Bahnhofstraße 14 // D-37181 Hardegsen // T +49 (0)5505 94098-0
Geschäftsführer: Ralf Klaus Blecher // Amtsgericht Göttingen HRB 130263
www.crb-gmbh.de // labor@crb-gmbh.de

CRB Analyse Service GmbH

GeoPT27, England - MGL-AND, Andesite

Veranstalter: International Association of Geoanalysts and Geostandards Newsletter - GeoPT27
Ringversuchsmaterial: MGL-AND, (Andesite)
RV geschlossen: 010 – 8
Literatur: Proficiency Testing Report GeoPT27 (Laborcode CRB = B3)

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na_2O	4,41	4,48	0,071	
MgO	3,56	3,55	0,059	
Al_2O_3	16,78	16,69	0,219	
SiO_2	59,27	59,23	0,641	
P_2O5	0,262	0,261	0,006	
K_2O	2,37	2,40	0,042	
CaO	5,55	5,58	0,086	
TiO_2	0,717	0,714	0,015	
Fe_2O_3 tot.	5,55	5,42	0,084	
MnO	0,08	0,08	0,002	
L.O.I.*	1,30	1,40	0,03	

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
As	2,4	2,7	0,2	
Ba	680	673	20	
Ce	50	53	2,3	
Co	25	19,5	1	
Cr	101	95	3,8	
Cu	34	41,3	1,9	
Ga	20	21	1,1	
Hf	3,4	3,6	0,2	
La	25	25,4	1,2	
Nb	1	3,4	0,2	
Nd	29	26,3	1,3	
Ni	62	62,5	2,7	
Pb	10	18,3	0,9	
Pr	4	6,5	0,4	
Rb	33	49,9	2,2	
Sm	3	5,1	0,3	
Sr	1125	1116	31,1	
Th	7	6,2	0,4	
U	1	1,9	0,1	
V	115	121	4,7	

Y	11	12	0,1
Zn	71	70	3
Zr	126	148	5,6

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch
Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- ***** Wert nicht zertifiziert

Geo*PT*27 – AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES – REPORT ON ROUND 27 (Andesite, MGL-AND) / July 2010

Peter C. Webb[1]*, Michael Thompson[2], Philip J. Potts[1] and B. Batjargal[3]

[1]Department of Earth Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.

[2]Department of Chemistry, Birkbeck College, Gordon House, London, WC1H 0PP, UK.

[3]Central Geological Laboratory, Ulaanbaatar, Mongolia.

*Corresponding author: e-mail p.c.webb@open.ac.uk

*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT*27 Round, MGL-AND, andesite*

Abstract

Results are presented for Geo*PT*27, round twenty-seven of the International Association of Geoanalysts' Proficiency Testing programme for analytical geochemistry laboratories. The sample distributed for this round was andesite, MGL-AND, supplied by Dr B. Batjargal of the Central Geological Laboratory, Mongolia. In this report, contributed data are listed, together with an assessment of consensus values, z-scores and charts showing both the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This twenty-seventh round of the international proficiency testing programme, Geo*PT*, was conducted in a similar manner to earlier rounds. The programme is designed to be part of the routine quality assurance scheme of analytical geochemistry laboratories and the aims of the programme can be reviewed at http://www.geoanalyst.org/geoPT.html. The programme is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol (http://www.geoanalyst.org/GeoPT-protocol.pdf). The overall aim of the programme is to provide participating laboratories with z-score information for each reported elemental determination, from which the laboratories can decide whether the quality of their data is satisfactory in relation to both their chosen fitness-for-purpose criterion and results submitted by all the other laboratories contributing to the round and, therefore, choose to take appropriate corrective action if this appears justified.

Steering Committee for Round 27: M. Thompson, P.C. Webb, P.J. Potts and B. Batjargal.

Sample Geo*PT*27: MGL-AND, andesite, was produced in the Central Geological Laboratories, Mongolia, under direction of Dr B. Batjargal. The test material was tested for grain size distribution and compositional homogeneity by the originating laboratory and was considered suitable for use in the Geo*PT* proficiency testing programme.

Timetable for Round 27:

Distribution of sample: March 2010.
Deadline for submission of analytical results: 11th June 2010.
Distribution of draft report: July/August 2010

Submission of results

Results submitted by 80 laboratories are listed in Table 1. All of these data were used for the assessment of assigned values.

Assigned values

Following procedures described in earlier rounds, a robust statistical procedure was used to derive assigned concentration values [X_a], these being judged to be the best estimates of the true composition of this sample. Data in Table 2 lists assigned and provisional values for 11 major components and 45 trace elements. Values were assigned on the basis that: (i) sufficient laboratories had contributed data for an element, (ii) the statistical assessment gave confidence that the results showed a central portion approximating to a normal distribution. Part of this assessment involved examining bar charts for each element to judge the distribution of results and the most favourable basis for defining the assigned values. In 28 cases the robust mean was used as the preferred value. In 21 cases the median value was preferred. In 7 cases a mode produced a baseline that had improved symmetry with the normally distributed portion of the graph. The procedure used to determine the mode was based on the analysis of mixed populations detailed in Thompson (2006) and first used in GeoPT to analyse round 23 data. Confidence in one such value (for Bi) was sufficient for it to be designated as assigned: the other six values obtained in this way were assigned provisional values.

Bar charts for 56 elements/components that were judged to have satisfactory distributions for assigned or provisional values to be given, as listed in Table 2, are shown in Figure 1, namely: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T, MnO, MgO, CaO, Na_2O, K_2O, P_2O_5, LOI, As, Ba, Be, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge, Hf, Ho, In, La, Li, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sb, Sc, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, V, W, Y, Yb, Zn, and Zr. Of these, only provisional values could be given to the 9 elements/components: LOI, As, Ge, In, Mo, Sb, Sn, Ta and W. In most cases these corresponded to results for which modes were chosen to obtain a consensus value.

Bar charts for the 8 elements/components, Fe(II)O, H_2O^+, CO_2, Ag, Cd, Cl, F and S are plotted in Figure 2 for information only, where the data were not amenable to the reliable determination of a consensus.

Z-score analysis

As in previous rounds, laboratories were invited to choose one of two performance standards against which their analytical results would be judged:

Data quality 1 for laboratories working to a 'pure geochemistry' standard of performance, where analytical results are designed for geochemical research and where care is taken to provide data of high precision and accuracy, sometimes at the expense of a reduced sample throughput rate. 1432 results of data quality 1 were submitted.

Data quality 2 for laboratories working to an 'applied geochemistry' standard of performance, where, although precision and accuracy are still important, the main objective is to provide results on large numbers of samples collected, for example, as part of geochemical mapping projects or geochemical exploration programmes. 1531 results of data quality 2 were submitted.

The target standard deviation (H_a) for each element assessed was calculated from a modified form of the Horwitz function as follows:

$$H_a = k.X_a^{0.8495}$$

Where X_a is the concentration of the element expressed as a *fraction*, and the factor k = 0.01 for pure geochemistry labs and k = 0.02 for applied geochemistry labs.

Z-scores were calculated for each elemental result submitted by each laboratory from:

$$z = [X - X_a] / H_a$$

where: X is the contributed result, X_a is the assigned value and H_a is the target standard deviation.

Z-score results are listed in Table 3. Participating laboratories are invited to assess their performance using the following criterion:–

Z-score results in the range -2<z<2 are considered to be 'satisfactory' (in the sense that no action is called for by the participant). If the z-score for any element falls outside this range, especially if it is outside the range -3<z<3, it would be advisable for contributing laboratories to examine their procedures, and if necessary, to take action to ensure that determinations are not subject to unsuspected analytical bias.

Overall performance

A summary of the overall performance of individual laboratories in this round is plotted in Figure 3 as a multiple z-score chart. In this chart, the z-score performance for each element is distinguished by symbols that make it simple to identify whether the results were satisfactory or gave z-scores that exceeded the action limits. This chart is designed to help individual laboratories to judge their overall performance in this proficiency testing round.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to the Geo*PT*28 round, the sample for which will be distributed during September 2010.

Acknowledgements

The authors thank John Watson and Liz Lomas (The Open University) for valued assistance in the distribution of samples and the production of this report. Thanks also to Ms B. Davaasuren for assistance at the Central Geological Laboratory, Mongolia.

Reference

Thompson, M. (2006). Using mixture models for bump-hunting in the results of proficiency tests. Accred. Qual. Assur., 10, 501-505.

Appendix 1

Publication status of proficiency testing reports

Geo*PT*1
Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)
Geo*PT*1. International proficiency test for analytical geochemistry laboratories - Report on round 1. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 20, 295-325.

Geo*PT*2
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)
Geo*PT*2. International proficiency test for analytical geochemistry laboratories - Report on round 2. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 22 127-156.

Geo*PT*3
Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)
Geo*PT*3. International proficiency test for analytical geochemistry laboratories - Report on round 3. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 23, 87-121.

Geo*PT*4
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)
Geo*PT*4. International proficiency test for analytical geochemistry laboratories - Report on round 4. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*5
Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)
Geo*PT*5. International proficiency test for analytical geochemistry laboratories - Report on round 5. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*6
Potts P.J., Thompson M., Kane J.S., Webb P.C. and Carignan J. (2000)
GEO*PT*6 - an international proficiency test for analytical geochemistry laboratories - report on round 6 (OU-3: Nanhoron microgranite) and 6A (CAL-S: CRPG limestone). International Association of Geoanalysts: Unpublished report.

Geo*PT*7
Potts P.J., Thompson M., Kane J.S., and Petrov L.L. (2000)
GEO*PT*7 - an international proficiency test for analytical geochemistry laboratories - report on round 7 (GBPG-1 Garnet-biotite plagiogneiss). International Association of Geoanalysts: Unpublished report.

Geo*PT*8
Potts P.J., Thompson M., Kane J.S., Webb, P.C. and Watson J.S. (2000)
GEO*PT*8 - an international proficiency test for analytical geochemistry laboratories - report on round 8 / February 2001 (OU-4 Penmaenmawr microdiorite). International Association of Geoanalysts: Unpublished report.

Geo*PT*9
Potts P.J., Thompson M., Webb, P.C. and Watson J.S. (2001)
GEO*PT*9 - an international proficiency test for analytical geochemistry laboratories - report on round 9 / July 2001 (OU-6 Penrhyn slate). International Association of Geoanalysts: Unpublished report.

Geo*PT*10
Potts P.J., Thompson M., Webb, P.C., Watson J.S. and Wang Yimin (2001)
GEO*PT*10 - an international proficiency test for analytical geochemistry laboratories - report on round 10 / December 2001 (CH-1 Marine sediment). International Association of Geoanalysts: Unpublished report.

Geo*PT*11
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Watson J.S. (2002)
GEO*PT*11 - an international proficiency test for analytical geochemistry laboratories - report on round 11 / July 2002 (OU-5 Leaton dolerite). International Association of Geoanalysts: Unpublished report.

Geo*PT*12
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Batjargal B. (2003)
GEO*PT*12 - an international proficiency test for analytical geochemistry laboratories - report on round 12 / January 2003 (GAS Serpentinite). International Association of Geoanalysts: Unpublished report.

Geo*PT*13
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kaspar H.U. (2003)
GEO*PT*13 - an international proficiency test for analytical geochemistry laboratories - report on round 13 / July 2003 (Köln Loess). International Association of Geoanalysts: Unpublished report.

Geo*PT*14
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and B. Batjargal (2004)
Geo*PT*14 - an international proficiency test for analytical geochemistry laboratories - report on round 14 / January 2004 (OShBO - alkaline granite). International Association of Geoanalysts: Unpublished report.

Geo*PT*15
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and WANG Yimin (2004)
Geo*PT*15 - an international proficiency test for analytical geochemistry laboratories - report on round 15 / June 2004 (Ocean floor sediment MSAN). International Association of Geoanalysts: Unpublished report.

Geo*PT*16
Potts P.J., Thompson M., Webb, P.C. and S.Wilson (2005)
Geo*PT*16 - an international proficiency test for analytical geochemistry laboratories - report on round 16 / February 2005 (Nevada basalt, BNV-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*17
Potts P.J., Thompson M., Webb, P.C. and J. Nicholas Walsh (2005)
Geo*PT*17 - an international proficiency test for analytical geochemistry laboratories - report on round 17 / July 2005 (Calcareous sandstone, OU-8). International Association of Geoanalysts: Unpublished report.

Geo*PT*18
Webb, P.C., Thompson M., Potts P.J. and L. Paul Bedard (2006)
Geo*PT*18 - an international proficiency test for analytical geochemistry laboratories - report on round 18 / Jan 2006 (Quartz Diorite, KPT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*19
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2006)
Geo*PT*19 - an international proficiency test for analytical geochemistry laboratories - report on round 19 / July 2006 (Gabbro, MGR-N). International Association of Geoanalysts: Unpublished report.

Geo*PT*20
Webb, P.C., Thompson M., Potts P.J. and M. Burnham (2007)
Geo*PT*20 - an international proficiency test for analytical geochemistry laboratories - report on round 20 / Jan 2007 (Ultramafic rock, OPY-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*21
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2007)
Geo*PT*21 - an international proficiency test for analytical geochemistry laboratories - report on round 21 / July 2007 (Granite, MGT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*22
Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2008)
Geo*PT*22 - an international proficiency test for analytical geochemistry laboratories - report on round 22 / January 2008 (Basalt, MBL-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*23
Webb, P.C., Thompson, M., Potts, P.J., Watson, J.S. and Kriete, C. (2008)
Geo*PT*23 - an international proficiency test for analytical geochemistry laboratories - report on round 23 / Se*PT*ember 2008 (Separation Lake pegmatite, OU-9) and 23A (Manganese nodule, FeMn-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*24
Webb, P.C., Thompson, M., Potts, P.J. and Watson, J.S. (2009)
Geo*PT*24 - an international proficiency test for analytical geochemistry laboratories - report on round 24 / January 2009 (Longmyndian greywacke, OU-10). International Association of Geoanalysts: Unpublished report.

Geo*PT*25
Webb, P.C., Thompson, M., Potts, P.J. and Enzweiler, J. (2009)
Geo*PT*25 - an international proficiency test for analytical geochemistry laboratories - report on round 25 / July 2009 (Basalt, HTP-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*26
Webb, P.C., Thompson, M., Potts, P.J. and Loubser, M. (2010)
Geo*PT*26 - an international proficiency test for analytical geochemistry laboratories - report on round 26 / January 2010 (Ordinary Portland cement, OPC-1). International Association of Geoanalysts: Unpublished report.

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B01	B01	B02	B03	B04	B05	B06	B07	B08	B09
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		1	2	1	2	2	1	2	1	1	1
SiO2	% m/m	59.46		59.44	59.27	59.15	59.27	59.39	58.81	59.52	57.9
TiO2	% m/m	0.72		0.68	0.717	0.7	0.703	0.716	0.71	0.727	0.7
Al2O3	% m/m	16.73		16.61	16.78	16.67	16.88	16.71	16.66	16.9	16.4
Fe2O3 T	% m/m	5.542		5.42	5.38	5.55	5.318	5.42	5.45	5.52	5.38
Fe(II)O	% m/m			1.65					1.83		1.03
MnO	% m/m	0.078		0.07	0.083	0.08	0.082	0.08	0.081	0.082	0.08
MgO	% m/m	3.434		3.37	3.56	3.62	3.63	3.59	3.58	3.57	3.25
CaO	% m/m	5.672		5.37	5.55	5.5	5.58	5.58	5.7	5.6	5.58
Na2O	% m/m	4.381		4.58	4.41	4.53	4.56	4.44	4.43	4.53	4.68
K2O	% m/m	2.398		2.31	2.37	2.43	2.41	2.42	2.38	2.43	2.53
P2O5	% m/m	0.191		0.25	0.262	0.26	0.268	0.26	0.28	0.269	0.25
H2O+	% m/m								1.43		1.23
CO2	% m/m								0.08		0.14
LOI	% m/m	1.39		1.38	-0.13	1.45	1.46	1.39	1.44	1.48	1.33
Ag	mg kg^{-1}						0.05		0.13		
As	mg kg^{-1}		3.7		2.7				2.34	2.3	
B	mg kg^{-1}								12.2		
Ba	mg kg^{-1}		656		680	668	663		632	678.7	652
Be	mg kg^{-1}		2			2.14	2		1.98	2.67	
Bi	mg kg^{-1}						0.1			0.38	
Cd	mg kg^{-1}	0.12			2.4		0.05			0.043	
Ce	mg kg^{-1}	50.5			50	51.2	55.9		52.3	53.03	47
Cl	mg kg^{-1}								81		
Co	mg kg^{-1}		17		25	19.8	20.2		18.8	19.17	23
Cr	mg kg^{-1}		87		101	98	99		101	97.03	99
Cs	mg kg^{-1}					1.06	1.15		1.09	1.02	0
Cu	mg kg^{-1}		40		34	42.6	43.1		41.6	43.03	42
Dy	mg kg^{-1}	2.35				2.47	2.53		2.28	2.53	
Er	mg kg^{-1}	1.16				1.15	1.19		1.02	1.32	
Eu	mg kg^{-1}	1.42				1.41	1.47		1.39	1.39	
F	mg kg^{-1}				560				690		
Ga	mg kg^{-1}		21		20	21.1	21.6		21.8	20.6	24
Gd	mg kg^{-1}	4.1				3.82	3.93		3.54	4.18	
Ge	mg kg^{-1}					1.02			1		
Hf	mg kg^{-1}		7		3.4	3.59	3.68		3.64	3.7	6
Hg	mg kg^{-1}				0.6						
Ho	mg kg^{-1}	0.42				0.45	0.45		0.338	0.53	
I	mg kg^{-1}				14						
In	mg kg^{-1}				2						
La	mg kg^{-1}	23.8			25	25.6	27.78		24.6	25.67	24
Li	mg kg^{-1}		13			14.1	14.2		13.6	13.07	
Lu	mg kg^{-1}	0.14				0.14	0.15		0.144	0.151	
Mo	mg kg^{-1}	0.59					0.57		0.57	0.71	0
Nb	mg kg^{-1}		4		1.4	3.54	3.27		2.83	3.89	5
Nd	mg kg^{-1}	25.5			29	26.6	28.6		25.5	27.9	27
Ni	mg kg^{-1}		56		62	63.2	63.5		62.2	63.67	59
Os	mg kg^{-1}										
Pb	mg kg^{-1}		16		1	17.8	18		18.1	18.23	19
Pd	mg kg^{-1}										
Pr	mg kg^{-1}	6.29			4	6.6	7.11		6.42	7.25	
Rb	mg kg^{-1}		49		33	51.8	50.9		48.1	48.57	46
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}				60						
Sb	mg kg^{-1}	0.23					0.22		0.24	0.235	
Sc	mg kg^{-1}					12.5	12.5			11.77	14
Se	mg kg^{-1}									0.26	
Sm	mg kg^{-1}	4.97			3	5.19	5.42		4.91	5.453	
Sn	mg kg^{-1}						1		0.83		3
Sr	mg kg^{-1}		1061		1125	1125	1144		1125	1146.7	1113
Ta	mg kg^{-1}					0.24	0.18		0.25	0.248	0
Tb	mg kg^{-1}	0.49				0.47	0.51		0.458	0.488	
Te	mg kg^{-1}										
Th	mg kg^{-1}		3.6		7	6.37	6.41		5.86	6.497	0
Tl	mg kg^{-1}	0.23					0.22			0.217	
Tm	mg kg^{-1}	0.15				0.16	0.17		0.144	0.161	
U	mg kg^{-1}		5.1		1	1.88	1.91		1.77	1.893	1
V	mg kg^{-1}		120		115	124	128		120	125.3	110
W	mg kg^{-1}						1.7		1.36	1.667	0
Y	mg kg^{-2}		12		11	12.6	11.4		11.3	13.67	7
Yb	mg kg^{-1}	0.93				0.98	1.01		0.94	0.984	
Zn	mg kg^{-1}		67		71	68.1	70.8		73.8	69.83	52
Zr	mg kg^{-1}		143		126	149	150		135	150	170

