

GeoPT 32, England - WG-1, Woodstock Basalt

Veranstalter: International Association of Geoanalysts and Geostandards Newsletter - GeoPT32

Ringversuchsmaterial: WG-1, (Woodstock Basalt)

RV geschlossen: 2013 – 1

Literatur: Report - GeoPT32 Proficiency Testing Round (CRB Laborcode = G93)

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na ₂ O	3,18	3,10	0,052	0,77
MgO	7,64	7,55	0,111	0,40
Al ₂ O ₃	14,35	14,35	0,19	0,00
SiO ₂	51,76	52,23	0,58	-0,41
P ₂ O ₅	0,293	0,291	0,007	0,15
K ₂ O	0,86	0,84	0,017	0,47
CaO	8,57	8,40	0,12	0,70
TiO ₂	1,76	1,74	0,03	0,31
Fe ₂ O ₃ tot	11,53	11,31	0,12	0,70
MnO	0,151	0,143	0,004	1,00
L.O.I.*	-0,26	-0,07	---	---

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
As *	3	2,2	---	---
Ba	250	219	7,7	2,03
Ce	43	31	1,5	3,92
Co	46	44,6	2,0	0,35
Cl *	80	114	---	---
Cr *	221	229	---	---
Cu	61	56,1	2,5	1,01
F*	230	277	---	---
Hf	3,4	3,3	0,2	0,19
La	17	15,4	0,8	0,98
Nb	26	18,2	0,9	4,11
Nd	21	17,9	0,9	1,69
Ni	155	149	5,6	0,54
Rb	22	22,3	1,1	-0,11
S*	160	180	---	---
Sm	5	4,5	0,3	0,96
Sn	2,7	1,7	0,1	4,30
Sr	359	356	11,7	0,15
Ta	2,8	2,9	0,2	-0,28
Th	2,4	2,5	0,2	-0,26
U	1,3	0,7	0,1	5,47
V	154	155	5,8	-0,11
Y	22	20,8	1,1	0,56

Zn	105	103	4,1	0,22
Zr	132	131	5,0	0,13

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch

Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

GeoPT32 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 32 (Woodstock Basalt, WG-1) / January 2013

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WG-1, Woodstock basalt*

Abstract

Results are presented for GeoPT32, the subject of round thirty-two of the International Association of Geoanalysts' Proficiency Testing programme for analytical geochemistry laboratories. The test sample distributed in this round is Woodstock basalt, WG-1, prepared at the Department of Geology at the Australian National University, Canberra under the direction of the late Bruce Chappell. In this report, the data contributed from 98 laboratories are listed, together with an assessment of consensus values, consequent z-scores and charts to show the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This thirty-second round of the international proficiency testing programme, GeoPT, was conducted in a similar manner to earlier rounds. The programme is designed to be part of the routine quality assurance procedures employed by analytical geochemistry laboratories. The programme is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol available at (<http://www.geoanalyst.org/documents/>

[GeoPT-protocol.pdf](#)). The overall aim of the programme is to provide participating laboratories with z-score information for reported elemental determinations from which the laboratory can decide whether the quality of their data is satisfactory in relation both to their chosen fitness-for-purpose criteria and to the results submitted by other laboratories contributing to the round and can choose to take corrective action if this appears justified.

Steering Committee for Round 32: P.C. Webb (results coordinator), M. Thompson (statistical advisor), P.J. Potts (analytical advisor), E. Webber (provision of WG-1).

Timetable for Round 32:

Distribution of sample: September 2012.
Deadline for submission of analytical results:
14th December 2012.
Distribution of draft report: February 2013

Sample details

GeoPT32: The Woodstock basalt test material, WG-1, was produced by the Department of Geology at the Australian National University, Canberra under the

direction of Bruce Chappell and originally intended for an early round of GeoPT. We are very grateful that he offered it to GeoPT prior to his death in 2012. We are particularly grateful to Liz Webber of Geoscience Australia for communicating his wishes and for making the arrangements to provide us with the sample. The test material had previously been evaluated by the originating laboratory for suitability, but as the results were not available, the trace element homogeneity was checked by analysis at the Open University and as a result, the sample was considered suitable for use in this proficiency test.

Submission of results

The results submitted for GeoPT32 (WG-1) by 98 laboratories are listed in Table 1. All of these data were used for the assessment of the respective assigned values. An additional set of data was submitted late.

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. Values were assigned on the basis that: (i) sufficient laboratories had contributed data for an element, and (ii) the statistical assessment gave confidence that the results distribution showed a central portion approximating to a normal distribution. Part of this assessment involved examining a bar chart of contributed data for each element to judge the distribution of results.

In this round it was apparent that there was confusion in the submission of data for loss on ignition (LOI). Owing to the high level of Fe(II) in the sample there would have been take up of O₂ by oxidation to Fe(III) during the ignition procedure. This can often lead to a gain on ignition, which is, in effect, a negative loss. In these circumstances reporting a negative LOI value would be entirely valid. However, some participants may have mistakenly reported a positive LOI or even a zero LOI to avoid reporting a negative value. Also,

participants are asked not to report values below the limit of determination and this may have added to the confusion. As a result, the LOI data were well dispersed (possibly multimodal) and therefore unsuitable for assessment of an assigned value.

Table 2 lists assigned and provisional values for 11 major components and 38 trace elements in GeoPT32 (WG-1). Bar charts for the 49 elements/components of GeoPT32 that were judged to have satisfactory distributions for consensus values to be assigned or provisional values to be given are shown in Figure 1. These are: SiO₂, TiO₂, Al₂O₃, Fe₂O₃T, Fe(II)O*, MnO, MgO, CaO, Na₂O, K₂O, P₂O₅*, Ba, Ce, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge*, Hf, Ho, La, Li, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sc, Sm, Sn*, Sr, Ta, Tb, Th, Tl*, Tm, U, V, Y, Yb, Zn and Zr. Of these, only provisional values could be given to the 4 marked '*'. Instances of provisional status were recorded because i) a relatively small number of measurements contributed to the consensus, or ii) the degree of consensus was less than ideal.

As in many earlier rounds, stepped patterns are noted in Figure 1 barcharts for a number of major components at low concentrations. These features are due to rounding of many contributed data values. For TiO₂, MnO and K₂O improved statistics could be obtained if more contributors reported an additional decimal place for these (and other) major components. A similar problem applies to P₂O₅, where not only is the pattern stepped but the symmetry is less than ideal, consequently the preferred value is given only provisional status.

In 24 cases the robust mean was used to define the consensus value but in 22 cases the median value was preferred. In 3 cases a mode provided the most satisfactory consensus value. The procedure used to determine the mode was based on the analysis of mixed populations detailed in Thompson (2006) and first used for GeoPT23. Values obtained in this way were, in all cases, designated as provisional values.

Bar charts for the 17 elements/components: H₂O⁺, LOI, Ag, As, Be, Bi, C(tot), Cd, Cl, Cr, F, Hg, In, S, Sb, Se and W, are plotted in Figure 2 for information only, as the data were insufficient or too variable for 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. For GeoPT32, 1760 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. For GeoPT32, 1792 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:

$$H_a = k \cdot X_a^{0.8495}$$

Where X_a is the concentration of the element expressed as a *fraction*; 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 for contributors to GeoPT32 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 the contributing laboratory to examine its procedures, and if necessary, 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 multiple z-score charts for GeoPT32 in Figure 3. In these charts, 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.

Participants should always review their z-scores in accord with their own fitness-for-purpose criteria.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to the GeoPT33 round, the sample for which will be distributed during March 2013.

Acknowledgements

The authors thank Liz Lomas for valued assistance in distributing both the sample and the report, and John Watson for assistance with relabelling the WG-1 samples.

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

GeoPT1

Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)
GeoPT1. International proficiency test for analytical geochemistry laboratories - Report on round 1. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 20, 295-325.

GeoPT2

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)
GeoPT2. International proficiency test for analytical geochemistry laboratories - Report on round 2. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 22 127-156.

GeoPT3

Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)
GeoPT3. International proficiency test for analytical geochemistry laboratories - Report on round 3. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 23, 87-121.

GeoPT4

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)
GeoPT4. 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).

GeoPT5

Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)
GeoPT5. 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).

GeoPT6

Potts P.J., Thompson M., Kane J.S., Webb P.C. and Carignan J. (2000)
GEOPT6 - an international proficiency test for analytical geochemistry laboratories - report on round 6 (OU-3: Nanhonon microgranite) and 6A (CAL-S: CRPG limestone). International Association of Geoanalysts: Unpublished report.

GeoPT7

Potts P.J., Thompson M., Kane J.S., and Petrov L.L. (2000)
GEOPT7 - an international proficiency test for analytical geochemistry laboratories - report on round 7 (GBPG-1 Garnet-biotite plagiogneiss). International Association of Geoanalysts: Unpublished report.

GeoPT8

Potts P.J., Thompson M., Kane J.S., Webb, P.C. and Watson J.S. (2000)
GEOPT8 - an international proficiency test for analytical geochemistry laboratories - report on round 8 / February 2001 (OU-4 Penmaenmawr microdiorite). International Association of Geoanalysts: Unpublished report.

GeoPT9

Potts P.J., Thompson M., Webb, P.C. and Watson J.S. (2001)
GEOPT9 - an international proficiency test for analytical geochemistry laboratories - report on round 9 / July 2001 (OU-6 Penrhyn slate). International Association of Geoanalysts: Unpublished report.

GeoPT10

Potts P.J., Thompson M., Webb, P.C., Watson J.S. and Wang Yimin (2001)
GEOPT10 - an international proficiency test for analytical geochemistry laboratories - report on round 10 / December 2001 (CH-1 Marine sediment). International Association of Geoanalysts: Unpublished report.

GeoPT11

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Watson J.S. (2002)
GEOPT11 - an international proficiency test for analytical geochemistry laboratories - report on round 11 / July 2002 (OU-5 Leaton dolerite). International Association of Geoanalysts: Unpublished report.

GeoPT12

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Batjargal B. (2003)
GEOPT12 - an international proficiency test for analytical geochemistry laboratories - report on round 12 / January 2003 (GAS Serpentinite). International Association of Geoanalysts: Unpublished report.

GeoPT13

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kaspar H.U. (2003)
GEOPT13 - an international proficiency test for analytical geochemistry laboratories - report on round 13 / July 2003 (Köln Loess). International Association of Geoanalysts: Unpublished report.

GeoPT14

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and B. Batjargal (2004)
GeoPT14 - an international proficiency test for analytical geochemistry laboratories - report on round 14 / January 2004 (OShBO - alkaline granite). International Association of Geoanalysts: Unpublished report.

GeoPT15

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and WANG Yimin (2004)
GeoPT15 - an international proficiency test for analytical geochemistry laboratories - report on round 15 / June 2004 (Ocean floor sediment MSAN). International Association of Geoanalysts: Unpublished report.

