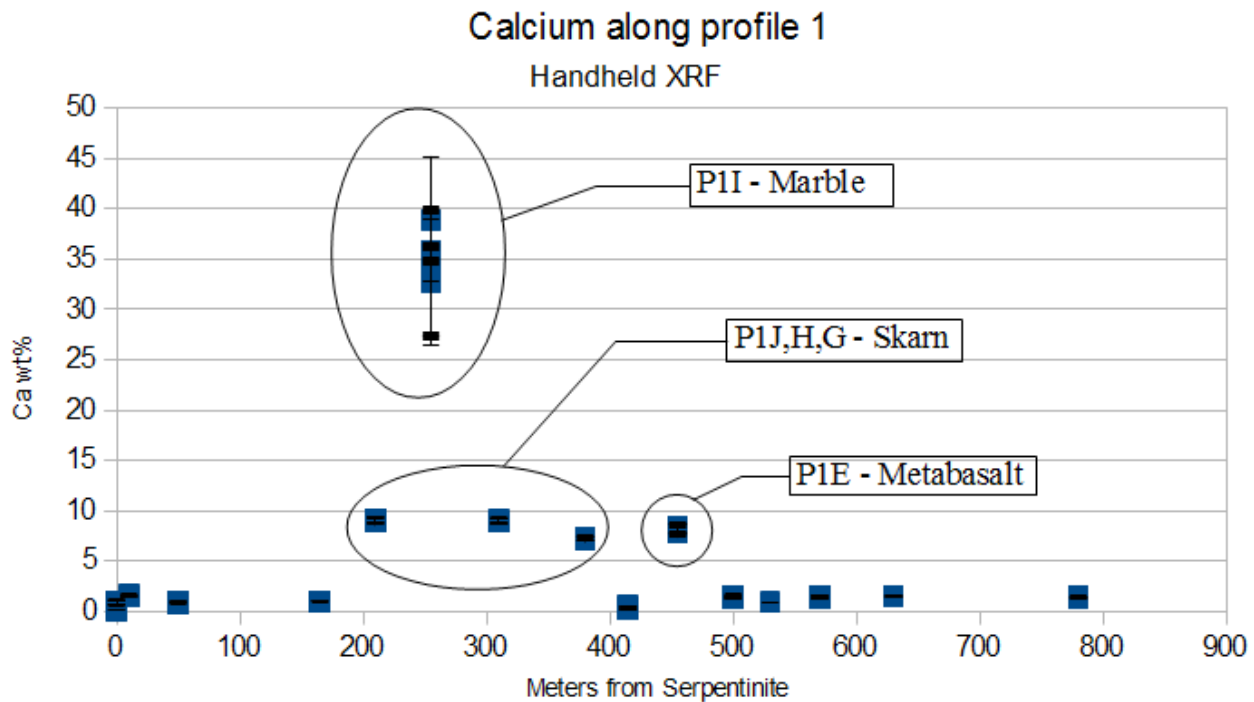


Fig. 29 This graph shows variation in whole rock Ca content along profile 1. The metacarbonates at P1I, J, H, G and the metabasalt at P1E stands out from the metapelites and the serpentinite (0 meters from serpentinite).

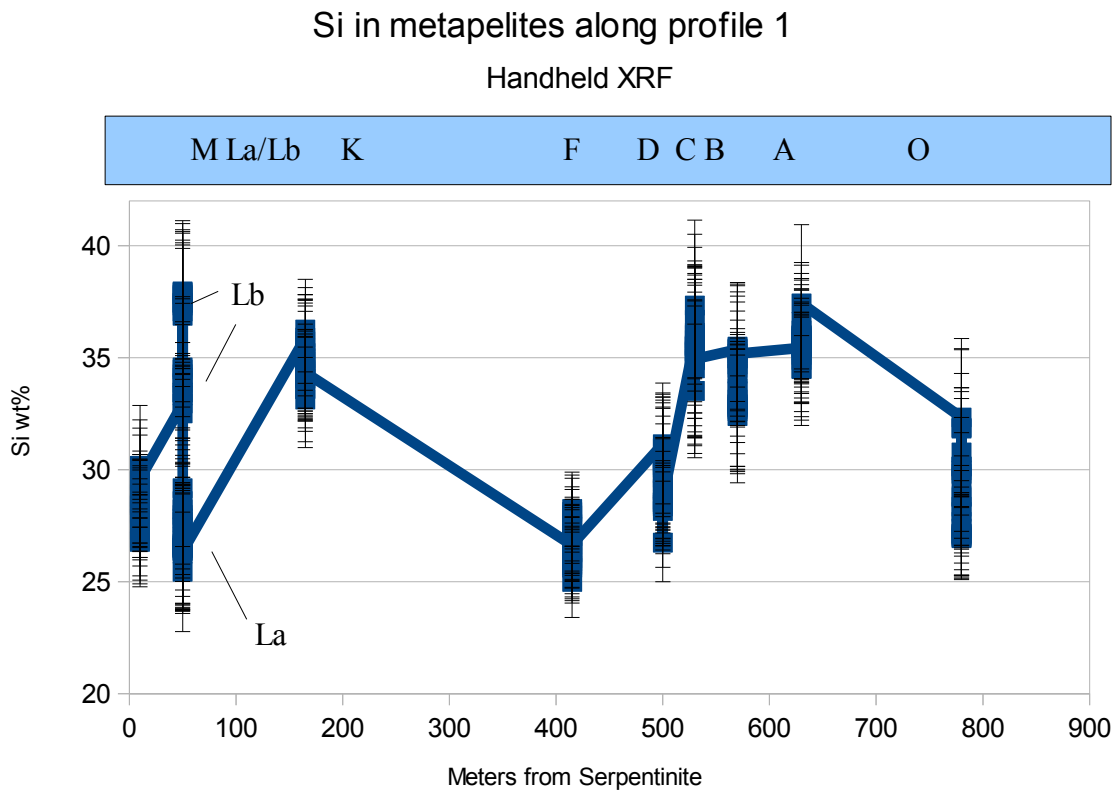


Fig. 30 Silica content along profile 1.

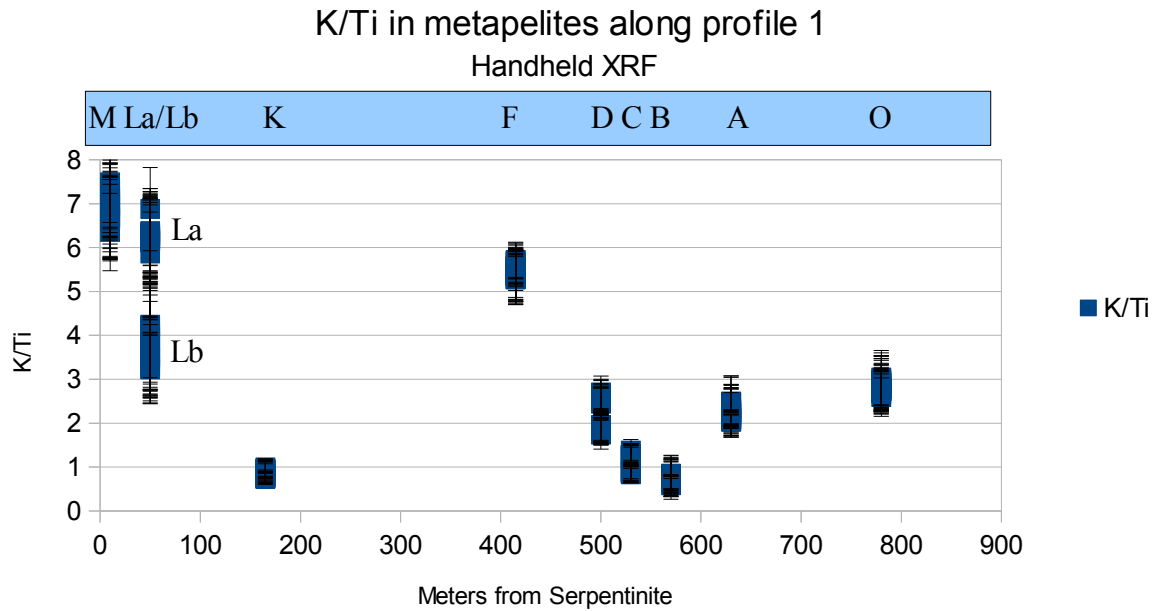


Fig. 31 K/Ti for all metapelites along profile 1.

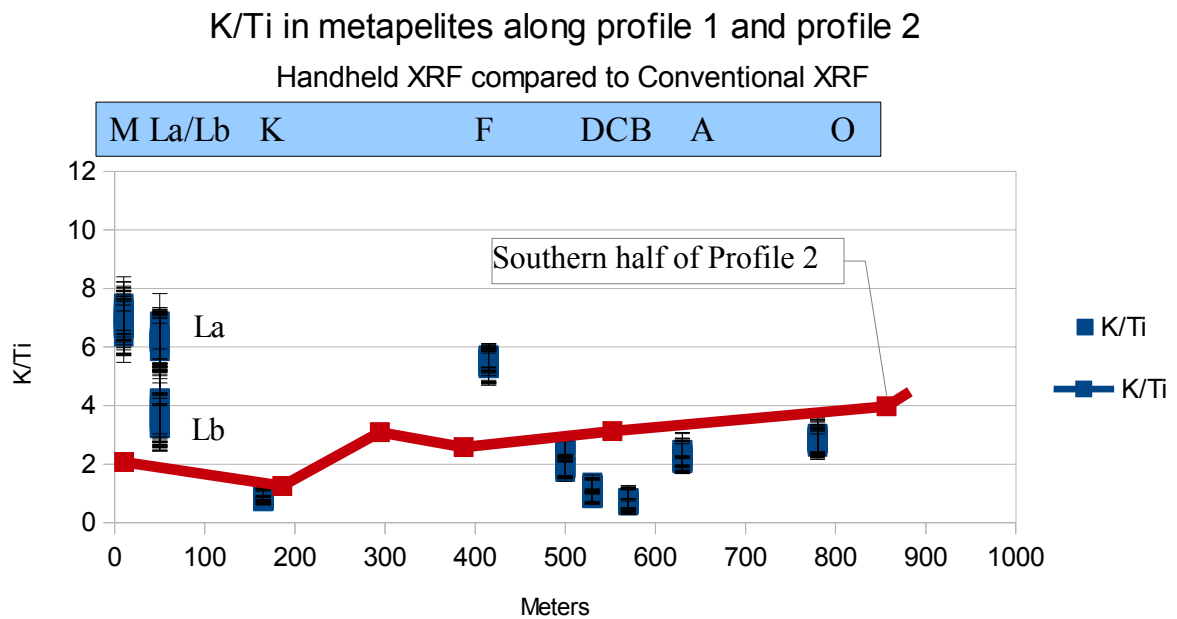


Fig. 32 In this figure K/Ti for Profile 1 is being compared to profile 2. Profile 2 has been cut off to only show the 900 meters closest to profile 1 and is relatively flat. The result of profile 1 show much more variation with both lower and much higher values.

Mn/Ti in metapelites along profile 1

Handheld XRF

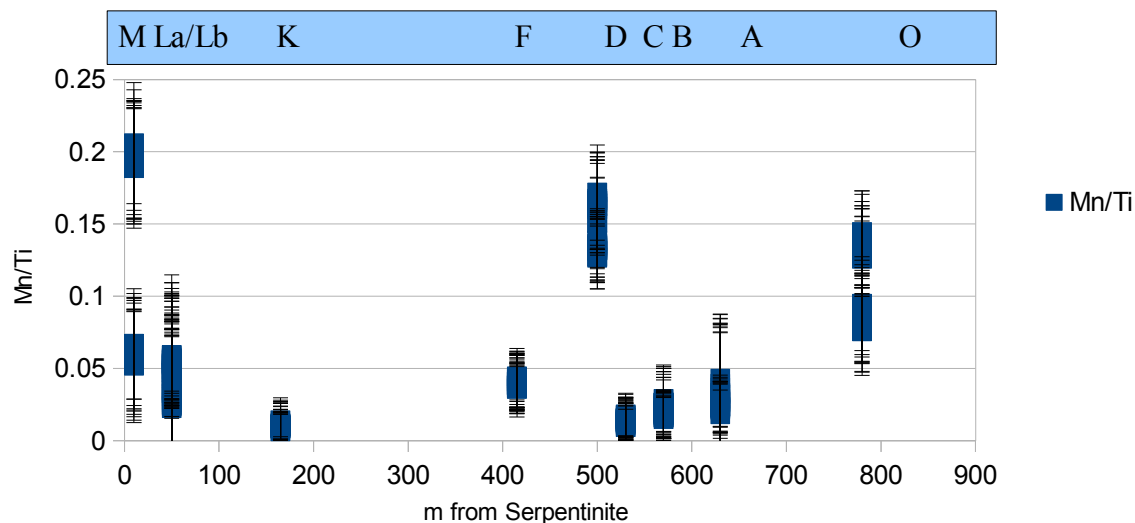


Fig. 33 Manganese normalized to titanium for metapelites along profile 1. P1M has one high (KAP1M) and one low (RTP1M) sample.

Y/Ti in metapelites along profile 1

Handheld XRF

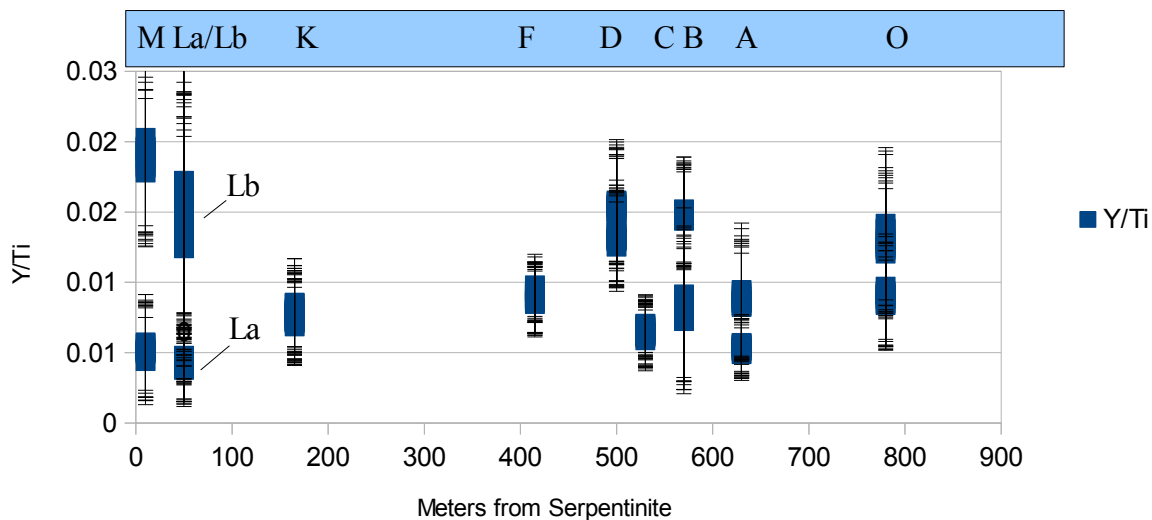


Fig. 34 Two immobile elements, Y and Ti, plotted normalized to each other for profile 1. No pattern or gradient can be seen.

EMPA

The result from the electron micro-probe was primarily used for the P/T calculations in THERMOCALC and the complete data can be found in the appendix. Three garnets were also chosen for more thorough analysis. Two of the garnets were of the same size and are shown below in the backscatter images in Fig. 35-36. The result of the two profiles with regards to manganese are shown in Fig. 37 and 38. KÅP2Bb shows a normal bell curve and is moderately cracked. KÅP2D shows a reverse bell curve and is barely cracked. This is thought to be a sign of re-equilibrium, chemical diffusion or retrograde growth. (Philpotts et al 2013)

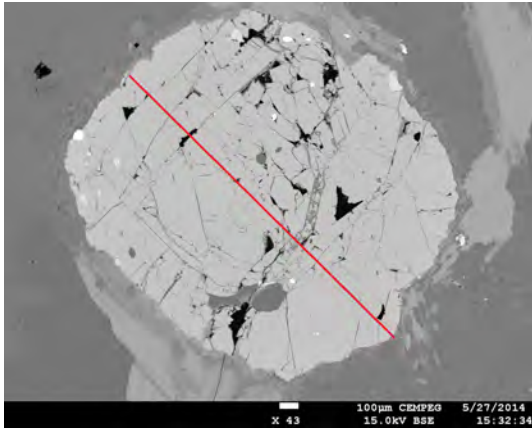


Fig. 35 Electron backscatter image of garnet from KÅP2Bb with a red line showing the traverse of the profile. It has several cracks.

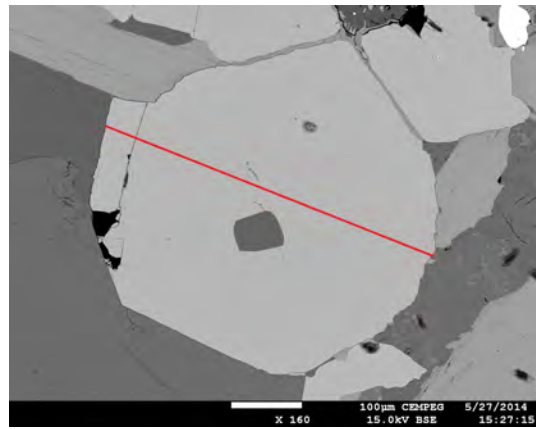


Fig. 36 Electron backscatter image of garnet from KÅP2D with a red line showing the traverse of the profile. It has only one crack that can be seen in this image.

Profile through garnet from sample KÅP2Bb

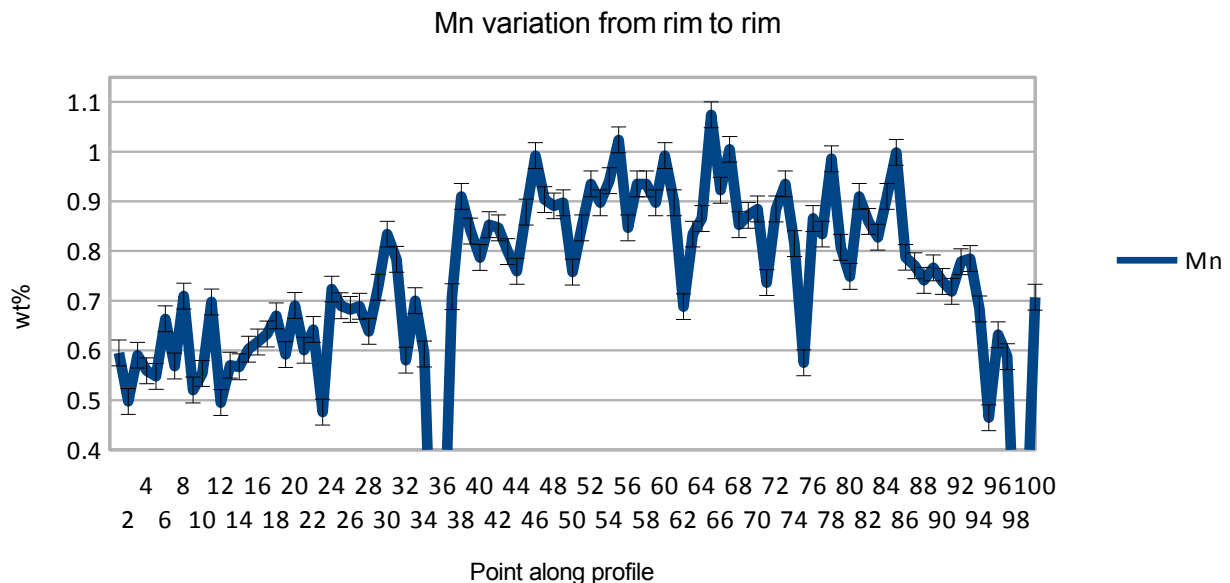


Fig. 37 Flat to gentle slope from 1 to around 25, then it follows a bell-shaped curve.

Profile through garnet from sample KÅP2D

Mn variation from rim to rim

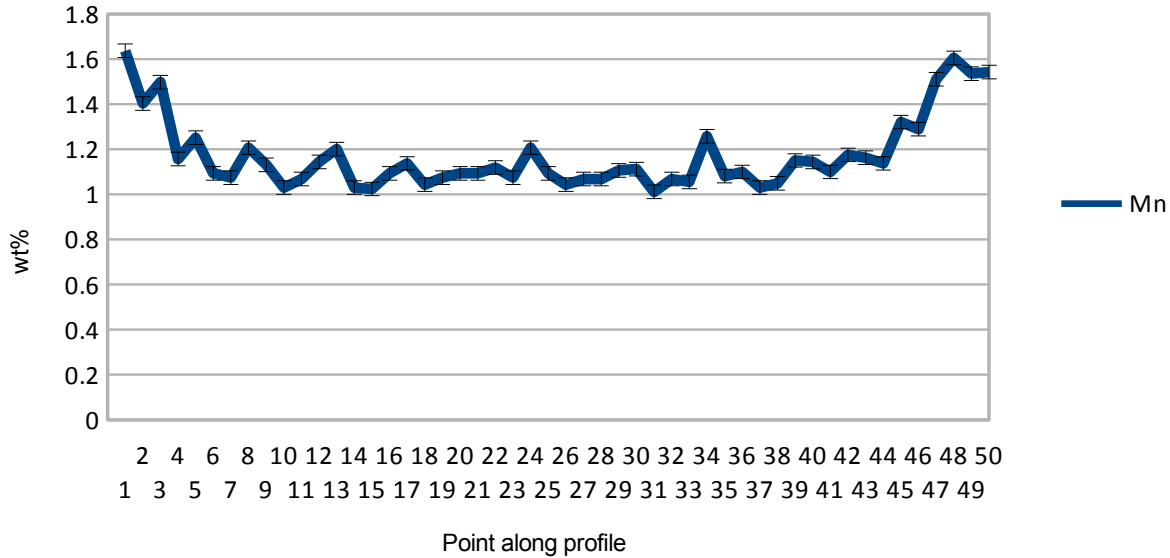


Fig. 38 In the profile through a garnet in thin section KÅP2D, Mn is flat in the middle and goes up toward.

THERMOCALC

The EMPA result was used with THERMOCALC and successfully completed calculations for 5 points along profile 1 (See Fig. 39-40) and 8 points along profile 2 (see Fig. 41-42).

Profile 1 lay flat most of its length in both pressure and temperature except for a rise in both P/T at the serpentinite with the highest peak at P1Lb. The average pressure along profile 1 is 7.0kbar without the peak of KÅ1Lb and 7.8kbar counting all results. Average temperature is 622°C along profile 1 not counting KÅ1Lb (708°C and a minimum value of 674°C within error) and an average of 639°C when all are included.

An average geothermal gradient allows for a change of 12-13°C per 500m of a normal sequence and ~0.1-0.2kbar. The variation found in Fig. 39 and 40 are greater than this within error. Temperature calculations show much less error and are therefore more reliable.

The result from profile 2 lay overall higher than profile 1 and with much more variation. The pressure ranges between ~11kbar and ~6 kbar with an average of 8.8kbar and a temperature range between ~600°C to ~800°C with an average of 698°C.

For profile 2 the error of P is greatest closest to the fault ranging from below 5kbar to above 12kbar. Closer to Cnoc na Moine at around 2000m from fault the range within error is only slightly less and lay between ~5kbar to below 11kbar.

Pressure of metamorphism along profile 1

Thermocalc results

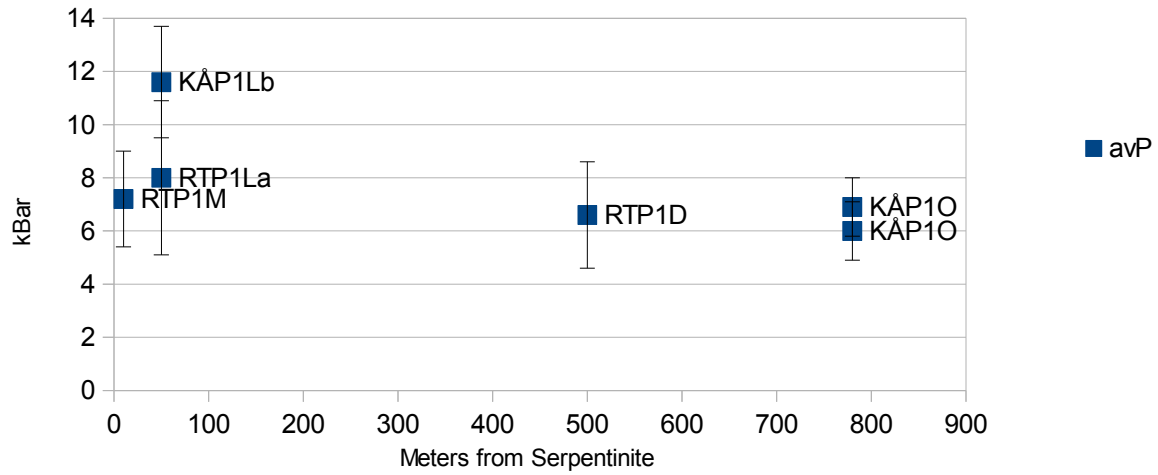


Fig. 39 P along profile 1. All lay within error of each other except KÅP1Lb that only lay within error of RTP1La.

Temperature of metamorphism along profile 1

Thermocalc results

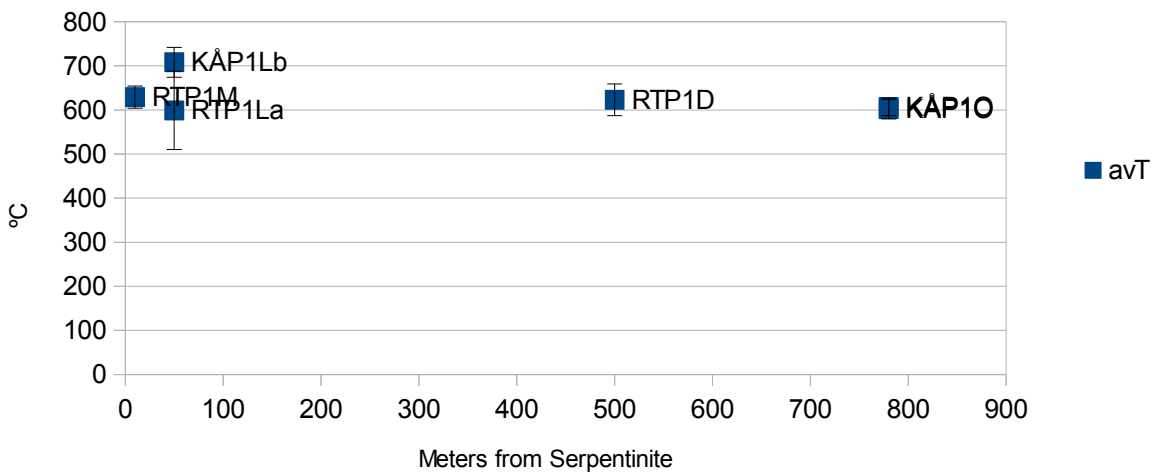


Fig. 40 T along profile 1. All lay within error of each other except KÅP1Lb that only lay within error of RTP1La.

Pressure of metamorphism along profile 2

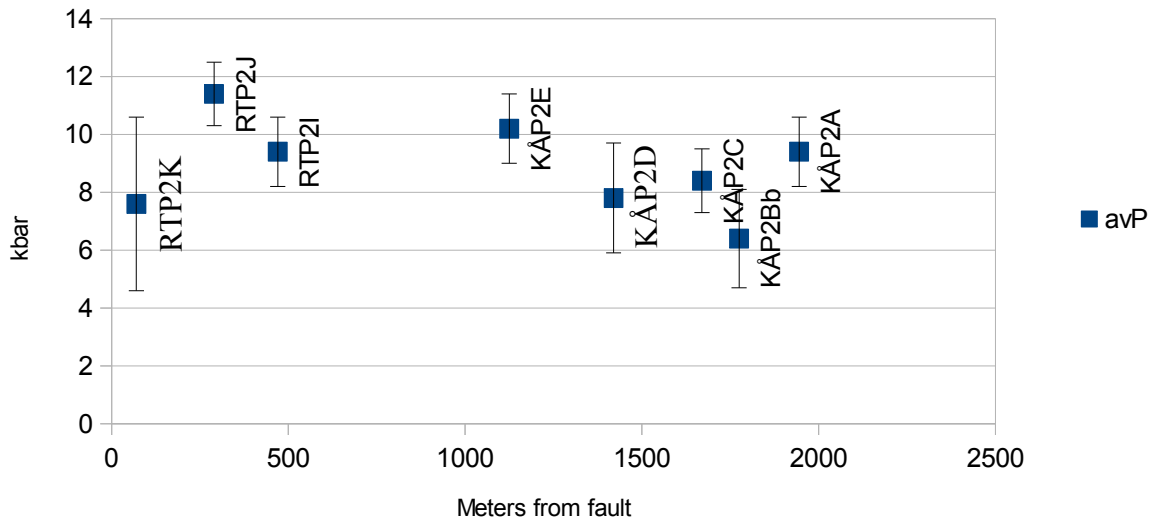


Fig. 41 P along profile 2. All lay within error at slightly above 8kbar except RTP2J and KAP2E. The error is greatest closest to the fault.

Temperature of metamorphism along profile 2

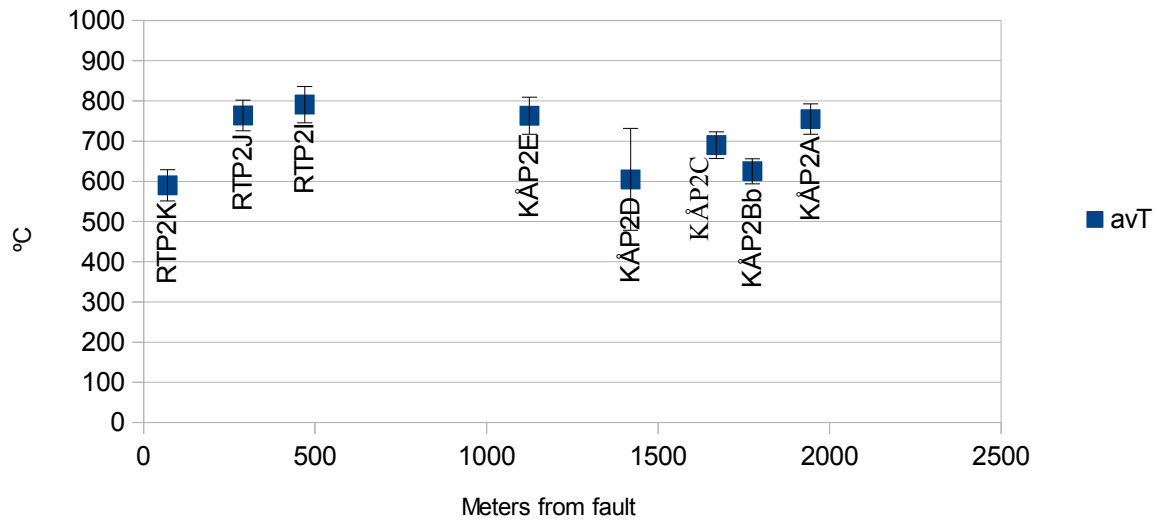


Fig. 42 T along profile 2 varying between 600°C and 800°C.

Structural data

The map by Rock (1981-1983) show a synform NW/SE slightly parallel to profile 1 and perpendicular to profile 2. The structural measurements of foliation in this study agree with that of Rock and show folds by the lake slightly north of profile 1 (see Fig. 9). The map by Rock also show how the serpentinite and surrounding metasedimentary rocks have been folded together in parasitic folds. This study also confirmed Rock's observations that the metasedimentary unit folds around the northern end of the serpentinite.

The structural data has been organized by location in the table in Fig. 43. The results with no rock type mentioned come from a small outcrop at the lake north of profile 1. This section reveals this to be a skarn, but meta-pelites lay not far away and are closely interlayered at this location. The measurements were made around a small fold. The numbered locations can be seen on the map (see Fig. 9). Dip and dip directions were drawn on another map for easier visualization (see Fig. 50). Additionally, the foliation of the area was plotted on stereonet (see Fig. 44-49). One stereonet shows the combined result, but each rock type is also presented individually. The poles to foliation of all measurements can be seen in Fig. 45. The stereonet shows that the general foliation of the area runs axial planar to the synform through both metasediments and serpentinite. The stereonet, especially when plotted as poles, show that some of the measurements are of a fold. These are the measurements taken by the small parasitic folds by the lake. Based on the mapping, structural measurements, petrographic analyses and geochemical data, a cross section was made along profile 1 and is presented in Fig. 51.

Location	Direction	Dip	Rocktype	Location	Direction	Dip	Rocktype
1	045	76	Serpentinite	71	062	63	Schist
1	062	52	Serpentinite	71	058	60	Schist
1	060	58	serpentinite	71	058	80	Gneiss
1	061	72	serpentinite	71	044	72	Gneiss
1	077	52	serpentinite	74	174	48	
5	045	77	Gneiss	74	042	54	
5	041	59	Gneiss	74	136	44	
5	050	72	Gneiss	74	156	60	
5	037	66	Gneiss	74	141	42	
7	155	24	Carbonate	74	095	29	
7	116	36	Carbonate	74	082	16	
24	082	38	Marble	74	205	51	
27	040	42	Marble	74	100	52	
27	044	39	Marble	74	182	60	
27	042	40	Marble	76	052	78	Gneiss
27	058	42	Marble	76	050	75	Gneiss
27	040	44	Marble	77	052	89	Gneiss
28	212	60	serpentinite	78	037	74	Gneiss
30	049	61	Marble	79	201	73	Gneiss
31	100	35	Marble	80	052	90	Gneiss
32	061	55	Schist	81	019	90	Gneiss
34	350	49	serpentinite	X1	022	55	Schist
34	030	90	Marble	X2	084	40	Serpentinite
70	054	52	Gneiss	X5	034	55	Serpentinite
70	023	57	Gneiss	X5	035	58	Serpentinite
71	046	62	Schist	X5	029	56	Serpentinite

Fig. 43 Table of all structural measurements of foliation.



Fig. 44 Foliation planes of all measurements.

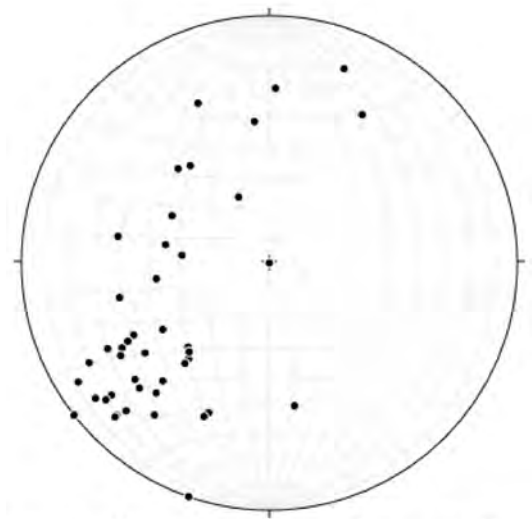


Fig. 45 Poles to foliation planes of all measurements.

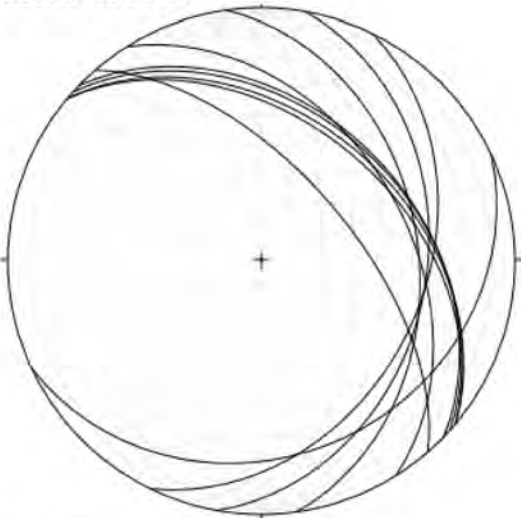


Fig. 46 Foliation planes of metacarbonates.

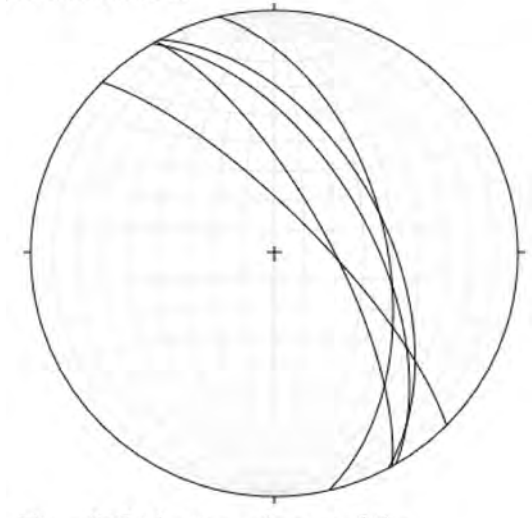


Fig. 47 Foliation planes of the serpentinite

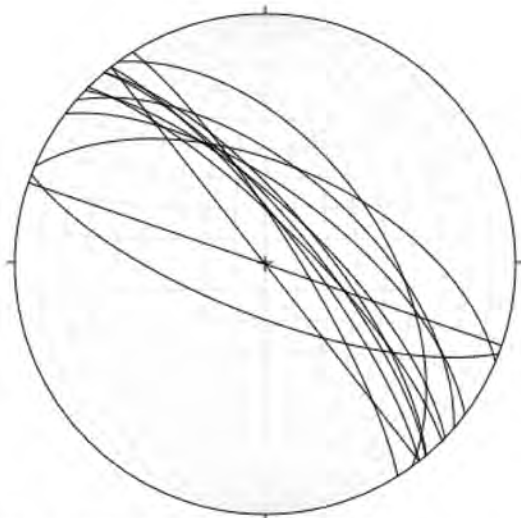


Fig. 48 Foliation planes of the gneiss.

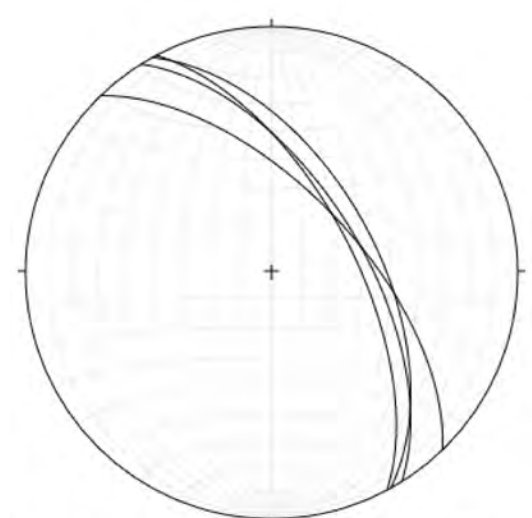
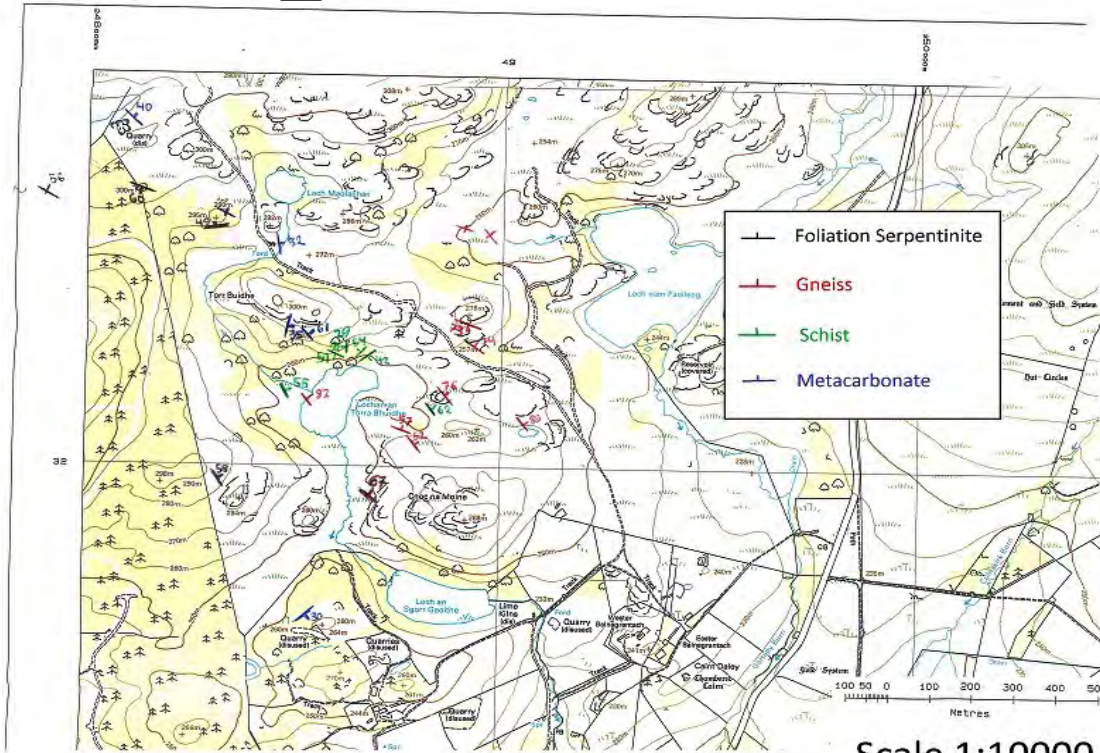


Fig. 49 Foliation planes of the schist.

Landplan®



Scale 1:10000

Fig. 50 Map showing the structural measurements and their location.

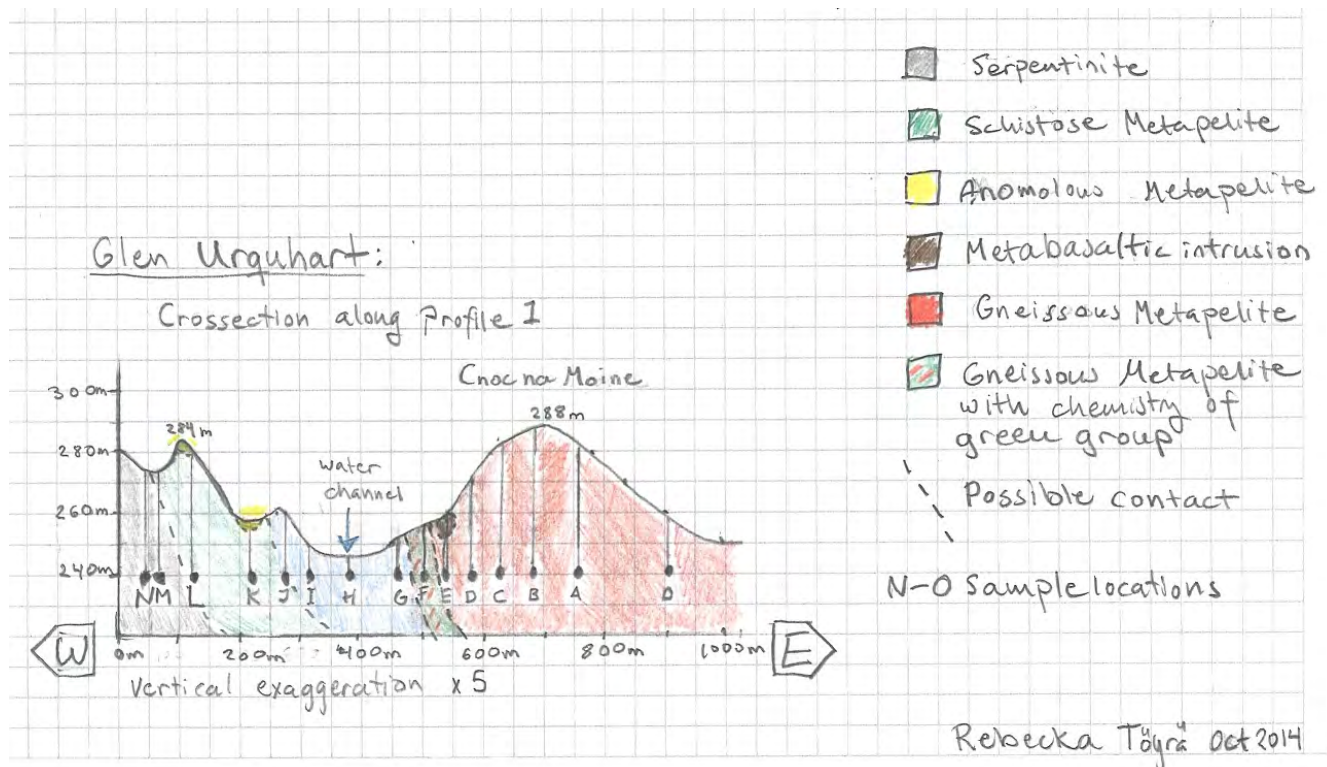


Fig. 51 Cross section along profile 1. Anomalous metapelite are PIK and PILb which are psammitic.

Discussion

The purpose of this study was to examine fluid flow by looking at mineralogical, geochemical and P/T gradients along a profile (Profile 1) toward the serpentinite body near Glen Urquhart. A profile constructed at 90° to profile 1 was used for comparison (Profile 2). The map in Fig. 9 shows that while profile 2 only consists of metapelites, profile 1 consists of metapelites, skarn, marble, metabasalt and serpentinite. The variation in lithology along profile 1 can distort possible gradients. This problem was solved by focusing on the metapelites and normalizing them to titanium.

The XRF-data show two chemical gradients in K/Ti (Fig. 31), which increases 1) toward the serpentinite and 2) towards the contact with the metacarbonates. No gradients were visible for other elements. For mobile Mn the peaks seem to be related to mineral assemblage. Garnet-rich samples make up two of three peaks in Fig. 33 while a third peak, KÅP1M, also contained garnets in the hand-sample, but not in the thin sections. RTP1M from the same rock unit and location showed no such peak. Yttrium is immobile and showed no gradient in Fig. 34 as expected. Both Mn/Ti and Y/Ti have large error and are therefore less reliable than K/Ti.

The second of the gradients in K/Ti along profile 1 is mirrored in the petrographic analysis that show the highest mode of retrograde minerals at P1F with lower modes on either side (Fig. 16). This is immediately adjacent to the contact between the metapelitic gneiss and the metacarbonates. The point-counting of individual crystals of garnet and kyanite provided a quantitative method of tracking mineral reaction texture with the focus on retrograde metamorphism into chlorite and white mica respectively. The result was presented in Fig. 17, with a peak from RTP1C to RTP1F. This agrees with both the overall mineral mode and the second of the gradients in K/Ti. The least amount of retrograded kyanite is found closest to the serpentinite and means less retrograde metamorphism toward the serpentinite which in turn indicates less fluid flow. This is unexpected since serpentinite is fluid rich and one of the K/Ti gradients show some change in the metapelite near the contact with the serpentinite. One possible explanation is that fluid was consumed during serpentinitisation, effectively dehydrating these rocks. The gradients combined instead point toward a zone of high fluid flow at the contact between metacarbonates and gneissose metapelites. This could be explained by devolatilisation of the metacarbonates.

In addition to the geochemical and petrographic analysis, pressure and temperature of metamorphism was analyzed. Calculations using THERMOCALC yield P/T for the gneissose metapelite of $6,0\pm 1,1$ kbar and $602\pm 22^\circ\text{C}$ at P1O and $6,8\pm 2,2$ kbar and $653\pm 36^\circ\text{C}$ at P1D. Calculations for the schistose metapelites closer to the serpentinite yield a peak P/T of $11.6\pm 2,1$ kbar and $708\pm 34^\circ\text{C}$ at P1Lb with raised values in P1M and P1La as well. This gives an average of 7.0 kbar and 639°C for profile 1. When compared to profile 2 that ranges from $6,4\pm 1,7$ kbar and $625\pm 31^\circ\text{C}$ to $13,8\pm 2,1$ kbar and $791\pm 45^\circ\text{C}$ with an average P/T of 8.8 kbar and 698°C , profile 1 is both overall lower and flatter, but is also shorter and has fewer data points. The average increase in P/T down a normal sequence during metamorphism is not enough of a change to explain the jump in P/T along profile 1, but there are several other possibilities.

1) If the serpentinite intruded as hot ultramafic rock it could have subjected the closest metasedimentary rocks to contact metamorphism. For example through rising in a form of diapirism, due to a change in buoyancy associated with fluid infiltration and subsequent serpentinitisation along the Great Glen fault during the Caledonian. This does not explain the much higher P, but this value is less reliable than that for T because of the lack of reliable geobarometers. The structural evidence indicate a more complicated geological history and show the serpentinite being folded together with the

metasedimentary units and that the current sequence was established before the deformation event assumed to be Caledonian. This is supported by the same foliation being pervasive in the serpentinite and all surrounding metasedimentary rocks. The serpentinite could instead have been emplaced “cold” in the form of a thrust bringing mafic to ultramafic rock (e.g. an ophiolite), on top of the metasedimentary unit, and been metamorphosed together. A possible setting could for example be during the closing of the Iapetus Ocean and subsequent orogeny (Johnstone et al 1989). When the metamorphism occurred in relation to the deformation that caused the folding and the NW/SE synform as well as the method of emplacement of the serpentinite are questions for future studies.

2) A folded isotherm/isobar could also explain the jump in P/T. The folding seen during the mapping and by Rock (1981-1983) in his map could have deformed the entire area while preserving the preexisting metamorphic grade. This could put a unit with higher P/T closer to one with lower P/T.

3) A third option is that there is an unmapped fault.

4) The final possibility presented here refers back to the mineral reaction textures and the study of retrograde metamorphism. The area closest to the serpentinite has the best preserved high grade metamorphic mineral assemblage, while the area with lower values in P/T have more retrograde reaction textures and is possibly an area of high fluid flow. Therefore the change in P/T can be linked to the amount of retrograde metamorphism. The result from EMPA (Fig. 37-38) shows that garnets do change in chemistry from garnet to garnet and show signs of re-equilibrium, chemical diffusion or retrograde growth. Since they are used as geothermobarometers in THERMOCALC this will affect the P/T result. A high fluid flow could also explain the extensive skarning of the area. This option supplies a simple explanation for the lower P/T values along profile 1, and is supported by all parts of this study.

Conclusion

There are three major conclusions from the result of this study.

- I. There are two chemical gradients seen for K/Ti along profile 1, toward 1) the serpentinite and 2) the metacarbonates.
- II. There is also a petrographic gradient showing retrograde reactions that peaks near the contact of gneissose metapelites and metacarbonates.
- III. Overall P/T along profile 1 is lower than profile 2 with a gradient up toward the serpentinite.

One possible explanation is that there is a region of high fluid flow at or near the contact between the gneissose metapelite and the metacarbonates. This has resulted in higher amount of retrograde metamorphism of minerals in the eastern metapelites while the western metapelites have been unaffected by this fluid flow and thus show higher P/T.