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B09	B10	B11	B12	B12	B13	B14	B15	B15	B16
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		2	1	2	1	2	2	2	1	2	1
SiO2	% m/m		60.07	59.6	59.168		59.32	60.709		59.37	
TiO2	% m/m		0.756	0.71	0.739		0.73	0.742		0.73	0.8
Al2O3	% m/m		16.6	17.1	16.523		16.61	17.052		16.76	16.39
Fe2O3 T	% m/m		5.85	5.4	5.468		3.04	5.531		5.44	4.85
Fe(II)O	% m/m		1.7				2.19				
MnO	% m/m		0.104	0.077		0.078	0.08	0.083		0.083	0.087
MgO	% m/m		3.9	3.6		3.592	3.54	3.59		3.5	3.56
CaO	% m/m		5.61	5.4	5.55		5.61	5.843		5.53	5.6
Na2O	% m/m		2.2	4.43	4.46		4.45	4.552		4.53	4.54
K2O	% m/m		2.38	2.36	2.39		2.4	2.439		2.46	2.93
P2O5	% m/m		0.22	0.27		0.257	0.28	0.265		0.27	0.25
H2O+	% m/m						1.03				
CO2	% m/m										
LOI	% m/m		1.64	1.5		1.59	1.38	1.36		1.42	
Ag	mg kg^{-1}		0.128665			0.06					
As	mg kg^{-1}	10	3.366133								2.77
B	mg kg^{-1}		10.16751			25					
Ba	mg kg^{-1}		602.7445	750		600	661	699.2	675.5445		802.28
Be	mg kg^{-1}		1.872851			2.00	2.12	2	1.867648		
Bi	mg kg^{-1}	4	0.078536						0.111289		0.088
Cd	mg kg^{-1}	10	0.138434			0.053					0.04
Ce	mg kg^{-1}		45.6098			50.2	53.7	50.27	54.35416		51.5
Cl	mg kg^{-1}	34									
Co	mg kg^{-1}		18.45757			18.80	19	19.15	19.39762		17.65
Cr	mg kg^{-1}		93.3694			94.00	88.4	97.8	94.30172		90
Cs	mg kg^{-1}		0.985498				1.02	0.98	1.101175		1.04
Cu	mg kg^{-1}		37.91831			43.00	39.9	41.2	41.80799		38.13
Dy	mg kg^{-1}	2	2.030704		2.29		2.34	2.23	2.423266		2.52
Er	mg kg^{-1}	2	0.932134		1.02		1.14	1.12	1.14116		1.17
Eu	mg kg^{-1}	1	1.163478		1.34		1.43	1.32	1.446737		1.41
F	mg kg^{-1}	315				470.0					
Ga	mg kg^{-1}		20.54967			20.13	20.8	21.63	21.14364		20.2
Gd	mg kg^{-1}	5	3.093014		3.82		3.89	3.51	3.949994		4.3
Ge	mg kg^{-1}		0.919773			1.136			1.021637		1.01
Hf	mg kg^{-1}		2.845058			3.365	3.47	3.18	3.684785		3.51
Hg	mg kg^{-1}										
Ho	mg kg^{-1}	1	0.361609		0.43		0.46	0.4	0.42747		0.4
I	mg kg^{-1}										
In	mg kg^{-1}										
La	mg kg^{-1}		19.9277			23.90	24.7	23.77	25.76547		24.61
Li	mg kg^{-1}		13.24697		14		14		12.5768		10.59
Lu	mg kg^{-1}		0.11843		0.15		0.13	0.13	0.144303		0.14
Mo	mg kg^{-1}		0.57234			0.78			0.594455		0.54
Nb	mg kg^{-1}		3.081021			3.467603	3.35	3	3.378158		3.05
Nd	mg kg^{-1}		22.94533			24.1	26.9	24.74	27.40435		26.27
Ni	mg kg^{-1}		56.88323			63.0	60.2	65.5	63.87193		57.54
Os	mg kg^{-1}										
Pb	mg kg^{-1}		17.24147			18.20	19	16.7	18.20313		17.4
Pd	mg kg^{-1}										
Pr	mg kg^{-1}	7	5.555632			5.840	6.6	6.32	6.722948		6.47
Rb	mg kg^{-1}		48.45185	60	47		50.1	48.52	50.62954		47.25
Re	mg kg^{-1}										
Rh	mg kg^{-1}										0.027
S	mg kg^{-1}	0									
Sb	mg kg^{-1}	21	0.185747			0.72					0.24
Sc	mg kg^{-1}		10.71052			*12.0*	12	11.6	11.9382		
Se	mg kg^{-1}		0.380951								
Sm	mg kg^{-1}	5	4.217529		4.952533		5.05	4.75	5.166255		5.04
Sn	mg kg^{-1}		0.89228			1.4			1.000816		0.88
Sr	mg kg^{-1}		1010.813	1100		1156	1117	1106.6	1135.073		1084
Ta	mg kg^{-1}		0.217407			0.237	0.22		0.24057		0.24
Tb	mg kg^{-1}	1	0.365447			0.486	0.49	0.44	0.488069		0.48
Te	mg kg^{-1}		0.006288								
Th	mg kg^{-1}		5.51817			5.836	6.26	5.64	6.277212		6.11
Tl	mg kg^{-1}		0.189568			0.77			0.203557		0.215
Tm	mg kg^{-1}		0.125108			0.152013	0.15	0.14	0.152321		0.15
U	mg kg^{-1}		1.885607			1.8	1.89	1.67	1.873247		1.8
V	mg kg^{-1}		120.8831			120	119	123	125.109		120.14
W	mg kg^{-1}		1.320565			*1.50*			1.385476		
Y	mg kg^{-2}		9.273916			12.5033	12.2	10.79	12.41942		11.8
Yb	mg kg^{-1}	2	0.775527			0.985904	0.98	0.91	0.977973		0.96
Zn	mg kg^{-1}		66.36665	70		62	67.8	70.8	68.52694		
Zr	mg kg^{-1}		117.522	210		160	149	133.85	144.1961		

Sc & W amended

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B17	B18	B19	B20	B21	B22	B23	B24	B25	B26
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		2	2	2	2	1	1	1	1	1	2
SiO2	% m/m		59.15	59.61713	59.6772		58.77	58.35	59.12	57.4	60.9
TiO2	% m/m		0.71	0.662108	0.696892		0.72	0.73	0.73	0.6743	0.67
Al2O3	% m/m		16.71	16.91168	16.01914		16.68	16.21	16.25	13.65	16.1
Fe2O3 T	% m/m		5.43	5.175403	5.48685		5.36	5.39	5.82	5.27	5.31
Fe(II)O	% m/m										
MnO	% m/m		0.08	0.084376	0.079405		0.08	0.09	0.09	0.078	0.076
MgO	% m/m		3.55	3.945108	4.173458		3.47	4.05	4.05	3.37	3.2
CaO	% m/m		5.52	5.611463	5.422241		5.52	5.43	5.17	5.35	5.14
Na2O	% m/m		4.36	4.488454	4.131536		4.46	4.86	4.18	2.2	4.19
K2O	% m/m		2.3	2.337737	2.349112		2.37	2.29	2.4	2.36	2.27
P2O5	% m/m		0.27	0.263936	0.256464		0.25	0.23	0.23	0.2295	0.25
H2O+	% m/m										
CO2	% m/m										
LOI	% m/m		1.46	1.46	1.36		1.37		1.92		
Ag	mg kg^{-1}	0.054	0.06								
As	mg kg^{-1}		2.94	2.49525	1.776667		4			1.5	
B	mg kg^{-1}	6.905									
Ba	mg kg^{-1}	656.301	684	622.5142	685.6667	665.49	655	751		693.5	650
Be	mg kg^{-1}	1.948	1.64		1.903333			12			
Bi	mg kg^{-1}	0.1078	0.088		0.112333						
Cd	mg kg^{-1}	0.0742	0.049		0.046833		3			2	
Ce	mg kg^{-1}	53.753	54	53.0848	51.9	53.33	52	45.9		50.7	45.3
Cl	mg kg^{-1}				79						
Co	mg kg^{-1}	20.474	19	18.504	19.26667	19.04	20	19			15.5
Cr	mg kg^{-1}	112.01	94	94.03225	93	91.99	83	114		83.9	79.2
Cs	mg kg^{-1}	0.844	1.02		1.024333	1.018		1.14		15.7	0.89
Cu	mg kg^{-1}	41.803	43.1	42.8284	42.16667	39.67	38	36		41.8	29.2
Dy	mg kg^{-1}	2.439	2.46		2.28	2.544		3			2.18
Er	mg kg^{-1}	1.166	1.16		1.063333	1.151		1.5			1.02
Eu	mg kg^{-1}	1.368	1.41		1.413333	1.345		1.9			1.2
F	mg kg^{-1}				447						
Ga	mg kg^{-1}	16.394	21.1	21.3824	22.1	21.26	20	21		19.4	
Gd	mg kg^{-1}	4.075	3.85		3.777156	4.03		4			3.36
Ge	mg kg^{-1}	0.982									
Hf	mg kg^{-1}	3.503	3.57			3.48	2	2.88			
Hg	mg kg^{-1}										
Ho	mg kg^{-1}	0.424	0.439		0.402667	0.584		0.6			0.38
I	mg kg^{-1}										
In	mg kg^{-1}	0.0452									
La	mg kg^{-1}	24.789	25.4	30.6824	23.96667	24.4	47	27.9		25.6	21.7
Li	mg kg^{-1}	13.28	13.6		13.36667						12.1
Lu	mg kg^{-1}	0.1426	0.151		0.135333	0.15		0.2			0.12
Mo	mg kg^{-1}	0.46		0.5476	0.665						
Nb	mg kg^{-1}	3.951	3.02	4.29725		3.38	2	13		2.4	
Nd	mg kg^{-1}	26.17	27		26.16667	26.65	24	22		19.3	22.9
Ni	mg kg^{-1}	235.011	63	61.20825	63.43333	64.64	56	54		59.7	49.2
Os	mg kg^{-1}										
Pb	mg kg^{-1}	19.933	18.4	16.7852	19.03333	17.9	27	36		18	17.1
Pd	mg kg^{-1}		6.65								
Pr	mg kg^{-1}	6.376			6.28	6.71		5			5.7
Rb	mg kg^{-1}		48.7	47.7931	46.13333	48.08	53	55		47	42.9
Re	mg kg^{-1}	50.174									
Rh	mg kg^{-1}										
S	mg kg^{-1}			40	105						
Sb	mg kg^{-1}		0.23		0.257333		1				
Sc	mg kg^{-1}	17.337	12.3	12.996	11	11.79	13	10.12			10.7
Se	mg kg^{-1}										
Sm	mg kg^{-1}	5.114	5.13		4.863333	4.97	2	5.35		4.7	4.49
Sn	mg kg^{-1}	1.325	0.947		0.934333		7			2.6	
Sr	mg kg^{-1}	1144.23	1100	1130.265	1040	1180	1147	1117		1021	1115.4
Ta	mg kg^{-1}	0.2428	0.284			0.226	2	0.81			
Tb	mg kg^{-1}	0.5094	0.479		0.508	0.511		0.65			0.39
Te	mg kg^{-1}						1				
Th	mg kg^{-1}	6.2582			5.636667	6.24	7	4		10.2	5.78
Tl	mg kg^{-1}	0.227	0.202		0.204333						
Tm	mg kg^{-1}	0.1638	0.158		0.141	0.155		0.2			0.13
U	mg kg^{-1}	1.9136	1.91		1.676667	1.763	5	2.2		2.4	1.66
V	mg kg^{-1}	128.899	122	120.4863	118	117.32	120	103		122.4	113.4
W	mg kg^{-1}	1.591	1.64				14				
Y	mg kg^{-2}	13.214	11.5	11.93895		12.32	12	17		10.9	9.46
Yb	mg kg^{-1}	0.97	1		0.929333	0.938		1.08			0.89
Zn	mg kg^{-1}	75.544	70	73.9378	74.79333	51.3	68	79		68.3	68.2
Zr	mg kg^{-1}	153.12	150	158.1962	220	134.78	150	193		139.5	120.9

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		1	2	2	1	1	2	2	2	2	1
SiO2	% m/m	56.57	58.9	60.003	59.731	59.03	59.68	60.09	58.65	58.831	59.37
TiO2	% m/m	0.57	0.709	0.745	0.721	*0.71*		0.733	0.69	0.699	0.67
Al2O3	% m/m	14.07	16.7		16.974	*16.6*		16.97	16.13	16.626	16.49
Fe2O3 T	% m/m	4.93	5.45	5.609	5.516	*5.71*		5.453	5.56	5.518	5.23
Fe(II)O	% m/m					*1.89*					1.67
MnO	% m/m	0.060	0.077		0.0832	*0.08*		0.081	0.09	0.079	0.089
MgO	% m/m	3.02	3.56	3.783	3.576	*3.56*		3.535	3.41	3.607	3.49
CaO	% m/m	4.85	5.45	5.65	5.668	*5.22*		5.65	5.91	5.631	5.96
Na2O	% m/m		4.44	4.609	4.422	*4.37*		4.615	4.41	4.55	4.32
K2O	% m/m	2.3	2.42	2.395	2.458	*2.39*		2.44	2.37	2.425	2.32
P2O5	% m/m	0.3	0.26		0.272	*0.28*		0.263		0.276	0.244
H2O+	% m/m										1.49
CO2	% m/m							0.106			0.07
LOI	% m/m		1.42	1.41	1.362	*1.54*		1.447		1.51	1.35
Ag	mg kg^{-1}										
As	mg kg^{-1}					9.39				2.3	
B	mg kg^{-1}						200				
Ba	mg kg^{-1}		680		656.3	785		1356.7	680	708.7	717
Be	mg kg^{-1}		2.1			2.09					
Bi	mg kg^{-1}										
Cd	mg kg^{-1}		0.1			0.11					
Ce	mg kg^{-1}		49		52.4	54.9				47	57.90
Cl	mg kg^{-1}							140			
Co	mg kg^{-1}		20		18.1	16.62					21
Cr	mg kg^{-1}		110		98.5	101		151.3		101	
Cs	mg kg^{-1}										
Cu	mg kg^{-1}	80	42		39.4	32.5		67.7	40	32.7	
Dy	mg kg^{-1}					4.13					2.50
Er	mg kg^{-1}					1.89					1.28
Eu	mg kg^{-1}					1.54					1.63
F	mg kg^{-1}						598	1116.5			780
Ga	mg kg^{-1}		19.3		21.7					21	
Gd	mg kg^{-1}					4.5					4.47
Ge	mg kg^{-1}		1.6								
Hf	mg kg^{-1}										
Hg	mg kg^{-1}										
Ho	mg kg^{-1}					0.73					0.44
I	mg kg^{-1}										
In	mg kg^{-1}										
La	mg kg^{-1}		26		24.2	24.43				30.3	28.26
Li	mg kg^{-1}		13.8								
Lu	mg kg^{-1}					0.27					0.16
Mo	mg kg^{-1}	10				0.65					
Nb	mg kg^{-1}				3.1						4
Nd	mg kg^{-1}		24.7			24.3					29.82
Ni	mg kg^{-1}		71		62.6	69		87.7		64.7	61
Os	mg kg^{-1}										
Pb	mg kg^{-1}		19.1		17.4	9.8		27		23	22
Pd	mg kg^{-1}										
Pr	mg kg^{-1}		6.5			6.8					6.99
Rb	mg kg^{-1}		56		50.5					53	
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}					45		34.8			
Sb	mg kg^{-1}										
Sc	mg kg^{-1}					11.1				13	
Se	mg kg^{-1}										
Sm	mg kg^{-1}		5.26			5.57					5.46
Sn	mg kg^{-1}										
Sr	mg kg^{-1}		1190		1112.6	784				1163	1192
Ta	mg kg^{-1}										
Tb	mg kg^{-1}					0.7					0.56
Te	mg kg^{-1}										
Th	mg kg^{-1}				6.2					6	7.5
Tl	mg kg^{-1}										
Tm	mg kg^{-1}		0.22			0.29					0.17
U	mg kg^{-1}		1.01		1.1					2	
V	mg kg^{-1}		126		126	118		241	120	120.3	117
W	mg kg^{-1}					3.23					
Y	mg kg^{-2}		12.4		11.8					12.3	11.85
Yb	mg kg^{-1}					1.78					1.07
Zn	mg kg^{-1}	36	64		70.2	69.5		98.7	80	71.7	77
Zr	mg kg^{-1}		170		141.3			38.3	150	150	134

Commas replaced for majors

Table 1

Lab identifier		B36	B37	B38	B39	B40	B41	B41	B42	B43	B44
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		2	1	2	2	2	1	2	1	2	2
SiO2	% m/m		58.92	59.142	58.892	58.31	59.29		59.23841	59.29605	59.56
TiO2	% m/m		0.718	0.71	0.75	0.701	0.71		0.711154	0.7125	0.718
Al2O3	% m/m		16.7	16.84	16.374	16.73	16.6		16.74388	16.6894	16.68
Fe2O3 T	% m/m		5.37	5.425	5.342	5.36	5.36		5.787728	5.40323	5.36
Fe(II)O	% m/m		2.06		1.95						
MnO	% m/m		0.081	0.086	0.072	0.082	0.082		0.082032	0.0815	0.078
MgO	% m/m		3.49	3.506	3.504	3.47	3.43		3.497485	3.595	3.64
CaO	% m/m		5.56	5.613	5.601	5.51	5.61		5.573858	5.584095	5.56
Na2O	% m/m		4.57	4.53	4.321		4.33		4.489676	4.475	4.49
K2O	% m/m		2.43	2.447	2.251	2.4	2.37		2.414362	2.39463	2.48
P2O5	% m/m		0.26	0.259	0.249	0.25	0.257		0.268477	0.25774	0.26
H2O+	% m/m		1.83						0.26		
CO2	% m/m		0.11								
LOI	% m/m		1.38	1.453	1.363	1.347	1.35		1.44	1.4	
Ag	mg kg^{-1}										
As	mg kg^{-1}			2.19							
B	mg kg^{-1}										
Ba	mg kg^{-1}		660	699.8	710	644	664		673.7589	390	
Be	mg kg^{-1}	2.1		1.72							
Bi	mg kg^{-1}										
Cd	mg kg^{-1}										
Ce	mg kg^{-1}		53.5	55.09	41.38	54		68	54.81184		
Cl	mg kg^{-1}				76						
Co	mg kg^{-1}		17.6	19.9	20	21.7				19	
Cr	mg kg^{-1}	121	91.1	93.7	91	81	100		95.98978	72	
Cs	mg kg^{-1}		1.07	1.149	0.72				1.079796		
Cu	mg kg^{-1}	47	41.2	41.4	40.7	39		40	41.67847	40	
Dy	mg kg^{-1}		2.36	2.475	1.93				2.693348		
Er	mg kg^{-1}		1.12	1.188	0.94				1.225271		
Eu	mg kg^{-1}		1.38	1.403	1.09				1.544705		
F	mg kg^{-1}				600						
Ga	mg kg^{-1}		22.6	20.6	17.54	19.9		21	22.28157		
Gd	mg kg^{-1}		3.64	3.886	2.71				4.060688		
Ge	mg kg^{-1}				0.84						
Hf	mg kg^{-1}		3.2	3.972	3.94				3.752161		
Hg	mg kg^{-1}										
Ho	mg kg^{-1}		0.43	0.421	0.37				0.484861		
I	mg kg^{-1}										
In	mg kg^{-1}										
La	mg kg^{-1}		22.3	26.48	21	28			26.31079		
Li	mg kg^{-1}			12.24	391						
Lu	mg kg^{-1}		0.14	0.139	0.12				0.152516		
Mo	mg kg^{-1}			0.458	0.49	1.4					
Nb	mg kg^{-1}		3.61	2.4	3.25	2.5			3.125658		
Nd	mg kg^{-1}		25	28.09	21.07	25			27.37855		
Ni	mg kg^{-1}		63	62.1	77	56	70		64.55686	81	
Os	mg kg^{-1}										
Pb	mg kg^{-1}		17.1	19.4	20				18.69585	22	
Pd	mg kg^{-1}										
Pr	mg kg^{-1}		6.14	6.85	4.98				6.863755		
Rb	mg kg^{-1}	41	47.4	49.7	32.34	52.2	43		49.31242		
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}										
Sb	mg kg^{-1}			0.256							
Sc	mg kg^{-1}		7.64	12.5	10.08	11.4			12.78934		
Se	mg kg^{-1}										
Sm	mg kg^{-1}		4.92	5.4	4.42				5.467881		
Sn	mg kg^{-1}			0.8	1.35						
Sr	mg kg^{-1}		1117	1139.1	1100	1036	1121		1187.562	1080	
Ta	mg kg^{-1}			0.171	4.18				0.339368		
Tb	mg kg^{-1}		0.47	0.47	0.35				0.521062		
Te	mg kg^{-1}										
Th	mg kg^{-1}		5.9	5.76	3.69	4.9			6.676592	7	
Tl	mg kg^{-1}				0.33						
Tm	mg kg^{-1}		0.15	0.154	0.13				0.164701		
U	mg kg^{-1}		1.69	1.859	2.94	6.6			1.934362		
V	mg kg^{-1}		116	117.3	110	105	124		125.9306		
W	mg kg^{-1}			1.4							
Y	mg kg^{-2}		12	14.3	9.63	13.1			12.33664		
Yb	mg kg^{-1}		0.95	1.007	0.73				0.992727		
Zn	mg kg^{-1}		70.5	71.9	72.7	65.8	72		73.60875	70	
Zr	mg kg^{-1}		143	152.4	180	146	178		145.1987		