GeoPT16

Potts P.J., Thompson M., Webb, P.C. and S.Wilson (2005)
GeoPT16 - an international proficiency test for analytical geochemistry laboratories - report on round 16 / February 2005 (Nevada basalt, BNV-1). International Association of Geoanalysts: Unpublished report.

GeoPT17

Potts P.J., Thompson M., Webb, P.C. and J. Nicholas Walsh (2005)
GeoPT17 - an international proficiency test for analytical geochemistry laboratories - report on round 17 / July 2005 (Calcareous sandstone, OU-8). International Association of Geoanalysts: Unpublished report.

GeoPT18

Webb, P.C., Thompson M., Potts P.J. and L. Paul Bedard (2006)
GeoPT18 - an international proficiency test for analytical geochemistry laboratories - report on round 18 / Jan 2006 (Quartz Diorite, KPT-1). International Association of Geoanalysts: Unpublished report.

GeoPT19

Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2006)
GeoPT19 - an international proficiency test for analytical geochemistry laboratories - report on round 19 / July 2006 (Gabbro, MGR-N). International Association of Geoanalysts: Unpublished report.

GeoPT20

Webb, P.C., Thompson M., Potts P.J. and M. Burnham (2007)
GeoPT20 - an international proficiency test for analytical geochemistry laboratories - report on round 20 / Jan 2007 (Ultramafic rock, OPY-1). International Association of Geoanalysts: Unpublished report.

Contd.

GeoPT21

Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2007)
GeoPT21 - an international proficiency test for analytical geochemistry laboratories - report on round 21 / July 2007 (Granite, MGT-1). International Association of Geoanalysts: Unpublished report.

GeoPT22

Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2008)
GeoPT22 - an international proficiency test for analytical geochemistry laboratories - report on round 22 / January 2008 (Basalt, MBL-1). International Association of Geoanalysts: Unpublished report.

GeoPT23

Webb, P.C., Thompson, M., Potts, P.J., Watson, J.S. and Kriete, C. (2008)
GeoPT23 - an international proficiency test for analytical geochemistry laboratories - report on round 23 / September 2008 (Separation Lake pegmatite, OU-9) and 23A (Manganese nodule, FeMn-1). International Association of Geoanalysts: Unpublished report.

GeoPT24

Webb, P.C., Thompson, M., Potts, P.J. and Watson, J.S. (2009)
GeoPT24 - an international proficiency test for analytical geochemistry laboratories - report on round 24 / January 2009 (Longmyndian greywacke, OU-10). International Association of Geoanalysts: Unpublished report.

GeoPT25

Webb, P.C., Thompson, M., Potts, P.J. and Enzweiler, J. (2009)
GeoPT25 - an international proficiency test for analytical geochemistry laboratories - report on round 25 / July 2009 (Basalt, HTP-1). International Association of Geoanalysts: Unpublished report.

GeoPT26

Webb, P.C., Thompson, M., Potts, P.J. and Loubser, M. (2010)
GeoPT26 - 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.

GeoPT27

Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2010)
GeoPT27 - an international proficiency test for analytical geochemistry laboratories - report on round 27 / July 2010 (Andesite, MGL-AND). International Association of Geoanalysts: Unpublished report.

GeoPT28

Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
GeoPT28 - an international proficiency test for analytical geochemistry laboratories - report on round 28 / January 2011 (Shale, SBC-1). International Association of Geoanalysts: Unpublished report.

GeoPT29

Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
GeoPT29 - an international proficiency test for analytical geochemistry laboratories - report on round 29 / July 2011 (Nephelinite, NKT-1). International Association of Geoanalysts: Unpublished report.

GeoPT30

Webb, P.C., Thompson, M., Potts, P.J., Long, D. and Batjargal, B. (2012)
GeoPT30 - an international proficiency test for analytical geochemistry laboratories - report on round 30 / January 2012 (Syenite, CG-2) and 30A (Limestone, ML-2). International Association of Geoanalysts: Unpublished report.

GeoPT31

Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2012)
GeoPT31 - an international proficiency test for analytical geochemistry laboratories - report on round 31 / July 2012 (Modified river sediment, SdAR-1). International Association of Geoanalysts: Unpublished report.

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G01	G02	G03	G04	G05	G06	G07	G08	G09	G10	G11	
Data Quality		2	2	1	1	2	2	1	1	1	2	1	
SiO2	% m/m	52.31	51.9	51.50	52.24	51.99	52.02	51.53		52.21	52.37		
TiO2	% m/m	1.65	1.77	1.78	1.76	1.768	1.78	1.72	1.67	1.75	1.76	1.71	
Al2O3	% m/m	14.38	14.25	13.62	14.12	14.27	14.56	14.38		14.38	14.32	13.91	
Fe2O3T	% m/m	11.01	11.4	11.04	11.55	11.72	11.49	11.35		11.44	11.21	11.06	
Fe(II)O	% m/m			8.19		10.55		8.42					
MnO	% m/m	0.1349	0.147	0.13	0.143	0.150	0.146	0.144		0.145	0.14	0.142	
MgO	% m/m	7.52	7.55	7.73	7.42	7.513	7.51	7.69		7.73	7.49	7.43	
CaO	% m/m	8.18	8.41	7.95	8.51	8.417	8.56	8.33		8.52	8.38	8.5	
Na2O	% m/m	2.95	3.16	2.94	3.141	2.797	2.91	3.17		3.01	3.14	3.01	
K2O	% m/m	0.83	0.84	0.79	0.772	0.857	0.821	0.8		0.86	0.86	0.87	
P2O5	% m/m	0.29	0.30	0.38	0.282	0.331	0.263	0.31		0.3	0.29		
H2O+	% m/m	0.16						0.47					
CO2	% m/m												
LOI	% m/m	-0.02		-0.01	0.05		0.00	-0.08	-0.27	-0.22	-0.2		
Ag	mg kg ⁻¹											0.278	
As	mg kg ⁻¹				1.54					8		1.432	
Au	mg kg ⁻¹												
B	mg kg ⁻¹							5					
Ba	mg kg ⁻¹	232				245		211	197	224	291	215	219.86
Be	mg kg ⁻¹				1.14				1.06				
Bi	mg kg ⁻¹					1.3							
Br	mg kg ⁻¹												
C(tot)	mg kg ⁻¹					483.3			55				
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹											0.055	
Ce	mg kg ⁻¹	31			30.4		31.29	28	33.1				
Cl	mg kg ⁻¹							125					
Co	mg kg ⁻¹	47			47.5		47	42.8	47.73	43	48	44.08	
Cr	mg kg ⁻¹	239				211	235	250	249	263	247	262	
Cs	mg kg ⁻¹							0.79	0.863			0.791	
Cu	mg kg ⁻¹	32				59	48	54.4	56.81	106	51	55.66	
Dy	mg kg ⁻¹				4.1		4.12	3.75	4.294			4.11	
Er	mg kg ⁻¹				2.08		1.99	1.74	2.389			1.98	
Eu	mg kg ⁻¹				1.6		1.53	1.5	1.792			1.51	
F	mg kg ⁻¹							291					
Ga	mg kg ⁻¹	21				21.1		19.1				19.12	
Gd	mg kg ⁻¹				4.83		4.86	4.26	4.68			4.73	
Ge	mg kg ⁻¹							1.28				1.43	
Hf	mg kg ⁻¹							3.01	3.379				
Hg	mg kg ⁻¹							0.001					
Ho	mg kg ⁻¹				0.8		0.78	0.685	0.807			0.782	
I	mg kg ⁻¹												
In	mg kg ⁻¹												
La	mg kg ⁻¹	8			14.6		15.32	14.1	15.99		16	14.4	
Li	mg kg ⁻¹				6			8.2			9		
Lu	mg kg ⁻¹				0.24		0.23	0.22	0.265			0.22	
Mo	mg kg ⁻¹					1.6		1.6				1.7	
Nb	mg kg ⁻¹	18				18.8		15.6	18.98	18.7		19.15	
Nd	mg kg ⁻¹				17.3		16.65	16	18.13			17.92	
Ni	mg kg ⁻¹	166				141.5	154	148	164.6	146	149	162.73	
Pb	mg kg ⁻¹	6				1	4	2.99	3.363	4		3.11	
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹				3.99		4.04	3.41	4.176			3.81	
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹	24				22.2	23	20.8	23.25	22.5		21.4	
S	mg kg ⁻¹						201.7	265					
Sb	mg kg ⁻¹												
Sc	mg kg ⁻¹					16.8		21.93	20.68	19	20		
Se	mg kg ⁻¹				5.210			0.04					
Sm	mg kg ⁻¹				4.600		4.48	4.10	4.548			4.340	
Sn	mg kg ⁻¹							1.49	1.616			1.57	
Sr	mg kg ⁻¹	368				347.5	366	345	378	356	343	370	
Ta	mg kg ⁻¹							3.13	3.55				
Tb	mg kg ⁻¹				0.72		0.7	0.658	0.949				
Te	mg kg ⁻¹												
Th	mg kg ⁻¹	8			2.81		2	2.3	2.602			2.35	
Tl	mg kg ⁻¹												
Tm	mg kg ⁻¹				0.28		0.26	0.24	0.281			0.26	
U	mg kg ⁻¹				0.74			0.63	0.722			0.59	
V	mg kg ⁻¹	171				143	173	144	170.2	139			
W	mg kg ⁻¹							0.5	0.586			0.54	
Y	mg kg ⁻¹	22				19.4	22	19.3	20.29	20	20		
Yb	mg kg ⁻¹				1.68		1.76	1.52	1.85			1.6	
Zn	mg kg ⁻¹	103				103	114	114	112.5	104	112	112	
Zr	mg kg ⁻¹	140				129	158	120	132.3	140	124	134.9	