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Appendix

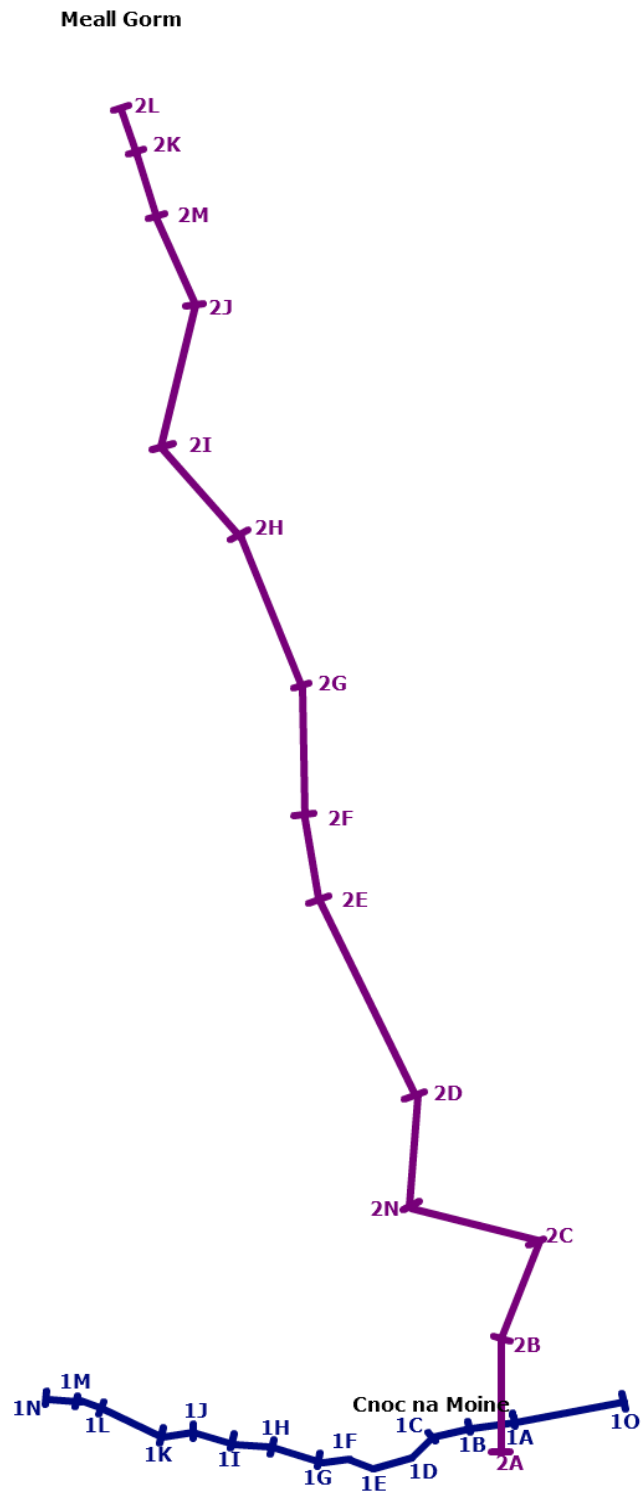
Mineralogical, geochemical and P/T gradients toward a serpentinite body north of Glen Urquhart,
Scotland

Rebecka Töyrä

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Profiles



LOI

LOI on profile 2

Sample name	Crucible	Sample+Cruci 10h	105degre	10h 1000degre	First Loss	Second Loss
RTP2A	25.6487	30.7337	30.7296	30.7025	-0.0041	-0.0271
RTP2B	25.5003	30.4949	30.4904	30.4840	-0.0045	-0.0064
RTP2C	24.0737	29.1585	29.1562	29.1293	-0.0023	-0.0269
RTP2N	24.3111	29.3316	29.3296	29.2785	-0.0020	-0.0511
RTP2D	24.0947	29.0851	29.0824	29.0591	-0.0027	-0.0233
RTP2E	23.0422	28.0766	28.0741	28.0525	-0.0025	-0.0216
RTP2F	23.8882	28.8790	28.8761	28.8469	-0.0029	-0.0292
RTP2G	23.5217	28.5252	28.5182	28.4917	-0.0070	-0.0265
RTP2H	23.6452	28.6444	28.6411	28.6079	-0.0033	-0.0332
RTP2I	23.2431	28.2531	28.2491	28.2160	-0.0040	-0.0331
RTP2J	23.0498	28.0895	28.0843	27.9729	-0.0052	-0.1114
RTP2M	23.0167	28.0934	28.0886	27.9836	-0.0048	-0.1050
RTP2K	25.3649	30.3434	30.3421	30.2218	-0.0013	-0.1203

Conventional XRF

Profile 2		SiO2	Al2O3	CaO	MgO	MnO	P2O5	Fe2O3	Na2O	K2O	TiO2
Conventional XRF		mass%	mass%	mass%	mass%	mass%	mass%	mass%	mass%	mass%	mass%
RTP2A	StdCalib0313	76,63	11,68	1,84	0,98	0,03	0,05	3,53	3,28	1,16	0,84
RTP2B	StdCalib0313	75,32	13,13	2,18	0,67	0,08	0,09	3,57	4,16	0,36	0,45
RTP2C	StdCalib0313	78,10	11,17	1,80	0,79	0,03	0,02	3,18	2,95	1,33	0,63
RTP2N	StdCalib0313	70,10	14,44	1,27	3,33	0,01	0,04	3,33	4,13	2,13	1,22
RTP2D	StdCalib0313	70,63	14,91	3,08	1,32	0,05	0,07	4,13	3,67	1,46	0,68
RTP2E	StdCalib0313	73,88	14,34	2,76	0,78	0,05	0,01	2,69	4,09	1,04	0,38
RTP2F	StdCalib0313	75,32	12,33	1,68	0,74	0,06	0,05	3,27	2,71	3,13	0,71
RTP2G	StdCalib0313	78,72	11,20	1,52	0,46	0,03	0,02	2,19	2,63	2,85	0,39
RTP2H	StdCalib0313	73,03	13,88	3,04	0,80	0,12	0,06	3,41	3,36	1,57	0,74
RTP2I	StdCalib0313	71,65	14,10	2,16	1,10	0,08	0,05	4,50	3,14	2,56	0,65
RTP2J	StdCalib0313	63,84	17,03	1,06	2,06	0,08	0,14	7,38	1,64	5,69	1,08
RTP2M	StdCalib0313	67,64	16,99	1,17	1,48	0,06	0,10	5,13	3,29	3,25	0,90
RTP2K	StdCalib0313	64,49	16,83	1,26	1,84	0,11	0,13	7,30	5,12	1,93	0,98

Profile 2		AGV-2	AGV-2	AGV-2			
Conventional XRF		StdCalib0313	StdCalib0313	StdCalib0313	Average	Expected	Difference
SiO2	mass%	60,22	60,24	60,24	60,23	60,15	0,09
Al2O3	mass%	17,14	17,13	17,12	17,13	17,15	-0,02
CaO	mass%	5,22	5,23	5,23	5,22	5,27	-0,05
MgO	mass%	1,78	1,78	1,77	1,78	1,82	-0,04
MnO	mass%	0,10	0,10	0,10	0,10	0,10	0,00
P2O5	mass%	0,55	0,55	0,55	0,55	0,49	0,06
Fe2O3	mass%	6,80	6,81	6,81	6,81	6,79	0,02
Na2O	mass%	4,24	4,21	4,23	4,23	4,25	-0,02
K2O	mass%	2,90	2,91	2,91	2,90	2,92	-0,02
TiO2	mass%	1,05	1,05	1,05	1,05	1,07	-0,01

Handheld XRF

Provko	Date	Time	Reading	Mode	Elapsed Time 1	Elapsed Time 2	Elapsed Total	Mg	Mg +/-
KÅP1A	2014-04-25	11:08:31	#2	Geochem	28.32	31.13	59.45	ND	
KÅP1A	2014-04-25	11:09:59	#3	Geochem	28.38	30.06	58.44	ND	
KÅP1A	2014-04-25	11:12:25	#4	Geochem	28.36	30.09	58.45	ND	
KÅP1A	2014-04-25	11:15:17	#5	Geochem	28.36	30.06	58.42	ND	
KÅP1A	2014-04-25	11:16:31	#6	Geochem	28.88	30.06	58.94	ND	
KÅP1A	2014-04-25	11:18:30	#7	Geochem	28.36	30.05	58.41	ND	
KÅP1A	2014-04-25	11:19:36	#8	Geochem	28.35	30.05	58.4	ND	
KÅP1A	2014-04-25	11:20:51	#9	Geochem	28.37	30.05	58.42	ND	
KÅP1A	2014-04-25	11:22:02	#10	Geochem	28.36	30.04	58.4	ND	
KÅP1A	2014-04-25	11:23:14	#11	Geochem	28.36	30.07	58.42	ND	
RTP1A	2014-04-25	11:25:03	#12	Geochem	28.37	30.04	58.41	ND	
RTP1A	2014-04-25	11:26:11	#13	Geochem	28.38	30.1	58.48	ND	
RTP1A	2014-04-25	11:27:53	#14	Geochem	28.35	30.05	58.4	ND	
RTP1A	2014-04-25	11:29:13	#15	Geochem	28.38	30.1	58.48	ND	
RTP1A	2014-04-25	11:30:18	#16	Geochem	28.8	30.05	58.85	ND	
RTP1A	2014-04-25	11:31:38	#17	Geochem	28.33	30.07	58.41	ND	
RTP1A	2014-04-25	11:32:51	#18	Geochem	28.33	30.05	58.38	ND	
RTP1A	2014-04-25	11:33:58	#19	Geochem	28.34	30.06	58.4	ND	
RTP1A	2014-04-25	11:35:19	#20	Geochem	28.57	30.07	58.64	ND	
RTP1A	2014-04-25	11:37:28	#22	Geochem	28.38	30.06	58.44	ND	
KÅP1B	2014-04-25	11:41:00	#23	Geochem	28.33	30.05	58.38	ND	
KÅP1B	2014-04-25	11:42:32	#24	Geochem	28.33	30.06	58.39	ND	
KÅP1B	2014-04-25	11:43:45	#25	Geochem	28.83	30.05	58.88	ND	
KÅP1B	2014-04-25	11:44:54	#26	Geochem	28.32	30.05	58.36	ND	
KÅP1B	2014-04-25	11:46:08	#27	Geochem	28.34	30.1	58.44	ND	
KÅP1B	2014-04-25	11:47:25	#28	Geochem	28.33	30.04	58.37	ND	
KÅP1B	2014-04-25	11:48:33	#29	Geochem	28.37	30.05	58.42	ND	
KÅP1B	2014-04-25	11:49:41	#30	Geochem	28.33	30.05	58.38	ND	
KÅP1B	2014-04-25	11:50:50	#31	Geochem	28.35	30.06	58.41	ND	
KÅP1B	2014-04-25	11:52:00	#32	Geochem	28.35	30.15	58.5	ND	
RTP1B	2014-04-25	11:53:43	#33	Geochem	28.46	30.14	58.6	ND	
RTP1B	2014-04-25	11:55:15	#34	Geochem	28.42	30.07	58.49	ND	
RTP1B	2014-04-25	11:56:23	#35	Geochem	28.9	30.04	58.94	ND	
RTP1B	2014-04-25	11:57:38	#36	Geochem	28.41	30.03	58.44	ND	
RTP1B	2014-04-25	11:59:07	#37	Geochem	28.43	30.19	58.61	ND	
RTP1B	2014-04-25	12:00:19	#38	Geochem	28.97	30.04	59.02	ND	

RTP1B	2014-04-25	12:01:27	#39	Geochem	28.41	30.31	58.72	ND
RTP1B	2014-04-25	12:02:36	#40	Geochem	28.54	30.04	58.58	ND
RTP1B	2014-04-25	12:03:44	#41	Geochem	28.42	30.04	58.46	ND
RTP1B	2014-04-25	12:04:55	#42	Geochem	28.45	30.21	58.66	ND
KÅP1C	2014-04-25	12:06:42	#43	Geochem	28.38	30.03	58.41	ND
KÅP1C	2014-04-25	12:07:51	#44	Geochem	28.62	30.11	58.72	ND
KÅP1C	2014-04-25	12:09:18	#45	Geochem	28.4	30.09	58.49	ND
KÅP1C	2014-04-25	12:11:18	#46	Geochem	28.4	30.05	58.45	ND
KÅP1C	2014-04-25	12:12:45	#47	Geochem	29.15	30.06	59.21	ND
KÅP1C	2014-04-25	12:13:51	#48	Geochem	28.46	30.05	58.51	ND
KÅP1C	2014-04-25	12:15:04	#49	Geochem	28.44	30.08	58.53	ND
KÅP1C	2014-04-25	12:16:13	#50	Geochem	28.42	30.03	58.45	ND
KÅP1C	2014-04-25	12:17:20	#51	Geochem	28.44	30.05	58.49	ND
KÅP1C	2014-04-25	12:18:28	#52	Geochem	28.4	30.03	58.43	ND
RTP1C	2014-04-25	12:20:39	#53	Geochem	28.29	30.05	58.34	ND
RTP1C	2014-04-25	12:21:54	#54	Geochem	28.27	30.07	58.33	ND
RTP1C	2014-04-25	12:23:36	#55	Geochem	28.26	30.06	58.31	ND
RTP1C	2014-04-25	12:25:58	#56	Geochem	28.24	30.08	58.32	ND
RTP1C	2014-04-25	12:27:13	#57	Geochem	28.25	30.21	58.46	ND
RTP1C	2014-04-25	12:28:31	#58	Geochem	28.27	30.03	58.3	ND
RTP1C	2014-04-25	12:29:52	#59	Geochem	28.26	30.04	58.3	ND
RTP1C	2014-04-25	12:31:02	#60	Geochem	28.25	30.05	58.3	ND
RTP1C	2014-04-25	12:32:07	#61	Geochem	28.25	30.04	58.29	ND
RTP1C	2014-04-25	12:33:20	#62	Geochem	28.27	30.04	58.3	ND
KÅP1D	2014-04-25	12:35:01	#63	Geochem	28.59	30.02	58.62	ND
KÅP1D	2014-04-25	12:39:22	#64	Geochem	28.57	30.06	58.63	ND
KÅP1D	2014-04-25	12:40:35	#65	Geochem	28.6	30.07	58.67	ND
KÅP1D	2014-04-25	12:41:41	#66	Geochem	28.6	30.05	58.65	ND
KÅP1D	2014-04-25	12:42:57	#67	Geochem	28.62	30.04	58.66	ND
KÅP1D	2014-04-25	12:44:05	#68	Geochem	28.61	30.22	58.84	ND
KÅP1D	2014-04-25	12:45:18	#69	Geochem	28.58	30.07	58.65	ND
KÅP1D	2014-04-25	12:46:24	#70	Geochem	28.55	30.08	58.63	ND
KÅP1D	2014-04-25	12:47:33	#71	Geochem	28.62	30.03	58.65	ND
KÅP1D	2014-04-25	12:48:47	#72	Geochem	28.58	30.08	58.66	ND
RTP1D	2014-04-25	12:50:40	#73	Geochem	28.56	30.1	58.65	ND
RTP1D	2014-04-25	12:51:57	#74	Geochem	28.46	30.53	58.99	ND
RTP1D	2014-04-25	12:53:06	#75	Geochem	28.73	30.11	58.84	ND
RTP1D	2014-04-25	12:54:18	#76	Geochem	28.43	30.06	58.49	ND
RTP1D	2014-04-25	12:55:24	#77	Geochem	28.43	30.04	58.48	ND
RTP1D	2014-04-25	12:56:32	#78	Geochem	28.43	30.17	58.6	ND
RTP1D	2014-04-25	12:57:40	#79	Geochem	28.6	30.08	58.68	ND
RTP1D	2014-04-25	12:59:21	#80	Geochem	28.43	30.75	59.18	ND
RTP1D	2014-04-25	13:00:37	#81	Geochem	28.48	30.03	58.51	ND
RTP1D	2014-04-25	13:02:04	#82	Geochem	28.43	30.05	58.48	ND
KÅP1E	2014-04-25	13:03:33	#83	Geochem	28.75	30	58.75	ND
KÅP1E	2014-04-25	13:04:40	#84	Geochem	28.77	30.04	58.82	ND
KÅP1E	2014-04-25	13:08:15	#85	Geochem	28.78	30.59	59.38	ND

KÅP1E	2014-04-25	13:09:59	#86	Geochem	30.38	30	60.39	ND
KÅP1E	2014-04-25	13:11:06	#87	Geochem	28.75	30.07	58.82	ND
KÅP1E	2014-04-25	13:12:15	#88	Geochem	28.75	30.26	59.01	ND
KÅP1E	2014-04-25	13:13:45	#89	Geochem	28.76	30.01	58.77	ND
KÅP1E	2014-04-25	13:15:53	#90	Geochem	28.8	30.01	58.81	ND
KÅP1E	2014-04-25	13:17:26	#91	Geochem	28.74	30.36	59.1	ND
KÅP1E	2014-04-25	13:18:34	#92	Geochem	28.74	30.07	58.81	ND
RTP1E	2014-04-25	13:20:41	#93	Geochem	29.37	30.09	59.46	ND
RTP1E	2014-04-25	13:23:14	#94	Geochem	28.77	30.03	58.8	ND
RTP1E	2014-04-25	13:24:22	#95	Geochem	28.76	30.01	58.77	ND
RTP1E	2014-04-25	13:25:30	#96	Geochem	28.75	30.01	58.76	ND
RTP1E	2014-04-25	13:26:36	#97	Geochem	28.79	30.03	58.82	ND
RTP1E	2014-04-25	13:27:43	#98	Geochem	28.76	30.07	58.83	ND
RTP1E	2014-04-25	13:28:50	#99	Geochem	28.83	30.47	59.3	ND
RTP1E	2014-04-25	13:29:56	#100	Geochem	28.85	30.07	58.92	ND
RTP1E	2014-04-25	13:31:02	#101	Geochem	28.76	30.02	58.78	ND
RTP1E	2014-04-25	13:32:10	#102	Geochem	28.76	30.05	58.81	ND
KÅP1F	2014-04-25	13:33:32	#103	Geochem	28.44	30.32	58.76	ND
KÅP1F	2014-04-25	13:34:58	#104	Geochem	28.43	30.03	58.47	ND
KÅP1F	2014-04-25	13:36:16	#105	Geochem	28.44	30.32	58.76	ND
KÅP1F	2014-04-25	13:37:23	#106	Geochem	28.44	30.03	58.47	ND
KÅP1F	2014-04-25	13:40:08	#107	Geochem	28.46	30.03	58.49	ND
KÅP1F	2014-04-25	13:41:19	#108	Geochem	28.44	30.06	58.5	ND
KÅP1F	2014-04-25	13:42:27	#109	Geochem	28.45	31.1	59.56	ND
KÅP1F	2014-04-25	13:43:38	#110	Geochem	29.01	30.04	59.04	ND
KÅP1F	2014-04-25	13:44:44	#111	Geochem	29.01	30.03	59.04	ND
KÅP1F	2014-04-25	13:45:51	#112	Geochem	28.49	30.05	58.53	ND
RTP1F	2014-04-25	13:47:19	#113	Geochem	28.44	30.04	58.48	ND
RTP1F	2014-04-25	13:48:29	#114	Geochem	29	30.04	59.04	ND
RTP1F	2014-04-25	13:49:35	#115	Geochem	28.5	30.04	58.54	ND
RTP1F	2014-04-25	13:50:41	#116	Geochem	28.46	30.02	58.48	ND
RTP1F	2014-04-25	13:51:48	#117	Geochem	28.46	30.02	58.48	ND
RTP1F	2014-04-25	13:52:59	#118	Geochem	28.45	30.04	58.49	ND
RTP1F	2014-04-25	13:54:08	#119	Geochem	28.78	30.04	58.82	ND
RTP1F	2014-04-25	13:55:14	#120	Geochem	28.47	30.05	58.51	ND
RTP1F	2014-04-25	13:56:21	#121	Geochem	28.45	30.03	58.48	ND
RTP1F	2014-04-25	13:57:26	#122	Geochem	28.46	30.05	58.52	ND
KÅP1G								
RTP1G	2014-04-25	14:00:05	#123	Geochem	28.57	30.01	58.58	ND
KÅP1G								
RTP1G	2014-04-25	14:01:11	#124	Geochem	28.59	30.05	58.64	ND
KÅP1G								
RTP1G	2014-04-25	14:03:23	#125	Geochem	28.6	30.06	58.66	ND
KÅP1G								
RTP1G	2014-04-25	14:05:02	#126	Geochem	28.57	30.03	58.6	ND
KÅP1G								
RTP1G	2014-04-25	14:06:07	#127	Geochem	28.58	30.16	58.74	ND

KÅP1G							
RTP1G	2014-04-25	14:07:37 #128	Geochem	28.59	30.03	58.62	ND
KÅP1G							
RTP1G	2014-04-25	14:08:53 #129	Geochem	28.58	30.61	59.18	ND
KÅP1G							
RTP1G	2014-04-25	14:10:04 #130	Geochem	28.83	30.02	58.85	ND
KÅP1G							
RTP1G	2014-04-25	14:11:11 #131	Geochem	28.59	30.07	58.66	ND
KÅP1G							
RTP1G	2014-04-25	14:12:36 #132	Geochem	29.29	30.01	59.31	ND
KÅP1H							
RTP1H	2014-04-25	14:13:59 #133	Geochem	28.78	30.04	58.82	ND
KÅP1H							
RTP1H	2014-04-25	14:15:14 #134	Geochem	28.56	30.02	58.58	ND
KÅP1H							
RTP1H	2014-04-25	14:16:20 #135	Geochem	28.55	30.06	58.61	ND
KÅP1H							
RTP1H	2014-04-25	14:17:51 #136	Geochem	29.16	30.03	59.19	ND
KÅP1H							
RTP1H	2014-04-25	14:19:20 #137	Geochem	28.54	30.59	59.13	ND
KÅP1H							
RTP1H	2014-04-25	14:20:29 #138	Geochem	28.56	30.05	58.61	ND
KÅP1H							
RTP1H	2014-04-25	14:21:37 #139	Geochem	28.58	30.02	58.6	ND
KÅP1H							
RTP1H	2014-04-25	14:22:58 #140	Geochem	28.58	30.04	58.61	ND
KÅP1H							
RTP1H	2014-04-25	14:24:03 #141	Geochem	28.54	30.06	58.6	ND
KÅP1H							
RTP1H	2014-04-25	14:25:12 #142	Geochem	28.54	30.57	59.1	ND
KÅP1I	2014-04-25	14:26:45 #143	Geochem	28.77	30.2	58.97	ND
KÅP1I	2014-04-25	14:28:59 #144	Geochem	28.75	29.97	58.72	ND
KÅP1I	2014-04-25	14:30:14 #145	Geochem	28.76	29.99	58.76	ND
KÅP1I	2014-04-25	14:31:29 #146	Geochem	28.74	30.09	58.83	ND
KÅP1I	2014-04-25	14:32:35 #147	Geochem	28.75	29.98	58.73	ND
KÅP1I	2014-04-25	14:33:40 #148	Geochem	28.8	29.98	58.78	ND
KÅP1I	2014-04-25	14:34:45 #149	Geochem	28.75	29.98	58.73	ND
KÅP1I	2014-04-25	14:35:51 #150	Geochem	28.74	30.61	59.36	ND
KÅP1I	2014-04-25	14:36:56 #151	Geochem	28.74	29.97	58.71	ND
KÅP1I	2014-04-25	14:38:02 #152	Geochem	28.77	29.98	58.75	ND
RTP1I	2014-04-25	14:39:27 #153	Geochem	28.73	30.26	58.99	ND
RTP1I	2014-04-25	14:40:33 #154	Geochem	28.75	29.99	58.73	ND
RTP1I	2014-04-25	14:42:23 #155	Geochem	28.81	29.99	58.8	ND
RTP1I	2014-04-25	14:43:31 #156	Geochem	28.73	29.99	58.72	ND
RTP1I	2014-04-25	14:44:43 #157	Geochem	28.75	30.56	59.31	ND
RTP1I	2014-04-25	14:45:56 #158	Geochem	28.76	29.99	58.75	ND
RTP1I	2014-04-25	14:47:04 #159	Geochem	28.8	30	58.8	ND

RTP1I	2014-04-25	14:48:12	#160	Geochem	28.76	29.98	58.74	ND	
RTP1I	2014-04-25	14:49:17	#161	Geochem	29.01	29.98	58.99	ND	
RTP1I	2014-04-25	14:50:23	#162	Geochem	28.84	29.99	58.83	81	7.12
KÅP1J									
RTP1J	2014-04-25	14:51:38	#163	Geochem	28.5	30.05	58.55	ND	
KÅP1J									
RTP1J	2014-04-25	14:52:44	#164	Geochem	28.5	30.02	58.53	ND	
KÅP1J									
RTP1J	2014-04-25	14:53:50	#165	Geochem	29.18	30.03	59.21	ND	
KÅP1J									
RTP1J	2014-04-25	14:54:54	#166	Geochem	28.52	30.03	58.55	ND	
KÅP1J									
RTP1J	2014-04-25	14:55:59	#167	Geochem	28.5	30.51	59	ND	
KÅP1J									
RTP1J	2014-04-25	14:57:04	#168	Geochem	28.5	30.44	58.94	ND	
KÅP1J									
RTP1J	2014-04-25	14:58:12	#169	Geochem	29.07	30.04	59.11	ND	
KÅP1J									
RTP1J	2014-04-25	14:59:40	#170	Geochem	28.53	30.04	58.57	ND	
KÅP1J									
RTP1J	2014-04-25	15:00:45	#171	Geochem	28.51	30.04	58.54	ND	
KÅP1J									
RTP1J	2014-04-25	15:01:50	#172	Geochem	29.08	30.04	59.12	ND	
KÅP1K	2014-04-25	15:03:09	#173	Geochem	28.25	30.04	58.29	ND	
KÅP1K	2014-04-25	15:04:15	#174	Geochem	28.24	30.03	58.27	ND	
KÅP1K	2014-04-25	15:05:22	#175	Geochem	28.29	30.6	58.89	ND	
KÅP1K	2014-04-25	15:06:29	#176	Geochem	28.24	30.05	58.29	ND	
KÅP1K	2014-04-25	15:08:01	#177	Geochem	28.24	30.08	58.32	ND	
KÅP1K	2014-04-25	15:09:16	#178	Geochem	28.23	30.05	58.28	ND	
KÅP1K	2014-04-25	15:10:23	#179	Geochem	28.26	30.03	58.29	ND	
KÅP1K	2014-04-25	15:11:35	#180	Geochem	28.27	30.03	58.31	ND	
KÅP1K	2014-04-25	15:12:42	#181	Geochem	28.28	30.3	58.58	ND	
KÅP1K	2014-04-25	15:13:47	#182	Geochem	28.41	30.06	58.47	ND	

Sample	Date	Time	Reading	Mode	Elapsed Time 1	Elapsed Time 2	Elapsed Time Total	Mg	Mg +/-
RTP2A	2014-10-01	10:31:19	#4-1	Geochem	28.49	30.02	58.51	ND	
RTP2A	2014-10-01	10:32:23	#4-2	Geochem	28.43	30.02	58.45	ND	
RTP2A	2014-10-01	10:33:27	#4-3	Geochem	28.45	30.03	58.48	ND	
RTP2A	2014-10-01	10:33:27	Avg(3)	Geochem				ND	
KÅP2A	2014-10-01	10:39:20	#5-1	Geochem	28.55	30.04	58.58	ND	
KÅP2A	2014-10-01	10:40:24	#5-2	Geochem	28.56	30.02	58.58	ND	
KÅP2A	2014-10-01	10:41:27	#5-3	Geochem	28.56	30.04	58.6	ND	

			#5-						
KÅP2A	2014-10-01	10:41:28	Avg(3)	Geochem					ND
RTP1L									
b	2014-10-01	10:45:39	#6-1	Geochem	28.42	30.04	58.46		ND
RTP1L									
b	2014-10-01	10:46:42	#6-2	Geochem	28.42	30.03	58.45		ND
RTP1L									
b	2014-10-01	10:47:46	#6-3	Geochem	28.39	30.04	58.42		ND
RTP1L									
			#6-						
b	2014-10-01	10:47:46	Avg(3)	Geochem					ND
KÅP1L									
b	2014-10-01	10:50:00	#7-1	Geochem	28.42	30.07	58.48		ND
KÅP1L									
b	2014-10-01	10:51:04	#7-2	Geochem	28.46	30.03	58.49		ND
KÅP1L									
b	2014-10-01	10:52:07	#7-3	Geochem	28.44	30.04	58.48		ND
KÅP1L									
			#7-						
b	2014-10-01	10:52:07	Avg(3)	Geochem					ND
RTP1M	2014-10-01	10:54:17	#8-1	Geochem	28.56	30.04	58.6		ND
RTP1M	2014-10-01	10:55:20	#8-2	Geochem	28.58	30.03	58.61		ND
RTP1M	2014-10-01	10:56:23	#8-3	Geochem	28.59	30.03	58.62		ND
			#8-						
RTP1M	2014-10-01	10:56:23	Avg(3)	Geochem					ND
KÅP1									
M	2014-10-01	11:03:05	#10-1	Geochem	28.5	30.03	58.54		ND
KÅP1									
M	2014-10-01	11:04:09	#10-2	Geochem	28.53	30.71	59.24		ND
KÅP1									
M	2014-10-01	11:05:12	#10-3	Geochem	28.55	30.03	58.58		ND
KÅP1									
			#10-						
M	2014-10-01	11:05:12	Avg(3)	Geochem					ND
RTP1N	2014-10-01	11:06:58	#11-1	Geochem	28.54	30.25	58.78		ND
RTP1N	2014-10-01	11:08:01	#11-2	Geochem	28.58	30	58.58		ND
RTP1N	2014-10-01	11:09:05	#11-3	Geochem	28.59	30.07	58.66		ND
			#11-						
RTP1N	2014-10-01	11:09:05	Avg(3)	Geochem					ND
KÅP1N	2014-10-01	11:11:09	#12-1	Geochem	28.59	30.02	58.6		ND
KÅP1N	2014-10-01	11:12:12	#12-2	Geochem	28.56	30.06	58.61		ND
KÅP1N	2014-10-01	11:13:15	#12-3	Geochem	28.58	30.01	58.59		ND
			#12-						
KÅP1N	2014-10-01	11:13:15	Avg(3)	Geochem					ND
RTP1O	2014-10-01	11:16:16	#13-1	Geochem	28.3	30.03	58.32		ND
RTP1O	2014-10-01	11:17:20	#13-2	Geochem	28.31	30.01	58.33		ND
RTP1O	2014-10-01	11:18:24	#13-3	Geochem	28.29	30.03	58.32		ND
			#13-						
RTP1O	2014-10-01	11:18:24	Avg(3)	Geochem					ND
KÅP1O	2014-10-01	11:21:05	#14-1	Geochem	28.54	30.05	58.59		ND

KÅP1O 2014-10-01 11:22:09 #14-2 Geochem 28.53 30.02 58.55 ND
 KÅP1O 2014-10-01 11:23:12 #14-3 Geochem 28.56 30.02 58.59 ND
 #14-
 KÅP1O 2014-10-01 11:23:13 Avg(3) Geochem ND

Provko	Al	Al +/-	Si	Si +/-	P	P +/-	S	S +/-	Cl	Cl +/-
KÅP1A	4.96	1.54	37.42	0.85	ND		ND		ND	
KÅP1A ND			35.73	0.59	ND		ND		ND	
KÅP1A ND			36.22	0.59	ND		ND		ND	
KÅP1A ND			36	0.59	ND		ND		ND	
KÅP1A ND			34.89	0.6	ND		ND		ND	
KÅP1A	5.59	1.56	36.6	0.85	ND		ND		ND	
KÅP1A ND			35.5	0.59	ND		ND		ND	
KÅP1A ND			35.93	0.59	ND		ND		ND	
KÅP1A ND			35.55	0.59	ND		ND		ND	
KÅP1A ND			35.73	0.59	ND		ND		ND	
RTP1A ND			34.5	0.58	ND		ND		ND	
RTP1A ND			35.48	0.58	ND		ND		ND	
RTP1A ND			35.12	0.58	ND		ND		ND	
RTP1A ND			34.5	0.58	ND		ND		ND	
RTP1A ND			35.37	0.58	ND		ND		ND	
RTP1A ND			35.99	0.57	ND		ND		ND	
RTP1A ND			35.32	0.57	ND		ND		ND	
RTP1A ND			35.85	0.57	ND		ND		ND	
RTP1A ND			35.52	0.57	ND		ND		ND	
RTP1A ND			35.44	0.57	ND		ND		ND	
KÅP1B	7.33	1.49	35.18	0.84	ND		ND		ND	
KÅP1B	5.84	1.47	34.54	0.82	ND		ND		ND	
KÅP1B ND			32.7	0.61	ND		ND		ND	
KÅP1B	4.68	1.47	33.63	0.81	ND		ND		ND	
KÅP1B	5.68	1.46	34.69	0.82	ND		ND		ND	
KÅP1B	6.22	1.46	35.42	0.83	ND		ND		ND	
KÅP1B	5.67	1.45	35.38	0.82	ND		ND		ND	
KÅP1B	6.44	1.46	35.49	0.83	ND		ND		ND	
KÅP1B	6.24	1.47	34.29	0.82	ND		ND		ND	
KÅP1B ND			32.93	0.6	ND		ND		ND	
RTP1B ND			33.5	0.6	ND		ND		ND	
RTP1B	5.56	1.48	34.96	0.82	ND		ND		ND	
RTP1B ND			32.81	0.6	ND		ND		ND	
RTP1B ND			32.61	0.6	ND		ND		ND	
RTP1B ND			32.78	0.6	ND		ND		ND	
RTP1B	4.77	1.45	34.95	0.81	ND		ND		ND	
RTP1B ND			32.39	0.6	0.58	0.15	ND		ND	
RTP1B ND			32.9	0.6	ND		ND		ND	
RTP1B ND			33.14	0.6	ND		ND		ND	
RTP1B	4.8	1.44	35.37	0.81	ND		ND		ND	

KÅP1C ND			34.94	0.6 ND	ND	ND
KÅP1C ND			33.51	0.61 ND	ND	ND
KÅP1C ND			35.51	0.6 ND	ND	ND
KÅP1C ND			36.01	0.59 ND	ND	ND
KÅP1C ND			35.51	0.6 ND	ND	ND
KÅP1C ND			35.26	0.6 ND	ND	ND
KÅP1C ND			34.88	0.6 ND	ND	ND
KÅP1C ND			36.11	0.6 ND	ND	ND
KÅP1C ND			34.53	0.6 ND	ND	ND
KÅP1C	6.66	1.5	37.32	0.85 ND	ND	ND
RTP1C	4.8	1.42	35.22	0.79 ND	ND	ND
RTP1C	4.46	1.41	36.69	0.79 ND	ND	ND
RTP1C ND			35.25	0.57 ND	ND	ND
RTP1C ND			35.5	0.57 ND	ND	ND
RTP1C ND			34.95	0.57 ND	ND	ND
RTP1C ND			35.29	0.57 ND	ND	ND
RTP1C ND			35.34	0.57 ND	ND	ND
RTP1C	5.23	1.42	35.84	0.8 ND	ND	ND
RTP1C ND			35.56	0.57 ND	ND	ND
RTP1C ND			35.79	0.57 ND	ND	ND
KÅP1D	8.03	1.66	28.66	0.81 ND	ND	ND
KÅP1D	8.35	1.66	28.16	0.8 ND	ND	ND
KÅP1D ND			26.74	0.6 ND	ND	ND
KÅP1D	7.39	1.66	28.36	0.8 ND	ND	ND
KÅP1D	11.45	1.65	29.64	0.83 ND	ND	ND
KÅP1D	7.1	1.67	28.45	0.8 ND	ND	ND
KÅP1D	8.09	1.66	28.55	0.8 ND	ND	ND
KÅP1D	9.21	1.66	29.08	0.82 ND	ND	ND
KÅP1D	6.59	1.66	28.54	0.8 ND	ND	ND
KÅP1D	9.79	1.64	29.15	0.82 ND	ND	ND
RTP1D	6.17	1.62	29.49	0.78 ND	ND	ND
RTP1D	8.15	1.6	30.47	0.79 ND	ND	ND
RTP1D	5.8	1.61	29.84	0.78 ND	ND	ND
RTP1D	10.18	1.6	30.96	0.81 ND	ND	ND
RTP1D	9.23	1.6	30.35	0.8 ND	ND	ND
RTP1D	7.38	1.6	30.52	0.79 ND	ND	ND
RTP1D	9.41	1.6	30.2	0.8 ND	ND	ND
RTP1D	7.64	1.57	30.08	0.78 ND	ND	ND
RTP1D	8.64	1.61	30.33	0.8 ND	ND	ND
RTP1D	6.75	1.58	31.14	0.79 ND	ND	ND
KÅP1E	6.33	1.69	18.11	0.65 ND	ND	ND
KÅP1E ND			19.03	0.55 ND	ND	ND
KÅP1E	7.82	1.68	18.56	0.66 ND	ND	ND
KÅP1E ND			18.35	0.55 ND	ND	ND
KÅP1E	7.25	1.7	17.84	0.66 ND	ND	ND
KÅP1E	8.33	1.68	19	0.67 ND	ND	ND
KÅP1E	10.56	1.69	19.05	0.68 ND	ND	ND

KÅP1E	6.5	1.68	19.78	0.67	ND	ND	ND
KÅP1E	6.58	1.67	18.53	0.65	ND	ND	ND
KÅP1E	6.94	1.67	19.93	0.68	ND	ND	ND
RTP1E	5.34	1.67	19.11	0.66	ND	ND	ND
RTP1E	6.2	1.67	19.6	0.67	ND	ND	ND
RTP1E	6.88	1.67	19.53	0.67	ND	ND	ND
RTP1E ND			17.78	0.55	ND	ND	ND
RTP1E	8.02	1.68	19.56	0.67	ND	ND	ND
RTP1E	7.21	1.68	19.51	0.67	ND	ND	ND
RTP1E	8.08	1.68	18.09	0.65	ND	ND	ND
RTP1E	8.18	1.68	19.61	0.68	ND	ND	ND
RTP1E	6.73	1.68	19.06	0.67	ND	ND	ND
RTP1E	6.25	1.68	19.53	0.67	ND	ND	ND
KÅP1F	7.73	1.84	26.66	0.79	ND	ND	ND
KÅP1F	8.43	1.83	27.03	0.8	ND	ND	ND
KÅP1F	11.54	1.76	28.24	0.81	ND	ND	ND
KÅP1F	9.49	1.84	26.76	0.8	ND	ND	ND
KÅP1F	9.46	1.82	27.12	0.8	ND	ND	ND
KÅP1F	9.76	1.79	28.11	0.81	ND	ND	ND
KÅP1F	7.22	1.82	27.47	0.79	ND	ND	ND
KÅP1F	5.91	1.84	27.58	0.79	ND	ND	ND
KÅP1F	9.7	1.81	27.03	0.8	ND	ND	ND
KÅP1F	12.97	1.77	27.97	0.82	ND	ND	ND
RTP1F	9.29	1.85	26.04	0.79	0.47	0.12	ND
RTP1F	13.52	1.79	25.74	0.8	0.44	0.12	ND
RTP1F	11.29	1.82	26.87	0.81	ND	ND	ND
RTP1F	9.14	1.85	26.33	0.8	0.41	0.12	ND
RTP1F	10.47	1.84	25.82	0.79	0.36	0.11	ND
RTP1F	8.71	1.87	24.99	0.78	0.45	0.12	ND
RTP1F	6.84	1.88	25.63	0.78	0.56	0.12	ND
RTP1F	12.48	1.81	25.9	0.8	0.42	0.12	ND
RTP1F	10.83	1.83	26.29	0.8	ND	ND	ND
RTP1F	10.54	1.83	26.63	0.81	ND	ND	ND
KÅP1G							
RTP1G ND			21.33	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			21.99	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			20.63	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			20.88	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			21.94	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			21.08	0.56	ND	ND	ND
KÅP1G							
RTP1G ND			21.51	0.56	ND	ND	ND

KÅP1G						
RTP1G ND		21.54	0.56 ND		ND	ND
KÅP1G						
RTP1G ND		21.46	0.56 ND		ND	ND
KÅP1G						
RTP1G ND		21.18	0.56 0.64	0.2	ND	ND
KÅP1H						
RTP1H ND		21.81	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		21.88	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		21.51	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		21.81	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		21.12	0.55 ND		ND	ND
KÅP1H						
RTP1H ND		21.71	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		22.21	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		21.16	0.56 ND		ND	ND
KÅP1H						
RTP1H ND		22.09	0.56 ND		ND	ND
KÅP1H						
RTP1H	5.3	1.56	22	0.68 ND		ND
KÅP1I ND			5.29	0.42 ND		ND
KÅP1I ND			5.31	0.42 ND		ND
KÅP1I ND			4.52	0.41 ND		ND
KÅP1I ND			5.4	0.42 ND		ND
KÅP1I ND			5.38	0.42 ND		ND
KÅP1I ND			5.6	0.42 ND		ND
KÅP1I ND			5	0.42 ND		ND
KÅP1I ND			4.65	0.41 ND		ND
KÅP1I ND			5.18	0.42 ND		ND
KÅP1I ND			5.42	0.42 ND		ND
RTP1I ND			5.76	0.43 ND		ND
RTP1I ND			6.5	0.43 ND		ND
RTP1I ND			6.2	0.43 ND		ND
RTP1I ND			6.3	0.43 ND		ND
RTP1I ND			5.57	0.42 0.81	0.24	ND
RTP1I ND			6.91	0.44 ND		ND
RTP1I ND			6.17	0.43 ND		ND
RTP1I ND			6.42	0.43 ND		ND
RTP1I ND			5.76	0.42 ND		ND
RTP1I ND			8.01	1.02 ND		ND
KÅP1J ND			32.78	0.55 ND		ND

RTP1J									
KÅP1J									
RTP1J ND			33.2	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			33.28	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			32.57	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			32.68	0.54 ND		ND		ND	
KÅP1J									
RTP1J ND			31.46	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			33.1	0.54 ND		ND		ND	
KÅP1J									
RTP1J ND			32.93	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			32.79	0.55 ND		ND		ND	
KÅP1J									
RTP1J ND			33.02	0.55 ND		ND		ND	
KÅP1K ND			34.12	0.56 ND		ND		ND	
KÅP1K ND			34.59	0.56 ND		ND		ND	
KÅP1K ND			34.37	0.56 ND		ND		ND	
KÅP1K	4.89	1.38	36.4	0.78 ND		ND		ND	
KÅP1K	6.48	1.38	36.92	0.79 ND		ND		ND	
KÅP1K	4.34	1.37	36.01	0.76 ND		ND		ND	
KÅP1K ND			35.27	0.56 ND		ND		ND	
KÅP1K ND			35.29	0.56 ND		ND		ND	
KÅP1K ND			34.54	0.56 ND		ND		ND	
KÅP1K	4.67	1.38	35.97	0.77 ND		ND		ND	

Sample	Al	Al +/-	Si	Si +/-	P	P +/-	S	S +/-	Cl	Cl +/-
RTP2A ND			34.01	0.6 ND			ND		ND	
RTP2A ND			33.78	0.6 ND			ND		ND	
RTP2A ND			34.5	0.6 ND			ND		ND	
RTP2A ND			34.09	0.6 ND			ND		ND	
KÅP2A	6.15	1.75	32.55	0.89 ND			ND		ND	
KÅP2A ND			31.52	0.63 ND			ND		ND	
KÅP2A ND			31.73	0.63 ND			ND		ND	
KÅP2A ND			31.94	0.71 ND			ND		ND	
RTP1L										
b ND			37.9	0.59 ND			ND		ND	
RTP1L										
b	4.81	1.52	37.22	0.85 ND			ND		ND	
RTP1L										
b ND			36.44	0.59 ND			ND		ND	
RTP1L ND			37.19	0.68 ND			ND		ND	

b											
KÅP1L											
b	ND		39.12		0.59	ND		ND		ND	
KÅP1L											
b	ND		38.86		0.59	ND		ND		ND	
KÅP1L											
b	ND		39		0.59	ND		ND		ND	
KÅP1L											
b	ND		38.99		0.59	ND		ND		ND	
RTP1M	ND		26.81		0.59	0.47	0.14	ND		ND	
RTP1M	ND		27.23		0.6	ND		ND		ND	
RTP1M	6.77	1.87	28.83		0.84	ND		ND		ND	
RTP1M	ND		27.62		0.68	ND		ND		ND	
KÅP1											
M	6.24	1.74	30.94		0.83	ND		ND		ND	
KÅP1											
M	6.84	1.7	31.11		0.82	ND		ND		ND	
KÅP1											
M	ND		29.8		0.58	ND		ND		ND	
KÅP1											
M	ND		30.62		0.74	ND		ND		ND	
								0.105	0.0		
RTP1N	ND		14.02		0.55	ND		4	241	ND	
RTP1N	ND		14.33		0.55	ND		ND		ND	
										0.0	
RTP1N	ND		14.94		0.55	0.26	0.08	0.101	238	ND	
RTP1N	ND		14.43		0.55	ND		ND		ND	
								0.076	0.0		
KÅP1N	ND		14.53		0.55	ND		4	237	ND	
										0.0	
KÅP1N	ND		15.07		0.56	ND		0.1	256	ND	
								0.092	0.0		
KÅP1N	ND		14.74		0.55	0.46	0.11	5	251	ND	
								0.089	0.0		
KÅP1N	ND		14.78		0.55	ND		6	248	ND	
RTP1O	ND		31.02		0.57	ND		ND		ND	
RTP1O	7.81	1.56	31.79		0.8	ND		ND		ND	
RTP1O	6.08	1.54	33.35		0.8	ND		ND		ND	
RTP1O	ND		32.05		0.72	ND		ND		ND	
KÅP1O	9.62	1.7	31.71		0.85	0.47	0.15	ND		ND	
KÅP1O	ND		29.14		0.59	ND		ND		ND	
KÅP1O	ND		28.98		0.59	ND		ND		ND	
KÅP1O	ND		29.94		0.68	ND		ND		ND	

Provko								V	Cr		
d	K	K +/-	Ca	Ca +/-	Ti	Ti +/-	V	V +/-	Cr +/-		
KÅP1A		0.7786	0.0237	1.5258	0.0352	0.343	0.012	0.014	0.0	0.0361	0.00

								3 039	23
									0.00
KÅP1A	0.7897	0.0203	1.527	0.0251	0.3506	0.0107	ND	0.0364	22
									0.00
KÅP1A	0.788	0.0202	1.5579	0.0253	0.3173	0.0102	ND	0.0364	22
									0.00
KÅP1A	0.7968	0.0205	1.5695	0.0256	0.3638	0.0109	ND	0.0368	22
									0.00
KÅP1A	0.769	0.0201	1.5206	0.0251	0.3443	0.0105	ND	0.0349	22
									0.00
KÅP1A	0.8105	0.0247	1.5738	0.0367	0.3248	0.0117	ND	0.038	23
								0.013 0.0	0.00
KÅP1A	0.7532	0.0198	1.5481	0.0252	0.3368	0.0105		4 038 0.0386	22
									0.00
KÅP1A	0.834	0.0208	1.5529	0.0253	0.3359	0.0104	ND	0.0353	22
									0.00
KÅP1A	0.7816	0.0201	1.5309	0.025	0.3389	0.0105	ND	0.038	22
									0.00
KÅP1A	0.8041	0.0205	1.5437	0.0253	0.3433	0.0106	ND	0.0354	22
									0.00
RTP1A	0.9308	0.0214	1.4365	0.0236	0.4438	0.0116	ND	0.0307	21
								0.014 0.0	0.00
RTP1A	0.9561	0.0217	1.4405	0.0237	0.4481	0.0116		3 039 0.0303	21
								0.019 0.0	0.00
RTP1A	0.963	0.0218	1.4289	0.0236	0.4495	0.0116		2 039 0.028	2
								0.012 0.0	0.00
RTP1A	0.95	0.0215	1.4714	0.0238	0.4441	0.0115		4 038 0.0269	2
									0.00
RTP1A	0.9496	0.0216	1.4385	0.0236	0.4563	0.0116	ND	0.03	2
								0.012 0.0	0.00
RTP1A	0.9641	0.0218	1.4314	0.0236	0.4715	0.0119		3 039 0.028	2
								0.013 0.0	0.00
RTP1A	0.9403	0.0214	1.4606	0.0237	0.4583	0.0117		5 039 0.027	2
								0.0	0.00
RTP1A	0.9372	0.0215	1.4532	0.0238	0.445	0.0116		0.013 039 0.0316	21
									0.00
RTP1A	0.9371	0.0213	1.461	0.0237	0.4615	0.0117	ND	0.0303	2
								0.013 0.0	0.00
RTP1A	0.9531	0.0216	1.4426	0.0235	0.4696	0.0118		7 039 0.0277	2
									0.00
KÅP1B	0.2125	0.0127	1.4214	0.0333	0.2513	0.0103	ND	0.0294	22
									0.00
KÅP1B	0.1671	0.0117	1.4881	0.034	0.2296	0.0097	ND	0.0319	22
									0.00
KÅP1B	0.1869	0.0116	1.436	0.0236	0.2554	0.0093	ND	0.0293	21
									0.00
KÅP1B	0.2093	0.0124	1.4333	0.0325	0.2474	0.0099	ND	0.028	21

KÅP1B	0.1887	0.012	1.4657	0.0334	0.2615	0.0104	ND	0.0353	23	0.00
KÅP1B	0.2054	0.0125	1.4273	0.0328	0.2571	0.0103	ND	0.0281	21	0.00
KÅP1B	0.1879	0.0121	1.4405	0.0328	0.2516	0.0101	ND	0.0282	21	0.00
KÅP1B	0.1989	0.0123	1.4701	0.0336	0.2488	0.0101	ND	0.0302	22	0.00
KÅP1B	0.1879	0.012	1.4195	0.0327	0.2589	0.0103	ND	0.0329	22	0.00
KÅP1B	0.1856	0.0116	1.4025	0.0233	0.2487	0.0092	ND	0.0278	2	0.00
RTP1B	0.2611	0.0128	1.281	0.0221	0.41	0.0113	ND	0.0308	21	0.00
RTP1B	0.2674	0.0138	1.3239	0.031	0.4187	0.0133	ND	0.0322	22	0.00
RTP1B	0.2653	0.0128	1.2888	0.0221	0.3952	0.0109	ND	0.0297	2	0.00
RTP1B	0.2636	0.0127	1.278	0.0219	0.3992	0.0112	ND	0.0301	21	0.00
RTP1B	0.2467	0.0124	1.2986	0.022	0.3901	0.0109	ND	0.0313	21	0.00
RTP1B	0.2553	0.0133	1.296	0.0299	0.407	0.0128	ND	0.0346	22	0.00
RTP1B	0.2597	0.0127	1.3382	0.0225	0.412	0.0113	ND	0.0331	21	0.00
RTP1B	0.2684	0.0127	1.2535	0.0216	0.4106	0.0112	ND	0.0306	2	0.00
RTP1B	0.2625	0.0128	1.2716	0.022	0.4008	0.0112	ND	0.0366	22	0.00
RTP1B	0.2392	0.0131	1.3318	0.0305	0.4089	0.013	ND	0.0354	23	0.00
KÅP1C	0.5311	0.0172	0.9021	0.0186	0.4256	0.0116	ND	0.0332	21	0.00
KÅP1C	0.5582	0.0176	0.9114	0.0186	0.4061	0.0112	ND	0.03	21	0.00
KÅP1C	0.5434	0.0175	0.9352	0.0192	0.4264	0.0118	ND	0.0328	22	0.00
KÅP1C	0.5371	0.0174	0.8906	0.0185	0.4208	0.0117	0.012 0.0	2 04 0.033	22	0.00
KÅP1C	0.5354	0.0175	0.9438	0.0193	0.4226	0.0116	ND	0.0329	22	0.00
KÅP1C	0.5492	0.0175	0.9044	0.0188	0.4247	0.0117	ND	0.0299	21	0.00
KÅP1C	0.5207	0.0171	0.8999	0.0186	0.4297	0.0116	ND	0.0359	22	0.00
KÅP1C	0.5384	0.0176	0.922	0.019	0.4313	0.0119	ND	0.032	0.00	0.00

									22	
									0.00	
KÅP1C	0.5459	0.0176	0.8904	0.0186	0.4295	0.0118	ND	0.0283	21	
									0.00	
KÅP1C	0.5683	0.0201	0.9095	0.0241	0.4391	0.0138	ND	0.0348	23	
									0.00	
RTP1C	0.4484	0.0168	0.9123	0.0228	0.5371	0.0151	ND	0.0295	21	
									0.00	
RTP1C	0.4606	0.0171	0.9325	0.0231	0.5425	0.0152	ND	0.0271	21	
									0.00	
RTP1C	0.4284	0.0151	0.9169	0.018	0.5068	0.0122	ND	0.0286	2	
									0.00	
RTP1C	0.4414	0.0151	0.9011	0.0176	0.5147	0.0122	ND	0.0258	19	
									0.00	
RTP1C	0.452	0.0153	0.8695	0.0174	0.5037	0.0121	ND	0.0271	2	
									0.00	
RTP1C	0.4654	0.0156	0.9122	0.018	0.5333	0.0126	ND	0.0283	2	
									0.00	
RTP1C	0.4459	0.0153	0.9136	0.0181	0.5231	0.0125	ND	0.0258	2	
									0.00	
RTP1C	0.4746	0.0173	0.9218	0.023	0.5278	0.0149	ND	0.0292	21	
									0.00	
RTP1C	0.4771	0.0157	0.8726	0.0176	0.5051	0.0121	ND	0.0273	2	
									0.00	
RTP1C	0.4749	0.0157	0.9155	0.0181	0.5488	0.0129	ND	0.0291	21	
							0.016	0.0	0.00	
KÅP1D	1.0752	0.0299	1.571	0.0376	0.5829	0.0167	7	041	0.0296	21
								0.015	0.0	0.00
KÅP1D	1.0844	0.03	1.564	0.0375	0.5796	0.0166	9	04	0.0311	21
								0.012	0.0	0.00
KÅP1D	1.0348	0.0217	1.5299	0.0235	0.5562	0.0124	7	038	0.0303	2
								0.014	0.0	0.00
KÅP1D	1.0895	0.03	1.5559	0.0371	0.5879	0.0168	3	04	0.0333	22
								0.015	0.0	0.00
KÅP1D	1.094	0.0308	1.5795	0.0387	0.5786	0.0169	9	041	0.0309	22
								0.019	0.0	0.00
KÅP1D	1.1084	0.0303	1.4897	0.0355	0.566	0.0163	2	04	0.0283	21
										0.00
KÅP1D	1.1043	0.0304	1.5827	0.0378	0.5808	0.0167	ND		0.0291	21
								0.017	0.0	0.00
KÅP1D	1.1262	0.0311	1.5559	0.0376	0.586	0.0169	7	041	0.0335	22
								0.019	0.0	0.00
KÅP1D	1.0927	0.03	1.5586	0.037	0.5659	0.0163	1	04	0.0317	21
										0.00
KÅP1D	1.0439	0.0294	1.6056	0.0386	0.6002	0.0172	ND		0.0341	22
								0.022	0.0	0.00
RTP1D	1.4429	0.0358	1.3769	0.0326	0.534	0.0152	5	039	0.0238	19

							0.016	0.0	0.00
RTP1D	1.4456	0.0361	1.4022	0.0333	0.5513	0.0157	5 039	0.0244	2
							0.026	0.0	0.00
RTP1D	1.384	0.0346	1.4023	0.0329	0.5624	0.0157	8 04	0.0249	2
							0.021	0.0	0.00
RTP1D	1.4192	0.0362	1.4406	0.0346	0.5592	0.016	5 04	0.0248	2
							0.015	0.0	0.00
RTP1D	1.4106	0.0358	1.4011	0.0336	0.5745	0.0162	6 039	0.0227	19
							0.019	0.0	0.00
RTP1D	1.4206	0.0354	1.3882	0.0328	0.5454	0.0154	5 039	0.0235	19
							0.013	0.0	0.00
RTP1D	1.4195	0.036	1.4037	0.0337	0.5736	0.0162	1 039	0.0251	2
							0.014	0.0	0.00
RTP1D	1.3602	0.0339	1.3642	0.0319	0.5565	0.0156	8 038	0.0222	19
							0.020	0.0	0.00
RTP1D	1.4519	0.0367	1.4003	0.0337	0.5499	0.0158	7 04	0.0233	2
							0.015	0.0	0.00
RTP1D	1.3848	0.0346	1.3852	0.0326	0.5562	0.0156	7 039	0.0206	19
							0.014	0.0	0.00
KÅP1E	0.285	0.0121	8.31	0.17	0.773	0.0201	2 042	0.0633	28
							0.017	0.0	0.00
KÅP1E	0.2905	0.0108	7.85	0.07	0.7647	0.0142	7 041	0.0602	24
							0.0	0.0	0.00
KÅP1E	0.3024	0.0124	7.94	0.16	0.7379	0.0194	0.029 043	0.061	27
							0.022	0.0	0.00
KÅP1E	0.2845	0.0107	7.99	0.07	0.7531	0.0138	4 041	0.0594	24
							0.018	0.0	0.00
KÅP1E	0.297	0.0123	8.06	0.16	0.763	0.02	2 042	0.057	26
							0.028	0.0	0.00
KÅP1E	0.3118	0.0127	8.19	0.17	0.7462	0.0197	1 043	0.0603	27
							0.023	0.0	0.00
KÅP1E	0.2878	0.0124	8.28	0.17	0.7686	0.0205	5 043	0.0601	27
							0.019	0.0	0.00
KÅP1E	0.2854	0.0122	8.2	0.16	0.7408	0.0194	7 042	0.0626	27
							0.022	0.0	0.00
KÅP1E	0.2821	0.0119	8	0.16	0.7646	0.0198	9 043	0.0615	27
							0.020	0.0	0.00
KÅP1E	0.2932	0.0123	8.22	0.17	0.7512	0.0197	5 042	0.0633	28
							0.020	0.0	0.00
RTP1E	0.3266	0.0128	8.1	0.16	0.7159	0.0186	7 041	0.0521	25
							0.022	0.0	0.00
RTP1E	0.291	0.0122	8.2	0.16	0.724	0.019	7 042	0.0496	25
							0.015	0.0	0.00
RTP1E	0.2872	0.0122	8.27	0.17	0.7493	0.0196	4 041	0.0551	26
							0.019	0.0	0.00
RTP1E	0.2972	0.0109	7.97	0.07	0.7267	0.0139	1 041	0.0494	23
RTP1E	0.3099	0.0126	8.39	0.17	0.7532	0.0198	0.026 0.0	0.053	0.00