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B45	B46	B47	B48	B48	B49	B50	B51	B52	B53
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		1	1	2	1	2	2	2	2	1	2
SiO2	% m/m			59.27	59.283		0.138	59.13	59.43	59.08	58.4
TiO2	% m/m		0.701	0.73	0.711		0.723	0.718	0.72	0.72	0.71
Al2O3	% m/m		15.68	16.96	16.817		16.03	17.12	16.73	16.83	16.2
Fe2O3 T	% m/m		5.42	5.51	5.348		5.33	5.439	5.4	5.44	5.22
Fe(II)O	% m/m			1.82				1.72		2.09	1.8
MnO	% m/m		0.074	0.083	0.083		0.08	0.0819	0.079	0.08	0.08
MgO	% m/m		3.12	3.58	3.625		3.575	3.548	3.42	3.6	3.51
CaO	% m/m		5.13	5.62	5.593		5.649	5.616	5.55	5.64	5.54
Na2O	% m/m		4.47	4.5	4.504		4.314	4.121	4.18	4.44	4.6
K2O	% m/m		2.48	2.43	2.417		2.306	2.517	2.39	2.42	2.46
P2O5	% m/m			0.27	0.262		0.245	0.2544	0.268	0.26	0.27
H2O+	% m/m										1.4
CO2	% m/m										
LOI	% m/m			1.38	1.38		1.46	1.22	1.47	1.9	1.6
Ag	mg kg^{-1}						0.5				
As	mg kg^{-1}		2.3				2	1.553			2.5
B	mg kg^{-1}										
Ba	mg kg^{-1}	673	650	680.3	680.9		687	676	689	656	670
Be	mg kg^{-1}				2.25		1.8	1.734			2
Bi	mg kg^{-1}										
Cd	mg kg^{-1}										
Ce	mg kg^{-1}	52.1	53.4	45.4	51.7		54	53.6	42		52.4
Cl	mg kg^{-1}										110
Co	mg kg^{-1}	18.8	19.1	29.1	18.1		25.3	19.38	20	21	19.2
Cr	mg kg^{-1}	96.7	102.8	95.8	91.9		101.1	83.84	90	103	90
Cs	mg kg^{-1}	1.07	1.08		1.05		1	1.013			1
Cu	mg kg^{-1}	41.3		39.7	40.6		27.6	37.17	39	63	42
Dy	mg kg^{-1}	2.49	2.1		2.28			2.576			2.49
Er	mg kg^{-1}	1.14			1.09			1.205			1.17
Eu	mg kg^{-1}	1.48	1.6		1.35			1.396			1.32
F	mg kg^{-1}										570
Ga	mg kg^{-1}	21.9	21	20	21.4		32	22.39	20	21	21
Gd	mg kg^{-1}	4.16			3.75			4.097			3.68
Ge	mg kg^{-1}							0.871			
Hf	mg kg^{-1}	3.57	3.99		3.27			3.809		5	4
Hg	mg kg^{-1}										
Ho	mg kg^{-1}	0.42			0.423			0.453			0.44
I	mg kg^{-1}										
In	mg kg^{-1}										
La	mg kg^{-1}	24.8	25.9	27.2	25.1		24	26.33			25.7
Li	mg kg^{-1}				13.8		15				
Lu	mg kg^{-1}	0.13	0.139		0.133			0.152			0.16
Mo	mg kg^{-1}						0.9	0.653			0.74
Nb	mg kg^{-1}	6.58		9.5	5.6			3.39		5	3
Nd	mg kg^{-1}	26.2	26	36.6	25.7			27.31			26.7
Ni	mg kg^{-1}	65	110	58.4	60.3		54.5	43.59	60	72	65
Os	mg kg^{-1}										
Pb	mg kg^{-1}			20.3	18.4		16	16.7	19	18	17.7
Pd	mg kg^{-1}										
Pr	mg kg^{-1}	6.5			6.51			6.586			6.71
Rb	mg kg^{-1}	45.4	49	47.8	51.6		49	49.62	48	49	53.4
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}						560				0.03
Sb	mg kg^{-1}		0.31		0.228			0.991			0.3
Sc	mg kg^{-1}		12.24		11.6		12	11.75	12	14	12.6
Se	mg kg^{-1}										
Sm	mg kg^{-1}	4.9	5.18		4.96			4.897			4.9
Sn	mg kg^{-1}							1.04			
Sr	mg kg^{-1}	1124	1070	1140.8	1114.5		1210	1150	1078	1183	1130
Ta	mg kg^{-1}	0.43	0.23		0.249			0.227			
Tb	mg kg^{-1}	0.46	0.45		0.463			0.542			0.5
Te	mg kg^{-1}										
Th	mg kg^{-1}	6.21	6.36	6	6.13		6	0.563		6	6.3
Tl	mg kg^{-1}										0.21
Tm	mg kg^{-1}	0.15						0.156			0.15
U	mg kg^{-1}	1.86	1.8		1.76			1.86			1.87
V	mg kg^{-1}	118.1	124	196.7		121.3	141.2	123.2	119	130	124
W	mg kg^{-1}		1.4				2	1.492			
Y	mg kg^{-2}	10.9			14		11	12.21	13	12	10.9
Yb	mg kg^{-1}	0.91	0.89		0.927			1.008			1
Zn	mg kg^{-1}		70	72.2	67.4		68.6	71.61	70	68	70
Zr	mg kg^{-1}	127.5	130	147.4	168.6		145	157	154	152	150

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B54	B55	B56	B57	B58	B59	B60	B61	B62	B63
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		2	1	1	2	2	1	1	2	1	1
SiO2	% m/m	59.18	58.62	58.94	59.33	59.456	57.77	59.4	50.8	59.95	58.73
TiO2	% m/m	0.728	0.72	0.709		0.731	0.691	0.7	0.614	0.734	0.71
Al2O3	% m/m	16.69	16.76	16.532	16.68	16.789	16.32	16.75	25.5	16.87	16.77
Fe2O3 T	% m/m	5.46	5.48	5.332	5.3	5.604	5.184	5.45	5.42	5.506	5.35
Fe(II)O	% m/m			1.632							
MnO	% m/m	0.08	0.081	0.08	0.084	0.082	0.0758	0.09	0.091	0.086	0.08
MgO	% m/m	3.55	3.72	3.529	3.57	3.601	3.504	3.62		3.507	3.42
CaO	% m/m	5.59	5.84	5.518	5.68	5.646	5.416	5.51	5.18	5.529	5.473
Na2O	% m/m	4.45	4.56	4.436	4.48	4.532	4.421	4.49		4.55	4.633
K2O	% m/m	2.42	2.43	2.399	2.42	2.445	2.304	2.41	2.41	2.326	2.377
P2O5	% m/m	0.269	0.261	0.267	0.27	0.263	0.2522	0.27		0.257	0.267
H2O+	% m/m						1.171				
CO2	% m/m	0.132									0.07
LOI	% m/m	1.26	1.38	1.64	1.19	1.413				1.454	1.123
Ag	mg kg^{-1}										1.39
As	mg kg^{-1}		1.57	3.6						3	
B	mg kg^{-1}										
Ba	mg kg^{-1}	674	473.4	688	634		653		659	687.4	644
Be	mg kg^{-1}	2.05		2.35	1.47		2.35			2.02	1.8
Bi	mg kg^{-1}		0.44	0.11							0.255
Cd	mg kg^{-1}			0.17					3.7	0.03	0.175
Ce	mg kg^{-1}			52.56	52.8		59.99		46.4	60	55.7
Cl	mg kg^{-1}										
Co	mg kg^{-1}	19	2.06				21.61			19.9	17.8
Cr	mg kg^{-1}	97	4.11	91.5					130	73.8	92.5
Cs	mg kg^{-1}		8.93	0.99			1.278				0.915
Cu	mg kg^{-1}	41	0.68	42			47.06		80	42.2	47.95
Dy	mg kg^{-1}			2.209	2.45		2.701				2.49
Er	mg kg^{-1}			1.053	1.13		1.296				1.225
Eu	mg kg^{-1}			1.251	1.36		1.522				1.47
F	mg kg^{-1}			593							
Ga	mg kg^{-1}	21	2.73	21.85					20.8		20.2
Gd	mg kg^{-1}			3.663	4.13		4.282				3.9
Ge	mg kg^{-1}		0.47	1.055							0.7
Hf	mg kg^{-1}		0.3	3.82			4.058				2.83
Hg	mg kg^{-1}									0.03	
Ho	mg kg^{-1}			0.3895	0.43		0.4902				0.285
I	mg kg^{-1}										
In	mg kg^{-1}										0.03
La	mg kg^{-1}	24	5.97	24.845	24.5		28.2		19	32	26.3
Li	mg kg^{-1}						19.2				13
Lu	mg kg^{-1}			0.0845			0.1647				0.115
Mo	mg kg^{-1}		0.01	0.95			0.7705				0.83
Nb	mg kg^{-1}	3.3	0.57	3.35			3.807		1.8		4.905
Nd	mg kg^{-1}			24.79	26.2		28.97		25.5		24.3
Ni	mg kg^{-1}	59	0.67	70					60.9	64.7	52
Os	mg kg^{-1}										
Pb	mg kg^{-1}	18.5	0.92	18.58			21.66		24	19.8	16.25
Pd	mg kg^{-1}										
Pr	mg kg^{-1}			6.54	6.5		7.099		5.9		6.13
Rb	mg kg^{-1}	50	106.8	51.05			58.73		55	49.3	46.4
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}			94						120	
Sb	mg kg^{-1}						0.2461				1.23
Sc	mg kg^{-1}	11.2	0.84	12			14.48				10.3
Se	mg kg^{-1}									0	
Sm	mg kg^{-1}			4.8915	4.88		5.583				5.05
Sn	mg kg^{-1}			0.4			1.203				1.35
Sr	mg kg^{-1}	1125	13	1142.8	1050		1095.5		1220		1025
Ta	mg kg^{-1}			0.495			0.302				2.575
Tb	mg kg^{-1}			0.4365			0.5188				0.505
Te	mg kg^{-1}								1.1		
Th	mg kg^{-1}		0.17	5.87	6.12		7.281		5.5		6.1
Tl	mg kg^{-1}		0.18				0.2454			0.08	0.17
Tm	mg kg^{-1}						0.1724				
U	mg kg^{-1}			1.835	2.12		2.161			0	1.95
V	mg kg^{-1}	117	1.17	121			156.7		207	119	113.5
W	mg kg^{-1}										3.1
Y	mg kg^{-2}	11	0.02	11.85	11.2		13.06		10.4		10.5
Yb	mg kg^{-1}		0.49	0.889	1		1.119				0.9
Zn	mg kg^{-1}	72	3.25	76			85.64		75.9	73.8	68.5
Zr	mg kg^{-1}	143	2.83	145.7			154.2		165		127

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B64	B65	B66	B67	B68	B69	B70	B71	B72	B72
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		1	2	1	2	2	2	1	2	1	2
SiO2	% m/m	59.2	60.3	58.87	59.304	58.895	59.78	59	59.22	58.06	
TiO2	% m/m	0.716	0.75	0.718	0.706	0.75	0.71	0.71	0.7	0.7	
Al2O3	% m/m	16.66	16.5	16.73	16.67	16.712	16.55	16.94	17.03	16.44	
Fe2O3 T	% m/m	5.34	5.3	5.44	5.351	5.49	5.49	5.55	5.4	5.5	
Fe(II)O	% m/m	1.86					1.91				
MnO	% m/m	0.081	0.069	0.08	0.095	0.065	0.08	0.08	0.0739	0.08	
MgO	% m/m	3.57	3.53	3.56	3.57	3.546	3.54	3.607	3.48	3.51	
CaO	% m/m	5.57	5.76	5.6	5.579	5.794	5.76	5.3	5.22	5.45	
Na2O	% m/m	4.51	4.61	4.4	4.433	4.599	4.62	4.63	3.56	4.38	
K2O	% m/m	2.41	2.43	2.4	2.428	2.47	2.44	2.4	2.37	2.39	
P2O5	% m/m	0.265	0.289	0.264	0.258	0.29	0.28	0.26	0.28	0.26	
H2O+	% m/m			0.21			1.26				
CO2	% m/m		0.23				0.11				
LOI	% m/m	1.38	1.38	1.243	1.585	1.35	1.34	1.43	1.5		1.7816
Ag	mg kg^{-1}						0.06			0	
As	mg kg^{-1}						2.2			0.31	
B	mg kg^{-1}										
Ba	mg kg^{-1}	663.8	680	681		765	699.8	670	676	610.89	
Be	mg kg^{-1}	2					1.9	2.13			
Bi	mg kg^{-1}	0.14								0.12	
Cd	mg kg^{-1}	0.05		0.17			0.076	0.05		0	
Ce	mg kg^{-1}	57.23	53.8	55.2		56.9	57.25	55.66	47	50.66	
Cl	mg kg^{-1}		110							48.2	
Co	mg kg^{-1}	19.02	20	18.5	19.40546	16.3	20.12	25	23	16.37	
Cr	mg kg^{-1}	99.41	90	90.8		115.5	104	108	96	100.38	
Cs	mg kg^{-1}	1.11				1.1	1.094	1.16		0	
Cu	mg kg^{-1}	42.42	40	36.7	36.2588	38.4	43.5	54	51	48.91	
Dy	mg kg^{-1}	2.41	2.67	2.53		2.5	2.531	2.52			
Er	mg kg^{-1}	1.13	1.17	1.17		1.1	1.19	1.17			
Eu	mg kg^{-1}	1.47	1.47	1.51		1.5	1.475	1.54			
F	mg kg^{-1}										
Ga	mg kg^{-1}	21.95	20	19.5		21.1	20.68		29	21.08	
Gd	mg kg^{-1}	3.87	4.19	4.09		4.05	3.941	4.44			
Ge	mg kg^{-1}									0	
Hf	mg kg^{-1}	3.78	3.89	3.53		3.95	3.6	3.67		2.8	
Hg	mg kg^{-1}										
Ho	mg kg^{-1}	0.43	0.42	0.445		0.49	0.46	0.44			
I	mg kg^{-1}									0	
In	mg kg^{-1}						0.038				
La	mg kg^{-1}	25.65	25.1	26.5		26.59	27.39	26.66	45	21.84	
Li	mg kg^{-1}	13.55					13.4	10.6			
Lu	mg kg^{-1}	0.15	0.14	0.148		0.15	0.147	0.15			
Mo	mg kg^{-1}	0.65		0.95		1.66	0.61			0.83	
Nb	mg kg^{-1}	3.36	2.69	3.29		3.86	3.282	3	10	2.76	
Nd	mg kg^{-1}	27.02	27.4	27.8		28.1	28.49	28.08		24.19	
Ni	mg kg^{-1}	60.75	80	56.2		53.3	65.9	67	77	58.53	
Os	mg kg^{-1}										
Pb	mg kg^{-1}	18.69	30	18.6			17.9	17	19	17.12	
Pd	mg kg^{-1}										
Pr	mg kg^{-1}	6.23	6.78	7.26		6.9	6.964	7.19			
Rb	mg kg^{-1}	50	49.7	49.4		50.4	53.46	54	51	50.19	
Re	mg kg^{-1}										
Rh	mg kg^{-1}										
S	mg kg^{-1}										
Sb	mg kg^{-1}						0.24	0.22		0	
Sc	mg kg^{-1}	12.26	9.85	11.4		11.2	13.5	13.87		10.64	
Se	mg kg^{-1}									0.31	
Sm	mg kg^{-1}	5.37	5.07	5.28		5.3	5.45	5.64		5.57	
Sn	mg kg^{-1}	0.92					1.11	0.9		0	
Sr	mg kg^{-1}	1070.8	109	1111	1050	1164.2	1155.9	1075	1128	1100.31	
Ta	mg kg^{-1}	0.24		0.244		0.26	0.226	0.29		0	
Tb	mg kg^{-1}	0.49	0.53	0.503			0.491	0.57			
Te	mg kg^{-1}									0	
Th	mg kg^{-1}	6.36	6.35	6.5		6.88	6.402	7	17	12	
Tl	mg kg^{-1}						0.191			0	
Tm	mg kg^{-1}	0.16	0.15	0.16			0.162	0.16			
U	mg kg^{-1}	1.9	1.8	1.9		1.97	1.92	2.01	18	5.34	
V	mg kg^{-1}	124.77	127	112.4		127.5	131	127	117	104.14	
W	mg kg^{-1}	1.52					1.4			2.57	
Y	mg kg^{-2}	11.45	11.2	12.5		13.5	12.26	18	18	12.48	
Yb	mg kg^{-1}	1.01	1.02	1.01		1.03	0.992	1.02		0.88	
Zn	mg kg^{-1}	68.61	70	66		69.2	73	83	74	85.67	
Zr	mg kg^{-1}	154.96	154	126		143.25	144	230	254	141.75	

Table 1 GeoPT27 Contributed data for Andesite, MGL-AND (June 2010)

