Report on SHRIMP U–Pb analysis of zircons from 4 porphyritic dykes from Maldon (2), Fosterville and Maryborough (Victoria)

31 October 1997

Prepared by: Frank P. Bierlein

Minerals Industry Research Institute
University of Ballarat
Ballarat, Vic 3353

Samples

Geological Setting

All samples were taken from porphyritic dykes associated with turbidite-hosted gold mineralisation. The current study forms part of an ongoing AMIRA research project investigating the emplacement and timing relationships of gold mineralisation in Central Victoria. In the Nuggetty Reef adit, a granodioritic dyke cross-cuts and truncates the auriferous structure. One sample was taken from underground were the dyke is exposed in the adit, in addition to a drill core sample from what is assumed to represent an intersection of the same dyke at greater depth. At Fosterville, several mineralised and generally pervasively altered quartz porphyries are emplaced along NE-SW-trending faults. The sample analysed in this study was taken from the O'Dwyers Hill. At Bristol Hill in Maryborough, a W-E trending and pervasively altered quartz porphyry cuts across auriferous structures, but is itself cross-cut by a later generation of quartz veins.

Four porphyritic dyke samples were processed at Monash University in June 1997 to separate zircons. The separation procedure applied follows the method put to use at UWA and include:
- washing the crushed sample in water so as to remove the fines,
- LST heavy liquid separation to remove material lighter than about 3.0 gms/cc;
- Di-iodomethane heavy liquid separation to remove material lighter than about 3.3 gms/cc;
- Frantz Isodynamic Separator: magnetic separation to remove strongly to moderately magnetic minerals;
- Handpicking of zircons.

Samples were:	NUGD-13	granodioritic dyke, Nuggetty Reef, Maldon
	NR 9/10	granodioritic dyke, Nuggetty Reef, Maldon
	FO-01	quartz porphyry, Fosterville
	BH 16/10	quartz porphyry, Bristol Hill, Maryborough

Zircons

Mount preparation and imaging

Zircons from all samples were mounted in epoxy (mount no. UWA 97-21) together with 7 chips of the CZ3 zircon standard (564 Ma; $^{206}Pb/^{236}U = 0.0914$), ground and polished to remove about half of each grain, and photographed at low and high magnifications for the purposes of SHRIMP analysis. Mount preparation and documentation was carried out at the Centre for Strategic Mineral Deposits, Department of Geology and Geophysics, University of Western Australia. Representative zircons for SHRIMP analysis were imaged using Scanning Electron Microscope techniques at the Minerals Industry Research Institute, University of Ballarat. Images from backscattered electrons were obtained using a Cameca-50 SEM with WDS and EDS detectors. These images highlight impurities, growth zones, internal fractures and cracks and were used to select the position for spot analyses of individual zircons.

Zircon descriptions

Sample NUGD-13: The zircon population in this sample consists primarily of one morphologic type, which is typically euhedral to subhedral in external morphology with continuous euhedral internal zoning from core to rim. Inclusions are common and consist of opaque or rod-like to equant minerals, and rarer irregular inclusions. All inclusions occur throughout the grains and show no preference for core or rim regions. The grains range from clear to pale brown, to dark brown in colour. A sub-population of smaller, somewhat platey grains is translucent, free of fractures and/or inclusions and display well developed growth faces. Larger grains and a second sub-population of smaller grains are commonly fractured, have a rounded to elongate, semi-translucent to opaque appearance and contain abundant inclusions. Internal fractures and inclusions are highlighted by SEM imaging, which also reveals that most grains are characterised by intricate zonation patterns with significant enrichment of heavy elements (possibly REE and/or U) towards the grain rims, while core zones appear to be relatively depleted with respect to these elements. In addition, the development of euhedral (?metamorphic) overgrowth zones around rounded cores is also highlighted by the SEM images. These U-enriched rims vary in width and enable separate analysis of the core and rim zones, respectively, in some of the larger grains. In view the generally small grain size, however, these rims are often too narrow to allow analysis of the rims without avoiding overlap with the core zones.

Sample NR 9/10: The zircon population in this sample is very similar to those in sample NUGD-13 and represents a single morphologic population. Overall, there is a larger abundance of rounded or fragmented, semi-translucent to opaque grains in NR 9/10. The grains are generally less euhedral and clear 'platey' zircons are less common.

Sample FO-01: Although the population in this sample comprises of only two zircons (one complete grain and one fractured 3/4 grain), both grains are very similar in their appearance and size and can be considered to represent one morphologic population. A massive sub-rounded core is apparent in both grains, which are rimmed by several bands of fine euhedral zoning. The grain rims are defined by sub-rounded to well developed cleavage faces. Due to the presence of several internal fractures and rounded inclusions, both grains have a somewhat stained and semi-translucent appearance. SEM imaging highlights the presence of continuous euhedral zoning around a massive core in both grains. Whereas the 3/4 grain displays no significant variations with respect to heavy element enrichment, the highest heavy element concentrations in the complete grain occur in the core zone.

Sample BH 16/10: The zircons in this sample (which also contains several monazites) are of similar grain size and have a generally sub-euhedral to rounded appearance. The grains display abundant internal fractures and inclusions, and are semi-translucent to opaque. Distinct cores and development of euhedral zoning are apparent in some of the 'fresher' looking grains only. SEM imaging reveals that continuous euhedral zoning is developed in the majority of the grains, but the zircons generally lack the characteristic enrichment of heavy elements in the rim zones, as observed in samples NUGD-13 and NR 9/10. Instead, a reverse trend can be observed in some of the grains, whereby U appears to be concentrated in the core zones. Based on SEM imaging, a sub-population of zircons can be identified in this sample. Zircons of this sub-population are characterised by a complete absence of zoning patterns in highly fractured and disturbed grains.

SHRIMP Analyses

Timetable: The zircons were analysed on SHRIMP II at Curtin University as follows:

23-24 October, 1997	Sample NR 9/10:	64 analyses of 56 grains
	Sample FO-01:	4 analyses of 2 grains
28-29 October, 1997	Sample NUGD-13:	44 analyses of 41 grains
	Sample BH 16/10:	18 analyses of 16 grains

Operating Conditions: The operating parameters for SHRIMP during the period of analysis were as follows:

Mass	Species	Counting time (secs)	Delay time (secs)
196	Zr_2O	2	6
204	^{204}Pb	10	3
204.04	Bkg	10	1
206	^{206}Pb	10	2
207	^{207}Pb	10	1
208	^{208}Pb	10	1
238	^{238}U	5	3
248	ThO	5	2
254	UO	2	2

Precision of U/Pb for Standard: The precision for the $^{206}Pb/^{238}U$ for the CZ3 standard for each batch of data is given below:

Date	Samples	No. of Stds.	±1σ
23-24 October, 1997	NR 9/10 and FO-01	20	0.78% (default slope, 2.00) 0.59% (actual slope, 2.44)
28-29 October, 1997	NUGD-13 and BH 16/10	21	0.54% (default slope, 2.00)

Notes: 1. Default and actual slopes refer to a line fitted to data for the CZ3 standard on a ln UO/U versus Ln $^{206}Pb^*/^{238}U$ diagram.
2.Precision of ±1 to 3% is considered normal; the precisions obtained are excetionally good.

Common Lead Correction: The $^{204}Pb/^{206}Pb$ ratios and calculated f_{206} (i.e. proportion of ^{206}Pb which is attributed to common Pb) are both low (i.e. <1% for analyses used in age calculations). Hence common Pb is assumed to have the isotopic composition of Broken Hill galena, and is a relatively minor correction. Analyses with large common Pb corrections (i.e. f206>1-2%) are excluded from the interpretations.

SHRIMP Data and Interpretations

Sample NUGD-13

The data for this sample is presented in Table 1 and shown on concordia diagrams in Figures 1 and 2. The data have been divided into three groups:

Group 1 includes all data which are concordant around ca. 370 Ma, and those near-concordant analyses which are not statistically distinguishable from this group on the basis of $^{206}Pb/^{238}U$. Analyses from Groups 2 and 3 are also excluded from this group.

Group 2 includes data from zircons which have suffered recent lead loss. The Th/U and morphology of Group 2 zircons are indistinguishable from Group 1, although their U-Th and common lead contents are generally higher.

Group 3 includes data from core zones of inherited zircon xenocrysts and rim zones of probable xenocrysts. As with Group 2 zircons, Group 3 zircons are also generally indistinguishable from Group 1 on the basis of their morphology.

Group 1 zircon analyses comprise 25 of the 44 analyses and yield a weighted $^{206}Pb/^{238}U$ age of 369.0 ±1.5 Ma (95% confidence level). The chi-square for this group is 1.06, indicating that the spread in data is slightly greater than would be expected for a single population (i.e. expected chi-square for a single population <1.0). These analyses include both cores and rims of a single morphological group, which have the typical texture of magmatic zircons and the 369.0 ± 1.5 Ma age is conservatively taken as the age of dyke emplacement. Although the spread in data is greater than would be expected for a single population and culling of Group 2 and Group 3 zircons might appear somewhat arbitrary, most of the concordant and near-concordant analyses plot on the same $^{206}Pb/^{238}U$ isochor defining a single population on a probability diagram. The chi-square for all of the 44 analyses (that is, if all data were included) is 4.83 yielding a weighted $^{206}Pb/^{238}U$ age of 368.9 ± 2.1 Ma, which is almost indistinguishable from the $^{206}Pb/^{238}U$ age obtained for Group

1 zircons. Likewise, the overall $^{206}Pb/^{238}U$ distribution does not change significantly, if f_{208} is used for the common lead correction.

Group 2 zircons are the same morphological group as Group 1 and are interpreted to be 369.0 Ma zircons which have suffered variable recent Pb-loss. Lead loss in these grains corresponds to generally high uranium and/or common lead concentrations. In some instances, the uranium content is up to one order of magnitude higher in rim zones than in the core.

Group 3 zircons are interpreted to have suffered variable old Pb loss and, as with Group 2 zircons, are characterised by generally high common lead concentrations or low $^{208}Pb/^{206}Pb$ ratios. There are few constraints on the timing of Pb-loss, which rather than representing a resetting event, is probably diffusional Pb-loss from radiation damaged zones. This interpretation is supported by the analysis of one xenocryst (morphologically indistinguishable from Group 1) which yielded a $^{207}Pb/^{206}Pb$ age of 928 ± 6 Ma.

Sample NR 9/10

The data for this sample is presented in Table 2 and shown on a concordia diagram in Figures 3 and 4. The data mostly fall in a group near concordia and can be divided into the same three groups as for sample NUGD-13. The Group 1 analyses yield 369.0 ± 1.5 Ma for 31 of the 64 analyses with a chi-square of 0.97. The spread in data is thus somewhat smaller than would be expected for a single population. However, as with sample NUGD-13, a $^{206}Pb/^{238}U$ probability plot shows that most analyses fall on a single isochor. Consequently, weighted $^{206}Pb/^{238}U$ ages for chi-square values of 1.18 (n=32; 369.2 ± 1.5 Ma), 1.38 (n=33; 369.6 ± 1.6 Ma) and 6.02 (n=64; 368 ± 2.1 Ma) are more or less indistinguishable from the 369.0 ± 1.5 Ma age which is taken as the age of magmatism for this sample.

The Group 2 zircon analyses are interpreted as Group 1 zircons which have suffered recent Pb-loss, similar to those in sample NUGD-13.

Group 3 zircons include four inherited xenocrysts which range in age from meso-Proterozoic to Late Ordovician, as well as data from rim zones of probable xenocrysts which have experienced variable lead loss. As with sample NUGD-13, these zircons are morphologically similar to Group 1 zircons, but are characterised by generally high common lead concentrations or low $^{208}Pb/^{206}Pb$ ratios. In view of the (not uncommon) presence of Archaean xenocrysts in igneous rocks elsewhere in Victoria, it is also possible that the xenocrysts recording Proterozoic ages may be mixtures between Archaean cores and younger magmatic rims.

Sample FO-01

The data for this sample is presented in Table 3 and shown on a concordia diagram in Figure 5. Three of the four analyses fall on or near concordia, giving a weighted $^{206}Pb/^{238}U$ age of 371 ± 6 Ma with a chi-square of 1.65. The fourth analysis is considered to show evidence of recent lead loss and has been omitted from Group 1, as it is characterised by a very low $^{208}Pb/^{206}Pb$ ratio. Although naturally imprecise due to the limited data set, the 371 ± 6 Ma is in general agreement with the ages obtained from other dykes in Central Victoria and is thus considered to approximate the age of dyke emplacement at Fosterville.

Sample BH 16/10

The data for this sample is presented in Table 3 and shown on a concordia diagram in Figure 6. As with the dyke samples from the Nuggetty Reef at Maldon, the data from BH 16/10 have been divided into three groups. Seven of the 17 analyses fall on or near concordia and are considered to represent Group 1 zircons, giving a weighted $^{206}Pb/^{238}U$ age of 370 ± 3 Ma with a chi-square of 1.43.

Data in Group 2 comprise eight analyses from grains which are morphologically indistinguishable from Group 1. However, the Group 2 zircons yield anomalously young ages (weighted mean age = 344 Ma; chi-square 66.47) and are characterised by high common lead concentrations and/or low $^{208}Pb/^{206}Pb$ ratios, indicative of recent lead loss and radiation damage.

Two more grains are also characterised by high common lead concentrations and/or low $^{208}Pb/^{206}Pb$ ratios, but yield noticeably older ages and thus are considered to represent inherited xenocrysts which have suffered partial lead loss.