							4 043	26	
							0.017 0.0	0.00	
RTP1E	0.3012	0.0125	8.28	0.17	0.7608	0.0199	1 042 0.0527	26	
							0.022 0.0	0.00	
RTP1E	0.2975	0.0123	8.19	0.17	0.7356	0.0193	9 042 0.0503	25	
							0.013 0.0	0.00	
RTP1E	0.3354	0.0133	8.39	0.17	0.7627	0.0201	8 042 0.0545	26	
							0.020 0.0	0.00	
RTP1E	0.3071	0.0126	8.26	0.17	0.7567	0.0198	1 043 0.0504	25	
							0.019 0.0	0.00	
RTP1E	0.3167	0.0128	8.21	0.16	0.7544	0.0196	4 042 0.0539	26	
							0.020 0.0	0.00	
KÅP1F	3.15	0.07	0.2724	0.0136	0.5821	0.0169	9 038 0.0316	21	
							0.019 0.0	0.00	
KÅP1F	3.16	0.08	0.2523	0.0133	0.5896	0.0171	3 038 0.0298	2	
							0.028 0.0	0.00	
KÅP1F	3.25	0.08	0.2617	0.0139	0.6021	0.0175	6 041 0.032	21	
							0.030 0.0	0.00	
KÅP1F	3.24	0.08	0.2562	0.0136	0.6071	0.0176	8 04 0.03	2	
							0.022 0.0	0.00	
KÅP1F	3.21	0.08	0.2645	0.0137	0.5977	0.0173	5 039 0.0297	2	
							0.024 0.0	0.00	
KÅP1F	3.18	0.08	0.2815	0.014	0.5821	0.0169	5 039 0.0273	2	
							0.025 0.0	0.00	
KÅP1F	3.17	0.07	0.2663	0.0134	0.6005	0.0172	3 04 0.026	2	
							0.024 0.0	0.00	
KÅP1F	3.16	0.07	0.2956	0.014	0.591	0.0169	5 039 0.0273	2	
							0.026 0.0	0.00	
KÅP1F	3.18	0.08	0.2463	0.0133	0.6026	0.0173	5 039 0.0269	19	
							0.028 0.0	0.00	
KÅP1F	3.31	0.08	0.2463	0.0139	0.6269	0.0182	3 041 0.029	2	
							0.0	0.00	
RTP1F	3.34	0.08	0.5043	0.0182	0.5878	0.0173	0.026 0.039 0.0233	19	
							0.027 0.0	0.00	
RTP1F	3.35	0.08	0.4909	0.0183	0.6027	0.0177	7 04 0.0252	19	
							0.026 0.0	0.00	
RTP1F	3.32	0.08	0.4791	0.0178	0.5822	0.0172	6 04 0.0179	18	
							0.026 0.0	0.00	
RTP1F	3.38	0.08	0.4637	0.0176	0.6069	0.0178	7 04 0.0233	19	
							0.023 0.0	0.00	
RTP1F	3.35	0.08	0.5001	0.0183	0.5981	0.0175	7 039 0.0222	19	
							0.026 0.0	0.00	
RTP1F	3.29	0.08	0.4909	0.0179	0.5879	0.0172	2 039 0.0229	19	
							0.028 0.0	0.00	
RTP1F	3.28	0.08	0.5073	0.0181	0.6064	0.0175	1 04 0.0247	19	
							0.032 0.0	0.00	
RTP1F	3.35	0.08	0.4871	0.0182	0.6057	0.0178	2 041 0.023	19	

RTP1F	3.35	0.08	0.4618	0.0176	0.5857	0.0173	0.021	0.0	0.00
							5 039	0.0243	19
							0.023	0.0	0.00
RTP1F	3.39	0.08	0.5241	0.0188	0.618	0.018	3 039	0.0258	19
KÅP1G							0.016	0.0	0.00
RTP1G	1.8499	0.0277	7.18	0.07	0.2521	0.0091	8 035	0.0104	17
KÅP1G							0.022	0.0	0.00
RTP1G	1.8622	0.0281	7.3	0.07	0.2666	0.0095	8 037	0.0107	17
KÅP1G							0.014	0.0	0.00
RTP1G	1.8714	0.0278	7.18	0.07	0.2482	0.009	1 034	0.01	16
KÅP1G									0.00
RTP1G	1.8597	0.0279	7.28	0.07	0.2922	0.0098	ND	0.0102	17
KÅP1G							0.017	0.0	0.00
RTP1G	1.8592	0.0279	7.18	0.07	0.257	0.0092	9 035	0.0114	17
KÅP1G							0.015	0.0	0.00
RTP1G	1.8655	0.028	7.36	0.07	0.2477	0.0092	5 036	0.0099	17
KÅP1G							0.014	0.0	0.00
RTP1G	1.8514	0.0277	7.33	0.07	0.2823	0.0097	9 036	0.0111	17
KÅP1G							0.011	0.0	0.00
RTP1G	1.86	0.0279	7.32	0.07	0.2561	0.0093	1 035	0.012	17
KÅP1G							0.012	0.0	0.00
RTP1G	1.8489	0.0277	7.21	0.07	0.2567	0.0092	6 034	0.0136	17
KÅP1G							0.014	0.0	0.00
RTP1G	1.8404	0.0279	7.29	0.07	0.2456	0.009	5 035	0.0135	17
KÅP1H									0.00
RTP1H	0.1567	0.0092	9.01	0.08	0.2228	0.0088	ND	0.0097	17
KÅP1H									0.00
RTP1H	0.1384	0.009	9	0.08	0.2277	0.0088	ND	0.0104	17
KÅP1H									0.00
RTP1H	0.1558	0.0092	8.92	0.08	0.2109	0.0086	ND	0.0104	17
KÅP1H									0.00
RTP1H	0.1497	0.0091	8.96	0.08	0.2264	0.0088	ND	0.0115	17
KÅP1H									0.00
RTP1H	0.1429	0.0089	9.01	0.08	0.2251	0.0088	ND	0.0088	16
KÅP1H								0.0	0.00
RTP1H	0.1471	0.009	8.95	0.08	0.2241	0.0088	0.011 034	0.0139	17
KÅP1H							0.011	0.0	0.00
RTP1H	0.1621	0.0093	9.02	0.08	0.235	0.009	2 035	0.0107	17
KÅP1H							0.012	0.0	0.00
RTP1H	0.1597	0.0093	8.92	0.08	0.2271	0.0089	7 035	0.0094	17
KÅP1H									0.00
RTP1H	0.1597	0.0092	8.93	0.08	0.2289	0.0088	ND	0.0134	17
KÅP1H									0.00
RTP1H	0.1492	0.0095	9.15	0.17	0.2539	0.0102	ND	0.0098	17
KÅP1I	0.1282	0.0072	35.42	0.2	0.1053	0.0082	ND	ND	
KÅP1I	0.1174	0.0071	35.61	0.2	0.1174	0.0085	ND	ND	
KÅP1I	0.1274	0.0072	35.69	0.2	0.1021	0.0082	ND	ND	

KÅP1I	0.1281	0.0072	35.72	0.2	0.1068	0.0083	ND	ND	
KÅP1I	0.1218	0.0072	35.67	0.2	0.095	0.0081	ND	ND	
KÅP1I	0.1294	0.0073	35.85	0.21	0.1047	0.0083	ND	ND	
KÅP1I	0.1404	0.0073	35.21	0.2	0.1068	0.0082	ND	ND	
KÅP1I	0.1259	0.0071	35.17	0.2	0.0959	0.008	ND	ND	
KÅP1I	0.1342	0.0073	35.35	0.2	0.0948	0.008	ND	ND	
KÅP1I	0.1251	0.0072	35.64	0.2	0.1079	0.0083	ND	ND	
RTP1I	0.266	0.009	33.31	0.19	0.13	0.0086	ND	ND	
RTP1I	0.2675	0.0091	33.36	0.2	0.1107	0.0082	ND	ND	
RTP1I	0.2589	0.009	33.4	0.2	0.1326	0.0087	ND	ND	
RTP1I	0.2443	0.0088	33.64	0.2	0.117	0.0084	ND	ND	
RTP1I	0.2657	0.009	32.72	0.2	0.1369	0.0087	ND	ND	
RTP1I	0.2589	0.0091	33.84	0.2	0.1207	0.0085	ND	ND	
RTP1I	0.2717	0.0091	33.64	0.2	0.1374	0.0087	ND	ND	
RTP1I	0.2689	0.0091	33.57	0.2	0.1348	0.0088	ND	ND	
RTP1I	0.266	0.009	33.52	0.19	0.1393	0.0088	ND	ND	
RTP1I	0.3199	0.0366	38.96	4.26	0.1229	0.0159	ND	ND	
KÅP1J									0.00
RTP1J	0.6518	0.0171	9.09	0.09	0.1361	0.0078	ND	0.0385	23
KÅP1J									0.00
RTP1J	0.674	0.0174	9.13	0.09	0.1358	0.0078	ND	0.0361	23
KÅP1J									0.00
RTP1J	0.6838	0.0175	9.14	0.09	0.1433	0.0078	ND	0.0333	22
KÅP1J									0.00
RTP1J	0.6721	0.0172	9.02	0.09	0.1373	0.0078	ND	0.033	22
KÅP1J									0.00
RTP1J	0.6733	0.0171	8.98	0.09	0.14	0.0078	ND	0.0374	23
KÅP1J									0.00
RTP1J	0.6611	0.0169	8.87	0.08	0.1352	0.0076	ND	0.0344	22
KÅP1J									0.00
RTP1J	0.6936	0.0175	9.09	0.09	0.1521	0.0079	ND	0.0348	22
KÅP1J									0.00
RTP1J	0.661	0.0171	9.06	0.09	0.1458	0.0079	ND	0.0366	22
KÅP1J									0.00
RTP1J	0.694	0.0175	9.07	0.09	0.1397	0.0078	ND	0.0331	22
KÅP1J									0.00
RTP1J	0.6624	0.0172	9.05	0.09	0.1506	0.008	ND	0.0335	22
KÅP1K	0.5247	0.0161	1.0961	0.0196	0.5741	0.0129	ND	0.0357	21
KÅP1K	0.5016	0.0157	1.1028	0.0196	0.5656	0.0128	0.013 0.0	0.0327	21
KÅP1K	0.5006	0.0156	1.1097	0.0195	0.5577	0.0127	ND	0.0371	22
KÅP1K	0.5212	0.0178	1.1574	0.0265	0.5545	0.0151	ND	0.0361	23
KÅP1K	0.5016	0.0175	1.0931	0.0257	0.5418	0.0149	ND	0.04	23

KÅP1K	0.5161	0.0175	1.0706	0.0247	0.5336	0.0145	0.012	0.0	0.00
							8	039	0.0364
									22
									0.00
KÅP1K	0.5387	0.0163	1.1097	0.0198	0.5485	0.0126	ND		0.0344
									21
									0.00
KÅP1K	0.5114	0.0158	1.1142	0.0197	0.5538	0.0125	0.012	0.0	0.00
							7	039	0.0372
									21
									0.00
KÅP1K	0.5026	0.0156	1.0857	0.0193	0.5516	0.0125	ND		0.0324
									2
									0.00
KÅP1K	0.5551	0.0185	1.1365	0.0261	0.5822	0.0156	ND		0.0347
									22
Sample K	K +/-	Ca	Ca +/-	Ti	Ti +/-	V	V +/-	Cr	Cr +/-
							0.019	0.0	0.00
RTP2A	0.8938	0.0214	1.6956	0.0267	0.5697	0.0133	3	042	0.0307
									21
							0.021	0.0	0.00
RTP2A	0.8711	0.0211	1.6751	0.0264	0.5549	0.0131	5	042	0.0324
									22
							0.027	0.0	0.00
RTP2A	0.8871	0.0213	1.7097	0.0268	0.561	0.0132	2	043	0.0314
									22
							0.022	0.0	0.00
RTP2A	0.884	0.0213	1.6935	0.0266	0.5619	0.0132	6	042	0.0315
									21
							0.016	0.0	0.00
KÅP2A	0.981	0.0295	1.9819	0.0479	0.4764	0.0154	8	041	0.0279
									22
							0.023	0.0	0.00
KÅP2A	0.9986	0.0231	1.9337	0.0296	0.4588	0.0122	6	041	0.0277
									21
							0.0		0.00
KÅP2A	0.9577	0.0226	1.9394	0.0296	0.4895	0.0126	0.021	041	0.0296
									21
							0.020	0.0	0.00
KÅP2A	0.9791	0.0251	1.9517	0.0357	0.4749	0.0134	5	041	0.0284
									22
RTP1L									0.00
b	0.6312	0.0186	0.9624	0.0194	0.1867	0.0083	ND		0.0344
									21
RTP1L									0.00
b	0.6306	0.0211	0.9614	0.0247	0.1889	0.0088	ND		0.0331
									22
RTP1L									0.00
b	0.6373	0.0186	0.9787	0.0194	0.1777	0.0081	ND		0.0356
									22
RTP1L									0.00
b	0.633	0.0194	0.9675	0.0212	0.1844	0.0084	ND		0.0344
									21
KÅP1L									0.00
b	0.6487	0.0192	0.8603	0.0186	0.1451	0.0077	ND		0.0367
									22
KÅP1L									0.00
b	0.6288	0.0189	0.8528	0.0184	0.1479	0.0077	ND		0.0373
									22
KÅP1L									0.00
b	0.6572	0.0193	0.8552	0.0186	0.1517	0.0078	ND		0.0378
									22
KÅP1L									0.00
b	0.6449	0.0191	0.8561	0.0185	0.1482	0.0077	ND		0.0373
									22
							0.014	0.0	0.00
RTP1M	2.2708	0.034	1.5623	0.0244	0.2965	0.0094	8	034	0.0289
									19

RTP1M	2.2864	0.0342	1.5798	0.0246	0.3219	0.0097	0.015	0.0	0.00
							8 034	0.03	19
							0.011	0.0	0.00
RTP1M	2.34	0.06	1.6037	0.041	0.3176	0.0117	7 035	0.0303	21
							0.014	0.0	0.00
RTP1M	2.2999	0.0424	1.5819	0.03	0.312	0.0103	1 034	0.0298	2
KÅP1							0.017	0.0	0.00
M	1.9062	0.047	1.5815	0.0385	0.2929	0.011	6 035	0.0424	23
KÅP1							0.018	0.0	0.00
M	1.8631	0.0454	1.5436	0.0371	0.2798	0.0106	5 035	0.0396	22
KÅP1							0.017	0.0	0.00
M	1.8367	0.0297	1.5141	0.0238	0.2669	0.009	8 034	0.0331	2
KÅP1							0.017	0.0	0.00
M	1.8687	0.0407	1.5464	0.0331	0.2799	0.0102	9 035	0.0384	22
									0.00
RTP1N ND			0.1434	0.0061	ND	ND		0.2249	36
									0.00
RTP1N ND			0.1409	0.006	0.0186	0.0046	ND	0.225	36
									0.00
RTP1N ND			0.1462	0.0062	0.0189	0.0047	ND	0.2278	36
					0.0187				0.00
RTP1N ND			0.1435	0.0061	5	ND		0.2259	36
									0.00
KÅP1N ND			0.9729	0.0154	0.0322	0.005	ND	0.1573	3
									0.00
KÅP1N ND			0.9437	0.0152	0.0288	0.005	ND	0.1593	31
									0.00
KÅP1N ND			0.975	0.0155	0.0315	0.0051	ND	0.1615	31
									0.00
KÅP1N ND			0.9639	0.0153	0.0308	0.005	ND	0.1594	31
							0.014	0.0	0.00
RTP1O	1.1512	0.0224	1.35	0.0215	0.4181	0.0106	8 036	0.0257	19
							0.013	0.0	0.00
RTP1O	1.2041	0.031	1.4244	0.0331	0.4231	0.013	5 036	0.0224	19
									0.00
RTP1O	1.1997	0.0306	1.4005	0.0322	0.4182	0.0128	ND	0.0229	19
									0.00
RTP1O	1.185	0.028	1.3916	0.0289	0.4198	0.0122	ND	0.0236	19
							0.018	0.0	0.00
KÅP1O	1.6672	0.0428	1.583	0.0391	0.6385	0.0183	6 041	0.0343	22
							0.019	0.0	0.00
KÅP1O	1.6036	0.0278	1.4815	0.0236	0.607	0.013	1 039	0.0329	2
							0.012	0.0	0.00
KÅP1O	1.6104	0.0278	1.5233	0.024	0.6007	0.0129	9 039	0.0344	21
							0.016	0.0	0.00
KÅP1O	1.6271	0.0328	1.5293	0.0289	0.6154	0.0147	9 04	0.0339	21

Provko d	Mn	Mn +/-	Fe	Fe +/-	Co	Co +/-	Ni	Ni +/-	Cu	Cu +/-
KÅP1A	0.0126	0.0015	2.1388	0.0414	ND		ND		ND	
KÅP1A	0.01	0.0014	2.1513	0.0225	ND		ND		ND	
KÅP1A	0.0085	0.0014	2.1261	0.0222	ND		ND		ND	
										0.00
KÅP1A	0.0156	0.0015	2.1662	0.0227	ND		ND		0.0011	04
										0.00
KÅP1A	0.0093	0.0014	2.1483	0.0225	ND		ND		0.0012	04
KÅP1A	0.0108	0.0015	2.1633	0.0425	ND		ND		ND	
KÅP1A	0.0108	0.0014	2.1374	0.0223	ND		ND		ND	
KÅP1A	0.0098	0.0014	2.1274	0.0222	ND		ND		ND	
KÅP1A	0.0108	0.0014	2.1207	0.0221	ND		ND		ND	
KÅP1A	0.0135	0.0015	2.1458	0.0224	ND		ND		ND	
								0.0		
RTP1A	0.0104	0.0014	2.5643	0.0257	ND		0.002	006	ND	
RTP1A	0.0096	0.0014	2.5808	0.0259	ND		ND		ND	
RTP1A	0.01	0.0014	2.5812	0.0258	ND		ND		ND	
RTP1A	0.0103	0.0014	2.5656	0.0256	ND		ND		ND	
RTP1A	0.0104	0.0014	2.5777	0.0257	ND		ND		ND	
RTP1A	0.0123	0.0014	2.5728	0.0257	ND		ND		ND	
RTP1A	0.0122	0.0014	2.5774	0.0257	ND		ND		ND	
RTP1A	0.0123	0.0014	2.5737	0.0258	ND		ND		ND	
RTP1A	0.0109	0.0014	2.556	0.0254	ND		ND		ND	
RTP1A	0.0086	0.0013	2.5631	0.0255	ND		ND		ND	
KÅP1B	0.0047	0.0013	1.1697	0.0231	ND		ND		ND	
KÅP1B	0.004	0.0013	1.161	0.0225	ND		ND		ND	
KÅP1B	0.0042	0.0012	1.1323	0.0126	ND		ND		ND	
KÅP1B	0.0037	0.0012	1.1414	0.0218	ND		ND		ND	
KÅP1B ND			1.1669	0.0225	ND		ND		ND	
KÅP1B ND			1.1518	0.0223	ND		ND		ND	
KÅP1B	0.0052	0.0013	1.1589	0.0222	ND		ND		ND	
KÅP1B	0.0048	0.0013	1.1559	0.0224	ND		ND		ND	
KÅP1B	0.0053	0.0013	1.1466	0.0222	ND		ND		ND	
KÅP1B	0.004	0.0012	1.1305	0.0127	ND		ND		ND	
RTP1B	0.0108	0.0014	2.3167	0.0238	ND		ND		ND	
RTP1B	0.0103	0.0014	2.3451	0.0443	ND		ND		ND	
										0.00
RTP1B	0.0084	0.0013	2.2409	0.0229	ND		ND		0.0013	04
RTP1B	0.0103	0.0014	2.2879	0.0234	ND		ND		ND	
RTP1B	0.0103	0.0014	2.2385	0.0228	ND		ND		ND	
							0.001	0.0		
RTP1B	0.0074	0.0013	2.299	0.0424	ND		8	006	ND	
										0.00
RTP1B	0.0119	0.0014	2.2776	0.0234	ND		ND		0.0011	04
RTP1B	0.0108	0.0014	2.2709	0.0232	ND		ND		ND	
RTP1B	0.0079	0.0014	2.2859	0.0235	ND		0.002	0.0	ND	

						2 006		
						0.0		
RTP1B	0.0082	0.0014	2.349	0.0432	ND	0.002	006	ND
KÅP1C ND			1.5185	0.0166	ND	ND		ND
KÅP1C	0.0048	0.0013	1.5381	0.0166	ND	ND		ND
KÅP1C	0.0077	0.0014	1.5713	0.0172	ND	ND		ND
KÅP1C	0.0072	0.0013	1.5701	0.0171	ND	ND		ND
KÅP1C	0.0054	0.0013	1.576	0.0172	ND	ND		ND
KÅP1C	0.0061	0.0013	1.5777	0.0172	ND	ND		ND
KÅP1C ND			1.5372	0.0167	ND	ND		ND
						0.001	0.0	
KÅP1C ND			1.5761	0.0173	ND	8 006		ND
KÅP1C	0.0067	0.0013	1.5548	0.0169	ND	ND		ND
KÅP1C	0.0068	0.0013	1.5448	0.0302	ND	ND		ND
								0.00
RTP1C	0.0066	0.0013	1.9501	0.0355	ND	ND	0.0013	04
								0.00
RTP1C	0.0076	0.0013	1.9472	0.0352	ND	ND	0.0011	04
								0.00
RTP1C	0.0055	0.0013	1.8841	0.0193	ND	ND	0.0011	03
RTP1C	0.0067	0.0013	1.8751	0.0191	ND	ND		
RTP1C	0.008	0.0013	1.8766	0.0191	ND	ND		
						0.002	0.0	
RTP1C	0.005	0.0013	1.9243	0.0197	ND	4 006		ND
								0.00
RTP1C	0.0068	0.0013	1.9416	0.0199	ND	ND	0.0012	04
RTP1C	0.0075	0.0013	1.9434	0.0355	ND	ND		
RTP1C	0.0077	0.0013	1.8829	0.0193	ND	ND		
RTP1C	0.0079	0.0014	1.9438	0.02	ND	ND		
						0.002	0.0	
KÅP1D	0.0945	0.0032	5.73	0.12	ND	9 006		ND
						0.002	0.0	
KÅP1D	0.0953	0.0032	5.71	0.12	ND	5 006		ND
						0.002	0.0	
KÅP1D	0.0924	0.0026	5.56	0.05	ND	3 006		ND
						0.0		
KÅP1D	0.0886	0.0031	5.72	0.12	ND	0.003	006	ND
								0.00
KÅP1D	0.0969	0.0033	5.8	0.12	ND	ND	0.0018	04
						0.001	0.0	
KÅP1D	0.0941	0.0032	5.73	0.12	ND	9 006		ND
						0.002	0.0	
KÅP1D	0.0956	0.0032	5.74	0.12	ND	1 006		ND
						0.002	0.0	0.00
KÅP1D	0.0939	0.0032	5.78	0.12	ND	4 006	0.0016	04
						0.002	0.0	0.00
KÅP1D	0.0972	0.0032	5.69	0.11	ND	4 006	0.0014	04

KÅP1D	0.0906	0.0031	5.75	0.12 ND	ND	0.0017	04	0.00
					0.002	0.0		0.00
RTP1D	0.072	0.0026	4.7	0.09 ND	7 006	0.0016	04	
					0.003	0.0		0.00
RTP1D	0.0728	0.0027	4.74	0.09 ND	3 006	0.0014	04	
					0.003	0.0		0.00
RTP1D	0.074	0.0027	4.71	0.09 ND	3 006	0.0013	04	
								0.00
RTP1D	0.0757	0.0027	4.79	0.1 ND	ND	0.0013	04	
								0.00
RTP1D	0.0755	0.0027	4.76	0.09 ND	ND	0.0017	04	
					0.002	0.0		0.00
RTP1D	0.0743	0.0027	4.7	0.09 ND	8 006	0.002	04	
					0.002	0.0		0.00
RTP1D	0.0727	0.0027	4.71	0.09 ND	1 006	0.0013	04	
					0.003	0.0		0.00
RTP1D	0.071	0.0026	4.7	0.09 ND	3 006	0.0016	04	
					0.002	0.0		0.00
RTP1D	0.0736	0.0027	4.78	0.1 ND	4 006	0.0017	04	
					0.002	0.0		0.00
RTP1D	0.0768	0.0027	4.74	0.09 ND	1 006	0.0021	04	
					0.013	0.0		0.00
KÅP1E	0.1378	0.0041	10.46	0.21 ND	3 009	0.0017	05	
					0.013	0.0		
KÅP1E	0.1348	0.0032	10.21	0.08 ND	5 009	ND		
					0.013	0.0		
KÅP1E	0.1397	0.0041	10.2	0.2 ND	2 009	ND		
					0.014	0.0		
KÅP1E	0.1349	0.0031	10.26	0.08 ND	2 009	ND		
					0.014	0.0		0.00
KÅP1E	0.1301	0.004	10.19	0.2 ND	5 009	0.0014	05	
					0.013	0.0		0.00
KÅP1E	0.1372	0.0041	10.26	0.2 ND	5 009	0.002	05	
					0.014	0.0		
KÅP1E	0.1394	0.0042	10.44	0.21 ND	3 009	ND		
					0.014	0.0		0.00
KÅP1E	0.1362	0.0041	10.31	0.2 ND	8 009	0.0015	05	
					0.012	0.0		
KÅP1E	0.1386	0.0041	10.36	0.2 ND	9 009	ND		
					0.015	0.0		
KÅP1E	0.141	0.0042	10.34	0.2 ND	3 009	ND		
					0.012	0.0		0.00
RTP1E	0.1373	0.004	9.9	0.19 ND	7 009	0.0021	05	
					0.0			0.00
RTP1E	0.1386	0.0041	10.01	0.2 ND	0.014	009	0.0031	05
RTP1E	0.1312	0.0039	10	0.2 ND	0.014	0.0	0.0023	0.00

						009	05
					0.014	0.0	0.00
RTP1E	0.1365	0.0032	10.03	0.08 ND	5 009	0.0041	05
					0.014	0.0	0.00
RTP1E	0.1348	0.004	10	0.2 ND	3 009	0.0029	05
					0.014	0.0	0.00
RTP1E	0.1376	0.0041	10.04	0.2 ND	2 009	0.002	05
					0.012	0.0	0.00
RTP1E	0.139	0.0041	9.86	0.2 ND	4 009	0.0032	05
					0.012	0.0	0.00
RTP1E	0.1433	0.0042	10.27	0.2 ND	9 009	0.0028	05
					0.014	0.0	0.00
RTP1E	0.1417	0.0042	10.19	0.2 ND	5 009	0.0029	05
					0.013	0.0	0.00
RTP1E	0.1368	0.0041	10.03	0.2 ND	9 009	0.003	05
					0.001	0.0	0.00
KÅP1F	0.0241	0.0017	5.58	0.12 ND	9 006	0.0013	04
					0.001	0.0	
KÅP1F	0.0213	0.0016	5.5	0.12 ND	8 006	ND	
KÅP1F	0.0267	0.0018	5.72	0.12 ND	ND	ND	
KÅP1F	0.0231	0.0017	5.58	0.12 ND	ND	ND	
					0.002	0.0	0.00
KÅP1F	0.0245	0.0017	5.55	0.12 ND	1 006	0.0015	04
							0.00
KÅP1F	0.0227	0.0017	5.55	0.12 ND	ND	0.0014	04
					0.002	0.0	0.00
KÅP1F	0.0255	0.0018	5.68	0.12 ND	4 006	0.0018	04
							0.00
KÅP1F	0.0241	0.0017	5.61	0.12 ND	ND	0.0013	04
KÅP1F	0.0228	0.0016	5.53	0.12 ND	ND	ND	
							0.00
KÅP1F	0.0257	0.0018	5.72	0.13 ND	ND	0.0013	04
					0.001	0.0	
RTP1F	0.0236	0.0017	5.05	0.11 ND	8 006	ND	
RTP1F	0.023	0.0017	5.12	0.11 ND	ND	ND	
					0.001	0.0	
RTP1F	0.0258	0.0017	5.04	0.11 ND	7 006	ND	
RTP1F	0.0217	0.0017	5.13	0.11 ND	ND	ND	
RTP1F	0.023	0.0017	5.05	0.11 ND	ND	ND	
RTP1F	0.0214	0.0016	5	0.11 ND	ND	ND	
RTP1F	0.0224	0.0017	5.09	0.11 ND	ND	ND	
RTP1F	0.0231	0.0017	5.09	0.11 ND	ND	ND	
RTP1F	0.0252	0.0017	5.06	0.11 ND	ND	ND	
RTP1F	0.0237	0.0017	5.09	0.11 ND	ND	ND	
KÅP1G					0.002	0.0	0.00
RTP1G	0.0454	0.002	3.6722	0.0312 ND	5 006	0.0028	04
KÅP1G	0.0441	0.002	3.6992	0.0316 ND	0.002	0.0	0.0026 0.00

RTP1G						7 006	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.0445	0.0019	3.6138	0.0305 ND		6 006 0.0026	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.045	0.002	3.6961	0.0314 ND		6 006 0.0021	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.044	0.0019	3.6335	0.0309 ND		7 006 0.0025	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.0412	0.0019	3.7082	0.0315 ND		2 006 0.0033	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.0441	0.002	3.7412	0.0316 ND		6 006 0.0026	04
KÅP1G					0.003	0.0	0.00
RTP1G	0.0464	0.002	3.7067	0.0315 ND		4 006 0.0021	04
KÅP1G					0.003	0.0	0.00
RTP1G	0.0447	0.0019	3.6337	0.0308 ND		4 006 0.0027	04
KÅP1G					0.002	0.0	0.00
RTP1G	0.0426	0.0019	3.7015	0.032 ND		6 006 0.0035	04
KÅP1H					0.002	0.0	
RTP1H	0.0467	0.002	2.8614	0.0248 ND		6 006 ND	
KÅP1H					0.002	0.0	
RTP1H	0.0439	0.0019	2.8416	0.0247 ND		4 006 ND	
KÅP1H					0.002	0.0	
RTP1H	0.0473	0.002	2.8616	0.0248 ND		2 006 ND	
KÅP1H					0.003	0.0	
RTP1H	0.0484	0.002	2.8699	0.0247 ND		3 006 ND	
KÅP1H							
RTP1H	0.0462	0.002	2.8548	0.0244 ND	ND	ND	
KÅP1H					0.002	0.0	
RTP1H	0.0481	0.002	2.8558	0.0247 ND		7 006 ND	
KÅP1H						0.0	
RTP1H	0.0447	0.002	2.874	0.0249 ND		0.002 006 ND	
KÅP1H					0.003	0.0	
RTP1H	0.0476	0.002	2.8988	0.0251 ND		6 006 ND	
KÅP1H					0.003	0.0	
RTP1H	0.0429	0.0019	2.8225	0.0245 ND		7 006 ND	
KÅP1H						0.0	
RTP1H	0.0505	0.0022	2.9	0.05 ND		0.004 006 ND	
KÅP1I	0.0153	0.0017	1.0363	0.0098 ND	ND	ND	
KÅP1I	0.0197	0.0018	1.0532	0.01 ND	ND	ND	
							0.00
KÅP1I	0.0167	0.0017	1.0481	0.0099 ND	ND	0.0016	04
KÅP1I	0.0178	0.0017	1.0508	0.01 ND	ND	ND	
KÅP1I	0.0188	0.0018	1.0535	0.01 ND	ND	ND	
KÅP1I	0.0209	0.0018	1.0519	0.01 ND	ND	ND	
KÅP1I	0.0189	0.0018	1.0293	0.0098 ND	ND	ND	
KÅP1I	0.0177	0.0017	1.0335	0.0098 ND	ND	ND	
KÅP1I	0.0179	0.0017	1.0394	0.0099 ND	ND	ND	

KÅP1I	0.0196	0.0018	1.0394	0.0099	ND	ND	ND
RTP1I	0.0283	0.002	1.0783	0.0102	ND	ND	ND
RTP1I	0.0227	0.0018	1.0632	0.0101	ND	ND	ND
RTP1I	0.0261	0.0019	1.0894	0.0103	ND	ND	ND
RTP1I	0.0248	0.0019	1.0849	0.0102	ND	ND	ND
RTP1I	0.0215	0.0018	1.0596	0.0103	ND	ND	ND
RTP1I	0.0252	0.0019	1.08	0.0102	ND	ND	ND
						0.002 0.0	0.00
RTP1I	0.0267	0.0019	1.0608	0.0101	ND	5 007	0.0014 04
RTP1I	0.0251	0.0019	1.0825	0.0102	ND	ND	ND
RTP1I	0.0247	0.0019	1.0813	0.0101	ND	ND	ND
						0.002 0.0	
RTP1I	0.0204	0.0029	1.09	0.12	ND	6 007	ND
KÅP1J							0.00
RTP1J	0.0445	0.0021	1.8229	0.018	ND	0.0037	04
KÅP1J							0.00
RTP1J	0.0404	0.002	1.812	0.018	ND	0.0034	04
KÅP1J							0.00
RTP1J	0.0466	0.0021	1.7945	0.0177	ND	0.0019	04
KÅP1J							0.00
RTP1J	0.0462	0.0021	1.7838	0.0176	ND	0.0026	04
KÅP1J							0.00
RTP1J	0.0445	0.0021	1.7881	0.0175	ND	0.0026	04
KÅP1J							0.00
RTP1J	0.0464	0.002	1.75	0.0171	ND	0.0031	04
KÅP1J							0.00
RTP1J	0.0437	0.002	1.7793	0.0175	ND	0.003	04
KÅP1J							0.00
RTP1J	0.0437	0.002	1.8069	0.0178	ND	0.0029	04
KÅP1J							0.00
RTP1J	0.0429	0.002	1.7992	0.0177	ND	0.0029	04
KÅP1J						0.002 0.0	0.00
RTP1J	0.0414	0.002	1.8098	0.0178	ND	3 006	0.0028 04
						0.001 0.0	
KÅP1K	0.0066	0.0013	1.7799	0.0179	ND	6 005	ND
						0.002 0.0	
KÅP1K	0.0065	0.0013	1.7697	0.0179	ND	2 006	ND
						0.001 0.0	
KÅP1K	0.006	0.0013	1.7878	0.0179	ND	9 005	ND
						0.001 0.0	
KÅP1K	0.005	0.0013	1.7866	0.0318	ND	7 005	ND
KÅP1K	0.0057	0.0013	1.7612	0.0318	ND	ND	ND
KÅP1K	0.0082	0.0013	1.7494	0.0307	ND	ND	ND
						0.0	
KÅP1K	0.0101	0.0014	1.7866	0.018	ND	0.002 005	ND
							0.00
KÅP1K	0.0073	0.0013	1.7394	0.0175	ND	ND	0.0018 03

KÅP1K	0.0077	0.0013	1.7453	0.0175	ND	ND	ND			
KÅP1K	0.0089	0.0014	1.7874	0.0318	ND	ND	0.0012	0.00	03	
Sample	Mn	Mn +/-	Fe	Fe +/-	Co	Co +/-	Ni	Ni +/-	Cu	Cu +/-
RTP2A	0.0314	0.0018	3.2791	0.0332	ND	ND	ND	ND	ND	
RTP2A	0.0283	0.0018	3.2737	0.0331	ND	ND	0.002	0.0	ND	
RTP2A	0.0323	0.0018	3.2891	0.0333	ND	ND	4	0.006	ND	
RTP2A	0.0307	0.0018	3.2806	0.0332	ND	ND	ND	ND	ND	
KÅP2A	0.0589	0.0026	3.69	0.08	ND	ND	ND	ND	ND	
KÅP2A	0.0561	0.0022	3.6313	0.037	ND	ND	0.002	0.0	ND	
KÅP2A	0.0587	0.0023	3.6415	0.0371	ND	ND	8	0.006	ND	
KÅP2A	0.0579	0.0024	3.65	0.05	ND	ND	ND	ND	ND	
RTP1L										
b	0.0069	0.0013	1.6493	0.018	ND	ND	ND	ND	ND	
RTP1L										
b	0.0052	0.0013	1.6258	0.0315	ND	ND	ND	ND	ND	
RTP1L										
b	0.0072	0.0013	1.6414	0.0178	ND	ND	ND	ND	ND	
RTP1L										
b	0.0064	0.0013	1.6388	0.0224	ND	ND	ND	ND	ND	
KÅP1L										
b	0.0058	0.0013	1.4331	0.0161	ND	ND	ND	ND	ND	
KÅP1L										
b	0.0067	0.0013	1.4437	0.0162	ND	ND	ND	ND	ND	
KÅP1L										
b	0.0064	0.0013	1.4391	0.0162	ND	ND	ND	ND	ND	
KÅP1L										
b	0.0063	0.0013	1.4386	0.0162	ND	ND	0.002	0.0	ND	
RTP1M	0.0176	0.0015	4.523	0.0416	ND	ND	7	0.006	ND	
RTP1M	0.0163	0.0015	4.5707	0.0419	ND	ND	ND	ND	ND	
RTP1M	0.0196	0.0016	4.69	0.1	ND	ND	0.002	0.0	ND	
RTP1M	0.0178	0.0016	4.59	0.06	ND	ND	2	0.006	ND	
KÅP1							0.002	0.0	ND	
M	0.0567	0.0024	5.14	0.11	ND	ND	2	0.006	ND	
KÅP1							0.002	0.0	ND	
M	0.0588	0.0024	5	0.1	ND	ND	9	0.006	ND	
KÅP1										
M	0.0545	0.0021	4.9278	0.0451	ND	ND	ND	ND	ND	
KÅP1										
M	0.0567	0.0023	5.02	0.08	ND	ND	ND	ND	ND	
RTP1N	0.0762	0.0023	6.53	0.05	ND	ND	0.215	0.0	0.0033	0.00

								9 026	07
								0.0	0.00
RTP1N	0.0721	0.0023	6.53	0.05	ND			0.219 026 0.0037	07
								0.220 0.0	0.00
RTP1N	0.0755	0.0023	6.58	0.05	ND			7 026 0.0029	06
								0.218 0.0	0.00
RTP1N	0.0746	0.0023	6.55	0.05	ND			5 026 0.0033	07
								0.196 0.0	
KÅP1N	0.0895	0.0024	6.52	0.05	ND			9 024 ND	
								0.199 0.0	
KÅP1N	0.0913	0.0025	6.62	0.05	ND			2 025 ND	
								0.0	
KÅP1N	0.0911	0.0025	6.72	0.05	ND			0.198 025 ND	
								0.0	
KÅP1N	0.0906	0.0025	6.62	0.05	ND			0.198 024 ND	
								0.0	0.00
RTP1O	0.0376	0.0018	3.4809	0.0319	ND			0.002 006 0.0011	04
								0.002 0.0	0.00
RTP1O	0.0387	0.0019	3.54	0.07	ND			1 006 0.0013	04
								0.002 0.0	0.00
RTP1O	0.0352	0.0019	3.58	0.07	ND			8 006 0.0012	04
								0.002 0.0	0.00
RTP1O	0.0372	0.0019	3.53	0.06	ND			3 006 0.0012	04
								0.003 0.0	0.00
KÅP1O	0.0819	0.003	5.98	0.13	ND			6 007 0.002	04
								0.0	0.00
KÅP1O	0.079	0.0025	5.79	0.05	ND			0.004 007 0.0019	04
								0.003 0.0	0.00
KÅP1O	0.0806	0.0025	5.8	0.05	ND			6 007 0.0016	04
								0.003 0.0	0.00
KÅP1O	0.0805	0.0026	5.86	0.08	ND			7 007 0.0018	04
Provko								Rb	Sr
d	Zn	Zn +/-	As	As +/-	Se	Se +/-	Rb	+/-	Sr
								+/-	+/-
							0.003	0.0	0.00
KÅP1A	0.0011	0.0002	ND		ND		1 001	0.0288	06
							0.0		0.00
KÅP1A	0.0008	0.0002	ND		ND		0.003	001 0.0294	04
							0.002	0.0	0.00
KÅP1A	0.0007	0.0002	ND		ND		9 001	0.0291	03
							0.0		0.00
KÅP1A	0.0006	0.0002	ND		ND		0.003	001 0.0297	04
							0.003	0.0	0.00
KÅP1A	0.0009	0.0002	ND		ND		1 001	0.0295	04
							0.003	0.0	0.00
KÅP1A	0.0007	0.0002	0.0005	0.0001	ND		1 001	0.0295	06
KÅP1A	0.0008	0.0002	ND		ND		0.003	0.0 0.0294	0.00

						001	04
					0.002	0.0	0.00
KÅP1A	0.0007	0.0002	0.0005	0.0001	ND	9 001	0.0294 04
					0.002	0.0	0.00
KÅP1A	0.0008	0.0002	0.0004	0.0001	ND	9 001	0.0289 03
						0.0	0.00
KÅP1A	0.0007	0.0002	0.0005	0.0001	ND	0.003 001	0.0297 04
						0.0	0.00
RTP1A	0.0011	0.0002	ND		ND	0.004 001	0.026 03
						0.0	0.00
RTP1A	0.0011	0.0002	ND		ND	0.004 001	0.0261 03
						0.003 0.0	0.00
RTP1A	0.0011	0.0002	ND		ND	8 001	0.0258 03
						0.0	0.00
RTP1A	0.001	0.0002	ND		ND	0.004 001	0.026 03
						0.0	0.00
RTP1A	0.0011	0.0002	ND		ND	0.004 001	0.0263 03
						0.0	0.00
RTP1A	0.0011	0.0002	ND		ND	0.004 001	0.0263 03
						0.0	0.00
RTP1A	0.0009	0.0002	ND		ND	0.004 001	0.0258 03
						0.004 0.0	0.00
RTP1A	0.001	0.0002	0.0004	0.0001	ND	1 001	0.0262 03
						0.003 0.0	0.00
RTP1A	0.001	0.0002	ND		ND	8 001	0.026 03
						0.003 0.0	0.00
RTP1A	0.0012	0.0002	ND		ND	9 001	0.0261 03
						0.000 0.0	0.00
KÅP1B ND		0.0006	0.0001	ND		6 001	0.0346 07
						0.000 0.0	0.00
KÅP1B	0.0005	0.0002	0.0006	0.0001	ND	6 001	0.0342 07
						0.000 0.0	0.00
KÅP1B ND		0.0006	0.0001	ND		7 001	0.0338 04
						0.000 0.0	0.00
KÅP1B ND		ND	ND			6 001	0.0344 07
						0.000 0.0	0.00
KÅP1B ND		0.0004	0.0001	ND		5 001	0.034 07
						0.000 0.0	0.00
KÅP1B ND		0.0005	0.0001	ND		7 001	0.0341 07
						0.000 0.0	0.00
KÅP1B ND		ND	ND			7 001	0.034 07
						0.000 0.0	0.00
KÅP1B ND		ND	ND			8 001	0.0342 07
						0.000 0.0	0.00
KÅP1B ND		ND	ND			8 001	0.034 07
						0.000 0.0	0.00
KÅP1B ND		0.0005	0.0001	ND		9 001	0.0336 04

RTP1B	0.0005	0.0002	0.0006	0.0001	ND	0.000	0.0	0.00
						9	001	0.0258 03
RTP1B	0.0006	0.0002	0.0004	0.0001	ND	0.000	0.0	0.00
						9	001	0.0256 05
RTP1B	0.0007	0.0002	ND		ND	0.001	0.0	0.00
						1	001	0.0256 03
RTP1B ND			0.0006	0.0001	ND	0.001	0.0	0.00
						1	001	0.0256 03
RTP1B	0.0006	0.0002	ND		ND	0.001	0.0	0.00
						1	001	0.0256 03
RTP1B ND			ND		ND	0.001	0.0	0.00
						1	001	0.0252 05
RTP1B	0.0005	0.0002	ND		ND	0.000	0.0	0.00
						9	001	0.0254 03
RTP1B ND			ND		ND	0.000	0.0	0.00
						8	001	0.0251 03
RTP1B ND			ND		ND		0.0	0.00
						0.001	001	0.0259 03
RTP1B	0.0006	0.0002	0.0006	0.0001	ND		0.0	0.00
						0.001	001	0.0255 05
KÅP1C	0.0006	0.0002	ND		ND	0.001	0.0	0.00
						2	001	0.0213 03
KÅP1C	0.0005	0.0002	ND		ND	0.001	0.0	0.00
						3	001	0.0213 03
KÅP1C	0.0007	0.0002	0.0004	0.0001	ND	0.001	0.0	0.00
						2	001	0.0215 03
KÅP1C ND			0.0005	0.0001	ND	0.001	0.0	0.00
						2	001	0.0213 03
KÅP1C	0.0006	0.0002	0.0004	0.0001	ND	0.001	0.0	0.00
						4	001	0.0219 03
KÅP1C ND			ND		ND	0.001	0.0	0.00
						3	001	0.0216 03
KÅP1C ND			ND		ND	0.001	0.0	0.00
						3	001	0.0216 03
KÅP1C ND			0.0005	0.0001	ND	0.001	0.0	0.00
						4	001	0.0213 03
KÅP1C	0.0008	0.0002	0.0005	0.0001	ND	0.001	0.0	0.00
						2	001	0.0212 03
KÅP1C ND			ND		ND	0.001	0.0	0.00
						1	001	0.0213 04
RTP1C	0.0005	0.0002	0.0005	0.0001	ND		0.0	0.00
						0.001	001	0.0217 04
RTP1C ND			0.0005	0.0001	ND	0.001	0.0	0.00
						1	001	0.0217 04
RTP1C ND			ND		ND	0.001	0.0	0.00
						1	001	0.0215 03
RTP1C ND			ND		ND	0.001	0.0	0.0215 0.00

						1 001	03
					0.001	0.0	0.00
RTP1C	0.0005	0.0002	ND	ND	1 001	0.0217	03
					0.000	0.0	0.00
RTP1C	0.0005	0.0002	0.0004	0.0001	9 001	0.0217	03
					0.001	0.0	0.00
RTP1C	0.0006	0.0002	0.0005	0.0001	1 001	0.0215	03
					0.001	0.0	0.00
RTP1C	0.0006	0.0002	0.0007	0.0001	1 001	0.0214	04
					0.001	0.0	0.00
RTP1C	0.0006	0.0002	ND	ND	1 001	0.0217	03
					0.001	0.0	0.00
RTP1C	ND		0.0007	0.0001	1 001	0.0218	03
					0.004	0.0	0.00
KÅP1D	0.0027	0.0002	ND	ND	3 002	0.0321	07
					0.0	0.0	0.00
KÅP1D	0.0032	0.0002	0.0006	0.0002	0.004	001 0.0315	07
					0.004	0.0	0.00
KÅP1D	0.0033	0.0002	ND	ND	2 001	0.0318	04
					0.004	0.0	0.00
KÅP1D	0.0023	0.0002	ND	ND	2 001	0.0319	07
					0.003	0.0	0.00
KÅP1D	0.0024	0.0002	ND	ND	9 001	0.0317	07
					0.0	0.0	0.00
KÅP1D	0.0025	0.0002	ND	ND	0.004	001 0.0322	07
					0.004	0.0	0.00
KÅP1D	0.0028	0.0002	ND	ND	5 002	0.0321	07
					0.004	0.0	0.00
KÅP1D	0.0029	0.0002	ND	ND	4 002	0.0323	07
					0.004	0.0	0.00
KÅP1D	0.0026	0.0002	ND	ND	2 001	0.032	07
					0.004	0.0	0.00
KÅP1D	0.0022	0.0002	ND	ND	2 002	0.0313	07
					0.0	0.0	0.00
RTP1D	0.0025	0.0002	ND	ND	0.005	002 0.03	06
					0.0	0.0	0.00
RTP1D	0.0027	0.0002	ND	ND	0.005	002 0.0299	06
					0.005	0.0	0.00
RTP1D	0.0027	0.0002	ND	ND	3 002	0.0302	06
					0.0	0.0	0.00
RTP1D	0.003	0.0002	ND	ND	0.005	002 0.0302	06
					0.005	0.0	0.00
RTP1D	0.0027	0.0002	ND	ND	1 002	0.0298	06
					0.005	0.0	0.00
RTP1D	0.003	0.0002	ND	ND	1 002	0.0302	06
					0.005	0.0	0.00
RTP1D	0.0029	0.0002	0.0006	0.0002	2 002	0.0292	06

RTP1D	0.0032	0.0002	ND	ND	0.005	0.0	0.00
					1	002	0.0297 06
RTP1D	0.0026	0.0002	0.0006	0.0002	ND	0.005	0.0 0.00
					3	002	0.0299 06
						0.0	0.00
RTP1D	0.0028	0.0002	ND	ND	0.005	002	0.0298 06
					0.000	0.0	0.00
KÅP1E	0.0094	0.0004	ND	ND	3	001	0.0114 03
					0.000	0.0	0.00
KÅP1E	0.0105	0.0004	ND	ND	5	001	0.0116 02
					0.000	0.0	0.00
KÅP1E	0.0101	0.0004	ND	ND	6	001	0.0112 03
					0.000	0.0	0.00
KÅP1E	0.0094	0.0004	ND	ND	5	001	0.0117 02
					0.000	0.0	0.00
KÅP1E	0.01	0.0004	ND	ND	6	001	0.0116 03
					0.000	0.0	0.00
KÅP1E	0.0101	0.0004	ND	ND	5	001	0.0112 03
					0.000	0.0	0.00
KÅP1E	0.0098	0.0004	ND	ND	5	001	0.0114 03
					0.000	0.0	0.00
KÅP1E	0.0096	0.0004	ND	ND	5	001	0.0114 03
					0.000	0.0	0.00
KÅP1E	0.0107	0.0005	0.0005	0.0002	ND	5	001 0.0113 03
					0.000	0.0	0.00
KÅP1E	0.0101	0.0004	ND	ND	3	001	0.0114 03
					0.000	0.0	0.00
RTP1E	0.0094	0.0004	ND	ND	5	001	0.0141 03
					0.000	0.0	0.00
RTP1E	0.0096	0.0004	ND	ND	5	001	0.0145 03
					0.000	0.0	0.00
RTP1E	0.0091	0.0004	ND	ND	4	001	0.0141 03
					0.000	0.0	0.00
RTP1E	0.0099	0.0004	0.0005	0.0002	ND	6	001 0.0144 02
					0.000	0.0	0.00
RTP1E	0.0091	0.0004	ND	ND	5	001	0.0145 03
					0.000	0.0	0.00
RTP1E	0.0096	0.0004	ND	ND	4	001	0.0143 03
					0.000	0.0	0.00
RTP1E	0.009	0.0004	ND	ND	5	001	0.014 03
					0.000	0.0	0.00
RTP1E	0.0094	0.0004	ND	ND	5	001	0.0144 03
					0.000	0.0	0.00
RTP1E	0.0095	0.0004	0.0006	0.0002	ND	5	001 0.0144 03
					0.000	0.0	0.00
RTP1E	0.0093	0.0004	ND	ND	6	001	0.0145 03
KÅP1F	0.0029	0.0002	ND	ND	0.009	0.0	0.0072 0.00

						6 003	02
					0.009	0.0	0.00
KÅP1F	0.0035	0.0002	ND	ND	7 003	0.0071	02
					0.009	0.0	0.00
KÅP1F	0.0026	0.0002	ND	ND	9 003	0.0075	02
					0.0		0.00
KÅP1F	0.0033	0.0002	ND	ND	0.01 003	0.0074	02
					0.009	0.0	0.00
KÅP1F	0.0031	0.0002	ND	ND	7 003	0.0073	02
					0.009	0.0	0.00
KÅP1F	0.0033	0.0002	ND	ND	8 003	0.0076	02
					0.009	0.0	0.00
KÅP1F	0.0032	0.0002	0.0005	0.0001	9 003	0.0074	02
					0.009	0.0	0.00
KÅP1F	0.0032	0.0002	0.0005	0.0001	7 003	0.0074	02
					0.0		0.00
KÅP1F	0.003	0.0002	ND	ND	0.01 003	0.0074	02
					0.010	0.0	0.00
KÅP1F	0.0032	0.0002	ND	ND	1 003	0.0073	02
					0.009	0.0	0.00
RTP1F	0.0055	0.0003	ND	ND	4 003	0.0051	02
					0.009	0.0	0.00
RTP1F	0.0052	0.0003	ND	ND	6 003	0.0049	02
					0.009	0.0	0.00
RTP1F	0.0051	0.0003	ND	ND	7 003	0.0048	02
					0.009	0.0	0.00
RTP1F	0.0049	0.0003	ND	ND	8 003	0.0048	02
					0.009	0.0	0.00
RTP1F	0.0056	0.0003	ND	ND	4 003	0.005	02
					0.009	0.0	0.00
RTP1F	0.0051	0.0003	ND	ND	8 003	0.0048	02
					0.009	0.0	0.00
RTP1F	0.0053	0.0003	0.0004	0.0001	5 003	0.0049	02
					0.009	0.0	0.00
RTP1F	0.0053	0.0003	ND	ND	7 003	0.005	02
					0.009	0.0	0.00
RTP1F	0.0045	0.0003	ND	ND	6 003	0.0051	02
					0.009	0.0	0.00
RTP1F	0.006	0.0003	ND	ND	6 003	0.005	02
KÅP1G					0.009	0.0	0.00
RTP1G	0.0073	0.0003	ND	ND	4 002	0.0089	02
KÅP1G					0.009	0.0	0.00
RTP1G	0.0067	0.0003	ND	ND	5 002	0.0089	02
KÅP1G					0.009	0.0	0.00
RTP1G	0.0067	0.0003	ND	ND	5 002	0.0092	02
KÅP1G					0.009	0.0	0.00
RTP1G	0.0069	0.0003	ND	ND	8 002	0.0088	02