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G12	G13	G13	G14	G15	G16	G17	G18	G19	G20	G21	G22
Data Quality		1	1	2	2	2	2	1	2	2	2	1	2
SiO2	% m/m	52.03			51.95	51.86	52.28	52.47	52.11	51.97	51.12	51.03	52
TiO2	% m/m	1.71	1.735		1.75	1.6	1.72	1.71	1.73	1.75	2.95	1.71	1.76
Al2O3	% m/m	14.35	14.322		14.3	20.02	14.36	14.32	14.29	14.36	3.02	14.11	14.34
Fe2O3T	% m/m	11.2	11.781		11.33	10.72	11.18	11.3	11.3	11.32	19.64	11.24	11.38
Fe(II)O	% m/m											7.01	
MnO	% m/m	0.140	0.142		0.14	0.16	0.142	0.147	0.144	0.14	0.23	0.15	0.15
MgO	% m/m	7.59	7.41		7.55	2.54	7.51	7.48	7.48	7.56	1.69	7.44	7.58
CaO	% m/m	8.25	8.675		8.42	7.67	8.39	8.293	8.47	8.4	15.53	8.40	8.41
Na2O	% m/m	3.12	3.127		3.17		3.07	3.12	3.08	3.14	3.93	3.00	2.98
K2O	% m/m	0.84	0.855		0.83	0.95	0.85	0.82	0.84	0.84	1.48	0.82	0.82
P2O5	% m/m	0.28			0.303		0.301	0.28	0.29	0.30	0.17	0.29	0.3
H2O+	% m/m	0.16											
CO2	% m/m					5.03							
LOI	% m/m	-0.2					-0.19		-0.11	-0.19		0.11	0
Ag	mg kg ⁻¹									0.1			0.17
As	mg kg ⁻¹										8.98		2.07
Au	mg kg ⁻¹												
B	mg kg ⁻¹									119			
Ba	mg kg ⁻¹		210		217	227			224	205		208	217
Be	mg kg ⁻¹				1.03					1.1			0.96
Bi	mg kg ⁻¹												0.02
Br	mg kg ⁻¹												
C(tot)	mg kg ⁻¹	350								200			
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹					2.6							
Ce	mg kg ⁻¹		31.5		34.4	29				30.4	122		31.4
Cl	mg kg ⁻¹		140										
Co	mg kg ⁻¹		46.7		43.5				43.3	46	84.87	45	43.8
Cr	mg kg ⁻¹		260		196				239.1	199	456	247	255
Cs	mg kg ⁻¹		0.71		0.85					0.8			0.79
Cu	mg kg ⁻¹				53.4	55			57.7	63	48.26	76	55.8
Dy	mg kg ⁻¹		4.8		4.33					3.7			4.1
Er	mg kg ⁻¹				2.15					2.0			2
Eu	mg kg ⁻¹		1.62		1.65					1.3			1.51
F	mg kg ⁻¹												
Ga	mg kg ⁻¹				19	17			20.1	19	29	17	19
Gd	mg kg ⁻¹				5.03					4.4			4.65
Ge	mg kg ⁻¹									0.8			
Hf	mg kg ⁻¹		3.55		3.5					3.4			3.32
Hg	mg kg ⁻¹			0.4									
Ho	mg kg ⁻¹				0.79					0.7			0.76
I	mg kg ⁻¹												
In	mg kg ⁻¹				0.061								0.06
La	mg kg ⁻¹		15.3			13			15.4	14.3	33.46		17.5
Li	mg kg ⁻¹									7.4			7.36
Lu	mg kg ⁻¹		0.2		0.25					0.23			0.22
Mo	mg kg ⁻¹				1.74	1.3				1.6			1.75
Nb	mg kg ⁻¹				18.5	14			19.4	18	8.24	20	17.8
Nd	mg kg ⁻¹		13		18.2	18			18.5	17.1	65.78		18.9
Ni	mg kg ⁻¹		250		149.5	135			159.4	150	116.2	168	160
Pb	mg kg ⁻¹					0.1				3	5.47		3.36
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹				4.29					4.0			3.84
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹		26		23	23			19.7	21	17.15	22	23.8
S	mg kg ⁻¹									160			
Sb	mg kg ⁻¹									0.1			0.12
Sc	mg kg ⁻¹		21.1		19.6					19		20	20.4
Se	mg kg ⁻¹												
Sm	mg kg ⁻¹		4.350		4.67					4.1			3.23
Sn	mg kg ⁻¹									2			1.8
Sr	mg kg ⁻¹		440		391	366			361	349	661	352	349
Ta	mg kg ⁻¹		2.8							3	1.23		2.91
Tb	mg kg ⁻¹		0.74							0.64			0.71
Te	mg kg ⁻¹												
Th	mg kg ⁻¹		2.58							2.3			2.43
Tl	mg kg ⁻¹									0.1			0.1
Tm	mg kg ⁻¹				0.3					0.22			0.26
U	mg kg ⁻¹									0.66			0.58
V	mg kg ⁻¹		169		164				153.8	160	488	159	151
W	mg kg ⁻¹			0.5						0.5			0.82
Y	mg kg ⁻¹				21.1	19			22.6	19	65.17	24	20.4
Yb	mg kg ⁻¹		1.54		1.72					1.5			1.63
Zn	mg kg ⁻¹			90	112	97			108	103	75.13	103	107
Zr	mg kg ⁻¹		130		127	135			125.7	127	197	132	132

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G23	G24	G25	G25	G26	G27	G28	G29	G30	G31	G32	G33
Data Quality		1	2	1	2	1	1	2	1	2	1	1	2
SiO2	% m/m	52.62	52.33	52.65		51.537	52.24	51.946	52.73	52.56	50.6	53.12	52.69
TiO2	% m/m	1.82	1.75	1.76		1.738	1.7	1.737	1.73	1.72	1.74	1.77	1.8
Al2O3	% m/m	15.42	14.30	14.57		13.83	14.35	13.763	14.56	14.22	14	15.2	14.23
Fe2O3T	% m/m	11.92	11.29	11.42		11.795	11.31	11.567	11.3	11.46	10.9	11.14	11.15
Fe(II)O	% m/m	6.865					8.45						7.73
MnO	% m/m	0.134	0.138	0.1472		0.1448	0.149	0.121	0.138	0.14	0.131	0.150	0.14
MgO	% m/m	5.455	7.78	7.65		7.79	7.65	7.859	7.42	7.57	4.80	7.73	7.6
CaO	% m/m	8.17	8.40	8.44		8.764	8.498	8.643	8.13	8.28	8	8.07	8.16
Na2O	% m/m	3.385	3.04	3.01		3.169	3.17	3.169	3.11	3.08	2.4	3.07	3.12
K2O	% m/m	0.7575	0.875	0.84		0.844	0.85	0.828	0.84	0.85	0.9	0.83	0.73
P2O5	% m/m	0.249	0.291	0.297		0.300	0.298	0.294	0.295	0.3	0.2523	0.28	0.3
H2O+	% m/m						0.65						0.35
CO2	% m/m						0.07						
LOI	% m/m	0.59		0.01		-0.313	0.08	-0.25		-0.19		-0.3	0.1
Ag	mg kg ⁻¹	0.340						3.6					
As	mg kg ⁻¹	1.200		0.89				0.2				4	
Au	mg kg ⁻¹												
B	mg kg ⁻¹	1.499			5.98								
Ba	mg kg ⁻¹	188.792		213		247.5	223.6	237	213	209	243.8	234	260
Be	mg kg ⁻¹	0.869		0.95			1.12		1.15	1.11			
Bi	mg kg ⁻¹	0.015					0.22	0.1	0.028				
Br	mg kg ⁻¹												
C(tot)	mg kg ⁻¹							180					
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹	0.045		0.072			0.056	6.3			1.2		
Ce	mg kg ⁻¹	27.565		32.85		43.6	33.36	6.1	31.0	30.2	40.7	45	29.2
Cl	mg kg ⁻¹												
Co	mg kg ⁻¹	36.947		46.0		47	48.8	59.2	45.6	46.2	30.6	45	43
Cr	mg kg ⁻¹	149.168		231		223	269	171.1	248	247	192.8		230
Cs	mg kg ⁻¹	0.730		0.86			0.844	2	0.80	0.82			0.83
Cu	mg kg ⁻¹	49.679		53.7		56.1	57.9	56	55.8	55.2	55.1	53	54
Dy	mg kg ⁻¹	3.891		3.94			4.499		4.26	4.09			3.95
Er	mg kg ⁻¹	2.031		1.91			2.226		2.06	2.03			1.95
Eu	mg kg ⁻¹	1.417		1.48			1.6538		1.53	1.51			1.43
F	mg kg ⁻¹												
Ga	mg kg ⁻¹	16.496		19.7		20.5	19.54	20	19.3	19.1	18.5	20	19
Gd	mg kg ⁻¹	4.291		3.94			5.139		4.64	4.55			4.56
Ge	mg kg ⁻¹	1.195							1.43	1.36			
Hf	mg kg ⁻¹	3.325		3.13		4.52	3.42	4.1	3.24	3.15		2	
Hg	mg kg ⁻¹												
Ho	mg kg ⁻¹	0.736		0.749			0.8531		0.79	0.77			0.73
I	mg kg ⁻¹												
In	mg kg ⁻¹						0.0604						
La	mg kg ⁻¹	13.316		15.12		27.5	16.05	20.4	15.0	14.7	17.3	76	15.6
Li	mg kg ⁻¹	6.136		5.30			7.6		7.48	7.97			7.2
Lu	mg kg ⁻¹	0.219		0.222			0.2419		0.23	0.23			0.24
Mo	mg kg ⁻¹	1.389					1.76	1.7	1.68			2	1.6
Nb	mg kg ⁻¹	15.637		16.99		16.6	17.724	17.2	19.2	19.1	16.3	17	19
Nd	mg kg ⁻¹	15.685		17.27		20	18.76	11.1	17.5	17.3		20	16.8
Ni	mg kg ⁻¹	126.906		152		144.8	166.4	136.6	163	161	145.6	133	140
Pb	mg kg ⁻¹	2.370		3.49		5.6	3.3	1.6	3.36	3.31	4.3	11	3.5
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹	3.549		3.87			4.305		3.96	3.95			3.79
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹	20.642		24.7		23.4	22.61	21.7	22.3	21.6	20.7	23	22
S	mg kg ⁻¹							190			54		
Sb	mg kg ⁻¹	0.095		0.12			0.1	1.6					
Sc	mg kg ⁻¹	14.684		21.4		14.7	22.6	16	20.7	20.5		18	21
Se	mg kg ⁻¹	0.512											
Sm	mg kg ⁻¹	4.014		4.40			4.783	3.3	4.51	4.39		4.000	4.16
Sn	mg kg ⁻¹	1.478					1.33	2	1.66		3.1		1.5
Sr	mg kg ⁻¹	301.946		348		352.8	361.1	345.4	363	361	323.2	355	360
Ta	mg kg ⁻¹	2.972		2.87		3.68	2.933	2.2	2.83	2.64			2.01
Tb	mg kg ⁻¹	0.650		0.708			0.7761		0.74	0.71			0.66
Te	mg kg ⁻¹	0.013						3					
Th	mg kg ⁻¹	2.188		2.49			2.514	3.4	2.43	2.38	1.5	3	2.3
Tl	mg kg ⁻¹	0.069		0.064			0.077		0.091				
Tm	mg kg ⁻¹	0.261		0.258			0.2968		0.28	0.27			0.29
U	mg kg ⁻¹	0.613		0.66			0.688	2.1	0.65	0.64		2	0.71
V	mg kg ⁻¹	108.652		158		133.5	166.5	118.2	149	157	162.1	144	140
W	mg kg ⁻¹	0.528		0.50		2.1	0.52	1.7					
Y	mg kg ⁻¹	16.562		20.3		20.8	20.79	20.3	22.2	21.7	20.1	21	22
Yb	mg kg ⁻¹	1.546		1.58			1.736	0.8	1.65	1.63			1.53
Zn	mg kg ⁻¹	77.351		109		102	105	102.6	106	104	92.8	102	95
Zr	mg kg ⁻¹	108.538		136		130.7	138	126.9	130	132	124.6	132	130