Lab identifier		B73	B74	B75	B76	B77	B78	B79	B80
Sample		MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND	MGL-AND
Data quality		1	2	2	2	1	2	2	2
SiO2	% m/m		59.71	59.21	58.97	59.59	59.66	58.85	59.47
TiO2	% m/m		0.72	0.72	0.72	0.684	0.7	0.748	0.72
Al2O3	% m/m		16.43	16.84	16.79	16.72	16.47	16.268	16.73
Fe2O3 T	% m/m		6.01	5.45	5.45	5.353	5.29	5.692	5.39
Fe(II)O	% m/m			2.3					
MnO	% m/m		0.05	0.08	0.08	0.08	0.09	0.076	0.08
MgO	% m/m		7.85	3.51	3.51	3.501	3.59	4.037	3.46
CaO	% m/m		5.22	5.45	5.58	5.504	5.58	5.63	5.6
Na2O	% m/m		1.71	4.49	4.52	4.482	4.57	4.388	4.42
K2O	% m/m		2.37	2.36	2.42	2.395	2.29	2.273	2.43
P2O5	% m/m		0.1	0.25	0.273	0.257	0.26	0.237	0.26
H2O+	% m/m							1.273	
CO2	% m/m								
LOI	% m/m			1.51	1.34	1.29	1.2	1.612	1.21
Ag	mg kg^{-1}		0.67				0.06		
As	mg kg^{-1}		4.2	2.4					
B	mg kg^{-1}								
Ba	mg kg^{-1}	653.5267		677	659		640	720	717
Be	mg kg^{-1}				1.8		1.98		
Bi	mg kg^{-1}	0.117			0.1		0.1		
Cd	mg kg^{-1}						0.06		
Ce	mg kg^{-1}	53.291		50	54		52.97	53	
Cl	mg kg^{-1}		112.27						
Co	mg kg^{-1}		19.8	20	19.6		22.53	18.5	22
Cr	mg kg^{-1}		103.48	91	82		89	86	80
Cs	mg kg^{-1}	1.064333			1.1		0.99	0.93	
Cu	mg kg^{-1}		43.9	41	39		42.7	44	33
Dy	mg kg^{-1}	2.386667			2.3		2.49	2.35	
Er	mg kg^{-1}	1.081			1.16		1.23	1.18	
Eu	mg kg^{-1}	1.370667			1.4		1.32	1.41	
F	mg kg^{-1}			659					
Ga	mg kg^{-1}		17.19	20	22		20.8	19.8	
Gd	mg kg^{-1}	3.729667			3.8		4.34	4.05	
Ge	mg kg^{-1}				0.6		0.09		
Hf	mg kg^{-1}	3.916			3.8		4.1	3.79	
Hg	mg kg^{-1}								
Ho	mg kg^{-1}	0.414			0.42		0.45	0.44	
I	mg kg^{-1}								
In	mg kg^{-1}				0.04		0.04		
La	mg kg^{-1}	25.14067		23	27		25.23	26	
Li	mg kg^{-1}	11.91767		14.9	12.2		15.63		
Lu	mg kg^{-1}	0.139667			0.11		0.15	0.148	
Mo	mg kg^{-1}	0.633667	7.59		0.5		0.71	1.21	
Nb	mg kg^{-1}	3.479667	10.14		3.4		3.17	3.59	
Nd	mg kg^{-1}	26.57567		27	26		27.07	27	
Ni	mg kg^{-1}		52.83	61	66.5		69.9	62	53
Os	mg kg^{-1}								
Pb	mg kg^{-1}	18.43233	1.1	15	18		21.9	20.1	
Pd	mg kg^{-1}								
Pr	mg kg^{-1}	6.549			6.6		6.69	6.71	
Rb	mg kg^{-1}	46.63933	63.12	49	50		46.77	51	
Re	mg kg^{-1}								
Rh	mg kg^{-1}								
S	mg kg^{-1}		1120		60			87	
Sb	mg kg^{-1}				0.21		0.39		
Sc	mg kg^{-1}			12	11		11.27	13.1	11
Se	mg kg^{-1}								
Sm	mg kg^{-1}	4.979			5.2		5.09	5.11	
Sn	mg kg^{-1}		1.58		1			2.95	
Sr	mg kg^{-1}	1084.231	1097	1101	1110	1183.8	1068.33	1150	941
Ta	mg kg^{-1}	0.259667	0.82		0.3		0.3	0.295	
Tb	mg kg^{-1}	0.456333			0.49		0.5	0.505	
Te	mg kg^{-1}								
Th	mg kg^{-1}	6.460333		6	6.3		6.71	6.41	
Tl	mg kg^{-1}	0.225			0.2				
Tm	mg kg^{-1}	0.158333			0.14		0.15	0.161	
U	mg kg^{-1}	1.819			1.9		1.91	1.82	
V	mg kg^{-1}		106.13	115	121		137.67	122	114
W	mg kg^{-1}				1.5				
Y	mg kg^{-2}	10.53133		12	12		11.07	11.5	
Yb	mg kg^{-1}	1.004667			0.9		1.01	1.01	
Zn	mg kg^{-1}		3.9	68	72		82.33	74	60
Zr	mg kg^{-1}	130.5473	21.36	156	146		149.67	158	133

Table 2 GeoPT27 Assigned values and statistical summary for contributed data (Andesite MGL-AND)

	Assigned value	Uncertainty of assigned value	Horwitz Target value	Uncertainty/Target	Number of reported results	Robust mean of results	Median of results	Status	Type of assigned value
	X_a	**sdm**	**H_a**	**sdm/H_a**	**n**				
	% m/m	**% m/m**	**% m/m**			**% m/m**	**% m/m**		
SiO2	59.23	0.057	0.641	0.089	74	59.19	59.23	Assigned	Median
TiO2	0.714	0.002	0.015	0.148	73	0.714	0.716	Assigned	Robust Mean
Al2O3	16.69	0.026	0.219	0.119	73	16.65	16.69	Assigned	Median
Fe2O3 T	5.42	0.013	0.084	0.156	74	5.42	5.42	Assigned	Robust Mean
MnO	0.080	0.000	0.002	0.148	73	0.081	0.080	Assigned	Median
MgO	3.55	0.011	0.059	0.186	73	3.55	3.55	Assigned	Robust Mean
CaO	5.58	0.011	0.086	0.128	74	5.56	5.58	Assigned	Median
Na2O	4.48	0.013	0.071	0.185	71	4.46	4.48	Assigned	Median
K2O	2.40	0.005	0.042	0.123	74	2.40	2.40	Assigned	Median
P2O5	0.261	0.001	0.006	0.225	70	0.261	0.260	Assigned	Robust Mean
LOI	1.40	0.011	0.027	0.401	62	1.41	1.40	Provisional	Median
	mg/kg	mg/kg	mg/kg			mg/kg	mg/kg		
As	2.35	0.077	0.165	0.469	26	2.66	2.45	Provisional	Mode
Ba	673	3.715	20.20	0.184	68	673	674	Assigned	Robust Mean
Be	2.00	0.035	0.144	0.245	33	2.00	2.00	Assigned	Robust Mean
Bi	0.106	0.003	0.012	0.259	17	0.135	0.110	Assigned	Mode
Ce	53.0	0.385	2.332	0.165	60	52.4	53.0	Assigned	Median
Co	19.5	0.217	0.997	0.218	59	19.5	19.3	Assigned	Robust Mean
Cr	95.0	1.182	3.827	0.309	64	95.0	94.2	Assigned	Robust Mean
Cs	1.04	0.016	0.083	0.189	40	1.04	1.05	Assigned	Robust Mean
Cu	41.3	0.326	1.887	0.173	67	41.1	41.3	Assigned	Median
Dy	2.46	0.023	0.172	0.132	43	2.42	2.46	Assigned	Median
Er	1.16	0.014	0.091	0.153	42	1.16	1.16	Assigned	Robust Mean
Eu	1.41	0.014	0.107	0.127	43	1.41	1.41	Assigned	Median
Ga	21.0	0.159	1.062	0.149	56	20.9	21.0	Assigned	Median
Gd	3.96	0.047	0.257	0.183	42	3.96	3.95	Assigned	Robust Mean
Ge	0.99	0.031	0.079	0.385	16	0.86	0.95	Provisional	Mode
Hf	3.63	0.062	0.239	0.260	43	3.63	3.67	Assigned	Robust Mean
Ho	0.436	0.007	0.040	0.169	42	0.436	0.430	Assigned	Robust Mean
In	0.040	0.002	0.005	0.420	6	0.040	0.040	Provisional	Robust Mean
La	25.4	0.269	1.249	0.215	60	25.4	25.3	Assigned	Robust Mean
Li	13.5	0.236	0.729	0.324	28	13.5	13.5	Assigned	Robust Mean
Lu	0.143	0.002	0.015	0.140	41	0.143	0.143	Assigned	Robust Mean
Mo	0.65	0.031	0.056	0.566	34	0.70	0.65	Provisional	Median
Nb	3.36	0.083	0.224	0.371	52	3.47	3.36	Assigned	Median
Nd	26.3	0.258	1.285	0.201	52	26.3	26.4	Assigned	Robust Mean
Ni	62.5	0.872	2.682	0.325	64	62.5	62.4	Assigned	Robust Mean
Pb	18.3	0.218	0.946	0.231	60	18.5	18.3	Assigned	Median
Pr	6.54	0.070	0.394	0.178	44	6.54	6.57	Assigned	Robust Mean
Rb	49.6	0.408	2.204	0.185	62	49.6	49.4	Assigned	Robust Mean
Sb	0.237	0.006	0.024	0.256	23	0.30	0.240	Provisional	Mode
Sc	11.9	0.186	0.654	0.284	47	11.9	11.9	Assigned	Robust Mean
Sm	5.08	0.046	0.318	0.145	48	5.08	5.05	Assigned	Robust Mean
Sn	0.96	0.033	0.077	0.423	25	1.15	1.00	Provisional	Mode
Sr	1116	5.640	31.050	0.180	68	1112	1116	Assigned	Median
Ta	0.242	0.005	0.024	0.197	36	0.274	0.249	Provisional	Mode
Tb	0.49	0.005	0.044	0.106	41	0.49	0.49	Assigned	Median
Th	6.19	0.087	0.376	0.232	56	6.19	6.23	Assigned	Robust Mean
Tl	0.208	0.007	0.021	0.337	20	0.208	0.207	Assigned	Robust Mean
Tm	0.155	0.002	0.016	0.124	37	0.155	0.155	Assigned	Robust Mean
U	1.89	0.018	0.137	0.130	51	1.89	1.89	Assigned	Median
V	121	0.880	4.702	0.187	65	121	120	Assigned	Robust Mean
W	1.49	0.038	0.112	0.341	20	1.66	1.51	Provisional	Mode
Y	12.0	0.157	0.660	0.238	57	11.9	12.0	Assigned	Median
Yb	0.98	0.008	0.079	0.101	45	0.97	0.98	Assigned	Median
Zn	70.0	0.438	2.954	0.148	66	70.6	70.0	Assigned	Median
Zr	148	2.086	5.571	0.374	64	148	149	Assigned	Robust Mean

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B01 MGL-AND 1	B01 MGL-AND 2	B02 MGL-AND 1	B03 MGL-AND 2	B04 MGL-AND 2	B05 MGL-AND 1	B06 MGL-AND 2	B07 MGL-AND 1	B08 MGL-AND 1	B09 MGL-AND 1
SiO2	0.36	*	0.33	0.03	-0.06	0.06	0.13	-0.65	0.45	-2.07
TiO2	0.37	*	-2.29	0.09	-0.48	-0.76	0.05	-0.29	0.84	-0.96
Al2O3	0.18	*	-0.37	0.21	-0.05	0.87	0.05	-0.14	0.96	-1.33
Fe2O3 T	1.46	*	0.01	-0.23	0.78	-1.21	0.00	0.36	1.20	-0.47
MnO	-0.85	*	-4.27	0.64	0.00	0.85	0.00	0.43	0.85	0.00
MgO	-1.94	*	-3.03	0.11	0.62	1.41	0.36	0.55	0.38	-5.07
CaO	1.07	*	-2.44	-0.17	-0.46	0.00	0.00	1.39	0.23	0.00
Na2O	-1.32	*	1.47	-0.46	0.39	1.19	-0.25	-0.63	0.77	2.87
K2O	-0.05	*	-2.14	-0.36	0.36	0.24	0.24	-0.48	0.71	3.09
P2O5	-10.96	*	-1.72	0.08	-0.08	1.09	-0.08	2.97	1.25	-1.72
LOI	-0.19	*	-0.57	-28.74	1.04	2.45	-0.09	1.70	3.20	-2.45
As	*	4.10	*	1.07	*	*	*	-0.04	-0.28	*
Ba	*	-0.42	*	0.17	-0.12	-0.50	*	-2.03	0.28	-1.04
Be	*	0.01	*	*	0.50	0.02	*	-0.12	4.68	*
Bi	*	*	*	*	*	-0.53	*	*	22.98	*
Ce	-1.07	*	*	-0.64	-0.38	1.25	*	-0.29	0.02	-2.57
Co	*	-1.25	*	2.76	0.15	0.71	*	-0.70	-0.33	3.52
Cr	*	-1.04	*	0.79	0.40	1.06	*	1.58	0.54	1.06
Cs	*	*	*	*	0.12	1.32	*	0.59	-0.25	-12.58
Cu	*	-0.34	*	-1.93	0.34	0.95	*	0.16	0.92	0.37
Dy	-0.64	*	*	*	0.03	0.41	*	-1.05	0.41	*
Er	0.04	*	*	*	-0.04	0.37	*	-1.51	1.80	*
Eu	0.09	*	*	*	0.00	0.56	*	-0.19	-0.19	*
Ga	*	0.00	*	-0.47	0.05	0.56	*	0.75	-0.38	2.82
Gd	0.55	*	*	*	-0.27	-0.11	*	-1.63	0.86	*
Ge	*	*	*	*	0.19	*	*	0.13	*	*
Hf	*	7.06	*	-0.48	-0.08	0.22	*	0.05	0.30	9.93
Ho	-0.40	*	*	*	0.18	0.36	*	-2.47	2.39	*
In	*	*	*	188.70	*	*	*	*	*	*
La	-1.29	*	*	-0.17	0.07	1.89	*	-0.65	0.20	-1.13
Li	*	-0.33	*	*	0.42	0.99	*	0.16	-0.57	*
Lu	-0.17	*	*	*	-0.09	0.48	*	0.09	0.54	*
Mo	-1.11	*	*	*	*	-1.47	*	-1.47	1.05	-11.72
Nb	*	1.44	*	-4.37	0.41	-0.38	*	-2.35	2.39	7.36
Nd	-0.60	*	*	1.06	0.13	1.81	*	-0.60	1.27	0.57
Ni	*	-1.21	*	-0.09	0.14	0.38	*	-0.10	0.45	-1.30
Pb	*	-1.22	*	-9.15	-0.27	-0.33	*	-0.23	-0.09	0.72
Pr	-0.63	*	*	-3.22	0.08	1.45	*	-0.30	1.81	*
Rb	*	-0.13	*	-3.76	0.50	0.59	*	-0.68	-0.46	-1.63
Sb	-0.31	*	*	*	*	-0.74	*	0.11	-0.10	*
Sc	*	*	*	*	0.49	0.98	*	*	-0.14	3.27
Sm	-0.36	*	*	-3.27	0.17	1.06	*	-0.54	1.16	*
Sn	*	*	*	*	*	0.58	*	-1.63	*	26.57
Sr	*	-0.89	*	0.14	0.14	0.90	*	0.28	0.98	-0.10
Ta	*	*	*	*	-0.05	-2.60	*	0.32	0.24	-10.10
Tb	0.00	*	*	*	-0.23	0.46	*	-0.73	-0.05	*
Th	*	-3.44	*	1.08	0.24	0.59	*	-0.87	0.83	-16.45
Tl	1.05	*	*	*	*	0.57	*	*	0.43	*
Tm	-0.32	*	*	*	0.15	0.90	*	-0.68	0.35	*
U	*	11.72	*	-3.23	-0.02	0.18	*	-0.85	0.05	-6.46
V	*	-0.10	*	-0.64	0.32	1.49	*	-0.21	0.92	-2.34
W	*	*	*	*	*	1.87	*	-1.16	1.58	-13.28
Y	*	0.00	*	-0.76	0.45	-0.91	*	-1.06	2.53	-7.57
Yb	-0.68	*	*	*	-0.03	0.33	*	-0.56	0.00	*
Zn	*	-0.51	*	0.17	-0.32	0.27	*	1.29	-0.06	-6.09
Zr	*	-0.42	*	-1.95	0.12	0.41	*	-2.28	0.41	4.00

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B09 MGL-AND 2	B10 MGL-AND 1	B11 MGL-AND 2	B12 MGL-AND 1	B12 MGL-AND 2	B13 MGL-AND 2	B14 MGL-AND 2	B15 MGL-AND 1	B15 MGL-AND 2	B16 MGL-AND 1
SiO2	*	1.31	0.29	-0.09	*	0.07	1.15	*	0.11	*
TiO2	*	2.77	-0.15	1.64	*	0.52	0.92	*	0.52	5.70
Al2O3	*	-0.41	0.94	-0.76	*	-0.18	0.83	*	0.16	-1.37
Fe2O3 T	*	5.12	-0.12	0.58	*	-14.16	0.66	*	0.12	-6.77
MnO	*	10.26	-0.64	*	-0.43	0.00	0.64	*	0.64	4.27
MgO	*	6.01	0.45	*	0.38	-0.06	0.36	*	-0.41	0.21
CaO	*	0.35	-1.04	-0.35	*	0.17	1.53	*	-0.29	0.23
Na2O	*	-31.85	-0.32	-0.21	*	-0.18	0.54	*	0.39	0.91
K2O	*	-0.48	-0.48	-0.24	*	0.00	0.46	*	0.71	12.60
P2O5	*	-6.42	0.70	*	-0.31	1.49	0.31	*	0.70	-1.72
LOI	*	9.23	1.98	*	3.67	-0.28	-0.66	*	0.47	*
As	23.19	6.18	*	*	*	*	*	*	*	2.57
Ba	*	-3.48	1.91	*	-1.81	-0.30	0.65	0.15	*	6.40
Be	*	-0.86	*	*	0.01	0.43	0.01	-0.88	*	*
Bi	163.44	-2.29	*	*	*	*	*	0.31	*	-0.53
Ce	*	-3.16	*	*	-0.60	0.15	-0.58	0.61	*	-0.64
Co	*	-1.04	*	*	-0.35	-0.25	-0.17	-0.09	*	-1.50
Cr	*	-0.41	*	*	-0.12	-0.86	0.37	-0.17	*	-1.29
Cs	*	-0.68	*	*	*	-0.13	-0.37	0.71	*	-0.01
Cu	*	-1.79	*	*	0.45	-0.37	-0.03	0.27	*	-1.75
Dy	-1.34	-2.50	*	-0.99	*	-0.35	-0.67	-0.23	*	0.35
Er	4.66	-2.48	*	-1.51	*	-0.09	-0.20	-0.18	*	0.15
Eu	-1.91	-2.31	*	-0.65	*	0.09	-0.42	0.37	*	0.00
Ga	*	-0.42	*	*	-0.41	-0.09	0.30	0.09	*	-0.75
Gd	2.02	-3.36	*	-0.54	*	-0.13	-0.87	-0.03	*	1.33
Ge	*	-0.88	*	*	0.92	*	*	0.38	*	0.25
Hf	*	-3.27	*	*	-0.55	-0.33	-0.94	0.22	*	-0.53
Ho	7.14	-1.87	*	-0.14	*	0.31	-0.45	-0.14	*	-0.90
In	*	*	*	*	*	*	*	*	*	*
La	*	-4.39	*	*	-0.61	-0.29	-0.66	0.31	*	-0.64
Li	*	-0.32	*	0.71	*	0.36	*	-1.21	*	-3.97
Lu	*	-1.61	*	0.48	*	-0.41	-0.41	-0.17	*	-0.17
Mo	*	-1.43	*	*	1.16	*	*	-1.11	*	-2.01
Nb	*	-1.23	*	*	0.26	-0.01	-0.79	0.11	*	-1.36
Nd	*	-2.59	*	*	-0.85	0.24	-0.60	0.88	*	0.00
Ni	*	-2.08	*	*	0.10	-0.42	0.56	0.53	*	-1.67
Pb	*	-1.14	*	*	-0.06	0.36	-0.85	-0.12	*	-0.97
Pr	0.59	-2.49	*	*	-0.88	0.08	-0.28	0.46	*	-0.17
Rb	*	-0.52	2.36	-1.18	*	0.12	-0.24	0.46	*	-1.06
Sb	440.45	-2.18	*	*	10.24	*	*	*	*	0.11
Sc	*	-1.76	*	*	*0.11*	0.11	-0.20	0.06	*	*
Sm	-0.13	-2.72	*	-0.42	*	-0.05	-0.52	0.27	*	-0.14
Sn	*	-0.82	*	*	2.89	*	*	0.58	*	-0.98
Sr	*	-3.39	-0.26	*	0.64	0.01	-0.15	0.61	*	-1.04
Ta	*	-1.06	*	*	-0.11	-0.47	*	-0.10	*	-0.10
Tb	5.84	-2.86	*	*	0.00	0.00	-0.57	0.00	*	-0.23
Th	*	-1.78	*	*	-0.46	0.10	-0.73	0.25	*	-0.20
Tl	*	-0.85	*	*	13.34	*	*	-0.38	*	0.34
Tm	*	-1.84	*	*	-0.16	-0.16	-0.46	-0.32	*	-0.32
U	*	0.00	*	*	-0.31	0.01	-0.79	-0.12	*	-0.63
V	*	-0.02	*	*	-0.10	-0.21	0.22	0.86	*	-0.18
W	*	-1.51	*	*	0.04	*	*	-0.89	*	*
Y	*	-4.13	*	*	0.38	0.15	-0.92	0.61	*	-0.30
Yb	6.44	-2.64	*	*	0.04	-0.03	-0.47	-0.05	*	-0.30
Zn	*	-1.23	0.00	*	-1.35	-0.37	0.14	-0.51	*	*
Zr	*	-5.42	5.59	*	1.10	0.12	-1.24	-0.67	*	*