KÅP1G						0.009	0.0	0.00
RTP1G	0.0064	0.0003	ND	ND		4 002	0.0086	02
KÅP1G						0.009	0.0	0.00
RTP1G	0.0071	0.0003	ND	ND		5 002	0.0087	02
KÅP1G						0.009	0.0	0.00
RTP1G	0.0068	0.0003	0.0004	0.0001	ND	5 002	0.0091	02
KÅP1G						0.009	0.0	0.00
RTP1G	0.0067	0.0003	ND	ND		6 002	0.0088	02
KÅP1G						0.009	0.0	0.00
RTP1G	0.0068	0.0003	ND	ND		3 002	0.0087	02
KÅP1G						0.009	0.0	0.00
RTP1G	0.0069	0.0003	ND	ND		7 002	0.0087	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0054	0.0003	ND	ND		3 001	0.017	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0051	0.0003	ND	ND		5 001	0.0169	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0054	0.0003	ND	ND		5 001	0.017	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0057	0.0003	ND	ND		4 001	0.0167	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0051	0.0003	ND	ND		4 001	0.0169	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0055	0.0003	ND	ND		5 001	0.0171	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0057	0.0003	ND	ND		4 001	0.017	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0048	0.0003	ND	ND		5 001	0.0169	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0052	0.0003	ND	ND		4 001	0.0168	02
KÅP1H						0.000	0.0	0.00
RTP1H	0.0059	0.0003	ND	ND		4 001	0.0172	04
						0.000	0.0	0.00
KÅP1I	0.0013	0.0002	0.0005	0.0002	ND	5 001	0.1663	11
						0.000	0.0	0.00
KÅP1I	0.0012	0.0002	0.0007	0.0002	ND	5 001	0.1668	11
						0.000	0.0	0.00
KÅP1I	0.0013	0.0002	0.0006	0.0002	ND	6 001	0.1679	11
						0.000	0.0	0.00
KÅP1I	0.0017	0.0002	0.0006	0.0002	ND	6 001	0.1682	11
						0.000	0.0	0.00
KÅP1I	0.0014	0.0002	0.0009	0.0002	ND	7 001	0.1676	11
						0.000	0.0	0.00
KÅP1I	0.0013	0.0002	0.001	0.0002	ND	6 001	0.1674	11
						0.000	0.0	0.00
KÅP1I	0.0015	0.0002	ND	ND		7 001	0.1666	11
KÅP1I	0.0018	0.0002	0.0006	0.0002	ND	0.000	0.0	0.1662
						0.00		0.00

						5 001	11
					0.000	0.0	0.00
KÅP1I	0.0017	0.0002	0.0008	0.0002 ND	5 001	0.1662	11
					0.000	0.0	0.00
KÅP1I	0.0014	0.0002	0.0009	0.0002 ND	5 001	0.1668	11
					0.0		0.00
RTP1I	0.0016	0.0002 ND		ND	0.001 001	0.1552	1
					0.001	0.0	0.00
RTP1I	0.0013	0.0002 ND		ND	2 001	0.154	1
					0.001	0.0	0.00
RTP1I	0.0014	0.0002	0.0006	0.0002 ND	3 001	0.1539	1
					0.001	0.0	0.00
RTP1I	0.0018	0.0002	0.0007	0.0002 ND	2 001	0.155	1
					0.0		0.00
RTP1I	0.0016	0.0002	0.0007	0.0002 ND	0.001 001	0.151	11
					0.001	0.0	0.00
RTP1I	0.0013	0.0002	0.0008	0.0002 ND	2 001	0.1559	11
					0.001	0.0	0.00
RTP1I	0.0014	0.0002 ND		ND	2 001	0.1545	1
					0.0		0.00
RTP1I	0.0014	0.0002	0.0007	0.0002 ND	0.001 001	0.1537	1
					0.001	0.0	0.00
RTP1I	0.0018	0.0002	0.0007	0.0002 ND	1 001	0.1537	1
					0.0		0.01
RTP1I	0.0016	0.0003	0.0006	0.0002 ND	0.001 002	0.1533	68
KÅP1J					0.002	0.0	0.00
RTP1J	0.0025	0.0002 ND		ND	5 001	0.0083	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0025	0.0002 ND		ND	5 001	0.0083	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0024	0.0002 ND		ND	5 001	0.0081	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0022	0.0002 ND		ND	4 001	0.0082	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0024	0.0002 ND		ND	5 001	0.0084	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0025	0.0002 ND		ND	2 001	0.0081	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0022	0.0002 ND		ND	4 001	0.0082	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0026	0.0002 ND		ND	6 001	0.0082	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0025	0.0002 ND		ND	5 001	0.0081	01
KÅP1J					0.002	0.0	0.00
RTP1J	0.0023	0.0002 ND		ND	4 001	0.0082	01
					0.001	0.0	0.00
KÅP1K ND		ND		ND	1 001	0.0204	03

KÅP1K	0.0005	0.0002	0.0005	0.0001	ND	0.000	0.0	0.00
						9	001	0.0207 03
						0.0		0.00
KÅP1K	0.0007	0.0002	ND		ND	0.001	001	0.0209 03
						0.0		0.00
KÅP1K	0.0007	0.0002	ND		ND	0.001	001	0.0205 04
						0.0		0.00
KÅP1K	0.0006	0.0002	ND		ND	0.001	001	0.0208 04
						0.0		0.00
KÅP1K ND			ND		ND	0.001	001	0.0206 04
						0.001	0.0	0.00
KÅP1K	0.0008	0.0002	0.0005	0.0001	ND	1	001	0.0205 03
						0.000	0.0	0.00
KÅP1K	0.0005	0.0002	ND		ND	9	001	0.0205 03
						0.000	0.0	0.00
KÅP1K	0.0005	0.0002	ND		ND	9	001	0.0206 03
						0.000	0.0	0.00
KÅP1K	0.0005	0.0002	0.0005	0.0001	ND	9	001	0.0207 04

Sample	Zn	Zn +/-	As	As +/-	Se	Se +/-	Rb	Sr
							+/-	+/-
							0.004	0.00
RTP2A	0.0036	0.0002	0.0005	0.0002	ND	8	001	0.0302 04
						0.004	0.0	0.00
RTP2A	0.0034	0.0002	ND		ND	7	001	0.03 04
						0.004	0.0	0.00
RTP2A	0.0028	0.0002	ND		ND	8	001	0.0303 04
						0.004	0.0	0.00
RTP2A	0.0033	0.0002	ND		ND	7	001	0.0302 04
						0.005	0.0	0.00
KÅP2A	0.0036	0.0003	0.0006	0.0002	ND	2	002	0.0342 08
						0.005	0.0	0.00
KÅP2A	0.0033	0.0002	ND		ND	3	001	0.0341 04
						0.005	0.0	0.00
KÅP2A	0.003	0.0002	ND		ND	1	001	0.0339 04
						0.005	0.0	0.00
KÅP2A	0.0033	0.0002	ND		ND	2	001	0.0341 05
RTP1L						0.002	0.0	0.00
b	0.0012	0.0002	ND		ND	9	001	0.0224 03
RTP1L						0.002	0.0	0.00
b	0.001	0.0002	ND		ND	8	001	0.0227 05
RTP1L						0.0		0.00
b	0.0011	0.0002	0.0005	0.0001	ND	0.003	001	0.0223 03
RTP1L						0.002	0.0	0.00
b	0.0011	0.0002	ND		ND	9	001	0.0225 03
KÅP1L						0.002	0.0	0.00
b	0.0007	0.0002	ND		ND	5	001	0.0206 03

KÅP1L					0.002	0.0	0.00
b	0.0007	0.0002	ND	ND	6 001	0.0208	03
KÅP1L					0.002	0.0	0.00
b	0.0008	0.0002	ND	ND	5 001	0.0206	03
KÅP1L					0.002	0.0	0.00
b	0.0007	0.0002	ND	ND	6 001	0.0206	03
					0.011	0.0	0.00
RTP1M	0.0059	0.0003	ND	ND	9 002	0.0211	03
					0.0		0.00
RTP1M	0.0058	0.0003	ND	ND	0.012	002 0.0215	03
					0.011	0.0	0.00
RTP1M	0.0059	0.0003	ND	ND	8 003	0.0212	05
					0.011	0.0	0.00
RTP1M	0.0059	0.0003	ND	ND	9 002	0.0213	03
KÅP1					0.009	0.0	0.00
M	0.0059	0.0003	ND	ND	9 003	0.02	05
KÅP1					0.009	0.0	0.00
M	0.0059	0.0003	ND	ND	6 002	0.0194	04
KÅP1					0.009	0.0	0.00
M	0.0058	0.0003	ND	ND	5 002	0.0198	03
KÅP1					0.009	0.0	0.00
M	0.0059	0.0003	ND	ND	6 002	0.0197	04
					0.000	0.0	0.00
RTP1N	0.005	0.0003	ND	ND	2 001	0.0005	01
							0.00
RTP1N	0.0053	0.0003	ND	ND	ND	0.0006	01
							0.00
RTP1N	0.0049	0.0003	ND	ND	ND	0.0007	01
							0.00
RTP1N	0.0051	0.0003	ND	ND	ND	0.0006	01
							0.00
KÅP1N	0.005	0.0003	ND	ND	ND	0.0012	01
							0.00
KÅP1N	0.0052	0.0003	ND	ND	ND	0.0014	01
					0.000	0.0	0.00
KÅP1N	0.0049	0.0003	0.0005	0.0001	ND	3 001	0.0011
							01
							0.00
KÅP1N	0.005	0.0003	ND	ND	ND	0.0012	01
					0.005	0.0	0.00
RTP1O	0.0028	0.0002	ND	ND	9 001	0.0325	04
					0.0		0.00
RTP1O	0.003	0.0002	ND	ND	0.006	002 0.0325	07
					0.005	0.0	0.00
RTP1O	0.003	0.0002	ND	ND	8 002	0.0328	07
					0.005	0.0	0.00
RTP1O	0.003	0.0002	ND	ND	9 002	0.0326	06
KÅP1O	0.0047	0.0003	ND	ND	0.007	0.0 0.0248	0.00

								4 002	06
								0.007 0.0	0.00
KÅP1O	0.0049	0.0003	ND					7 002 0.0251	03
								0.007 0.0	0.00
KÅP1O	0.0049	0.0003	ND					9 002 0.0252	03
								0.007 0.0	0.00
KÅP1O	0.0048	0.0003	ND					7 002 0.025	04

Provko	Y	Y +/-	Zr	Zr +/-	Mo	Mo +/-	Ag	Ag +/-	Cd	Cd +/-
KÅP1A	0.003	0.0001	0.0508	0.001	0.0032	0.0002	ND		ND	
KÅP1A	0.003	0.0001	0.051	0.0006	0.0033	0.0002	ND		ND	
KÅP1A	0.003	0.0001	0.0509	0.0006	0.0033	0.0002	ND		ND	
KÅP1A	0.003	0.0001	0.0513	0.0006	0.0037	0.0002	ND		ND	
KÅP1A	0.003	0.0001	0.0516	0.0006	0.0033	0.0002	ND		ND	
KÅP1A	0.003	0.0001	0.0506	0.001	0.0032	0.0002	ND		ND	
KÅP1A	0.0031	0.0001	0.0505	0.0006	0.0031	0.0002	ND		ND	
KÅP1A	0.0028	0.0001	0.0505	0.0005	0.0034	0.0002	ND		ND	
KÅP1A	0.0029	0.0001	0.05	0.0005	0.0032	0.0002	ND		ND	
KÅP1A	0.0031	0.0001	0.0507	0.0006	0.0031	0.0002	ND		ND	
RTP1A	0.0025	0.0001	0.0512	0.0005	0.0028	0.0002	ND		ND	
RTP1A	0.0024	0.0001	0.0507	0.0005	0.0026	0.0002	ND		ND	
RTP1A	0.0025	0.0001	0.0509	0.0005	0.0025	0.0002	ND		ND	
RTP1A	0.0024	0.0001	0.0512	0.0005	0.0024	0.0002	ND		ND	
RTP1A	0.0026	0.0001	0.0509	0.0005	0.0022	0.0002	ND		ND	
RTP1A	0.0024	0.0001	0.0508	0.0005	0.0024	0.0002	ND		ND	
RTP1A	0.0025	0.0001	0.0504	0.0005	0.0026	0.0002	ND		ND	
RTP1A	0.0023	0.0001	0.0503	0.0005	0.0023	0.0002	ND		ND	
RTP1A	0.0024	0.0001	0.0502	0.0005	0.0022	0.0002	ND		ND	
RTP1A	0.0023	0.0001	0.051	0.0005	0.0023	0.0002	ND		ND	
KÅP1B	0.0021	0.0001	0.0305	0.0006	0.0028	0.0002	ND		ND	
KÅP1B	0.0021	0.0001	0.0309	0.0006	0.0023	0.0002	ND		ND	
KÅP1B	0.0019	0.0001	0.0308	0.0004	0.0026	0.0002	ND		ND	
KÅP1B	0.0021	0.0001	0.0309	0.0006	0.0027	0.0002	ND		ND	
KÅP1B	0.0021	0.0001	0.0309	0.0006	0.0027	0.0002	ND		ND	
KÅP1B	0.0022	0.0001	0.0305	0.0006	0.0026	0.0002	ND		ND	
KÅP1B	0.0019	0.0001	0.0309	0.0006	0.0028	0.0002	ND		ND	
KÅP1B	0.0019	0.0001	0.0308	0.0006	0.0027	0.0002	ND		ND	
KÅP1B	0.0021	0.0001	0.0307	0.0006	0.0028	0.0002	ND		ND	
KÅP1B	0.0018	0.0001	0.0304	0.0004	0.0027	0.0002	ND		ND	
RTP1B	0.006	0.0001	0.0543	0.0006	0.0032	0.0002	ND		ND	
RTP1B	0.0062	0.0002	0.055	0.0011	0.0034	0.0002	ND		ND	
RTP1B	0.006	0.0001	0.0544	0.0006	0.0028	0.0002	ND		ND	
RTP1B	0.0059	0.0001	0.0544	0.0006	0.0029	0.0002	ND		ND	
RTP1B	0.0059	0.0001	0.0529	0.0006	0.003	0.0002	ND		ND	
RTP1B	0.0059	0.0002	0.0526	0.001	0.0027	0.0002	ND		ND	
RTP1B	0.006	0.0001	0.053	0.0006	0.0029	0.0002	ND		ND	

RTP1B	0.0059	0.0001	0.0527	0.0006	0.0028	0.0002	ND	ND
RTP1B	0.006	0.0001	0.0532	0.0006	0.003	0.0002	ND	ND
RTP1B	0.0061	0.0002	0.0532	0.001	0.003	0.0002	ND	ND
KÅP1C	0.003	0.0001	0.0545	0.0006	0.0026	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0542	0.0006	0.0026	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0549	0.0006	0.003	0.0002	ND	ND
KÅP1C	0.0029	0.0001	0.0542	0.0006	0.0028	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0544	0.0006	0.0028	0.0002	ND	ND
KÅP1C	0.003	0.0001	0.0548	0.0006	0.0031	0.0002	ND	ND
KÅP1C	0.0029	0.0001	0.0551	0.0006	0.003	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0551	0.0006	0.0027	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0544	0.0006	0.003	0.0002	ND	ND
KÅP1C	0.0028	0.0001	0.0552	0.0011	0.0031	0.0002	ND	ND
RTP1C	0.0034	0.0001	0.076	0.0014	0.0019	0.0002	ND	ND
RTP1C	0.0033	0.0001	0.0758	0.0014	0.0024	0.0002	ND	ND
RTP1C	0.0032	0.0001	0.0762	0.0008	0.0022	0.0002	ND	ND
RTP1C	0.0032	0.0001	0.076	0.0008	0.0019	0.0002	ND	ND
RTP1C	0.0032	0.0001	0.076	0.0008	0.0022	0.0002	ND	ND
RTP1C	0.0033	0.0001	0.0763	0.0008	0.0023	0.0002	ND	ND
RTP1C	0.0034	0.0001	0.0758	0.0008	0.0021	0.0002	ND	ND
RTP1C	0.0031	0.0001	0.0752	0.0014	0.0022	0.0002	ND	ND
RTP1C	0.0031	0.0001	0.076	0.0008	0.0021	0.0002	ND	ND
RTP1C	0.0034	0.0001	0.0773	0.0008	0.0021	0.0002	ND	ND
KÅP1D	0.009	0.0002	0.0327	0.0007	0.0029	0.0002	ND	ND
KÅP1D	0.0087	0.0002	0.0332	0.0007	0.0027	0.0002	ND	ND
KÅP1D	0.0088	0.0002	0.0335	0.0004	0.0028	0.0002	ND	ND
KÅP1D	0.0088	0.0002	0.0334	0.0007	0.003	0.0002	ND	ND
KÅP1D	0.0089	0.0002	0.0333	0.0007	0.0027	0.0002	ND	ND
KÅP1D	0.0088	0.0002	0.0339	0.0007	0.0026	0.0002	ND	ND
KÅP1D	0.0086	0.0002	0.0336	0.0007	0.0029	0.0002	ND	ND
KÅP1D	0.0091	0.0002	0.0336	0.0007	0.0027	0.0002	ND	ND
KÅP1D	0.0089	0.0002	0.034	0.0007	0.0025	0.0002	ND	ND
KÅP1D	0.0091	0.0002	0.0331	0.0007	0.0024	0.0002	ND	ND
RTP1D	0.0073	0.0002	0.031	0.0006	0.0017	0.0002	ND	ND
RTP1D	0.0072	0.0002	0.0309	0.0006	0.0017	0.0002	ND	ND
RTP1D	0.0076	0.0002	0.031	0.0006	0.0016	0.0002	ND	ND
RTP1D	0.0073	0.0002	0.0311	0.0007	0.0019	0.0002	ND	ND
RTP1D	0.0072	0.0002	0.0308	0.0007	0.0018	0.0002	ND	ND
RTP1D	0.0072	0.0002	0.0304	0.0006	0.0019	0.0002	ND	ND
RTP1D	0.0074	0.0002	0.0305	0.0006	0.0017	0.0002	ND	ND
RTP1D	0.0072	0.0002	0.0299	0.0006	0.0015	0.0002	ND	ND
RTP1D	0.0073	0.0002	0.0306	0.0006	0.0019	0.0002	ND	ND
RTP1D	0.0075	0.0002	0.0309	0.0006	0.0018	0.0002	ND	ND
KÅP1E	0.0023	0.0001	0.0109	0.0003	0.0019	0.0002	ND	ND
KÅP1E	0.0025	0.0001	0.0105	0.0002	0.0018	0.0002	ND	ND
KÅP1E	0.0026	0.0001	0.0101	0.0003	0.0017	0.0002	ND	ND
KÅP1E	0.0028	0.0001	0.0105	0.0002	0.0022	0.0002	ND	ND

KÅP1E	0.0025	0.0001	0.0103	0.0003	0.002	0.0002	ND	ND
KÅP1E	0.0025	0.0001	0.0102	0.0003	0.0017	0.0002	ND	ND
KÅP1E	0.0027	0.0001	0.0104	0.0003	0.0022	0.0002	ND	ND
KÅP1E	0.0026	0.0001	0.0106	0.0003	0.0021	0.0002	ND	ND
KÅP1E	0.0026	0.0001	0.0102	0.0003	0.0019	0.0002	ND	ND
KÅP1E	0.0027	0.0001	0.0101	0.0003	0.0024	0.0002	ND	ND
RTP1E	0.0026	0.0001	0.0099	0.0003	0.0013	0.0002	ND	ND
RTP1E	0.0027	0.0001	0.0098	0.0003	0.0012	0.0002	ND	ND
RTP1E	0.0025	0.0001	0.0103	0.0003	0.0011	0.0002	ND	ND
RTP1E	0.0028	0.0001	0.0105	0.0002	0.0018	0.0002	ND	ND
RTP1E	0.0026	0.0001	0.0099	0.0003	0.0013	0.0002	ND	ND
RTP1E	0.0025	0.0001	0.0102	0.0003	0.0012	0.0002	ND	ND
RTP1E	0.0026	0.0001	0.0096	0.0003	0.0011	0.0002	ND	ND
RTP1E	0.0026	0.0001	0.0102	0.0003	0.0011	0.0002	ND	ND
RTP1E	0.0027	0.0001	0.0098	0.0003	0.0017	0.0002	ND	ND
RTP1E	0.0026	0.0001	0.0103	0.0003	0.0011	0.0002	ND	ND
KÅP1F	0.0057	0.0002	0.0284	0.0007	0.002	0.0002	ND	ND
KÅP1F	0.0055	0.0002	0.0282	0.0006	0.0022	0.0002	ND	ND
KÅP1F	0.0056	0.0002	0.0286	0.0007	0.0022	0.0002	ND	ND
KÅP1F	0.0057	0.0002	0.0291	0.0007	0.0026	0.0002	ND	ND
KÅP1F	0.0055	0.0002	0.0284	0.0007	0.002	0.0002	ND	ND
KÅP1F	0.0056	0.0002	0.0286	0.0007	0.002	0.0002	ND	ND
KÅP1F	0.0056	0.0002	0.0288	0.0007	0.0028	0.0002	ND	ND
KÅP1F	0.0055	0.0002	0.0282	0.0006	0.0022	0.0002	ND	ND
KÅP1F	0.0056	0.0002	0.0283	0.0007	0.0022	0.0002	ND	ND
KÅP1F	0.0057	0.0002	0.0287	0.0007	0.0025	0.0002	ND	ND
RTP1F	0.0051	0.0002	0.0266	0.0006	0.0014	0.0002	ND	ND
RTP1F	0.0051	0.0002	0.0259	0.0006	0.0009	0.0002	ND	ND
RTP1F	0.0052	0.0002	0.0261	0.0006	0.0012	0.0002	ND	ND
RTP1F	0.0053	0.0002	0.0269	0.0006	0.0017	0.0002	ND	ND
RTP1F	0.0052	0.0002	0.0263	0.0006	0.0013	0.0002	ND	ND
RTP1F	0.0052	0.0002	0.0262	0.0006	0.0014	0.0002	ND	ND
RTP1F	0.0052	0.0002	0.0265	0.0006	0.0012	0.0002	ND	ND
RTP1F	0.0053	0.0002	0.0262	0.0006	0.0017	0.0002	ND	ND
RTP1F	0.0052	0.0002	0.0266	0.0006	0.001	0.0002	ND	ND
RTP1F	0.0055	0.0002	0.0265	0.0006	0.0016	0.0002	ND	ND
KÅP1G								
RTP1G	0.0018	0.0001	0.0116	0.0002	0.0012	0.0002	ND	ND
KÅP1G								
RTP1G	0.0018	0.0001	0.0117	0.0002	0.0009	0.0002	ND	ND
KÅP1G								
RTP1G	0.0018	0.0001	0.0118	0.0002	0.0009	0.0002	ND	ND
KÅP1G								
RTP1G	0.0017	0.0001	0.012	0.0002	0.0011	0.0002	ND	ND
KÅP1G								
RTP1G	0.0019	0.0001	0.0121	0.0002	0.0009	0.0002	ND	ND
KÅP1G	0.0016	0.0001	0.0119	0.0002	0.0008	0.0002	ND	ND

RTP1G								
KÅP1G								
RTP1G	0.0018	0.0001	0.0118	0.0002	0.0011	0.0002	ND	ND
KÅP1G								
RTP1G	0.0018	0.0001	0.0123	0.0002	0.0012	0.0002	ND	ND
KÅP1G								
RTP1G	0.0018	0.0001	0.0121	0.0002	0.0007	0.0002	ND	ND
KÅP1G								
RTP1G	0.0017	0.0001	0.012	0.0002	0.0014	0.0002	ND	ND
KÅP1H								
RTP1H	0.0019	0.0001	0.0097	0.0002	0.0008	0.0002	ND	ND
KÅP1H								
RTP1H	0.002	0.0001	0.0098	0.0002	0.001	0.0002	ND	ND
KÅP1H								
RTP1H	0.0017	0.0001	0.0099	0.0002	0.0009	0.0002	ND	ND
KÅP1H								
RTP1H	0.0018	0.0001	0.0092	0.0002	0.0006	0.0002	ND	ND
KÅP1H								
RTP1H	0.0016	0.0001	0.0094	0.0002	0.0009	0.0002	ND	ND
KÅP1H								
RTP1H	0.0019	0.0001	0.0096	0.0002	0.0009	0.0002	ND	ND
KÅP1H								
RTP1H	0.0017	0.0001	0.0098	0.0002	0.001	0.0002	ND	ND
KÅP1H								
RTP1H	0.0019	0.0001	0.0098	0.0002	0.0009	0.0002	ND	ND
KÅP1H								
RTP1H	0.0019	0.0001	0.0098	0.0002	0.0007	0.0002	ND	ND
KÅP1H								
RTP1H	0.0019	0.0001	0.0096	0.0002	0.0009	0.0002	ND	ND
KÅP1I	0.0008	0.0001	0.0134	0.0003	ND		ND	ND
KÅP1I	0.0007	0.0001	0.0134	0.0003	0.0007	0.0002	ND	ND
KÅP1I	0.0008	0.0001	0.0142	0.0003	0.0006	0.0002	ND	ND
KÅP1I	0.0008	0.0001	0.014	0.0003	ND		ND	ND
KÅP1I	0.0007	0.0001	0.0134	0.0003	ND		ND	ND
KÅP1I	0.0008	0.0001	0.0139	0.0003	ND		ND	ND
KÅP1I	0.0008	0.0001	0.014	0.0003	ND		ND	ND
KÅP1I	0.0008	0.0001	0.0138	0.0003	ND		ND	ND
KÅP1I	0.0008	0.0001	0.0135	0.0003	ND		ND	ND
KÅP1I	0.0008	0.0001	0.0134	0.0003	ND		ND	ND
RTP1I	0.0005	0.0001	0.0137	0.0003	0.0006	0.0002	ND	ND
RTP1I	0.0006	0.0001	0.0135	0.0003	0.0007	0.0002	ND	ND
RTP1I	0.0005	0.0001	0.0136	0.0003	ND		ND	ND
RTP1I	0.0007	0.0001	0.013	0.0003	ND		ND	ND
RTP1I	0.0009	0.0001	0.0131	0.0003	ND		ND	ND
RTP1I	0.0005	0.0001	0.0136	0.0003	ND		ND	ND
RTP1I	0.0007	0.0001	0.0138	0.0003	ND		ND	ND
RTP1I	0.0008	0.0001	0.0135	0.0003	ND		ND	ND

RTP1I	0.0008	0.0001	0.0135	0.0003	ND	ND	ND
RTP1I	0.0008	0.0001	0.0136	0.0015	0.0006	0.0002	ND
KÅP1J							
RTP1J	0.0026	0.0001	0.0446	0.0005	0.0029	0.0002	ND
KÅP1J							
RTP1J	0.0026	0.0001	0.0444	0.0005	0.0027	0.0002	ND
KÅP1J							
RTP1J	0.0027	0.0001	0.0445	0.0005	0.0027	0.0002	ND
KÅP1J							
RTP1J	0.0027	0.0001	0.0442	0.0005	0.0024	0.0002	ND
KÅP1J							
RTP1J	0.0024	0.0001	0.0441	0.0005	0.0027	0.0002	ND
KÅP1J							
RTP1J	0.0027	0.0001	0.044	0.0004	0.0025	0.0002	ND
KÅP1J							
RTP1J	0.0025	0.0001	0.0435	0.0004	0.0026	0.0002	ND
KÅP1J							
RTP1J	0.0025	0.0001	0.0443	0.0005	0.0027	0.0002	ND
KÅP1J						0.002	0.0
RTP1J	0.0027	0.0001	0.0445	0.0005	0.0026	0.0002	8 009 ND
KÅP1J							
RTP1J	0.0027	0.0001	0.0443	0.0005	0.0025	0.0002	ND
KÅP1K	0.0038	0.0001	0.0666	0.0007	0.0024	0.0002	ND
KÅP1K	0.0039	0.0001	0.0669	0.0007	0.0028	0.0002	ND
KÅP1K	0.0038	0.0001	0.0664	0.0007	0.0023	0.0002	ND
KÅP1K	0.004	0.0001	0.0664	0.0012	0.0026	0.0002	ND
KÅP1K	0.0039	0.0001	0.0671	0.0012	0.0027	0.0002	ND
KÅP1K	0.0039	0.0001	0.0654	0.0011	0.0026	0.0002	ND
KÅP1K	0.0041	0.0001	0.0666	0.0007	0.0025	0.0002	ND
KÅP1K	0.004	0.0001	0.0662	0.0007	0.0025	0.0002	ND
KÅP1K	0.0039	0.0001	0.0668	0.0007	0.0025	0.0002	ND
KÅP1K	0.0037	0.0001	0.0655	0.0012	0.0024	0.0002	ND

Sample	Y	Y +/-	Zr	Zr +/-	Mo	Mo +/-	Ag	Ag +/-	Cd	Cd +/-
RTP2A		0.0028	0.0001	0.0709	0.0007	0.0029	0.0002	ND		ND
RTP2A		0.0026	0.0001	0.0715	0.0008	0.003	0.0002	ND		ND
RTP2A		0.0028	0.0001	0.0711	0.0008	0.0028	0.0002	ND		ND
RTP2A		0.0027	0.0001	0.0712	0.0008	0.0029	0.0002	ND		ND
KÅP2A		0.0042	0.0002	0.0492	0.0011	0.0024	0.0002	ND		ND
KÅP2A		0.0044	0.0001	0.0497	0.0006	0.0028	0.0002	ND		ND
KÅP2A		0.0043	0.0001	0.05	0.0006	0.0027	0.0002	ND		ND
KÅP2A		0.0043	0.0001	0.0496	0.0007	0.0027	0.0002	ND		ND
RTP1L										
b		0.0031	0.0001	0.0225	0.0003	0.0029	0.0002	ND		ND
RTP1L										
b		0.003	0.0001	0.0221	0.0005	0.0029	0.0002	ND		ND

RTP1L										
b	0.003	0.0001	0.0223	0.0003	0.0029	0.0002	ND			ND
RTP1L										
b	0.003	0.0001	0.0223	0.0003	0.0029	0.0002	ND			ND
KÅP1L										
b	0.0025	0.0001	0.0165	0.0002	0.0032	0.0002	ND			ND
KÅP1L										
b	0.0024	0.0001	0.0164	0.0002	0.0027	0.0002	ND			ND
KÅP1L										
b	0.0026	0.0001	0.0164	0.0002	0.003	0.0002	ND			ND
KÅP1L										
b	0.0025	0.0001	0.0165	0.0002	0.003	0.0002	ND			ND
RTP1M	0.0016	0.0001	0.0159	0.0002	0.0022	0.0002	ND			ND
RTP1M	0.0016	0.0001	0.0163	0.0002	0.0022	0.0002	ND			ND
RTP1M	0.0017	0.0001	0.016	0.0004	0.0019	0.0002	ND			ND
RTP1M	0.0016	0.0001	0.0161	0.0003	0.0021	0.0002	ND			ND
KÅP1										
M	0.0049	0.0002	0.0135	0.0003	0.0028	0.0002	ND			ND
KÅP1										
M	0.0051	0.0002	0.0131	0.0003	0.0027	0.0002	ND			ND
KÅP1										
M	0.0054	0.0001	0.0131	0.0002	0.0027	0.0002	ND			ND
KÅP1										
M	0.0051	0.0002	0.0132	0.0003	0.0027	0.0002	ND			ND
RTP1N	0.0003	0.0001	ND		ND		ND			ND
RTP1N	0.0003	0.0001	0.0005	0.0001	ND		ND			ND
RTP1N	0.0004	0.0001	0.0004	0.0001	0.0006	0.0002	ND			ND
RTP1N	0.0003	0.0001	ND		ND		ND			ND
KÅP1N	0.0007	0.0001	ND		ND		ND			ND
KÅP1N	0.0004	0.0001	ND		0.001	0.0002	ND			ND
KÅP1N	0.0005	0.0001	ND		0.0006	0.0002	ND			ND
KÅP1N	0.0005	0.0001	ND		ND		ND			ND
RTP1O	0.0037	0.0001	0.0337	0.0004	0.0017	0.0002	ND			ND
RTP1O	0.0038	0.0001	0.0334	0.0007	0.0016	0.0002	ND			ND
RTP1O	0.0037	0.0001	0.0337	0.0007	0.0016	0.0002	ND			ND
RTP1O	0.0037	0.0001	0.0336	0.0006	0.0016	0.0002	ND			ND
KÅP1O	0.0076	0.0002	0.0368	0.0008	0.0022	0.0002	ND			ND
KÅP1O	0.0078	0.0002	0.037	0.0004	0.0027	0.0002	ND			ND
KÅP1O	0.0079	0.0002	0.0369	0.0004	0.0023	0.0002	ND			ND
KÅP1O	0.0078	0.0002	0.0369	0.0006	0.0024	0.0002	ND			ND

Provko	Sn	Sn +/-	Sb	Sb +/-	Hf	Hf +/-	Ta	Ta +/-	W	W +/-
KÅP1A	ND		ND						ND	
KÅP1A	ND		ND						ND	
KÅP1A	ND		ND						ND	
KÅP1A	ND		ND						ND	

RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
RTP1C ND	ND	ND	
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
			0.00
KÅP1D ND	ND	0.0011	03
KÅP1D ND	ND	ND	
KÅP1D ND	ND	ND	
			0.00
KÅP1D ND	ND	0.001	03
RTP1D ND	ND	ND	
			0.00
RTP1D ND	ND	0.001	03
RTP1D ND	ND	ND	
RTP1D ND	ND	ND	
			0.00
RTP1D ND	ND	0.0011	03
RTP1D ND	ND	ND	
			0.00
RTP1D ND	ND	0.0009	03
RTP1D ND	0.0097	0.0032	
RTP1D ND	ND	ND	
RTP1D ND	ND	ND	
			0.00
KÅP1E ND	ND	0.0017	04
			0.00
KÅP1E ND	ND	0.0019	04
KÅP1E ND	ND	ND	
			0.00
KÅP1E ND	ND	0.0016	04
KÅP1E ND	ND	ND	
KÅP1E ND	ND	ND	
KÅP1E ND	ND	ND	
KÅP1E ND	ND	ND	
KÅP1E ND	ND	ND	
KÅP1E ND	ND	ND	

RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
RTP1E ND		ND		ND
				0.00
RTP1E ND		ND	0.0013	04
RTP1E ND		ND		ND
RTP1E	0.0071	0.0024	ND	ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
				0.00
KÅP1F ND		ND	0.001	03
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
KÅP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F	0.0061	0.0019	ND	ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
RTP1F ND		ND		ND
KÅP1G				
RTP1G ND		ND		ND
KÅP1G				
RTP1G ND		ND		ND
KÅP1G				
RTP1G ND		ND		ND
KÅP1G				
RTP1G ND		ND		ND
KÅP1G				
RTP1G	0.0073	0.0021	ND	ND
KÅP1G				
RTP1G ND		ND		ND
KÅP1G ND		ND		ND

KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J								0.00	
RTP1J	ND		ND				0.001	03	
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1J									
RTP1J	ND		ND				ND		
KÅP1K	ND		ND				0.0009	03	
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND						0.00
KÅP1K	ND		ND				0.0009	03	
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		
KÅP1K	ND		ND				ND		

Sample	Sn	Sn +/-	Sb	Sb +/-	Hf	Hf +/-	Ta	Ta +/-	W	W +/-
RTP2A	ND		ND						ND	
RTP2A	ND		ND						ND	
RTP2A	ND		ND						ND	
RTP2A	ND		ND						ND	
KÅP2A	ND		ND						ND	
KÅP2A	ND		ND						ND	
KÅP2A	ND		ND						ND	
KÅP2A	ND		ND						ND	
RTP1L										
b	ND		ND						ND	
RTP1L										
b	ND		ND						ND	

RTP1L										
b		0.0058	0.0018	ND						ND
RTP1L										
b	ND			ND						ND
KÅP1L										
b	ND			ND						ND
KÅP1L										
b	ND			ND						ND
KÅP1L										
b	ND			ND						ND
RTP1M	ND			ND						ND
RTP1M	ND			ND						ND
RTP1M	ND			ND						ND
RTP1M	ND			ND						ND
RTP1M	ND			ND						ND
KÅP1										
M	ND			ND						ND
KÅP1										
M	ND			ND						ND
KÅP1										
M	ND			ND						ND
KÅP1										
M	ND			ND						ND
RTP1N	ND			ND						ND
RTP1N	ND			ND						ND
RTP1N	ND			ND						ND
RTP1N	ND			ND						ND
RTP1N	ND			ND						ND
KÅP1N	ND			ND						ND
KÅP1N	ND			ND						ND
KÅP1N	ND			ND						ND
KÅP1N	ND			ND						ND
RTP1O	ND			ND						ND
RTP1O	ND			ND						ND
										0.00
RTP1O	ND			ND						0.0009 03
RTP1O	ND			ND						ND
KÅP1O	ND			ND						ND
KÅP1O	ND			ND						ND
KÅP1O	ND			ND						ND
KÅP1O	ND			ND						ND
Provko								Th		U
d	Hg	Hg +/-	Pb	Pb +/-	Bi	Bi +/-	Th	+/- U		+/-
							0.004	0.0		
KÅP1A	ND		0.001	0.0002	ND		3	0.005	ND	
KÅP1A	ND		0.0009	0.0002	ND		0.003	0.0 0.0009	0.00	

			6 005	02
			0.004 0.0	0.00
KÅP1A ND	0.0007	0.0002 ND	5 005 0.0009	02
			0.004 0.0	
KÅP1A ND	0.001	0.0002 ND	6 005 ND	
			0.004 0.0	0.00
KÅP1A ND	0.0008	0.0002 ND	1 005 0.0007	02
			0.004 0.0	
KÅP1A ND	0.0008	0.0002 ND	3 005 ND	
			0.0	
KÅP1A ND	0.0008	0.0002 ND	0.004 005 ND	
			0.004 0.0	
KÅP1A ND	0.0007	0.0002 ND	3 005 ND	
			0.004 0.0	
KÅP1A ND	0.0006	0.0002 ND	1 005 ND	
			0.004 0.0	
KÅP1A ND	0.0006	0.0002 ND	2 005 ND	
			0.004 0.0	
RTP1A ND	0.0008	0.0002 ND	3 005 ND	
			0.003 0.0	
RTP1A ND	0.0008	0.0002 ND	9 005 ND	
			0.003 0.0	
RTP1A ND	0.0006	0.0002 ND	3 005 ND	
			0.004 0.0	
RTP1A ND	0.0007	0.0002 ND	4 005 ND	
			0.004 0.0	
RTP1A ND	0.0007	0.0002 ND	1 005 ND	
			0.0	
RTP1A ND	0.0007	0.0002 ND	0.004 005 ND	
			0.003 0.0	
RTP1A ND	0.0006	0.0002 ND	7 005 ND	
			0.004 0.0	
RTP1A ND	0.0007	0.0002 ND	6 005 ND	
			0.003 0.0	
RTP1A ND	0.001	0.0002 ND	6 005 ND	
			0.003 0.0	
RTP1A ND	0.0007	0.0002 ND	3 005 ND	
			0.004 0.0	
KÅP1B ND	ND	ND	2 005 ND	
			0.003 0.0	0.00
KÅP1B ND	ND	ND	8 005 0.0007	02
			0.004 0.0	
KÅP1B ND	ND	ND	6 005 ND	
			0.003 0.0	
KÅP1B ND	ND	ND	6 005 ND	
			0.0	0.00
KÅP1B ND	ND	ND	0.004 005 0.0007	02

KÅP1B ND	ND	ND	0.004 0.0 6 005 ND
KÅP1B ND	0.0005	0.0002 ND	0.004 0.0 1 005 ND
KÅP1B ND	0.0005	0.0002 ND	0.004 0.0 0.00 2 005 0.0007 02
KÅP1B ND	0.0006	0.0002 ND	0.003 0.0 5 005 ND
KÅP1B ND	ND	ND	0.003 0.0 6 005 ND
RTP1B ND	ND	ND	0.004 0.0 0.00 5 005 0.0009 02
RTP1B ND	ND	ND	0.004 0.0 8 005 ND
RTP1B ND	ND	ND	0.004 0.0 5 005 ND
RTP1B ND	ND	ND	0.004 0.0 0.00 2 005 0.0007 02
RTP1B ND	ND	ND	0.004 0.0 1 005 ND
RTP1B ND	0.0005	0.0002 ND	0.0 0.004 005 ND
RTP1B ND	0.0005	0.0002 ND	0.004 0.0 4 005 ND
RTP1B ND	0.0006	0.0002 ND	0.003 0.0 3 005 ND
RTP1B ND	0.0006	0.0002 ND	0.004 0.0 6 005 ND
RTP1B ND	ND	ND	0.004 0.0 4 005 ND
KÅP1C ND	ND	ND	0.004 0.0 0.00 2 005 0.0008 02
KÅP1C ND	ND	ND	0.004 0.0 2 005 ND
KÅP1C ND	ND	ND	0.005 0.0 0.00 2 005 0.0007 02
KÅP1C ND	ND	ND	0.003 0.0 0.00 7 005 0.0007 02
KÅP1C ND	ND	ND	0.004 0.0 2 005 ND
KÅP1C ND	0.0005	0.0002 ND	0.004 0.0 4 005 ND
KÅP1C ND	ND	ND	0.004 0.0 3 005 ND
KÅP1C ND	ND	ND	0.0 0.005 005 ND
KÅP1C ND	ND	ND	0.005 0.0 ND

						9 005		
						0.003 0.0		0.00
KÅP1C ND		ND		ND		7 005 0.0009		02
						0.003 0.0		0.00
RTP1C ND		ND		ND		9 005 0.0006		02
						0.004 0.0		
RTP1C ND		ND		ND		9 005 ND		
						0.004 0.0		
RTP1C ND		ND		ND		6 005 ND		
						0.0		
RTP1C ND		ND		ND		0.004 005 ND		
						0.004 0.0		
RTP1C ND		ND		ND		4 005 ND		
						0.004 0.0		
RTP1C ND		ND		ND		3 005 ND		
						0.0		
RTP1C ND		ND		ND		0.005 005 ND		
						0.004 0.0		
RTP1C ND		ND		ND		9 005 ND		
						0.004 0.0		
RTP1C ND		ND		ND		6 005 ND		
						0.0		
RTP1C ND		ND		ND		0.006 005 ND		
						0.006 0.0		
KÅP1D	0.0009	0.0002	0.001	0.0002 ND		4 006 ND		
						0.005 0.0		
KÅP1D ND		0.0007	0.0002 ND			2 005 ND		
						0.005 0.0		0.00
KÅP1D ND		0.0008	0.0002 ND			4 005 0.0008		02
						0.005 0.0		0.00
KÅP1D ND		0.001	0.0002 ND			3 005 0.001		02
						0.005 0.0		0.00
KÅP1D ND		0.0007	0.0002 ND			4 005 0.0007		02
						0.0		0.00
KÅP1D ND		0.0007	0.0002 ND			0.005 005 0.0012		02
						0.005 0.0		
KÅP1D ND		0.0009	0.0002 ND			3 005 ND		
						0.005 0.0		
KÅP1D ND		0.0012	0.0002 ND			3 005 ND		
						0.005 0.0		0.00
KÅP1D ND		0.0009	0.0002 ND			1 005 0.0007		02
						0.005 0.0		0.00
KÅP1D ND		0.001	0.0002 ND			7 005 0.0007		02
						0.004 0.0		0.00
RTP1D ND		0.0012	0.0002 ND			2 005 0.0008		02
						0.004 0.0		0.00
RTP1D ND		0.0008	0.0002 ND			6 005 0.0008		02

RTP1D ND	0.0011	0.0002 ND	0.004 0.0	4 005 ND	
RTP1D ND	0.0011	0.0002 ND	0.004 0.0	4 005 0.0007	0.00
RTP1D ND	0.001	0.0002 ND	0.005 0.0	1 005 ND	
RTP1D ND	0.0011	0.0002 ND	0.003 0.0	9 005 ND	
RTP1D ND	0.0008	0.0002 ND	0.004 0.0	7 005 ND	
RTP1D ND	0.0009	0.0002 ND	0.004 0.0	1 005 0.0009	0.00
RTP1D ND	0.0008	0.0002 ND	0.005 0.0	5 005 ND	
RTP1D	0.0006	0.0002	0.0011	0.0002 ND	
KÅP1E ND	ND	ND	ND	ND	ND
KÅP1E ND	ND	ND	0.0	0.003 006 ND	
KÅP1E ND	ND	ND	0.002 0.0	4 006 ND	
KÅP1E ND	ND	ND	0.002 0.0	4 005 ND	
KÅP1E ND	ND	ND	0.001 0.0	7 005 ND	
KÅP1E ND	ND	ND	0.002 0.0	6 006 ND	
KÅP1E ND	ND	ND	0.0	0.003 006 ND	
KÅP1E ND	ND	ND	0.002 0.0	2 006 ND	
KÅP1E ND	ND	ND	0.003 0.0	5 006 ND	
KÅP1E ND	ND	ND	0.002 0.0	9 006 ND	
RTP1E ND	ND	ND	0.0	0.002 005 ND	
RTP1E ND	ND	ND	0.002 0.0	7 006 ND	
RTP1E ND	ND	ND	0.001 0.0	7 005 ND	
RTP1E ND	ND	ND	0.002 0.0	6 006 ND	
RTP1E ND	ND	ND	ND	ND	ND
RTP1E ND	ND	ND	0.002 0.0	7 006 ND	
RTP1E ND	ND	ND	0.002 0.0 ND		

			4 005		
			0.001 0.0		
RTP1E ND	ND	ND	7 005 ND		
			0.0		
RTP1E ND	ND	ND	0.003 006 ND		
			0.0		
RTP1E ND	ND	ND	0.003 006 ND		
			0.003 0.0		
KÅP1F ND	0.0005	0.0002 ND	8 005 ND		
			0.004 0.0		
KÅP1F ND	ND	ND	4 005 ND		
			0.003 0.0	0.00	
KÅP1F ND	ND	ND	4 005 0.0006	02	
			0.003 0.0		
KÅP1F ND	ND	ND	7 005 ND		
			0.003 0.0	0.00	
KÅP1F ND	ND	ND	7 005 0.0007	02	
			0.0		
KÅP1F ND	ND	ND	0.003 005 ND		
			0.005 0.0	0.00	
KÅP1F ND	ND	ND	4 005 0.0007	02	
			0.003 0.0	0.00	
KÅP1F ND	ND	ND	8 005 0.0007	02	
			0.003 0.0		
KÅP1F ND	ND	ND	2 005 ND		
			0.002 0.0		
KÅP1F ND	0.0006	0.0002 ND	9 005 ND		
			0.002 0.0	0.00	
RTP1F ND	ND	ND	9 005 0.0009	02	
			0.002 0.0	0.00	
RTP1F ND	0.0005	0.0002 ND	1 005 0.0006	02	
			0.003 0.0	0.00	
RTP1F ND	ND	ND	7 005 0.0007	02	
			0.004 0.0		
RTP1F ND	0.0006	0.0002 ND	2 005 ND		
			0.003 0.0	0.00	
RTP1F ND	ND	ND	9 005 0.0006	02	
			0.003 0.0		
RTP1F ND	ND	ND	8 005 ND		
			0.004 0.0		
RTP1F ND	ND	ND	2 005 ND		
			0.003 0.0	0.00	
RTP1F ND	ND	ND	4 005 0.0006	02	
			0.002 0.0	0.00	
RTP1F ND	ND	ND	8 005 0.0006	02	
			0.002 0.0		
RTP1F ND	ND	ND	7 005 ND		

KÅP1G					0.002	0.0		0.00
RTP1G ND		ND		ND	3	005	0.0006	02
KÅP1G					0.002	0.0		
RTP1G	0.0006	0.0002	ND	ND	9	005	ND	
KÅP1G					0.002	0.0		
RTP1G ND		ND		ND	2	005	ND	
KÅP1G					0.003	0.0		
RTP1G ND		0.0006	0.0002	ND	9	005	ND	
KÅP1G					0.002	0.0		
RTP1G ND		ND		ND	8	005	ND	
KÅP1G					0.003	0.0		
RTP1G	0.0007	0.0002	ND	ND	2	005	ND	
KÅP1G					0.002	0.0		
RTP1G ND		ND		ND	7	005	ND	
KÅP1G					0.002	0.0		
RTP1G ND		0.0007	0.0002	ND	3	005	ND	
KÅP1G					0.001	0.0		
RTP1G ND		ND		ND	9	005	ND	
KÅP1G					0.002	0.0		
RTP1G ND		0.0006	0.0002	ND	9	005	ND	
KÅP1H					0.003	0.0		
RTP1H ND		0.0006	0.0002	ND	3	005	ND	
KÅP1H					0.003	0.0		
RTP1H ND		ND		ND	1	005	ND	
KÅP1H						0.0		
RTP1H ND		0.0006	0.0002	ND	0.002	005	ND	
KÅP1H					0.003	0.0		
RTP1H	0.0007	0.0002	0.0005	0.0002	6	005	ND	
KÅP1H					0.002	0.0		
RTP1H ND		ND		ND	7	005	ND	
KÅP1H					0.002	0.0		
RTP1H ND		0.0005	0.0002	ND	2	005	ND	
KÅP1H					0.002	0.0		
RTP1H	0.0006	0.0002	0.0005	0.0002	6	005	ND	
KÅP1H						0.0		
RTP1H ND		ND		ND	0.002	005	ND	
KÅP1H					0.002	0.0		
RTP1H ND		ND		ND	6	005	ND	
KÅP1H						0.0		
RTP1H	0.0007	0.0002	ND	ND	0.003	005	ND	
					0.005	0.0		
KÅP1I ND		0.0006	0.0002	ND	3	006	ND	
					0.006	0.0		
KÅP1I ND		ND		ND	4	006	ND	
					0.006	0.0		
KÅP1I ND		0.0008	0.0002	ND	5	006	ND	
KÅP1I ND		0.0007	0.0002	ND	0.005	0.0	ND	

				7 006
				0.006 0.0
KÅP1I ND	ND	ND		6 006 ND
				0.006 0.0
KÅP1I ND	ND	ND		1 006 ND
				0.004 0.0
KÅP1I ND	0.0007	0.0002 ND		7 006 ND
				0.006 0.0
KÅP1I ND	0.0007	0.0002 ND		2 006 ND
				0.005 0.0
KÅP1I ND	ND	ND		6 006 ND
				0.006 0.0
KÅP1I ND	ND	ND		1 006 ND
				0.005 0.0
RTP1I ND	0.0007	0.0002 ND		8 006 ND
				0.005 0.0
RTP1I ND	0.0006	0.0002 ND		7 006 ND
				0.005 0.0
RTP1I ND	ND	ND		2 006 ND
				0.006 0.0
RTP1I ND	0.0007	0.0002 ND		7 006 ND
				0.004 0.0
RTP1I ND	ND	ND		6 006 ND
				0.005 0.0
RTP1I ND	0.0006	0.0002 ND		6 006 ND
				0.004 0.0
RTP1I ND	0.0007	0.0002 ND		4 006 ND
				0.005 0.0
RTP1I ND	ND	ND		5 006 ND
				0.0
RTP1I ND	ND	ND		0.005 006 ND
				0.005 0.0
RTP1I ND	0.0006	0.0002 ND		5 009 ND
KÅP1J				0.002 0.0
RTP1J ND	0.0006	0.0002 ND		7 005 ND
KÅP1J				0.0
RTP1J ND	0.0007	0.0002 ND		0.003 005 ND
KÅP1J				0.002 0.0
RTP1J ND	0.0008	0.0002 ND		1 005 ND
KÅP1J				0.002 0.0
RTP1J ND	0.0008	0.0002 ND		5 005 ND
KÅP1J				0.002 0.0
RTP1J ND	0.0008	0.0002 ND		9 005 ND
KÅP1J				0.001 0.0
RTP1J ND	ND	ND		9 005 ND
KÅP1J				0.001 0.0
RTP1J ND	0.0007	0.0002 ND		9 005 ND

KÅP1J						0.001	0.0	0.00
RTP1J ND	0.0006	0.0002	ND			7	0.005	0.0006 02
KÅP1J						0.002	0.0	
RTP1J ND	0.0006	0.0002	ND			1	0.005	ND
KÅP1J						0.002	0.0	
RTP1J ND	0.0006	0.0002	ND			1	0.005	ND
						0.003	0.0	
KÅP1K ND	ND		ND			3	0.005	ND
						0.003	0.0	0.00
KÅP1K ND	ND		ND			6	0.005	0.0008 02
						0.004	0.0	0.00
KÅP1K ND	ND		ND			7	0.005	0.0007 02
						0.005	0.0	0.00
KÅP1K ND	0.0005	0.0002	ND			4	0.005	0.0006 02
						0.004	0.0	
KÅP1K ND	ND		ND			2	0.005	ND
						0.004	0.0	
KÅP1K ND	ND		ND			2	0.005	ND
						0.004	0.0	
KÅP1K ND	ND		ND			6	0.005	ND
						0.003	0.0	
KÅP1K ND	ND		ND			7	0.005	ND
						0.003	0.0	0.00
KÅP1K ND	ND		ND			9	0.005	0.0007 02
						0.004	0.0	
KÅP1K ND	ND		ND			5	0.005	ND

Sample	Hg	Hg +/-	Pb	Pb +/-	Bi	Bi +/-	Th	Th +/-	U	U +/-
RTP2A	0.0007	0.0002	0.0008	0.0002	ND		0.004	0.0		
							8	0.005	ND	
RTP2A ND			0.0007	0.0002	ND		0.004	0.0	0.00	
							8	0.005	0.0008	02
RTP2A ND			0.0012	0.0002	ND		0.004	0.0		
							9	0.005	ND	
RTP2A ND			0.0009	0.0002	ND		0.004	0.0		
							8	0.005	ND	
KÅP2A ND			0.0012	0.0002	ND		0.005	0.0		
							2	0.005	ND	
KÅP2A ND			0.001	0.0002	ND		0.004	0.0		
							4	0.005	ND	
KÅP2A ND			0.0012	0.0002	ND		0.004	0.0		
							8	0.005	ND	
KÅP2A ND			0.0011	0.0002	ND		0.004	0.0		
							8	0.005	ND	
RTP1L							0.002	0.0		
b ND			0.0007	0.0002	ND		9	0.005	ND	