Summary and Geological Framework

The agreement in age between NR 9/10 (underground grab sample) and NUGD-13 (taken from drill core) strongly suggests that both samples are from the same dyke. The SHRIMP age of 369.0 ± 1.5 Ma is also in agreement with $^{40}Ar/^{39}Ar$ ages obtained for mica separates from the granodioritic dyke cross-cutting the Nuggetty Reef (373 ± 3 Ma). These ages give a minimum emplacement age for the Nuggetty Reef and, at the same time, constrain the emplacement age of the granodioritic dyke. Based on petrographic and geochemical similarities, it has been assumed that formation of the granodioritic dyke in the Nuggetty Reef adit was coeval with the emplacement of the earliest, granodioritic phase of the Harcourt Granite (the granite contact occurs some 50 metres to the north of the Nuggetty Reef). However and in view of the age constraints, it has to be considered possible that the granodioritic dyke postdated the main intrusion by several millions of years (a recently obtained SHRIMP age for the felsic phase of the Harcourt Granite suggests emplacement occurred at least 5 million years prior to the emplacement of the granodioritic dyke in the Nuggetty Reef adit; S. Keay, pers. commun., 1997). It is therefore strongly recommended to collect suitable material from the granodioritic phase of the Harcourt Granite for SHRIMP analysis in order to resolve the timing relationships between the multi-phase Harcourt Granite and dykes in the Maldon area.

The lack of zircons in FO-01 again precludes the determination of a well constrained emplacement age for the porphyritic dykes at Fosterville. Although a younger zircon population suggested that dyke emplacement and/or mineralisation could have occurred during the Late Devonian, previous SHRIMP analyses have given a rather imprecise Silurian 'best' age for the magmatic zircon population in the Fosterville area (Arne et al., 1996). Clearly, further analyses are required to better constrain the age of dyke emplacement at Fosterville, provided a sufficient amount of magmatic zircons can be obtained from these generally pervasively metasomatised porphyritic dykes.

Despite the limited data set and the pervasively altered nature of the dyke at Bristol Hill in Maryborough, the 370 ± 3 Ma age provides a reasonably well constrained emplacement age, which is in general agreement with ages for dyke emplacement elsewhere in Central Victoria. The dyke at Bristol Hill is inferred to cross-cut auriferous veins, but in turn, is cross-cut by a later generation of (gold-bearing?) quartz veins.

Acknowledgments

Mrs Marion Dahl undertook the zircon separations and prepared the SHRIMP zircon mount. The guidance and assistance by Drs Neal McNaughton and Ian Fletcher is gratefully acknowledged. Zircon analyses were carried out on a Sensitive High Resolution Ion Micro Probe mass spectrometer (SHRIMP II) operated by a consortium consisting of Curtin University of Technology, the Geological Survey of Western Australia and the University of Western Australia with the support of the Australian Research Council. The SHRIMP analyses were funded by AMIRA P487.

Figure Captions

Figure 1: Concordia plot of all data for sample NUGD-13.

Figure 2: Enlarged area from Figure 1. The unshaded analyses are the data for the 369.0 ±1.5 Ma Group 1 zircon analyses; the light-grey shaded data are for Group 2, the dark-grey shaded and black data are for Group 3.

Figure 3: Concordia plot of all data for sample NR 9/10.

Figure 4: Enlarged area from Figure 3. The unshaded analyses are the data for the 369.0 ±1.5 Ma Group 1 zircon analyses; the light-grey shaded data are for Group 2, the dark-grey shaded and black data are for Group 3.

Figure 5: Concordia plot of all data for sample FO-01. The unshaded analyses are the data for the 371 ± 6 Ma Group 1 zircon analyses; the light-grey shaded data are for Group 2.

Figure 6: Concordia plot of all data for sample BH 16/10. The unshaded analyses are the data for the 370 ± 3 Ma Group 1 zircon analyses the light-grey shaded data are for Group 2, the dark-grey shaded data are for Group 3.

Table 1: NUGD-13 SHRIMP U-Pb data

spot	group	U (ppm)	Th (ppm)	204/206	4f206 (%)	207*/206*	208*/206*	206*/238	207*/235	208*/232	206*/238* Age	207*/206* Age	%conc.	Uncertainties 207/206	0.86555	0.881	0.89655	208/206	4f206
u721A.1-1	1	796	208	-0.00005	0.000	0.0544 ± 7	0.0805 ± 8	0.059 ± 0	0.45 ± 1	0.0183 ± 2	372 ± 2	388 ± 28	96	0.00067	0.00039	0.007	0.00023	0.000829	0.000
u721A.1-2	1	284	63	0.00028	0.449	0.0503 ± 22	0.0605 ± 46	0.059 ± 0	0.41 ± 2	0.0161 ± 12	369 ± 3	208 ± 103	177	0.00224	0.00048	0.019	0.00125	0.004643	0.004
u721A.41-1	1	379	206	-0.00001	0.000	0.0545 ± 10	0.1839 ± 19	0.059 ± 0	0.44 ± 1	0.0198 ± 3	368 ± 3	394 ± 39	93	0.00095	0.00044	0.009	0.00026	0.001854	0.000
u721A.42-1	3	1068	166	-0.00003	0.000	0.0540 ± 5	0.0469 ± 5	0.060 ± 0	0.45 ± 1	0.0182 ± 2	378 ± 2	370 ± 23	102	0.00055	0.00037	0.006	0.00023	0.000509	0.000
u721A.6-1	2	4994	1001	0.00004	0.069	0.0541 ± 3	0.0605 ± 5	0.058 ± 0	0.43 ± 0	0.0175 ± 2	363 ± 2	376 ± 14	96	0.00033	0.00033	0.004	0.00017	0.00049	0.001
u721A.43-1	2	273	101	0.00004	0.057	0.0543 ± 30	0.1109 ± 65	0.057 ± 1	0.42 ± 2	0.0169 ± 10	356 ± 3	384 ± 125	93	0.00301	0.00051	0.024	0.00101	0.006511	0.001
u721A.8-1	2	1481	327	0.00000	0.000	0.0539 ± 5	0.0704 ± 6	0.057 ± 0	0.43 ± 1	0.0183 ± 2	359 ± 2	366 ± 21	98	0.00051	0.00035	0.005	0.00019	0.000584	0.000
u721A.10-1	3	622	66	-0.00001	0.000	0.0544 ± 7	0.0334 ± 6	0.060 ± 0	0.45 ± 1	0.0190 ± 4	375 ± 2	388 ± 31	97	0.00074	0.00040	0.007	0.00036	0.000577	0.000
u721A.9-1	1	139	43	0.00015	0.244	0.0534 ± 47	0.0943 ± 104	0.059 ± 1	0.43 ± 4	0.0181 ± 20	369 ± 4	348 ± 200	106	0.00470	0.00065	0.039	0.00200	0.01035	0.002
u721A.44-1	1	185	78	-0.00014	0.000	0.0559 ± 14	0.1323 ± 23	0.059 ± 1	0.46 ± 1	0.0186 ± 4	370 ± 3	448 ± 56	83	0.00142	0.00054	0.013	0.00037	0.002257	0.000
u721A.45-1	3	482	87	0.00020	0.322	0.0523 ± 14	0.0481 ± 26	0.060 ± 0	0.43 ± 1	0.0158 ± 9	373 ± 3	299 ± 59	125	0.00136	0.00043	0.012	0.00085	0.002563	0.003
u721A.46-1	1	286	49	0.00017	0.280	0.0512 ± 21	0.0484 ± 41	0.059 ± 0	0.41 ± 2	0.0165 ± 14	367 ± 3	251 ± 93	146	0.00206	0.00048	0.017	0.00143	0.004148	0.003
u721A.18-1	2	942	103	-0.00002	0.000	0.0539 ± 6	0.0340 ± 5	0.058 ± 0	0.43 ± 1	0.0179 ± 3	362 ± 2	367 ± 26	99	0.00062	0.00037	0.006	0.00028	0.000485	0.000
u721A.11-1	1	890	273	0.00003	0.052	0.0540 ± 8	0.0951 ± 15	0.059 ± 0	0.44 ± 1	0.0184 ± 3	371 ± 2	370 ± 34	100	0.00083	0.00038	0.008	0.00032	0.001504	0.001
u721A.14-1	1	377	282	0.00004	0.066	0.0534 ± 16	0.2292 ± 37	0.058 ± 0	0.42 ± 1	0.0176 ± 3	362 ± 3	345 ± 70	105	0.00164	0.00044	0.014	0.00032	0.003738	0.001
u721A.47-1	1	1354	314	0.00000	0.000	0.0546 ± 5	0.0695 ± 6	0.058 ± 0	0.44 ± 1	0.0175 ± 2	366 ± 2	396 ± 21	93	0.00052	0.00036	0.005	0.00019	0.000587	0.000
u721A.15-1	3	2078	227	0.00001	0.018	0.0536 ± 4	0.0331 ± 6	0.060 ± 0	0.44 ± 0	0.0182 ± 3	376 ± 2	355 ± 18	106	0.00044	0.00035	0.005	0.00032	0.000552	0.000
u721A.15-2	1	132	57	-0.00037	0.000	0.0569 ± 17	0.1384 ± 27	0.059 ± 1	0.46 ± 2	0.0188 ± 4	370 ± 4	486 ± 66	76	0.00169	0.00061	0.015	0.00043	0.002742	0.000
u721A.48-1	1	711	59	0.00004	0.057	0.0540 ± 10	0.0250 ± 16	0.059 ± 0	0.44 ± 1	0.0179 ± 11	371 ± 2	370 ± 40	100	0.00095	0.00039	0.009	0.00112	0.001559	0.001
u721A.20-1	3	431	58	0.00020	0.325	0.0518 ± 16	0.0361 ± 30	0.058 ± 0	0.42 ± 1	0.0157 ± 13	365 ± 3	275 ± 69	133	0.00155	0.00043	0.013	0.00130	0.002981	0.003
u721A.49-1	1	270	123	0.00004	0.062	0.0535 ± 22	0.1379 ± 46	0.058 ± 0	0.43 ± 2	0.0177 ± 6	366 ± 3	352 ± 91	104	0.00215	0.00049	0.018	0.00061	0.004608	0.001
u721A.23-1	1	185	35	0.00018	0.285	0.0538 ± 29	0.0525 ± 60	0.059 ± 1	0.44 ± 2	0.0162 ± 18	370 ± 3	361 ± 121	102	0.00289	0.00056	0.024	0.00185	0.005954	0.003
u721A.50-1	2	169	50	0.00047	0.748	0.0510 ± 43	0.0837 ± 93	0.058 ± 1	0.41 ± 3	0.0162 ± 18	362 ± 4	240 ± 190	151	0.00428	0.00061	0.035	0.00182	0.009336	0.007
u721A.24-1	1	601	82	-0.00003	0.000	0.0550 ± 8	0.0438 ± 7	0.060 ± 0	0.45 ± 1	0.0192 ± 3	373 ± 2	411 ± 32	91	0.00077	0.00041	0.007	0.00033	0.000687	0.000
u721A.24-2	2	211	54	0.00026	0.412	0.0499 ± 28	0.0727 ± 58	0.057 ± 1	0.40 ± 2	0.0164 ± 13	360 ± 3	191 ± 127	189	0.00275	0.00053	0.023	0.00131	0.005768	0.004
u721A.51-1	1	166	48	0.00015	0.238	0.0557 ± 33	0.0800 ± 69	0.059 ± 1	0.45 ± 3	0.0163 ± 14	368 ± 4	440 ± 131	84	0.00328	0.00058	0.028	0.00143	0.006946	0.002
u721A.52-1	3	146	81	0.00008	0.124	0.0556 ± 36	0.1649 ± 79	0.060 ± 1	0.46 ± 3	0.0178 ± 9	375 ± 4	436 ± 143	86	0.00356	0.00062	0.030	0.00088	0.007879	0.001
u721A.25-1	2	1345	131	0.00000	0.003	0.0537 ± 7	0.0318 ± 11	0.057 ± 0	0.42 ± 1	0.0186 ± 7	359 ± 2	358 ± 30	100	0.00071	0.00035	0.006	0.00067	0.00112	0.000
u721A.25-2	2	123	51	0.00032	0.509	0.0522 ± 51	0.1289 ± 114	0.056 ± 1	0.41 ± 4	0.0176 ± 16	354 ± 4	293 ± 223	121	0.00513	0.00067	0.041	0.00157	0.011408	0.005
u721A.28-1	1	2200	105	0.00001	0.017	0.0545 ± 5	0.0146 ± 8	0.059 ± 0	0.45 ± 1	0.0181 ± 9	371 ± 2	391 ± 22	95	0.00054	0.00035	0.005	0.00094	0.000751	0.000
u721A.53-1	1	189	61	-0.00023	0.000	0.0539 ± 14	0.1045 ± 19	0.059 ± 1	0.44 ± 1	0.0192 ± 4	370 ± 3	368 ± 57	100	0.00135	0.00053	0.012	0.00040	0.001929	0.000
u721A.29-1	1	933	261	-0.00004	0.000	0.0547 ± 6	0.0891 ± 8	0.059 ± 0	0.44 ± 1	0.0187 ± 2	368 ± 2	398 ± 25	92	0.00062	0.00037	0.006	0.00021	0.000799	0.000
u721A.54-1	1	114	53	0.00000	0.000	0.0556 ± 53	0.1423 ± 118	0.058 ± 1	0.45 ± 4	0.0179 ± 15	364 ± 4	437 ± 213	83	0.00529	0.00069	0.043	0.00151	0.011824	0.000
u721A.55-1	3	1359	190	0.00031	0.494	0.0536 ± 8	0.0415 ± 15	0.060 ± 0	0.45 ± 1	0.0179 ± 7	377 ± 2	353 ± 34	107	0.00080	0.00037	0.007	0.00065	0.001491	0.005
u721A.33-1	2	213	242	0.00015	0.240	0.0522 ± 25	0.3585 ± 63	0.058 ± 1	0.41 ± 2	0.0181 ± 4	361 ± 3	295 ± 111	122	0.00253	0.00052	0.021	0.00037	0.006315	0.002
u721A.56-1	1	525	68	0.00007	0.118	0.0536 ± 12	0.0371 ± 22	0.060 ± 0	0.44 ± 1	0.0172 ± 10	373 ± 3	355 ± 52	105	0.00123	0.00042	0.011	0.00104	0.002229	0.001
u721A.38-1	1	537	39	0.00001	0.011	0.0545 ± 14	0.0243 ± 26	0.059 ± 0	0.44 ± 1	0.0195 ± 21	369 ± 3	394 ± 58	94	0.00140	0.00042	0.012	0.00213	0.00264	0.000
u721A.39-1	2	230	86	0.00023	0.375	0.0507 ± 27	0.1066 ± 58	0.058 ± 1	0.40 ± 2	0.0165 ± 9	361 ± 3	228 ± 124	159	0.00272	0.00051	0.022	0.00092	0.005837	0.004
u721A.40-1	1	1182	183	-0.00003	0.000	0.0548 ± 5	0.0496 ± 5	0.059 ± 0	0.45 ± 1	0.0189 ± 2	370 ± 2	405 ± 22	91	0.00054	0.00036	0.005	0.00023	0.000515	0.000
u721A.57-1	3	300	190	-0.00010	0.000	0.0785 ± 8	0.1968 ± 13	0.155 ± 1	1.68 ± 2	0.0480 ± 5	928 ± 6	1160 ± 20	80	0.00081	0.00108	0.022	0.00049	0.001348	0.000
u721A.58-1	3	210	144	0.00098	1.571	0.0541 ± 37	0.2178 ± 84	0.060 ± 1	0.44 ± 3	0.0190 ± 8	374 ± 3	373 ± 154	100	0.00369	0.00056	0.031	0.00075	0.008372	0.016
u721A.59-1	1	366	45	-0.00005	0.000	0.0547 ± 10	0.0384 ± 8	0.058 ± 0	0.44 ± 1	0.0182 ± 4	366 ± 3	400 ± 41	91	0.00100	0.00044	0.009	0.00042	0.000831	0.000
u721A.60-1	1	143	66	0.00025	0.395	0.0522 ± 44	0.1380 ± 97	0.059 ± 1	0.42 ± 4	0.0176 ± 13	369 ± 4	296 ± 191	124	0.00436	0.00063	0.036	0.00125	0.009704	0.004
u721A.61-1	1	223	66	-0.00001	0.000	0.0543 ± 13	0.0961 ± 17	0.058 ± 1	0.44 ± 1	0.0188 ± 4	365 ± 3	382 ± 53	96	0.00128	0.00050	0.011	0.00038	0.001735	0.000