Data anomaly:
not included in analysis

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B17 MGL-AND 2	B18 MGL-AND 2	B19 MGL-AND 2	B20 MGL-AND 2	B21 MGL-AND 1	B22 MGL-AND 1	B23 MGL-AND 1	B24 MGL-AND 1	B25 MGL-AND 1	B26 MGL-AND 2
SiO2	*	-0.06	0.31	0.35	*	-0.72	-1.37	-0.17	-2.85	1.30
TiO2	*	-0.15	-1.74	-0.48	*	0.37	1.04	1.04	-2.67	-1.48
Al2O3	*	0.05	0.50	-1.53	*	-0.05	-2.20	-2.01	-13.91	-1.35
Fe2O3 T	*	0.06	-1.42	0.42	*	-0.71	-0.35	4.77	-1.78	-0.65
MnO	*	0.00	0.85	-0.21	*	0.00	4.27	4.27	-0.85	-0.85
MgO	*	0.02	3.43	5.31	*	-1.32	8.57	8.57	-3.03	-2.96
CaO	*	-0.35	0.17	-0.93	*	-0.70	-1.74	-4.76	-2.67	-2.55
Na2O	*	-0.81	0.11	-2.42	*	-0.21	5.39	-4.13	-31.85	-2.00
K2O	*	-1.19	-0.71	-0.59	*	-0.71	-2.61	0.00	-0.95	-1.55
P2O5	*	0.70	0.23	-0.08	*	-1.72	-4.85	-4.85	-4.93	-0.86
LOI	*	1.22	1.22	-0.66	*	-0.94	*	19.79	*	*
As	*	1.80	0.47	-1.71	*	10.02	*	*	-5.13	*
Ba	-0.41	0.27	-1.24	0.32	-0.37	-0.89	3.86	*	1.02	-0.57
Be	-0.17	-1.24	*	-0.34	*	*	69.51	*	*	*
Bi	0.06	-0.77	*	0.16	*	*	*	*	*	*
Ce	0.16	0.22	0.02	-0.23	0.15	-0.42	-3.04	*	-0.98	-1.65
Co	0.49	-0.25	-0.50	-0.10	-0.46	0.51	-0.50	*	*	-2.00
Cr	2.23	-0.12	-0.12	-0.26	-0.77	-3.12	4.98	*	-2.89	-2.06
Cs	-1.19	-0.13	*	-0.13	-0.28	*	1.20	*	177.12	-0.91
Cu	0.13	0.48	0.40	0.24	-0.86	-1.75	-2.81	*	0.27	-3.21
Dy	-0.06	0.00	*	-0.52	0.49	*	3.14	*	*	-0.81
Er	0.05	0.02	*	-0.53	-0.06	*	3.79	*	*	-0.76
Eu	-0.20	0.00	*	0.00	-0.61	*	4.58	*	*	-0.98
Ga	-2.17	0.05	0.19	0.52	0.24	-0.94	0.00	*	-1.51	*
Gd	0.23	-0.21	*	-0.35	0.28	*	0.16	*	*	-1.16
Ge	-0.05	*	*	*	*	*	*	*	*	*
Hf	-0.26	-0.12	*	*	-0.62	-6.81	-3.13	*	*	*
Ho	-0.15	0.04	*	-0.45	3.75	*	4.16	*	*	-0.71
In	0.50	*	*	*	*	*	*	*	*	*
La	-0.25	-0.01	2.12	-0.57	-0.81	17.28	1.99	*	0.15	-1.49
Li	-0.14	0.08	*	-0.06	*	*	*	*	*	-0.95
Lu	0.00	0.27	*	-0.09	0.48	*	3.75	*	*	-0.74
Mo	-1.72	*	-0.91	0.17	*	*	*	*	*	*
Nb	1.33	-0.75	2.11	*	0.11	-6.06	43.12	*	-4.27	*
Nd	-0.04	0.28	*	-0.03	0.29	-1.77	-3.33	*	-5.43	-1.31
Ni	32.17	0.10	-0.24	0.17	0.81	-2.41	-3.16	*	-1.03	-2.47
Pb	0.86	0.04	-0.80	0.36	-0.44	9.18	18.70	*	-0.33	-0.64
Pr	-0.20	*	*	-0.33	0.44	*	-3.90	*	*	-1.06
Rb	*	-0.20	-0.41	-0.79	-0.69	1.55	2.45	*	-1.18	-1.52
Sb	*	-0.16	*	0.48	*	32.36	*	*	*	*
Sc	4.19	0.33	0.87	-0.66	-0.11	1.74	-2.66	*	*	-0.89
Sm	0.05	0.07	*	-0.35	-0.36	-9.69	-0.26	*	-1.20	-0.93
Sn	2.40	-0.06	*	-0.17	*	78.55	*	*	21.37	*
Sr	0.45	-0.26	0.22	-1.23	2.05	0.99	0.03	*	-3.07	-0.01
Ta	0.01	0.87	*	*	-0.68	73.25	23.66	*	*	*
Tb	0.22	-0.13	*	0.23	0.48	*	3.67	*	*	-1.15
Th	0.10	*	*	-0.78	0.14	2.16	-5.81	*	10.67	-0.54
Tl	0.45	-0.14	*	-0.09	*	*	*	*	*	*
Tm	0.26	0.09	*	-0.46	-0.01	*	2.73	*	*	-0.77
U	0.10	0.09	*	-0.75	-0.90	22.71	2.29	*	3.75	-0.82
V	0.84	0.11	-0.10	-0.32	-0.78	-0.21	-3.82	*	0.30	-0.81
W	0.45	0.67	*	*	*	111.45	*	*	*	*
Y	0.92	-0.38	-0.08	*	0.48	0.00	7.57	*	-1.67	-1.92
Yb	-0.09	0.10	*	-0.34	-0.58	*	1.22	*	*	-0.60
Zn	0.94	0.00	0.66	0.81	-6.33	-0.68	3.05	*	-0.58	-0.30
Zr	0.49	0.21	0.92	6.49	-2.32	0.41	8.13	*	-1.47	-2.41

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B27 MGL-AND 1	B28 MGL-AND 2	B29 MGL-AND 2	B30 MGL-AND 1	B31 MGL-AND 1	B32 MGL-AND 2	B33 MGL-AND 2	B34 MGL-AND 2	B35 MGL-AND 2	B36 MGL-AND 1
SiO2	-4.15	-0.26	0.60	0.78	-0.31	0.35	0.67	-0.45	-0.31	0.22
TiO2	-9.61	-0.18	1.02	0.44	*-0.29*	*	0.62	-0.81	-0.51	-2.95
Al2O3	-11.99	0.02	*	1.30	*-0.41*	*	0.64	-1.28	-0.15	-0.92
Fe2O3 T	-5.82	0.18	1.13	1.15	*3.46*	*	0.20	0.84	0.59	-2.25
MnO	-8.55	-0.64	*	1.37	*0.00*	*	0.21	2.14	-0.21	3.85
MgO	-9.00	0.11	1.98	0.49	*0.21*	*	-0.11	-1.17	0.51	-0.98
CaO	-8.47	-0.75	0.41	1.02	*-4.18*	*	0.41	1.92	0.30	4.41
Na2O	*	-0.25	0.95	-0.74	*-1.47*	*	0.98	-0.46	0.53	-2.17
K2O	-2.38	0.24	0.00	1.38	*-0.24*	*	0.48	-0.36	0.30	-1.90
P2O5	6.10	-0.08	*	1.72	*2.97*	*	0.16	*	1.17	-2.66
LOI	*	0.47	0.28	-1.24	*5.46*	*	0.98	*	2.17	-1.70
As	*	*	*	*	42.68	*	*	*	-0.14	*
Ba	*	0.17	*	-0.83	5.55	*	16.92	0.17	0.88	2.18
Be	*	0.36	*	*	0.65	*	*	*	*	*
Bi	*	*	*	*	*	*	*	*	*	*
Ce	*	-0.85	*	-0.25	0.82	*	*	*	-1.28	2.11
Co	*	0.25	*	-1.40	-2.88	*	*	*	*	1.51
Cr	*	1.97	*	0.93	1.58	*	7.36	*	0.79	*
Cs	*	*	*	*	*	*	*	*	*	*
Cu	20.51	0.19	*	-1.01	-4.66	*	7.00	-0.34	-2.28	*
Dy	*	*	*	*	9.72	*	*	*	*	0.23
Er	*	*	*	*	8.10	*	*	*	*	1.36
Eu	*	*	*	*	1.21	*	*	*	*	2.05
Ga	*	-0.94	*	0.66	*	*	*	*	0.00	*
Gd	*	*	*	*	2.10	*	*	*	*	1.99
Ge	*	3.85	*	*	*	*	*	*	*	*
Hf	*	*	*	*	*	*	*	*	*	*
Ho	*	*	*	*	7.45	*	*	*	*	0.11
In	*	*	*	*	*	*	*	*	*	*
La	*	0.23	*	-0.97	-0.79	*	*	*	1.96	2.28
Li	*	0.36	*	*	*	*	*	*	*	*
Lu	*	*	*	*	8.32	*	*	*	*	1.13
Mo	168.20	*	*	*	-0.03	*	*	*	*	*
Nb	*	*	*	-1.14	*	*	*	*	*	2.88
Nd	*	-0.50	*	*	-1.54	*	*	*	*	2.76
Ni	*	1.59	*	0.05	2.43	*	4.70	*	0.42	-0.55
Pb	*	0.36	*	-0.97	-9.00	*	4.59	*	2.48	3.90
Pr	*	-0.05	*	*	0.67	*	*	*	*	1.15
Rb	*	1.45	*	0.41	*	*	*	*	0.77	*
Sb	*	*	*	*	*	*	*	*	*	*
Sc	*	*	*	*	-1.17	*	*	*	0.87	*
Sm	*	0.34	*	*	1.53	*	*	*	*	1.18
Sn	*	*	*	*	*	*	*	*	*	*
Sr	*	1.19	*	-0.12	-10.70	*	*	*	0.75	2.44
Ta	*	*	*	*	*	*	*	*	*	*
Tb	*	*	*	*	4.81	*	*	*	*	1.60
Th	*	*	*	0.04	*	*	*	*	-0.25	3.49
Tl	*	*	*	*	*	*	*	*	*	*
Tm	*	1.36	*	*	8.21	*	*	*	*	0.90
U	*	-3.23	*	-5.73	*	*	*	*	0.42	*
V	*	0.53	*	1.07	-0.63	*	12.76	-0.10	-0.07	-0.85
W	*	*	*	*	15.50	*	*	*	*	*
Y	*	0.00	*	-0.30	*	*	*	*	0.23	-0.23
Yb	*	*	*	*	10.09	*	*	*	*	1.09
Zn	-11.51	-1.02	*	0.07	-0.17	*	4.86	1.69	0.29	2.37
Zr	*	2.00	*	-1.15	*	*	-9.82	0.21	0.21	-2.46

Commas in supplied data
Not included in analysis

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B36 MGL-AND 2	B37 MGL-AND 1	B38 MGL-AND 2	B39 MGL-AND 2	B40 MGL-AND 2	B41 MGL-AND 1	B41 MGL-AND 2	B42 MGL-AND 1	B43 MGL-AND 2	B44 MGL-AND 2
SiO2	*	-0.48	-0.07	-0.26	-0.72	0.10	*	0.01	0.06	0.26
TiO2	*	0.24	-0.15	1.18	-0.45	-0.29	*	-0.21	-0.05	0.12
Al2O3	*	0.05	0.34	-0.72	0.09	-0.41	*	0.25	0.00	-0.02
Fe2O3 T	*	-0.59	0.03	-0.46	-0.35	-0.71	*	4.39	-0.12	-0.35
MnO	*	0.43	1.28	-1.71	0.43	0.85	*	0.85	0.43	-0.43
MgO	*	-0.98	-0.35	-0.37	-0.66	-2.00	*	-0.86	0.40	0.79
CaO	*	-0.23	0.19	0.12	-0.46	0.35	*	-0.07	0.02	-0.12
Na2O	*	1.33	0.39	-1.08	*	-2.03	*	0.21	0.00	0.11
K2O	*	0.71	0.56	-1.77	0.00	-0.71	*	0.33	-0.06	0.95
P2O5	*	-0.16	-0.16	-0.94	-0.86	-0.16	*	1.17	-0.24	-0.08
LOI	*	-0.57	1.09	-0.60	-0.85	-1.70	*	1.70	0.09	*
As	*	*	-0.47	*	*	*	*	*	*	*
Ba	*	-0.64	0.66	0.92	-0.72	-0.45	*	0.04	-7.00	*
Be	0.36	*	-0.96	*	*	*	*	*	*	*
Bi	*	*	*	*	*	*	*	*	*	*
Ce	*	0.22	0.45	-2.49	0.22	*	3.22	0.78	*	*
Co	*	-1.90	0.20	0.25	1.11	*	*	*	-0.25	*
Cr	3.40	-1.01	-0.16	-0.52	-1.82	1.32	*	0.27	-3.00	*
Cs	*	0.35	0.65	-1.94	*	*	*	0.47	*	*
Cu	1.51	-0.05	0.03	-0.16	-0.61	*	-0.34	0.21	-0.34	*
Dy	*	-0.58	0.04	-1.54	*	*	*	1.36	*	*
Er	*	-0.41	0.17	-1.20	*	*	*	0.75	*	*
Eu	*	-0.28	-0.03	-1.49	*	*	*	1.26	*	*
Ga	*	1.51	-0.19	-1.63	-0.52	*	0.00	1.22	*	*
Gd	*	-1.24	-0.14	-2.43	*	*	*	0.40	*	*
Ge	*	*	*	-0.95	*	*	*	*	*	*
Hf	*	-1.79	0.72	0.65	*	*	*	0.52	*	*
Ho	*	-0.14	-0.19	-0.83	*	*	*	1.25	*	*
In	*	*	*	*	*	*	*	*	*	*
La	*	-2.49	0.43	-1.77	1.03	*	*	0.72	*	*
Li	*	*	-0.85	258.94	*	*	*	*	*	*
Lu	*	-0.17	-0.12	-0.74	*	*	*	0.68	*	*
Mo	*	*	-1.74	-1.45	6.73	*	*	*	*	*
Nb	*	1.14	-2.14	-0.23	-1.91	*	*	-1.02	*	*
Nd	*	-0.99	0.71	-2.03	-0.50	*	*	0.86	*	*
Ni	*	0.20	-0.07	2.71	-1.21	2.81	*	0.79	3.45	*
Pb	*	-1.28	0.57	0.89	*	*	*	0.40	1.95	*
Pr	*	-1.01	0.40	-1.98	*	*	*	0.83	*	*
Rb	-1.95	-0.99	0.02	-3.91	0.55	-2.99	*	-0.13	*	*
Sb	*	*	0.40	*	*	*	*	*	*	*
Sc	*	-6.46	0.49	-1.36	-0.35	*	*	1.42	*	*
Sm	*	-0.51	0.50	-1.04	*	*	*	1.21	*	*
Sn	*	*	-1.01	2.56	*	*	*	*	*	*
Sr	*	0.03	0.37	-0.26	-1.29	0.15	*	2.30	-0.58	*
Ta	*	*	-1.49	82.06	*	*	*	4.03	*	*
Tb	*	-0.46	-0.23	-1.60	*	*	*	0.71	*	*
Th	*	-0.76	-0.57	-3.32	-1.71	*	*	1.30	1.08	*
Tl	*	*	*	2.90	*	*	*	*	*	*
Tm	*	-0.32	-0.04	-0.77	*	*	*	0.60	*	*
U	*	-1.43	-0.10	3.84	17.19	*	*	0.35	*	*
V	*	-1.06	-0.39	-1.17	-1.70	0.64	*	1.05	*	*
W	*	*	-0.40	*	*	*	*	*	*	*
Y	*	0.00	1.74	-1.79	0.83	*	*	0.51	*	*
Yb	*	-0.43	0.15	-1.61	*	*	*	0.11	*	*
Zn	*	0.17	0.32	0.46	-0.71	0.68	*	1.22	0.00	*
Zr	*	-0.85	0.42	2.90	-0.15	5.44	*	-0.45	*	*

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B45 MGL-AND 1	B46 MGL-AND 1	B47 MGL-AND 2	B48 MGL-AND 1	B48 MGL-AND 2	B49 MGL-AND 2	B50 MGL-AND 2	B51 MGL-AND 2	B52 MGL-AND 1	B53 MGL-AND 2
SiO2	*	*	0.03	0.08	*	-46.10	-0.08	0.16	-0.23	-0.65
TiO2	*	-0.89	0.52	-0.23	*	0.29	0.12	0.19	0.37	-0.15
Al2O3	*	-4.62	0.62	0.58	*	-1.51	0.98	0.09	0.64	-1.12
Fe2O3 T	*	0.01	0.54	-0.85	*	-0.53	0.12	-0.12	0.25	-1.19
MnO	*	-2.56	0.64	1.28	*	0.00	0.41	-0.21	0.00	0.00
MgO	*	-7.29	0.28	1.32	*	0.23	0.00	-1.09	0.89	-0.32
CaO	*	-5.22	0.23	0.15	*	0.40	0.21	-0.17	0.70	-0.23
Na2O	*	-0.07	0.18	0.41	*	-1.13	-2.48	-2.07	-0.49	0.88
K2O	*	1.90	0.36	0.40	*	-1.12	1.39	-0.12	0.48	0.71
P2O5	*	*	0.70	0.15	*	-1.25	-0.52	0.55	-0.16	0.70
LOI	*	*	-0.28	-0.57	*	1.22	-3.30	1.41	19.03	3.86
As	*	-0.28	*	*	*	-1.05	-2.40	*	*	0.47
Ba	0.00	-1.14	0.18	0.39	*	0.35	0.07	0.40	-0.84	-0.07
Be	*	*	*	1.76	*	-0.68	-0.91	*	*	0.01
Bi	*	*	*	*	*	*	*	*	*	*
Ce	-0.38	0.18	-1.63	-0.55	*	0.22	0.13	-2.36	*	-0.13
Co	-0.70	-0.40	4.82	-1.40	*	2.91	-0.06	0.25	1.51	-0.15
Cr	0.46	2.05	0.11	-0.80	*	0.80	-1.45	-0.65	2.10	-0.65
Cs	0.35	0.47	*	0.11	*	-0.25	-0.17	*	*	-0.25
Cu	0.00	*	-0.42	-0.37	*	-3.63	-1.09	-0.61	11.50	0.19
Dy	0.17	-2.10	*	-1.05	*	*	0.34	*	*	0.09
Er	-0.18	*	*	-0.74	*	*	0.27	*	*	0.07
Eu	0.65	1.77	*	-0.56	*	*	-0.07	*	*	-0.42
Ga	0.85	0.00	-0.47	0.38	*	5.18	0.65	-0.47	0.00	0.00
Gd	0.78	*	*	-0.81	*	*	0.27	*	*	-0.54
Ge	*	*	*	*	*	*	-0.75	*	*	*
Hf	-0.24	1.52	*	-1.50	*	*	0.38	*	5.74	0.78
Ho	-0.40	*	*	-0.32	*	*	0.22	*	*	0.05
In	*	*	*	*	*	*	*	*	*	*
La	-0.49	0.39	0.71	-0.25	*	-0.57	0.37	*	*	0.11
Li	*	*	*	0.44	*	1.04	*	*	*	*
Lu	-0.83	-0.24	*	-0.63	*	*	0.30	*	*	0.57
Mo	*	*	*	*	*	2.24	0.01	*	*	0.80
Nb	14.42	*	13.74	10.04	*	*	0.08	*	7.36	-0.79
Nd	-0.06	-0.21	4.02	-0.45	*	*	0.40	*	*	0.17
Ni	0.94	17.72	-0.76	-0.81	*	-1.49	-3.52	-0.46	3.55	0.47
Pb	*	*	1.05	0.09	*	-1.22	-0.85	0.36	-0.33	-0.33
Pr	-0.09	*	*	-0.07	*	*	0.06	*	*	0.22
Rb	-1.90	-0.27	-0.41	0.91	*	-0.13	0.01	-0.36	-0.27	0.86
Sb	*	3.08	*	-0.40	*	*	15.99	*	*	1.33
Sc	*	0.58	*	-0.40	*	0.11	-0.09	0.11	3.27	0.56
Sm	-0.58	0.30	*	-0.39	*	*	-0.29	*	*	-0.29
Sn	*	*	*	*	*	*	0.55	*	*	*
Sr	0.25	-1.49	0.40	-0.05	*	1.51	0.54	-0.62	2.15	0.22
Ta	7.82	-0.52	*	0.28	*	*	-0.32	*	*	*
Tb	-0.69	-0.92	*	-0.62	*	*	0.60	*	*	0.11
Th	0.06	0.46	-0.25	-0.15	*	-0.25	-7.48	*	-0.50	0.15
Tl	*	*	*	*	*	*	*	*	*	0.05
Tm	-0.32	*	*	*	*	*	0.03	*	*	-0.16
U	-0.19	-0.63	*	-0.92	*	*	-0.09	*	*	-0.06
V	-0.61	0.64	8.05	*	0.03	2.15	0.24	-0.21	1.92	0.32
W	*	-0.80	*	*	*	2.27	0.01	*	*	*
Y	-1.67	*	*	3.03	*	-0.76	0.16	0.76	0.00	-0.83
Yb	-0.94	-1.19	*	-0.72	*	*	0.15	*	*	0.10
Zn	*	0.00	0.37	-0.88	*	-0.24	0.27	0.00	-0.68	0.00
Zr	-3.63	-3.18	-0.03	3.75	*	-0.24	0.83	0.57	0.77	0.21