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G34	G35	G35	G36	G36	G37	G38	G39	G40	G41	G42	G43
Data Quality		1	1	2	1	2	2	1	2	1	2	2	1
SiO2	% m/m		52.69		51.86		52.66	53.3	52.47	52.392	52.59	51.8	
TiO2	% m/m		1.67		1.7		1.76	1.77	1.72	1.732	1.69	1.72	1.74
Al2O3	% m/m		14.47		14.15		14.58	14.6	14.36	14.545	14.16	14.36	
Fe2O3T	% m/m		11.25		11.1		11.48		10.96	11.233	11.38	11.26	
Fe(II)O	% m/m				8.26			8.56					
MnO	% m/m		0.150		0.140		0.147	0.140	0.17	0.142	0.19	0.14	0.145
MgO	% m/m		7.72		7.36		7.65	7.61	7.99	7.565	7.37	7.68	
CaO	% m/m		8.41		8.27		8.5	8.47	8.25	8.454	8.26	8.65	
Na2O	% m/m		3.13		2.9		3.09	3.37	3.16	3.074	2.62	3.07	
K2O	% m/m		0.85		0.81		0.85	0.84	0.77	0.845	0.86	0.86	
P2O5	% m/m		0.28		0.27		0.298	0.3	0.31	0.301	0.26	0.3	
H2O+	% m/m				0.5			0.05			0.6		
CO2	% m/m				0.08								
LOI	% m/m			0.0894	0.4		0	-0.11	-0.02	-0.2	0	0.02	
Ag	mg kg ⁻¹		1										
As	mg kg ⁻¹		1.1			12		11	4.95				1.3
Au	mg kg ⁻¹												
B	mg kg ⁻¹												
Ba	mg kg ⁻¹	216.13	230		205		210	232	222.82	228.7	150	185	227
Be	mg kg ⁻¹							1.6	1.18			1.1	0.934
Bi	mg kg ⁻¹												
Br	mg kg ⁻¹		0.2										
C(tot)	mg kg ⁻¹								428				
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹					6		0.29	0.12				
Ce	mg kg ⁻¹	30.322	29.8		26			41.7	32.47			31.5	31.24
Cl	mg kg ⁻¹		69.6			46							
Co	mg kg ⁻¹	45.137	40		44			46.6	46.54	42.4		46.8	46.700
Cr	mg kg ⁻¹	251.43	215.9		253		240	0.03	255.15	246.8	210	255	
Cs	mg kg ⁻¹	0.77						0.91	0.84			0.89	0.8
Cu	mg kg ⁻¹	56.73	58.1		44			67	63.88	57.9		53.8	59.3
Dy	mg kg ⁻¹	4.286						5.85	4.26			4.1	4.31
Er	mg kg ⁻¹	2.048						2.96	2.14			2	2.09
Eu	mg kg ⁻¹	1.567						2.65	1.58			1.5	1.6
F	mg kg ⁻¹					139							
Ga	mg kg ⁻¹	19.504	20.2		20			23.3	20.3	20.6		18.1	
Gd	mg kg ⁻¹	4.886						6.97	4.96			4.6	4.69
Ge	mg kg ⁻¹												
Hf	mg kg ⁻¹	3.224	2.3					3.98				3.2	
Hg	mg kg ⁻¹								0.001				
Ho	mg kg ⁻¹	0.7903						1.35	0.81			0.8	0.816
I	mg kg ⁻¹		0.6										
In	mg kg ⁻¹							0.07					
La	mg kg ⁻¹	14.678	24.3		13			16.5	15.5			15.6	15.75
Li	mg kg ⁻¹							8	7.56				7.33
Lu	mg kg ⁻¹	0.2362						0.32	0.23			0.2	0.235
Mo	mg kg ⁻¹		1.8		3			1.37	1.63			1.2	1.84
Nb	mg kg ⁻¹	19.139	18.4		24				17.93	18.1		19.5	
Nd	mg kg ⁻¹	17.784	16.4		23			24.4	18.53			17.5	18.77
Ni	mg kg ⁻¹	162.83	130.4		160			164	179.41	141.6		159	158
Pb	mg kg ⁻¹	3.621	3.1		2			9.2	3.18	4.7		1.1	3.76
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹	4.098						5.82	4.1			4.1	4.33
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹	21.736	22.1		12			26.4	22.95	23.5		22.5	22.7
S	mg kg ⁻¹					19		300	174		376		
Sb	mg kg ⁻¹							0.23	0.65				
Sc	mg kg ⁻¹	22.44	19.6		21			25.5	19.23	20.8		19.7	
Se	mg kg ⁻¹		0.200										
Sm	mg kg ⁻¹	4.397	3.100					5.900	4.6			4.4	4.620
Sn	mg kg ⁻¹				3								
Sr	mg kg ⁻¹	345.41	348.9		343		350	375	382.28	367.7	470	341	375
Ta	mg kg ⁻¹	2.546							3.04			3	
Tb	mg kg ⁻¹	0.7395						1.18	0.77				0.736
Te	mg kg ⁻¹								0.02				
Th	mg kg ⁻¹	2.486	2.8		4				2.57	2.3		2.4	2.44
Tl	mg kg ⁻¹							0.09	0.06			0.05	0.0705
Tm	mg kg ⁻¹	0.2862						0.46	0.29			0.27	0.273
U	mg kg ⁻¹	0.6634	0.7		1			1.57	0.74			0.65	0.676
V	mg kg ⁻¹	152.09	140.4		136		170	151	161.49	155.3		158	164
W	mg kg ⁻¹		0.1		4				1.19			0.74	0.526
Y	mg kg ⁻¹	21.729	20.3		16			29.8	19.5	22.9		22	21.65
Yb	mg kg ⁻¹	1.7068	1.8					2.2	1.83			1.6	1.67
Zn	mg kg ⁻¹	97.84	95		97		110	100	121.44	99.3	142	105	108
Zr	mg kg ⁻¹	129.48	135.2		132		130		128.47	130.9	87	124	

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)												
Lab Code		G44	G45	G46	G47	G48	G48	G49	G50	G51	G52	G53	G54	
Data Quality		2	2	1	2	1	2	1	2	2	1	2	2	
SiO2	% m/m	53.49	53.03	52.228	52.45	52.237		52.653		51.32		54.3	52.417	
TiO2	% m/m	1.78	1.83	1.7285	1.762	1.718		1.682	1.813	1.72	1.18	1.7	1.744	
Al2O3	% m/m	13.63	14.69	14.39	14.29	14.32		14.102		14.51	9.75	14.5	14.513	
Fe2O3T	% m/m	11.23	10.69	11.074	11.42	11.251		11.23	11.07	11.45	9.49	10.8	11.345	
Fe(II)O	% m/m		8.6					7.87		8.3				
MnO	% m/m	0.15	0.14	0.1447	0.144	0.144		0.149	0.143	0.14	0.105	0.149	0.147	
MgO	% m/m	7.33	7.2	7.495	7.48	7.58		7.399		7.67	4.54	4.9	7.643	
CaO	% m/m	8.45	8.22	8.384	8.3	8.402		8.22	8.20	8.47	5.34	8.4	8.465	
Na2O	% m/m	3.02	3.1	3.116	2.82	3.073		3.063		3.23	2.21	3.6	3.183	
K2O	% m/m	0.84	0.84	0.849	0.822	0.858		0.896	0.861	0.84	0.54	0.88	0.868	
P2O5	% m/m	0.29	0.28	0.296	0.295	0.2989		0.263	0.250	0.29	0.2	0.28	0.296	
H2O+	% m/m		0.6					0.65					0.097	
CO2	% m/m													
LOI	% m/m	-0.25	0.33	0.04		0.22				-0.21		-0.27	-0.263	
Ag	mg kg ⁻¹	1	0.24							0.15		0.056		
As	mg kg ⁻¹		2							1.16		0.92		
Au	mg kg ⁻¹	0.019												
B	mg kg ⁻¹													
Ba	mg kg ⁻¹	244	200	216.0	257	220.9				219	213	136.21	212	242.5
Be	mg kg ⁻¹	2	0.9							1.37	0.85	0.73	1.06	
Bi	mg kg ⁻¹	23								0.04		0.009		1.4
Br	mg kg ⁻¹													
C(tot)	mg kg ⁻¹		0.03								470			
C(org)	mg kg ⁻¹										220			
Cd	mg kg ⁻¹	4	0.08											
Ce	mg kg ⁻¹		31.1	31.588	55.02		30.3	32.6	32.3	30	23.85	30.9	34.9	
Cl	mg kg ⁻¹		140									70		
Co	mg kg ⁻¹	9	46.8		45					42.7	37.5	33.99	48.1	44.4
Cr	mg kg ⁻¹	148	230	243.9	246	220.8				208		180.58	201	220.2
Cs	mg kg ⁻¹		0.8	0.812						0.72		0.45	0.816	
Cu	mg kg ⁻¹	32	59.5	55.5	50	57.1				59	52	47.48	57	55.5
Dy	mg kg ⁻¹		4.08	4.712	4.15				4.03	4.41	4.6	3.55	4.13	
Er	mg kg ⁻¹		2.19	2.154	2.16				1.94	2.10	2.35	1.63	2.07	
Eu	mg kg ⁻¹		1.57	1.711	1.49				1.74	1.66	1.65	1.12	1.54	
F	mg kg ⁻¹		288						466					
Ga	mg kg ⁻¹	12	20	20.4	19	19.8				19	19.7	12.08	20.9	19.9
Gd	mg kg ⁻¹		4.71	5.054	5.13			3.41	5.06	5.2	3.52	4.7		
Ge	mg kg ⁻¹											2.51		2.1
Hf	mg kg ⁻¹		4	3.311						4.16		2.46	3.4	13.0
Hg	mg kg ⁻¹													
Ho	mg kg ⁻¹		0.78	0.872	0.78			0.79	0.77	0.86	0.56	0.78		
I	mg kg ⁻¹													
In	mg kg ⁻¹		0.08							0.06				
La	mg kg ⁻¹		15.3	15.491	18.56			15.5	15.9	15.1	11.39	14.8	19.4	
Li	mg kg ⁻¹		9						8.22	7	3.75	7.57		
Lu	mg kg ⁻¹		0.26	0.249	0.23			0.25	0.24	0.25	0.17	0.24		
Mo	mg kg ⁻¹	7	1.85							1.82		1.13	1.9	1.6
Nb	mg kg ⁻¹	18	21	17.738	18	18.0				18	18.1	6.92	16	17.8
Nd	mg kg ⁻¹		17.5	17.974	16.85		21.2	17.7	18.4	18.4	13.43	17.4	20.5	
Ni	mg kg ⁻¹	92	148	152.1	165	143.8				140		93.57	153	143.2
Pb	mg kg ⁻¹		3.6	3.337	3.02		3.6		3.74		1.47	3.35	3.1	
Pd	mg kg ⁻¹	0.021												
Pr	mg kg ⁻¹		4.06	4.118	3.8			4.09	4.07	5.6	2.88	3.96		
Pt	mg kg ⁻¹	0.085												
Rb	mg kg ⁻¹	63	22.3	22.057	22.2	22.5				22	22	13.17	21.9	22.6
S	mg kg ⁻¹													
Sb	mg kg ⁻¹		0.16									0.06		
Sc	mg kg ⁻¹	12	18.4	20.68	19.3		17.5			19		13.05	21	16.8
Se	mg kg ⁻¹													
Sm	mg kg ⁻¹		4.3	4.672	4.12			4.39	4.67	4.5	3.270	4.42		
Sn	mg kg ⁻¹		2						1.82		0.64	1.85	2.2	
Sr	mg kg ⁻¹	193	379	365.4	339	356.7				352	346	217.38	341	361.2
Ta	mg kg ⁻¹		3.1	2.855	4.05					3.42		0.26		2.8
Tb	mg kg ⁻¹		0.79	0.81	0.73			0.75	0.74	0.87	0.61	0.71		
Te	mg kg ⁻¹													
Th	mg kg ⁻¹		4.8	2.516	2.74					2.49		1.95		1.7
Tl	mg kg ⁻¹		0.08							0.09		0.04	0.088	
Tm	mg kg ⁻¹		0.26	0.289	0.27			0.27	0.29	0.25	0.19	0.27		
U	mg kg ⁻¹	3	0.76	0.669	0.66					0.73		0.52	0.668	1.1
V	mg kg ⁻¹	115	158	163.4	161	151.5				144	159	151.42	165	142.0
W	mg kg ⁻¹									0.50		0.08	0.5	1.9
Y	mg kg ⁻¹		20.1	21.817	19.74	21.2		21.0	21	20.9	16.1	20.6	28.9	
Yb	mg kg ⁻¹		1.7	1.663	1.71			1.60	1.72		1.21	1.69	6.3	
Zn	mg kg ⁻¹	68	101	108.9	110	108.4				105	100	66.48	111	104.6
Zr	mg kg ⁻¹	28	126	129.64	126	134.2				131	127	105.2	121	134.5