RTP1L				0.003	0.0		
b	ND	ND	ND	4	005	ND	
RTP1L				0.003	0.0		
b	ND	ND	ND	5	005	ND	
RTP1L				0.003	0.0		
b	ND	ND	ND	3	005	ND	
KÅP1L				0.003	0.0		
b	ND	0.0005	0.0002	9	005	ND	
KÅP1L				0.003	0.0		
b	ND	0.0007	0.0002	2	005	ND	
KÅP1L				0.003	0.0		
b	ND	0.0006	0.0002	2	005	ND	
KÅP1L				0.003	0.0		
b	ND	0.0006	0.0002	4	005	ND	
				0.004	0.0		
RTP1M	ND	ND	ND	6	005	ND	
				0.003	0.0		
RTP1M	ND	ND	ND	2	005	ND	
				0.003	0.0		
RTP1M	ND	ND	ND	9	005	ND	
				0.003	0.0		
RTP1M	ND	ND	ND	9	005	ND	
KÅP1				0.003	0.0		
M	ND	0.0005	0.0002	7	005	ND	
KÅP1				0.003	0.0		
M	ND	ND	ND	3	005	ND	
KÅP1				0.003	0.0		0.00
M	ND	ND	ND	7	005	0.0008	02
KÅP1				0.003	0.0		
M	ND	ND	ND	5	005	ND	
				0.002	0.0		
RTP1N	ND	ND	ND	2	005	ND	
RTP1N	ND	ND	ND	ND	ND		
				0.001	0.0		
RTP1N	ND	ND	ND	8	005	ND	
RTP1N	ND	ND	ND	ND	ND		
KÅP1N	ND	ND	ND	ND	ND		
				0.002	0.0		
KÅP1N	ND	ND	ND	3	005	ND	
				0.002	0.0		
KÅP1N	ND	ND	ND	4	005	ND	
KÅP1N	ND	ND	ND	ND	ND		
				0.003	0.0		
RTP1O	ND	0.0008	0.0002	4	005	ND	
				0.003	0.0		
RTP1O	ND	0.0008	0.0002	9	005	ND	
RTP1O	ND	0.001	0.0002	0.004	0.0	ND	

RTP1O ND	0.0009	0.0002 ND	2 005	0.003 0.0	8 005 ND	0.004 0.0	0.00
KÅP1O ND	0.0008	0.0002 ND	5 005	0.0008	02	0.004 0.0	
KÅP1O ND	0.0013	0.0002 ND	2 005	ND		0.005 0.0	
KÅP1O ND	0.0012	0.0002 ND	8 005	ND		0.004 0.0	
KÅP1O ND	0.0011	0.0002 ND	8 005	ND			

Provko d	LE	LE +/-	Live Time 1	Live Time 2	Live Time Total
KÅP1A	52.68	0.99	23.93	30.71	54.65
KÅP1A	59.31	0.55	23.97	29.68	53.65
KÅP1A	58.85	0.55	23.96	29.68	53.64
KÅP1A	58.95	0.55	23.96	29.66	53.62
KÅP1A	60.19	0.56	24.41	29.67	54.08
KÅP1A	52.79	1.01	23.95	29.63	53.58
KÅP1A	59.57	0.55	23.95	29.64	53.6
KÅP1A	59.08	0.55	23.97	29.67	53.63
KÅP1A	59.54	0.55	23.95	29.67	53.61
KÅP1A	59.29	0.55	23.93	29.69	53.62
RTP1A	59.99	0.54	23.89	29.63	53.52
RTP1A	58.95	0.53	23.89	29.68	53.57
RTP1A	59.31	0.53	23.86	29.65	53.5
RTP1A	59.93	0.53	23.89	29.71	53.6
RTP1A	59.08	0.53	24.24	29.65	53.9
RTP1A	58.43	0.53	23.87	29.68	53.55
RTP1A	59.1	0.53	23.84	29.63	53.48
RTP1A	58.59	0.53	23.86	29.64	53.5
RTP1A	58.93	0.53	24.04	29.68	53.72
RTP1A	58.99	0.53	23.89	29.65	53.54
KÅP1B	54.33	1.02	23.91	29.66	53.57
KÅP1B	56.46	1.03	23.93	29.67	53.6
KÅP1B	64.18	0.58	24.37	29.68	54.05
KÅP1B	58.55	1.06	23.93	29.69	53.62
KÅP1B	56.44	1.03	23.92	29.74	53.67
KÅP1B	55.22	1.01	23.91	29.69	53.6
KÅP1B	55.81	1.01	23.96	29.68	53.65
KÅP1B	54.89	1	23.93	29.66	53.6
KÅP1B	56.34	1.03	23.94	29.7	53.64
KÅP1B	64	0.58	23.96	29.76	53.72
RTP1B	62.1	0.56	24.1	29.78	53.88
RTP1B	54.98	1.01	24.09	29.69	53.78

RTP1B	62.87	0.57	24.49	29.64	54.13
RTP1B	63.02	0.57	24.08	29.63	53.71
RTP1B	62.91	0.56	24.09	29.78	53.87
RTP1B	55.89	1	24.55	29.67	54.21
RTP1B	62.61	0.57	24.07	29.89	53.96
RTP1B	62.76	0.56	24.18	29.65	53.83
RTP1B	62.5	0.57	24.07	29.66	53.74
RTP1B	55.36	0.99	24.1	29.82	53.93
KÅP1C	61.56	0.57	24.06	29.63	53.69
KÅP1C	62.96	0.58	24.26	29.75	54.01
KÅP1C	60.88	0.57	24.08	29.73	53.81
KÅP1C	60.43	0.56	24.08	29.71	53.79
KÅP1C	60.88	0.57	24.72	29.67	54.39
KÅP1C	61.16	0.57	24.14	29.68	53.81
KÅP1C	61.61	0.57	24.13	29.71	53.83
KÅP1C	60.3	0.57	24.1	29.67	53.77
KÅP1C	61.92	0.57	24.13	29.65	53.78
KÅP1C	52.43	0.99	24.1	29.67	53.77
RTP1C	55.99	0.98	23.68	29.7	53.38
RTP1C	54.82	0.96	23.69	29.69	53.39
RTP1C	60.87	0.54	23.7	29.65	53.34
RTP1C	60.63	0.54	23.64	29.7	53.34
RTP1C	61.21	0.54	23.66	29.83	53.48
RTP1C	60.73	0.54	23.66	29.64	53.3
RTP1C	60.69	0.54	23.66	29.64	53.3
RTP1C	54.92	0.97	23.69	29.7	53.39
RTP1C	60.56	0.54	23.68	29.69	53.38
RTP1C	60.18	0.54	23.68	29.64	53.31
KÅP1D	54.11	1.09	24.34	29.58	53.92
KÅP1D	54.32	1.1	24.33	29.6	53.93
KÅP1D	64.36	0.53	24.35	29.63	53.98
KÅP1D	55.07	1.1	24.36	29.63	53.99
KÅP1D	49.63	1.03	24.39	29.63	54.02
KÅP1D	55.32	1.11	24.37	29.8	54.17
KÅP1D	54.13	1.09	24.35	29.65	54
KÅP1D	52.42	1.07	24.31	29.66	53.96
KÅP1D	55.72	1.11	24.36	29.62	53.98
KÅP1D	51.83	1.05	24.35	29.65	54
RTP1D	56.08	1.08	24.08	29.68	53.76
RTP1D	53.04	1.03	24.01	30.08	54.09
RTP1D	56.09	1.07	24.21	29.69	53.9
RTP1D	50.45	1	23.96	29.59	53.56
RTP1D	52.08	1.03	23.96	29.6	53.56
RTP1D	53.85	1.04	23.99	29.74	53.72
RTP1D	52.09	1.03	24.12	29.65	53.77
RTP1D	54.1	1.03	23.97	30.3	54.27
RTP1D	52.64	1.04	24.03	29.58	53.61

RTP1D	53.84	1.03	23.97	29.61	53.59
KÅP1E	55.46	1.08	24.54	29.32	53.87
KÅP1E	61.58	0.44	24.57	29.42	54
KÅP1E	54.16	1.06	24.57	29.94	54.51
KÅP1E	62.09	0.44	25.93	29.36	55.29
KÅP1E	55.34	1.09	24.55	29.42	53.97
KÅP1E	52.88	1.05	24.55	29.61	54.16
KÅP1E	50.33	1.03	24.59	29.36	53.95
KÅP1E	53.91	1.05	24.6	29.39	53.99
KÅP1E	55.21	1.07	24.56	29.72	54.28
KÅP1E	53.25	1.04	24.54	29.38	53.92
RTP1E	56.24	1.08	25.07	29.44	54.5
RTP1E	54.7	1.06	24.59	29.4	53.99
RTP1E	54.03	1.05	24.56	29.37	53.93
RTP1E	62.93	0.44	24.56	29.37	53.94
RTP1E	52.7	1.04	24.58	29.36	53.95
RTP1E	53.63	1.05	24.58	29.44	54.02
RTP1E	54.47	1.07	24.63	29.81	54.44
RTP1E	52.18	1.03	24.64	29.44	54.08
RTP1E	54.42	1.06	24.58	29.38	53.97
RTP1E	54.63	1.06	24.57	29.39	53.96
KÅP1F	55.9	1.2	23.94	29.87	53.81
KÅP1F	54.9	1.19	23.93	29.55	53.48
KÅP1F	50.25	1.09	23.93	29.82	53.75
KÅP1F	53.92	1.18	23.93	29.61	53.54
KÅP1F	53.67	1.17	23.97	29.59	53.57
KÅP1F	52.41	1.13	23.94	29.61	53.55
KÅP1F	55.45	1.18	23.95	30.59	54.54
KÅP1F	56.73	1.2	24.42	29.56	53.99
KÅP1F	53.58	1.16	24.44	29.57	54.01
KÅP1F	49.02	1.08	23.97	29.59	53.55
RTP1F	54.58	1.2	24.03	29.56	53.59
RTP1F	50.6	1.13	24.5	29.59	54.09
RTP1F	52.28	1.16	24.09	29.58	53.67
RTP1F	54.42	1.2	24.03	29.59	53.62
RTP1F	53.74	1.19	24.06	29.55	53.62
RTP1F	56.35	1.24	24.03	29.58	53.61
RTP1F	57.35	1.24	24.3	29.59	53.89
RTP1F	51.54	1.15	24.08	29.61	53.7
RTP1F	53.29	1.18	24.04	29.56	53.6
RTP1F	53.08	1.17	24.06	29.61	53.67
KÅP1G					
RTP1G	65.6	0.48	24.48	29.44	53.92
KÅP1G					
RTP1G	64.76	0.48	24.5	29.53	54.03
KÅP1G					
RTP1G	66.34	0.48	24.53	29.51	54.04

KÅP1G					
RTP1G	65.89	0.48	24.49	29.51	53.99
KÅP1G					
RTP1G	65.01	0.48	24.51	29.6	54.11
KÅP1G					
RTP1G	65.61	0.48	24.51	29.48	53.99
KÅP1G					
RTP1G	65.17	0.47	24.49	30.08	54.57
KÅP1G					
RTP1G	65.2	0.48	24.72	29.5	54.22
KÅP1G					
RTP1G	65.47	0.48	24.52	29.55	54.07
KÅP1G					
RTP1G	64.99	0.49	25.12	29.48	54.6
KÅP1H					
RTP1H	65.84	0.48	24.59	29.52	54.11
KÅP1H					
RTP1H	65.82	0.48	24.41	29.46	53.87
KÅP1H					
RTP1H	66.25	0.48	24.42	29.54	53.96
KÅP1H					
RTP1H	65.89	0.48	24.93	29.48	54.4
KÅP1H					
RTP1H	66.56	0.47	24.42	30.03	54.45
KÅP1H					
RTP1H	66	0.48	24.41	29.55	53.96
KÅP1H					
RTP1H	65.39	0.48	24.44	29.48	53.92
KÅP1H					
RTP1H	66.53	0.48	24.43	29.5	53.93
KÅP1H					
RTP1H	65.67	0.48	24.41	29.53	53.94
KÅP1H					
RTP1H	60.14	1.09	24.41	30.03	54.44
KÅP1I	57.81	0.29	24.77	28.93	53.7
KÅP1I	57.58	0.3	24.75	28.69	53.45
KÅP1I	58.3	0.29	24.75	28.69	53.43
KÅP1I	57.37	0.29	24.74	28.79	53.53
KÅP1I	57.47	0.3	24.77	28.67	53.45
KÅP1I	57.05	0.3	24.8	28.69	53.48
KÅP1I	58.31	0.29	24.74	28.71	53.46
KÅP1I	58.72	0.29	24.75	29.31	54.05
KÅP1I	57.99	0.29	24.73	28.68	53.41
KÅP1I	57.46	0.3	24.78	28.68	53.46
RTP1I	59.25	0.3	24.77	29.02	53.79
RTP1I	58.5	0.31	24.79	28.74	53.54
RTP1I	58.72	0.31	24.84	28.75	53.59

RTP1I	58.42	0.31	24.8	28.77	53.57
RTP1I	59.24	0.33	24.8	29.28	54.08
RTP1I	57.58	0.31	24.78	28.76	53.55
RTP1I	58.51	0.31	24.85	28.78	53.63
RTP1I	58.32	0.31	24.8	28.76	53.56
RTP1I	59.03	0.3	25.03	28.76	53.79
RTP1I	16.48	1.8	24.89	28.73	53.62
KÅP1J					
RTP1J	55.37	0.46	24.36	29.53	53.88
KÅP1J					
RTP1J	54.9	0.46	24.36	29.5	53.85
KÅP1J					
RTP1J	54.8	0.46	24.9	29.51	54.4
KÅP1J					
RTP1J	55.67	0.46	24.35	29.5	53.85
KÅP1J					
RTP1J	55.58	0.46	24.34	29.95	54.29
KÅP1J					
RTP1J	56.97	0.47	24.34	29.88	54.21
KÅP1J					
RTP1J	55.05	0.46	24.83	29.51	54.34
KÅP1J					
RTP1J	55.24	0.46	24.37	29.55	53.91
KÅP1J					
RTP1J	55.36	0.46	24.36	29.49	53.85
KÅP1J					
RTP1J	55.16	0.46	24.82	29.54	54.36
KÅP1K	61.76	0.53	23.63	29.65	53.27
KÅP1K	61.31	0.53	23.62	29.66	53.28
KÅP1K	61.52	0.53	23.66	30.21	53.87
KÅP1K	54.55	0.93	23.6	29.65	53.26
KÅP1K	52.56	0.91	23.62	29.69	53.31
KÅP1K	55.63	0.94	23.61	29.65	53.26
KÅP1K	60.6	0.53	23.66	29.66	53.32
KÅP1K	60.64	0.53	23.65	29.62	53.27
KÅP1K	61.43	0.53	23.67	29.94	53.61
KÅP1K	55.16	0.94	23.76	29.65	53.42

Sample	LE	LE +/-	Live		Live Time Total	Unit
			Time 1	Time 2		
RTP2A	59.35	0.55	24.15	29.62	53.77	%
RTP2A	59.64	0.55	24.11	29.63	53.74	%
RTP2A	58.84	0.54	24.13	29.62	53.76	%
RTP2A	59.28	0.55				%
KÅP2A	53.96	1.13	24.44	29.64	54.08	%
KÅP2A	61.24	0.57	24.48	29.65	54.13	%

KÅP2A	61.02	0.57	24.44	29.66	54.09 %
KÅP2A	58.74	0.76			%
RTP1L					
b	58.57	0.56	24.12	29.67	53.79 %
RTP1L					
b	54.47	1.02	24.13	29.63	53.75 %
RTP1L					
b	60.02	0.56	24.1	29.66	53.75 %
RTP1L					
b	57.68	0.71			%
KÅP1L					
b	57.7	0.56	24.23	29.69	53.92 %
KÅP1L					
b	57.97	0.56	24.24	29.67	53.92 %
KÅP1L					
b	57.81	0.56	24.23	29.69	53.92 %
KÅP1L					
b	57.82	0.56			%
RTP1M	63.94	0.53	24.33	29.6	53.93 %
RTP1M	63.89	0.53	24.37	29.61	53.98 %
RTP1M	55.32	1.21	24.37	29.59	53.96 %
RTP1M	61.05	0.76			%
KÅP1					
M	53.72	1.1	24.24	29.58	53.82 %
KÅP1					
M	53.19	1.08	24.25	30.25	54.51 %
KÅP1					
M	61.49	0.52	24.3	29.6	53.9 %
KÅP1					
M	56.13	0.9			%
RTP1N	78.67	0.51	24.06	29.81	53.87 %
RTP1N	78.46	0.51	24.14	29.58	53.72 %
RTP1N	77.42	0.51	24.13	29.62	53.75 %
RTP1N	78.18	0.51			%
KÅP1N	77.42	0.5	24.17	29.57	53.74 %
KÅP1N	76.77	0.51	24.15	29.59	53.74 %
KÅP1N	76.52	0.51	24.19	29.56	53.75 %
KÅP1N	76.9	0.51			%
RTP1O	62.41	0.52	23.65	29.62	53.27 %
RTP1O	53.65	1.02	23.71	29.58	53.28 %
RTP1O	53.83	1	23.69	29.62	53.31 %
RTP1O	56.63	0.85			%
KÅP1O	48.11	1.01	24.21	29.6	53.8 %
KÅP1O	61.15	0.52	24.2	29.56	53.76 %
KÅP1O	61.27	0.52	24.25	29.58	53.84 %
KÅP1O	56.84	0.68			%

LA-ICP-MS

Source file	RTP2A-1	RTP2A-2	RTP2A-3	RTP2C-1	RTP2C-2	RTP2C-3	RTP2N-1	RTP2N-2	RTP2N-3
DateTime	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11
Date	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Time	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.48
Duration(s)	27.52	19.89	34.48	20.55	24.53	19.56	34.48	23.87	18.90
Comments	RTP2A-1	RTP2A-2	RTP2A-3	RTP2C-1	RTP2C-2	RTP2C-3	RTP2N-1	RTP2N-2	RTP2N-3
Si29_CPS	3210000.00	3340000.00	###	3220000.00	3810000.00	3290000.00	3260000.00	3530000.00	3630000.00
Si29_CPS_Int	170000.00	150000.00	###	130000.00	280000.00	180000.00	120000.00	230000.00	230000.00
Sc_ppm_m45	13.12	13.20	13.71	12.89	13.38	13.09	17.88	18.67	17.73
Sc_ppm_m45	0.84	0.48	0.56	0.74	0.60	0.66	0.56	0.69	0.86
V_ppm_m51	77.80	80.30	81.00	64.60	69.20	62.50	111.70	115.80	113.60
V_ppm_m51	3.30	3.60	3.10	2.70	3.10	3.00	2.90	3.90	5.30
Cr_ppm_m53	364.00	362.00	359.00	325.00	342.00	312.00	254.00	265.00	263.00
Cr_ppm_m53	18.00	21.00	16.00	14.00	15.00	15.00	7.90	12.00	14.00
Ni_ppm_m60	21.70	21.70	22.00	16.13	16.80	14.68	32.32	33.10	31.60
Ni_ppm_m60	1.30	1.30	1.10	0.77	1.10	0.75	0.99	1.60	1.60
Cu_ppm_m65	8.47	9.06	8.86	8.73	9.77	7.77	5.92	6.91	5.99
Cu_ppm_m65	0.47	0.58	0.49	0.44	0.68	0.47	0.40	0.44	0.28
Ga_ppm_m71	16.82	16.51	16.41	15.51	16.81	14.51	16.31	16.92	16.40
Ga_ppm_m71	0.81	0.84	0.64	0.73	0.77	0.76	0.47	0.65	0.90
Rb_ppm_m85	44.40	45.40	46.40	58.30	58.60	54.30	58.20	62.20	60.10
Rb_ppm_m85	2.60	2.40	2.30	3.40	2.50	3.10	1.70	2.40	3.10
Sr_ppm_m88	200.80	200.90	209.70	230.50	224.40	225.00	164.30	165.80	157.80
Sr_ppm_m88	9.90	9.00	7.40	9.90	9.10	10.00	4.40	5.00	7.50
Y_ppm_m89	16.28	16.26	17.35	12.77	12.66	12.67	39.50	38.80	36.90
Y_ppm_m89	0.93	0.60	0.57	0.66	0.62	0.67	1.30	1.20	1.90
Zr_ppm_m90	610.00	595.00	643.00	433.00	415.00	438.00	458.00	467.00	443.00
Zr_ppm_m90	30.00	27.00	21.00	20.00	18.00	22.00	14.00	15.00	20.00
Nb_ppm_m91	15.95	15.57	16.66	13.30	13.45	12.83	19.84	20.61	21.00
Nb_ppm_m91	0.89	0.78	0.74	0.66	0.52	0.71	0.63	0.71	1.10
Cs_ppm_m13	1.00	1.05	1.01	1.17	1.21	1.11	1.70	1.76	1.80
Cs_ppm_m13	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.08	0.11
Ba_ppm_m13	471.00	469.00	480.00	370.00	370.00	366.00	117.10	116.50	115.70
Ba_ppm_m13	24.00	22.00	20.00	17.00	16.00	16.00	3.90	4.60	5.30
La_ppm_m13	34.60	34.50	36.30	25.10	24.50	25.20	53.00	54.80	52.20
La_ppm_m13	2.00	1.40	1.40	1.00	1.20	1.30	1.50	1.50	2.40
Ce_ppm_m14	87.40	86.90	93.40	72.60	73.60	71.30	126.30	135.20	128.80
Ce_ppm_m14	4.40	3.40	3.30	3.10	2.90	3.10	3.40	4.00	6.30
Pr_ppm_m14	9.14	9.12	9.46	6.36	6.38	6.64	13.58	13.85	13.21
Pr_ppm_m14	0.55	0.41	0.39	0.31	0.30	0.32	0.33	0.50	0.64
Nd_ppm_m14	34.50	33.80	35.30	24.00	23.90	24.80	52.50	52.50	51.00
Nd_ppm_m14	2.00	1.50	1.20	1.20	1.40	1.20	1.60	2.20	2.40
Sm_ppm_m14	6.49	6.52	6.56	4.56	4.63	4.59	9.73	9.70	9.71
Sm_ppm_m14	0.34	0.41	0.33	0.25	0.28	0.35	0.41	0.41	0.54
Eu_ppm_m15	1.13	1.05	1.15	0.99	1.02	1.01	2.06	1.98	1.93
Eu_ppm_m15	0.08	0.08	0.06	0.06	0.07	0.07	0.08	0.08	0.12
Gd_ppm_m15	5.00	4.88	5.13	3.49	3.35	3.24	8.23	7.94	7.69
Gd_ppm_m15	0.32	0.31	0.27	0.22	0.25	0.25	0.28	0.35	0.50
Tb_ppm_m15	0.64	0.66	0.68	0.47	0.44	0.41	1.16	1.15	1.17
Tb_ppm_m15	0.06	0.05	0.04	0.05	0.05	0.04	0.07	0.07	0.09
Dy_ppm_m16	3.70	3.62	3.93	2.65	2.58	2.44	7.14	7.11	6.75
Dy_ppm_m16	0.22	0.26	0.20	0.21	0.19	0.16	0.30	0.26	0.33
Ho_ppm_m16	0.62	0.67	0.71	0.55	0.50	0.49	1.49	1.41	1.50
Ho_ppm_m16	0.04	0.05	0.05	0.04	0.04	0.05	0.06	0.08	0.08
Er_ppm_m16	1.77	1.69	1.82	1.41	1.44	1.43	4.27	4.40	4.04
Er_ppm_m16	0.10	0.10	0.10	0.13	0.10	0.12	0.17	0.19	0.25
Tm_ppm_m16	0.29	0.25	0.29	0.22	0.22	0.20	0.62	0.61	0.57
Tm_ppm_m16	0.03	0.03	0.03	0.04	0.03	0.03	0.04	0.04	0.06
Yb_ppm_m17	1.90	1.83	1.94	1.58	1.46	1.56	4.33	4.31	3.93
Yb_ppm_m17	0.13	0.12	0.11	0.17	0.12	0.17	0.19	0.21	0.23
Lu_ppm_m17	0.32	0.32	0.34	0.23	0.25	0.24	0.63	0.64	0.60
Lu_ppm_m17	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.04
Hf_ppm_m17	15.29	15.41	16.05	10.80	10.55	10.54	11.62	11.63	11.38
Hf_ppm_m17	0.81	0.73	0.50	0.67	0.55	0.65	0.42	0.44	0.63
Ta_ppm_m18	0.60	0.59	0.62	0.66	0.67	0.56	1.16	1.13	1.07
Ta_ppm_m18	0.05	0.04	0.05	0.07	0.07	0.05	0.06	0.07	0.09
Pb_ppm_m20	9.40	9.53	10.46	10.16	12.54	9.62	6.50	7.04	7.19
Pb_ppm_m20	0.49	0.55	0.59	0.58	0.62	0.66	0.27	0.26	0.44
Th_ppm_m23	10.15	10.70	11.02	8.99	9.07	8.42	12.53	12.77	12.26
Th_ppm_m23	0.64	0.54	0.45	0.51	0.47	0.54	0.38	0.45	0.61
U_ppm_m23	2.48	2.70	2.66	1.82	2.06	1.70	3.18	3.33	3.36
U_ppm_m23	0.16	0.16	0.15	0.13	0.10	0.10	0.12	0.14	0.21

Source file	RTP2D-1	RTP2D-2	RTP2D-3	RTP2E-1	RTP2E-2	RTP2E-3	RTP2F-1	RTP2F-2	RTP2F-3
DateTime	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11
Date	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Time	0.48	0.48	0.48	0.48	0.48	0.48	0.49	0.49	0.49
Duration(s)	15.91	40.44	33.81	30.83	28.84	11.93	36.47	11.60	40.78
Comments	RTP2D-1	RTP2D-2	RTP2D-3	RTP2E-1	RTP2E-2	RTP2E-3	RTP2F-1	RTP2F-2	RTP2F-3
Si29_CPS	2380000.00	2780000.00	###	2480000.00	2370000.00	2790000.00	2870000.00	3300000.00	2980000.00
Si29_CPS_Int	190000.00	120000.00	###	120000.00	120000.00	200000.00	110000.00	310000.00	160000.00
Sc_ppm_m45	13.50	13.21	13.50	12.44	12.75	12.19	14.62	14.70	14.23
Sc_ppm_m45	1.10	0.56	0.53	0.57	0.71	0.80	0.54	1.00	0.55
V_ppm_m51	81.80	80.30	82.70	46.30	48.10	49.90	62.50	62.90	63.60
V_ppm_m51	5.40	3.10	3.10	2.30	2.50	3.50	1.80	4.00	2.10
Cr_ppm_m53	289.00	277.00	289.00	277.00	270.00	275.00	290.00	291.00	285.00
Cr_ppm_m53	23.00	12.00	10.00	14.00	14.00	18.00	9.90	19.00	10.00
Ni_ppm_m60	18.80	19.60	20.00	11.20	11.54	11.60	12.90	12.70	13.40
Ni_ppm_m60	1.50	0.95	1.10	1.20	0.72	1.30	0.64	1.30	1.10
Cu_ppm_m65	5.44	6.36	5.79	7.50	4.54	7.80	4.41	4.76	6.40
Cu_ppm_m65	0.56	0.53	0.34	5.20	0.70	6.00	0.32	0.69	1.80
Ga_ppm_m71	18.40	20.10	20.45	15.46	16.23	16.80	16.07	17.77	16.30
Ga_ppm_m71	1.20	0.83	0.82	0.70	0.86	1.30	0.52	0.92	0.67
Rb_ppm_m85	65.90	63.70	67.00	36.50	37.80	37.20	121.00	122.90	122.20
Rb_ppm_m85	5.40	2.60	2.90	2.10	1.90	3.10	3.80	8.60	5.00
Sr_ppm_m88	279.00	288.00	291.00	263.00	273.00	271.00	190.10	200.00	188.60
Sr_ppm_m88	17.00	10.00	10.00	13.00	13.00	19.00	4.80	13.00	6.40
Y_ppm_m89	15.30	15.21	15.40	10.04	10.35	10.52	17.02	17.70	17.26
Y_ppm_m89	1.50	0.62	0.72	0.51	0.61	0.78	0.45	1.10	0.61
Zr_ppm_m90	137.00	138.10	137.40	185.00	187.50	190.00	500.00	516.00	505.00
Zr_ppm_m90	11.00	5.70	5.20	8.70	9.70	13.00	13.00	30.00	16.00
Nb_ppm_m91	8.55	8.31	8.73	3.53	3.62	3.77	17.17	17.20	17.12
Nb_ppm_m91	0.60	0.37	0.40	0.23	0.22	0.33	0.54	1.10	0.59
Cs_ppm_m13	1.55	1.60	1.73	0.73	0.77	2.30	3.64	3.61	3.70
Cs_ppm_m13	0.11	0.08	0.08	0.05	0.06	3.00	0.11	0.27	0.17
Ba_ppm_m13	371.00	377.00	388.00	285.00	288.00	295.00	566.00	600.00	583.00
Ba_ppm_m13	28.00	15.00	12.00	14.00	15.00	24.00	15.00	36.00	19.00
La_ppm_m13	9.90	10.15	10.47	22.00	22.30	22.50	11.39	12.13	11.75
La_ppm_m13	0.77	0.42	0.38	1.00	1.10	1.60	0.37	0.85	0.43
Ce_ppm_m14	29.70	29.50	31.00	57.10	58.90	60.80	60.90	62.40	59.50
Ce_ppm_m14	2.20	1.10	1.00	2.80	3.00	4.50	1.60	3.40	1.80
Pr_ppm_m14	2.77	2.73	2.81	5.33	5.29	5.61	3.30	3.27	3.46
Pr_ppm_m14	0.28	0.13	0.11	0.31	0.28	0.40	0.11	0.23	0.13
Nd_ppm_m14	10.80	10.11	10.66	18.40	20.00	19.00	12.21	12.20	12.35
Nd_ppm_m14	1.20	0.49	0.59	1.10	1.30	1.80	0.47	1.20	0.50
Sm_ppm_m14	2.16	1.94	2.11	3.20	3.12	3.08	2.64	2.80	2.63
Sm_ppm_m14	0.29	0.15	0.15	0.28	0.27	0.30	0.17	0.37	0.16
Eu_ppm_m15	1.25	1.26	1.31	1.33	1.32	1.32	0.85	0.83	0.85
Eu_ppm_m15	0.15	0.06	0.07	0.09	0.09	0.11	0.05	0.12	0.04
Gd_ppm_m15	1.72	1.75	1.78	2.05	1.97	2.08	2.03	2.19	2.11
Gd_ppm_m15	0.17	0.13	0.14	0.18	0.20	0.25	0.15	0.27	0.15
Tb_ppm_m15	0.26	0.30	0.32	0.29	0.29	0.30	0.40	0.40	0.42
Tb_ppm_m15	0.05	0.03	0.03	0.04	0.05	0.06	0.03	0.05	0.04
Dy_ppm_m16	2.53	2.37	2.49	1.75	1.86	1.80	2.99	3.17	3.03
Dy_ppm_m16	0.23	0.13	0.15	0.14	0.16	0.23	0.16	0.30	0.17
Ho_ppm_m16	0.58	0.57	0.60	0.40	0.44	0.42	0.68	0.65	0.70
Ho_ppm_m16	0.08	0.03	0.04	0.04	0.04	0.05	0.05	0.07	0.05
Er_ppm_m16	1.94	1.91	1.96	1.40	1.39	1.38	2.37	2.21	2.39
Er_ppm_m16	0.23	0.10	0.10	0.13	0.12	0.14	0.13	0.21	0.18
Tm_ppm_m17	0.32	0.30	0.30	0.24	0.26	0.26	0.39	0.38	0.37
Tm_ppm_m17	0.07	0.02	0.03	0.04	0.03	0.05	0.04	0.05	0.03
Yb_ppm_m17	2.22	2.15	2.25	1.76	1.70	1.99	2.69	3.03	2.83
Yb_ppm_m17	0.27	0.15	0.12	0.16	0.19	0.23	0.14	0.36	0.16
Lu_ppm_m17	0.31	0.31	0.33	0.27	0.27	0.29	0.43	0.47	0.48
Lu_ppm_m17	0.04	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.04
Hf_ppm_m17	3.83	3.54	3.70	4.55	4.92	4.82	12.86	13.30	13.27
Hf_ppm_m17	0.36	0.19	0.18	0.27	0.32	0.43	0.41	0.88	0.71
Ta_ppm_m18	0.42	0.44	0.43	0.16	0.18	0.14	0.99	1.04	1.03
Ta_ppm_m18	0.09	0.04	0.04	0.02	0.03	0.04	0.05	0.09	0.06
Pb_ppm_m20	9.30	10.91	11.20	15.60	14.66	16.90	15.72	17.30	16.60
Pb_ppm_m20	0.88	0.52	0.44	0.94	0.84	1.30	0.76	1.30	1.10
Th_ppm_m23	4.22	4.50	4.45	7.02	7.70	7.13	9.85	10.85	10.52
Th_ppm_m23	0.47	0.26	0.21	0.37	1.60	0.57	0.33	0.90	0.62
U_ppm_m23	0.89	0.93	1.01	1.15	1.18	1.21	1.96	2.01	2.06
U_ppm_m23	0.14	0.06	0.06	0.08	0.17	0.16	0.10	0.16	0.12

Source file	RTP2G-1	RTP2G-2	RTP2G-3	RTP2B-1	RTP2B-2	RTP2B-3	RTP2H-1	RTP2H-2	RTP2H-3
DateTime	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11	23/07/2014 (4) 11
Date	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Time	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.50
Duration(s)	35.47	36.13	37.79	38.79	40.44	28.51	36.80	32.49	39.45
Comments	RTP2G-1	RTP2G-2	RTP2G-3	RTP2B-1	RTP2B-2	RTP2B-3	RTP2H-1	RTP2H-2	RTP2H-3
Si29_CPS	2630000.00	2510000.00	###	2737000.00	2879000.00	3017000.00	2773000.00	3070000.00	2987000.00
Si29_CPS_Int	120000.00	100000.00	###	95000.00	97000.00	97000.00	79000.00	130000.00	93000.00
Sc_ppm_m45	11.76	12.09	11.68	19.48	19.13	18.90	14.84	13.93	15.12
Sc_ppm_m45	0.51	0.57	0.56	0.55	0.60	0.60	0.47	0.49	0.50
V_ppm_m51	46.20	48.40	45.20	47.00	46.20	46.60	64.20	61.00	64.50
V_ppm_m51	1.90	2.00	1.70	1.20	1.00	1.30	1.80	1.90	1.40
Cr_ppm_m53	306.00	311.00	299.00	355.30	342.70	354.00	271.30	261.60	273.80
Cr_ppm_m53	14.00	14.00	14.00	9.70	7.30	11.00	7.50	8.60	7.30
Ni_ppm_m60	13.40	12.07	11.29	8.80	7.90	8.58	12.09	12.05	12.50
Ni_ppm_m60	2.30	0.91	0.68	0.45	0.37	0.46	0.39	0.46	0.57
Cu_ppm_m65	4.89	4.74	4.21	4.12	4.23	4.11	2.76	3.13	2.88
Cu_ppm_m65	0.88	0.66	0.27	0.31	0.28	0.29	0.22	0.27	0.21
Ga_ppm_m71	13.57	14.35	13.95	12.28	11.79	12.15	19.19	18.87	18.97
Ga_ppm_m71	0.61	0.62	0.56	0.35	0.30	0.34	0.52	0.63	0.51
Rb_ppm_m85	95.50	100.80	97.40	10.01	10.02	10.17	92.40	90.30	92.60
Rb_ppm_m85	4.10	4.10	4.20	0.30	0.28	0.35	2.60	2.90	2.60
Sr_ppm_m88	164.80	173.10	171.50	278.20	274.60	269.60	207.20	201.50	207.60
Sr_ppm_m88	5.80	6.40	6.60	8.60	7.10	7.50	4.80	6.30	6.00
Y_ppm_m89	6.50	7.07	7.06	48.70	48.40	45.90	25.16	24.37	25.30
Y_ppm_m89	0.33	0.32	0.31	1.60	1.50	1.40	0.78	0.86	0.80
Zr_ppm_m90	249.20	265.10	260.70	359.00	354.00	336.00	524.00	503.00	531.00
Zr_ppm_m90	9.40	9.60	9.10	13.00	10.00	10.00	14.00	17.00	15.00
Nb_ppm_m91	9.46	9.63	9.20	16.35	15.78	15.78	19.97	19.17	19.60
Nb_ppm_m91	0.41	0.50	0.38	0.49	0.43	0.54	0.57	0.69	0.58
Cs_ppm_m13	2.55	2.69	2.59	0.77	0.77	0.79	4.44	4.26	4.42
Cs_ppm_m13	0.12	0.13	0.11	0.05	0.03	0.05	0.12	0.16	0.16
Ba_ppm_m13	538.00	566.00	553.00	56.30	57.80	56.70	256.90	251.00	251.50
Ba_ppm_m13	20.00	21.00	20.00	2.00	1.70	2.10	7.30	7.90	8.00
La_ppm_m13	3.90	4.22	3.99	25.70	25.88	25.45	39.70	38.50	39.80
La_ppm_m13	0.18	0.19	0.19	0.79	0.76	0.86	1.00	1.30	1.10
Ce_ppm_m14	26.60	28.00	27.59	56.90	56.10	56.30	93.50	89.80	94.00
Ce_ppm_m14	1.00	1.10	0.94	1.50	1.50	1.60	2.40	3.00	2.50
Pr_ppm_m14	1.04	1.13	1.12	6.41	6.19	6.26	10.34	10.17	10.57
Pr_ppm_m14	0.06	0.08	0.08	0.21	0.16	0.24	0.28	0.32	0.31
Nd_ppm_m14	4.31	4.29	4.34	24.80	24.38	24.57	40.90	40.00	40.70
Nd_ppm_m14	0.29	0.36	0.33	0.86	0.77	0.91	1.40	1.40	1.40
Sm_ppm_m14	0.85	0.88	0.93	4.98	5.19	4.95	7.63	7.61	7.72
Sm_ppm_m14	0.11	0.11	0.11	0.22	0.25	0.25	0.29	0.37	0.33
Eu_ppm_m15	0.58	0.60	0.58	1.58	1.50	1.55	1.39	1.33	1.36
Eu_ppm_m15	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07
Gd_ppm_m15	0.66	0.65	0.68	5.17	5.02	4.78	5.57	5.50	5.80
Gd_ppm_m15	0.08	0.08	0.10	0.25	0.27	0.23	0.31	0.24	0.28
Tb_ppm_m15	0.12	0.13	0.15	0.98	0.92	0.98	0.81	0.79	0.83
Tb_ppm_m15	0.02	0.02	0.02	0.06	0.04	0.07	0.05	0.05	0.05
Dy_ppm_m16	1.01	1.20	1.08	7.89	7.75	7.71	4.83	4.89	5.03
Dy_ppm_m16	0.08	0.26	0.09	0.34	0.26	0.35	0.21	0.23	0.23
Ho_ppm_m16	0.26	0.27	0.29	1.85	1.87	1.74	0.93	0.92	1.04
Ho_ppm_m16	0.03	0.03	0.03	0.09	0.08	0.07	0.05	0.05	0.05
Er_ppm_m16	1.00	0.99	0.97	5.47	5.60	5.17	2.74	2.70	2.91
Er_ppm_m16	0.08	0.08	0.08	0.22	0.20	0.21	0.12	0.12	0.13
Tm_ppm_m17	0.16	0.18	0.17	0.80	0.79	0.82	0.42	0.37	0.42
Tm_ppm_m17	0.02	0.03	0.03	0.05	0.04	0.06	0.04	0.03	0.04
Yb_ppm_m17	1.32	1.35	1.30	5.58	5.46	5.36	2.92	2.91	2.97
Yb_ppm_m17	0.11	0.11	0.12	0.29	0.25	0.24	0.17	0.17	0.13
Lu_ppm_m17	0.20	0.21	0.22	0.80	0.76	0.78	0.44	0.42	0.43
Lu_ppm_m17	0.02	0.02	0.02	0.03	0.04	0.04	0.03	0.03	0.02
Hf_ppm_m17	6.53	6.91	6.68	9.07	8.99	8.77	13.05	12.99	13.52
Hf_ppm_m17	0.31	0.36	0.35	0.37	0.33	0.33	0.53	0.50	0.48
Ta_ppm_m18	0.56	0.56	0.56	0.85	0.88	0.89	1.00	1.10	1.07
Ta_ppm_m18	0.05	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.06
Pb_ppm_m20	15.86	16.70	15.80	9.40	9.46	9.73	9.42	9.42	9.19
Pb_ppm_m20	0.75	1.20	0.78	0.45	0.33	0.48	0.42	0.34	0.36
Th_ppm_m23	4.18	4.40	4.42	6.89	7.10	6.78	11.47	11.30	11.67
Th_ppm_m23	0.22	0.26	0.22	0.32	0.23	0.26	0.41	0.43	0.40
U_ppm_m23	0.97	1.08	1.04	1.64	1.69	1.75	2.25	2.20	2.23
U_ppm_m23	0.07	0.08	0.07	0.08	0.09	0.09	0.10	0.12	0.10

Source file	RTP2I-1	RTP2I-2	RTP2I-3	RTP2J-1	RTP2J-2	RTP2J-3
DateTime	23/07/2014 (4) 12	23/07/2014 (4) 1	23/07/2014 (4) 1	23/07/2014 (4) 2	23/07/2014 (4) 2	23/07/2014 (4) 2
Date	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Time	0.50	0.50	0.50	0.50	0.50	0.51
Duration(s)	16.91	35.47	40.11	41.11	40.11	39.45
Comments	RTP2I-1	RTP2I-2	RTP2I-3	RTP2J-1	RTP2J-2	RTP2J-3
Si29_CPS	2390000.00	2778000.00	###	2740000.00	2850000.00	2878000.00
Si29_CPS_Int	130000.00	93000.00	###	110000.00	110000.00	99000.00
Sc_ppm_m45	15.69	15.32	15.34	18.89	18.84	18.82
Sc_ppm_m45	0.64	0.50	0.59	0.57	0.58	0.54
V_ppm_m51	69.60	68.40	69.90	98.80	98.00	101.10
V_ppm_m51	2.60	2.00	1.90	2.30	2.30	2.00
Cr_ppm_m53	291.00	299.00	299.00	195.60	192.10	197.10
Cr_ppm_m53	13.00	10.00	10.00	5.30	5.10	5.40
Ni_ppm_m60	17.78	16.44	16.44	30.22	30.27	30.39
Ni_ppm_m60	0.79	0.60	0.65	0.79	0.90	0.91
Cu_ppm_m65	3.95	4.61	4.73	5.73	6.12	5.75
Cu_ppm_m65	0.37	0.33	0.35	0.34	0.38	0.29
Ga_ppm_m71	18.13	18.93	18.88	24.87	24.19	24.92
Ga_ppm_m71	0.53	0.60	0.61	0.61	0.62	0.61
Rb_ppm_m85	122.30	120.80	121.50	223.20	219.10	229.10
Rb_ppm_m85	4.70	3.70	3.70	4.90	5.90	5.70
Sr_ppm_m88	208.30	202.00	202.20	155.70	155.00	155.80
Sr_ppm_m88	7.00	6.60	6.10	3.90	4.70	3.70
Y_ppm_m89	25.48	24.33	24.44	45.70	45.80	46.10
Y_ppm_m89	0.99	0.86	0.84	1.40	1.50	1.10
Zr_ppm_m90	333.00	317.00	321.10	454.00	462.00	456.00
Zr_ppm_m90	12.00	11.00	9.80	12.00	13.00	11.00
Nb_ppm_m93	16.01	16.07	16.30	24.87	24.28	25.16
Nb_ppm_m93	0.69	0.49	0.52	0.68	0.60	0.77
Cs_ppm_m13	4.72	4.66	4.80	6.88	6.78	7.09
Cs_ppm_m13	0.24	0.15	0.15	0.18	0.20	0.20
Ba_ppm_m13	490.00	479.00	488.00	1131.00	1126.00	1158.00
Ba_ppm_m13	24.00	13.00	14.00	28.00	30.00	29.00
La_ppm_m13	19.46	18.37	18.53	74.40	74.20	75.00
La_ppm_m13	0.81	0.56	0.61	2.10	2.20	1.90
Ce_ppm_m14	56.10	54.30	55.40	129.10	128.80	131.10
Ce_ppm_m14	2.30	1.60	1.50	3.20	3.60	3.10
Pr_ppm_m14	4.61	4.79	4.66	17.64	17.50	17.86
Pr_ppm_m14	0.22	0.17	0.17	0.44	0.43	0.47
Nd_ppm_m14	18.06	18.02	18.09	68.50	68.50	68.80
Nd_ppm_m14	0.95	0.71	0.70	2.10	2.20	1.90
Sm_ppm_m14	3.74	3.62	3.47	13.31	13.05	13.13
Sm_ppm_m14	0.26	0.20	0.22	0.48	0.45	0.50
Eu_ppm_m15	0.78	0.79	0.78	2.22	2.16	2.18
Eu_ppm_m15	0.05	0.04	0.05	0.08	0.09	0.07
Gd_ppm_m15	3.13	3.07	3.10	11.26	11.40	11.43
Gd_ppm_m15	0.25	0.20	0.20	0.40	0.38	0.38
Tb_ppm_m15	0.52	0.54	0.57	1.52	1.56	1.58
Tb_ppm_m15	0.07	0.04	0.04	0.07	0.07	0.06
Dy_ppm_m16	4.01	4.01	3.94	9.04	9.01	9.12
Dy_ppm_m16	0.25	0.17	0.18	0.29	0.34	0.28
Ho_ppm_m16	0.86	0.88	0.90	1.69	1.71	1.66
Ho_ppm_m16	0.07	0.05	0.05	0.07	0.07	0.06
Er_ppm_m16	2.87	2.77	3.01	4.54	4.58	4.48
Er_ppm_m16	0.20	0.14	0.14	0.18	0.19	0.18
Tm_ppm_m17	0.46	0.46	0.46	0.64	0.66	0.67
Tm_ppm_m17	0.04	0.04	0.04	0.04	0.04	0.04
Yb_ppm_m17	3.26	3.34	3.39	4.20	4.20	4.22
Yb_ppm_m17	0.25	0.17	0.17	0.16	0.20	0.21
Lu_ppm_m17	0.49	0.49	0.50	0.64	0.62	0.62
Lu_ppm_m17	0.03	0.02	0.03	0.03	0.03	0.03
Hf_ppm_m17	8.66	8.48	8.22	11.80	11.85	12.00
Hf_ppm_m17	0.52	0.34	0.28	0.48	0.42	0.44
Ta_ppm_m18	1.16	1.25	1.26	1.17	1.25	1.17
Ta_ppm_m18	0.08	0.07	0.07	0.06	0.06	0.05
Pb_ppm_m20	15.32	17.13	17.21	19.06	19.20	19.56
Pb_ppm_m20	0.77	0.72	0.78	0.54	0.64	0.63
Th_ppm_m23	9.23	8.75/129	9.05	17.37	17.66	17.35
Th_ppm_m23	0.33	0.28	0.33	0.52	0.52	0.49
U_ppm_m238	2.92	2.78	2.89	3.64	3.55	3.65
U_ppm_m238	0.20	0.13	0.14	0.16	0.12	0.11

Source file	RTP2M-1	RTP2M-2	RTP2M-3	RTP2K-1	RTP2K-2	RTP2K-3
DateTime	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Date	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)	23/07/2014 (4)
Time	0.51	0.51	0.51	0.51	0.51	0.51
Duration(s)	37.13	33.48	36.13	30.50	40.44	40.11
Comments	RTP2M-1	RTP2M-2	RTP2M-3	RTP2K-1	RTP2K-2	RTP2K-3
Si29_CPS	2457000.00	2502000.00	###	2629000.00	2746000.00	2695000.00
Si29_CPS_Int	74000.00	69000.00	###	80000.00	80000.00	76000.00
Sc_ppm_m45	17.66	17.73	17.31	18.98	19.00	19.23
Sc_ppm_m45	0.73	0.55	0.54	0.51	0.57	0.58
V_ppm_m51	83.50	85.30	83.30	90.20	89.20	90.80
V_ppm_m51	2.40	2.20	2.30	2.20	1.80	2.40
Cr_ppm_m53	206.70	206.20	200.00	168.70	161.10	164.30
Cr_ppm_m53	6.70	6.30	6.60	5.40	4.10	4.80
Ni_ppm_m60	24.80	24.90	23.97	28.10	27.66	28.20
Ni_ppm_m60	1.00	0.92	0.81	1.00	0.68	0.98
Cu_ppm_m65	5.27	5.34	5.42	8.70	8.75	9.16
Cu_ppm_m65	0.42	0.36	0.33	0.51	0.50	0.66
Ga_ppm_m71	22.45	22.77	21.51	23.52	22.99	23.84
Ga_ppm_m71	0.63	0.61	0.57	0.60	0.57	0.76
Rb_ppm_m85	147.90	148.10	145.20	78.60	77.10	79.80
Rb_ppm_m85	4.70	3.80	3.30	1.90	1.80	2.40
Sr_ppm_m88	203.80	205.20	200.90	191.30	195.60	196.40
Sr_ppm_m88	6.30	6.40	5.90	4.50	4.20	5.10
Y_ppm_m89	32.10	32.30	31.50	63.30	65.40	65.90
Y_ppm_m89	1.00	1.10	1.00	1.80	1.70	1.80
Zr_ppm_m90	361.00	363.00	358.00	368.30	379.70	379.50
Zr_ppm_m90	11.00	12.00	11.00	8.80	9.40	9.90
Nb_ppm_m91	20.22	20.57	19.82	23.93	23.59	24.44
Nb_ppm_m91	0.70	0.69	0.74	0.73	0.46	0.65
Cs_ppm_m13	6.80	7.01	6.66	1.31	1.35	1.39
Cs_ppm_m13	0.24	0.24	0.21	0.05	0.05	0.06
Ba_ppm_m13	615.00	629.00	610.00	719.00	735.00	734.00
Ba_ppm_m13	20.00	21.00	16.00	17.00	18.00	20.00
La_ppm_m13	40.90	41.40	40.90	70.70	72.00	72.10
La_ppm_m13	1.30	1.10	1.30	1.70	1.90	2.00
Ce_ppm_m14	94.00	93.80	95.00	130.40	132.90	135.50
Ce_ppm_m14	2.90	2.50	2.80	3.10	3.40	3.50
Pr_ppm_m14	10.77	10.92	10.64	16.28	16.68	17.03
Pr_ppm_m14	0.34	0.35	0.32	0.44	0.45	0.45
Nd_ppm_m14	40.50	40.70	40.10	65.90	65.10	65.00
Nd_ppm_m14	1.40	1.20	1.50	2.10	1.90	1.90
Sm_ppm_m14	8.24	8.27	7.92	12.94	12.97	13.29
Sm_ppm_m14	0.44	0.29	0.30	0.52	0.35	0.47
Eu_ppm_m15	1.54	1.56	1.46	2.27	2.28	2.33
Eu_ppm_m15	0.09	0.07	0.06	0.07	0.08	0.09
Gd_ppm_m15	6.65	6.58	6.38	11.08	11.68	11.97
Gd_ppm_m15	0.34	0.32	0.29	0.35	0.41	0.39
Tb_ppm_m15	1.00	1.10	1.02	1.76	1.73	1.80
Tb_ppm_m15	0.08	0.07	0.05	0.09	0.07	0.08
Dy_ppm_m16	6.59	6.39	6.18	10.75	11.07	11.06
Dy_ppm_m16	0.29	0.29	0.23	0.46	0.36	0.38
Ho_ppm_m16	1.29	1.38	1.33	2.19	2.20	2.24
Ho_ppm_m16	0.07	0.06	0.07	0.09	0.08	0.08
Er_ppm_m16	3.96	3.94	3.75	6.34	6.25	6.43
Er_ppm_m16	0.19	0.18	0.16	0.25	0.26	0.23
Tm_ppm_m17	0.62	0.59	0.60	0.85	0.92	0.89
Tm_ppm_m17	0.06	0.04	0.05	0.06	0.05	0.06
Yb_ppm_m17	4.23	4.25	4.14	5.88	5.86	5.84
Yb_ppm_m17	0.23	0.22	0.21	0.23	0.18	0.24
Lu_ppm_m17	0.60	0.61	0.62	0.79	0.82	0.84
Lu_ppm_m17	0.03	0.03	0.03	0.03	0.04	0.04
Hf_ppm_m17	9.65	9.74	9.38	9.67	9.85	10.31
Hf_ppm_m17	0.37	0.37	0.35	0.37	0.38	0.38
Ta_ppm_m18	1.31	1.39	1.41	1.57	1.51	1.59
Ta_ppm_m18	0.08	0.07	0.08	0.06	0.08	0.06
Pb_ppm_m20	22.74	23.53	23.45	22.74	22.00	23.03
Pb_ppm_m20	0.94	0.92	0.92	0.94	0.85	0.90
Th_ppm_m23	15.69	15.86/129.03	15.86/129.03	16.97	17.27	17.40
Th_ppm_m23	0.58	0.50	0.55	0.59	0.52	0.54
U_ppm_m23	5.42	5.84	5.38	4.76	4.68	4.82
U_ppm_m23	0.26	0.20	0.18	0.15	0.16	0.18