Group 1: Magmatic population
Group 2: Evidence of lead loss
Group 3: Inherited zircon xenocrysts and rim zones of probable xenocrysts

Table 2: NR 9/10 SHRIMP U-Pb data

spot	group	U (ppm)	Th (ppm)	204/206	4f206 (%)	207*/206*	208*/206*	206*/238	207*/235	208*/232	206*/238* Age	207*/206* Age	%conc.	Uncertainties 207/206	0.86555	0.881	0.89655	208/206	4f206
u721B.4-1	1	74	31	0.00085	1.361	0.0434 ± 68	0.1088 ± 152	0.058 ± 1	0.35 ± 6	0.0151 ± 21	366 ± 5	0 ± 88	0	0.00681	0.00085	0.056	0.00212	0.015204	0.014
u721B.4-2	2	916	62	0.00008	0.133	0.0527 ± 9	0.0188 ± 16	0.058 ± 0	0.42 ± 1	0.0160 ± 13	361 ± 2	315 ± 40	115	0.00092	0.00040	0.008	0.00134	0.001573	0.001
u721B.5-1	2	227	96	0.00106	1.695	0.0516 ± 37	0.1229 ± 81	0.057 ± 1	0.40 ± 3	0.0165 ± 11	355 ± 3	267 ± 163	133	0.00366	0.00054	0.029	0.00110	0.008057	0.017
u721B.5-2	2	399	70	0.00007	0.105	0.0529 ± 16	0.0524 ± 31	0.058 ± 0	0.42 ± 1	0.0173 ± 10	363 ± 3	324 ± 69	112	0.00160	0.00046	0.014	0.00103	0.003085	0.001
u721B.3-1	1	785	137	0.00003	0.052	0.0536 ± 10	0.0530 ± 18	0.059 ± 0	0.43 ± 1	0.0178 ± 6	367 ± 2	356 ± 42	103	0.00101	0.00041	0.009	0.00063	0.001817	0.001
u721B.2-1	1	643	156	0.00005	0.081	0.0535 ± 11	0.0753 ± 20	0.059 ± 0	0.43 ± 1	0.0182 ± 5	369 ± 3	351 ± 46	105	0.00109	0.00042	0.010	0.00052	0.002048	0.001
u721B.1-1	2	2857	276	0.00004	0.057	0.0543 ± 4	0.0294 ± 6	0.058 ± 0	0.43 ± 0	0.0176 ± 4	363 ± 2	382 ± 17	95	0.00042	0.00036	0.005	0.00036	0.000573	0.001
u721B.51-1	2	911	222	0.00055	0.881	0.0528 ± 13	0.0744 ± 26	0.058 ± 0	0.42 ± 1	0.0176 ± 6	362 ± 2	321 ± 55	113	0.00127	0.00040	0.011	0.00064	0.002627	0.009
u721B.6-1	1	476	186	0.00098	1.562	0.0564 ± 22	0.1310 ± 49	0.059 ± 0	0.46 ± 2	0.0197 ± 7	367 ± 3	469 ± 88	78	0.00224	0.00045	0.019	0.00075	0.004858	0.016
u721B.6-2	3	268	67	0.00635	10.167	0.0667 ± 65	0.1277 ± 145	0.071 ± 1	0.66 ± 7	0.0366 ± 42	444 ± 4	828 ± 205	54	0.00650	0.00074	0.065	0.00418	0.014515	0.102
u721B.6-3	3	623	132	0.00244	3.902	0.0611 ± 29	0.0761 ± 63	0.062 ± 0	0.52 ± 3	0.0222 ± 18	387 ± 3	641 ± 101	60	0.00287	0.00047	0.025	0.00183	0.006251	0.039
u721B.7-1	2	1040	93	-0.00007	0.000	0.0543 ± 6	0.0280 ± 4	0.058 ± 0	0.44 ± 1	0.0183 ± 3	364 ± 2	383 ± 25	95	0.00060	0.00039	0.006	0.00031	0.000427	0.000
u721B.7-2	1	139	34	0.00014	0.228	0.0527 ± 35	0.0744 ± 74	0.059 ± 1	0.43 ± 3	0.0182 ± 18	368 ± 4	317 ± 152	116	0.00353	0.00064	0.030	0.00183	0.007418	0.002
u721B.8-1	1	319	37	-0.00019	0.000	0.0535 ± 11	0.0357 ± 9	0.059 ± 0	0.43 ± 1	0.0183 ± 5	369 ± 3	348 ± 45	106	0.00106	0.00048	0.010	0.00047	0.000857	0.000
u721B.9-1	2	1468	202	0.00002	0.026	0.0544 ± 6	0.0430 ± 10	0.058 ± 0	0.43 ± 1	0.0180 ± 4	362 ± 2	390 ± 26	93	0.00064	0.00038	0.006	0.00044	0.001005	0.000
u721B.11-1	2	618	79	0.00003	0.054	0.0542 ± 13	0.0412 ± 24	0.056 ± 0	0.42 ± 1	0.0180 ± 11	354 ± 3	378 ± 55	94	0.00131	0.00042	0.011	0.00107	0.002417	0.001
u721B.11-2	1	177	78	0.00029	0.466	0.0513 ± 29	0.1312 ± 63	0.059 ± 1	0.42 ± 2	0.0176 ± 9	370 ± 4	256 ± 131	144	0.00292	0.00059	0.025	0.00087	0.006286	0.005
u721B.12-1	1	743	101	0.00017	0.275	0.0520 ± 10	0.0387 ± 18	0.059 ± 0	0.42 ± 1	0.0168 ± 8	368 ± 3	286 ± 45	129	0.00102	0.00041	0.009	0.00081	0.001838	0.003
u721B.12-2	1	196	91	0.00028	0.443	0.0490 ± 28	0.1405 ± 60	0.058 ± 1	0.39 ± 2	0.0175 ± 8	365 ± 3	148 ± 124	246	0.00275	0.00057	0.023	0.00077	0.005987	0.004
u721B.13-1	2	1079	248	0.00003	0.052	0.0537 ± 8	0.0708 ± 13	0.058 ± 0	0.43 ± 1	0.0179 ± 3	362 ± 2	358 ± 32	101	0.00076	0.00039	0.007	0.00034	0.001274	0.001
u721B.14-1	1	141	45	-0.00003	0.000	0.0549 ± 16	0.1081 ± 23	0.058 ± 1	0.44 ± 1	0.0194 ± 5	363 ± 4	410 ± 66	89	0.00162	0.00060	0.014	0.00048	0.002335	0.000
u721.B15-1	1	492	181	0.00009	0.139	0.0536 ± 12	0.1140 ± 23	0.060 ± 0	0.44 ± 1	0.0187 ± 4	376 ± 3	352 ± 51	107	0.00120	0.00045	0.011	0.00041	0.00231	0.001
u721.B16-1	1	104	55	0.00066	1.052	0.0489 ± 58	0.1422 ± 130	0.059 ± 1	0.40 ± 5	0.0159 ± 15	368 ± 5	144 ± 257	255	0.00582	0.00075	0.048	0.00147	0.013049	0.011
u721.B18-1	3	340	60	-0.00003	0.000	0.0544 ± 10	0.0534 ± 10	0.061 ± 0	0.45 ± 1	0.0184 ± 4	379 ± 3	388 ± 42	98	0.00102	0.00049	0.010	0.00039	0.001012	0.000
u721.B19-1	1	1268	222	0.00000	0.000	0.0535 ± 5	0.0574 ± 5	0.059 ± 0	0.43 ± 1	0.0192 ± 2	367 ± 2	350 ± 22	105	0.00052	0.00038	0.005	0.00022	0.00054	0.000
u721.B19-2	1	121	37	0.00051	0.815	0.0460 ± 42	0.0765 ± 92	0.059 ± 1	0.37 ± 4	0.0148 ± 18	369 ± 4	0 ± 73	0	0.00424	0.00069	0.035	0.00179	0.009166	0.008
u721.B19-3	2	280	27	0.00005	0.084	0.0540 ± 23	0.0296 ± 47	0.057 ± 1	0.42 ± 2	0.0173 ± 27	356 ± 3	372 ± 97	96	0.00233	0.00050	0.019	0.00273	0.004665	0.001
u721.B20-1	1	379	163	0.00010	0.162	0.0538 ± 16	0.1290 ± 34	0.059 ± 0	0.44 ± 1	0.0176 ± 5	367 ± 3	364 ± 67	101	0.00161	0.00046	0.014	0.00048	0.00335	0.002
u721.B21-1	2	283	60	-0.00001	0.000	0.0537 ± 11	0.0666 ± 13	0.058 ± 0	0.43 ± 1	0.0182 ± 4	363 ± 3	357 ± 47	102	0.00112	0.00049	0.010	0.00038	0.001252	0.000
u721.B49-1	1	261	90	0.00031	0.489	0.0467 ± 23	0.1029 ± 49	0.059 ± 1	0.38 ± 2	0.0176 ± 9	368 ± 3	41 ± 106	906	0.00231	0.00053	0.019	0.00086	0.004912	0.005
u721.B22-1	1	846	104	0.00003	0.043	0.0536 ± 9	0.0366 ± 14	0.059 ± 0	0.44 ± 1	0.0177 ± 7	371 ± 2	353 ± 36	105	0.00086	0.00041	0.008	0.00071	0.001441	0.000
u721.B22-2	1	172	38	0.00058	0.922	0.0459 ± 32	0.0515 ± 68	0.059 ± 1	0.37 ± 3	0.0138 ± 18	369 ± 4	0 ± 61	0	0.00325	0.00060	0.027	0.00184	0.00684	0.009
u721.B23-1	2	120	72	0.00056	0.901	0.0457 ± 60	0.1718 ± 137	0.058 ± 1	0.36 ± 5	0.0165 ± 13	360 ± 4	0 ± 80	0	0.00602	0.00074	0.049	0.00134	0.013662	0.009
u721.B23-2	1	291	174	0.00002	0.025	0.0541 ± 21	0.1893 ± 47	0.059 ± 1	0.44 ± 2	0.0186 ± 5	369 ± 3	376 ± 88	98	0.00211	0.00050	0.018	0.00049	0.004677	0.000
u721.B28-1	1	304	58	0.00024	0.382	0.0510 ± 21	0.0534 ± 41	0.059 ± 1	0.42 ± 2	0.0167 ± 13	372 ± 3	239 ± 93	156	0.00205	0.00050	0.018	0.00130	0.004117	0.004
u721.B29-1	3	122	37	0.00047	0.749	0.0558 ± 45	0.0872 ± 97	0.062 ± 1	0.47 ± 4	0.0177 ± 20	386 ± 4	446 ± 179	86	0.00448	0.00071	0.039	0.00198	0.009679	0.007
u721.B30-1	1	185	75	0.00029	0.470	0.0503 ± 34	0.1167 ± 74	0.059 ± 1	0.41 ± 3	0.0168 ± 11	367 ± 4	207 ± 154	177	0.00339	0.00060	0.028	0.00108	0.007404	0.005
u721.B31-1	1	488	264	0.00087	1.395	0.0531 ± 24	0.1551 ± 53	0.059 ± 0	0.43 ± 2	0.0168 ± 6	368 ± 3	333 ± 103	110	0.00241	0.00048	0.020	0.00059	0.005301	0.014
u721.B32-1	3	1282	159	0.00002	0.025	0.0542 ± 7	0.0381 ± 11	0.061 ± 0	0.46 ± 1	0.0188 ± 6	384 ± 2	380 ± 30	101	0.00072	0.00041	0.007	0.00058	0.001137	0.000
u721.B33-1	2	400	238	0.00227	3.634	0.0574 ± 40	0.1902 ± 89	0.057 ± 1	0.45 ± 3	0.0184 ± 9	360 ± 3	508 ± 152	71	0.00396	0.00052	0.032	0.00088	0.008882	0.036
u721.B52-1	3	280	68	0.00014	0.231	0.0520 ± 20	0.0709 ± 37	0.061 ± 1	0.44 ± 2	0.0177 ± 9	381 ± 3	286 ± 87	133	0.00198	0.00056	0.018	0.00095	0.003741	0.002
u721.B38-1	1	922	100	0.00008	0.126	0.0542 ± 9	0.0346 ± 14	0.060 ± 0	0.45 ± 1	0.0191 ± 8	375 ± 2	378 ± 36	99	0.00087	0.00041	0.008	0.00080	0.001433	0.001
u721.B39-1	2	1107	162	0.00002	0.038	0.0539 ± 7	0.0468 ± 9	0.059 ± 0	0.44 ± 1	0.0190 ± 4	371 ± 2	366 ± 27	101	0.00066	0.00040	0.006	0.00039	0.000893	0.000
u721.B53-1	3	335	60	0.00015	0.235	0.0517 ± 17	0.0444 ± 33	0.061 ± 1	0.43 ± 2	0.0151 ± 11	381 ± 3	272 ± 77	140	0.00173	0.00051	0.015	0.00113	0.003274	0.002
u721.B40-1	2	166	93	0.00019	0.304	0.0548 ± 29	0.1768 ± 64	0.058 ± 1	0.44 ± 2	0.0183 ± 7	363 ± 4	403 ± 119	90	0.00291	0.00058	0.024	0.00069	0.006384	0.003
u721.B41-1	3	161	60	0.00006	0.097	0.0563 ± 24	0.1186 ± 50	0.086 ± 1	0.67 ± 3	0.0271 ± 12	531 ± 5	464 ± 94	114	0.00240	0.00081	0.030	0.00119	0.005039	0.001
u721.B42-1	1	217	115	0.00001	0.000	0.05467 ± 24	0.1662 ± 52	0.0585 ± 1	0.44 ± 2	0.0184 ± 6	367 ± 3	399 ± 99	92	0.00241	0.00054	0.020	0.00061	0.005249	0.000
u721.B42-2	1	108	39	0.00051	0.008	0.04852 ± 51	0.0947 ± 111	0.0589 ± 1	0.39 ± 4	0.0156 ± 18	369 ± 4	125 ± 228	296	0.00506	0.00073	0.042	0.00185	0.011117	0.008
u721.B54-1	1	215	149	0.00017	0.003	0.05268 ± 25	0.2136 ± 55	0.0594 ± 1	0.43 ± 2	0.0184 ± 5	372 ± 3	315 ± 106	118	0.00245	0.00055	0.021	0.00051	0.005536	0.003
u721.B45-1	1	1019	107	-0.00002	0.000	0.05496 ± 7	0.0325 ± 5	0.0583 ± 0	0.44 ± 1	0.0180 ± 3	365 ± 2	410 ± 27	89	0.00066	0.00040	0.006	0.00031	0.000501	0.000
u721.B48-1	2	946	87	0.00013	0.002	0.05510 ± 9	0.0304 ± 16	0.0576 ± 0	0.44 ± 1	0.0190 ± 10	361 ± 2	416 ± 38	87	0.00095	0.00040	0.008	0.00100	0.001583	0.002
u721.B55-1	3	283	79	-0.00001	0.000	0.14627 ± 10	0.0968 ± 8	0.2125 ± 2	4.29 ± 5	0.0732 ± 8	1242 ± 8	2303 ± 12	54	0.00100	0.00156	0.046	0.00085	0.000798	0.000
u721.B56-1	3	230	26	-0.00009	0.000	0.05420 ± 13	0.0354 ± 10	0.0599 ± 1	0.45 ± 1	0.0188 ± 6	375 ± 3	380 ± 52	99	0.00126	0.00053	0.012	0.00057	0.001011	0.000
u721.B57-1	1	327	42	0.00002	0.000	0.05288 ± 17	0.0408 ± 31	0.0583 ± 0	0.43 ± 1	0.0186 ± 14	365 ± 3	324 ± 71	113	0.00165	0.00048	0.014	0.00140	0.00306	0.000
u721.B58-1	1	578	169	0.00003	0.001	0.05321 ± 11	0.0886 ± 20	0.0582 ± 0	0.43 ± 1	0.0176 ± 4	365 ± 3	338 ± 47	108	0.00110	0.00043	0.010	0.00043	0.002029	0.001
u721.B59-1	3	491	73	0.00006	0.001	0.05330 ± 12	0.0425 ± 19	0.0601 ± 0	0.44 ± 1	0.0173 ± 8	376 ± 3	341 ± 51	110	0.00120	0.00047	0.011	0.00081	0.001949	0.001
u721.B60-1	3	1394	357	0.00000	0.000	0.05349 ± 5	0.0805 ± 6	0.0610 ± 0	0.45 ± 1	0.0192 ± 2	382 ± 2	350 ± 22	109	0.00052	0.00040	0.006	0.00020	0.000642	0.000
u721.B61-1	3	1258	296	0.00000	0.000	0.05417 ± 7	0.0744 ± 12	0.0602 ± 0	0.45 ± 1	0.0190 ± 3	377 ± 2	378 ± 29	100	0.00071	0.00040	0.007	0.00033	0.001186	0.000
u721.B63-1	1	132	89	-0.00011	0.000	0.05728 ± 17	0.2067 ± 35	0.0593 ± 1	0.47 ± 2	0.0181 ± 4	371 ± 4	502 ± 66	74	0.00171	0.00063	0.015	0.00037	0.003476	0.000
u721.B64-1	3	148	42	-0.00024	0.000	0.06023 ± 18	0.1115 ± 25	0.0598 ± 1	0.50 ± 2	0.0233 ± 6	374 ± 4	612 ± 66	61	0.00183	0.00065	0.017	0.00061	0.002548	0.000
u721.B65-1	1	549	48	-0.00003	0.000	0.05499 ± 8	0.0299 ± 6	0.0587 ± 0	0.45 ± 1	0.0201 ± 4	368 ± 3	412 ± 34	89	0.00083	0.00043	0.008	0.00044	0.000603	0.000
u721.B66-1	2	82	63	0.00032	0.005	0.07142 ± 27	0.2234 ± 58	0.1753 ± 2	1.73 ± 7	0.0508 ± 15	1041 ± 10	969 ± 77	107	0.00268	0.00188	0.070	0.00147	0.005844	0.005
u721.B67-1	1	205	26	0.00001	0.000	0.05450 ± 25	0.0416 ± 51	0.0593 ± 1	0.45 ± 2	0.0192 ± 24	371 ± 3	392 ± 104	95	0.00253	0.00056	0.022	0.00235	0.005079	0.000
u721.B68-1	1	379	77	0.00001	0.000	0.05243 ± 15	0.0648 ± 28	0.0594 ± 0	0.43 ± 1	0.0190 ± 8	372 ± 3	304 ± 64	122	0.00148	0.00047	0.013	0.00084	0.002826	0.000