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B54 MGL-AND 2	B55 MGL-AND 1	B56 MGL-AND 1	B57 MGL-AND 2	B58 MGL-AND 2	B59 MGL-AND 1	B60 MGL-AND 1	B61 MGL-AND 2	B62 MGL-AND 1	B63 MGL-AND 1
SiO2	-0.04	-0.95	-0.45	0.08	0.18	-2.28	0.27	-6.58	1.13	-0.78
TiO2	0.45	0.37	-0.36	*	0.55	-1.56	-0.96	-3.34	1.30	-0.29
Al2O3	0.00	0.32	-0.72	-0.02	0.23	-1.69	0.27	20.16	0.82	0.37
Fe2O3 T	0.24	0.72	-1.04	-0.71	1.10	-2.80	0.36	0.00	1.03	-0.83
MnO	0.00	0.43	0.00	0.85	0.43	-1.80	4.27	2.35	2.56	0.00
MgO	0.02	2.94	-0.32	0.19	0.46	-0.74	1.24	*	-0.69	-2.18
CaO	0.06	3.02	-0.72	0.58	0.38	-1.90	-0.81	-2.32	-0.59	-1.24
Na2O	-0.18	1.19	-0.55	0.04	0.40	-0.76	0.21	*	1.05	2.21
K2O	0.24	0.71	-0.02	0.24	0.53	-2.28	0.24	0.12	-1.76	-0.55
P2O5	0.62	0.00	0.94	0.70	0.16	-1.38	1.41	*	-0.63	0.94
LOI	-2.54	-0.57	9.23	-3.86	0.34	*	*	*	2.22	-10.25
As	*	-4.70	7.60	*	*	*	*	*	3.96	*
Ba	0.03	-9.88	0.74	-0.97	*	-0.99	*	-0.35	0.71	-1.44
Be	0.19	*	2.45	-1.83	*	2.45	*	*	0.16	-1.37
Bi	*	28.02	0.31	*	*	*	*	*	*	12.49
Ce	*	*	-0.18	-0.04	*	3.00	*	-1.41	3.01	1.16
Co	-0.25	-17.48	*	*	*	2.12	*	*	0.41	-1.70
Cr	0.27	-23.74	-0.90	*	*	*	*	4.58	-5.53	-0.64
Cs	*	95.32	-0.62	*	*	2.86	*	*	*	-1.52
Cu	-0.08	-21.53	0.37	*	*	3.05	*	10.25	0.48	3.52
Dy	*	*	-1.46	-0.03	*	1.40	*	*	*	0.17
Er	*	*	-1.15	-0.15	*	1.54	*	*	*	0.75
Eu	*	*	-1.48	-0.23	*	1.05	*	*	*	0.56
Ga	0.00	-17.20	0.80	*	*	*	*	-0.09	*	-0.75
Gd	*	*	-1.15	0.33	*	1.26	*	*	*	-0.23
Ge	*	-6.56	0.82	*	*	*	*	*	*	-3.66
Hf	*	-13.92	0.81	*	*	1.80	*	*	*	-3.34
Ho	*	*	-1.17	-0.07	*	1.38	*	*	*	-3.82
In	*	*	*	*	*	*	*	*	*	-1.93
La	-0.57	-15.57	-0.46	-0.37	*	2.23	*	-2.57	5.27	0.71
Li	*	*	*	*	*	7.84	*	*	*	-0.66
Lu	*	*	-3.80	*	*	1.44	*	*	*	-1.81
Mo	*	-11.54	5.37	*	*	2.14	*	*	*	3.21
Nb	-0.12	-12.45	-0.02	*	*	2.02	*	-3.48	*	6.93
Nd	*	*	-1.15	-0.03	*	2.10	*	-0.30	*	-1.54
Ni	-0.65	-23.04	2.81	*	*	*	*	-0.29	0.83	-3.91
Pb	0.10	-18.39	0.28	*	*	3.54	*	3.01	1.57	-2.18
Pr	*	*	0.01	-0.05	*	1.43	*	-0.81	*	-1.03
Rb	0.09	25.95	0.66	*	*	4.15	*	1.23	-0.13	-1.45
Sb	*	*	*	*	*	0.37	*	*	*	42.12
Sc	-0.51	-16.86	0.21	*	*	4.00	*	*	*	-2.39
Sm	*	*	-0.60	-0.32	*	1.57	*	*	*	-0.11
Sn	*	*	-7.22	*	*	3.22	*	*	*	5.13
Sr	0.14	-35.53	0.86	-1.07	*	-0.67	*	1.67	*	-2.94
Ta	*	*	10.53	*	*	2.49	*	*	*	97.22
Tb	*	*	-1.23	*	*	0.66	*	*	*	0.34
Th	*	-16.00	-0.84	-0.09	*	2.91	*	-0.91	*	-0.23
Tl	*	-1.32	*	*	*	1.78	*	*	-6.07	-1.80
Tm	*	*	*	*	*	1.05	*	*	*	*
U	*	*	-0.37	0.85	*	2.01	*	*	-13.76	0.47
V	-0.42	-25.48	0.00	*	*	7.60	*	9.15	-0.42	-1.59
W	*	*	*	*	*	*	*	*	*	14.34
Y	-0.76	-18.14	-0.23	-0.61	*	1.61	*	-1.21	*	-2.27
Yb	*	-6.26	-1.20	0.10	*	1.71	*	*	*	-1.06
Zn	0.34	-22.60	2.03	*	*	5.29	*	1.00	1.29	-0.51
Zr	-0.42	-26.01	-0.36	*	*	1.17	*	1.55	*	-3.72

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B64 MGL-AND 1	B65 MGL-AND 2	B66 MGL-AND 1	B67 MGL-AND 2	B68 MGL-AND 2	B69 MGL-AND 2	B70 MGL-AND 1	B71 MGL-AND 2	B72 MGL-AND 1	B72 MGL-AND 2
SiO2	-0.05	0.84	-0.56	0.06	-0.26	0.43	-0.36	-0.01	-1.82	*
TiO2	0.11	1.18	0.24	-0.28	1.18	-0.15	-0.29	-0.48	-0.96	*
Al2O3	-0.14	-0.43	0.18	-0.05	0.05	-0.32	1.14	0.78	-1.14	*
Fe2O3 T	-0.94	-0.71	0.25	-0.41	0.42	0.42	1.55	-0.12	0.96	*
MnO	0.43	-2.35	0.00	3.21	-3.21	0.00	0.00	-1.30	0.00	*
MgO	0.38	-0.15	0.21	0.19	-0.01	-0.06	1.01	-0.58	-0.64	*
CaO	-0.12	1.04	0.23	-0.01	1.24	1.04	-3.25	-2.09	-1.51	*
Na2O	0.49	0.95	-1.05	-0.29	0.87	1.02	2.17	-6.41	-1.33	*
K2O	0.24	0.36	0.00	0.33	0.83	0.48	0.00	-0.36	-0.24	*
P2O5	0.62	2.19	0.47	-0.24	2.27	1.49	-0.16	1.49	-0.16	*
LOI	-0.57	-0.28	-5.73	3.58	-0.85	-1.04	1.32	1.98	*	7.28
As	*	*	*	*	*	-0.44	*	*	-12.34	*
Ba	-0.46	0.17	0.40	*	2.28	0.66	-0.15	0.07	-3.07	*
Be	0.02	*	*	*	*	-0.34	0.93	*	*	*
Bi	2.83	*	*	*	*	*	*	*	1.15	*
Ce	1.82	0.17	0.95	*	0.84	0.91	1.15	-1.28	-1.00	*
Co	-0.48	0.25	-1.00	-0.04	-1.60	0.31	5.52	1.76	-3.13	*
Cr	1.16	-0.65	-1.09	*	2.68	1.18	3.41	0.14	1.42	*
Cs	0.83	*	*	*	0.36	0.32	1.44	*	-12.58	*
Cu	0.59	-0.34	-2.44	-1.34	-0.77	0.58	6.73	2.57	4.03	*
Dy	-0.29	0.61	0.41	*	0.12	0.21	0.35	*	*	*
Er	-0.29	0.07	0.15	*	-0.31	0.18	0.15	*	*	*
Eu	0.56	0.28	0.93	*	0.42	0.30	1.21	*	*	*
Ga	0.89	-0.47	-1.41	*	0.05	-0.15	*	3.77	0.08	*
Gd	-0.34	0.45	0.51	*	0.18	-0.03	1.87	*	*	*
Ge	*	*	*	*	*	*	*	*	-12.48	*
Hf	0.64	0.55	-0.41	*	0.67	-0.06	0.18	*	-3.46	*
Ho	-0.14	-0.20	0.24	*	0.69	0.31	0.11	*	*	*
In	*	*	*	*	*	-0.19	*	*	*	*
La	0.19	-0.13	0.87	*	0.47	0.79	1.00	7.84	-2.86	*
Li	0.09	*	*	*	*	-0.06	-3.95	*	*	*
Lu	0.48	-0.09	0.35	*	0.24	0.14	0.48	*	*	*
Mo	-0.03	*	5.37	*	9.07	-0.37	*	*	3.21	*
Nb	0.02	-1.49	-0.29	*	1.13	-0.16	-1.59	14.86	-2.66	*
Nd	0.58	0.44	1.19	*	0.71	0.86	1.41	*	-1.62	*
Ni	-0.64	3.27	-2.34	*	-1.71	0.64	1.69	2.71	-1.47	*
Pb	0.40	6.18	0.30	*	*	-0.22	-1.39	0.36	-1.26	*
Pr	-0.78	0.31	1.83	*	0.46	0.54	1.66	*	*	*
Rb	0.18	0.02	-0.09	*	0.18	0.88	2.00	0.32	0.27	*
Sb	*	*	*	*	*	0.06	-0.74	*	-10.07	*
Sc	0.61	-1.54	-0.71	*	-0.51	1.25	3.07	*	-1.87	*
Sm	0.90	-0.02	0.62	*	0.34	0.58	1.75	*	1.53	*
Sn	-0.46	*	*	*	*	1.00	-0.72	*	-12.42	*
Sr	-1.46	-16.22	-0.17	-1.07	0.77	0.64	-1.33	0.19	-0.51	*
Ta	-0.10	*	0.07	*	0.37	-0.34	1.99	*	-10.10	*
Tb	0.00	0.46	0.30	*	*	0.01	1.83	*	*	*
Th	0.46	0.22	0.83	*	0.92	0.29	2.16	14.38	15.46	*
Tl	*	*	*	*	*	-0.40	*	*	-9.87	*
Tm	0.29	-0.16	0.29	*	*	0.21	0.29	*	*	*
U	0.10	-0.31	0.10	*	0.31	0.12	0.90	58.76	25.19	*
V	0.81	0.64	-1.83	*	0.69	1.07	1.28	-0.42	-3.58	*
W	0.27	*	*	*	*	-0.40	*	*	9.62	*
Y	-0.83	-0.61	0.76	*	1.14	0.20	9.09	4.54	0.73	*
Yb	0.33	0.23	0.33	*	0.29	0.05	0.46	*	-1.32	*
Zn	-0.47	0.00	-1.35	*	-0.14	0.51	4.40	0.68	5.30	*
Zr	1.30	0.57	-3.90	*	-0.40	-0.33	14.77	9.54	-1.07	*

Table 3 GeoPT27 Z-scores for contributed data (June 2010)

	B73 MGL-AND 1	B74 MGL-AND 2	B75 MGL-AND 2	B76 MGL-AND 2	B77 MGL-AND 1	B78 MGL-AND 2	B79 MGL-AND 2	B80 MGL-AND 2
SiO2	*	0.38	-0.01	-0.20	0.56	0.34	-0.30	0.19
TiO2	*	0.19	0.19	0.19	-2.02	-0.48	1.12	0.19
Al2O3	*	-0.59	0.34	0.23	0.14	-0.50	-0.97	0.09
Fe2O3 T	*	3.51	0.18	0.18	-0.79	-0.77	1.62	-0.17
MnO	*	-6.41	0.00	0.00	0.00	2.14	-0.85	0.00
MgO	*	36.69	-0.32	-0.32	-0.79	0.36	4.17	-0.75
CaO	*	-2.09	-0.75	0.00	-0.88	0.00	0.29	0.12
Na2O	*	-19.36	0.11	0.32	0.10	0.67	-0.61	-0.39
K2O	*	-0.36	-0.48	0.24	-0.12	-1.31	-1.51	0.36
P2O5	*	-12.60	-0.86	0.94	-0.63	-0.08	-1.88	-0.08
LOI	*	*	2.17	-1.04	-3.96	-3.67	4.09	-3.49
As	*	5.62	0.16	*	*	*	*	*
Ba	-0.96	*	0.10	-0.35	*	-0.82	1.16	1.09
Be	*	*	*	-0.68	*	-0.06	*	*
Bi	0.90	*	*	-0.26	*	-0.26	*	*
Ce	0.13	*	-0.64	0.22	*	0.00	0.00	*
Co	*	0.15	0.25	0.05	*	1.52	-0.50	1.26
Cr	*	1.11	-0.52	-1.69	*	-0.78	-1.17	-1.95
Cs	0.28	*	*	0.36	*	-0.31	-0.67	*
Cu	*	0.69	-0.08	-0.61	*	0.37	0.72	-2.20
Dy	-0.43	*	*	-0.47	*	0.09	-0.32	*
Er	-0.84	*	*	0.02	*	0.41	0.13	*
Eu	-0.37	*	*	-0.05	*	-0.42	0.00	*
Ga	*	-1.79	-0.47	0.47	*	-0.09	-0.56	*
Gd	-0.89	*	*	-0.31	*	0.74	0.18	*
Ge	*	*	*	-2.46	*	-5.67	*	*
Hf	1.21	*	*	0.36	*	0.99	0.34	*
Ho	-0.55	*	*	-0.20	*	0.18	0.05	*
In	*	*	*	0.00	*	0.00	*	*
La	-0.22	*	-0.97	0.63	*	-0.07	0.23	*
Li	-2.15	*	0.97	-0.88	*	1.47	*	*
Lu	-0.20	*	*	-1.07	*	0.24	0.17	*
Mo	-0.32	62.42	*	-1.36	*	0.53	5.02	*
Nb	0.56	15.17	*	0.10	*	-0.41	0.53	*
Nd	0.23	*	0.28	-0.11	*	0.31	0.28	*
Ni	*	-1.80	-0.27	0.75	*	1.38	-0.09	-1.77
Pb	0.12	-9.10	-1.75	-0.17	*	1.90	0.94	*
Pr	0.03	*	*	0.08	*	0.19	0.22	*
Rb	-1.34	3.07	-0.13	0.09	*	-0.64	0.32	*
Sb	*	*	*	-0.58	*	3.24	*	*
Sc	*	*	0.11	-0.66	*	-0.45	0.95	-0.66
Sm	-0.33	*	*	0.18	*	0.01	0.04	*
Sn	*	4.06	*	0.29	*	*	12.96	*
Sr	-1.03	-0.31	-0.24	-0.10	2.18	-0.77	0.54	-2.82
Ta	0.72	12.04	*	1.20	*	1.20	1.10	*
Tb	-0.77	*	*	0.00	*	0.11	0.17	*
Th	0.73	*	-0.25	0.15	*	0.70	0.30	*
Tl	0.81	*	*	-0.19	*	*	*	*
Tm	0.19	*	*	-0.46	*	-0.16	0.18	*
U	-0.49	*	*	0.05	*	0.09	-0.24	*
V	*	-1.58	-0.64	0.00	*	1.78	0.11	-0.74
W	*	*	*	0.04	*	*	*	*
Y	-2.22	*	0.00	0.00	*	-0.70	-0.38	*
Yb	0.26	*	*	-0.53	*	0.16	0.16	*
Zn	*	-11.19	-0.34	0.34	*	2.09	0.68	-1.69
Zr	-3.08	-11.34	0.74	-0.15	*	0.18	0.92	-1.32