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G55	G56	G56	G57	G58	G59	G60	G61	G62	G63	G64	G65
Data Quality		2	1	2	1	2	2	1	1	1	1	2	1
SiO2	% m/m	52.352	52.043		50.83	52	52.226	52.299	52.258	52.6		51.69	52.54
TiO2	% m/m	1.802	1.759		1.81	1.72	1.867	1.747	1.726	1.73		1.78	1.72
Al2O3	% m/m	14.626	14.666		14.97	14.3	14.882	14.409	14.299	14.17		14.53	14.51
Fe2O3T	% m/m	11.411	11.293		11.61	11.3	11.762	11.385	11.289	11.47		11.27	11.2
Fe(II)O	% m/m	8.388							8.5	7.4			
MnO	% m/m	0.14		0.139	0.130	0.147	0.153	0.146	0.145	0.150		0.144	0.150
MgO	% m/m	7.441		7.652	5.74	7.41	7.807	7.63	7.58	7.34		7.39	7.51
CaO	% m/m	8.49		8.097	8.39	8.01	8.54	8.586	8.416	8.29		8.37	8.34
Na2O	% m/m	3.042	3.14		3.34	3.02	3.154	3.095	3.103	2.98		3.07	3.1
K2O	% m/m	0.88	0.85		0.92	0.838	0.857	0.83	0.846	0.85		0.873	0.87
P2O5	% m/m	0.29		0.284	0.23	0.278	0.301	0.29	0.298	0.29		0.296	0.3
H2O+	% m/m												
CO2	% m/m												
LOI	% m/m	0.725		0.280	0.5	0.1				-0.12			
Ag	mg kg ⁻¹			0.07					2.12				
As	mg kg ⁻¹			0.7				1.117	0.96				
Au	mg kg ⁻¹												
B	mg kg ⁻¹			3.0									
Ba	mg kg ⁻¹	221		260.0	187		213	209.33	224.48	211	212.5	218	205.2
Be	mg kg ⁻¹	1.4		1.4			1.2	0.93	1.6				
Bi	mg kg ⁻¹												
Br	mg kg ⁻¹												
C(tot)	mg kg ⁻¹									400			
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹			0.07									
Ce	mg kg ⁻¹	34	32.03				30.61	31.3	31.65	31.6	29.7		29.16
Cl	mg kg ⁻¹	145											
Co	mg kg ⁻¹	41		39.0	48		47.74	45.533	45.24	53.4	41.1	43	42.48
Cr	mg kg ⁻¹	208		215.0	248		268.8	248.667	257.54	177	217.9	236	237.1
Cs	mg kg ⁻¹	0.8		0.82				0.807	0.9		0.76		1.02
Cu	mg kg ⁻¹	58.09		56.0	59		55.9	50.3	57.37	53	47.2	77	70.09
Dy	mg kg ⁻¹	4.03	4.51				4.18	4.247	4.31	4.2	3.96		3.96
Er	mg kg ⁻¹	2.01	2.33				2.13	2.087	2.07	2.07	1.99		1.96
Eu	mg kg ⁻¹	1.46	1.65				1.58	1.553	1.63	1.53	1.49		1.49
F	mg kg ⁻¹	170		300.0					225			245	
Ga	mg kg ⁻¹	16		19.06	12		20.69	20.067	18.9	20.6			18.27
Gd	mg kg ⁻¹	4.56	5.04				4.32	4.663	4.83	4.64	4.44		4.63
Ge	mg kg ⁻¹	1.27		1.4				1.317	1.23				
Hf	mg kg ⁻¹	3.42		3.45			3.28	3.223	3.04			2	
Hg	mg kg ⁻¹							0.01					
Ho	mg kg ⁻¹	0.77	0.84				0.83	0.79	0.87	0.8	0.76		0.75
I	mg kg ⁻¹												
In	mg kg ⁻¹									192			
La	mg kg ⁻¹	16	15.12				15.03	15.067	15.77	15.4	14.0		15.75
Li	mg kg ⁻¹			6				7.7		7.9	8.2	8	
Lu	mg kg ⁻¹	0.23	0.26				0.24	0.235		0.26	0.22		0.23
Mo	mg kg ⁻¹	1.4		1.8			1.53	1.667	3.09				
Nb	mg kg ⁻¹	17		20.52	22		17.02	18.967	18.84	19			21.21
Nd	mg kg ⁻¹	18	18.28				17.63	18.267	18.88	16.8	16.9		16.79
Ni	mg kg ⁻¹	145		150.0	152		181	153	147.68	131	139.0	124	157.5
Pb	mg kg ⁻¹	2.9		3.41	16		3.5	3.217	3.76				
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹		4.07				4	4.593		4.14	3.87		3.74
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹	18		18	30		22.14	22.533	21.45	33.4	21.1		20.7
S	mg kg ⁻¹	130						800	292.58	153			
Sb	mg kg ⁻¹			0.50				0.147	5.44				
Sc	mg kg ⁻¹	17		23.0	22		18.8	19.867	16.55	16.7	18.3		
Se	mg kg ⁻¹								0.350				
Sm	mg kg ⁻¹	4.49	4.58				4.39	4.517	4.870	4.480	4.36		4.300
Sn	mg kg ⁻¹	1.3		2.30			2.61		1.22				
Sr	mg kg ⁻¹	360		360.0	386		354.26	364.333	347.07	338	344.0	351	366.5
Ta	mg kg ⁻¹	4.69		2.97			2.64	2.987	2.91				3.46
Tb	mg kg ⁻¹	0.71	0.78				0.73	0.674	0.77	0.73	0.70		0.7
Te	mg kg ⁻¹												
Th	mg kg ⁻¹	3.5		2.66			2.4	2.45	1.5	2.57	2.31		2.85
Tl	mg kg ⁻¹	0.06		0.32				0.08					
Tm	mg kg ⁻¹	0.26	0.28				0.28	0.26		0.27	0.26		0.26
U	mg kg ⁻¹	0.65		0.87			0.64	0.671	0.64	0.65	0.65		0.66
V	mg kg ⁻¹	154		150.0	162		152.4	160.333	156.085	125	166.3		148.4
W	mg kg ⁻¹	3		0.43	25			0.783					
Y	mg kg ⁻¹	19		20.54			19.67	20.367	20.1	22.4	18.5	23	18.75
Yb	mg kg ⁻¹	1.54	1.72				1.66	1.7	1.78	1.7	1.62		1.64
Zn	mg kg ⁻¹	98		98.0	112		120.6	108.333	102.69	87	97.3	110	
Zr	mg kg ⁻¹	110		170.0	169		119.99	112	125.87	130		86	104.3