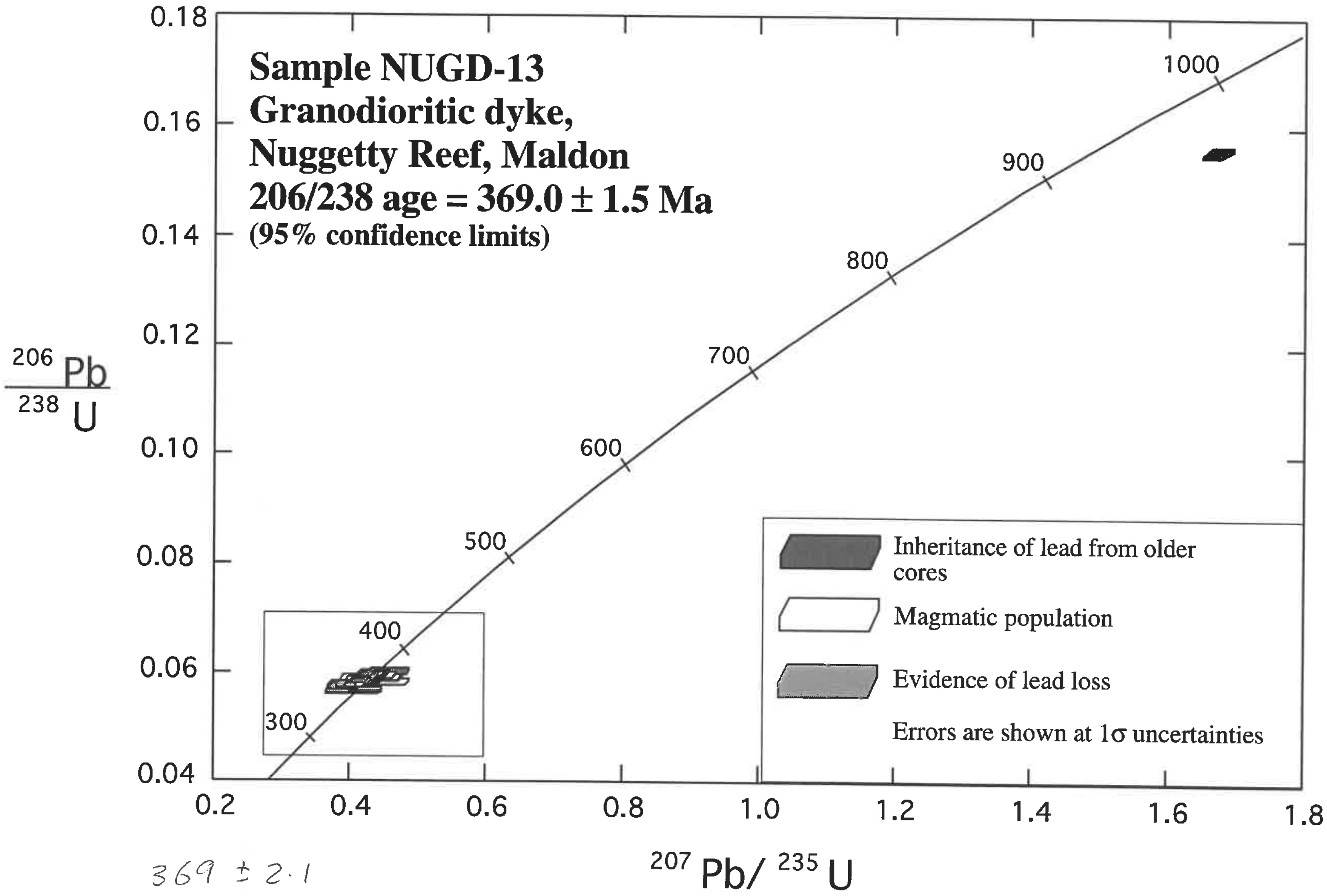
Group 1: Magmatic population
Group 2: Evidence of lead loss
Group 3: Inherited zircon xenocrysts and rim zones of probable xenocrysts