Copyright: International Association of Geoanalysts

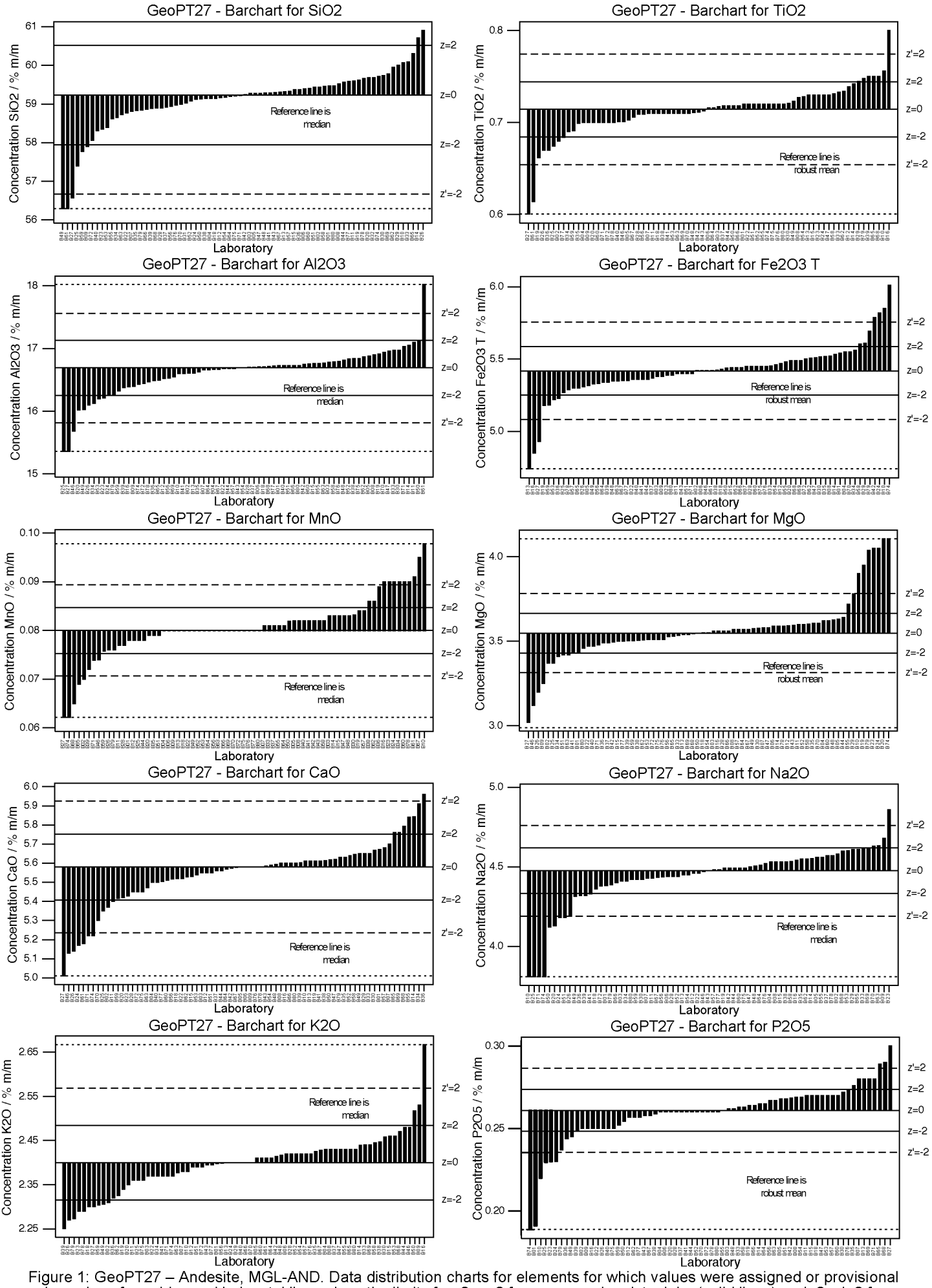


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

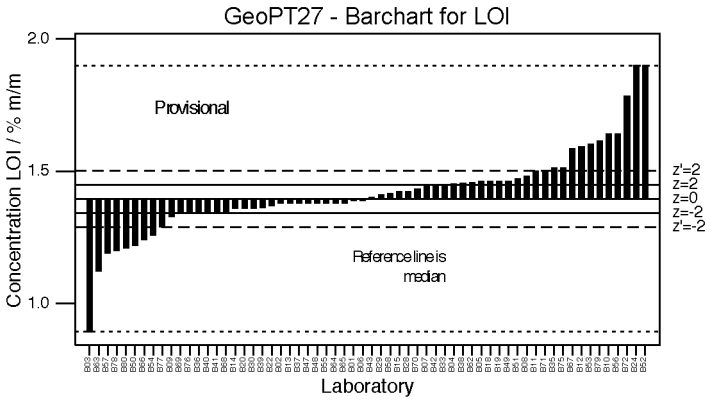
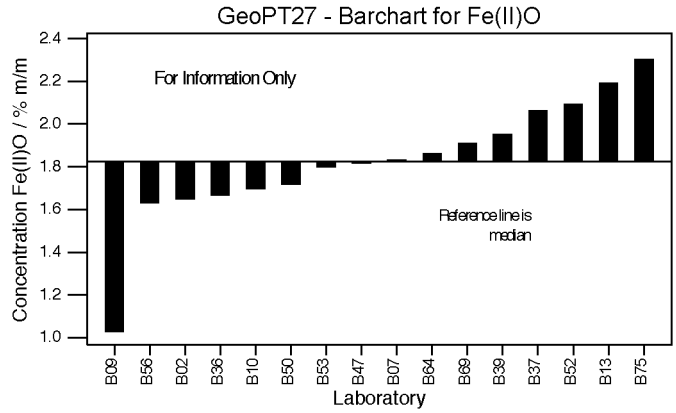
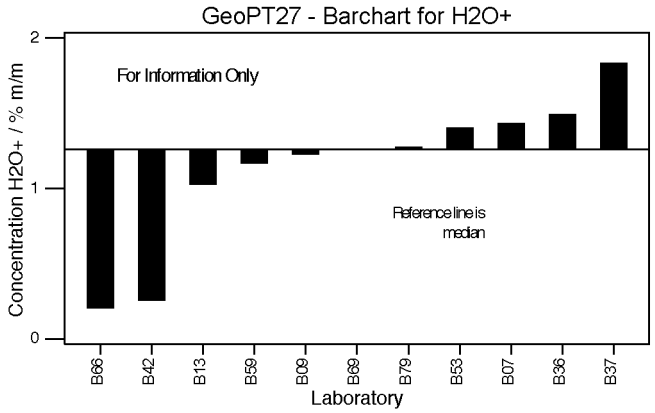


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).





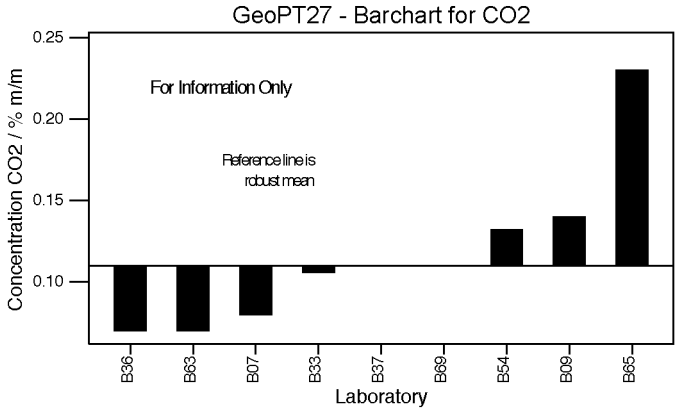
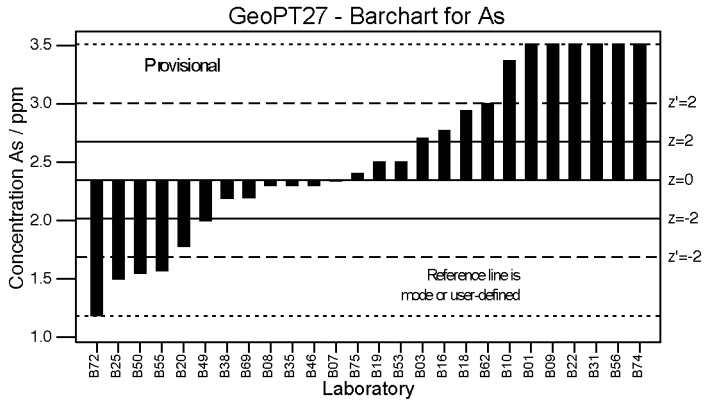


Figure 2: GeoPT27 – Andesite, MGL-AND. Data distribution charts for information only for elements for which values could not be assigned.