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G66	G67	G68	G69	G70	G71	G72	G73	G74	G75	G76	G77
Data Quality		1	2	1	2	2	2	2	2	2	1	1	2
SiO2	% m/m	52.1	51.45	47.53	52.60	52.2	51.93	50.39	52.5	51.77	51.47		52.51
TiO2	% m/m	1.72		1.78	1.76	1.73	1.859	1.83	1.72	1.754	1.43		1.739
Al2O3	% m/m	14.4	14.25	14.12	14.35	14.11	14.57	16.34	14.4	14.6	15.01		14.43
Fe2O3T	% m/m	11.6	11.67	10.69	11.23	11.32	10.92	11.52	11.3	11.27	10.68		11.42
Fe(II)O	% m/m	8.26			8.14		8.2		9.7				
MnO	% m/m	0.140		0.14	0.140	0.142	0.139	0.14	0.15	0.141	0.128		0.145
MgO	% m/m	7.57	6.98	7.49	7.60	7.51	7.955	4.85	7.6	7.79	4.26		7.642
CaO	% m/m	8.12	8.41	8.37	8.43	8.35	8.417	8.8	8.5	8.21	6.85		8.428
Na2O	% m/m	2.81		3.01	3.06	3.06	3.06	3.71	3.1	3.24	3.78		3.143
K2O	% m/m	0.77		0.58	0.87	0.83	0.841	0.99	0.86	0.83	0.844		0.845
P2O5	% m/m	0.26			0.290	0.28	0.282	0.34	0.28	0.299	0.222		0.291
H2O+	% m/m								0.19				
CO2	% m/m												
LOI	% m/m					-0.16		0.85					0.241
Ag	mg kg ⁻¹	0.038			0.18		0.053			0.8935			0.22
As	mg kg ⁻¹				1.8		1.908		59		5.6		
Au	mg kg ⁻¹	0.01		0.0056									
B	mg kg ⁻¹												
Ba	mg kg ⁻¹	242.8		261.57	215	208	238		192	215.48	295	214.816	223.7
Be	mg kg ⁻¹				1.1		1.333			1.12			
Bi	mg kg ⁻¹						0.0197					0.111	
Br	mg kg ⁻¹									3	4		
C(tot)	mg kg ⁻¹								100				
C(org)	mg kg ⁻¹												
Cd	mg kg ⁻¹	0.043			0.20		0.052		2		4.6		
Ce	mg kg ⁻¹	55.6		35.67	30	29	28.84		31.3	32.5		28	31.9
Cl	mg kg ⁻¹			133.63				200			52.7		
Co	mg kg ⁻¹	37.06		41.46	45	46	45.47		46	43	43.1		48.68
Cr	mg kg ⁻¹	248.2		219.297	245	220	216	200	287	221	247		
Cs	mg kg ⁻¹			0.97	0.76		0.728		0.83	0.8207		0.842	
Cu	mg kg ⁻¹	60.88		64.15	53	49.2	52.7	100	58	45	45.2		57.2
Dy	mg kg ⁻¹	2.37		4.87	4.2		4.131		4.35	4.4		4.198	4.55
Er	mg kg ⁻¹	0.31			2.3		1.951		2.14	2.16		1.967	2.19
Eu	mg kg ⁻¹	1.56		1.26	2.0		1.5		1.59	1.65		1.447	1.62
F	mg kg ⁻¹										222		
Ga	mg kg ⁻¹				21	18.6	18.32		19.2	19			
Gd	mg kg ⁻¹	5.18			4.6		4.297		4.95	5.03		4.664	4.97
Ge	mg kg ⁻¹						1.633		4.04				
Hf	mg kg ⁻¹			3			3.042			5		3.233	
Hg	mg kg ⁻¹										0.3		
Ho	mg kg ⁻¹	0.15		0.75	0.80		0.663		0.82	0.83		0.754	0.83
I	mg kg ⁻¹												
In	mg kg ⁻¹			0.02	0.05								
La	mg kg ⁻¹	13		14.67	15		14.08		15.8	15.4		13.774	15.26
Li	mg kg ⁻¹				7.8		6.96			7.8		7.223	
Lu	mg kg ⁻¹	0.049		0.22	0.27		0.259		0.24	0.25		0.208	
Mo	mg kg ⁻¹	1.7		4.71	1.7	1.9	1.977	20		1.7724		1.954	1.7
Nb	mg kg ⁻¹				17.1	15.9	18.61	20	16.7	20		19.216	
Nd	mg kg ⁻¹	16.19		27.21	18	15	17.23		18.1	18.64		17.417	18.1
Ni	mg kg ⁻¹	156.4		97.53	144	139	152.3	100	140	140	147		159.7
Pb	mg kg ⁻¹	8.7			3.4		3.307			3.2712	33	3.328	3.27
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹	3.73			4.1		3.806		4.11	4.22		3.67	4.13
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹			20.16	22.8	22.9	21.89	19	21.2	26			
S	mg kg ⁻¹							98			140		
Sb	mg kg ⁻¹			0.07						0.1566			
Sc	mg kg ⁻¹	20		19.33	24.3	20.9	18.19		20.3	22			
Se	mg kg ⁻¹						1.492						
Sm	mg kg ⁻¹	4.870		4.16	4.7		4.484		4.6	4.66		4.357	4.62
Sn	mg kg ⁻¹						1.679		1.73	1.7637	2.6		
Sr	mg kg ⁻¹	395		356.62	380	336	342.3	400	339	329	304	355.532	374.9
Ta	mg kg ⁻¹			2.66			2.701		3.24			2.029	
Tb	mg kg ⁻¹	0.58		0.29	0.89		0.684		0.77	0.75		0.711	0.78
Te	mg kg ⁻¹												
Th	mg kg ⁻¹			2.18	2.6		2.358		2.62	2.74		2.571	2.69
Tl	mg kg ⁻¹				0.07					0.0612		0.191	
Tm	mg kg ⁻¹				0.28		0.282		0.29	0.29		0.238	
U	mg kg ⁻¹			0.56	0.69		0.674		0.66	0.6574		1.172	0.69
V	mg kg ⁻¹	157.8		172.29	157	136	133	200	148	146	158		165.4
W	mg kg ⁻¹			0.53			0.6		0.64				
Y	mg kg ⁻¹	20.6			21	19.3	20.97		20.7	20.7		17.964	22.03
Yb	mg kg ⁻¹			1.67	1.8		1.517		1.7	1.73		1.597	1.79
Zn	mg kg ⁻¹	115		59.62	100	94	97.38	99	114	101	89.5		105
Zr	mg kg ⁻¹	200		161.53	148	127	125.1	100	132	151		150.011	

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)											
Lab Code		G78	G79	G80	G81	G82	G83	G83	G84	G85	G86	G87	G88
Data Quality		1	2	1	1	2	1	2	1	2	1	1	2
SiO2	% m/m	52	52.45	51.36	51.72	52.17	52.2		54.65	52.1	51.96	52.702	52.0
TiO2	% m/m	1.68	1.78	1.75	1.745	2	1.74		0.941	1.75	1.74	1.7002	1.72
Al2O3	% m/m	15.5	14.29	14.11	14.11	14.32	14.24		13.28	14.42	14.33	14.301	14.2
Fe2O3T	% m/m	11	11.58	11.24	11.31	11.39	11.29		10.65	11.37	11.32	11.201	11.4
Fe(II)O	% m/m		6.7	8.05	8.30								
MnO	% m/m	0.129	0.15	0.140	0.145	0.142	0.140			0.15	0.150	0.139	0.139
MgO	% m/m	6.84	7.47	7.28	7.60	7.389	7.59		7.43	7.76	7.74	7.641	7.58
CaO	% m/m	8.15	8.3	8.38	8.36	8.401	8.44		7.63	8.26	8.44	8.461	8.41
Na2O	% m/m	3.36	2.74	2.86	3.04	3.113	3.06		2.77	3.05	3.18	3.1403	3.12
K2O	% m/m	0.78	0.85	0.84	0.83	0.85	0.81		0.812	0.85	0.86	0.8641	0.854
P2O5	% m/m	0.313	0.29	0.28	0.292	0.291	0.29		0.321	0.29	0.29	0.292	0.293
H2O+	% m/m			0.60									
CO2	% m/m												
LOI	% m/m		-0.11	-0.18		-0.23	0		0.079	0.06			
Ag	mg kg ⁻¹			0.20									
As	mg kg ⁻¹		1.11	1.67					1.15		9.4		
Au	mg kg ⁻¹												
B	mg kg ⁻¹												
Ba	mg kg ⁻¹	230	226	191	218		210		209		281	220.3	
Be	mg kg ⁻¹								0.88				
Bi	mg kg ⁻¹								0.019				
Br	mg kg ⁻¹												
C(tot)	mg kg ⁻¹			0.18		276				300			
C(org)	mg kg ⁻¹			0.15									
Cd	mg kg ⁻¹			0.11					0.102				
Ce	mg kg ⁻¹	27.9	30.6	31.9	31.3						36	32.76	
Cl	mg kg ⁻¹	170											
Co	mg kg ⁻¹	43.4	40	35	44	48	46		40.1		46	40.04	43.6
Cr	mg kg ⁻¹	230	211	192	242	85	218		230		221	169.3	254.0
Cs	mg kg ⁻¹			0.73	0.82				0.76			0.8763	
Cu	mg kg ⁻¹	60	58	58	58	46	59		51.3		48	56.11	59.0
Dy	mg kg ⁻¹	3.84	4.26	4.32	4.16							4.487	
Er	mg kg ⁻¹	1.84	2.16	2.09	2.01							2.223	
Eu	mg kg ⁻¹	1.43	1.49	1.68	1.54							1.631	
F	mg kg ⁻¹		270			677							
Ga	mg kg ⁻¹	20	18				23		15.7		19	18.91	
Gd	mg kg ⁻¹	4.57	0.65	4.66	4.54							5.037	
Ge	mg kg ⁻¹												
Hf	mg kg ⁻¹	2.92	3.53	2.25	3.28						2.7	3.378	
Hg	mg kg ⁻¹												
Ho	mg kg ⁻¹	0.72	0.76	0.82	0.81							0.8437	
I	mg kg ⁻¹												
In	mg kg ⁻¹												
La	mg kg ⁻¹	13.7	15.4	15.4	15.4						23	16.03	
Li	mg kg ⁻¹		5.02						5.65			13.12	
Lu	mg kg ⁻¹	0.22	0.21	0.24	0.23							0.2494	
Mo	mg kg ⁻¹			1.89					1.57			1.367	
Nb	mg kg ⁻¹	15.3	17	21	20.8		18		11.83		19	13.67	
Nd	mg kg ⁻¹	15.8	17.4	16.1	17.8						24	18.11	
Ni	mg kg ⁻¹	150	141	150	151	108	140		138		155	246.5	148.0
Pb	mg kg ⁻¹			7	3.41	9		0.5	2.91		3.1		
Pd	mg kg ⁻¹												
Pr	mg kg ⁻¹	3.55	3.99	3.92	4.08							4.173	
Pt	mg kg ⁻¹												
Rb	mg kg ⁻¹	21.4	22	24	22.0		22		23.86		24	23.24	
S	mg kg ⁻¹	140		0.31		291		87		620		119.5	
Sb	mg kg ⁻¹		0.058	0.42					0.102				
Sc	mg kg ⁻¹	18.5	18	17	20.2				20.76		19	20.8	
Se	mg kg ⁻¹			0.640									
Sm	mg kg ⁻¹	4.150	4.4	4.76	4.51							4.631	
Sn	mg kg ⁻¹											1.506	
Sr	mg kg ⁻¹	330	345	324	354		424		346		365	359	
Ta	mg kg ⁻¹	3.09	2.55	3.47	1.68						3.6	1.159	
Tb	mg kg ⁻¹	0.69	4.79	4.25	0.75							0.7624	
Te	mg kg ⁻¹			0.62									
Th	mg kg ⁻¹	2.32	2.3	2.93	2.45			1.6	2.42		6.2	2.612	
Tl	mg kg ⁻¹			0.12					0.073				
Tm	mg kg ⁻¹	0.24	0.25	0.28	0.27							0.2945	
U	mg kg ⁻¹	0.69	0.68	0.70	0.64			0.7	0.583			0.7016	
V	mg kg ⁻¹	159	131	282	158				139		147	140.9	
W	mg kg ⁻¹												
Y	mg kg ⁻¹	18.2	20	21	20.9		44		17.43		22	21.24	
Yb	mg kg ⁻¹	1.49	1.72	1.78	1.64							1.756	
Zn	mg kg ⁻¹	100	99	70	104	91	110		94.23		105	115.5	
Zr	mg kg ⁻¹	130	131	121	127	170	151				140	129	