Table 3: Fosterville FO-01 and Bristol Hill BH 16/10 SHRIMP U-Pb data

FO-01

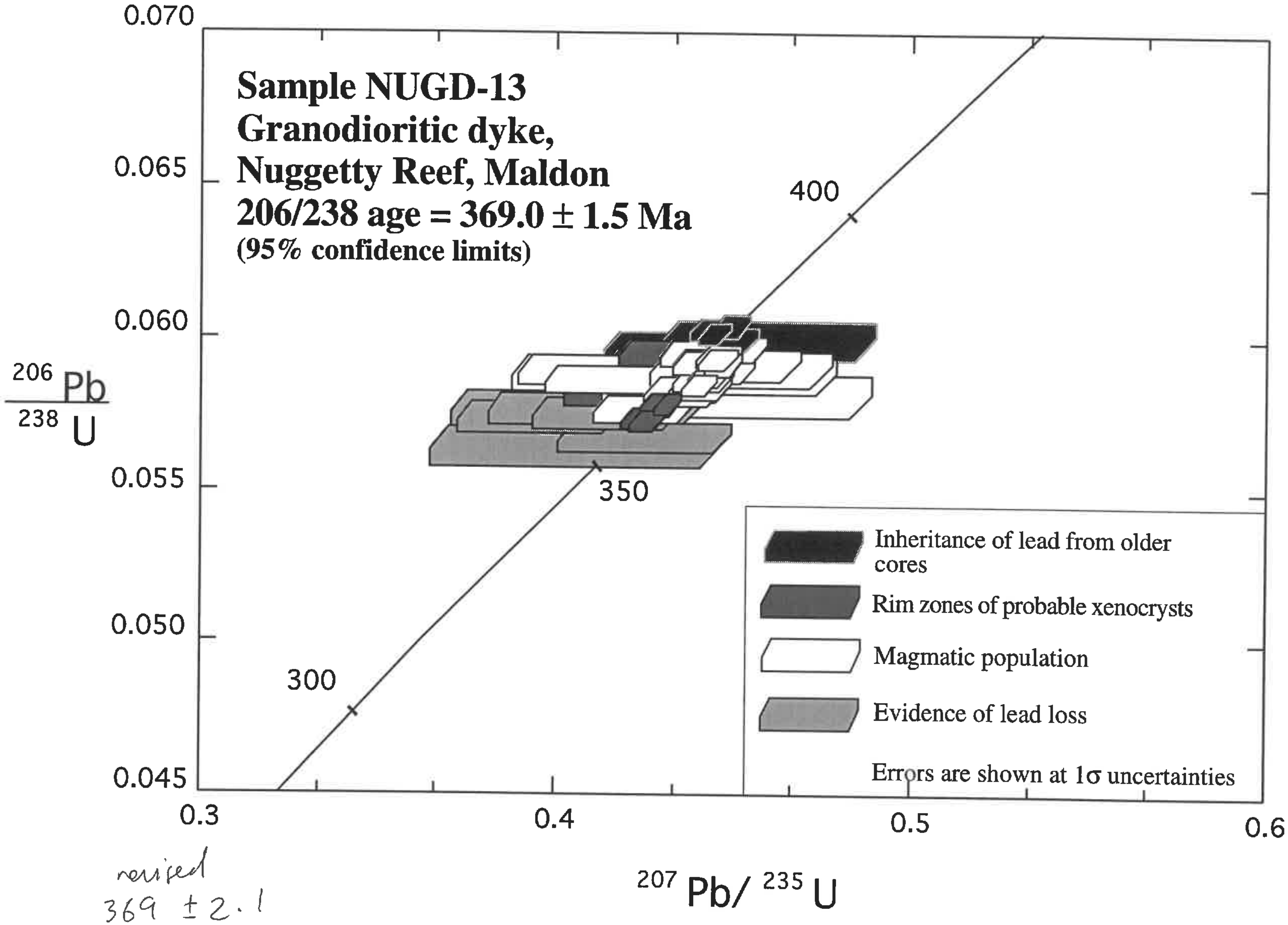
spot	group	U (ppm)	Th (ppm)	204/206	4f206 (%)	207*/206*	208*/206*	206*/238	207*/235	208*/232	206*/238* Age	207*/206* Age	%conc.	Uncertainties 207/206	0.86555	0.881	0.89655	208/206	4f206
u721.D1-1	1	719	257	0.00025	0.393	0.0535 ± 12	0.1045 ± 23	0.059 ± 0	0.43 ± 1	0.0171 ± 4	367 ± 3	348 ± 49	105	0.00116	0.00042	0.010	0.00039	0.002268	0.004
u721.D1-2	1	1874	161	-0.00001	0.000	0.0547 ± 5	0.0262 ± 3	0.060 ± 0	0.45 ± 0	0.0181 ± 2	373 ± 2	401 ± 19	93	0.00045	0.00038	0.005	0.00025	0.00031	0.000
u721.D2-1	2	1434	77	0.00009	0.139	0.0552 ± 7	0.0159 ± 11	0.058 ± 0	0.44 ± 1	0.0170 ± 12	361 ± 2	422 ± 28	86	0.00070	0.00038	0.007	0.00119	0.001102	0.001
u721.D2-2	1	2007	196	0.00003	0.041	0.0541 ± 5	0.0304 ± 6	0.060 ± 0	0.44 ± 1	0.0186 ± 4	373 ± 2	376 ± 21	99	0.00050	0.00038	0.005	0.00039	0.000604	0.000
BH 16/10																			
u721C.3-1	1	160	193	0.00007	0.109	0.0526 ± 33	0.3774 ± 82	0.059 ± 1	0.43 ± 3	0.0185 ± 4	371 ± 4	314 ± ##	118	0.00331	0.00058	0.028	0.00045	0.008206	0.001
u721C.3-2	1	209	277	0.00005	0.080	0.0522 ± 28	0.4134 ± 71	0.059 ± 1	0.42 ± 2	0.0183 ± 4	367 ± 3	296 ± ##	124	0.00278	0.00053	0.023	0.00036	0.007097	0.001
u721C.5-1	1	330	239	-0.00012	0.000	0.0525 ± 10	0.2235 ± 22	0.059 ± 0	0.43 ± 1	0.0182 ± 2	370 ± 3	309 ± 43	120	0.00099	0.00045	0.009	0.00023	0.002193	0.000
u721C.6-1	2	540	395	0.00101	1.623	0.0461 ± 21	0.1000 ± 46	0.053 ± 0	0.34 ± 2	0.0073 ± 3	334 ± 2	24 ± 89	1386	0.00212	0.00039	0.016	0.00034	0.004626	0.016
u721C.11-1	2	436	482	0.00128	2.050	0.0512 ± 29	0.1783 ± 65	0.048 ± 0	0.34 ± 2	0.0077 ± 3	301 ± 2	250 ± ##	120	0.00290	0.00038	0.020	0.00029	0.006498	0.020
u721C.12-1	2	671	272	0.00090	1.433	0.0529 ± 18	0.1181 ± 38	0.058 ± 0	0.42 ± 1	0.0168 ± 6	361 ± 2	324 ± 75	111	0.00175	0.00039	0.015	0.00055	0.003787	0.014
u721C.14-1	1	868	506	0.00022	0.350	0.0538 ± 10	0.1587 ± 21	0.059 ± 0	0.43 ± 1	0.0160 ± 2	367 ± 2	363 ± 42	101	0.00101	0.00038	0.009	0.00024	0.002128	0.003
u721C.14-2	3	266	107	0.00025	0.398	0.0509 ± 27	0.1136 ± 58	0.062 ± 1	0.43 ± 2	0.0175 ± 9	387 ± 3	234 ± ##	166	0.00267	0.00053	0.024	0.00091	0.0058	0.004
u721C.15-1	2	881	309	0.00064	1.031	0.0538 ± 14	0.0967 ± 29	0.057 ± 0	0.42 ± 1	0.0158 ± 5	358 ± 2	365 ± 57	98	0.00137	0.00037	0.011	0.00048	0.002875	0.010
u721C.22-1	1	713	249	0.00013	0.201	0.0552 ± 11	0.1120 ± 22	0.060 ± 0	0.46 ± 1	0.0192 ± 4	375 ± 2	419 ± 45	89	0.00112	0.00040	0.010	0.00040	0.002226	0.002
u721C.23-1	1	823	500	0.00002	0.031	0.0544 ± 9	0.1889 ± 18	0.059 ± 0	0.44 ± 1	0.0183 ± 2	368 ± 2	387 ± 36	95	0.00086	0.00038	0.008	0.00022	0.00183	0.000
u721C.26-1	2	887	334	0.00203	3.243	0.0568 ± 21	0.1141 ± 46	0.057 ± 0	0.45 ± 2	0.0174 ± 7	360 ± 2	485 ± 82	74	0.00211	0.00038	0.017	0.00072	0.00464	0.032
u721C.27-1	3	804	293	0.00063	1.012	0.0533 ± 15	0.0893 ± 32	0.061 ± 0	0.45 ± 1	0.0149 ± 5	382 ± 2	342 ± 64	112	0.00150	0.00040	0.013	0.00054	0.003165	0.010
u721C.31-1	2	144	128	0.00025	0.405	0.0491 ± 46	0.2944 ± 108	0.056 ± 1	0.38 ± 4	0.0184 ± 7	349 ± 4	154 ± ##	227	0.00458	0.00062	0.036	0.00071	0.010817	0.004
u721C.3-3	1	203	257	0.00004	0.070	0.0538 ± 26	0.4010 ± 67	0.060 ± 1	0.44 ± 2	0.0189 ± 4	374 ± 3	361 ± ##	104	0.00260	0.00055	0.022	0.00037	0.006654	0.001
u721C.32-1	2	540	488	0.00032	0.505	0.0548 ± 19	0.1894 ± 42	0.055 ± 0	0.42 ± 1	0.0115 ± 3	345 ± 2	405 ± 76	85	0.00187	0.00040	0.015	0.00027	0.004162	0.005
u721C.28-1	2	238	136	-0.00005	0.000	0.0559 ± 13	0.1843 ± 26	0.057 ± 0	0.44 ± 1	0.0182 ± 3	354 ± 3	449 ± 54	79	0.00135	0.00049	0.012	0.00031	0.00259	0.000

Group 1: Magmatic population
Group 2: Evidence of lead loss
Group 3: Inherited zircon xenocrysts and rim zones of probable xenocrysts



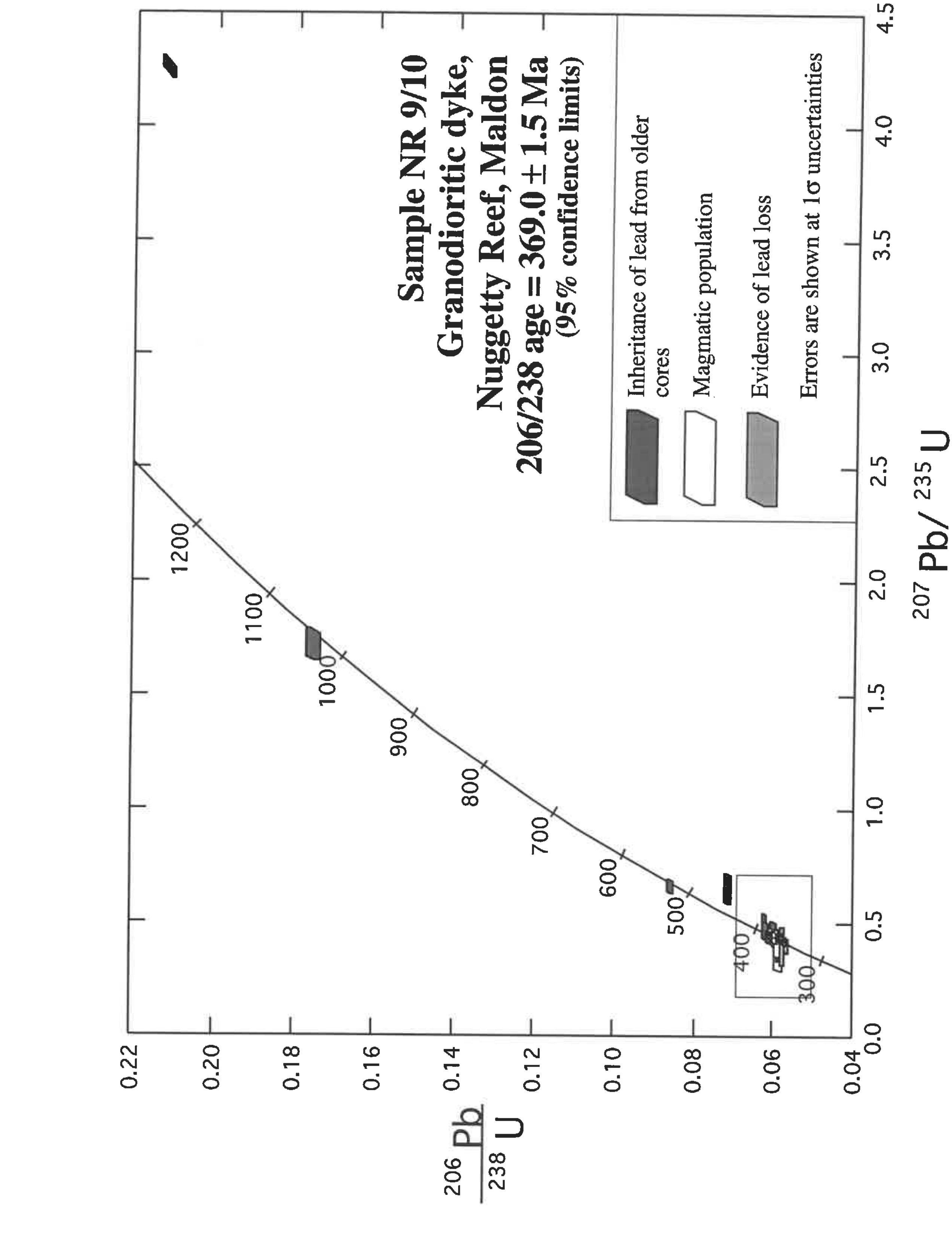
369 ± 2·1 revised

Figure 1



revised
369 ±2.1

Figure 2



Sample NR 9/10
Granodioritic dyke,
Nuggetty Reef, Maldon
206/238 age = 369.0 ± 1.5 Ma
(95% confidence limits)
Inheritance of lead from older cores
Magmatic population
Evidence of lead loss
Errors are shown at 1σ uncertainties
206Pb/238U
207Pb/235U
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.22
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
300
400
500
600
700
800
900
1000
1100
1200

Figure 3

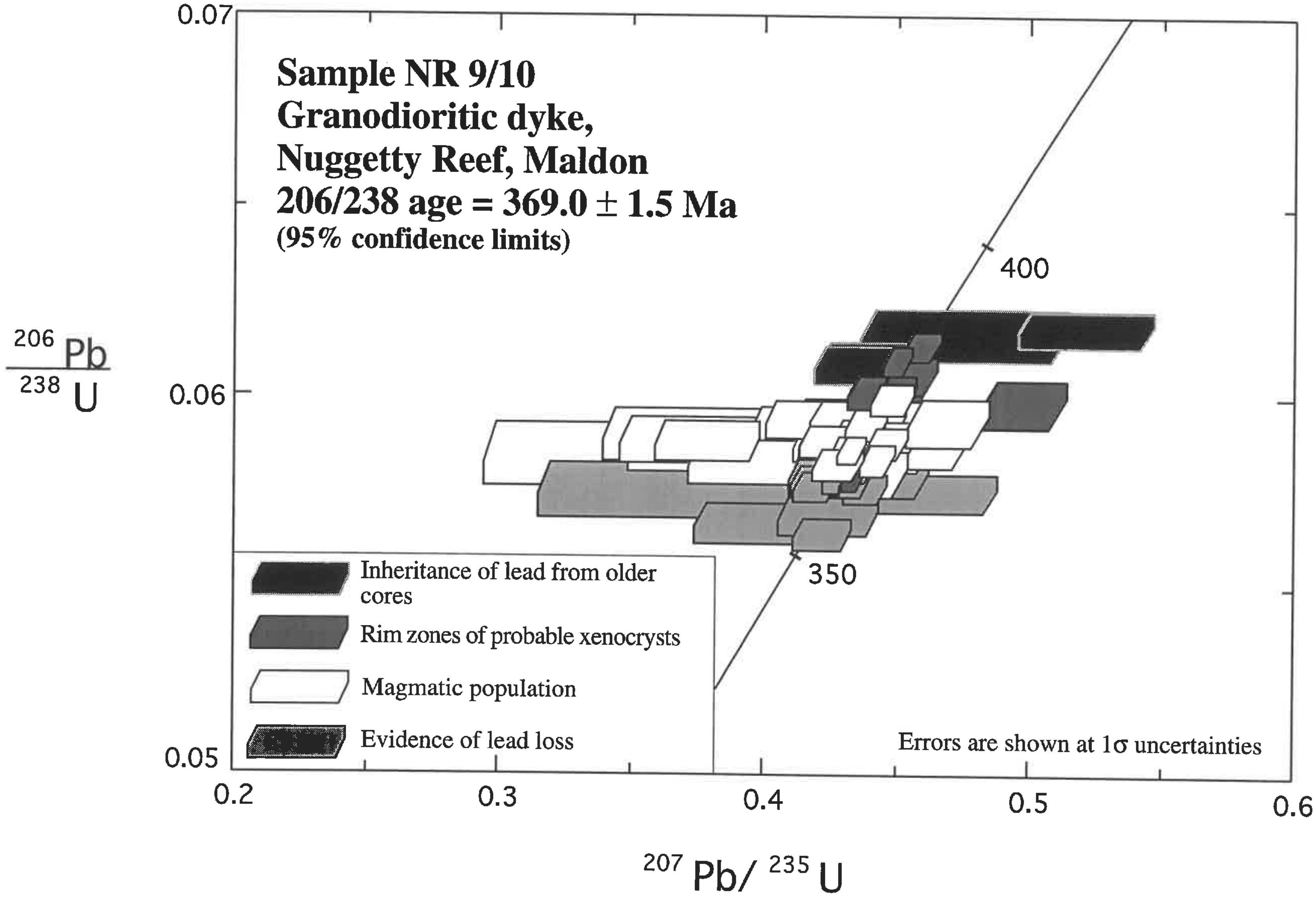

Sample NR 9/10
Granodioritic dyke,
Nuggetty Reef, Maldon
206/238 age = 369.0 ± 1.5 Ma
(95% confidence limits)
0.07
0.06
0.05
0.2
0.3
0.4
0.5
0.6
400
350
$^{206}Pb/^{238}U$
$^{207}Pb/^{235}U$
Inheritance of lead from older cores
Rim zones of probable xenocrysts
Magmatic population
Evidence of lead loss
Errors are shown at 1σ uncertainties