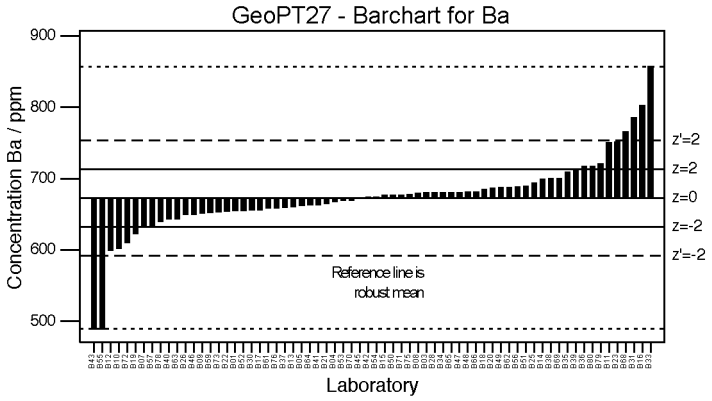


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

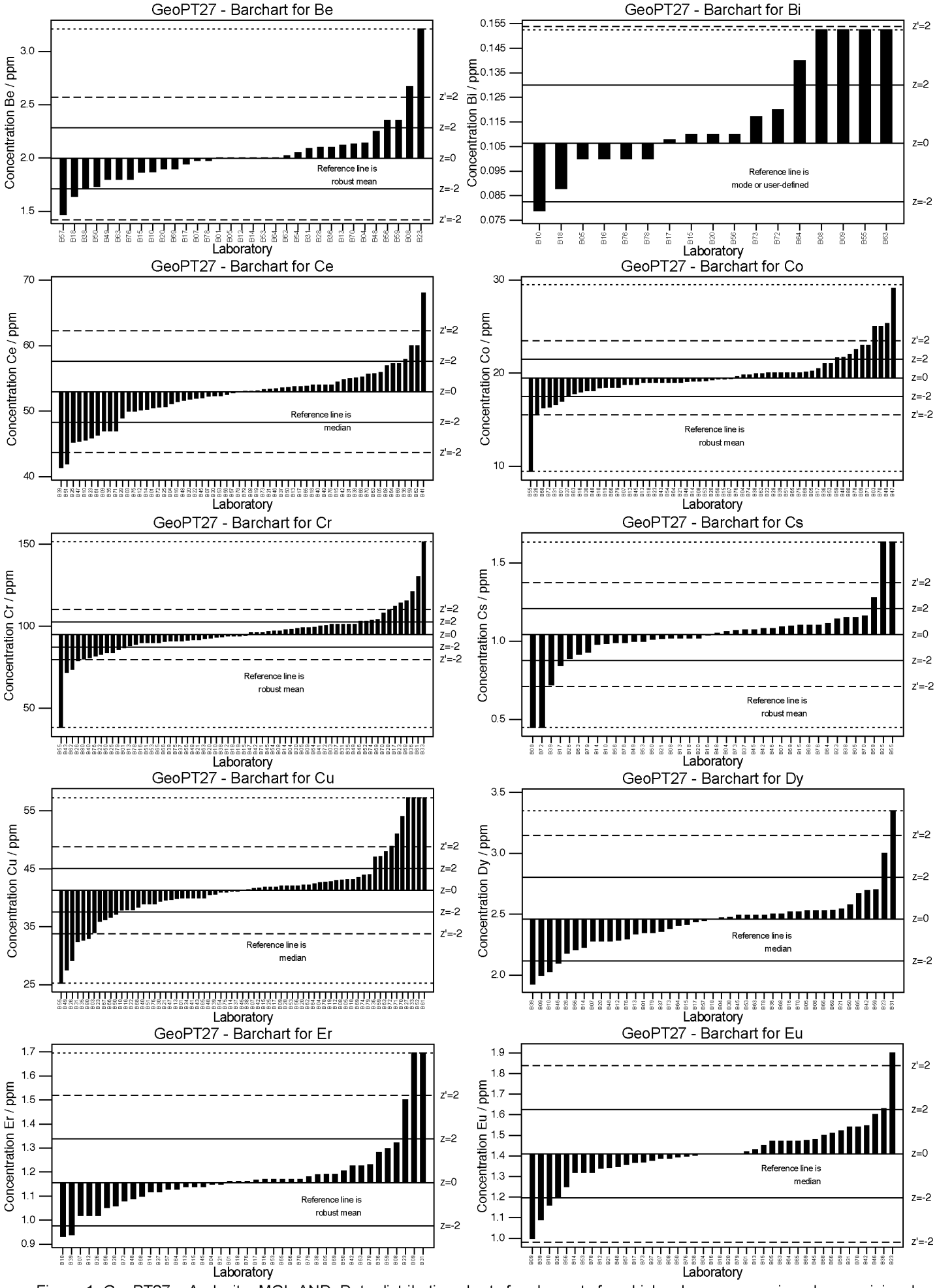


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

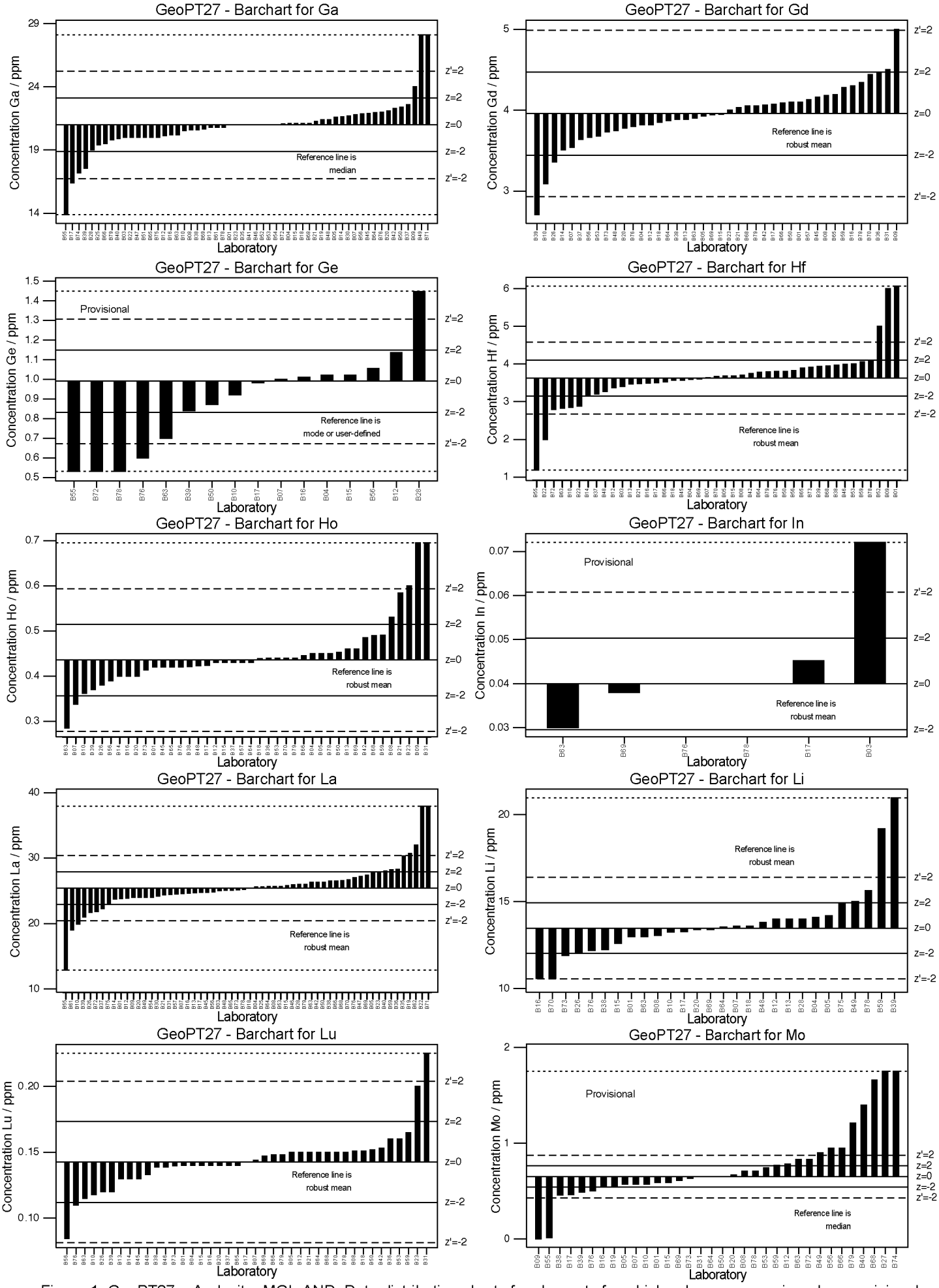


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

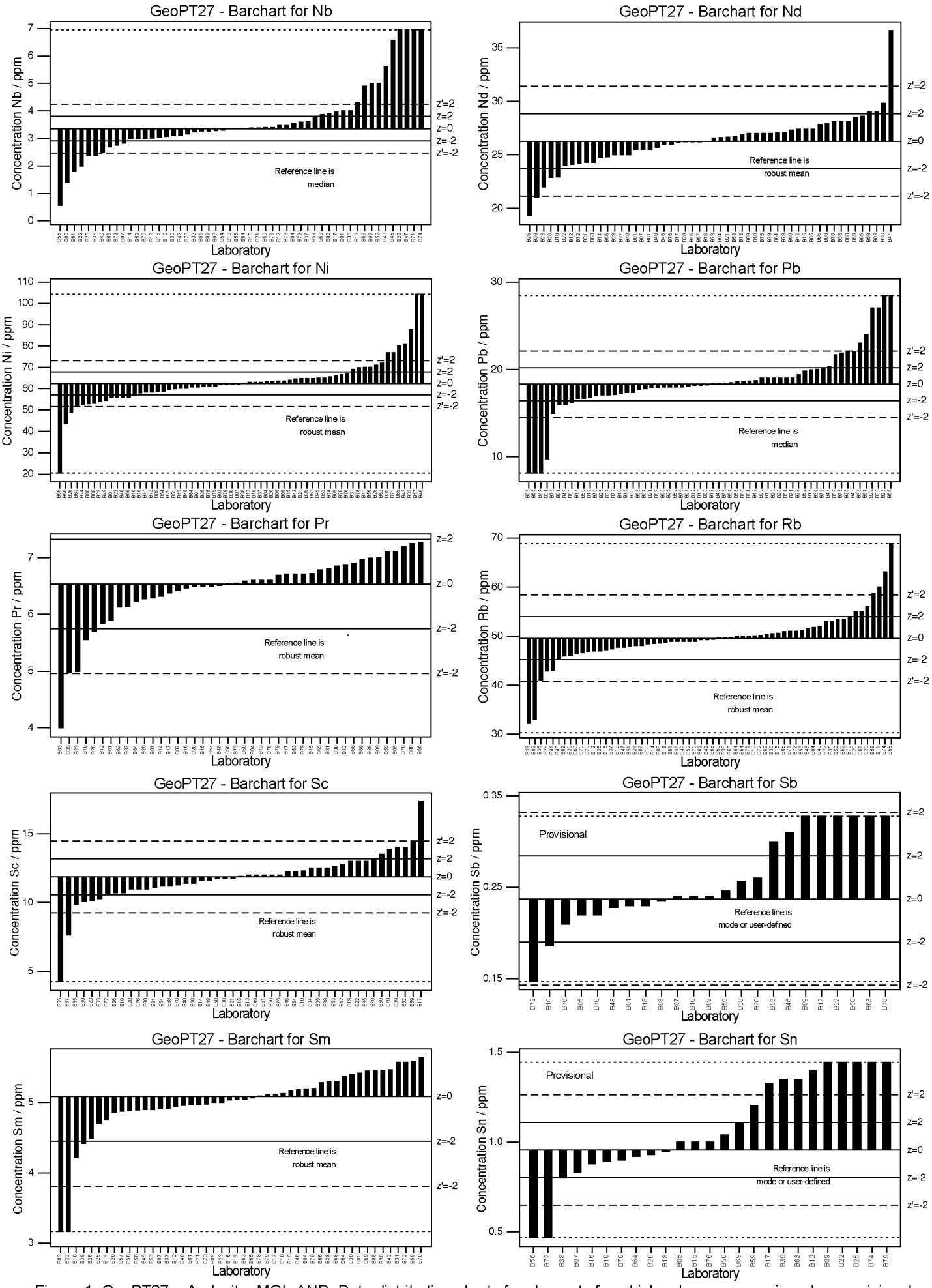


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

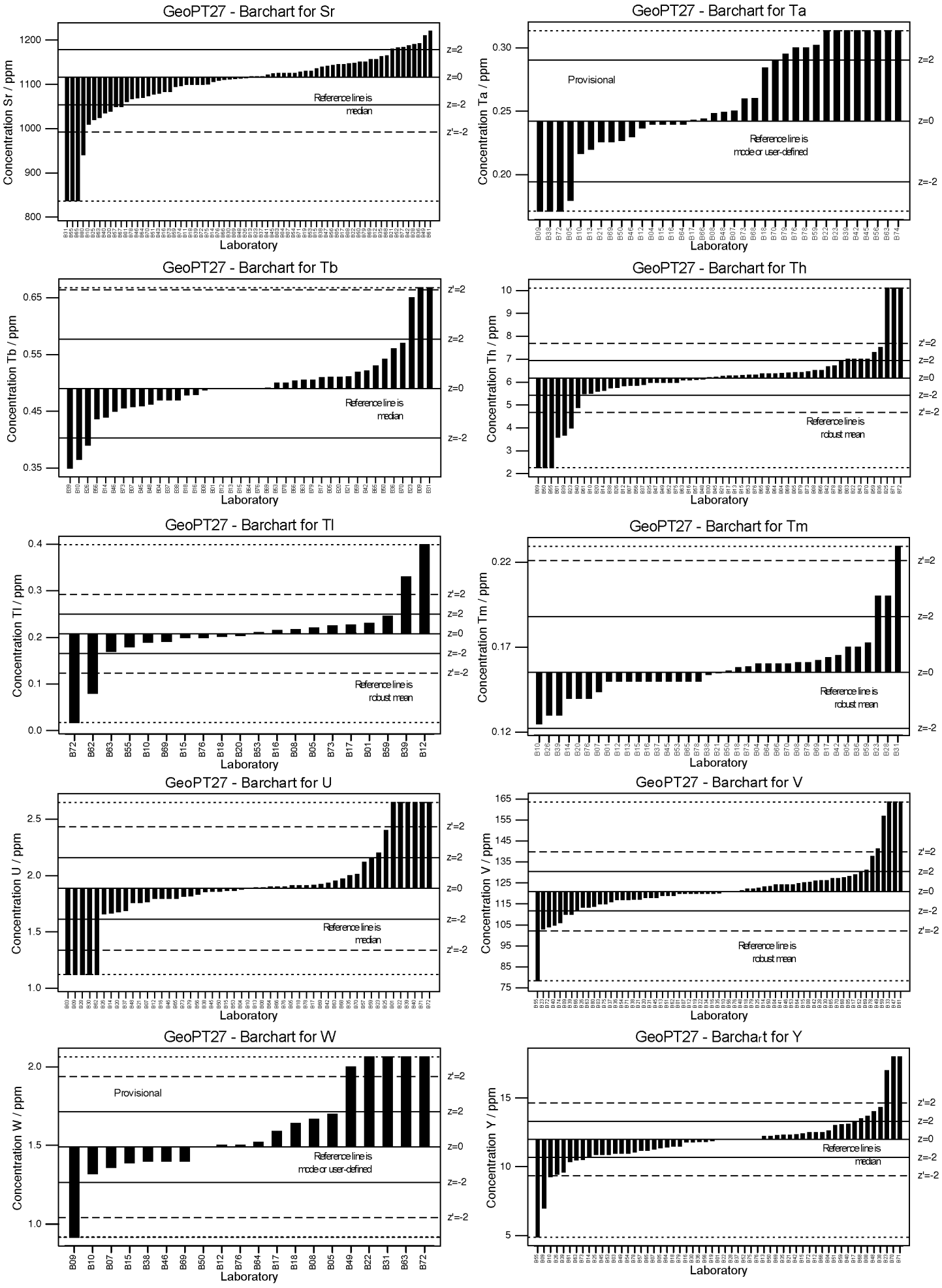


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

Copyright: International Association of Geoanalysts

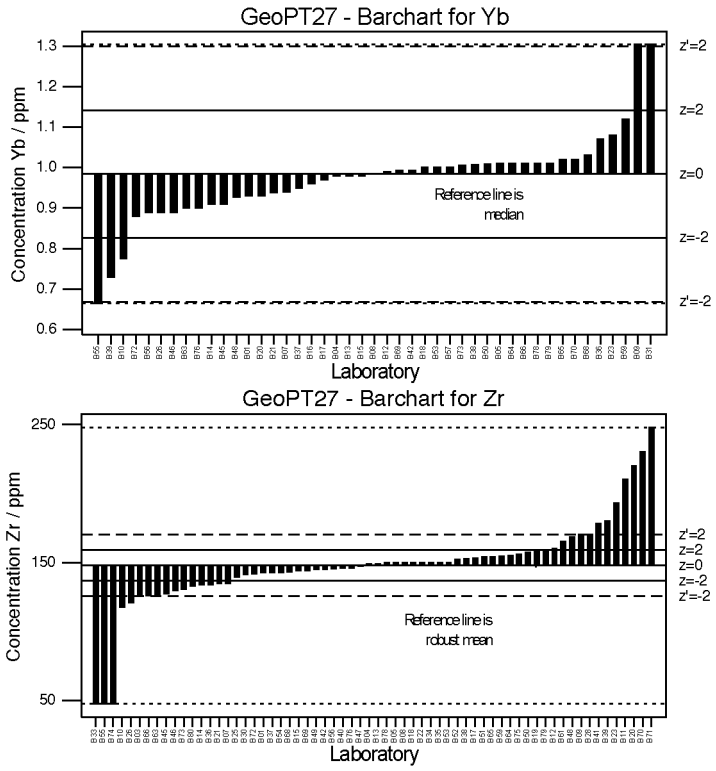


Figure 1: GeoPT27 – Andesite, MGL-AND. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 or pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

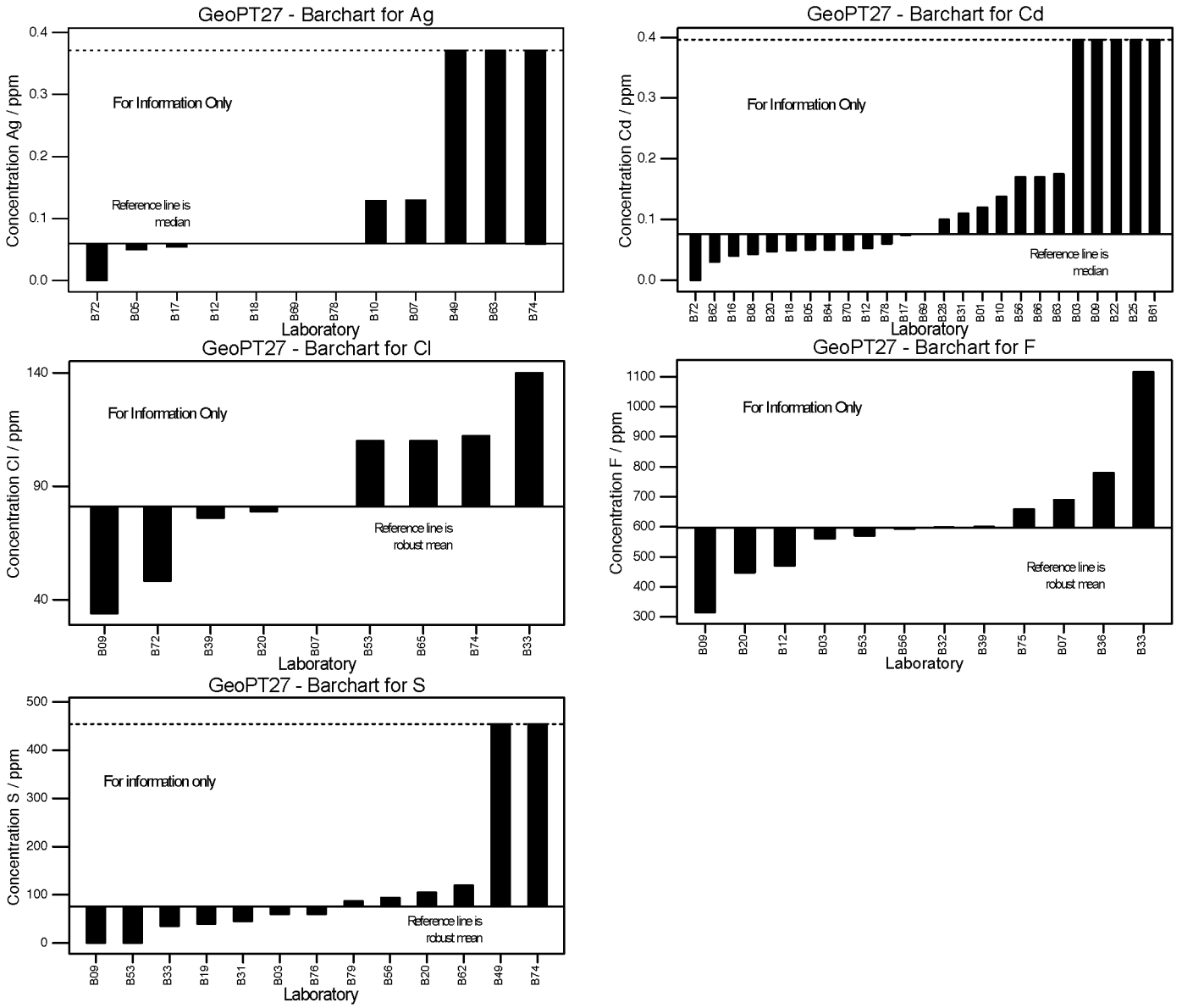


Figure 2: GeoPT27 – Andesite, MGL-AND. Data distribution charts for information only for elements for which values could not be assigned.

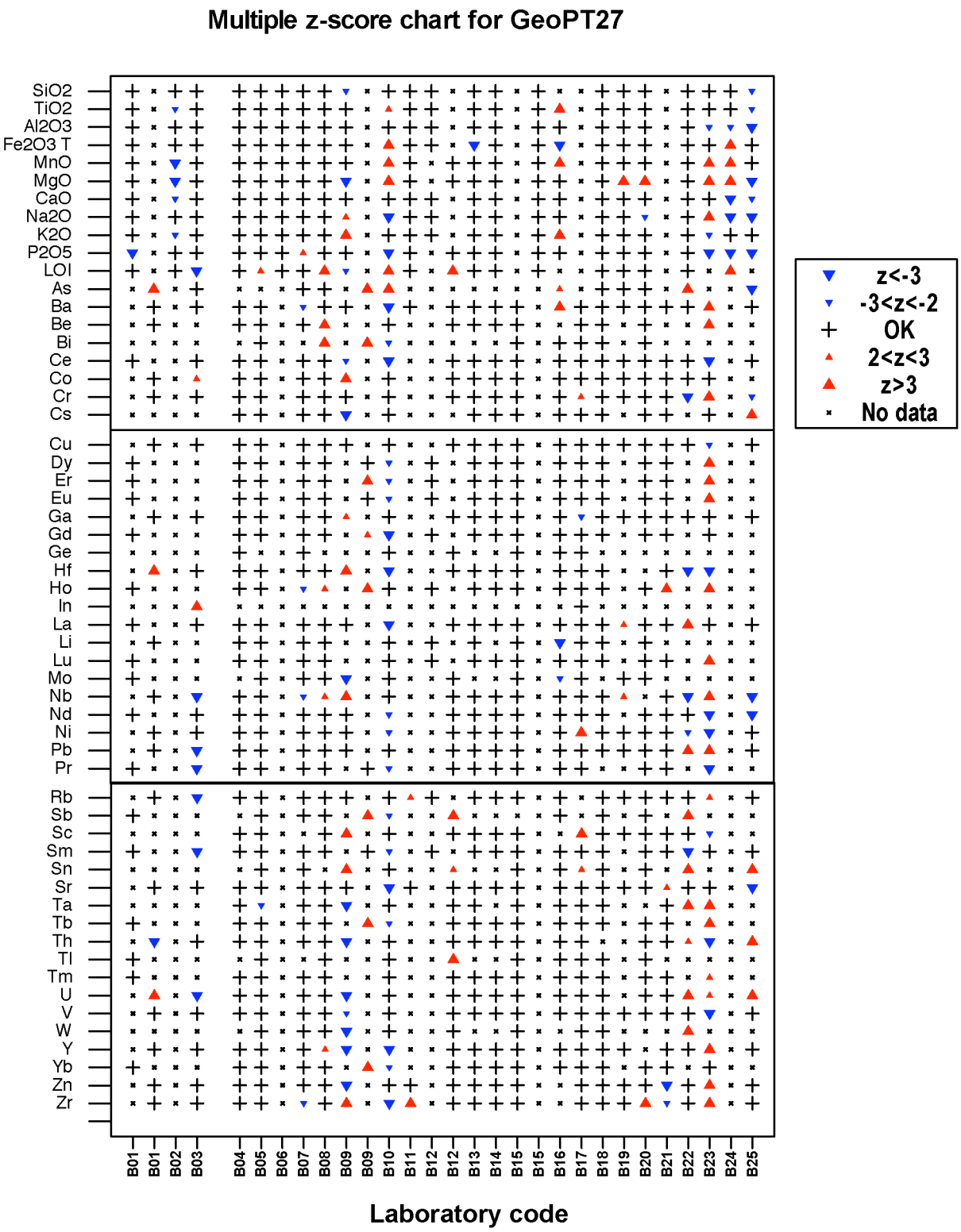


Figure 3: GeoPT27 – Andesite, MGL-AND. Multiple z-score charts for laboratories participating in the GeoPT27 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: z<-3 (▼), -3<z<-2 (▾), +2<z<+3 (▲), Z>+3 (▲).

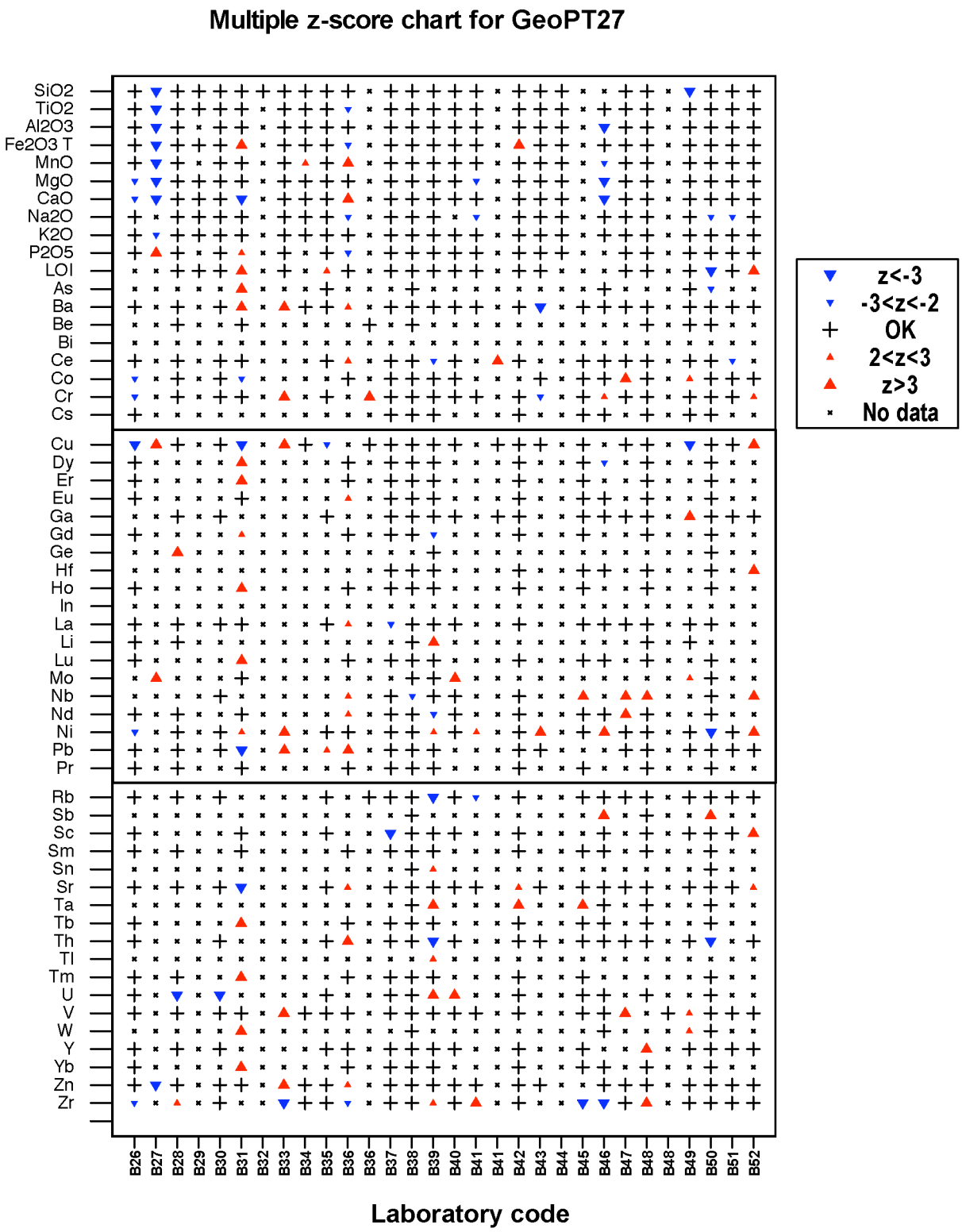


Figure 3: GeoPT27 – Andesite, MGL-AND. Multiple z-score charts for laboratories participating in the GeoPT27 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: z<-3 (▼), -3<z<-2 (▾), +2<z<+3 (▲), Z>+3 (▲).

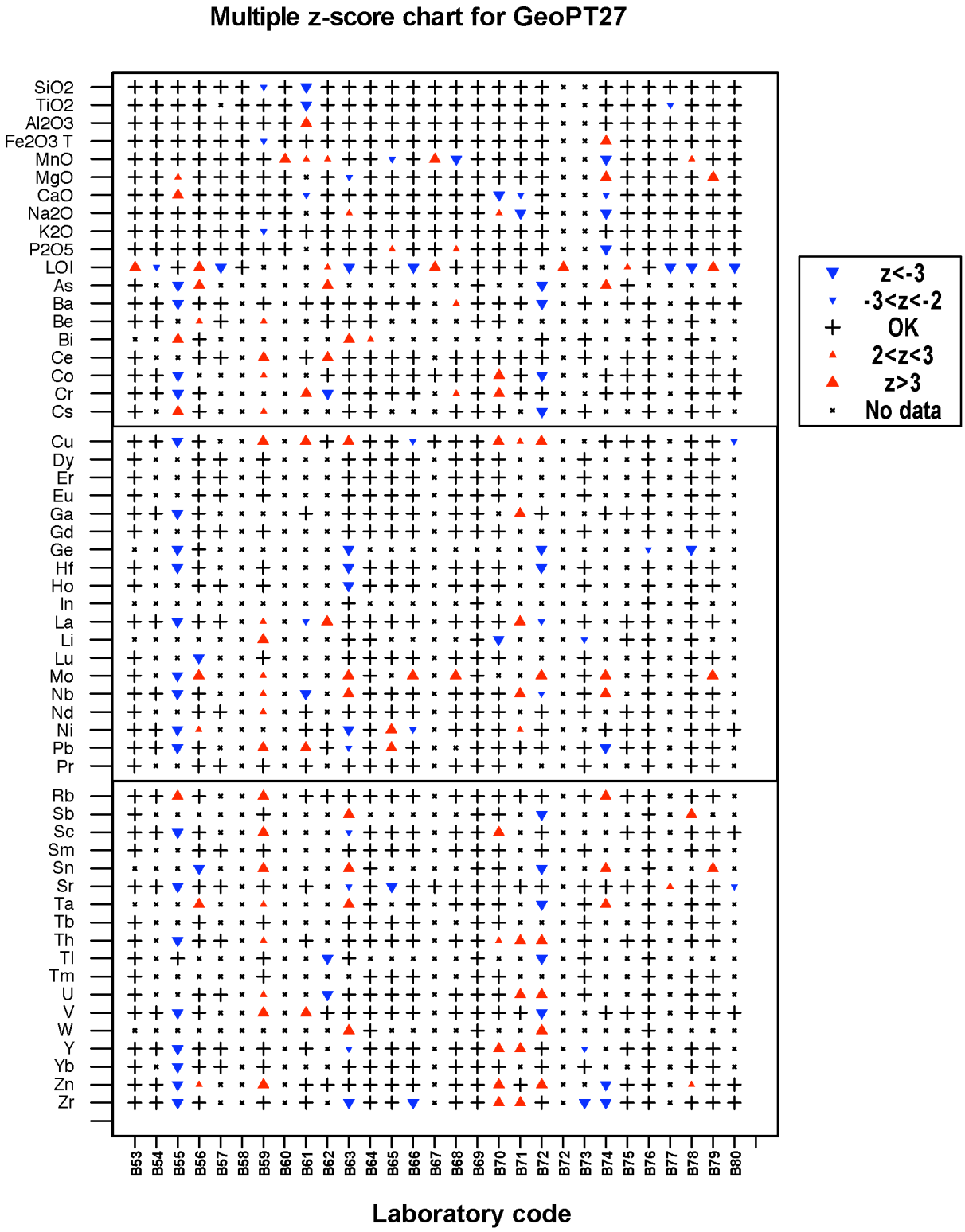


Figure 3: GeoPT27 – Andesite, MGL-AND. Multiple z-score charts for laboratories participating in the GeoPT27 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: z<-3 (▼), -3<z<-2 (▾), +2<z<+3 (▲), Z>+3 (▲).