WDS

thin section mineral name

Weight per Group : Sample : : Page

1

Omg 2	No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total	
	1	63.41	22.35	0.00	9.06	0.05	0.00	0.04	0.09	3.63	0.01	0.00	0.00	0.02	98.6573	
	2	63.10	22.75	0.01	8.79	0.13	0.00	0.07	0.00	4.09	0.00	0.00	0.00	0.02	98.9521	
	3	63.16	22.64	0.02	8.97	0.00	0.00	0.08	0.00	3.74	0.01	0.07	0.00	0.01	98.6945	
	4	63.60	22.22	0.02	8.86	0.00	0.00	0.11	0.00	3.42	0.00	0.02	0.02	0.02	98.2862	
	5	63.96	22.23	0.00	9.17	0.00	0.00	0.14	0.06	3.43	0.04	0.06	0.05	0.00	99.1305	
	6	63.59	22.06	0.00	9.07	0.02	0.01	0.13	0.01	3.55	0.00	0.00	0.01	0.00	98.4477	
	7	63.41	22.15	0.00	9.27	0.00	0.01	0.16	0.14	3.48	0.00	0.00	0.00	0.00	98.625	
	8	63.61	22.06	0.00	9.17	0.00	0.00	0.11	0.02	3.74	0.04	0.03	0.00	0.00	98.7719	
	9	63.35	22.36	0.00	8.99	0.16	0.00	0.06	0.01	3.87	0.07	0.02	0.00	0.02	98.9122	
	10	63.43	22.25	0.02	9.13	0.00	0.00	0.06	0.14	3.54	0.00	0.05	0.02	0.00	98.6555	
RTP1La	plagioclase	11	62.69	22.52	0.00	8.98	0.01	0.07	0.08	4.03	0.00	0.00	0.01	0.01	98.467	
RTP1La	biotite	12	36.97	18.40	13.97	0.22	0.09	1.87	9.12	2.23	0.00	0.01	13.25	0.02	0.03	94.1876
RTP1La	chlorite	13	26.66	22.20	19.73	0.00	0.18	0.12	0.02	0.00	0.00	0.03	18.05	0.04	0.00	87.035
RTP1La	muscovite	14	45.80	34.27	0.95	1.58	0.00	0.81	8.86	0.29	0.00	0.01	0.93	0.00	0.00	93.4953
RTP1La	kyanite	15	37.44	62.84	0.00	0.00	0.00	0.00	0.03	0.06	0.03	0.00	0.24	0.01	0.00	100.6453
RTP1La	muscovite (s)	16	46.36	36.12	0.62	0.84	0.00	0.05	9.80	0.25	0.05	0.00	0.75	0.00	0.00	94.8528
RTP1Lb	plagioclase	17	64.03	22.00	0.00	9.22	0.04	0.03	0.09	0.08	3.44	0.02	0.00	0.00	0.04	98.9887
RTP1Lb	chlorite	18	46.41	35.17	0.77	1.52	0.00	0.33	8.76	0.37	0.00	0.00	0.99	0.02	0.03	94.3681
RTP1Lb	muscovite (s)	19	46.93	34.49	0.89	0.24	0.03	0.04	10.39	0.15	0.01	0.00	0.58	0.00	0.00	93.7501
RTP1Lb	biotite	20	37.07	18.80	13.37	0.30	0.14	2.02	9.05	0.21	0.03	0.01	14.17	0.02	0.10	95.2891
RTP1M	plagioclase	21	60.33	24.69	0.00	7.54	0.00	0.01	0.07	0.00	6.46	0.00	0.02	0.03	0.01	99.1696
RTP1M	biotite	22	37.81	18.62	14.20	0.22	0.14	1.80	9.13	0.08	0.04	0.05	12.62	0.06	0.01	94.7827
RTP1M	muscovite	23	45.93	35.58	0.70	1.70	0.00	0.46	8.45	0.24	0.03	0.00	0.81	0.05	0.07	94.0192
RTP1M	chlorite	24	27.99	21.49	20.59	0.09	0.08	0.04	0.05	0.00	0.00	0.00	17.04	0.01	0.04	87.4212
RTP1M	muscovite (s)	25	46.29	34.69	0.84	0.85	0.00	0.67	9.68	0.20	0.00	0.00	0.72	0.05	0.01	94.0049
KAP2A	garnet, core	26	38.12	21.29	3.05	0.01	2.67	0.03	0.00	0.07	3.17	0.00	32.77	0.03	0.00	101.2044
KAP2A	garnet, rim	27	37.86	21.69	2.71	0.00	2.98	0.03	0.01	0.00	2.81	0.00	33.07	0.00	0.03	101.1978
KAP2A	biotite	28	35.85	17.76	8.01	0.02	0.09	2.98	9.27	0.50	0.03	0.00	21.22	0.02	0.05	95.8117
KAP2A	feldspar	29	62.45	23.44	0.00	8.53	0.00	0.00	0.17	0.00	4.96	0.04	0.08	0.00	0.00	99.6703
KAP2A	feldspar	30	62.36	23.33	0.00	8.37	0.00	0.00	0.09	0.06	5.05	0.00	0.02	0.00	0.00	99.2714
KAP2A	feldspar	31	62.59	23.37	0.01	8.48	0.13	0.00	0.11	0.00	5.03	0.03	0.02	0.00	0.01	99.7805
KAP2A	muscovite	32	46.19	33.93	0.87	0.53	0.04	0.82	10.14	0.68	0.00	0.03	1.76	0.03	0.10	95.1195
KAP2A	muscovite	33	45.61	33.48	0.92	0.46	0.00	0.92	9.89	0.82	0.03	0.01	2.69	0.03	0.06	94.9304

KAP2G	garnet, core	34	38.58	21.40	2.48	0.05	3.38	0.01	0.00	0.00	5.11	0.04	30.60	0.00	0.00	101.6521
KAP2G	garnet, rim	35	38.14	21.57	2.33	0.02	3.23	0.00	0.04	0.00	5.79	0.00	30.12	0.04	0.01	101.2966
KAP2G	muscovite	36	35.68	16.57	6.40	0.13	0.40	3.14	9.15	0.00	0.00	0.01	22.86	0.04	0.08	94.4627
KAP2G	plagioclase	37	61.66	24.48	0.01	8.16	0.00	0.03	0.15	0.04	5.72	0.00	0.04	0.00	0.00	100.2868
KAP2G	biotite	38	47.19	30.50	1.50	0.34	0.16	0.92	10.57	0.12	0.02	0.04	3.05	0.00	0.03	94.4553
KAP2G	biotite	39	47.18	30.84	1.46	0.32	0.05	1.17	10.93	0.04	0.00	0.00	2.86	0.05	0.08	94.9838
KAP2G	biotite	40	47.38	30.90	1.54	0.25	0.04	0.88	10.47	0.13	0.02	0.00	3.11	0.00	0.03	94.7438
KAP2G	K-feldspar	41	65.47	18.57	0.00	0.84	0.00	0.02	15.17	0.43	0.00	0.03	0.00	0.02	0.00	100.5457
RTP2K	garnet, core	42	37.69	21.61	3.45	0.01	2.97	0.00	0.00	0.06	1.21	0.04	33.80	0.04	0.03	100.9099
RTP2K	garnet, core	43	38.08	21.60	3.33	0.00	2.96	0.03	0.00	0.00	1.18	0.00	34.15	0.00	0.02	101.3419
RTP2K	garnet, rim	44	37.73	21.20	2.00	0.02	4.29	0.03	0.00	0.14	2.64	0.00	32.76	0.00	0.00	100.8152
RTP2K	garnet, rim	45	38.14	21.28	2.80	0.00	2.88	0.00	0.01	0.00	1.21	0.00	34.90	0.00	0.03	101.2495
RTP2K	muscovite	46	46.12	33.53	0.99	0.35	0.00	0.41	10.56	0.50	0.00	0.05	2.24	0.03	0.01	94.7813
RTP2K	muscovite	47	47.12	33.21	0.95	0.35	0.00	0.46	10.57	0.34	0.02	0.00	2.26	0.05	0.02	95.354
RTP2K	biotite	48	28.53	14.87	9.96	0.05	0.27	0.01	0.05	0.00	0.13	0.03	33.94	0.04	0.07	87.9315
RTP2K	garnet, rim	49	37.84	21.21	2.49	0.04	3.02	0.01	0.02	0.05	1.28	0.05	34.80	0.00	0.04	100.8482
RTP2K	biotite	50	28.58	15.69	9.83	0.01	0.13	0.00	0.06	0.03	0.07	0.02	33.58	0.01	0.02	88.017
RTP2K	chlorite	51	29.59	12.70	8.08	0.12	0.17	4.75	0.07	0.04	4.43	0.07	28.19	0.02	0.06	88.2916
RTP2K	chlorite	52	29.15	14.62	9.75	0.05	0.17	0.07	0.03	0.00	0.15	0.00	34.11	0.01	0.03	88.1492
RTP2K	plagioclase	53	67.47	20.59	0.02	10.58	0.01	0.00	0.36	0.10	0.73	0.02	0.18	0.00	0.00	100.0592
RTP2K	plagioclase	54	67.92	19.87	0.00	10.68	0.05	0.00	0.26	0.00	0.48	0.00	0.08	0.00	0.00	99.3373
KAP2M	chlorite	55	35.64	18.37	8.00	0.11	0.00	1.42	7.90	0.17	0.09	0.00	22.21	0.02	0.00	93.9265
KAP2M	biotite	56	34.17	18.96	8.45	0.14	0.02	1.37	6.68	0.09	0.03	0.03	23.07	0.07	0.06	93.1358
KAP2M	muscovite	57	46.11	34.90	0.69	0.51	0.00	1.11	10.56	0.19	0.01	0.00	1.52	0.04	0.06	95.7006
KAP2M	chlorite	58	27.97	18.74	9.91	0.08	0.35	0.15	0.52	0.09	0.08	0.01	29.45	0.00	0.00	87.3393
KAP2M	chlorite	59	36.05	19.25	8.21	0.16	0.08	1.60	7.75	0.00	0.06	0.01	21.36	0.00	0.05	94.5718
KAP2M	chlorite	60	27.08	18.89	10.32	0.05	0.16	0.08	0.10	0.00	0.05	0.04	30.91	0.00	0.03	87.6969
KAP2M	chlorite	61	29.27	19.03	10.24	0.06	0.16	0.37	1.62	0.00	0.05	0.03	28.17	0.04	0.02	89.0628
KAP2M	chlorite	62	35.83	18.01	7.85	0.08	0.26	1.73	8.58	0.05	0.04	0.03	21.18	0.01	0.03	93.6744
KAP2M	chlorite	63	31.21	18.65	9.31	0.11	0.26	0.79	4.01	0.09	0.01	0.05	25.36	0.03	0.04	89.9276
KAP2M	plagioclase	64	65.74	18.39	0.02	0.11	0.19	0.02	16.24	0.06	0.00	0.00	0.00	0.00	0.04	100.8155
KAP2M	plagioclase	65	65.61	18.20	0.00	0.04	0.06	0.04	16.04	0.12	0.00	0.04	0.01	0.03	0.00	100.1986
KAP1B	chlorite	66	27.05	22.57	19.68	0.00	0.02	0.10	0.04	0.06	0.04	0.00	17.66	0.06	0.05	87.3191
KAP1B	chlorite	67	26.73	22.84	20.61	0.02	0.00	0.04	0.00	0.05	0.04	0.06	17.33	0.05	0.06	87.8345
KAP1B	chlorite	68	26.54	22.54	20.48	0.00	0.07	0.03	0.01	0.08	0.01	0.01	17.62	0.07	0.07	87.534
KAP1B	plagioclase	69	64.36	21.91	0.00	9.77	0.06	0.00	0.07	0.03	3.33	0.05	0.02	0.00	0.00	99.6089
KAP1B	plagioclase	70	64.68	22.11	0.02	9.51	0.07	0.00	0.07	0.06	3.32	0.00	0.00	0.00	0.00	99.8412

KAP1B	plagioclase	71	64.78	22.01	0.00	9.40	0.00	0.01	0.04	0.03	3.18	0.07	0.00	0.01	0.03	99.5551
KAP1B	muscovite	72	46.60	35.46	0.76	1.16	0.04	0.05	9.12	0.12	0.00	0.00	1.28	0.00	0.03	94.6244
KAP1B	muscovite	73	46.25	35.42	0.81	0.61	0.02	0.08	10.45	0.19	0.01	0.00	1.24	0.00	0.03	95.0941
KAP1B	biotite	74	43.93	30.53	5.41	0.36	0.00	0.49	6.39	0.02	0.02	0.05	4.50	0.00	0.07	91.7813
KAP1B	biotite	75	51.58	31.99	1.27	1.15	0.07	0.13	7.96	0.03	0.26	0.00	0.96	0.05	0.01	95.4609
KAP1B	chlorite	76	27.03	22.06	20.36	0.18	0.05	0.07	0.02	0.00	0.04	0.05	17.24	0.05	0.03	87.1717
KAP1B	chlorite	77	27.10	22.62	20.64	0.14	0.00	0.09	0.05	0.06	0.03	0.01	17.17	0.06	0.05	88.0221
KAP1K	chlorite	78	28.78	21.41	24.18	0.02	0.15	0.07	0.04	0.11	0.00	0.00	12.43	0.04	0.00	87.2346
KAP1K	biotite	79	38.64	17.91	17.11	0.09	0.00	1.05	9.47	0.00	0.04	0.04	10.37	0.08	0.11	94.903
KAP1K	feldspar	80	65.52	21.53	0.00	9.90	0.04	0.00	0.07	0.11	2.36	0.06	0.00	0.01	0.00	99.6032
KAP1K	feldspar	81	65.81	21.43	0.00	10.03	0.00	0.01	9.12	0.00	2.33	0.02	0.04	0.05	0.01	99.8537
KAP1K	biotite	82	38.86	18.07	16.87	0.22	0.00	1.19	9.19	0.00	0.05	0.04	10.46	0.05	0.07	95.0737
KAP1K	muscovite (s?)	83	44.66	35.57	0.98	0.43	0.00	0.27	9.92	1.93	0.02	0.00	0.91	0.07	0.00	94.7612
Minimum			26.54	12.7	0	0	0	0	0	0	0	0	0	0	0	87.035
Maximum			67.92	62.84	24.18	10.68	4.29	4.75	16.24	1.93	6.46	0.0723	34.9	0.0791	0.1073	101.6522
Average			46.3034	24.0894	4.9858	2.8552	0.4012	0.4507	4.0446	0.1278	1.4142	0.0181	10.8696	0.0215	0.0262	95.6076
Sigma			13.8222	7.3931	6.8061	4.0723	0.9804	0.8262	4.9893	0.2513	1.912	0.0214	12.8467	0.0227	0.0275	4.5696
No. of data			83													

thin section	mineral name	Weight pe	Group	Sample : Page															
Omg 1				1	No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total
KAP1Lb	garnet (core)	1	38.94	21.87	6.12	0.00	1.96	0.01	0.00	0.00	0.93	0.00	32.39	0.00	0.04	102.2536			
KAP1Lb	garnet (rim)	2	38.56	21.62	5.49	0.02	2.25	0.00	0.00	0.01	0.97	0.00	32.07	0.01	0.00	100.995			
KAP1Lb	plagioclase	3	64.98	22.01	0.00	9.65	0.00	0.03	0.08	0.00	3.07	0.00	0.05	0.01	0.01	99.8909			
KAP1Lb	plagioclase	4	64.75	22.09	0.00	9.65	0.00	0.00	0.10	0.02	2.95	0.04	0.05	0.03	0.01	99.6753			
KAP1Lb	biotite	5	37.75	19.09	13.39	0.28	0.05	1.40	8.71	0.13	0.01	0.02	14.07	0.03	0.03	94.9462			
KAP1Lb	biotite	6	37.57	19.61	13.51	0.35	0.00	1.46	9.35	0.08	0.00	0.01	13.35	0.04	0.03	95.3605			
KAP1Lb	upprgarnet	7	38.64	21.96	6.21	0.01	1.89	0.02	0.00	0.07	0.90	0.00	32.01	0.04	0.06	101.8176			
KAP1Lb	muscovite (s)	8	48.13	34.37	0.99	0.34	0.01	0.00	9.96	0.02	0.05	0.00	0.69	0.01	0.04	94.6023			
KAP1Lb	albite	9	69.26	19.41	0.00	11.28	0.00	0.07	0.05	0.00	0.07	0.00	0.00	0.00	0.00	100.1356			

KAP1Lb	muscovite	10	49.54	34.17	0.20	1.11	0.01	0.01	9.16	0.04	0.05	0.08	0.28	0.01	0.00	94.6643			
RTP1D	garnet (core)	11	38.76	22.00	6.89	0.02	1.10	0.01	0.00	0.00	1.26	0.00	31.26	0.00	0.00	101.3109			
RTP1D	garnet (rim)	12	38.62	21.79	6.06	0.06	1.25	0.04	0.01	0.00	1.21	0.00	32.15	0.02	0.00	101.2043			
RTP1D	chlorite	13	26.25	21.60	16.14	0.02	0.07	0.03	0.05	0.00	0.03	0.01	23.59	0.05	0.06	87.8984			
RTP1D	biotite	14	36.89	18.35	10.37	0.12	0.06	1.90	9.53	0.18	0.03	0.03	18.82	0.05	0.08	96.4035			
RTP1D	feldspar	15	64.57	22.49	0.02	9.25	0.00	0.00	0.09	0.00	3.61	0.04	0.04	0.00	0.00	100.1144			
RTP1D	muscovite	16	46.99	33.32	1.26	0.59	0.05	0.01	10.04	0.02	0.00	0.02	1.65	0.00	0.04	93.9856			
RTP1H	amphibole	17	53.10	7.46	20.29	0.94	0.17	0.37	0.15	0.00	12.63	0.04	2.83	0.01	0.00	97.9813			
RTP1H	amphibole	18	52.39	8.51	20.09	0.93	0.00	0.41	0.19	0.00	12.54	0.04	2.94	0.00	0.00	98.0404			
RTP1H	amphibole	19	52.59	7.59	20.11	0.90	0.00	0.41	0.15	0.00	12.50	0.00	2.78	0.00	0.00	97.033			
RTP1H	amphibole	20	52.83	7.80	20.03	0.94	0.05	0.33	0.19	0.10	12.38	0.00	2.89	0.04	0.01	97.594			
RTP1H	amphibole	21	52.86	7.63	20.40	1.01	0.04	0.32	0.14	0.07	12.21	0.00	2.83	0.04	0.02	97.5612			
RTP2F	epidote	22	38.60	27.22	0.07	0.00	0.13	0.25	0.01	0.03	23.69	0.01	7.34	0.03	0.03	97.4093			
RTP2F	muscovite	23	48.07	29.69	1.78	0.17	0.00	0.93	10.76	0.21	0.02	0.01	3.27	0.06	0.02	94.9735			
RTP2F	biotite	24	35.95	16.40	7.14	0.05	0.41	3.41	9.19	0.05	0.01	0.00	23.17	0.03	0.06	95.8803			
RTP2F	plagioclase	25	64.87	22.24	0.00	9.19	0.07	0.00	0.23	0.00	3.51	0.00	0.00	0.00	0.03	100.137			
RTP2F	K-feldspar	26	64.97	18.67	0.02	1.05	0.00	0.04	14.89	0.48	0.05	0.00	0.03	0.00	0.00	100.1996			
KAP2M	muscovite	27	46.09	34.52	0.79	0.49	0.11	1.09	10.55	0.16	0.00	0.00	1.51	0.00	0.06	95.3746			
KAP2M	biotite	28	35.22	18.43	8.17	0.11	0.13	1.99	8.57	0.21	0.02	0.05	22.74	0.03	0.07	95.7411			
KAP2M	muscovite (s)	29	46.79	34.88	0.76	0.41	0.00	0.16	10.36	0.39	0.01	0.00	1.59	0.03	0.00	95.3902			
KAP2M	muscovite (s)	30	45.10	37.37	0.26	0.82	0.11	0.11	9.81	1.29	0.02	0.00	1.38	0.01	0.00	96.2778			
KAP2E	garnet	31	38.40	21.64	2.24	0.04	5.39	0.00	0.00	0.08	3.87	0.00	30.03	0.03	0.00	101.7241			
KAP2E	biotite	32	36.26	17.77	8.39	0.06	0.14	2.47	9.37	0.20	0.01	0.00	21.03	0.00	0.07	95.7752			
KAP2E	garnet	33	38.33	21.59	1.92	0.02	5.94	0.02	0.01	0.07	4.30	0.00	29.75	0.00	0.00	101.9502			
KAP2E	biotite	34	36.87	17.91	8.93	0.10	0.14	2.43	8.98	0.19	0.05	0.03	20.44	0.02	0.09	96.1939			
KAP2E	biotite	35	36.23	18.09	8.87	0.11	0.16	2.06	8.90	0.20	0.00	0.01	21.24	0.03	0.03	95.9355			
KAP2E	garnet	36	38.27	21.51	2.66	0.04	4.06	0.05	0.00	0.00	3.73	0.00	31.23	0.05	0.00	101.5966			
KAP2E	garnet (core)	37	38.27	21.25	2.92	0.00	3.63	0.07	0.00	0.11	4.38	0.02	30.60	0.03	0.01	101.3051			
KAP2E	muscovite	38	46.92	31.89	1.35	0.36	0.00	1.38	10.44	0.47	0.00	0.01	2.15	0.05	0.14	95.1565			
KAP2E	plagioclase	39	61.34	24.79	0.00	7.91	0.16	0.00	0.07	0.06	6.26	0.01	0.03	0.00	0.03	100.6626			
RTP2I	feldspar	40	61.77	24.26	0.03	7.95	0.00	0.03	0.18	0.02	5.86	0.00	0.00	0.00	0.00	100.0964			
RTP2I	muscovite	41	46.94	32.96	1.10	0.23	0.00	0.57	10.61	0.12	0.02	0.00	2.52	0.01	0.05	95.1231			
RTP2I	biotite	42	35.94	17.15	7.10	0.14	0.45	3.32	9.19	0.02	0.02	0.03	23.48	0.02	0.03	96.8976			
RTP2I	muscovite	43	46.86	33.08	1.00	0.34	0.01	1.11	10.81	0.10	0.00	0.02	2.05	0.01	0.04	95.4309			
RTP2I	biotite	44	35.86	17.55	7.21	0.16	0.13	2.84	9.25	0.17	0.03	0.00	22.90	0.04	0.10	96.2243			
RTP2I	biotite	45	35.62	17.26	7.13	0.04	0.25	2.72	9.21	0.00	0.05	0.03	23.20	0.04	0.05	95.6026			
KAP2D	biotite	46	36.12	17.77	9.57	0.16	0.18	1.60	8.27	0.19	0.03	0.00	21.04	0.00	0.01	94.936			

KAP2D	garnet	47	38.51	21.54	2.60	0.05	2.09	0.01	0.03	0.00	4.61	0.00	31.99	0.03	0.00	101.4577
KAP2D	biotite	48	36.92	18.05	9.54	0.12	0.21	1.63	9.36	0.31	0.03	0.04	21.08	0.07	0.05	97.4065
KAP2D	garnet	49	38.04	21.45	2.43	0.00	2.44	0.00	0.05	0.00	3.97	0.04	32.85	0.03	0.01	101.3107
KAP2D	biotite	50	36.12	18.31	9.22	0.12	0.22	1.38	8.63	0.16	0.01	0.04	21.33	0.00	0.01	95.5525
KAP2D	garnet	51	38.77	21.81	3.01	0.00	1.96	0.00	0.00	0.00	3.53	0.00	32.67	0.04	0.00	101.7946
KAP2D	feldspar	52	61.03	24.99	0.00	7.61	0.03	0.00	0.11	0.01	6.44	0.02	0.00	0.00	0.00	100.2649
KAP2D	feldspar	53	61.06	24.52	0.04	7.65	0.05	0.00	0.08	0.00	6.45	0.07	0.00	0.02	0.00	99.9424
KAP2D	epidote	54	39.23	28.91	0.00	0.00	0.06	0.17	0.02	0.04	23.79	0.00	5.36	0.04	0.13	97.7358
KAP2Bb	biotite	55	36.73	18.92	11.95	0.11	0.00	1.54	9.26	0.36	0.01	0.05	16.61	0.05	0.05	95.644
KAP2Bb	biotite	56	37.00	18.57	11.70	0.14	0.04	1.73	9.20	0.20	0.06	0.03	16.42	0.06	0.09	95.241
KAP2Bb	biotite	57	36.89	18.81	11.87	0.16	0.07	1.75	9.02	0.27	0.01	0.00	15.84	0.09	0.05	94.839
KAP2Bb	chlorite	58	26.93	22.36	17.56	0.00	0.12	0.13	0.18	0.00	0.01	0.09	21.53	0.01	0.03	88.9637
KAP2Bb	feldspar	59	63.74	23.58	0.01	8.90	0.00	0.00	0.10	0.00	4.60	0.00	0.02	0.01	0.00	100.9603
KAP2Bb	feldspar	60	63.23	23.29	0.02	8.57	0.06	0.04	0.04	0.00	4.62	0.03	0.01	0.01	0.05	99.9608
KAP2Bb	muscovite	61	47.59	34.50	1.11	0.72	0.09	0.07	9.83	0.61	0.01	0.02	1.29	0.00	0.02	95.8681
Minimum			26.25	7.46	0	0	0	0	0	0	0	0	0	0	0	87.8984
Maximum			69.26	37.37	20.4	11.28	5.94	3.41	14.89	1.29	23.79	0.0937	32.85	0.0882	0.144	102.2537
Average			45.2692	22.1351	5.8695	1.8288	0.6232	0.72	4.648	0.1233	3.1394	0.0158	13.2206	0.0223	0.0308	97.646
Sigma			10.9295	7.0068	6.3383	3.3762	1.2945	0.969	4.9168	0.2048	5.2689	0.0211	12.4822	0.021	0.0335	3.0852
No. of data			61													

Weight per	Group	Sample	Page														1.00	
No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment		
1.00	37.14	21.44	5.02	0.00	1.41	0.01	0.00	0.03	1.73	0.07	0.01	32.76	0.00	0.02	99.63			
Minimum	37.14	21.44	5.02	0.00	1.41	0.01	0.00	0.03	1.73	0.07	0.01	32.76	0.00	0.02	99.63			
Maximum	37.14	21.44	5.02	0.00	1.41	0.01	0.00	0.03	1.73	0.07	0.01	32.76	0.00	0.02	99.63			
Average	37.14	21.44	5.02	0.00	1.41	0.01	0.00	0.03	1.73	0.07	0.01	32.76	0.00	0.02	99.63			
Sigma	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
No. of data	1																	

Weight per	Group	Sample	Page														1.00	
No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment		
1.00	37.09	21.69	4.91	0.08	1.30	0.05	0.00	0.03	1.80	0.06	0.03	32.84	0.00	0.01	99.69			
2.00	36.72	21.48	4.27	0.00	1.55	0.00	0.02	0.00	1.68	0.01	0.00	33.77	0.00	0.01	99.51			
3.00	36.95	21.43	4.09	0.00	1.58	0.05	0.00	0.04	1.86	0.06	0.00	33.91	0.05	0.00	100.04			
4.00	37.19	21.16	3.45	0.01	1.33	0.06	0.00	0.00	1.56	0.00	0.00	34.79	0.00	0.00	99.55			
Minimum	36.72	21.16	3.45	0.00	1.30	0.00	0.00	0.00	1.56	0.00	0.00	32.84	0.00	0.00	99.51			
Maximum	37.19	21.69	4.91	0.08	1.58	0.06	0.02	0.04	1.88	0.06	0.03	34.79	0.05	0.01	100.04			
Average	36.99	21.44	4.18	0.02	1.44	0.04	0.01	0.02	1.68	0.03	0.01	33.83	0.01	0.00	99.70			
Sigma	0.20	0.22	0.60	0.04	0.15	0.03	0.01	0.02	0.14	0.03	0.02	0.80	0.03	0.01	0.24			
No. of data	4																	

Weight per	Group	Sample	Page														1.00	
No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment		
1.00	36.85	18.78	10.73	0.06	0.11	1.49	9.05	0.00	0.00	0.00	0.03	18.27	0.03	0.04	95.43			
2.00	35.85	18.40	10.92	0.26	0.01	1.47	8.91	0.18	0.00	0.00	0.08	17.99	0.08	0.08	94.22			
3.00	25.67	22.38	15.79	0.05	0.26	0.09	0.18	0.03	0.02	0.00	0.04	22.96	0.02	0.00	87.49			
4.00	25.91	22.18	15.25	0.11	0.27	0.10	0.02	0.00	0.02	0.00	0.07	23.00	0.01	0.01	86.95			
5.00	45.39	35.15	0.53	1.73	0.06	0.35	8.62	0.17	0.05	0.00	0.00	1.04	0.04	0.05	93.17			
6.00	46.94	33.60	1.05	1.14	0.00	0.35	9.87	0.27	0.00	0.00	0.00	1.59	0.00	0.09	94.89			
Minimum	25.67	18.40	0.53	0.05	0.00	0.09	0.02	0.00	0.00	0.00	0.00	1.04	0.00	0.00	86.95			
Maximum	46.94	35.15	15.79	1.73	0.27	1.49	9.87	0.27	0.05	0.00	0.08	23.00	0.08	0.09	95.43			
Average	36.10	25.08	9.05	0.56	0.12	0.64	6.11	0.11	0.02	0.00	0.04	14.14	0.03	0.04	92.02			
Sigma	9.13	7.40	6.73	0.71	0.12	0.66	4.67	0.11	0.02	0.00	0.03	10.17	0.03	0.04	3.80			
No. of data	6																	

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	0.00	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	0.19	0.10	0.00	0.04	0.04	93.10	0.02	0.18	0.03	0.00	0.00	0.46	0.05	0.85	96.06	
2.00	63.14	23.23	0.01	9.05	0.00	0.01	0.05	0.00	4.58	0.00	0.05	0.00	0.00	0.01	100.11	
3.00	36.51	18.38	10.37	0.21	0.09	2.58	8.99	0.29	0.01	0.00	0.00	17.68	0.02	0.02	95.14	
4.00	36.33	18.32	10.36	0.21	0.00	2.60	8.99	0.25	0.00	0.00	0.00	17.54	0.00	0.11	94.70	
5.00	62.85	23.33	0.00	8.55	0.00	0.05	0.09	0.05	4.77	0.00	0.02	0.02	0.02	0.02	99.78	
6.00	99.10	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	99.18	
7.00	24.92	23.33	15.15	0.01	0.07	0.05	0.04	0.07	0.02	0.00	0.02	23.54	0.02	0.01	87.23	
8.00	46.00	35.23	0.45	1.18	0.04	0.22	9.64	0.16	0.01	0.00	0.02	0.90	0.03	0.02	93.89	
9.00	37.81	61.87	0.04	0.05	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.11	0.07	0.02	100.05	
10.00	0.09	0.11	0.01	0.00	0.00	91.70	0.06	0.05	0.03	0.00	0.00	0.42	0.06	0.75	93.26	
11.00	36.61	18.77	10.23	0.12	0.01	1.41	9.64	0.03	0.00	0.00	0.02	16.02	0.00	0.02	94.88	
Minimum	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.23	
Maximum	99.10	61.87	15.15	9.05	0.09	93.10	9.64	0.29	4.77	0.00	0.05	23.54	0.07	0.85	100.11	
Average	40.32	20.24	4.24	1.76	0.02	17.44	3.41	0.10	0.86	0.00	0.01	7.16	0.03	0.17	95.75	
Sigma	28.34	17.93	5.93	3.50	0.03	37.08	4.69	0.10	1.89	0.00	0.02	9.68	0.03	0.32	3.88	

No. of data 11

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	36.83	21.41	3.67	0.11	1.83	0.04	0.01	0.00	1.69	0.00	0.03	34.73	0.05	0.00	100.40	
2.00	37.07	21.15	3.84	0.02	1.90	0.00	0.01	0.02	1.59	0.01	0.00	33.99	0.00	0.03	99.63	
Minimum	36.83	21.15	3.67	0.02	1.83	0.00	0.01	0.00	1.59	0.00	0.00	33.99	0.00	0.00	99.63	
Maximum	37.07	21.41	3.84	0.11	1.90	0.04	0.01	0.02	1.69	0.01	0.03	34.73	0.05	0.03	100.40	
Average	36.95	21.28	3.76	0.06	1.87	0.02	0.01	0.01	1.64	0.00	0.01	34.36	0.02	0.02	100.02	
Sigma	0.17	0.18	0.12	0.06	0.05	0.03	0.00	0.01	0.07	0.00	0.02	0.52	0.03	0.02	0.55	

No. of data 2

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	0.00	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	0.00	0.00	1.12	0.00	0.00	0.00	0.01	0.00	55.02	0.00	0.08	0.22	0.01	0.03	56.48	
2.00	55.16	4.23	21.41	0.61	0.03	0.09	0.39	0.00	13.03	0.00	0.02	1.73	0.02	0.03	96.74	
3.00	56.25	3.20	21.77	0.35	0.03	0.00	0.14	0.00	13.63	0.00	0.00	1.59	0.06	0.00	97.16	
4.00	56.70	2.46	22.34	0.39	0.00	0.07	0.14	0.04	13.74	0.00	0.04	1.59	0.01	0.05	97.56	
5.00	0.01	0.00	0.27	0.02	0.00	0.00	0.00	0.03	59.68	0.00	0.02	0.05	0.00	0.03	60.01	
6.00	99.90	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.02	0.00	0.00	100.02	
7.00	0.01	0.00	1.13	0.03	0.08	0.00	0.00	0.11	59.08	0.00	0.00	0.16	0.02	0.00	60.61	
8.00	57.11	2.19	22.09	0.29	0.00	0.04	0.07	0.00	13.47	0.00	0.00	1.81	0.00	0.02	97.08	
9.00	0.01	0.01	1.34	0.01	0.08	0.00	0.00	0.00	60.80	0.00	0.00	0.26	0.00	0.00	62.50	
10.00	0.00	0.03	1.24	0.03	0.08	0.00	0.00	0.00	58.93	0.00	0.02	0.21	0.00	0.00	60.55	

No. of data 10

11.00	29.85	21.18	29.74	0.06	0.00	0.00	0.01	0.00	0.06	0.00	0.00	3.17	0.03	0.02	84.11	
12.00	41.89	15.71	22.98	0.26	0.03	0.43	9.29	0.24	0.08	0.00	0.02	2.15	0.02	0.03	93.12	
13.00	41.46	16.12	23.01	0.32	0.00	0.51	9.43	0.26	0.16	0.00	0.00	2.43	0.00	0.03	93.72	
14.00	29.82	21.62	29.42	0.06	0.00	0.05	0.00	0.05	0.04	0.00	0.05	3.17	0.00	0.00	84.29	
Minimum	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	56.48	
Maximum	99.90	21.62	29.74	0.61	0.08	0.51	9.43	0.26	80.80	0.00	0.08	3.17	0.06	0.05	100.02	
Average	33.44	6.20	14.13	0.18	0.02	0.09	1.39	0.05	24.85	0.00	0.02	1.33	0.01	0.02	81.71	
Sigma	30.71	8.43	12.20	0.19	0.03	0.17	3.38	0.09	26.79	0.00	0.02	1.16	0.02	0.02	17.42	

No. of data 14

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	37.02	21.43	2.14	0.08	4.65	0.00	0.00	0.14	3.31	0.00	0.02	31.14	0.00	0.00	99.93	
2.00	36.93	21.27	2.33	0.08	4.12	0.03	0.00	0.00	3.32	0.00	0.03	32.18	0.05	0.04	100.30	
3.00	36.85	21.02	2.08	0.05	3.89	0.00	0.02	0.00	3.40	0.03	0.00	32.04	0.00	0.00	99.37	
Minimum	36.85	21.02	2.08	0.00	3.89	0.00	0.00	0.00	3.31	0.00	0.00	31.14	0.00	0.00	99.37	
Maximum	37.02	21.43	2.33	0.08	4.65	0.03	0.02	0.14	3.40	0.03	0.03	32.18	0.05	0.04	100.30	
Average	36.93	21.24	2.18	0.04	4.22	0.01	0.01	0.05	3.34	0.01	0.02	31.79	0.02	0.01	99.87	
Sigma	0.09	0.21	0.13	0.04	0.39	0.02	0.01	0.08	0.05	0.01	0.02	0.56	0.03	0.02	0.47	

No. of data 3

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	0.00	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	47.93	30.05	1.81	0.21	0.04	0.52	10.93	0.13	0.02	0.00	0.00	3.27	0.01	0.00	94.92	
2.00	35.69	17.34	6.95	0.12	0.30	2.52	9.68	0.06	0.00	0.00	0.00	22.66	0.04	0.04	95.38	
3.00	46.91	31.17	1.38	0.31	0.14	0.74	10.72	0.30	0.01	0.00	0.01	2.99	0.06	0.08	94.61	
4.00	36.54	17.42	7.32	0.07	0.20	2.61	9.28	0.12	0.00	0.00	0.09	22.54	0.04	0.02	98.23	
5.00	99.80	0.00	0.01	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	99.87	
6.00	64.35	21.69	0.00	0.41	0.08	0.04	0.14	0.00	3.22	0.00	0.00	0.02	0.00	0.04	98.98	
7.00	47.67	29.35	1.80	0.26	0.00	1.37	10.06	0.24	0.02	0.00	0.00	2.64	0.02	0.08	93.48	
Minimum	35.69	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.00	93.48	
Maximum	99.80	31.17	7.32	0.41	0.30	2.61	10.93	0.30	3.22	0.00	0.09	22.66	0.06	0.08	99.87	
Average	54.13	21.00	2.75	1.48	0.11	1.12	7.26	0.12	4.47	0.00	0.02	7.73	0.02	0.04	96.24	
Sigma	22.26	10.97	3.09	3.50	0.11	1.09	4.94	0.11	1.21	0.00	0.04	10.24	0.02	0.03	2.34	

No. of data 7

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	36.98	21.24	1.84	0.00	6.14	0.00	0.00	0.04	3.49	0.00	0.00	30.69	0.00	0.01	100.43	
2.00	36.78	21.19	1.58	0.00	6.65	0.00	0.01	0.00	3.71	0.00	0.06	29.34	0.00	0.04	99.36	
Minimum	36.78	21.19	1.58	0.00	6.14	0.00	0.00	0.00	3.49	0.00	0.00	29.34	0.00	0.01	99.36	
Maximum	36.98	21.24	1.84	0.00	6.65	0.00	0.01	0.04	3.71	0.00	0.06	30.69	0.00	0.04	100.43	
Average	36.88	21.22	1.71	0.00	6.40	0.00	0.00	0.02	3.60	0.00	0.03	30.02	0.00	0.03	99.89	
Sigma	0.14	0.04	0.18	0.00	0.36	0.00	0.01	0.03	0.16	0.00	0.04	0.95	0.00	0.02	0.76	

No.	Comment
<input checked="" type="checkbox"/> 1	KAP2C-Giv-1
<input checked="" type="checkbox"/> 2	KAP2C-Giv-2

No. of data 2

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	63.44	23.06	0.01	8.88	0.08	0.02	0.14	0.04	4.51	0.00	0.00	0.36	0.00	0.01	100.55 fsp
2.00	35.82	17.76	7.29	0.12	0.23	2.35	9.26	0.20	0.05	0.00	0.00	21.88	0.10	0.08	95.13
3.00	46.40	33.12	0.92	0.41	0.00	1.07	10.42	0.46	0.00	0.00	0.00	1.86	0.07	0.05	94.76
4.00	62.45	24.14	0.00	8.22	0.00	0.00	0.15	0.06	5.40	0.00	0.00	0.01	0.00	0.03	100.45 fsp
5.00	62.20	24.20	0.01	8.25	0.00	0.02	0.14	0.11	5.44	0.00	0.00	0.05	0.00	0.01	100.40 fsp
6.00	0.18	0.02	0.00	0.04	0.00	0.06	0.00	0.05	54.48	0.00	0.00	0.16	0.00	0.00	54.99 ej
7.00	34.25	0.03	0.01	0.00	0.00	0.04	0.05	0.03	0.00	0.00	0.07	0.00	0.00	0.00	34.47 Zi
8.00	46.11	33.01	0.92	0.44	0.00	1.35	10.60	0.48	0.00	0.01	1.78	0.04	0.05	0.05	94.78
9.00	35.75	17.50	7.32	0.30	0.13	2.66	9.45	0.34	0.00	0.00	0.03	21.54	0.04	0.09	95.14
10.00	43.83	12.75	11.86	1.22	0.18	0.77	0.49	0.00	10.75	0.00	0.00	9.89	0.10	0.00	91.85
11.00	43.50	12.69	11.76	1.36	0.16	0.95	0.47	0.00	10.89	0.00	0.08	9.54	0.11	0.00	91.51
12.00	43.82	12.72	11.65	1.31	0.01	0.94	0.48	0.00	10.55	0.00	0.00	9.31	0.09	0.02	90.91
13.00	53.28	26.89	0.03	5.38	0.02	0.00	0.04	0.00	9.20	0.00	0.01	0.10	0.01	0.00	94.86
14.00	52.97	26.51	0.02	5.02	0.00	0.00	0.02	0.00	9.36	0.00	0.00	0.00	0.03	0.03	93.97
15.00	51.99	27.04	0.01	5.16	0.00	0.06	0.02	0.06	9.86	0.00	0.00	0.07	0.00	0.00	94.26
16.00	0.14	0.06	0.00	0.04	0.09	81.05	0.01	0.18	0.09	0.00	0.01	0.26	0.14	0.61	82.69
17.00	37.65	18.37	14.27	0.21	0.00	1.36	9.59	0.19	0.11	0.00	0.00	12.14	0.08	0.09	94.06
18.00	37.55	18.42	13.86	0.21	0.17	1.57	9.41	0.19	0.05	0.00	0.00	12.59	0.04	0.06	94.12
19.00	60.68	24.71	0.03	7.78	0.03	0.00	0.10	0.10	6.60	0.00	0.02	0.00	0.01	0.00	100.04
20.00	62.09	24.06	0.01	8.26	0.00	0.08	0.12	0.00	5.29	0.00	0.05	0.00	0.00	0.00	99.97

No.	Comment
<input type="checkbox"/> 1	KAP2C-Giv-1
<input type="checkbox"/> 2	KAP2C-Giv-2
<input type="checkbox"/> 3	KAP2C-Giv-3
<input type="checkbox"/> 4	KAP2C-Giv-4
<input type="checkbox"/> 5	KAP2C-Giv-5
<input type="checkbox"/> 6	KAP2C-Giv-6
<input type="checkbox"/> 7	KAP2C-Giv-7
<input type="checkbox"/> 8	KAP2C-Giv-8
<input type="checkbox"/> 9	KAP2C-Giv-9
<input type="checkbox"/> 10	KAP2C-Giv-10
<input type="checkbox"/> 11	RTP1E-ami-1
<input type="checkbox"/> 12	RTP1E-ami-2
<input type="checkbox"/> 13	RTP1E-ami-3
<input type="checkbox"/> 14	RTP1E-fapp-4
<input type="checkbox"/> 15	RTP1E-fapp-5
<input type="checkbox"/> 16	RTP1E-G-6
<input type="checkbox"/> 17	RTP1E-ami-1
<input type="checkbox"/> 18	RTP1M-ol-2
<input type="checkbox"/> 19	RTP1M-fap-3
<input type="checkbox"/> 20	RTP1M-fap-4

No. of data 20

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	0.08	0.02	0.03	0.03	0.01	0.02	0.03	0.13	56.97	42.37	0.00	0.15	0.01	0.00	99.86 apatite?	
2.00	0.00	0.01	0.04	0.09	0.17	0.00	0.00	0.08	56.97	42.80	0.02	0.08	0.03	0.00	100.27 apatite?	
3.00	0.03	0.00	0.00	0.00	0.04	0.00	0.03	0.00	57.34	42.05	0.04	0.00	0.00	0.00	99.53 apatite?	
4.00	0.05	0.00	0.03	0.07	0.00	0.03	0.02	0.00	56.94	41.72	0.00	0.16	0.00	0.06	99.08 apatite?	

Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.94	41.72	0.00	0.00	0.00	0.00	99.08
Maximum	0.08	0.02	0.04	0.09	0.17	0.03	0.03	0.13	57.34	42.80	0.04	0.16	0.03	0.06	100.27
Average	0.04	0.01	0.03	0.05	0.05	0.01	0.02	0.05	57.06	42.24	0.01	0.10	0.01	0.02	99.69
Sigma	0.03	0.01	0.02	0.04	0.08	0.01	0.01	0.06	0.19	0.46	0.02	0.07	0.02	0.03	0.51

No.	Comment
<input checked="" type="checkbox"/> 1	RTP1M-G1-5
<input checked="" type="checkbox"/> 2	RTP1M-G1-6
<input checked="" type="checkbox"/> 3	RTP1M-G1-7
<input checked="" type="checkbox"/> 4	RTP1M-G1-8

No. of data 4

Weight per Group Sample Page 1.00

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	P2O5	NiO	FeO	Cr2O3	V2O3	Total	Comment
1.00	37.86	18.95	14.10	0.20	0.00	1.62	9.60	0.20	0.07	0.00	0.00	12.41	0.03	0.11	95.13	
2.00	37.58	18.97	14.07	0.17	0.03	1.67	9.67	0.25	0.01	0.00	0.01	12.31	0.03	0.08	94.85	
3.00	37.55	62.51	0.00	0.02	0.00	0.03	0.00	0.00	0.02	0.00	0.00	0.14	0.02	0.01	100.30	
4.00	0.20	0.58	0.00	0.07	0.00	89.36	0.01	0.15	0.01	0.00	0.00	0.90	0.14	0.94	92.35	
5.00	46.13	35.43	0.78	0.70	0.11	0.19	10.04	0.30	0.00	0.00	0.00	0.78	0.05	0.05	94.55	
6.00	38.02	19.18	14.21	0.19	0.06	1.28	9.73	0.10	0.00	0.00	0.00	12.08	0.09	0.07	95.01	

No.	Comment
<input checked="" type="checkbox"/> 1	RTP1M-G1-9
<input checked="" type="checkbox"/> 2	RTP1M-G1-10
<input checked="" type="checkbox"/> 3	RTP1M-G1-11
<input checked="" type="checkbox"/> 4	RTP1M-G1-12
<input checked="" type="checkbox"/> 5	RTP1M-G1-13
<input checked="" type="checkbox"/> 6	RTP1M-G1-14

No. of data 6

Weight per Group Sample Page 1.00

Minimum	0.20	0.58	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.02	0.01	92.35
Maximum	46.13	62.51	14.21	0.70	0.11	89.36	10.04	0.30	0.07	0.00	0.01	12.41	0.14	0.94	100.30
Average	32.89	25.94	7.19	0.23	0.03	15.69	6.51	0.16	0.02	0.00	0.00	6.44	0.06	0.21	95.37
Sigma	16.36	21.04	7.60	0.24	0.05	36.10	5.04	0.11	0.03	0.00	0.01	6.39	0.04	0.36	2.63

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No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total	Comment
1	38.6	21.87	5.39	0.0153	0.942	0.0773	0	0	1.74	0	33.1	0	0.0163	101.7508	KAP2Bb-grt Line 001
2	37.79	21.61	5.17	0.0258	0.7874	0	0	1.92	0	33.16	0.0106	0.0465	100.5202	KAP2Bb-grt Line 002	
3	38.33	21.58	5.29	0	0.9345	0.0955	0.0272	0	1.79	0.0292	32.41	0.017	0	100.5033	KAP2Bb-grt Line 003
4	38.73	22.07	5.64	0.0208	0.8852	0.0349	0.0025	0	2.02	0.0934	32.44	0.0106	0.0559	102.0032	KAP2Bb-grt Line 004
5	38.34	21.59	5.52	0.0145	0.867	0.0125	0.0039	0.0111	1.97	0.0816	32.65	0.0297	0	101.0902	KAP2Bb-grt Line 005
6	38.31	21.7	5.64	0.012	1.05	0.1168	0.0327	0	2	0	32.45	0.0596	0.0233	101.3944	KAP2Bb-grt Line 006
7	38.77	21.59	5.77	0.0272	0.8998	0.0712	0	0.0517	2	0.0039	32.58	0.0319	0.0443	101.8399	KAP2Bb-grt Line 007
8	38.16	21.8	5.79	0	1.1229	0.0378	0	0.0368	1.85	0	32.74	0.0659	0.0395	101.6429	KAP2Bb-grt Line 008
9	38.61	21.76	5.89	0	0.8235	0.0263	0	0	1.77	0	32.31	0.0297	0.0489	101.2683	KAP2Bb-grt Line 009
10	38.2	21.75	5.96	0.0278	0.8764	0	0	0	1.74	0	31.85	0.0255	0.007	100.4367	KAP2Bb-grt Line 010
11	38.61	21.43	6.07	0.0207	1.1039	0.0053	0	0	1.73	0	31.96	0	0.0163	100.9461	KAP2Bb-grt Line 011
12	37.68	21.2	6.15	0	0.7836	0.0402	0.0654	0.0369	1.62	0	31.42	0.017	0	99.0132	KAP2Bb-grt Line 012
13	38.71	21.32	6.17	0	0.9021	0	0.2023	0.0665	1.59	0	30.52	0.0512	0	99.5322	KAP2Bb-grt Line 013
14	38.67	22.23	6.09	0.0325	0.8972	0.0024	0	0.0442	1.7	0	32.1	0	0.0325	101.7987	KAP2Bb-grt Line 014
15	38.36	21.73	6.23	0	0.9536	0	0.008	0.0074	1.69	0	31.53	0.0447	0.0047	100.5583	KAP2Bb-grt Line 015
16	38.9	21.97	6.1	0	0.9767	0.0014	0.0015	0.1033	1.76	0.0194	31.81	0	0	101.6423	KAP2Bb-grt Line 016
17	38.95	21.96	6.24	0.0403	1.0023	0.0267	0	0.1399	1.8	0	32.16	0.0234	0	102.3425	KAP2Bb-grt Line 017
18	38.17	21.34	6.01	0	1.0598	0.0207	0.0135	0.1545	1.64	0	31.93	0	0.0023	100.3407	KAP2Bb-grt Line 018
19	37.57	21.34	6.33	0	0.9366	0.061	0.0256	0.0037	1.62	0.0774	32.91	0.019	0	100.8932	KAP2Bb-grt Line 019
20	38.76	22.02	6.26	0	1.0927	0.0172	0.0162	0.0882	1.71	0.0367	31.96	0	0	101.9609	KAP2Bb-grt Line 020
21	38.99	21.69	6.07	0.0504	0.9504	0.0068	0	0.0257	1.63	0	31.64	0	0.0325	101.0857	KAP2Bb-grt Line 021
22	38.29	21.7	6.17	0	1.0159	0	0	0	1.66	0	31.18	0	0	100.0159	KAP2Bb-grt Line 022
23	33.92	19.5	6.64	0.1644	0.7531	0	0.0367	0	1.52	0.0522	28.67	0.0085	0	91.265	KAP2Bb-grt Line 023
24	38.29	21.68	6.43	0	1.1449	0	0.0924	0	1.57	0.0194	31.17	0.0022	0.0232	100.422	KAP2Bb-grt Line 024
25	38.72	21.7	6.27	0.0307	1.0916	0.0699	0	0.0662	1.68	0	31.34	0.0361	0.007	101.0115	KAP2Bb-grt Line 025
26	38.79	21.71	6.44	0	1.0801	0	0.0135	0	1.67	0	31.48	0.0297	0.0116	101.2248	KAP2Bb-grt Line 026
27	38.75	21.72	6.25	0	1.0907	0.0101	0	0	1.67	0	31	0.0446	0.0093	100.5446	KAP2Bb-grt Line 027
28	38.89	21.9	6.37	0.0744	1.0102	0	0	0.0073	1.74	0	31.16	0	0	101.1518	KAP2Bb-grt Line 028
29	38.41	21.79	6.46	0	1.1505	0.0075	0.0135	0	1.6	0.0367	31.85	0.0445	0	101.3626	KAP2Bb-grt Line 029

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30	38.58	22	6.43	0	1.32	0	0.0094	0	1.78	0	31.75	0.0042	0.0232	101.8968	KAP2Bb-grt Line 030
31	38.54	21.76	6.26	0.0229	1.2393	0.0038	0.0069	0.022	1.75	0.0367	31.4	0.0255	0.0023	101.0694	KAP2Bb-grt Line 031
32	38.47	21.89	6.31	0	0.9185	0.0132	0	0	1.77	0.0096	31.03	0	0	100.4112	KAP2Bb-grt Line 032
33	38.78	21.71	6.09	0.07	1.1076	0	0.0094	0.0736	1.8	0	31.22	0.0149	0.0302	100.9056	KAP2Bb-grt Line 033
34	37.5	20.79	6.2	0.1061	0.9385	0	0.0122	0.0626	1.74	0.0135	30.32	0.0149	0.0557	97.7535	KAP2Bb-grt Line 034
35	0.3516	0.1131	0.055	0.0141	0	0.0065	0.0026	0.0581	0.0079	0	0.3848	0	0.0273	1.021	KAP2Bb-grt Line 035
36	20.84	5.29	1.4404	0.9361	0.1987	0.1234	0.2996	0.0806	1.92	0.0059	6.5	0.0045	0.0146	37.6539	KAP2Bb-grt Line 036
37	38	21.89	6.19	0.0504	1.1209	0	0	0	1.78	0.0465	31.01	0.066	0.0047	100.1585	KAP2Bb-grt Line 037
38	38.71	22	6.35	0.0498	1.44	0.0498	0.0137	0.0221	1.64	0.0059	31.73	0.0425	0.0418	102.0955	KAP2Bb-grt Line 038
39	38.9	21.94	6.13	0.0646	1.33	0.0473	0	0	1.76	0.0833	31.15	0	0.0558	101.461	KAP2Bb-grt Line 039
40	38.62	22.21	6.21	0.0646	1.2453	0	0.0042	0.1582	1.68	0	31.45	0.0022	0	101.6444	KAP2Bb-grt Line 040
41	38.31	22.13	6.16	0.0434	1.35	0	0.0108	0.0367	1.79	0.0232	31.66	0	0.0324	101.5465	KAP2Bb-grt Line 041
42	38.5	22.1	6.25	0	1.34	0	0	0.0037	1.71	0.0019	31.36	0.0595	0.0487	101.3737	KAP2Bb-grt Line 042
43	38.88	21.79	6.09	0.0608	1.2647	0	0.0026	0.1433	1.75	0.0426	31.69	0.0063	0	101.7203	KAP2Bb-grt Line 043
44	38.83	22.04	6.24	0.037	1.2016	0.0303	0.0081	0.0624	1.7	0.0155	31.65	0	0.0069	101.8217	KAP2Bb-grt Line 044
45	38.89	21.96	6.2	0.0047	1.39	0	0	0.183	1.67	0.0541	31.52	0	0.0162	101.7232	KAP2Bb-grt Line 045
46	38.85	22.06	6.1	0.0654	1.57	0.0128	0.0324	0.0293	1.55	0	31.66	0	0.0555	101.9853	KAP2Bb-grt Line 046
47	38.8	21.96	6.24	0.0016	1.43	0.0144	0.0054	0.0587	1.68	0.0445	31.53	0.0191	0	101.7836	KAP2Bb-grt Line 047
48	38.49	22.11	6.09	0	1.41	0	0.0081	0	1.65	0.0116	31.42	0.0572	0	101.2468	KAP2Bb-grt Line 048
49	38.6	21.85	6.22	0.0315	1.42	0.0431	0.0093	0	1.63	0	31.61	0.0148	0	101.4286	KAP2Bb-grt Line 049
50	38.51	21.95	6.22	0.0699	1.1992	0.0087	0.0027	0	1.53	0.0656	31.3	0	0.0023	100.8583	KAP2Bb-grt Line 050
51	37.98	21.56	6.31	0.011	1.34	0	0.0351	0.0183	1.57	0	31.5	0.0022	0.0023	100.3288	KAP2Bb-grt Line 051
52	38.76	21.95	6.25	0.0071	1.48	0.0168	0.008	0.0623	1.45	0	31.47	0	0	101.4542	KAP2Bb-grt Line 052
53	38.69	21.85	6.23	0	1.42	0	0.0108	0.1906	1.45	0.0309	31.49	0.0042	0	101.3664	KAP2Bb-grt Line 053
54	38.47	22.11	6.07	0.0142	1.49	0.1071	0	0.022	1.51	0.0058	31.6	0.0403	0.0116	101.4509	KAP2Bb-grt Line 054
55	38.59	22.04	6.25	0.0237	1.62	0.0338	0.0135	0.0624	1.47	0.0232	31.32	0.0042	0	101.4508	KAP2Bb-grt Line 055
56	38.69	21.96	6.05	0	1.34	0.0161	0.0069	0	1.52	0	31.26	0.017	0	100.8599	KAP2Bb-grt Line 056
57	38.65	22.07	6.28	0	1.48	0.0555	0.0078	0.0697	1.47	0.0039	31.86	0	0	101.9468	KAP2Bb-grt Line 057
58	38.71	21.83	6.29	0	1.48	0.0139	0.0053	0.0037	1.44	0.0329	32.02	0.0169	0	101.8427	KAP2Bb-grt Line 058
59	38.78	22.11	6.23	0.0606	1.42	0	0	0	1.56	0	31.5	0	0	101.6605	KAP2Bb-grt Line 059
60	38.59	21.89	6.28	0.0118	1.57	0	0.0124	0	1.51	0.0251	31.2	0.034	0	101.1233	KAP2Bb-grt Line 060
61	39.11	21.87	6.2	0	1.42	0	0	0	1.61	0.029	31.26	0	0	101.4989	KAP2Bb-grt Line 061
62	38.98	20.5	6.19	0.2041	1.089	0.0308	0.06	0	1.69	0.0116	27.9	0	0.0047	96.6602	KAP2Bb-grt Line 062