Figure 4

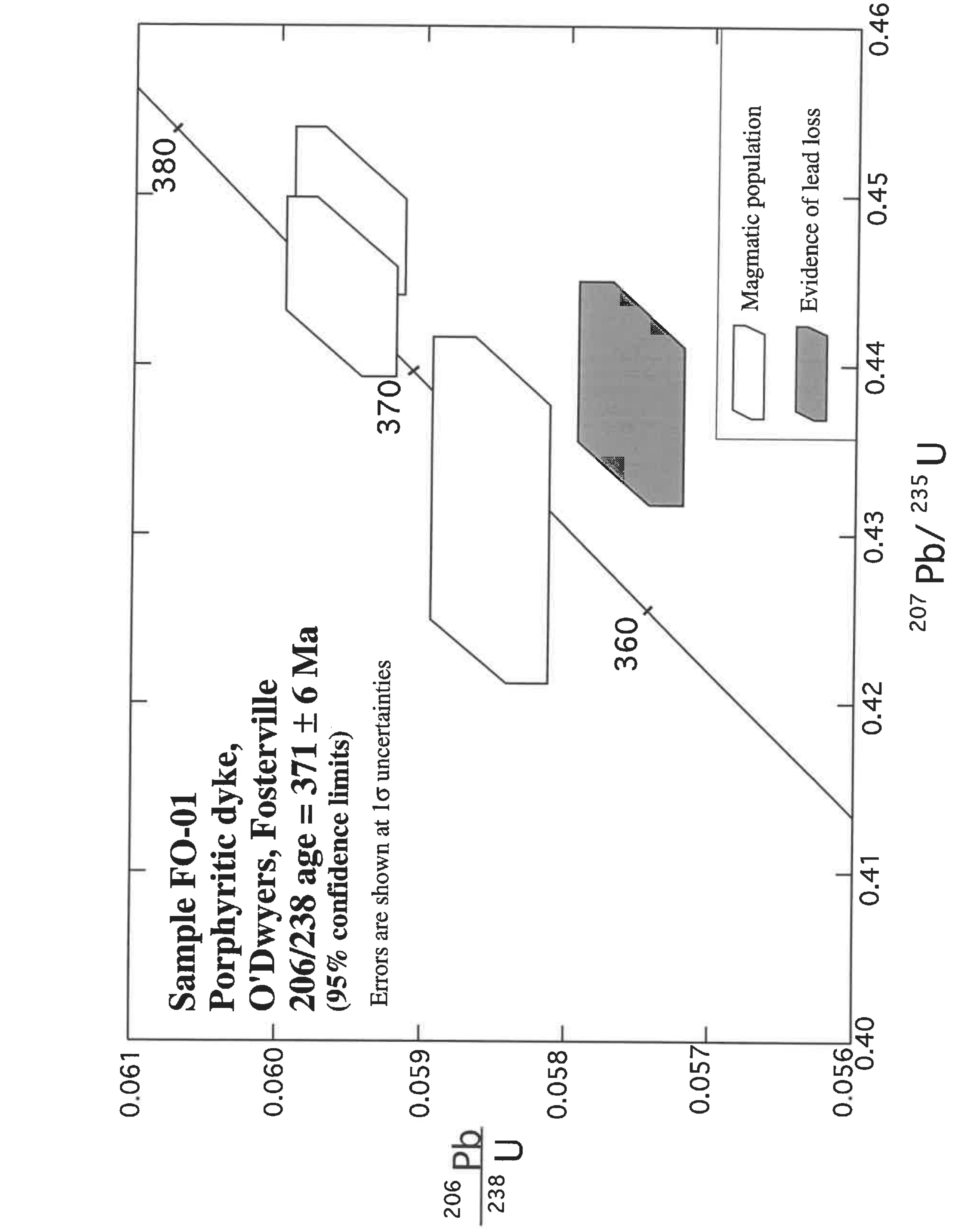
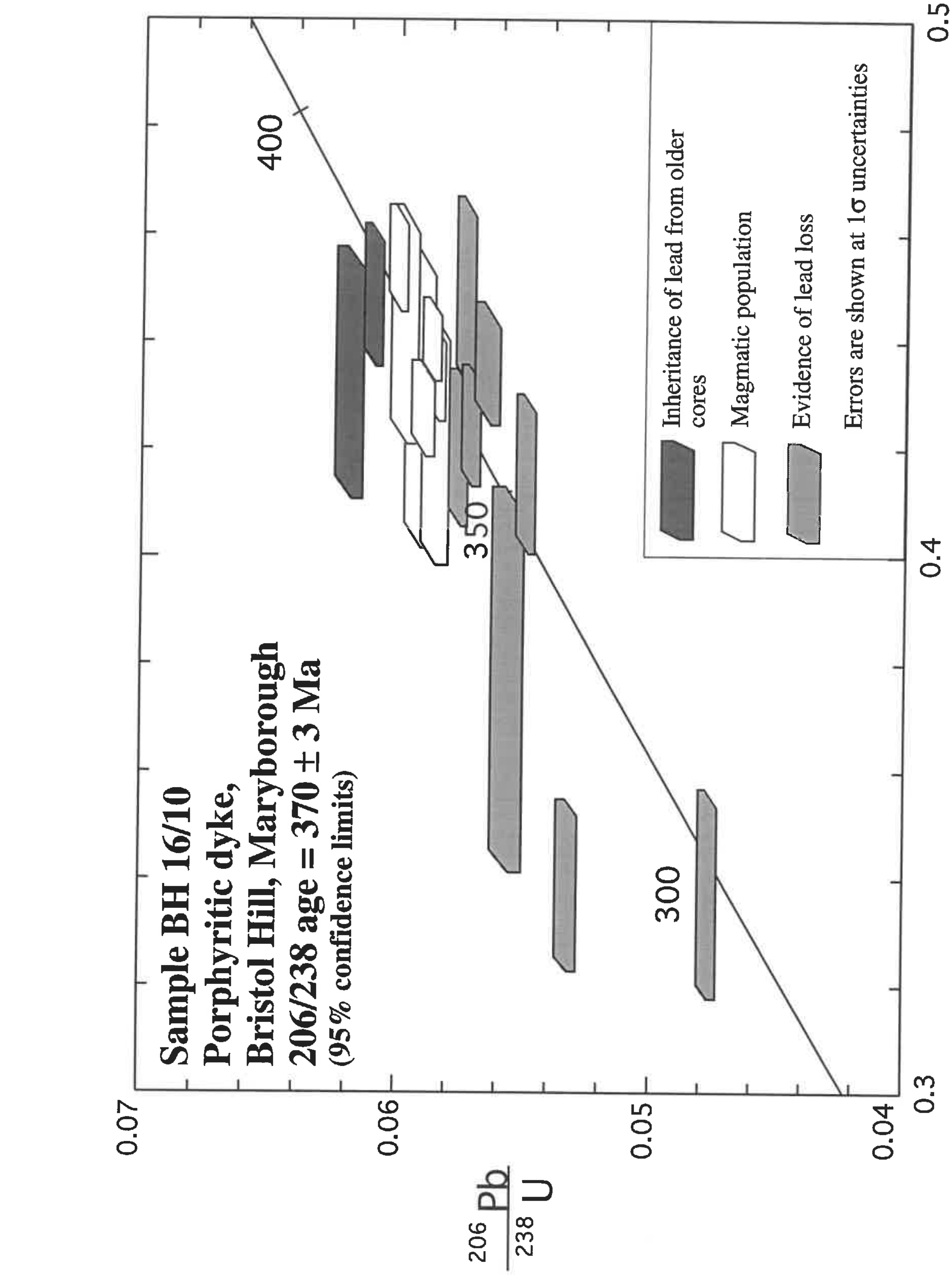

Sample FO-01
Porphyritic dyke,
O'Dwyers, Fosterville
206/238 age = 371 ± 6 Ma
(95% confidence limits)
Errors are shown at 1σ uncertainties
Magmatic population
Evidence of lead loss
360
370
380
0.061
0.060
0.059
0.058
0.057
0.056
0.40
0.41
0.42
0.43
0.44
0.45
0.46
206 Pb / 238 U
207 Pb/ 235 U

Figure 5



370 ± 4 revised

Figure 6

NUGD13 SHRIMP U-Pb data (revised)