Table 1		GeoPT32 Contributed data for Woodstock basalt, WG-1 (Dec. 2012)										
Lab Code		G89	G90	G91	G92	G93	G94	G95	G96	G97	G98	G99*
Data Quality		1	1	2	2	2	2	2	2	2	2	2
SiO2	% m/m	52.23	52.23		51.7	51.76	51.81	52.3	52.38	52.376	52.39	52.68
TiO2	% m/m	1.84	1.72	1.768		1.76	1.73	1.73	1.74	1.708	1.73	1.74
Al2O3	% m/m	14.76	14.48	15.16		14.35	14.33	15.2	14.44	14.436	14.37	13.7
Fe2O3T	% m/m	11.82	11.23	12.252		11.53	11.25	11.4	11.25	11.378	11.4	11.26
Fe(II)O	% m/m								8.67			
MnO	% m/m	0.14	0.140	0.143		0.151		0.14	0.14	0.13	0.15	0.14
MgO	% m/m	6.52	7.69	8.303		7.64	7.602	7.47	7.73	7.629	7.53	7.35
CaO	% m/m	8.09	8.42	7.806		8.57	8.418	8.33	7.87	8.538	8.33	7.87
Na2O	% m/m	3.36	3.1	3.402		3.18	3.003	2.87	3.14	3.138	3.1	3.04
K2O	% m/m	0.85	0.84	0.912		0.86		0.82	0.82	0.855	0.84	0.81
P2O5	% m/m	0.29	0.3	0.304		0.293		0.28	0.3	0.314	0.29	0.29
H2O+	% m/m								0.49			
CO2	% m/m					0.016						
LOI	% m/m	0.3	0			-0.26				-0.250	-0.11	
Ag	mg kg ⁻¹								58			
As	mg kg ⁻¹			1.27		3			1.23	1.0		
Au	mg kg ⁻¹											
B	mg kg ⁻¹											
Ba	mg kg ⁻¹	227	208	228.2		250		270	210	235.0		210
Be	mg kg ⁻¹		1.144	0.86					0.87			
Bi	mg kg ⁻¹					2						
Br	mg kg ⁻¹					1						
C(tot)	mg kg ⁻¹					689						240
C(org)	mg kg ⁻¹					645						
Cd	mg kg ⁻¹			0.066					0.079			
Ce	mg kg ⁻¹	28.2	31.313	35		43			32.5	31.0		
Cl	mg kg ⁻¹					80						
Co	mg kg ⁻¹	44	47.46	49.04		46			46.6		44	50
Cr	mg kg ⁻¹	264	241	238.71		221			244	239.0	162	250
Cs	mg kg ⁻¹		0.778	0.939					0.62			
Cu	mg kg ⁻¹	58	59.885	59.4		61			53.2	60.0	55	50
Dy	mg kg ⁻¹	3.7	4.388	4.786					3.99			
Er	mg kg ⁻¹	2	2.193	2.356					1.88			
Eu	mg kg ⁻¹	1.3	1.618	1.783					1.52			
F	mg kg ⁻¹					230						
Ga	mg kg ⁻¹		19.494	18.679					19.3	20.0		
Gd	mg kg ⁻¹	4.3	4.835	5.296					4.51			
Ge	mg kg ⁻¹					2.4						
Hf	mg kg ⁻¹		3.3	3.64		3.4			3.56			
Hg	mg kg ⁻¹					0.9						
Ho	mg kg ⁻¹	0.7	0.861	0.833					0.74			
I	mg kg ⁻¹											
In	mg kg ⁻¹											
La	mg kg ⁻¹	15.6	15.659	16.81		17			16.7	19.0		
Li	mg kg ⁻¹	8	7.162	7.29					6.89			
Lu	mg kg ⁻¹	0.4	0.25	0.242					0.21			
Mo	mg kg ⁻¹		1.7	1.84					1.89			
Nb	mg kg ⁻¹	20	18.766	18.59		26			20.3	18.0		
Nd	mg kg ⁻¹	15	17.898	20.02		21			18.4			
Ni	mg kg ⁻¹	159	147.313	166.39		155			144	145.0	150	150
Pb	mg kg ⁻¹		3.3652	3.5		8			4.22	5.0	9	
Pd	mg kg ⁻¹											
Pr	mg kg ⁻¹	4.1	4.082	4.417		9			4.13			
Pt	mg kg ⁻¹											
Rb	mg kg ⁻¹	21	22.4	23.16		22			18.7	24.0		
S	mg kg ⁻¹					160						
Sb	mg kg ⁻¹		0.1	0.1								
Sc	mg kg ⁻¹	19.4	20.763			31			18.2	19.0		
Se	mg kg ⁻¹					0.6						
Sm	mg kg ⁻¹	4.5	4.693	4.997		5			4.41			
Sn	mg kg ⁻¹		1.733	1.59		2.7			2.05			
Sr	mg kg ⁻¹	364	360	371.8		359		350	314	367.0	350	
Ta	mg kg ⁻¹		2.133	2.97		2.8			3.3			
Tb	mg kg ⁻¹	0.7	0.789	0.814					0.74			
Te	mg kg ⁻¹		0.1									
Th	mg kg ⁻¹		2.574	2.543		2.4			2.29	3.0		
Tl	mg kg ⁻¹		0.08	0.08					0.091			
Tm	mg kg ⁻¹	0.3	0.294	0.293					0.25			
U	mg kg ⁻¹	0.7	0.68	0.661		1.3			0.67	1.0		
V	mg kg ⁻¹	159	146	179.43		154			150	142.0	220	150
W	mg kg ⁻¹		0.312	0.491		7			0.92			
Y	mg kg ⁻¹	24	21.62	22.86		22			19.1	23.0		20
Yb	mg kg ⁻¹	1.5	1.723	1.839					1.47			
Zn	mg kg ⁻¹	107	102.811	111.3		105			119	100.0	103	90
Zr	mg kg ⁻¹	145	132.033	138.6		132		130	131	123.0		60

* Submitted late

Table 2 GeoPT32 Assigned values and statistical summary of contributed data for the Woodstock basalt, WG-1

	Assigned value	Uncertainty of assigned	Horwitz Target value	Uncertainty y/Target	Number of reported results	Median of results	Robust mean of results	Status of consensus value	Type of consensus value
	X_a % m/m	s_{dm} % m/m	H_a % m/m	s_{dm}/H_a	n	% m/m	% m/m		
SiO ₂	52.23	0.0446	0.5759	0.0774	88	52.23	52.163	Assigned	Median
TiO ₂	1.74	0.0031	0.032	0.096	93	1.74	1.741	Assigned	Median
Al ₂ O ₃	14.35	0.0233	0.1922	0.1213	91	14.35	14.372	Assigned	Median
Fe ₂ O ₃ T	11.31	0.0236	0.157	0.1503	91	11.30	11.310	Assigned	Robust Mean
Fe(II)O	8.33	0.0585	0.1211	0.4831	23	8.26	8.192	Provisional	Mode
MnO	0.143	0.0006	0.0038	0.1622	90	0.143	0.143	Assigned	Robust Mean
MgO	7.55	0.0186	0.1114	0.1674	91	7.55	7.527	Assigned	Median
CaO	8.40	0.0155	0.1219	0.1268	92	8.40	8.356	Assigned	Median
Na ₂ O	3.10	0.0094	0.0523	0.1803	89	3.10	3.089	Assigned	Median
K ₂ O	0.84	0.0027	0.0173	0.1546	90	0.84	0.844	Assigned	Robust Mean
P ₂ O ₅	0.291	0.0014	0.007	0.201	86	0.291	0.291	Provisional	Robust Mean
	mg kg⁻¹	mg kg⁻¹	mg kg⁻¹			mg kg⁻¹	mg kg⁻¹		
Ba	219	1.591	7.769	0.205	80	218.5	221.3	Assigned	Median
Ce	31.3	0.2355	1.491	0.1579	67	31.3	31.6	Assigned	Median
Co	44.6	0.3755	2.014	0.1864	76	45	44.6	Assigned	Robust Mean
Cs	0.813	0.0105	0.0671	0.1561	43	0.812	0.813	Assigned	Robust Mean
Cu	56.1	0.489	2.4458	0.1999	80	56.05	55.8	Assigned	Median
Dy	4.203	0.0388	0.2708	0.1433	53	4.198	4.203	Assigned	Robust Mean
Er	2.073	0.0198	0.1486	0.1334	51	2.07	2.073	Assigned	Robust Mean
Eu	1.560	0.015	0.1167	0.1284	53	1.553	1.560	Assigned	Robust Mean
Ga	19.37	0.1571	0.9917	0.1584	61	19.3	19.4	Assigned	Robust Mean
Gd	4.664	0.0465	0.2959	0.1572	51	4.664	4.708	Assigned	Median
Ge	1.336	0.0446	0.1023	0.4357	15	1.4	1.586	Provisional	Mode
Hf	3.316	0.0447	0.2214	0.2019	44	3.316	3.322	Assigned	Median
Ho	0.786	0.0074	0.0652	0.1138	52	0.79	0.786	Assigned	Robust Mean
La	15.4	0.1141	0.8162	0.1398	67	15.4	15.5	Assigned	Median
Li	7.374	0.1671	0.4366	0.3826	35	7.48	7.374	Assigned	Robust Mean
Lu	0.235	0.0028	0.0234	0.1188	51	0.235	0.235	Assigned	Robust Mean
Mo	1.7	0.0309	0.1255	0.2465	45	1.7	1.731	Assigned	Median
Nb	18.24	0.2224	0.9426	0.2359	68	18.1	18.2	Assigned	Robust Mean
Nd	17.87	0.1906	0.926	0.2058	66	17.91	17.9	Assigned	Robust Mean
Ni	149	1.49	5.611	0.266	80	149.3	149.0	Assigned	Robust Mean
Pb	3.383	0.071	0.225	0.316	62	3.383	3.69	Assigned	Median
Pr	4.07	0.0241	0.2635	0.0915	50	4.07	4.0	Assigned	Median
Rb	22.25	0.1762	1.1158	0.1579	73	22.2	22.3	Assigned	Robust Mean
Sc	19.56	0.2741	0.9999	0.2742	62	19.65	19.6	Assigned	Robust Mean
Sm	4.453	0.0366	0.2845	0.1288	57	4.48	4.453	Assigned	Robust Mean
Sn	1.649	0.0883	0.1223	0.722	30	1.748	1.838	Provisional	Mode
Sr	356	1.714	11.748	0.146	83	355.5	356.1	Assigned	Median
Ta	2.91	0.061	0.1982	0.308	43	2.91	2.868	Assigned	Median
Tb	0.738	0.0079	0.0618	0.1281	50	0.738	0.737	Assigned	Median
Th	2.49	0.0347	0.1736	0.2001	59	2.49	2.516	Assigned	Median
Tl	0.0803	0.0041	0.0094	0.4343	25	0.08	0.080	Provisional	Robust Mean
Tm	0.272	0.0029	0.0265	0.1085	48	0.27	0.272	Assigned	Robust Mean
U	0.674	0.0051	0.0572	0.0892	57	0.674	0.688	Assigned	Median
V	155	1.489	5.813	0.256	75	155.3	154.0	Assigned	Median
Y	20.82	0.1926	1.0545	0.1827	73	20.8	20.8	Assigned	Robust Mean
Yb	1.675	0.0151	0.124	0.1221	54	1.675	1.665	Assigned	Median
Zn	103	0.962	4.108	0.234	81	103	103.2	Assigned	Robust Mean
Zr	131	1.187	5.021	0.236	77	130	130.7	Assigned	Robust Mean