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63	39.3	21.94	6.14	0	1.32	0.0765	0.0027	0	1.68	0	31.56	0.0599	0.0303	102.1093	KAP2Bb-grt Line 063
64	38.64	21.99	6.11	0.0119	1.37	0.0454	0.0287	0.0776	1.63	0.0214	31.07	0.0107	0	101.0056	KAP2Bb-grt Line 064
65	38.93	21.95	6.15	0.0191	1.7	0.0527	0	0	1.57	0.0195	31.63	0	0.0348	102.056	KAP2Bb-grt Line 065
66	38.99	22.29	6.14	0	1.46	0	0.0166	0.1514	1.71	0.0311	31.24	0.0043	0	102.0333	KAP2Bb-grt Line 066
67	38.93	22.08	6.07	0.0624	1.59	0.0457	0	0	1.87	0	31.29	0	0	101.938	KAP2Bb-grt Line 067
68	39.08	22.27	6.16	0	1.35	0	0	0.1919	1.69	0.0272	31.04	0.0107	0	101.8197	KAP2Bb-grt Line 068
69	38.97	22.02	6.08	0	1.38	0	0.0041	0.0515	1.81	0.033	31.67	0	0.0093	102.0278	KAP2Bb-grt Line 069
70	38.55	21.79	6.63	0.0291	1.4	0	0.0152	0	1.68	0.029	31.13	0.0085	0.0534	101.3151	KAP2Bb-grt Line 070
71	37.93	21.1	6.66	0.0945	1.1654	0	0.1934	0	1.67	0	29.81	0.0064	0.014	98.6437	KAP2Bb-grt Line 071
72	38.3	21.69	6.11	0.0742	1.4	0	0.0081	0.0147	1.69	0.0194	31.66	0.0063	0.0116	100.9843	KAP2Bb-grt Line 072
73	33.36	18.71	5.2	0.0798	1.48	0.0401	0.0445	0	1.67	0.0039	31.52	0	0	92.1083	KAP2Bb-grt Line 073
74	29.83	16.21	4.66	0.1205	1.29	0.0802	0.1712	0	1.67	0.0443	30.76	0.0229	0.0046	84.8638	KAP2Bb-grt Line 074
75	30.25	16.1	6.55	0.374	0.9104	0	0.168	0	1.41	0.029	26.62	0	0.0069	82.4184	KAP2Bb-grt Line 075
76	38.92	22.34	6.27	0.0079	1.37	0.0172	0.007	0	1.63	0	31.28	0	0.0255	101.8675	KAP2Bb-grt Line 076
77	38.85	22.21	6.15	0	1.32	0.0141	0.0175	0.0404	1.59	0	31.78	0	0.0347	102.0066	KAP2Bb-grt Line 077
78	39.07	22.07	6.22	0.0418	1.56	0.0197	0.004	0.1466	1.84	0	31.95	0.0148	0	102.9368	KAP2Bb-grt Line 078
79	38.73	22.04	6.17	0.0338	1.278	0	0.0445	0	1.75	0	31.43	0	0	101.4762	KAP2Bb-grt Line 079
80	38.63	22.13	6.43	0.0205	1.1853	0	0.0231	0.0183	1.7	0.0329	31.77	0.036	0.0486	102.0247	KAP2Bb-grt Line 080
81	38.86	22.08	6.4	0	1.44	0	0	0	1.74	0	31.5	0.0381	0.0463	102.1044	KAP2Bb-grt Line 081
82	39.08	22.22	6.33	0.0368	1.36	0.048	0	0.0587	1.78	0.0386	31.22	0.0254	0	102.1974	KAP2Bb-grt Line 082
83	39.03	21.97	6.24	0	1.31	0	0	0	1.62	0	31.51	0	0	101.6799	KAP2Bb-grt Line 083
84	38.96	22.09	6.32	0	1.44	0.0091	0	0	1.78	0	31.51	0.0296	0.0162	102.1549	KAP2Bb-grt Line 084
85	39.14	21.98	6.31	0	1.58	0.0287	0.023	0	1.77	0.0405	31.09	0	0.0185	101.9807	KAP2Bb-grt Line 085
86	37.36	20.74	6.32	0.0071	1.246	0.0738	0.0407	0.0404	1.74	0	29.38	0	0.0023	96.9503	KAP2Bb-grt Line 086
87	36.41	20.92	6.02	0.067	1.2196	0.0714	0.0104	0	1.78	0	28.72	0.0106	0	95.2407	KAP2Bb-grt Line 087
88	37.47	20.77	6.54	0.0625	1.173	0	0.0459	0	1.69	0.0174	29.97	0.0254	0.0254	97.7896	KAP2Bb-grt Line 088
89	39.24	21.22	6.05	0.2038	1.2128	0.0683	0.0708	0	1.63	0	28.78	0	0	98.4757	KAP2Bb-grt Line 089
90	40.13	22.85	6.69	0.0055	1.1696	0	0	0	1.65	0.0039	30.93	0.0063	0	103.4353	KAP2Bb-grt Line 090
91	39.01	22.28	6.45	0.0283	1.1377	0.08	0	0.0552	1.84	0.0541	31.34	0.017	0.051	102.3432	KAP2Bb-grt Line 091
92	38.52	22.22	6.31	0.0636	1.2324	0	0.0043	0.0404	1.73	0	31.33	0.0276	0	101.4782	KAP2Bb-grt Line 092
93	38.62	22.21	6.46	0.0071	1.2422	0.0062	0.0109	0.0588	1.77	0	31.12	0	0.0325	101.5377	KAP2Bb-grt Line 093
94	34.93	18.68	5.41	0.2007	1.0816	0.0183	0.2884	0	1.63	0.0561	26.84	0	0	89.1352	KAP2Bb-grt Line 094
95	41.79	21.46	6.95	0.0981	0.7355	0	1.41	0.0224	1.5	0.0467	24.49	0	0.0213	98.524	KAP2Bb-grt Line 095

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96	41.03	21.86	6.17	0.0801	0.9996	0	0.9303	0.0668	1.51	0	28.07	0.0387	0	100.7554	KAP2Bb-grt Line 096
97	35.46	18.78	6.67	0.1454	0.9299	0.0469	0.2652	0.0405	1.53	0.0309	28.17	0	0.0023	92.0712	KAP2Bb-grt Line 097
98	20.43	9.95	4.36	0.2875	0.1639	0.0834	1.0229	0.0407	0.5016	0.0019	15.2	0	0.0257	52.0676	KAP2Bb-grt Line 098
99	29.41	15.89	8.11	0.0098	0.3007	0	0.1338	0	0.8067	0.0679	21.31	0.0236	0	76.0626	KAP2Bb-grt Line 099
100	38.85	22.04	6.8	0.0439	1.1188	0.0335	0.0653	0	1.66	0	31.32	0.0277	0	101.9592	KAP2Bb-grt Line 100
Minimum	0.3516	0.1131	0.055	0	0	0	0	0	0.0079	0	0.3848	0	0	1.021	
Maximum	41.79	22.85	8.11	0.9361	1.7	0.1234	1.41	0.1919	2.02	0.0934	33.16	0.066	0.0559	103.4353	
Average	37.4821	21.0367	6.0573	0.049	1.1639	0.0233	0.0622	0.0322	1.6486	0.0172	30.3421	0.015	0.0138	97.9435	
Sigma	4.8454	3.1311	0.8804	0.1089	0.3044	0.0306	0.1999	0.0465	0.2535	0.0229	4.5119	0.0183	0.0178	13.2011	
No. of data	100														

Weight per Group : Sample : Page 1

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total	Comment
1	37.66	21.49	2.51	0	2.59	0	0	0.1246	3.48	0	32.96	0.036	0.0623	100.9129	KAP2D-grt Line 001
2	37.9	21.28	2.85	0.0122	2.22	0	0.0015	0.066	3.24	0	33.06	0.0085	0.0046	100.6427	KAP2D-grt Line 002
3	37.63	21.29	2.91	0.0098	2.37	0.0231	0	0.0878	3.18	0	33.33	0.0189	0	100.8495	KAP2D-grt Line 003
4	36.44	20.61	3.66	0.0179	1.83	0.0392	0.0596	0.0293	2.76	0	31.93	0.0423	0.0185	97.4369	KAP2D-grt Line 004
5	38.39	21.24	3.03	0.0365	1.98	0	0	0	3.21	0	32.89	0.0149	0	100.7913	KAP2D-grt Line 005
6	38.25	21.4	3.11	0	1.73	0	0	0	2.98	0.0289	33.65	0.0106	0.0254	101.1849	KAP2D-grt Line 006
7	37.94	21.69	3.14	0.056	1.7	0.0213	0	0	3.18	0	33.35	0.0084	0.0092	101.0948	KAP2D-grt Line 007
8	37.87	21.57	3.22	0	1.91	0.0408	0	0.022	3.05	0	33.06	0	0.0092	100.752	KAP2D-grt Line 008
9	38.02	21.45	3.26	0.0105	1.79	0.0106	0.0053	0.066	3.14	0	33.17	0.0148	0.0461	100.9832	KAP2D-grt Line 009
10	37.88	21.38	3.49	0.1313	1.63	0.0011	0	0.0256	3.11	0	33.32	0	0.0046	100.9725	KAP2D-grt Line 010
11	38.45	21.41	3.44	0.0751	1.69	0	0.0083	0	3.29	0	33.02	0	0	101.3834	KAP2D-grt Line 011
12	37.97	21.27	3.22	0.0349	1.81	0	0.0041	0	3.32	0.0444	32.89	0	0.0323	100.9596	KAP2D-grt Line 012
13	37.79	21.22	3.41	0	1.9	0	0	0.0806	3.34	0.0463	33.17	0	0.0092	100.966	KAP2D-grt Line 013
14	38.11	21.52	3.52	0.0648	1.63	0.0053	0.0104	0.0476	3.13	0.0482	33.53	0	0.0208	101.637	KAP2D-grt Line 014
15	38.13	21.25	3.55	0.0195	1.62	0	0	0	3.15	0	33.15	0.0106	0.0439	100.924	KAP2D-grt Line 015
16	37.87	21.29	3.53	0.0461	1.73	0.0431	0.0051	0	3.13	0.0502	32.85	0	0	100.5444	KAP2D-grt Line 016

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17	37.88	21.68	3.63	0.0437	1.8	0	0.0187	0.022	3.3	0.0193	33.3	0	0.0231	101.7168 KAP2D-grt Line 017
18	38.14	21.16	3.6	0.0665	1.65	0	0	0.0476	3.26	0.0193	33.36	0	0.0369	101.3403 KAP2D-grt Line 018
19	37.9	21.45	3.45	0.1235	1.7	0	0	0.0806	3.25	0	32.95	0	0	100.904 KAP2D-grt Line 019
20	37.95	21.42	3.41	0.0138	1.73	0.0003	0.0011	0	3.31	0	33.1	0.0169	0.0092	100.9612 KAP2D-grt Line 020
21	37.57	21.45	3.36	0.0275	1.73	0.0159	0.0281	0.022	3.28	0.0405	32.7	0	0	100.2239 KAP2D-grt Line 021
22	37.94	21.27	3.46	0	1.77	0	0.0137	0	3.26	0	33.19	0.072	0.0092	100.9848 KAP2D-grt Line 022
23	38.5	21.06	3.45	0.0533	1.7	0.0365	0	0	3.12	0	32.71	0	0	100.6297 KAP2D-grt Line 023
24	38.11	21.4	3.46	0.0429	1.91	0	0.0081	0	3.31	0	32.99	0.0444	0	101.2754 KAP2D-grt Line 024
25	37.9	21.19	3.64	0.0435	1.73	0	0.0149	0.1501	3.25	0	32.79	0.0105	0.0161	100.735 KAP2D-grt Line 025
26	38.12	21.71	3.53	0.0362	1.65	0.0568	0	0.0585	3.3	0.0153	32.85	0.0718	0	101.3985 KAP2D-grt Line 026
27	38.07	21.37	3.35	0.0339	1.69	0.0315	0	0	3.21	0	32.85	0	0.0299	100.6352 KAP2D-grt Line 027
28	37.78	21.35	3.46	0.0394	1.69	0.0836	0.0215	0	3.23	0.0481	32.62	0.0105	0	100.333 KAP2D-grt Line 028
29	38.2	21.24	3.55	0.1384	1.75	0.0036	0.0081	0	3.25	0	32.93	0.0105	0	101.0806 KAP2D-grt Line 029
30	37.78	21.49	3.46	0.0289	1.76	0	0.0094	0	3.27	0	32.66	0.0632	0.0207	100.5421 KAP2D-grt Line 030
31	38.1	21.3	3.54	0.0888	1.6	0	0	0.0696	3.27	0.0405	32.98	0	0.0162	101.005 KAP2D-grt Line 031
32	38.4	21.21	3.48	0.041	1.69	0	0.008	0	3.17	0.0289	32.63	0.0127	0.0438	100.7143 KAP2D-grt Line 032
33	37.91	21.32	3.39	0.0452	1.67	0.0429	0.0269	0.0402	3.27	0.0231	32.93	0.0275	0	100.6957 KAP2D-grt Line 033
34	37.78	21.04	3.52	0.0194	1.99	0	0	0.0329	3.14	0.0019	33.04	0.0505	0.0598	100.6744 KAP2D-grt Line 034
35	38.11	21.1	3.28	0	1.71	0	0	0	3.23	0	32.42	0	0.0069	99.8569 KAP2D-grt Line 035
36	38.01	21.39	3.51	0	1.74	0	0	0	3.46	0.0019	33.29	0.0191	0.0023	101.4232 KAP2D-grt Line 036
37	37.72	21.3	3.41	0.0882	1.63	0.044	0	0	3.12	0	33.06	0.0169	0.0392	100.4283 KAP2D-grt Line 037
38	37.95	21.45	3.29	0.0575	1.66	0.0643	0	0	3.16	0	32.94	0.0127	0	100.5845 KAP2D-grt Line 038
39	37.96	21.47	3.19	0.068	1.82	0.0765	0.0487	0.0257	3.17	0.0039	32.81	0	0.0231	100.6659 KAP2D-grt Line 039
40	37.67	21.5	3.1	0.0788	1.81	0	0.0064	0	3.18	0.0386	33.15	0.0275	0.037	100.5982 KAP2D-grt Line 040
41	38	21.27	3.25	0.0667	1.74	0	0	0	3.14	0	33.26	0	0.0254	100.752 KAP2D-grt Line 041
42	37.86	21.4	3.12	0.0049	1.86	0.041	0.0109	0.022	3.44	0	33.33	0.0085	0	101.0973 KAP2D-grt Line 042
43	37.72	21.47	3.16	0	1.84	0.1012	0.0055	0	3.35	0	33.43	0	0.0347	101.1113 KAP2D-grt Line 043
44	37.87	21.54	3.1	0.0131	1.8	0.0393	0	0	3.36	0.0252	33.28	0	0.0671	101.0946 KAP2D-grt Line 044
45	38.18	21.33	3.07	0.009	2.09	0	0.0066	0.0771	3.36	0	33.23	0.0212	0	101.3739 KAP2D-grt Line 045
46	37.82	21.28	2.86	0.0229	2.04	0.0291	0.0081	0.0294	3.41	0.0367	33.21	0.0594	0	100.8055 KAP2D-grt Line 046
47	37.71	21.33	2.85	0.081	2.39	0.0302	0.0124	0	3.56	0.0446	33.25	0	0.0324	101.2905 KAP2D-grt Line 047
48	37.57	21.34	2.53	0.005	2.54	0.0136	0	0.0074	3.78	0.0233	32.39	0	0	100.1992 KAP2D-grt Line 048
49	37.61	21.44	2.37	0.0473	2.43	0.0196	0.0189	0	4.3	0.0387	32.53	0	0.0116	100.816 KAP2D-grt Line 049

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50	37.42	21.21	2	0.0372	2.44	0.0361	0.0162	0	5.54	0.029	30.93	0.03	0.0303	99.7188 KAP2D-grt Line 050
Minimum	36.44	20.61	2	0	1.6	0	0	0	2.76	0	30.93	0	0	97.4368
Maximum	38.5	21.71	3.66	0.1384	2.59	0.1012	0.0596	0.1501	5.54	0.0502	33.65	0.072	0.0671	101.7168
Average	37.9102	21.3458	3.2536	0.0396	1.8576	0.019	0.0077	0.0247	3.314	0.0139	32.9684	0.015	0.0172	100.7868
Sigma	0.3152	0.1812	0.3477	0.035	0.2586	0.0255	0.0122	0.036	0.385	0.0183	0.4326	0.0201	0.0187	0.6284
No. of data	50													

Weight per Group : Sample : Page 1

No.	SiO2	Al2O3	MgO	Na2O	MnO	TiO2	K2O	BaO	CaO	NiO	FeO	Cr2O3	V2O3	Total	Comment
1	38.02	21.51	2.14	0.0481	5.01	0	0.0475	0	3.56	0.0116	31.02	0.0212	0.0322	101.4205 RTP2I-grt Line 001	
2	38.01	21.72	2.18	0	4.65	0.0379	0.0082	0.1061	3.64	0	31.29	0.0361	0.0092	101.6875 RTP2I-grt Line 002	
3	23.45	13.81	1.4069	0.1092	3.92	0	0.0176	0	2.72	0	30.92	0.0185	0.0291	76.4014 RTP2I-grt Line 003	
4	23.67	14.41	1.84	0.0071	2.71	0	0.0601	0	3.34	0.0058	31.37	0.0062	0	77.4193 RTP2I-grt Line 004	
5	38.77	21.82	2.45	0.0333	3.8	0.0631	0.004	0.066	3.55	0	31.91	0	0	102.4663 RTP2I-grt Line 005	
6	38.16	21.6	2.5	0.0497	3.68	0.0268	0	0	3.56	0	32.28	0	0.0207	101.8771 RTP2I-grt Line 006	
7	37.86	21.76	2.55	0.0497	3.88	0.0938	0	0.0586	3.6	0.0386	31.73	0	0	101.6206 RTP2I-grt Line 007	
8	37.94	21.63	2.76	0.0836	3.58	0.027	0.0773	0	3.53	0.0097	31.62	0.0107	0	101.2682 RTP2I-grt Line 008	
9	37.69	21.65	2.55	0.0869	3.63	0	0.0298	0	3.76	0.0174	31.64	0.0319	0.0392	101.1251 RTP2I-grt Line 009	
10	36.86	17.32	2.65	0.274	2.93	0.0454	0.0905	0	3.28	0.0561	27.32	0	0.0162	90.8422 RTP2I-grt Line 010	
11	40.12	21.82	3.34	0.2056	3.18	0.0585	0.1757	0	3.44	0.0524	26.16	0.0065	0	98.5588 RTP2I-grt Line 011	
12	41.58	21.89	4.19	0.2607	2.37	0.0959	0.4289	0.0445	3.05	0	28.23	0.0453	0.0234	102.2087 RTP2I-grt Line 012	
13	37.35	19.23	2.98	0.5445	2.77	0.0649	0.1126	0.0148	3.11	0	26.5	0.0344	0.0093	92.7206 RTP2I-grt Line 013	
14	38.84	21.68	2.8	0.0341	3.14	0.0285	0	0	3.64	0	32.36	0.0255	0.0231	102.5712 RTP2I-grt Line 014	
15	38.1	21.67	2.9	0	3.49	0.0073	0	0.0074	3.73	0	31.8	0.017	0.0208	101.7424 RTP2I-grt Line 015	
16	38.46	21.78	2.92	0.0041	3.29	0	0	0.0733	3.84	0.0618	32.39	0	0	102.8191 RTP2I-grt Line 016	
17	38.31	21.74	2.89	0.0203	3.26	0.0144	0.0039	0	3.79	0	31.96	0.0042	0	101.9928 RTP2I-grt Line 017	
18	38.06	21.6	2.87	0.074	3.33	0	0.0078	0.1028	3.93	0.0367	32.16	0	0	102.1712 RTP2I-grt Line 018	
19	38.04	21.82	2.78	0.0591	3.09	0.0008	0	0.0257	3.69	0.0309	31.7	0.017	0	101.2535 RTP2I-grt Line 019	

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20	37.96	21.44	2.61	0.0681	3.19	0.0864	0.0232	0.011	3.77	0	31.85	0	0	101.0087 RTP2I-grt Line 020
21	32.43	18.14	2.24	0	3.18	0.0795	0	0	3.63	0	31.75	0	0.0046	91.4542 RTP2I-grt Line 021
22	36.57	19.66	2.93	0	2.5	0.0483	0.0978	0.0701	3.39	0	27.77	0.0278	0.007	93.0711 RTP2I-grt Line 022
23	38.55	21.96	2.97	0.0291	2.96	0	0	0.011	3.93	0.0368	31.86	0.0064	0	102.3132 RTP2I-grt Line 023
24	38.4	21.84	2.95	0	3.16	0.0591	0.0066	0.0736	3.85	0.0522	32	0.0639	0.0162	102.4715 RTP2I-grt Line 024
25	38.42	21.77	2.94	0	3	0.1267	0.0013	0.0331	3.9	0	31.71	0.0064	0.0509	101.9583 RTP2I-grt Line 025
26	38.34	21.7	2.9	0.0704	3.17	0.0532	0.027	0.0184	3.92	0	31.84	0	0	102.0389 RTP2I-grt Line 026
27	38.59	21.91	2.83	0.0186	3.25	0	0.0146	0.0772	3.86	0.0309	31.8	0.017	0.0347	102.4329 RTP2I-grt Line 027
28	38.59	21.61	2.85	0.0267	3.31	0.0565	0.0177	0.0588	3.96	0.0077	31.62	0	0.0602	102.1675 RTP2I-grt Line 028
29	38.72	21.76	2.85	0.0106	2.84	0.0428	0.0271	0	3.92	0.0136	32.24	0.0468	0	102.4708 RTP2I-grt Line 029
30	38.41	21.8	2.9	0.0608	2.97	0.0166	0.003	0.1176	3.97	0.0386	32.31	0.0617	0.0185	102.6768 RTP2I-grt Line 030
31	38.32	21.56	2.93	0	3.17	0.0475	0.0095	0	4.05	0.0154	32.18	0.0511	0	102.3335 RTP2I-grt Line 031
32	38.38	21.74	2.85	0	3.15	0.0673	0.0055	0.0661	3.84	0	32.01	0.0022	0.0092	102.1202 RTP2I-grt Line 032
33	38.24	21.5	2.88	0.067	3.16	0	0	0.022	3.88	0	31.67	0.0552	0.0092	101.4834 RTP2I-grt Line 033
34	38.14	21.99	2.76	0.0492	3.13	0	0	0	3.86	0.0212	31.64	0.0128	0.037	101.6401 RTP2I-grt Line 034
35	38.54	21.82	2.96	0.0517	3.36	0	0.0022	0	4.03	0.0522	31.55	0.0022	0.0371	102.4053 RTP2I-grt Line 035
36	38.62	21.61	2.72	0.0786	3.39	0	0	0.0147	3.83	0.0232	31.84	0.0107	0	102.1372 RTP2I-grt Line 036
37	38.5	21.75	2.83	0	3.31	0	0	0	3.93	0.0367	32.05	0.0022	0.0069	102.4157 RTP2I-grt Line 037
38	38.25	21.62	2.78	0	3.5	0	0	0	3.81	0	31.39	0.0298	0.0139	101.3936 RTP2I-grt Line 038
39	38.16	21.69	2.75	0.0244	3.52	0.0438	0.0066	0	3.86	0	31.85	0	0	101.9047 RTP2I-grt Line 039
40	37.89	20.98	2.75	0.03	3.21	0.0077	0.0189	0	3.77	0	31.57	0.0191	0	100.2456 RTP2I-grt Line 040
41	37.89	21.72	2.7	0.0187	3.84	0	0.0809	0	3.78	0.0136	31.5	0.0511	0.0485	101.6428 RTP2I-grt Line 041
42	38.28	21.67	2.99	0	3.58	0.0281	0.0325	0.0734	3.79	0	31.58	0.0107	0.0139	102.0485 RTP2I-grt Line 042
43	37.17	20.42	2.83	0.0983	3.12	0.1009	0.0852	0.0588	3.54	0.0521	29.82	0	0	97.2953 RTP2I-grt Line 043
44	38.19	21.55	2.71	0.0258	3.81	0.057	0.3853	0	3.49	0.027	30.56	0	0	100.805 RTP2I-grt Line 044
45	38.27	21.46	2.85	0	3.43	0.079	0.0148	0	3.85	0	31.54	0.0469	0.0185	101.5591 RTP2I-grt Line 045
46	38.33	21.58	2.83	0.0606	3.64	0	0.0105	0	3.93	0.0173	31.51	0	0.0346	101.943 RTP2I-grt Line 046
47	38.15	21.88	2.79	0.0252	3.69	0.0343	0.0108	0	3.98	0.0212	32.11	0	0	102.6915 RTP2I-grt Line 047
48	38.55	21.69	2.59	0.0429	3.84	0.0759	0	0.0733	4	0.0348	31.56	0.017	0.0138	102.4876 RTP2I-grt Line 048
49	38.11	21.62	2.62	0.0527	3.51	0.0594	0.0014	0	3.75	0	31.6	0.034	0.0231	101.3806 RTP2I-grt Line 049
50	38.14	21.74	2.71	0.0432	3.78	0.0039	0	0.0404	3.61	0	32.12	0	0.0485	102.2359 RTP2I-grt Line 050
51	36.53	20.27	2.73	0.1194	3.84	0.029	0.5647	0	3.29	0	31.29	0	0.0069	98.6701 RTP2I-grt Line 051
52	32.55	16.55	3	0.1742	3.2	0	0.8639	0.0552	2.6	0.0097	25.56	0.0043	0.0371	84.6045 RTP2I-grt Line 052

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53	31.22	12.2	4.06	0.4864	2.1	0.1465	0.8127	0.0037	2.17	0.0351	18.26	0.0546	0.0047	71.5537 RTP2I-grt Line 053
54	31.27	14.33	2.9	0.4093	2.68	0.0201	0.4287	0.0074	2.3	0.0523	21.07	0.0172	0	75.4851 RTP2I-grt Line 054
55	38.59	21.61	2.43	0	4.39	0	0.0191	0	3.4	0	32.27	0	0	102.7091 RTP2I-grt Line 055
56	38.18	21.55	2.25	0.0401	4.37	0	0.0259	0	3.3	0.0116	31.75	0.0658	0.0023	101.5456 RTP2I-grt Line 056
57	37.82	21.08	2.95	0.0656	3.93	0.0314	0.9159	0	2.73	0	30.83	0.0192	0.0139	100.386 RTP2I-grt Line 057
58	38.38	21.73	2.34	0.0302	4.28	0.0437	0	0.1281	3.39	0	32.05	0	0	102.3719 RTP2I-grt Line 058
59	38.21	21.41	2.27	0	4.22	0.0806	0.0041	0	3.38	0	32.01	0.0042	0	101.5888 RTP2I-grt Line 059
60	38.66	21.51	2.35	0.0106	4.25	0.0067	0.0244	0.011	3.47	0.029	31.69	0.0085	0.0023	102.0224 RTP2I-grt Line 060
61	38.14	21.66	2.12	0.0566	4.43	0.0796	0.0057	0.022	3.37	0.0058	32.01	0	0	101.8996 RTP2I-grt Line 061
62	37.79	21.43	1.5037	0.01	6.22	0.0091	0	0.0768	3.45	0	31.32	0	0	101.8095 RTP2I-grt Line 062
63	53.64	22.85	1.98	5.68	0.0374	0.1744	3.95	0.0118	2.41	0	6.71	0.0094	0.0452	97.4983 RTP2I-grt Line 063
64	62.23	23.89	0.0369	7.93	0	0.0144	0.4187	0	5.05	0.0298	0.3699	0.065	0	100.0347 RTP2I-grt Line 064
65	62.46	23.73	0.0083	8.04	0	0.0708	0.1579	0.0639	5.52	0.0576	0.3393	0	0	100.4478 RTP2I-grt Line 065
66	49.76	20.13	3.85	5.17	0.0636	0.686	4.37	0.0272	1.67	0	11.82	0.039	0	97.5858 RTP2I-grt Line 066
67	35.66	18.2	7.66	0.1199	0.2601	1.547	8.77	0.0679	0.0247	0	23	0.0199	0.0502	95.3798 RTP2I-grt Line 067
68	36.42	18.16	7.68	0.1119	0.1869	1.3252	9.14	0	0.0483	0.0349	22.68	0	0.0527	95.84 RTP2I-grt Line 068
69	35.41	18.03	7.41	0.1599	0.218	1.1361	8.8	0	0.117	0.0563	22.91	0.0044	0	94.2518 RTP2I-grt Line 069
70	36.05	18.09	7.51	0.0901	0.2009	1.2721	9.15	0.0717	0.0035	0	22.97	0.0155	0.0191	95.443 RTP2I-grt Line 070
71	45.96	19.34	4.81	3.99	0.194	0.8591	6.16	0	0.7641	0	15.43	0.0249	0	97.5322 RTP2I-grt Line 071
72	62.37	23.99	0.022	8.28	0	0.0181	0.1553	0.0239	5.07	0.006	0.3013	0.0288	0.0153	100.2806 RTP2I-grt Line 072
73	36.84	18.68	7.22	0.162	0.1263	0.8777	8.92	0.1209	0.1558	0	22.08	0.0729	0.0239	95.2796 RTP2I-grt Line 073
74	60.7	23.24	0.1653	7.58	0.1175	0	0.5847	0.0397	4.86	0	0.9725	0	0	98.2598 RTP2I-grt Line 074
75	38.26	21.22	1.322	0	7.65	0.079	0.003	0.0037	3.04	0	29.85	0	0.0388	101.4664 RTP2I-grt Line 075
76	38.06	21.36	1.4127	0	6.77	0.0242	0.0027	0	3.32	0	31.05	0	0.0068	102.0063 RTP2I-grt Line 076
77	37.66	21.24	1.5531	0.0584	7.18	0	0	0.0037	3.27	0.0116	30.32	0.0593	0.0068	101.3628 RTP2I-grt Line 077
78	48.66	16.8	1.0068	0.0595	5.8	0	0.0397	0.0222	3.75	0.0271	24.07	0.0326	0.0023	100.2701 RTP2I-grt Line 078
79	86.41	4.72	0.2395	0.0726	1.76	0.0186	0.0368	0	1.97	0.0218	6.86	0.0375	0.0175	102.1643 RTP2I-grt Line 079
80	54.88	15.8	0.9706	0.0958	5.35	0.015	0.0203	0.0598	4.3	0	21.79	0.0132	0	103.2946 RTP2I-grt Line 080
81	37.36	20.88	1.4234	0.0423	6.72	0	0.2442	0.0439	4.43	0	28.45	0.0363	0.023	99.6532 RTP2I-grt Line 081
82	41.97	16.53	5.32	0.1659	1.72	0.7359	5.95	0.1279	1.3661	0.0155	21.59	0.0198	0.0024	95.5136 RTP2I-grt Line 082
83	36.41	18.26	7.18	0.22	0.5093	0.9104	8.3	0	0.2242	0.0039	22.5	0	0	94.5179 RTP2I-grt Line 083
84	38.28	19.87	5.15	0.1508	3.13	0.3285	5.01	0	1.2819	0	23.5	0	0.0188	96.7201 RTP2I-grt Line 084
85	38.41	21.38	2.28	0.0318	4.66	0.0659	0.0187	0.1021	3.42	0	31.92	0.0762	0.0092	102.3738 RTP2I-grt Line 085

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86	38.52	21.74	2.4	0.0349	4.23	0.0499	0	0.0401	3.57	0	32.15	0	0	102.7348 RTP2l-grt Line 086
87	37.77	21.65	2.55	0.0473	4.35	0.0009	0	0	3.61	0	32.11	0.0444	0.0252	102.1577 RTP2l-grt Line 087
88	38.42	21.7	2.42	0	4	0.0176	0.0202	0.0292	3.65	0	31.95	0.0021	0.0275	102.2365 RTP2l-grt Line 088
89	38.16	21.6	2.63	0.0154	3.94	0.0921	0	0	3.66	0.0692	31.7	0	0.0184	101.8851 RTP2l-grt Line 089
90	37.75	21.75	2.61	0.0777	4.01	0.0553	0	0.011	3.63	0	31.59	0.0233	0	101.5072 RTP2l-grt Line 090
91	38.22	21.48	2.58	0.0074	3.83	0.0377	0.0176	0.0437	3.59	0.0019	32.54	0.0527	0.0183	102.4192 RTP2l-grt Line 091
92	38.19	21.5	2.59	0	3.8	0.0441	0.0063	0	3.59	0.0461	32.03	0.0359	0	101.8323 RTP2l-grt Line 092
93	38.33	21.62	2.66	0	3.74	0.0348	0.012	0	3.7	0.0326	32.2	0	0.0573	102.3867 RTP2l-grt Line 093
94	38.51	21.64	3.02	0	3.38	0.0068	0.2564	0.0549	3.3	0.0289	30.82	0.0531	0.0161	101.0861 RTP2l-grt Line 094
95	37.65	21.96	2.7	0.0202	3.6	0.0475	0.008	0.0146	3.46	0	31.8	0	0.0688	101.329 RTP2l-grt Line 095
96	38.5	21.66	2.58	0.0501	3.81	0.0256	0.0134	0	3.62	0.0116	31.77	0.0148	0	102.0554 RTP2l-grt Line 096
97	38.51	21.26	2.57	0.013	3.73	0.0738	0.0067	0.0437	3.84	0	31.51	0	0.0321	101.5892 RTP2l-grt Line 097
98	38.28	21.48	2.58	0.0313	3.6	0.0699	0.0146	0.0292	3.96	0.0153	31.04	0	0	101.1002 RTP2l-grt Line 098
99	38.34	21.53	2.64	0.0121	3.79	0.0797	0.0058	0	4.12	0	31.79	0	0	102.3075 RTP2l-grt Line 099
100	38.18	21.33	2.66	0	3.92	0.0954	0	0.1422	4.06	0	31.7	0	0.0459	102.1334 RTP2l-grt Line 100
101	38.12	21.52	2.54	0.0404	3.76	0.0631	0	0	3.97	0	31.31	0	0	101.3234 RTP2l-grt Line 101
102	38.45	21.55	2.54	0.0509	3.7	0.1377	0	0	4.2	0	31.61	0.0063	0.0253	102.2701 RTP2l-grt Line 102
103	38.31	21.68	2.65	0.0177	3.46	0.0469	0.0026	0.0878	4.24	0.0539	31.16	0	0.0161	101.725 RTP2l-grt Line 103
104	38.29	21.1	2.83	0.0008	3.62	0	0.2043	0.1281	3.9	0	30.45	0	0	100.5232 RTP2l-grt Line 104
105	37.92	21.28	2.66	0.047	3.58	0.071	0	0.0074	4.26	0	31.16	0	0	100.9853 RTP2l-grt Line 105
106	38.12	21.76	2.61	0.0057	3.64	0.0479	0.0052	0	4.34	0	31.47	0.017	0	102.0157 RTP2l-grt Line 106
107	38.24	21.32	2.57	0.0186	3.7	0.1283	0	0	4.16	0	31.19	0.0341	0.0323	101.3933 RTP2l-grt Line 107
108	38.25	21.72	2.53	0.0444	3.71	0.1108	0.0108	0	4.3	0.0269	31.23	0	0.0046	101.9375 RTP2l-grt Line 108
109	38.1	21.36	2.53	0.0685	3.72	0.101	0	0	4.21	0	31.04	0	0.0437	101.1731 RTP2l-grt Line 109
110	38.6	21.75	2.51	0.0685	3.7	0.1063	0.0147	0	4.14	0	31.59	0.0424	0	102.5218 RTP2l-grt Line 110
111	38	21.43	2.59	0.0469	3.97	0.192	0.055	0.0036	4.21	0.048	31.53	0	0	102.0754 RTP2l-grt Line 111
112	36.66	20.17	4.54	0.0885	3.49	0.2347	3.41	0.0478	2.03	0	26.55	0.0064	0	97.2275 RTP2l-grt Line 112
113	38.53	21.8	2.86	0.0017	3.27	0.0382	0.3563	0.0217	3.59	0.0439	29.37	0.044	0.0661	99.992 RTP2l-grt Line 113
114	74.35	6.62	0.7974	0.0272	1.2495	4.83	0.0593	0.0306	1.334	0.0781	11.45	0	0.0463	100.8724 RTP2l-grt Line 114
115	76.53	5.84	3.8	0.1048	0.0552	0	0.1868	0.0078	0.0569	0.0118	9.53	0.0115	0.0173	96.1521 RTP2l-grt Line 115
116	56.1	11.13	7.92	0.2389	0.2	0.0882	0.44	0	0.1251	0	15.78	0	0.0096	92.0318 RTP2l-grt Line 116
117	43.83	19.14	2.79	0.0559	3.22	0	0.143	0.0331	3.32	0	27.75	0	0.007	100.2889 RTP2l-grt Line 117
118	38.31	21.61	2.64	0.0538	3.53	0	0	0	4.16	0	31.6	0.0253	0	101.929 RTP2l-grt Line 118

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119	38.48	21.31	2.55	0.0137	3.58	0.0666	0.0001	0	4.13	0.046	31.07	0	0	101.2463 RTP2l-grt Line 119
120	38.48	21.51	2.6	0.0153	3.97	0.138	0	0	4.15	0.0211	31.1	0	0.0482	102.0325 RTP2l-grt Line 120
121	38.11	21.7	2.66	0.0184	3.42	0.0672	0.0256	0.0728	4.11	0	31.11	0.0063	0	101.3002 RTP2l-grt Line 121
122	37.97	21.35	2.45	0	3.62	0.0165	0.0215	0	4.18	0	30.94	0.0443	0.016	100.6082 RTP2l-grt Line 122
123	37.96	21.8	2.61	0.0658	3.62	0.1439	0.0188	0	4.07	0.0115	31.32	0.0084	0.0206	101.6489 RTP2l-grt Line 123
124	37.6	20.85	2.5	0	3.87	0	0.0253	0	4.01	0.0229	31.27	0.0063	0.0274	100.1819 RTP2l-grt Line 124
125	37.24	21.02	1.68	0.0389	5.05	0.0308	0.0331	0	3.92	0	30.92	0	0.0547	99.9875 RTP2l-grt Line 125
126	34.68	18.73	6.55	0.144	0.9458	0.2554	6.74	0	0.724	0	22.86	0	0.0188	91.6481 RTP2l-grt Line 126
127	38.15	21.39	2.07	0.0689	4.12	0.1672	0.182	0	3.78	0	30.39	0.0127	0	100.3307 RTP2l-grt Line 127
128	38.35	21.43	2.78	0.0948	3.27	0	0.3234	0.0401	3.55	0.0076	29.42	0.036	0	99.302 RTP2l-grt Line 128
129	38.03	21.34	2.94	0.0772	3.16	0.0672	0.2814	0	3.65	0.0096	29.13	0.0127	0.0207	98.7189 RTP2l-grt Line 129
130	37.35	21.32	3.01	0.052	3.57	0.0197	0.0548	0	3.74	0	30.85	0.0295	0	99.996 RTP2l-grt Line 130
131	37.87	21.63	2.86	0	3.67	0	0	0	4.04	0.0229	31.56	0	0	101.6528 RTP2l-grt Line 131
132	38.32	21.6	2.71	0.0113	3.48	0.0132	0	0	4.07	0.0611	31.25	0.0084	0	101.5239 RTP2l-grt Line 132
133	37.91	21.72	2.67	0	3.62	0.0185	0.0119	0.0255	4.05	0	31.45	0.019	0.0435	101.5384 RTP2l-grt Line 133
134	38.1	21.54	2.69	0	3.53	0.0441	0	0	3.98	0	31.58	0.0252	0.0023	101.4915 RTP2l-grt Line 134
135	37.99	21.42	2.68	0.0488	3.5	0.0168	0.008	0.0908	4.15	0.0057	31.13	0.0168	0	101.0569 RTP2l-grt Line 135
136	38.06	21.29	2.96	0.0408	3.83	0.0718	0	0	4.3	0	31.16	0.0421	0	101.7546 RTP2l-grt Line 136
137	38.02	21.32	2.81	0.0225	3.65	0.1007	0.0082	0	3.87	0.0306	31.38	0	0	101.212 RTP2l-grt Line 137
138	38.04	21.37	2.69	0.0634	3.78	0.0025	0	0	4.03	0	31.41	0.0063	0	101.3922 RTP2l-grt Line 138
139	37.59	21.23	2.83	0.0425	3.78	0	0.0064	0	4.01	0	31.28	0	0	100.7689 RTP2l-grt Line 139
140	37.21	20.78	2.36	0.021	4.27	0.0049	0.3089	0	3.57	0	30.29	0	0.0228	98.8376 RTP2l-grt Line 140
141	38	20.99	3.64	0.0485	3.47	0.0305	1.9	0	2.73	0	28.26	0.0361	0.0299	99.1351 RTP2l-grt Line 141
142	38.18	21.62	2.74	0	3.62	0.0492	0.0281	0	3.97	0	31.42	0.0529	0.0253	101.7055 RTP2l-grt Line 142
143	38.13	21.66	2.74	0.068	3.61	0.0292	0	0.0473	4.06	0	31.07	0.0127	0.0092	101.4363 RTP2l-grt Line 143
144	38.13	21.63	2.91	0	3.42	0	0	0	4.05	0	30.97	0	0	101.11 RTP2l-grt Line 144
145	38.3	21.58	2.73	0.0519	3.37	0.0917	0.0039	0	3.86	0	31.16	0.0337	0	101.1811 RTP2l-grt Line 145
146	38.02	21.38	2.71	0.008	3.75	0.0462	0.0159	0.0907	3.86	0	31.12	0	0.032	101.0327 RTP2l-grt Line 146
147	99.34	0.2229	0.0245	0.0074	0.1291	0.0088	0.0199	0	0.1751	0.0297	0.876	0.0048	0.0127	100.8508 RTP2l-grt Line 147
148	101.23	0.043	0.0074	0.0409	0.0166	0.0628	0.0144	0.0278	0.0397	0.0258	0.3818	0.0048	0.0102	101.9052 RTP2l-grt Line 148
149	100.96	0.0579	0.0327	0	0.0394	0.0241	0.0213	0	0.0412	0.0218	0.3387	0.0335	0.0178	101.5883 RTP2l-grt Line 149
150	100.38	0.0647	0.0049	0.0414	0	0	0.0115	0.0238	0.0335	0	0.4712	0.0215	0	101.0524 RTP2l-grt Line 150
151	37.39	17.46	5.56	0.088	0.0686	0.0313	6.58	0.0334	0	0.0115	25.43	0.0344	0.0023	92.6896 RTP2l-grt Line 151

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152	39.25	17.97	5.09	0.1948	0.2697	0.0849	7.42	0.0782	0.0551	0.0614	23.72	0.0543	0.033	94.2815	RTP2I-grt Line 152
153	77.9	6.56	1.81	0.0252	0.0986	0.0358	3.41	0	0.0056	0	9.83	0.0023	0.0173	99.6949	RTP2I-grt Line 153
154	99.85	0.0124	0	0	0	0	0.0069	0.0158	0	0.0614	0.4251	0.0215	0.0177	100.4107	RTP2I-grt Line 154
155	71.78	10.42	0.7844	0.037	2.32	0	0.011	0.0113	2.23	0.0232	16.61	0.0246	0.0048	104.2562	RTP2I-grt Line 155
156	38.28	21.5	2.65	0	3.3	0	0.0137	0.076	4.02	0.0305	31.57	0.0336	0	101.4737	RTP2I-grt Line 156
157	38.12	21.43	2.81	0.0639	3.84	0	0.0001	0	4.04	0	31.33	0.0126	0.0319	101.6785	RTP2I-grt Line 157
158	38.06	21.65	2.79	0.0064	3.4	0.0227	0.0054	0	3.8	0	31.34	0	0	101.0745	RTP2I-grt Line 158
159	38.13	21.41	2.81	0.0375	3.75	0	0.0077	0	3.95	0.021	31.51	0.0335	0.0387	101.6983	RTP2I-grt Line 159
160	38.17	21.58	2.7	0.1005	3.61	0	0.0146	0	4.02	0	31.48	0.0105	0.0273	101.7128	RTP2I-grt Line 160
161	37.92	21.49	2.97	0.0136	3.25	0.0104	0.004	0	3.87	0	31.59	0	0.0432	101.3511	RTP2I-grt Line 161
162	38.32	21.46	2.93	0	3.37	0.0785	0.0039	0.018	3.94	0.0132	31.93	0	0	102.0635	RTP2I-grt Line 162
163	38	21.54	2.88	0.0557	3.44	0	0.0172	0.0361	3.93	0.0874	31.44	0	0.0273	101.4537	RTP2I-grt Line 163
164	38	21.4	2.92	0.0518	3.52	0.0115	0.0064	0.0468	3.93	0.0076	31.72	0	0.0113	101.6253	RTP2I-grt Line 164
165	38.18	21.34	2.94	0	3.35	0	0.0052	0.0577	3.91	0	31.51	0.0251	0	101.318	RTP2I-grt Line 165
166	38.03	21.28	2.93	0.0119	3.46	0	0	0.1261	4	0.019	31.37	0	0.0272	101.2541	RTP2I-grt Line 166
167	37.9	21.58	2.9	0.0731	3.15	0.0507	0	0.0755	3.83	0.1136	31.9	0.0021	0.0091	101.5841	RTP2I-grt Line 167
168	38.19	21.35	2.75	0.0527	3.38	0.0172	0.0147	0	3.96	0.0626	31.99	0.0188	0.0317	101.8176	RTP2I-grt Line 168
169	38.01	21.41	2.81	0.0629	3.35	0.0789	0.0276	0	3.86	0.0378	32.07	0.0542	0	101.7714	RTP2I-grt Line 169
170	30.1	14.99	2.39	0.3028	1.83	0.0564	0.2024	0.1159	2.76	0.0265	22.5	0.0105	0	75.2846	RTP2I-grt Line 170
171	37.87	21.59	2.76	0.0231	3.22	0.0104	0.008	0	3.79	0.0455	32.11	0	0.0068	101.4337	RTP2I-grt Line 171
172	38	21.61	2.78	0.088	3.2	0.0931	0	0	3.86	0.0246	31.65	0.0021	0.0136	101.3214	RTP2I-grt Line 172
173	38.04	21.61	2.71	0.0413	3.11	0.0327	0	0.054	3.86	0.0019	31.76	0.0271	0	101.2469	RTP2I-grt Line 173
174	38.01	21.21	2.73	0.0215	3.08	0	0.0001	0.0503	3.79	0.017	32.08	0.0167	0.0226	101.0281	RTP2I-grt Line 174
175	38.16	21.31	2.76	0.05	3.08	0.0025	0.0039	0	3.88	0.0207	31.72	0	0.0068	100.9938	RTP2I-grt Line 175
176	38.06	21.42	2.73	0	3.4	0	0.0106	0.0467	3.85	0.0076	32.12	0	0.0475	101.6923	RTP2I-grt Line 176
177	37.5	21.23	2.79	0.0263	3.27	0	0.0039	0.0108	3.77	0	31.69	0	0	100.2909	RTP2I-grt Line 177
178	37.9	21.35	2.69	0.031	3.33	0.017	0.0159	0.0036	3.67	0	31.85	0	0	100.8574	RTP2I-grt Line 178
179	37.46	20.83	2.88	0.1285	3.21	0	0.0398	0	3.76	0.0019	31.33	0.0353	0.0023	99.6779	RTP2I-grt Line 179
180	37.85	21.5	2.48	0	3.19	0.0367	0	0.0611	3.84	0.0531	31.84	0	0.0272	100.878	RTP2I-grt Line 180
181	38.13	21.22	2.36	0	3.48	0	0	0	3.72	0	32.08	0.0146	0	101.0046	RTP2I-grt Line 181
182	35.66	19.88	2.1	0.064	3.92	0.0777	0.0186	0	3.7	0.017	31.79	0	0	97.2274	RTP2I-grt Line 182
183	37.57	20.83	2.59	0.0209	4.02	0	0.1205	0	3.43	0.0359	31.37	0.0291	0	100.0163	RTP2I-grt Line 183
184	37.18	20.7	1.5732	0.0403	6.01	0	0.1898	0.0967	4.14	0.0132	30.19	0	0.0405	100.1736	RTP2I-grt Line 184

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185	34.06	18.6	7.16	0.103	0.7508	0.0888	6.47	0	0.3632	0	24.76	0.0404	0.0602	92.4565	RTP2I-grt Line 185
186	35.02	18.81	7.35	0.1122	0.1234	0.0628	7.36	0	0.1117	0	23.96	0.0834	0	92.9936	RTP2I-grt Line 186
187	35.26	18.96	7.41	0.1038	0.4086	0.1799	8.1	0	0.0273	0.0075	24.44	0.0193	0.0023	94.9188	RTP2I-grt Line 187
188	61.56	19.55	0.629	3.37	0.3311	0.0309	9.42	0.1667	1.2585	0	3.35	0	0	99.6663	RTP2I-grt Line 188
189	44.85	22.18	0.8225	3.03	4.43	0.0805	0.0775	0	4.94	0	21.59	0	0	102.0005	RTP2I-grt Line 189
190	39.96	20.93	1.5446	0.0102	4.7	0.0419	1.37	0.0541	3.3	0	28.58	0	0.0091	100.4999	RTP2I-grt Line 190
191	37.45	21.5	1.97	0.0643	4.82	0	0.0133	0.0607	3.65	0	31.88	0	0.0539	101.4622	RTP2I-grt Line 191
192	37.97	21.32	2.18	0.0648	4.17	0	0.0042	0.0787	3.59	0.0263	31.96	0.0705	0.0112	101.4456	RTP2I-grt Line 192
193	37.67	21.46	2.24	0	4.21	0	0.0133	0	3.77	0.0399	31.84	0.0168	0.0227	101.2826	RTP2I-grt Line 193
194	37.9	21.09	2.31	0.0968	4.32	0.0211	0.0106	0.0756	3.51	0	32	0.0125	0.009	101.3556	RTP2I-grt Line 194
195	37.74	21.4	2.21	0.025	4.3	0.0247	0	0.1331	3.48	0	32.05	0	0.0068	101.3696	RTP2I-grt Line 195
196	37.71	21.48	2.39	0.0982	4.6	0.0686	0.0055	0.0288	3.29	0	31.69	0.0397	0.0272	101.428	RTP2I-grt Line 196
197	37.75	21.45	2.12	0.0589	4.45	0.0406	0.0055	0.0719	3.39	0	32	0	0.0023	101.3391	RTP2I-grt Line 197
198	37.68	21.07	2.13	0.0009	4.93	0.0484	0.0121	0.061	3.19	0.0037	31.99	0	0.0022	101.1182	RTP2I-grt Line 198
199	37.63	21.61	1.98	0.0372	5.19	0	0	0	3.28	0.0209	31.56	0	0.0203	101.3283	RTP2I-grt Line 199
200	37.51	21.51	1.92	0.0574	5.42	0	0	0	3.36	0	31.25	0.0627	0.0068	101.0968	RTP2I-grt Line 200
Minimum	23.45	0.0124	0	0	0	0	0	0	0	0	0.3013	0	0	71.5537	
Maximum	101.23	23.99	7.92	8.28	7.65	4.83	9.42	0.1667	5.52	0.1136	32.54	0.0834	0.0688	104.2563	
Average	41.2725	19.9899	2.7732	0.3193	3.2121	0.1115	0.7608	0.0268	3.2942	0.0146	27.9775	0.0164	0.0142	99.7828	
Sigma	12.2887	4.2831	1.4144	1.2884	1.466	0.4016	2.1444	0.0374	1.2333	0.0208	7.9146	0.02	0.0171	4.8197	
No. of data	200														

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Thermocalc: Table with results

Termocalc log

Sample	avP	sd	avT	sd	cor	fit
Profile 1						
KÅP1O	6.90	1.10	602.00	22.00	0.56	1.58
KÅP1O	6.00	1.10	607.00	20.00	0.59	1.42
KÅP1O	7.00	1.70	596.00	14.00	0.20	0.81
KÅP1O average	6.63		601.67			
RTP1D	6.80	2.20	653.00	36.00	0.49	2.63
RTP1La	8.00	2.90	599.00	89.00	0.78	2.29
KÅP1Lb	11.60	2.10	708.00	34.00	0.82	1.99
RTP1M	7.10	1.80	629.00	25.00	0.90	1.42
Profile 2						
KÅP2A	9.40	1.20	755.00	38.00	0.72	0.27
KÅP2Bb	6.40	1.70	625.00	31.00	0.54	2.14
KÅP2C	8.90	1.10	729.00	35.00	0.73	0.39
KÅP2C	8.40	1.10	690.00	33.00	0.74	0.59
KÅP2C average	8.65		709.50			
KÅP2D	7.80	1.90	605.00	127.00	0.91	0.34
KÅP2E	10.20	1.20	763.00	46.00	0.72	1.12
RTP2I	9.40	1.20	791.00	45.00	0.69	0.62
RTP2J	11.40	1.10	764.00	38.00	0.70	0.92
RTP2J	13.80	2.10	747.00	183.00	0.37	1.45
RTP2K	7.60	3.00	590.00	39.00	0.28	3.42