grain-spot	group	U (ppm)	Th (ppm)	Th/U	meas. 204/206	4f206 (%)	204-corrected --> 207*/206*	208*/206*	206*/238	207*/235	208*/232	%conc.	207*/206* Age(Ma)	206*/238 Age(Ma)	7f206 (%)	207-corrected 206*/238 Age(Ma)
u721A.1-1	1	796	208	0.261	0.0000	0.000	0.0544 ± 7	0.0805 ± 8	0.0594 ± 6	0.446 ± 7	0.0183 ± 3	96	388 ± 28	372 ± 3	0.043	372 ± 3
u721A.1-2	1	284	63	0.221	0.0003	0.449	0.0503 ± 22	0.0605 ± 46	0.0589 ± 6	0.409 ± 19	0.0161 ± 13	177	208 ± 103	369 ± 4	0.047	371 ± 4
u721A.41-1	1	379	206	0.545	0.0000	0.000	0.0545 ± 10	0.1839 ± 19	0.0587 ± 6	0.441 ± 9	0.0198 ± 3	93	394 ± 39	368 ± 4	0.069	367 ± 4
u721A.42-1	3	1068	166	0.155	0.0000	0.000	0.0540 ± 5	0.0469 ± 5	0.0604 ± 5	0.449 ± 6	0.0182 ± 3	102	370 ± 23	378 ± 3	0.000	378 ± 3
u721A.6-1	2	4994	1001	0.200	0.0000	0.069	0.0541 ± 3	0.0605 ± 5	0.0579 ± 5	0.432 ± 5	0.0175 ± 2	96	376 ± 14	363 ± 3	0.105	362 ± 3
u721A.43-1	2	273	101	0.371	0.0000	0.057	0.0543 ± 30	0.1109 ± 65	0.0567 ± 6	0.425 ± 25	0.0169 ± 10	93	384 ± 125	356 ± 4	0.131	356 ± 4
u721A.8-1	2	1481	327	0.221	0.0000	0.000	0.0539 ± 5	0.0704 ± 6	0.0573 ± 5	0.426 ± 6	0.0183 ± 2	98	366 ± 21	359 ± 3	0.017	359 ± 3
u721A.10-1	3	622	66	0.105	0.0000	0.000	0.0544 ± 7	0.0334 ± 6	0.0600 ± 6	0.450 ± 8	0.0190 ± 4	97	388 ± 31	375 ± 3	0.034	375 ± 3
u721A.9-1	1	139	43	0.307	0.0002	0.244	0.0534 ± 47	0.0943 ± 104	0.0590 ± 8	0.434 ± 39	0.0181 ± 20	106	348 ± 200	369 ± 5	0.188	370 ± 4
u721A.44-1	1	185	78	0.420	-0.0001	0.000	0.0559 ± 14	0.1323 ± 23	0.0592 ± 7	0.456 ± 13	0.0186 ± 4	83	448 ± 56	370 ± 4	0.209	370 ± 4
u721A.45-1	3	482	87	0.181	0.0002	0.322	0.0523 ± 14	0.0481 ± 26	0.0595 ± 6	0.429 ± 12	0.0158 ± 9	125	299 ± 59	373 ± 4	0.132	373 ± 4
u721A.46-1	1	286	49	0.171	0.0002	0.280	0.0512 ± 21	0.0484 ± 41	0.0586 ± 6	0.414 ± 18	0.0165 ± 14	146	251 ± 93	367 ± 4	0.000	368 ± 4
u721.18-1	2	942	103	0.110	0.0000	0.000	0.0539 ± 6	0.0340 ± 5	0.0578 ± 5	0.430 ± 7	0.0179 ± 3	99	367 ± 26	362 ± 3	0.011	362 ± 3
u721.11-1	1	890	273	0.307	0.0000	0.052	0.0540 ± 8	0.0951 ± 15	0.0592 ± 5	0.440 ± 8	0.0184 ± 3	100	370 ± 34	371 ± 3	0.049	371 ± 3
u721.14-1	1	377	282	0.750	0.0000	0.066	0.0534 ± 16	0.2292 ± 37	0.0577 ± 6	0.425 ± 14	0.0176 ± 3	105	345 ± 70	362 ± 4	0.024	362 ± 4
u721.47-1	1	1354	314	0.232	0.0000	0.000	0.0546 ± 5	0.0695 ± 6	0.0585 ± 5	0.440 ± 6	0.0175 ± 2	93	396 ± 21	366 ± 3	0.079	366 ± 3
u721A.15-1	3	2078	227	0.109	0.0000	0.018	0.0536 ± 4	0.0331 ± 6	0.0601 ± 5	0.444 ± 6	0.0182 ± 3	106	355 ± 18	376 ± 3	0.000	376 ± 3
u721A.15-2	1	132	57	0.434	-0.0004	0.000	0.0569 ± 17	0.1384 ± 27	0.0590 ± 7	0.463 ± 16	0.0188 ± 4	76	486 ± 66	370 ± 4	0.319	368 ± 4
u721A.48-1	1	711	59	0.083	0.0000	0.057	0.0540 ± 10	0.0250 ± 16	0.0593 ± 6	0.441 ± 9	0.0179 ± 11	100	370 ± 40	371 ± 3	0.054	371 ± 3
u721A.20-1	3	431	58	0.134	0.0002	0.325	0.0518 ± 16	0.0361 ± 30	0.0582 ± 6	0.416 ± 14	0.0157 ± 13	133	275 ± 69	365 ± 4	0.094	366 ± 4
u721A.20-2	1	185	26	0.139	0.0000	0.035	0.1078 ± 11	0.0159 ± 14	0.2773 ± 28	4.121 ± 63	0.0319 ± 29	90	1762 ± 19	1578 ± #	0.035	1578 ± #
u721A.49-1	1	270	123	0.454	0.0000	0.062	0.0535 ± 22	0.1379 ± 46	0.0584 ± 6	0.431 ± 18	0.0177 ± 6	104	352 ± 91	366 ± 4	0.025	366 ± 4
u721A.23-1	2	185	35	0.191	0.0002	0.285	0.0538 ± 29	0.0525 ± 60	0.0590 ± 7	0.438 ± 25	0.0162 ± 18	102	361 ± 121	370 ± 4	0.263	370 ± 4
u721A.250-1	2	169	50	0.298	0.0005	0.748	0.0510 ± 43	0.0837 ± 93	0.0577 ± 7	0.405 ± 35	0.0162 ± 18	151	240 ± 190	362 ± 4	0.443	363 ± 4
u721.24-1	1	601	82	0.136	0.0000	0.000	0.0550 ± 8	0.0438 ± 7	0.0596 ± 6	0.452 ± 8	0.0192 ± 4	91	411 ± 32	373 ± 3	0.099	373 ± 3
u721A.24-2	2	211	54	0.254	0.0003	0.412	0.0499 ± 28	0.0727 ± 58	0.0574 ± 6	0.395 ± 23	0.0164 ± 13	189	191 ± 127	360 ± 4	0.000	361 ± 4
u721A.51-1	1	166	48	0.288	0.0001	0.238	0.0557 ± 33	0.0800 ± 69	0.0588 ± 7	0.451 ± 28	0.0163 ± 14	84	440 ± 131	368 ± 4	0.430	368 ± 4
u721A.52-1	3	146	81	0.555	0.0001	0.124	0.0556 ± 36	0.1649 ± 79	0.0600 ± 7	0.460 ± 31	0.0178 ± 9	86	436 ± 143	375 ± 4	0.289	375 ± 4
u721A.25-1	2	1345	131	0.098	0.0000	0.003	0.0537 ± 7	0.0318 ± 11	0.0573 ± 5	0.425 ± 7	0.0186 ± 7	100	358 ± 30	359 ± 3	0.000	359 ± 3
u721A.25-2	2	123	51	0.413	0.0003	0.509	0.0522 ± 51	0.1289 ± 114	0.0564 ± 8	0.406 ± 41	0.0176 ± 16	121	293 ± 223	354 ± 5	0.353	354 ± 4
u721A.28-1	1	2200	105	0.048	0.0000	0.017	0.0545 ± 5	0.0146 ± 8	0.0593 ± 5	0.446 ± 6	0.0181 ± 9	95	391 ± 22	371 ± 3	0.070	371 ± 3
u721A.53-1	1	189	61	0.321	-0.0002	0.000	0.0539 ± 14	0.1045 ± 19	0.0590 ± 7	0.439 ± 13	0.0192 ± 4	100	368 ± 57	370 ± 4	0.000	370 ± 4
u721A.29-1	1	933	261	0.280	0.0000	0.000	0.0547 ± 6	0.0891 ± 8	0.0588 ± 5	0.443 ± 7	0.0187 ± 2	92	398 ± 25	368 ± 3	0.080	368 ± 3
u721A.54-1	1	114	53	0.461	0.0000	0.000	0.0556 ± 53	0.1423 ± 118	0.0581 ± 8	0.446 ± 44	0.0179 ± 15	83	437 ± 213	364 ± 5	0.197	363 ± 5
u721A.55-1	3	1359	190	0.140	0.0003	0.494	0.0536 ± 8	0.0415 ± 15	0.0603 ± 5	0.445 ± 8	0.0179 ± 7	107	353 ± 34	377 ± 3	0.428	378 ± 3
u721A.33-1	2	213	242	1.138	0.0002	0.240	0.0522 ± 25	0.3585 ± 63	0.0575 ± 6	0.414 ± 21	0.0181 ± 4	122	295 ± 111	361 ± 4	0.071	361 ± 4
u721A.56-1	1	525	68	0.129	0.0001	0.118	0.0536 ± 12	0.0371 ± 22	0.0595 ± 6	0.440 ± 11	0.0172 ± 10	105	355 ± 52	373 ± 3	0.071	373 ± 3
u721A.38-1	1	537	39	0.073	0.0000	0.011	0.0545 ± 14	0.0243 ± 26	0.0590 ± 6	0.443 ± 13	0.0195 ± 21	94	394 ± 58	369 ± 3	0.076	369 ± 3
u721A.39-1	2	230	86	0.373	0.0002	0.375	0.0507 ± 27	0.1066 ± 58	0.0577 ± 6	0.403 ± 23	0.0165 ± 9	159	228 ± 124	361 ± 4	0.039	363 ± 4
u721A.40-1	1	1182	183	0.155	0.0000	0.000	0.0548 ± 5	0.0496 ± 5	0.0591 ± 5	0.447 ± 6	0.0189 ± 3	91	405 ± 22	370 ± 3	0.093	370 ± 3
u721A.57-1	3	300	190	0.634	-0.0001	0.000	0.0785 ± 8	0.1968 ± 13	0.1548 ± 15	1.676 ± 25	0.0480 ± 6	80	1160 ± 20	928 ± 8	0.000	928 ± 8
u721A.58-1	3	210	144	0.686	0.0010	1.571	0.0541 ± 37	0.2178 ± 84	0.0597 ± 7	0.445 ± 31	0.0190 ± 8	100	373 ± 154	374 ± 4	1.570	374 ± 4
u721A.59-1	1	366	45	0.123	-0.0001	0.000	0.0547 ± 10	0.0384 ± 8	0.0584 ± 6	0.441 ± 10	0.0182 ± 4	91	400 ± 41	366 ± 4	0.091	366 ± 4
u721A.60-1	1	143	66	0.462	0.0002	0.395	0.0522 ± 44	0.1380 ± 97	0.0588 ± 7	0.424 ± 36	0.0176 ± 13	124	296 ± 191	369 ± 5	0.210	369 ± 4
u721A.61-1	1	223	66	0.297	0.0000	0.000	0.0543 ± 13	0.0961 ± 17	0.0583 ± 6	0.436 ± 12	0.0188 ± 4	96	382 ± 53	365 ± 4	0.045	365 ± 4

NR 9/10 SHRIMP U-Pb data (revised)

grain-spot	group	U (ppm)	Th (ppm)	Th/U	meas. 204/206	4f206 (%)	204-corrected --> 207*/206*	208*/206*	206*/238	207*/235	208*/232	%conc.	207*/206* Age(Ma)	206*/238 Age(Ma)	7f206 (%)	207-corrected 206*/238 Age(Ma)
u721B.4-1	1	74	31	0.422	0.0009	1.361	0.0434 ± 68	0.1088 ± 152	0.0583 ± 10	0.349 ± 56	0.0150 ± 21	0	0 ± 88	365 ± 6	0.223	369 ± 6
u721B.4-2	2	916	62	0.068	0.0001	0.133	0.0527 ± 9	0.0188 ± 16	0.0585 ± 7	0.425 ± 10	0.0162 ± 14	116	315 ± 40	366 ± 4	0.000	367 ± 4
u721B.5-1	2	227	96	0.422	0.0011	1.695	0.0516 ± 37	0.1229 ± 81	0.0561 ± 8	0.399 ± 30	0.0163 ± 11	132	267 ± 163	352 ± 5	1.482	353 ± 5
u721B.5-2	2	399	70	0.175	0.0001	0.105	0.0529 ± 16	0.0524 ± 31	0.0576 ± 8	0.420 ± 14	0.0172 ± 10	111	324 ± 69	361 ± 5	0.010	361 ± 5
u721B.3-1	1	785	137	0.174	0.0000	0.052	0.0536 ± 10	0.0530 ± 18	0.0582 ± 7	0.430 ± 10	0.0177 ± 6	102	356 ± 42	365 ± 4	0.029	365 ± 4
u721B.2-1	1	643	156	0.243	0.0001	0.081	0.0535 ± 11	0.0753 ± 20	0.0599 ± 8	0.442 ± 11	0.0186 ± 6	107	351 ± 46	375 ± 5	0.017	375 ± 5
u721B.1-1	2	2857	276	0.097	0.0000	0.057	0.0543 ± 4	0.0294 ± 6	0.0599 ± 7	0.448 ± 7	0.0182 ± 4	98	382 ± 17	375 ± 4	0.076	375 ± 4
u721B.51-1	2	911	222	0.244	0.0006	0.881	0.0528 ± 13	0.0744 ± 26	0.0585 ± 7	0.426 ± 12	0.0179 ± 7	114	321 ± 55	366 ± 4	0.763	367 ± 4
u721B.6-1	1	476	186	0.390	0.0010	1.562	0.0564 ± 22	0.1310 ± 49	0.0585 ± 8	0.455 ± 20	0.0197 ± 8	78	469 ± 88	367 ± 5	1.837	366 ± 5
u721B.6-2	3	268	67	0.249	0.0064	10.167	0.0667 ± 65	0.1277 ± 145	0.0702 ± 10	0.645 ± 65	0.0360 ± 41	53	828 ± 205	437 ± 6	11.264	432 ± 6
u721B.6-3	3	623	132	0.212	0.0024	3.902	0.0611 ± 29	0.0761 ± 63	0.0609 ± 8	0.513 ± 26	0.0218 ± 18	59	641 ± 101	381 ± 5	4.624	378 ± 5
u721B.7-1	2	1040	93	0.089	-0.0001	0.000	0.0543 ± 6	0.0280 ± 4	0.0583 ± 7	0.437 ± 8	0.0183 ± 4	95	383 ± 25	366 ± 4	0.047	365 ± 4
u721B.7-2	1	139	34	0.241	0.0001	0.228	0.0527 ± 35	0.0744 ± 74	0.0584 ± 9	0.424 ± 30	0.0180 ± 18	115	317 ± 152	366 ± 5	0.102	366 ± 5
u721B.8-1	1	319	37	0.115	-0.0002	0.000	0.0535 ± 11	0.0357 ± 9	0.0587 ± 8	0.432 ± 11	0.0182 ± 5	105	348 ± 45	368 ± 5	0.000	368 ± 5
u721B.9-1	2	1468	202	0.138	0.0000	0.026	0.0544 ± 6	0.0430 ± 10	0.0586 ± 7	0.440 ± 8	0.0183 ± 5	94	390 ± 26	367 ± 4	0.086	367 ± 4
u721B.11-1	2	618	79	0.129	0.0000	0.054	0.0542 ± 13	0.0412 ± 24	0.0553 ± 7	0.413 ± 12	0.0177 ± 11	92	378 ± 55	347 ± 4	0.135	346 ± 4
u721B.11-2	1	177	78	0.440	0.0003	0.466	0.0513 ± 29	0.1312 ± 63	0.0587 ± 9	0.415 ± 25	0.0175 ± 9	143	256 ± 131	367 ± 5	0.185	368 ± 5
u721B.12-1	1	743	101	0.135	0.0002	0.275	0.0520 ± 10	0.0387 ± 18	0.0597 ± 8	0.428 ± 11	0.0171 ± 8	131	286 ± 45	374 ± 5	0.048	375 ± 5
u721B.12-2	1	196	91	0.467	0.0003	0.443	0.0490 ± 28	0.1405 ± 60	0.0592 ± 9	0.400 ± 24	0.0178 ± 8	250	148 ± 124	371 ± 5	0.000	372 ± 5
u721B.13-1	2	1079	248	0.229	0.0000	0.052	0.0537 ± 8	0.0708 ± 13	0.0571 ± 7	0.423 ± 8	0.0176 ± 4	100	358 ± 32	358 ± 4	0.052	358 ± 4
u721B.14-1	1	141	45	0.323	0.0000	0.000	0.0549 ± 16	0.1081 ± 23	0.0585 ± 9	0.443 ± 15	0.0196 ± 5	89	410 ± 66	367 ± 5	0.115	366 ± 5
u721.B15-1	1	492	181	0.368	0.0001	0.139	0.0536 ± 12	0.1140 ± 23	0.0606 ± 8	0.447 ± 12	0.0188 ± 5	108	352 ± 51	379 ± 5	0.069	379 ± 5
u721.B16-1	1	104	55	0.526	0.0007	1.052	0.0489 ± 58	0.1422 ± 130	0.0586 ± 10	0.395 ± 48	0.0158 ± 15	254	144 ± 257	367 ± 6	0.509	369 ± 6
u721.B18-1	3	340	60	0.176	0.0000	0.000	0.0544 ± 10	0.0534 ± 10	0.0611 ± 8	0.458 ± 11	0.0185 ± 4	99	388 ± 42	382 ± 5	0.015	382 ± 5
u721.B19-1	1	1268	222	0.175	0.0000	0.000	0.0535 ± 5	0.0574 ± 5	0.0591 ± 7	0.436 ± 7	0.0194 ± 3	106	350 ± 22	370 ± 4	0.000	370 ± 4
u721.B19-2	1	121	37	0.305	0.0005	0.815	0.0460 ± 42	0.0765 ± 92	0.0599 ± 9	0.380 ± 36	0.0150 ± 18	0	0 ± 73	375 ± 6	0.000	378 ± 6
u721.B19-3	2	280	27	0.097	0.0001	0.084	0.0540 ± 23	0.0296 ± 47	0.0566 ± 8	0.421 ± 20	0.0172 ± 27	95	372 ± 97	355 ± 5	0.128	355 ± 5
u721.B20-1	1	379	163	0.430	0.0001	0.162	0.0538 ± 16	0.1290 ± 34	0.0600 ± 8	0.446 ± 15	0.0180 ± 5	103	364 ± 67	376 ± 5	0.130	376 ± 5
u721.B21-1	2	283	60	0.212	0.0000	0.000	0.0537 ± 11	0.0666 ± 13	0.0583 ± 8	0.431 ± 11	0.0183 ± 4	102	357 ± 47	365 ± 5	0.000	365 ± 5
u721.B49-1	1	261	90	0.345	0.0003	0.489	0.0467 ± 23	0.1029 ± 49	0.0597 ± 8	0.384 ± 20	0.0178 ± 9	920	41 ± 106	374 ± 5	0.000	376 ± 5
u721.B22-1	1	846	104	0.122	0.0000	0.043	0.0536 ± 9	0.0366 ± 14	0.0609 ± 8	0.450 ± 10	0.0182 ± 8	108	353 ± 36	381 ± 5	0.000	381 ± 5
u721.B22-2	1	172	38	0.219	0.0006	0.922	0.0459 ± 32	0.0515 ± 68	0.0589 ± 9	0.373 ± 28	0.0138 ± 18	0	0 ± 61	369 ± 5	0.042	372 ± 5
u721.B23-1	2	120	72	0.597	0.0006	0.895	0.0455 ± 60	0.1708 ± 136	0.0583 ± 10	0.365 ± 49	0.0167 ± 14	0	0 ± 81	365 ± 6	0.000	368 ± 6
u721.B23-2	1	291	174	0.598	0.0000	0.025	0.0541 ± 21	0.1893 ± 47	0.0592 ± 8	0.442 ± 19	0.0187 ± 5	99	376 ± 88	371 ± 5	0.038	371 ± 5
u721.B25-1	1	2630	1008	0.383	0.0035	5.622	-0.0138 ± 721	-0.0249 ± ###	0.0411 ± 45	-0.078 ± -408	-0.0027 ± -175	0	0 ± 67	260 ± #	0.000	275 ± #
u721.B28-1	3	304	58	0.190	0.0002	0.382	0.0510 ± 21	0.0534 ± 41	0.0590 ± 8	0.414 ± 18	0.0166 ± 13	154	239 ± 93	369 ± 5	0.053	370 ± 5
u721.B29-1	1	122	37	0.303	0.0005	0.749	0.0558 ± 45	0.0872 ± 97	0.0616 ± 10	0.474 ± 40	0.0177 ± 20	86	446 ± 179	385 ± 6	0.913	385 ± 6
u721.B30-1	1	185	75	0.407	0.0003	0.470	0.0503 ± 34	0.1167 ± 74	0.0601 ± 9	0.416 ± 30	0.0172 ± 11	182	207 ± 154	376 ± 5	0.047	378 ± 5
u721.B31-1	3	488	264	0.541	0.0009	1.395	0.0531 ± 24	0.1551 ± 53	0.0595 ± 8	0.436 ± 21	0.0171 ± 6	112	333 ± 103	373 ± 5	1.293	373 ± 5
u721.B32-1	2	1282	159	0.124	0.0000	0.025	0.0542 ± 7	0.0381 ± 11	0.0615 ± 8	0.460 ± 9	0.0189 ± 6	101	380 ± 30	385 ± 5	0.011	385 ± 5
u721.B33-1	3	400	238	0.594	0.0023	3.634	0.0574 ± 40	0.1902 ± 89	0.0574 ± 8	0.454 ± 33	0.0184 ± 9	71	508 ± 152	360 ± 5	4.027	358 ± 5
u721.B52-1	1	280	68	0.245	0.0001	0.231	0.0520 ± 20	0.0709 ± 37	0.0599 ± 8	0.430 ± 18	0.0174 ± 10	131	286 ± 87	375 ± 5	0.000	376 ± 5
u721.B38-1	2	922	100	0.109	0.0001	0.126	0.0542 ± 9	0.0346 ± 14	0.0597 ± 8	0.446 ± 10	0.0190 ± 8	99	378 ± 36	374 ± 5	0.138	374 ± 5
u721.B39-1	3	1107	162	0.146	0.0000	0.038	0.0539 ± 7	0.0468 ± 9	0.0596 ± 7	0.443 ± 8	0.0191 ± 4	102	366 ± 27	373 ± 5	0.018	373 ± 5
u721.B53-1	2	335	60	0.178	0.0001	0.235	0.0517 ± 17	0.0444 ± 33	0.0609 ± 8	0.434 ± 16	0.0152 ± 11	140	272 ± 77	381 ± 5	0.000	382 ± 5
u721.B40-1	3	166	93	0.560	0.0002	0.304	0.0548 ± 29	0.1768 ± 64	0.0582 ± 9	0.439 ± 25	0.0184 ± 7	90	403 ± 119	364 ± 5	0.407	364 ± 5
u721.B41-1	1	161	60	0.375	0.0001	0.097	0.0563 ± 24	0.1186 ± 50	0.0865 ± 12	0.671 ± 31	0.0273 ± 12	115	464 ± 94	535 ± 7	0.000	535 ± 7
u721.B42-1	1	217	115	0.529	0.0000	0.023	0.0547 ± 24	0.1662 ± 52	0.0591 ± 8	0.445 ± 21	0.0186 ± 6	93	399 ± 99	370 ± 5	0.100	370 ± 5
u721.B42-2	1	108	39	0.357	0.0005	0.811	0.0485 ± 51	0.0947 ± 111	0.0588 ± 10	0.393 ± 42	0.0156 ± 18	295	125 ± 228	368 ± 6	0.219	370 ± 6
u721.B54-1	1	215	149	0.691	0.0002	0.269	0.0527 ± 25	0.2136 ± 55	0.0603 ± 9	0.438 ± 22	0.0186 ± 6	120	315 ± 106	377 ± 5	0.108	378 ± 5
u721.B45-1	1	1019	107	0.105	0.0000	0.000	0.0550 ± 7	0.0325 ± 5	0.0587 ± 7	0.445 ± 8	0.0181 ± 4	90	410 ± 27	368 ± 5	0.114	367 ± 5
u721.B48-1	2	945	87	0.092	0.0002	0.339	0.0549 ± 10	0.0289 ± 17	0.0587 ± 7	0.444 ± 10	0.0185 ± 11	90	408 ± 39	368 ± 4	0.446	367 ± 4
u721.B55-1	3	283	79	0.281	0.0000	0.000	0.1463 ± 10	0.0968 ± 8	0.2127 ± 27	4.290 ± 66	0.0733 ± 12	54	2303 ± 12	1243 ± #	0.000	1243 ± #
u721.B56-1	3	230	26	0.113	-0.0001	0.000	0.0542 ± 13	0.0354 ± 10	0.0597 ± 8	0.446 ± 13	0.0187 ± 6	99	380 ± 52	374 ± 5	0.015	374 ± 5
u721.B57-1	1	327	42	0.128	0.0000	0.032	0.0529 ± 17	0.0408 ± 31	0.0582 ± 8	0.425 ± 15	0.0185 ± 14	113	324 ± 71	365 ± 5	0.000	365 ± 5
u721.B58-1	1	578	169	0.293	0.0000	0.052	0.0532 ± 11	0.0886 ± 20	0.0584 ± 8	0.429 ± 11	0.0177 ± 5	108	338 ± 47	366 ± 5	0.000	366 ± 5
u721.B59-1	3	491	73	0.148	0.0001	0.095	0.0533 ± 12	0.0425 ± 19	0.0610 ± 8	0.448 ± 12	0.0175 ± 8	112	341 ± 51	382 ± 5	0.000	382 ± 5
u721.B60-1	3	1394	357	0.256	0.0000	0.000	0.0535 ± 5	0.0805 ± 6	0.0617 ± 8	0.455 ± 8	0.0194 ± 3	110	350 ± 22	386 ± 5	0.000	386 ± 5
u721.B61-1	3	1258	296	0.236	0.0000	0.004	0.0542 ± 7	0.0744 ± 12	0.0600 ± 8	0.448 ± 9	0.0189 ± 4	99	378 ± 29	375 ± 5	0.012	375 ± 5

u721.B63-1	1	132	89	0.677	-0.0001	0.000	0.0573 ± 17	0.2067 ± 35	0.0602 ± 9	0.476 ± 17	0.0184 ± 4	75	502 ± 66	377 ± 6	0.346	376 ± 6
u721.B64-1	3	148	42	0.286	-0.0002	0.000	0.0602 ± 18	0.1115 ± 25	0.0602 ± 9	0.500 ± 18	0.0235 ± 7	62	612 ± 66	377 ± 6	0.671	374 ± 6
u721.B65-1	1	549	48	0.087	0.0000	0.000	0.0550 ± 8	0.0299 ± 6	0.0601 ± 8	0.456 ± 10	0.0205 ± 5	91	412 ± 34	376 ± 5	0.094	376 ± 5
u721.B66-1	2	82	63	0.771	0.0003	0.510	0.0714 ± 27	0.2234 ± 58	0.1769 ± 27	1.742 ± 73	0.0513 ± 16	108	969 ± 77	1050 ± #	0.185	1053 ± #
u721.B67-1	1	205	26	0.129	0.0000	0.018	0.0545 ± 25	0.0416 ± 51	0.0602 ± 9	0.452 ± 23	0.0195 ± 24	96	392 ± 104	377 ± 5	0.057	377 ± 5
u721.B68-1	1	379	77	0.203	0.0000	0.016	0.0524 ± 15	0.0648 ± 28	0.0600 ± 8	0.434 ± 14	0.0192 ± 9	123	304 ± 64	376 ± 5	0.000	376 ± 5

BH 16/10 SHRIMP data (revised)

grain-spot	group	U (ppm)	Th (ppm)	Th/U	meas. 204/206	4f206 (%)	204-corrected --> 207*/206*	208*/206*	206*/238	207*/235	208*/232	%conc.	207*/206* Age(Ma)	206*/238 Age(Ma)	7f206 (%)	207-corrected 206*/238 Age(Ma)
u721C.3-1	1	160	193	1.208	0.0001	0.109	0.0526 ± 33	0.3774 ± 82	0.0592 ± 7	0.429 ± 28	0.0185 ± 5	118	314 ± 143	371 ± 4	0.000	371 ± 4
u721C.3-2	1	209	277	1.323	0.0000	0.080	0.0522 ± 28	0.4134 ± 71	0.0586 ± 7	0.422 ± 24	0.0183 ± 4	124	296 ± 122	367 ± 4	0.000	367 ± 4
u721C.5-1	1	330	239	0.723	-0.0001	0.000	0.0525 ± 10	0.2235 ± 22	0.0590 ± 6	0.428 ± 10	0.0182 ± 3	120	309 ± 43	370 ± 4	0.000	370 ± 4
u721C.6-1	2	540	395	0.731	0.0010	1.623	0.0461 ± 21	0.1000 ± 46	0.0533 ± 5	0.339 ± 16	0.0073 ± 3	1386	24 ± 89	334 ± 3	0.867	337 ± 3
u721C.10-1	2	1366	488	0.357	0.0006	0.895	0.1254 ± 16	0.3767 ± 35	0.0385 ± 4	0.666 ± 11	0.0406 ± 5	12	2035 ± 23	243 ± 2	0.895	243 ± 2
u721C.11-1	2	436	482	1.106	0.0013	2.050	0.0512 ± 29	0.1783 ± 65	0.0477 ± 5	0.337 ± 20	0.0077 ± 3	120	250 ± 130	301 ± 3	1.927	301 ± 3
u721C.12-1	2	671	272	0.405	0.0009	1.433	0.0529 ± 18	0.1181 ± 38	0.0576 ± 5	0.420 ± 15	0.0168 ± 6	111	324 ± 75	361 ± 3	1.339	361 ± 3
u721C.14-1	1	868	506	0.582	0.0002	0.350	0.0538 ± 10	0.1587 ± 21	0.0585 ± 5	0.434 ± 10	0.0160 ± 3	101	363 ± 42	367 ± 3	0.339	367 ± 3
u721C.14-2	3	266	107	0.403	0.0002	0.398	0.0509 ± 27	0.1136 ± 58	0.0619 ± 7	0.434 ± 24	0.0175 ± 9	166	234 ± 121	387 ± 4	0.009	389 ± 4
u721C.15-1	2	881	309	0.351	0.0006	1.031	0.0538 ± 14	0.0967 ± 29	0.0571 ± 5	0.424 ± 12	0.0158 ± 5	98	365 ± 57	358 ± 3	1.047	358 ± 3
u721C.22-1	1	713	249	0.350	0.0001	0.201	0.0552 ± 11	0.1120 ± 22	0.0599 ± 6	0.456 ± 11	0.0192 ± 4	89	419 ± 45	375 ± 3	0.319	375 ± 3
u721C.23-1	1	823	500	0.607	0.0000	0.031	0.0544 ± 9	0.1889 ± 18	0.0587 ± 5	0.440 ± 9	0.0183 ± 2	95	387 ± 36	368 ± 3	0.083	368 ± 3
u721C.26-1	2	887	334	0.376	0.0020	3.243	0.0568 ± 21	0.1141 ± 46	0.0574 ± 5	0.450 ± 18	0.0174 ± 7	74	485 ± 82	360 ± 3	3.573	359 ± 3
u721C.27-1	3	804	293	0.365	0.0006	1.012	0.0533 ± 15	0.0893 ± 32	0.0611 ± 6	0.449 ± 14	0.0149 ± 5	112	342 ± 64	382 ± 3	0.908	382 ± 3
u721C.31-1	2	144	128	0.892	0.0003	0.405	0.0491 ± 46	0.2944 ± 108	0.0557 ± 7	0.377 ± 36	0.0184 ± 7	227	154 ± 205	349 ± 4	0.000	351 ± 4
u721C.3-3	1	203	257	1.269	0.0000	0.070	0.0538 ± 26	0.4010 ± 67	0.0598 ± 7	0.443 ± 23	0.0189 ± 4	104	361 ± 109	374 ± 4	0.036	374 ± 4
u721C.32-1	2	540	488	0.905	0.0003	0.505	0.0548 ± 19	0.1894 ± 42	0.0550 ± 5	0.415 ± 15	0.0115 ± 3	85	405 ± 76	345 ± 3	0.663	344 ± 3
u721C.28-1	2	238	136	0.572	-0.0001	0.000	0.0559 ± 13	0.1843 ± 26	0.0565 ± 6	0.436 ± 12	0.0182 ± 3	79	449 ± 54	354 ± 4	0.254	354 ± 4