Thermocalc logs

KAP10-1

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	clin
a	0.00410	0.000164	0.470	0.0600	0.0440	0.0500	0.0400
sd(a)/a	0.63496	0.80417	0.15000	0.34206	0.37671	0.36167	0.38400

	daph	ames	mu	cel	fcel	pa	an
a	0.0154	0.0390	0.650	0.0258	0.0284	0.800	0.390
sd(a)/a	0.50788	0.38642	0.10000	0.38760	0.35211	0.05012	0.11163

	ab	q	H2O
a	0.770	1.00	1.00
sd(a)/a	0.05000	0	

Independent set of reactions

- 1) $py + 2gr + 3ames + 6q = 3clin + 6an$
- 2) $3gr + 5ames + 11q = 4clin + 9an + 4H_2O$
- 3) $gr + 2pa + 3q = 3an + 2ab + 2H_2O$
- 4) $3east + 6q = py + phl + 2mu$
- 5) $2phl + ames + 6q = py + clin + 2cel$
- 6) $2east + ames + 6q = py + clin + 2mu$
- 7) $ann + 3an = gr + alm + mu$
- 8) $3ann + 3an + 6q = gr + 2alm + 3fcel$
- 9) $5alm + 3ames + 3cel = 5py + 3daph + 3mu$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	6.0	1.35	7.70	1.89	-0.24646	11.808	17.354	2.472
2	4.5	1.36	262.97	2.94	-0.61372	17.089	21.018	3.595
3	3.1	0.71	144.19	0.69	-0.26607	8.095	5.814	0.883
4	6.4	2.48	13.46	1.23	0.01271	-3.454	-0.185	1.318
5	9.7	2.33	61.63	1.04	0.02614	-3.700	-7.159	1.330
6	5.2	2.35	16.45	1.07	0.00225	-3.109	-0.342	1.124
7	4.8	0.85	-37.60	1.15	0.12785	-7.399	-3.953	0.966
8	8.0	0.99	25.26	3.18	0.16499	-12.153	-8.714	1.801
9	9.6	14.87	161.40	5.71	-0.09064	1.757	-16.817	3.969

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.53, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.42

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	6.9	1.1	602	22	0.563	1.58

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	6.96	1.19	603	24	0.605	1.58	-0.17	0.24
gr	7.69	1.27	603	20	0.496	1.46	-1.36	0.43

alm	6.93	1.18	602	25	0.598	1.58	-0.02	0.15
phl	7.03	1.12	603	21	0.569	1.54	-1.02	0.02
ann	6.76	1.11	597	22	0.581	1.51	-1.23	0.09
east	6.90	1.15	603	22	0.538	1.58	-0.35	0.08
clin	6.90	1.13	599	22	0.559	1.56	-0.67	0.06
daph	7.01	1.21	605	26	0.622	1.58	0.30	0.30
ames	7.18	1.08	605	20	0.576	1.46	1.60	0.05
mu	6.85	1.16	602	22	0.560	1.57	-0.39	0.02
cel	6.59	1.13	600	20	0.563	1.49	1.52	0.13
fcel	6.43	0.97	601	18	0.545	1.29	2.53	0.12
pa	7.00	1.18	601	22	0.524	1.57	-0.26	0.06
an	7.16	1.19	602	21	0.537	1.55	0.57	0.07
ab	7.00	1.18	601	22	0.525	1.57	0.26	0.06
q	6.92	1.15	602	22	0.563	1.58	0	0
H2O	6.92	1.15	602	22	0.563	1.58	0	0

T = 602;C

KAP10-2

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	clin	
a	0.00710	0.000310	0.380	0.0540	0.0400	0.0540	0.0340	
sd(a)/a	0.58729	0.78230	0.15000	0.35355	0.38967	0.35355	0.39913	

	daph	ames	mu	cel	fcel	pa	an	
--	------	------	----	-----	------	----	----	--

a 0.0133 0.0380 0.660 0.0184 0.0202 0.620 0.390
 sd(a)/a 0.52405 0.38888 0.10000 0.54348 0.49505 0.05000 0.11163

 ab q H2O
 a 0.770 1.00 1.00
 sd(a)/a 0.05000 0

Independent set of reactions

- 1) $py + 2gr + 3ames + 6q = 3clin + 6an$
- 2) $3gr + 5ames + 11q = 4clin + 9an + 4H_2O$
- 3) $gr + 2pa + 3q = 3an + 2ab + 2H_2O$
- 4) $3east + 6q = py + phl + 2mu$
- 5) $2phl + 3ames + 6q = py + 3clin + 2mu$
- 6) $2phl + ames + 6q = py + clin + 2cel$
- 7) $ann + 3an = gr + alm + mu$
- 8) $3ann + 3an + 6q = gr + 2alm + 3fcel$
- 9) $4alm + 3ames + 3fcel = 4py + 3daph + 3mu$

Calculations for the independent set of reactions

(for $x(H_2O) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	7.3	1.35	7.40	1.89	-0.24615	11.817	15.122	2.457
2	5.4	1.35	263.44	2.94	-0.61547	17.230	18.588	3.584
3	3.2	0.68	144.41	0.69	-0.26690	8.165	5.687	0.863
4	6.8	2.40	13.40	1.23	0.01287	-3.466	0.059	1.279
5	2.7	5.12	22.39	1.64	-0.01852	-2.430	-0.275	1.918
6	9.6	2.66	61.64	1.04	0.02630	-3.720	-7.212	1.529
7	5.3	0.84	-37.49	1.15	0.12779	-7.410	-3.418	0.953
8	7.7	1.13	25.39	3.18	0.16511	-12.189	-9.239	2.094
9	3.3	14.25	89.79	5.71	-0.05137	1.613	-8.610	3.465

Average PT (for $x(H_2O) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.53, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.42

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	6.0	1.1	607	20	0.588	1.42

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	5.83	1.11	601	22	0.632	1.39	0.73	0.27
gr	5.89	1.37	606	20	0.538	1.42	0.13	0.51
alm	6.00	1.11	607	23	0.611	1.42	-0.04	0.14
phl	6.18	1.00	609	19	0.595	1.30	-1.52	0.03
ann	5.86	1.02	601	20	0.598	1.33	-1.28	0.08
east	5.95	1.08	608	20	0.564	1.41	-0.52	0.08
clin	5.97	1.06	604	20	0.580	1.39	-0.69	0.06
daph	6.21	1.09	615	23	0.631	1.38	0.79	0.29
ames	6.34	0.95	612	17	0.604	1.22	1.89	0.05
mu	6.05	1.07	607	20	0.588	1.40	0.47	0.01
cel	5.86	1.10	606	20	0.590	1.40	0.73	0.09
fcel	5.74	1.03	606	19	0.580	1.32	1.51	0.09
pa	6.19	1.07	606	19	0.559	1.36	-0.67	0.05
an	5.96	1.18	607	20	0.567	1.42	-0.06	0.09
ab	6.19	1.07	606	19	0.559	1.36	0.67	0.05
q	5.99	1.08	607	20	0.588	1.42	0	0
H2O	5.99	1.08	607	20	0.588	1.42	0	0

T = 607

KAP10-3

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	alm	phl	ann	east	clin	daph
a	0.00540	0.380	0.0450	0.0390	0.0490	0.0310	0.0118
sd(a)/a	0.61191	0.15000	0.37244	0.39308	0.36377	0.40732	0.53685

	ames	mu	cel	fcel	q	H2O
a	0.0380	0.660	0.0131	0.0144	1.00	1.00
sd(a)/a	0.38888	0.10000	0.76336	0.69444	0	0

Independent set of reactions

- 1) $3\text{east} + 6\text{q} = \text{py} + \text{phl} + 2\text{mu}$
- 2) $\text{phl} + \text{east} + 6\text{q} = \text{py} + 2\text{cel}$
- 3) $2\text{phl} + 3\text{ames} + 6\text{q} = \text{py} + 3\text{clin} + 2\text{mu}$
- 4) $2\text{ann} + \text{mu} + 6\text{q} = \text{alm} + 3\text{fcel}$
- 5) $5\text{alm} + 3\text{ames} + 3\text{cel} = 5\text{py} + 3\text{daph} + 3\text{mu}$
- 6) $\text{alm} + 3\text{east} + 6\text{q} = 2\text{py} + \text{ann} + 2\text{mu}$
- 7) $2\text{py} + \text{daph} + 7\text{fcel} = 4\text{ann} + 3\text{east} + 19\text{q} + 4\text{H}_2\text{O}$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	6.9	2.74	14.05	1.23	0.01251	-3.529	-0.106	1.321
2	8.4	3.04	59.35	1.08	0.03640	-4.139	-7.775	1.725
3	1.4	5.73	23.03	1.64	-0.01889	-2.492	-0.461	1.955
4	9.7	3.37	63.60	2.19	0.03701	-4.862	-6.785	2.234

5	6.9	17.97	159.96	5.71	-0.08918	1.799	-13.018	4.383
6	7.8	3.85	58.77	1.53	-0.00117	-3.239	-4.503	1.705
7	9.5	2.58	-19.65	5.20	-0.32673	15.330	22.541	5.393

Average PT (for x(H2O) = 1.0)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.54, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.49

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	7.0	1.7	596	14	0.195	0.81

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	6.79	1.79	592	16	0.266	0.79	0.45	0.27
alm	7.11	1.78	599	16	0.258	0.79	-0.26	0.11
phl	6.99	1.76	596	14	0.210	0.81	-0.14	0.04
ann	7.06	1.85	596	14	0.253	0.81	0.14	0.11
east	7.25	2.11	595	14	0.031	0.81	0.21	0.44
clin	7.46	1.81	592	15	0.120	0.65	-0.97	0.13
daph	7.02	1.76	599	17	0.213	0.80	0.30	0.31
ames	7.34	1.79	600	15	0.238	0.67	0.90	0.08
mu	7.08	1.77	595	14	0.172	0.79	-0.24	0.02
cel	6.70	1.90	595	14	0.206	0.80	0.38	0.19
fcel	6.34	1.89	595	14	0.191	0.71	0.93	0.18
q	6.97	1.75	596	14	0.195	0.81	0	0

H2O 6.97 1.75 596 14 0.195 0.81 0 0

T=596

KAP1B

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	clin	daph	ames	ab	mu	cel	fcel
a	0.104	0.00390	0.0730	0.840	0.680	0.0185	0.0175
sd(a)/a	0.27541	0.63897	0.31958	0.05000	0.10000	0.54054	0.57143

	pa	osm2	fosm	q	H2O
a	0.510	0.400	0.350	1.00	1.00
sd(a)/a	0.07203	0.47500	0.12675	0	0

Independent set of reactions

- 1) $2\text{clin} + 9\text{ab} + 8\text{mu} + 9\text{q} = 7\text{cel} + 9\text{pa} + \text{osm2}$
- 2) $31\text{cel} + 36\text{pa} = 5\text{clin} + 36\text{ab} + 29\text{mu} + 2\text{osm2} + 18\text{H2O}$
- 3) $2\text{ames} + 9\text{ab} + 6\text{mu} + 9\text{q} = 5\text{cel} + 9\text{pa} + \text{osm2}$
- 4) $29\text{fcel} + 36\text{pa} = 5\text{daph} + 36\text{ab} + 27\text{mu} + 2\text{fosm} + 18\text{H2O}$
- 5) $5\text{fcel} + 6\text{pa} = \text{daph} + 6\text{ab} + 5\text{mu} + 2\text{q} + 2\text{H2O}$

Calculations for the independent set of reactions

(for $x(\text{H2O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	8.5	2.59	74.60	3.64	0.22766	-10.067	-25.725	4.014
2	2.4	1.51	794.12	12.69	-2.22035	74.264	117.320	17.377
3	7.1	2.22	35.35	3.39	0.18283	-8.777	-17.809	2.987
4	4.3	1.57	512.76	14.86	-1.84982	71.835	95.038	17.382
5	5.7	1.92	25.76	2.61	-0.23957	10.171	15.747	3.016

Average PT (for $x(\text{H2O}) = 1.0$)

Average PT outside window - use average P and/or T

an INCOMPLETE independent set of reactions has been calculated

Activities and their uncertainties

	clin	daph	ames	ab	mu	cel	fcel
a	0.104	0.00390	0.0730	0.840	0.680	0.0185	0.0175
sd(a)/a	0.27541	0.63897	0.31958	0.05000	0.10000	0.54054	0.57143

	pa	osm2	fosm	q	H2O
a	0.510	0.400	0.350	1.00	1.00
sd(a)/a	0.07203	0.47500	0.12675	0	0

~~INCOMPLETE~~ independent set of reactions

1) $8\text{daph} + 42\text{pa} + 20\text{osm2} = 15\text{ames} + 42\text{ab} + 20\text{fosm} + 14\text{q} + 14\text{H2O}$

Calculations for the independent set of reactions

at P = 7.0 kbar (for $x(\text{H2O}) = 1.0$)

	T(P)	sd(T)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	606	69	661.46	34.39	-1.40977	58.080	23.402	12.

RTP1D

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	clin	daph	ames	phl
a	0.0180	0.000106	0.330	0.0420	0.0164	0.0380	0.0520
sd(a)/a	0.49008	0.81683	0.15000	0.37927	0.50077	0.38888	0.35756

	ann	east	an	ab	mu	cel	fcel
a	0.0490	0.0450	0.300	0.820	0.660	0.0360	0.0260
sd(a)/a	0.36184	0.37244	0.14700	0.05000	0.10000	0.27879	0.38462

	pa	q	H2O	ky
a	0.373	1.00	1.00	1.00
sd(a)/a	0.11794	0	0	0

Independent set of reactions

1) $\text{gr} + \text{q} + 2\text{ky} = 3\text{an}$

- 2) $py + 2gr + 3ames + 6q = 3clin + 6an$
- 3) $3clin + 12an = 5py + 4gr + 12H_2O + 6ky$
- 4) $3an + pa = gr + ab + H_2O + 3ky$
- 5) $clin + east = ames + phl$
- 6) $3ames + 2phl + 6q = py + 3clin + 2mu$
- 7) $2ann + mu + 6q = alm + 3fcel$
- 8) $ann + q + 2ky = alm + mu$
- 9) $daph + 24an + 5mu = 8gr + 5fcel + 4H_2O + 22ky$
- 10) $ames + 2phl + 6q = py + clin + 2cel$

Calculations for the independent set of reactions
(for $x(H_2O) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	6.2	1.06	42.71	0.57	-0.14017	6.379	5.540	0.928
2	8.1	1.57	8.45	1.89	-0.24612	11.682	15.398	2.518
3	8.2	1.20	593.88	2.74	-0.14473	-27.825	-32.737	4.592
4	7.4	1.21	7.01	0.60	0.07973	-5.647	-4.752	0.937
5	18.8	15.88	-2.98	0.62	0.01044	-0.345	0.044	0.749
6	6.6	5.73	23.95	1.64	-0.02101	-2.369	1.365	1.857
7	11.6	2.21	63.74	2.19	0.03463	-4.609	-5.610	1.374
8	4.8	3.32	5.87	1.00	-0.01411	-0.934	1.492	0.404
9	6.9	1.00	-72.93	5.14	0.99809	-56.317	-56.381	7.704
10	13.9	2.38	62.65	1.04	0.02376	-3.587	-4.653	1.165

Average PT (for $x(H_2O) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :
a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :
large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :
large values, say >0.56, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.39

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	6.8	2.2	653	36	0.579	2.88

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	6.71	2.31	650	40	0.615	2.88	0.54	0.19
gr	6.76	2.60	652	37	0.603	2.88	0.11	0.29
alm	7.20	2.18	662	36	0.601	2.75	-1.81	0.05
clin	6.82	2.25	653	37	0.574	2.88	-0.02	0.05
daph	7.36	2.09	672	36	0.601	2.63	3.07	0.18
ames	7.08	2.22	660	37	0.596	2.80	1.86	0.09

phl	6.86	2.13	659	35	0.572	2.74	-2.62	0.06
ann	6.80	2.29	653	37	0.584	2.88	-0.11	0.04
east	6.54	2.22	654	35	0.559	2.80	-2.09	0.08
an	6.79	2.43	653	37	0.591	2.88	-0.06	0.09
ab	7.21	2.16	646	35	0.522	2.72	1.71	0.07
mu	6.75	2.27	651	38	0.594	2.88	-0.43	0.04
cel	5.82	2.26	641	35	0.624	2.68	3.07	0.19
fcel	6.38	2.22	648	35	0.593	2.77	2.51	0.07
pa	8.00	1.94	632	32	0.418	2.37	-4.03	0.40
q	6.82	2.24	653	36	0.579	2.88	0	0
H2O	6.82	2.24	653	36	0.579	2.88	0	0
ky	6.82	2.						

RTP1La

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	ab	phl	ann	east	clin	daph	ames	
a	0.800	0.118	0.0160	0.0800	0.0960	0.00390	0.0710	
sd(a)/a	0.05000	0.25859	0.50357	0.30859	0.28579	0.63897	0.32285	
	mu	cel	fcel	pa	q	H2O		
a	0.610	0.0420	0.0231	0.700	1.00	1.00		
sd(a)/a	0.10000	0.27533	0.43290	0.05029	0			

Independent set of reactions

- 1) $3\text{phl} + 4\text{pa} + \text{q} = 4\text{ab} + 2\text{east} + \text{clin} + \text{mu}$
- 2) $11\text{phl} + 14\text{pa} = 14\text{ab} + 9\text{east} + 3\text{clin} + 2\text{mu} + 2\text{H}_2\text{O}$
- 3) $2\text{phl} + 4\text{pa} + \text{q} = 4\text{ab} + \text{east} + \text{ames} + \text{mu}$
- 4) $\text{phl} + 2\text{cel} + 4\text{pa} + \text{q} = 4\text{ab} + \text{clin} + 3\text{mu}$
- 5) $\text{ann} + 2\text{fcel} + 4\text{pa} + \text{q} = 4\text{ab} + \text{daph} + 3\text{mu}$
- 6) $2\text{ann} + 9\text{fcel} + 14\text{pa} = 14\text{ab} + 3\text{daph} + 11\text{mu} + 2\text{H}_2\text{O}$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	3.4	1.57	46.26	1.25	-0.07160	4.482	-0.944	1.075
2	2.9	1.52	277.27	4.62	-0.38076	17.954	-5.373	4.191
3	2.3	1.19	43.26	1.11	-0.06113	4.137	-0.857	0.747
4	7.8	1.02	1.02	1.16	-0.09549	5.082	5.185	0.789
5	7.3	1.81	-18.28	2.18	-0.06312	4.636	5.175	1.258
6	7.9	1.59	-10.79	6.71	-0.36582	19.443	21.973	4.697

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.46, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.54

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	8.0	2.9	599	89	0.780	2.29

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
ab	8.61	3.14	611	90	0.795	2.23	0.63	0.09
phl	8.86	2.77	623	84	0.802	2.07	-1.84	0.12
ann	8.08	2.75	607	85	0.780	2.17	-1.38	0.02
east	7.70	3.00	579	111	0.771	2.27	0.52	0.54
clin	7.29	2.90	566	96	0.804	2.17	-1.16	0.21

daph	8.12	2.90	604	89	0.787	2.26	0.61	0.02
ames	8.57	2.38	597	72	0.765	1.86	2.56	0.09
mu	7.64	3.63	590	106	0.851	2.29	-0.19	0.20
cel	6.82	2.83	597	79	0.721	2.05	1.82	0.38
fcel	7.39	2.88	591	85	0.777	2.18	1.49	0.14
pa	8.62	3.14	611	90	0.795	2.23	-0.63	0.10
q	7.95	2.89	599	89	0.780	2.29	0	0
H2O	7.95	2.89	599	89	0.780	2.29	0	0

T = 599;C, sd = 89,

P = 8.0 kbars, sd = 2.9, cor = 0.780, sigfi

KAP1Lb

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	an	ab	phl	ann	
a	0.0130	4.50e-5	0.340	0.220	0.850	0.106	0.0190	
sd(a)/a	0.52652	0.83711	0.15000	0.18252	0.05000	0.27291	0.48377	

	east	ab	mu	cel	fcel	pa	q	
a	0.0710	0.990	0.660	0.0470	0.0370	0.790	1.00	
sd(a)/a	0.32285	0.10000	0.05000	0.27246	0.27821	0.05000	0	

	H2O	ky	
a	1.00	1.00	
sd(a)/a		0	

Independent set of reactions

- 1) $gr + q + 2ky = 3an$
- 2) $3an + pa = gr + ab + H_2O + 3ky$
- 3) $3an + pa = gr + ab + H_2O + 3ky$
- 4) $3east + 6q = py + phl + 2mu$
- 5) $phl + east + 6q = py + 2cel$
- 6) $3phl + 4ky = py + 3east + 4q$
- 7) $2ann + mu + 6q = alm + 3fcel$
- 8) $ann + q + 2ky = alm + mu$

Calculations for the independent set of reactions

(for $x(H_2O) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)	
1	6.3	1.14	42.71	0.57	-0.14017	6.379	5.466	1.000	
2	6.6	1.29	7.01	0.60	0.07973	-5.647	-5.393	1.003	
3	6.8	1.30	7.01	0.60	0.07973	-5.647	-5.241	1.007	
4	8.2	2.46	15.02	1.23	0.01030	-3.404	0.517	1.140	
5	12.5	1.63	59.68	1.08	0.03420	-3.931	-5.569	0.868	
6	5.6	4.75	85.90	1.12	-0.06554	2.109	-5.545	1.373	
7	16.5	2.08	63.74	2.19	0.03463	-4.609	-2.627	1.288	
8	12.3	4.10	5.87	1.00	-0.01411	-0.934	2.469	0.509	

Average PT (for $x(H_2O) = 1.0$)

Single end-member diagnostic information

avP , avT , sd 's, cor , fit are result of doubling the uncertainty on $\ln a$:

$\ln a$ suspect if any are v different from lsq values.

e^* are $\ln a$ residuals normalised to $\ln a$ uncertainties :

large absolute values, say >2.5 , point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.50 , point to influential data.

For 95% confidence, $\text{fit} (= \text{sd}(\text{fit})) < 1.45$
 however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	11.6	2.1	708	34	0.821	1.99

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	11.86	2.05	713	34	0.830	1.93	-1.16	0.06
gr	13.24	1.95	727	30	0.845	1.63	-2.42	0.26
alm	11.59	2.04	708	33	0.821	1.98	-0.34	0.00
an	12.64	2.01	720	31	0.837	1.77	1.58	0.11
ab	11.67	2.00	717	36	0.765	1.93	-0.82	0.31
phl	11.56	2.07	707	34	0.824	1.98	-0.27	0.02
ann	11.50	2.09	707	34	0.826	1.98	-0.48	0.05
east	11.75	2.13	710	34	0.829	1.98	0.52	0.09
ab	11.58	2.01	705	33	0.813	1.94	1.11	0.08
mu	11.45	2.00	706	33	0.822	1.92	-0.79	0.01
cel	10.79	2.11	698	33	0.843	1.86	1.73	0.22
fcel	10.48	1.87	693	30	0.842	1.67	2.72	0.18
pa	11.65	2.05	714	42	0.711	1.98	0.27	0.48
q	11.60	2.05	708	34	0.821	1.99	0	0
H2O	11.60	2.05	708	34	0.821	1.99	0	0
ky	11.60	2.05	708	34	0.821	1.99	0	0

$T = 708_iC, \text{sd} = 34$

RTP1M

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	ab	phl	ann	east	mu	cel	fcel	
a	0.690	0.121	0.0130	0.0820	0.650	0.0257	0.0167	
sd(a)/a	0.05000	0.25518	0.52652	0.30557	0.10000	0.38911	0.59880	

	pa	clin	daph	ames	q	H2O	ky	
a	0.650	0.116	0.00290	0.0700	1.00	1.00	1.00	
sd(a)/a	0.05031	0.26089	0.66161	0.32451	0		0	

Independent set of reactions

- 1) $phl + ames = east + clin$
- 2) $2phl + mu + 2ky = 3east + 5q$
- 3) $phl + cel + 2ky = 2east + 5q$
- 4) $3fcel + 2ky = ann + 2mu + 5q$
- 5) $5ann + 3cel + 3ames = 5phl + 3mu + 3daph$
- 6) $15east + daph + 33q = 10phl + 5fcel + 4H_2O + 16ky$
- 7) $ann + 2fcel + 4pa + q = 4ab + 3mu + daph$

Calculations for the independent set of reactions

(for $x(H_2O) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)	
1	15.4	12.26	2.98	0.62	-0.01044	0.345	0.116	0.576	
2	6.7	2.80	35.44	1.10	-0.03792	2.756	-2.848	1.054	
3	8.2	1.87	13.11	0.95	-0.04987	3.020	0.771	0.768	
4	13.4	3.74	-57.87	1.33	-0.04873	3.675	7.073	1.883	
5	0.41	119.82	-62.60	6.80	-0.02102	0.241	11.294	3.860	
6	8.5	2.33	91.56	6.12	0.06632	-19.070	1.777	6.076	
7	7.1	2.48	-12.02	2.18	-0.06976	4.539	5.631	1.523	

Average PT (for $x(H_2O) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.50, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.49

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	7.1	1.8	629	25	0.901	1.42

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
ab	7.46	1.78	627	24	0.823	1.34	0.66	0.37
phl	7.66	1.83	639	27	0.916	1.32	-1.03	0.23
ann	7.09	1.65	631	23	0.900	1.30	-1.22	0.01
east	6.92	1.79	628	25	0.898	1.39	-0.62	0.08
mu	7.31	1.97	633	29	0.919	1.40	0.28	0.14
cel	6.04	1.89	616	26	0.925	1.28	1.30	0.33
fcel	6.49	1.75	622	24	0.911	1.30	1.35	0.14
pa	7.46	1.78	627	24	0.822	1.34	-0.66	0.37
clin	7.05	1.79	629	25	0.899	1.41	-0.18	0.02
daph	7.17	1.76	631	25	0.902	1.38	0.62	0.02
ames	7.70	1.73	639	25	0.914	1.28	1.31	0.16
q	7.05	1.80	629	25	0.901	1.42	0	0
H2O	7.05	1.80	629	25	0.901	1.42	0	0
ky	7.05	1.80	629	25	0.901	1.42	0	0

T = 629;C, sd = 25,

P = 7.1 kbars, sd = 1.8

KAP2A

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	an	
a	0.00200	0.000720	0.380	0.0280	0.0740	0.0240	0.330	
sd(a)/a	0.68750	0.74590	0.15000	0.41600	0.30293	0.42850	0.13467	

	ab	an	ab	mu	cel	fcel	pa	
a	0.750	0.340	0.750	0.680	0.0210	0.0230	0.245	
sd(a)/a	0.05000	0.10429	0.05000	0.05000	0.47619	0.43478	0.17101	

	q	H2O	
a	1.00	1.00	
sd(a)/a	0		

Independent set of reactions

- 1) $gr + 2pa + 3q = 3an + 2ab + 2H_2O$
- 2) $gr + 2pa + 3q = 3an + 2ab + 2H_2O$
- 3) $gr + 2pa + 3q = 2ab + 3an + 2H_2O$
- 4) $3east + 6q = py + phl + 2mu$
- 5) $phl + east + 6q = py + 2cel$
- 6) $2ann + mu + 6q = alm + 3fcel$
- 7) $py + gr + mu = phl + 3an$
- 8) $gr + alm + mu = ann + 3an$

Calculations for the independent set of reactions

(for $x(H_2O) = 1.0$)

P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
------	-------	---	-------	---	---	------	----------

1	9.3	0.97	143.80	0.69	-0.26500	8.080	6.148	0.920
2	9.3	0.97	143.80	0.69	-0.26500	8.080	6.148	0.920
3	9.2	0.93	143.80	0.69	-0.26500	8.080	6.237	0.884
4	9.1	3.70	15.84	1.23	0.01047	-3.510	0.628	1.519
5	9.7	2.78	60.59	1.08	0.03436	-4.047	-6.636	1.318
6	9.2	2.64	64.58	2.19	0.03496	-4.735	-6.691	1.447
7	9.1	1.42	-10.33	0.70	-0.10967	7.010	6.935	1.170
8	9.5	1.08	33.90	1.15	-0.12285	7.303	2.660	0.915

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.50, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.45

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	9.4	1.2	755	38	0.720	0.27

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	9.59	1.23	761	42	0.755	0.23	-0.35	0.17
gr	9.51	1.45	756	38	0.629	0.27	-0.06	0.57
alm	9.38	1.22	753	41	0.748	0.26	0.11	0.05
phl	9.47	1.18	757	40	0.730	0.26	0.12	0.06
ann	9.27	1.37	749	46	0.802	0.25	-0.17	0.27
east	9.44	1.18	755	38	0.716	0.27	-0.04	0.05
an	9.43	1.17	755	38	0.716	0.26	-0.13	0.02

ab	9.44	1.16	755	38	0.719	0.27	0.01	0.01
an	9.47	1.18	756	38	0.712	0.26	0.12	0.04
ab	9.44	1.16	755	38	0.719	0.27	0.01	0.01
mu	9.44	1.17	755	39	0.723	0.27	0.00	0.01
cel	9.35	1.19	754	38	0.717	0.22	0.40	0.08
fcel	9.51	1.20	756	39	0.723	0.26	-0.23	0.08
pa	9.41	1.21	752	54	0.686	0.27	-0.07	0.53
q	9.44	1.16	755	38	0.720	0.27	0	0
H2O	9.44	1.16	755	38	0.720	0.27	0	0

KAP2Bb

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	clin
a	0.0126	0.000350	0.350	0.0740	0.0310	0.0620	0.0520
sd(a)/a	0.52988	0.77762	0.15000	0.31796	0.42337	0.33840	0.35756

	daph	ames	an	ab	mu	cel	fcel
a	0.00860	0.0440	0.340	0.780	0.670	0.0290	0.0190
sd(a)/a	0.56899	0.37469	0.13068	0.05000	0.10000	0.34483	0.52632

	pa	q	H2O
a	0.368	1.00	1.00
sd(a)/a	0.11983	0	

Independent set of reactions

- 1) $gr + 2pa + 3q = 3an + 2ab + 2H_2O$
- 2) $2phl + 3ames + 6q = py + 3clin + 2mu$
- 3) $2east + ames + 6q = py + clin + 2mu$
- 4) $py + gr + mu = phl + 3an$
- 5) $east + 3an + cel = py + gr + 2mu$
- 6) $gr + alm + mu = ann + 3an$
- 7) $2gr + alm + 3mu + 6q = 6an + 3fcel$
- 8) $7gr + 5alm + 12pa + 15q = 3daph + 21an + 12ab$
- 9) $4alm + 3ames + 3fcel = 4py + 3daph + 3mu$

Calculations for the independent set of reactions

(for x(H2O) = 1.0)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	5.3	0.79	143.01	0.69	-0.26657	8.351	6.224	0.909
2	4.2	5.24	23.23	1.64	-0.01922	-2.476	0.534	1.772
3	7.2	2.37	17.25	1.07	0.00170	-3.167	0.553	1.023
4	8.0	1.10	-9.00	0.70	-0.11187	7.108	6.892	1.073
5	7.0	1.23	-13.62	0.74	0.09992	-6.807	-3.575	1.146
6	7.3	0.98	35.70	1.15	-0.12553	7.397	2.698	0.985
7	5.4	1.74	135.15	1.45	-0.21441	9.963	-0.196	2.375
8	5.5	0.86	334.89	7.15	-1.00840	55.853	33.044	6.562
9	5.9	15.63	88.95	5.71	-0.05043	1.624	-7.506	3.408

Average PT (for x(H2O) = 1.0)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.53, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.42

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	6.4	1.7	625	31	0.535	2.14

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	6.21	1.73	618	36	0.593	2.11	0.86	0.32
gr	6.26	2.03	625	31	0.479	2.13	0.26	0.41
alm	6.40	1.72	624	35	0.570	2.13	0.12	0.11
phl	6.56	1.49	629	28	0.538	1.90	-2.54	0.01

ann	6.13	1.61	617	30	0.559	2.01	-1.86	0.08
east	6.31	1.67	627	31	0.500	2.11	-0.97	0.11
clin	6.42	1.67	624	32	0.526	2.13	-0.35	0.08
daph	6.66	1.69	635	35	0.574	2.09	1.01	0.27
ames	6.77	1.53	632	28	0.550	1.92	2.39	0.04
an	6.36	1.83	625	31	0.507	2.13	-0.13	0.10
ab	6.70	1.62	624	30	0.518	2.03	1.09	0.03
mu	6.53	1.63	627	30	0.538	2.07	0.92	0.00
cel	6.03	1.72	623	30	0.540	2.07	1.46	0.14
fcel	6.31	1.68	625	31	0.529	2.11	0.94	0.05
pa	7.38	1.45	622	25	0.478	1.73	-2.60	0.14
q	6.43	1.67	625	31	0.535	2.14	0	0
H2O	6.43	1.67	625	31	0.535	2.14	0	0

T = 625jC, sd = 31,

P = 6.4 kbars, sd = 1.7, cor = 0.535, sigfit = 2.14

KAP1C-1

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	an	
a	0.000560	0.00160	0.290	0.0257	0.0730	0.0260	0.400	
sd(a)/a	0.75775	0.70178	0.15000	0.42305	0.30492	0.42211	0.10800	
	ab	an	ab	mu	cel	fcel	pa	
a	0.760	0.410	0.750	0.680	0.0220	0.0240	0.309	

sd(a)/a 0.05000 0.10000 0.05000 0.05000 0.45455 0.41667 0.14324

q H2O
a 1.00 1.00
sd(a)/a 0

Independent set of reactions

- 1) 3east + 6q = py + phl + 2mu
- 2) phl + east + 6q = py + 2cel
- 3) 2ann + mu + 6q = alm + 3fcel
- 4) py + gr + mu = phl + 3an
- 5) py + gr + mu = phl + 3an
- 6) gr + alm + mu = ann + 3an
- 7) py + 3cel + 2pa = 3east + 2ab + 9q + 2H2O
- 8) py + 3cel + 2pa = 3east + 2ab + 9q + 2H2O

Calculations for the independent set of reactions

(for x(H2O) = 1.0)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)	
1	5.1	3.30	15.02	1.23	0.01030	-3.404	-0.971	1.538	
2	8.4	2.46	59.68	1.08	0.03420	-3.931	-7.810	1.326	
3	9.7	2.25	63.74	2.19	0.03463	-4.609	-6.807	1.400	
4	6.9	1.21	-7.75	0.70	-0.11255	7.026	7.901	1.163	
5	6.9	1.20	-7.75	0.70	-0.11255	7.026	7.975	1.157	
6	7.3	0.85	36.85	1.15	-0.12606	7.313	2.695	0.846	
7	6.6	1.77	52.88	2.01	-0.20495	8.415	9.789	2.032	
8	6.7	1.77	52.88	2.01	-0.20495	8.415	9.762	2.032	

Average PT (for x(H2O) = 1.0)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.
 e* are ln a residuals normalised to ln a uncertainties :
 large absolute values, say >2.5, point to suspect info.
 hat are the diagonal elements of the hat matrix :
 large values, say >0.50, point to influential data.
 For 95% confidence, fit (= sd(fit)) < 1.45
 however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	8.4	1.1	690	33	0.744	0.59

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	8.81	1.11	704	36	0.774	0.42	-1.01	0.17
gr	8.57	1.31	691	33	0.656	0.59	-0.12	0.58
alm	8.32	1.11	685	36	0.774	0.58	0.22	0.07
phl	8.45	1.07	690	34	0.753	0.59	0.00	0.05
ann	7.99	1.27	674	42	0.830	0.53	-0.47	0.31
east	8.54	1.06	691	33	0.740	0.56	0.53	0.04
an	8.43	1.06	690	33	0.740	0.59	-0.10	0.03
ab	8.44	1.05	690	33	0.743	0.59	0.14	0.01
an	8.47	1.06	690	33	0.739	0.59	0.14	0.03
ab	8.45	1.05	691	33	0.743	0.59	-0.12	0.01
mu	8.46	1.06	691	34	0.747	0.59	-0.07	0.01
cel	8.30	1.08	689	33	0.742	0.54	0.66	0.08
fcel	8.43	1.08	690	33	0.745	0.59	0.08	0.08
pa	8.43	1.08	688	45	0.699	0.59	-0.05	0.45
q	8.45	1.05	690	33	0.744	0.59	0	0
H2O	8.45	1.05	690	33	0.744	0.59	0	0

KAP1C-2

cales use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	an	
a	0.000500	0.00160	0.290	0.0270	0.0740	0.0250	0.350	
sd(a)/a	0.76280	0.70178	0.15000	0.41902	0.30293	0.42526	0.12675	

	ab	an	ab	mu	cel	fcel	pa	
a	0.750	0.360	0.750	0.680	0.0210	0.0240	0.262	
sd(a)/a	0.05000	0.10000	0.05000	0.05000	0.47619	0.41667	0.16339	

	q	H2O
a	1.00	1.00
sd(a)/a	0	

Independent set of reactions

- 1) 3east + 6q = py + phl + 2mu
- 2) phl + east + 6q = py + 2cel
- 3) 2ann + mu + 6q = alm + 3fcel
- 4) py + gr + mu = phl + 3an
- 5) py + gr + mu = phl + 3an
- 6) gr + alm + mu = ann + 3an
- 7) py + 3cel + 2pa = 3east + 2ab + 9q + 2H2O
- 8) py + 3cel + 2pa = 3east + 2ab + 9q + 2H2O

Calculations for the independent set of reactions

(for x(H2O) = 1.0)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	5.2	3.32	15.02	1.23	0.01030	-3.404	-0.918	1.548
2	8.0	2.52	59.68	1.08	0.03420	-3.931	-8.027	1.358
3	9.6	2.25	63.74	2.19	0.03463	-4.609	-6.834	1.398

4	7.2	1.23	-7.75	0.70	-0.11255	7.026	7.663	1.182
5	7.1	1.20	-7.75	0.70	-0.11255	7.026	7.747	1.159
6	7.7	0.88	36.85	1.15	-0.12606	7.313	2.308	0.868
7	6.3	1.82	52.88	2.01	-0.20495	8.415	10.227	2.090
8	6.3	1.82	52.88	2.01	-0.20495	8.415	10.227	2.090

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.50, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.45

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	8.9	1.1	708	36	0.736	0.63

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	9.30	1.15	725	39	0.767	0.40	-1.17	0.16
gr	8.72	1.35	707	36	0.639	0.63	0.12	0.58
alm	8.68	1.15	701	38	0.766	0.60	0.29	0.06
phl	8.89	1.10	710	37	0.744	0.63	0.18	0.05
ann	8.30	1.31	689	44	0.822	0.55	-0.54	0.29
east	8.95	1.10	708	36	0.732	0.59	0.55	0.04
an	8.83	1.09	708	36	0.732	0.63	-0.16	0.02
ab	8.85	1.09	708	36	0.735	0.63	0.03	0.01
an	8.87	1.10	708	36	0.728	0.63	0.08	0.04
ab	8.85	1.09	708	36	0.735	0.63	0.03	0.01

mu	8.85	1.09	708	36	0.739	0.63	-0.01	0.01
cel	8.77	1.11	707	36	0.734	0.62	0.36	0.07
fcel	8.91	1.12	709	36	0.738	0.63	-0.21	0.08
pa	8.76	1.13	697	49	0.702	0.62	-0.19	0.51
q	8.85	1.09	708	36	0.736	0.63	0	0
H2O	8.85	1.09	708	36	0.736	0.63	0	

KAP2D

calcs use:

an INCOMPLETE independent set of reactions has been calculated

Activities and their uncertainties

	phl	ann	east	py	gr	alm	an	
a	0.0430	0.0710	0.0330	0.00180	0.00200	0.370	0.480	
sd(a)/a	0.37696	0.30897	0.40181	0.69436	0.68750	0.15000	0.08112	

	cz	q	H2O	mu
a	0.640	1.00	1.00	1.00
sd(a)/a	0.17188	0	0	0

~~INCOMPLETE~~ independent set of reactions

- 1) $\text{phl} + \text{py} + 2\text{mu} = 3\text{east} + 6\text{q}$
- 2) $3\text{east} + \text{py} + 2\text{gr} + 6\text{q} = 3\text{phl} + 6\text{an}$
- 3) $\text{gr} + \text{alm} + \text{mu} = \text{ann} + 3\text{an}$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	8.7	3.09	-15.02	1.23	-0.01030	3.404	-0.767	1.441
2	7.3	1.58	-0.48	1.59	-0.21480	10.648	15.139	2.311
3	7.7	0.82	36.85	1.15	-0.12606	7.313	2.362	0.806

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.33, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.96

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	7.8	1.9	605	127	0.907	0.34

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
phl	7.98	2.06	619	143	0.924	0.27	0.15	0.15
ann	7.82	1.95	607	148	0.892	0.34	-0.02	0.23
east	7.71	1.90	601	128	0.907	0.19	-0.28	0.05
py	7.61	3.21	592	219	0.969	0.33	0.04	0.71
gr	7.94	2.14	605	127	0.795	0.31	-0.08	0.67
alm	7.81	1.89	606	132	0.902	0.34	0.01	0.05
an	7.82	1.91	605	127	0.888	0.33	0.03	0.08
q	7.80	1.87	605	127	0.907	0.34	0	0
mu	7.80	1.87	605	127	0.907	0.34	0	0

KÅP2E

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

py	gr	alm	phl	ann	east	mu
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a 0.00128 0.00170 0.280 0.0330 0.0740 0.0260 0.620
sd(a)/a 0.71517 0.69799 0.15000 0.40181 0.30293 0.42211 0.10000

 cel fcel pa an ab q H2O
a 0.0390 0.0350 0.192 0.410 0.700 1.00 1.00
sd(a)/a 0.27706 0.27937 0.19586 0.10443 0.05000 0

Independent set of reactions

- 1) 3east + 6q = py + phl + 2mu
- 2) phl + east + 6q = py + 2cel
- 3) 2ann + mu + 6q = alm + 3fcel
- 4) phl + 3an = py + gr + mu
- 5) ann + 3an = gr + alm + mu
- 6) py + 3ann + 2pa + 9q = 3alm + 3cel + 2ab + 2H2O

Calculations for the independent set of reactions

(for x(H2O) = 1.0)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	6.9	3.27	15.02	1.23	0.01030	-3.404	-0.079	1.522
2	11.5	2.01	59.68	1.08	0.03420	-3.931	-6.088	1.076
3	11.5	1.72	63.74	2.19	0.03463	-4.609	-5.645	1.050
4	7.4	1.17	7.75	0.70	0.11255	-7.026	-7.430	1.126
5	7.2	0.85	-36.85	1.15	0.12606	-7.313	-2.850	0.842
6	16.4	2.75	98.12	3.12	-0.06182	-4.241	3.508	1.547

Average PT (for x(H2O) = 1.0)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.43 , point to influential data.

For 95% confidence, $\text{fit} (= \text{sd}(\text{fit})) < 1.54$

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	10.2	1.2	763	46	0.720	1.12

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	10.56	1.19	779	45	0.753	1.02	-0.93	0.16
gr	10.83	1.24	761	41	0.620	0.98	-0.92	0.42
alm	10.09	1.30	760	48	0.747	1.12	0.18	0.05
phl	10.07	1.26	758	47	0.740	1.10	-0.36	0.07
ann	9.76	1.49	749	53	0.808	1.09	-0.41	0.30
east	10.23	1.26	764	46	0.714	1.12	0.20	0.05
mu	10.26	1.19	768	45	0.721	1.07	-0.43	0.02
cel	9.68	1.15	756	41	0.717	0.80	1.57	0.11
fcel	10.16	1.30	762	47	0.730	1.12	0.12	0.09
pa	10.30	1.26	778	62	0.674	1.11	0.26	0.55
an	10.41	1.24	763	44	0.682	1.08	0.41	0.08
ab	10.21	1.25	765	47	0.712	1.12	-0.07	0.04
q	10.20	1.24	763	46	0.720	1.12	0	0
H2O	10.20	1.24	763	46	0.720	1.12	0	0

$T = 763 \pm 46$, $\text{sd} = 46$,

$P = 10.2$ kbars, $\text{sd} = 1.2$, c

RTP2I

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	an	ab	mu	cel	fcel	pa	phl
a	0.470	0.710	0.660	0.0260	0.0330	0.157	0.0167
sd(a)/a	0.08427	0.05000	0.10000	0.38462	0.30303	0.21319	0.45495

	ann	east	py	gr	alm	q	H2O
a	0.0990	0.0170	0.00127	0.00140	0.310	1.00	1.00
sd(a)/a	0.25991	0.45374	0.71563	0.70990	0.15000	0	0

Independent set of reactions

- 1) $2\text{east} + 6\text{q} = \text{mu} + \text{cel} + \text{py}$
- 2) $3\text{east} + 6\text{q} = 2\text{mu} + \text{phl} + \text{py}$
- 3) $\text{mu} + 2\text{ann} + 6\text{q} = 3\text{fcel} + \text{alm}$
- 4) $\text{mu} + \text{py} + \text{gr} = 3\text{an} + \text{phl}$
- 5) $\text{mu} + \text{gr} + \text{alm} = 3\text{an} + \text{ann}$
- 6) $3\text{fcel} + 2\text{pa} = 2\text{ab} + 2\text{mu} + \text{ann} + 3\text{q} + 2\text{H}_2\text{O}$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	10.4	2.36	37.03	1.11	0.02380	-3.793	-2.585	1.222
2	8.4	3.37	14.43	1.23	0.01186	-3.497	0.632	1.616
3	10.4	1.67	63.85	2.19	0.03631	-4.802	-6.364	1.063
4	7.6	1.17	-8.87	0.70	-0.11195	7.097	7.298	1.139
5	6.5	0.82	35.82	1.15	-0.12559	7.387	3.580	0.817
6	6.6	1.38	43.08	1.39	-0.17636	5.678	10.108	1.061

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.43, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.54

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	9.4	1.1	791	45	0.693	0.62

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
an	9.52	1.16	791	45	0.661	0.60	0.18	0.06
ab	9.44	1.12	792	46	0.687	0.62	-0.05	0.03
mu	9.47	1.12	794	46	0.698	0.60	-0.20	0.02
cel	9.16	1.15	787	45	0.691	0.38	1.02	0.08
fcel	9.40	1.18	790	46	0.712	0.62	0.06	0.13
pa	9.52	1.16	804	63	0.668	0.60	0.20	0.58
phl	9.37	1.14	788	46	0.708	0.60	-0.24	0.06
ann	9.40	1.35	790	52	0.783	0.62	-0.03	0.25
east	9.41	1.13	791	45	0.689	0.61	-0.13	0.04
py	9.47	1.16	793	47	0.722	0.61	-0.13	0.13
gr	9.86	1.30	790	45	0.572	0.53	-0.51	0.49
alm	9.43	1.18	791	47	0.725	0.62	0.00	0.05
q	9.43	1.11	791	45	0.693	0.62	0	0
H2O	9.43	1.11	791	45	0.693	0.62	0	0

T = 791;C, sd = 45,

P = 9.4 kbars, sd = 1.1, cor = 0.6

RTP2J

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	py	gr	alm	phl	ann	east	mu	
a	0.00121	0.00134	0.360	0.0193	0.100	0.0190	0.600	
sd(a)/a	0.71841	0.71249	0.15000	0.44487	0.25841	0.44599	0.10000	

	cel	fcel	pa	an	ab	q	H2O	
a	0.0370	0.0450	0.243	0.270	0.840	1.00	1.00	
sd(a)/a	0.27821	0.27361	0.17191	0.15987	0.05000		0	

Independent set of reactions

- 1) $3\text{east} + 6\text{q} = \text{py} + \text{phl} + 2\text{mu}$
- 2) $\text{phl} + \text{east} + 6\text{q} = \text{py} + 2\text{cel}$
- 3) $2\text{ann} + \text{mu} + 6\text{q} = \text{alm} + 3\text{fcel}$
- 4) $\text{phl} + 3\text{an} = \text{py} + \text{gr} + \text{mu}$
- 5) $\text{ann} + 3\text{an} = \text{gr} + \text{alm} + \text{mu}$
- 6) $\text{py} + 3\text{ann} + 2\text{pa} + 9\text{q} = 3\text{alm} + 3\text{cel} + 2\text{ab} + 2\text{H}_2\text{O}$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)
1	7.5	3.42	15.02	1.23	0.01030	-3.404	0.204	1.595
2	12.8	2.06	59.68	1.08	0.03420	-3.931	-5.400	1.106
3	12.2	1.62	63.74	2.19	0.03463	-4.609	-5.209	0.987
4	8.9	1.25	7.75	0.70	0.11255	-7.026	-5.967	1.209
5	8.1	0.92	-36.85	1.15	0.12606	-7.313	-1.917	0.915
6	15.8	2.61	98.12	3.12	-0.06182	-4.241	3.150	1.464

Average PT (for x(H2O) = 1.0)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.43, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.54

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	11.4	1.1	764	38	0.699	0.92

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
py	11.53	1.17	771	40	0.725	0.89	-0.50	0.12
gr	11.82	1.25	763	38	0.613	0.82	-0.68	0.33
alm	11.34	1.20	763	41	0.737	0.92	0.05	0.07
phl	11.17	1.16	756	39	0.717	0.85	-0.65	0.06
ann	11.21	1.39	759	46	0.799	0.92	-0.13	0.29
east	11.46	1.14	764	38	0.692	0.89	0.45	0.06
mu	11.42	1.13	769	39	0.697	0.87	-0.40	0.03
cel	10.93	1.18	760	38	0.692	0.67	1.24	0.13
fcel	11.31	1.19	763	39	0.709	0.92	0.14	0.13
pa	11.48	1.16	778	52	0.657	0.90	0.26	0.52
an	11.65	1.20	763	38	0.643	0.86	0.46	0.15
ab	11.38	1.13	765	40	0.690	0.92	-0.07	0.04
q	11.37	1.13	764	38	0.699	0.92	0	0
H2O	11.37	1.13	764	38	0.699	0.92	0	0

$T = 764 \pm 38$ C,

$P = 11.4$ kbars, $sd = 1.1$, c

RTP2K

calcs use:

an independent set of reactions has been calculated

Activities and their uncertainties

	mu	cel	fcel	pa	py	gr	alm	
a	0.670	0.0270	0.0360	0.253	0.00142	4.30e-5	0.380	
sd(a)/a	0.10000	0.37037	0.27879	0.16740	0.70905	0.83804	0.15000	

	phl	ann	clin	daph	clin	daph	ames	
a	0.000819	0.00990	0.000630	0.0160	0.00230	0.0590	0.00145	
sd(a)/a	0.69886	0.55499	0.79682	0.50357	0.54383	0.26564	6.89655	

	an	ab	q	H2O	
a	0.0630	0.940	1.00	1.00	
sd(a)/a	0.26339	0.05000	0		

Independent set of reactions

- 1) $py + 2gr + 3ames + 6q = 3clin + 6an$
- 2) $py + 2gr + 3ames + 6q = 3clin + 6an$
- 3) $2gr + 5alm + 3ames + 6q = 4py + 3daph + 6an$
- 4) $2gr + 5alm + 3ames + 6q = 4py + 3daph + 6an$
- 5) $phl + 3an = mu + py + gr$
- 6) $3mu + py + 2gr + 6q = 3cel + 6an$
- 7) $ann + 3an = mu + gr + alm$
- 8) $3mu + 2gr + alm + 6q = 3fcel + 6an$
- 9) $12pa + 7gr + 5alm + 15q = 3daph + 21an + 12ab$
- 10) $9cel + 14pa + 2phl = 11mu + 3clin + 14ab + 2H_2O$

Calculations for the independent set of reactions

(for $x(\text{H}_2\text{O}) = 1.0$)

	P(T)	sd(P)	a	sd(a)	b	c	ln_K	sd(ln_K)	
1	12.2	12.21	7.84	1.89	-0.24611	11.750	7.577	20.966	
2	9.9	12.17	7.84	1.89	-0.24611	11.750	11.462	20.893	
3	5.8	12.45	227.18	5.76	-0.26851	11.593	-10.667	21.077	
4	3.5	12.43	227.18	5.76	-0.26851	11.593	-6.752	21.038	
5	12.7	1.48	7.67	0.70	0.11317	-7.075	-1.611	1.526	
6	7.9	1.86	66.36	1.47	-0.17893	9.869	0.444	2.671	
7	10.5	1.21	-37.12	1.15	0.12690	-7.362	1.487	1.291	
8	7.1	1.69	137.62	1.45	-0.21785	10.028	-4.283	2.474	
9	6.3	1.05	340.31	7.15	-1.01520	55.902	20.505	8.500	
10	3.2	1.73	80.30	4.18	-0.49336	20.289	38.582	5.096	

Average PT (for $x(\text{H}_2\text{O}) = 1.0$)

Single end-member diagnostic information

avP, avT, sd's, cor, fit are result of doubling the uncertainty on ln a :

a ln a suspect if any are v different from lsq values.

e* are ln a residuals normalised to ln a uncertainties :

large absolute values, say >2.5, point to suspect info.

hat are the diagonal elements of the hat matrix :

large values, say >0.56, point to influential data.

For 95% confidence, fit (= sd(fit)) < 1.39

however a larger value may be OK - look at the diagnostics!

	avP	sd	avT	sd	cor	fit
lsq	7.6	3.0	590	39	0.275	3.42

	P	sd(P)	T	sd(T)	cor	fit	e*	hat
mu	8.03	3.01	592	38	0.283	3.35	1.22	0.03
cel	7.26	3.07	589	38	0.285	3.39	1.26	0.10

fcel	7.43	3.17	590	39	0.276	3.42	0.41	0.14
pa	9.90	2.91	577	34	0.124	2.95	-3.72	0.26
py	7.36	2.89	581	40	0.292	3.32	2.44	0.12
gr	7.43	3.42	590	39	0.223	3.42	0.22	0.23
alm	7.59	3.06	591	50	0.363	3.42	-0.05	0.27
phl	7.32	2.64	594	34	0.268	3.04	-4.78	0.02
ann	6.74	2.50	588	32	0.278	2.84	-5.67	0.04
clin	7.54	2.96	589	39	0.278	3.41	-0.77	0.01
daph	7.49	2.94	587	39	0.283	3.39	-1.36	0.05
clin	7.67	2.94	593	39	0.284	3.38	1.25	0.02
daph	8.06	2.87	609	42	0.326	3.25	2.33	0.18
ames	7.58	2.96	590	39	0.275	3.42	0.21	0.00
an	7.44	3.40	590	39	0.225	3.42	-0.21	0.20
ab	7.91	2.97	588	38	0.250	3.36	1.11	0.02
q	7.57	2.96	590	39	0.275	3.42	0	0
H2O	7.57	2.96	590	39	0.275	3.42	0	0

T = 590jC, sd = 39,

P = 7.6