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																	
Lab Code	G01	G02	G03	G04	G04	G05	G06	G07	G08	G09	G10	G11	G12	G13	G13	G14	G15	G16
Data Quality	2	2	1	1	2	2	2	1	1	1	2	1	1	1	2	2	2	2
SiO2	0.07	-0.28	-1.26	0.02	*	-0.21	-0.18	-1.21	*	-0.03	0.12	*	-0.34	*	*	-0.24	-0.32	0.05
TiO2	-1.41	0.47	1.25	0.62	*	0.44	0.62	-0.62	-2.19	0.31	0.31	-0.94	-0.94	-0.16	*	0.16	-2.19	-0.31
Al2O3	0.08	-0.26	-3.80	-1.20	*	-0.21	0.55	0.16	*	0.16	-0.08	-2.29	0.00	-0.15	*	-0.13	14.75	0.03
Fe2O3T	-0.95	0.29	-1.72	1.53	*	1.31	0.57	0.26	*	0.83	-0.32	-1.59	-0.70	3.00	*	0.06	-1.88	-0.41
Fe(II)O	*	*	-1.19	*	*	9.15	*	0.71	*	*	*	*	*	*	*	*	*	*
MnO	-1.09	0.48	-3.46	-0.08	*	0.87	0.35	0.18	*	0.45	-0.43	-0.34	-0.86	-0.34	*	-0.43	2.18	-0.17
MgO	-0.13	0.00	1.62	-1.17	*	-0.17	-0.18	1.26	*	1.62	-0.27	-1.08	0.36	-1.26	*	0.00	-22.49	-0.18
CaO	-0.90	0.04	-3.69	0.90	*	0.07	0.66	-0.57	*	0.98	-0.08	0.82	-1.23	2.26	*	0.08	-2.99	-0.04
Na2O	-1.43	0.57	-3.06	0.78	*	-2.90	-1.82	1.34	*	-1.72	0.38	-1.72	0.38	0.52	*	0.67	*	-0.29
K2O	-0.39	-0.11	-3.10	-4.14	*	0.39	-0.65	-2.52	*	0.94	0.47	1.52	-0.21	0.65	*	-0.39	3.07	0.18
P2O5	-0.07	0.65	12.72	-1.27	*	2.86	-1.99	2.72	*	1.30	-0.07	*	-1.56	*	*	0.86	*	0.72
Ba	0.87	*	*	*	1.71	*	-0.48	-2.77	0.71	9.33	-0.23	0.18	*	-1.09	*	-0.10	0.55	*
Ce	-0.10	*	*	-0.60	*	*	0.00	-2.21	1.21	*	*	*	0.13	*	1.04	-0.77	*	*
Co	0.60	*	*	1.44	*	*	0.60	-0.89	1.56	-0.79	0.85	-0.26	*	1.05	*	-0.27	*	*
Cs	*	*	*	*	*	*	*	-0.34	0.75	*	*	-0.33	*	-1.53	*	0.28	*	*
Cu	-4.92	*	*	*	0.60	*	-1.65	-0.67	0.31	20.42	-1.03	-0.16	*	*	*	-0.54	-0.21	*
Dy	*	*	*	-0.38	*	*	-0.15	-1.67	0.34	*	*	-0.34	*	2.21	*	0.24	*	*
Er	*	*	*	0.05	*	*	-0.28	-2.24	2.12	*	*	-0.63	*	*	*	0.26	*	*
Eu	*	*	*	0.34	*	*	-0.13	-0.51	1.99	*	*	-0.43	*	0.52	*	0.39	*	*
Ga	0.82	*	*	*	0.87	*	*	-0.27	*	*	*	-0.25	*	*	*	-0.19	-1.19	*
Gd	*	*	*	0.56	*	*	0.33	-1.37	0.05	*	*	0.22	*	*	*	0.62	*	*
Ge	*	*	*	*	*	*	*	-0.54	*	*	*	0.92	*	*	*	*	*	*
Hf	*	*	*	*	*	*	*	-1.38	0.29	*	*	*	*	1.06	*	0.42	*	*
Ho	*	*	*	0.22	*	*	-0.05	-1.55	0.32	*	*	-0.06	*	*	*	0.03	*	*
La	-4.53	*	*	-0.98	*	*	-0.05	-1.59	0.72	*	0.37	-1.23	*	-0.12	*	*	-1.47	*
Li	*	*	*	-3.15	*	*	*	1.89	*	*	1.86	*	*	*	*	*	*	*
Lu	*	*	*	0.20	*	*	-0.11	-0.65	1.27	*	*	-0.65	*	-1.51	*	0.31	*	*
Mo	*	*	*	*	-0.40	*	*	-0.80	*	*	*	0.00	*	*	*	0.16	-1.59	*
Nb	-0.13	*	*	*	0.29	*	*	-2.81	0.78	0.48	*	0.96	*	*	*	0.14	-2.25	*
Nd	*	*	*	-0.61	*	*	-0.66	-2.02	0.28	*	*	0.06	*	-5.26	*	0.18	0.07	*
Ni	1.52	*	*	*	-0.67	*	0.45	-0.17	2.78	-0.53	0.00	2.45	*	18.00	*	0.05	-1.25	*
Pb	5.81	*	*	*	-5.29	*	1.37	-1.74	-0.09	2.74	*	-1.21	*	*	*	*	-7.29	*
Pr	*	*	*	-0.30	*	*	-0.06	-2.50	0.40	*	*	-0.99	*	*	*	0.42	*	*
Rb	0.78	*	*	*	-0.02	*	0.34	-1.30	0.89	0.22	*	-0.76	*	3.36	*	0.34	0.34	*
Sc	*	*	*	*	-1.38	*	*	2.37	1.12	-0.56	0.22	*	*	1.54	*	0.02	*	*
Sm	*	*	*	0.52	*	*	0.05	-1.24	0.33	*	*	-0.40	*	-0.36	*	0.38	*	*
Sn	*	*	*	*	*	*	*	-1.30	-0.27	*	*	-0.64	*	*	*	*	*	*
Sr	0.53	*	*	*	-0.34	*	0.45	-0.90	1.91	0.04	-0.53	1.23	*	7.19	*	1.51	0.45	*
Ta	*	*	*	*	*	*	*	1.11	3.23	*	*	*	*	-0.56	*	*	*	*
Tb	*	*	*	-0.29	*	*	-0.31	-1.29	3.42	*	*	*	*	0.04	*	*	*	*
Th	15.87	*	*	1.84	*	*	-1.41	-1.09	0.65	*	*	-0.81	*	0.52	*	*	*	*
Tl	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Tm	*	*	*	0.29	*	*	-0.23	-1.22	0.33	*	*	-0.47	*	*	*	0.52	*	*
U	*	*	*	1.15	*	*	*	-0.77	0.84	*	*	-1.47	*	*	*	*	*	*
V	1.35	*	*	*	-1.06	*	1.52	-1.94	2.56	-2.80	*	*	*	2.36	*	0.75	*	*
Y	0.56	*	*	*	-0.67	*	0.56	-1.44	-0.50	-0.78	-0.39	*	*	*	*	0.13	-0.86	*
Yb	*	*	*	0.04	*	*	0.34	-1.25	1.41	*	*	-0.61	*	-1.09	*	0.18	*	*
Zn	-0.03	*	*	*	-0.03	*	1.31	2.63	2.26	0.19	1.07	2.14	*	*	-1.61	1.07	-0.76	*
Zr	0.93	*	*	*	-0.17	*	2.72	-2.13	0.32	1.85	-0.67	0.84	*	-0.14	*	-0.37	0.43	*

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																		
Lab Code	G17	G18	G19	G20	G21	G22	G23	G24	G25	G25	G26	G27	G28	G29	G30	G31	G32	G33	
Data Quality	1	2	2	2	1	2	1	2	1	2	1	1	2	1	2	1	1	2	
SiO2	0.42	-0.10	-0.22	-0.96	-2.08	-0.20	0.68	0.09	0.73	*	-1.20	0.02	-0.24	0.87	0.29	-2.83	1.55	0.40	
TiO2	-0.94	-0.16	0.16	18.90	-0.94	0.31	2.50	0.16	0.62	*	-0.06	-1.25	-0.05	-0.31	-0.31	0.00	0.94	0.94	
Al2O3	-0.16	-0.16	0.03	-29.48	-1.25	-0.03	5.57	-0.13	1.14	*	-2.71	0.00	-1.53	1.09	-0.34	-1.82	4.42	-0.31	
Fe2O3T	-0.06	-0.03	0.03	26.53	-0.44	0.22	3.89	-0.06	0.70	*	3.09	0.00	0.82	-0.06	0.48	-2.61	-1.08	-0.51	
Fe(II)O	*	*	*	*	-10.93	*	-12.13	*	*	*	*	0.96	*	*	*	*	*	*	-2.49
MnO	0.97	0.09	-0.43	11.29	1.75	0.87	-2.42	-0.69	1.02	*	0.39	1.49	-2.90	-1.38	-0.43	-3.20	1.75	-0.43	
MgO	-0.63	-0.31	0.04	-26.31	-0.99	0.13	-18.81	1.03	0.90	*	2.15	0.90	1.39	-1.17	0.09	-24.69	1.62	0.22	
CaO	-0.88	0.29	0.00	29.23	0.00	0.04	-1.89	0.00	0.33	*	2.98	0.80	1.00	-2.21	-0.49	-3.28	-2.71	-0.98	
Na2O	0.38	-0.19	0.38	7.94	-1.91	-1.15	5.45	-0.57	-1.72	*	1.32	1.34	0.66	0.19	-0.19	-13.39	-0.57	0.19	
K2O	-1.37	-0.11	-0.11	18.38	-1.37	-0.68	-4.98	0.91	-0.21	*	0.02	0.37	-0.45	-0.21	0.18	3.25	-0.79	-3.28	
P2O5	-1.56	-0.07	0.65	-8.63	-0.13	0.65	-5.98	0.01	0.87	*	1.30	1.01	0.22	0.58	0.65	-5.51	-1.56	0.65	
Ba	*	0.35	-0.87	*	-1.35	-0.10	-3.82	*	-0.71	*	3.73	0.66	1.19	-0.71	-0.61	3.26	2.00	2.67	
Ce	*	*	-0.30	30.42	*	0.03	-2.51	*	1.04	*	8.25	1.38	-8.45	-0.20	-0.37	6.30	9.19	-0.70	
Co	*	-0.32	0.35	10.00	0.20	-0.20	-3.80	*	0.70	*	1.19	2.09	3.63	0.50	0.40	-6.95	0.20	-0.40	
Cs	*	*	-0.10	*	*	-0.17	-1.23	*	0.70	*	*	0.47	8.85	-0.19	0.05	*	*	0.13	
Cu	*	0.34	1.42	-1.59	8.16	-0.05	-2.60	*	-0.96	*	0.02	0.76	-0.01	-0.10	-0.17	-0.39	-1.25	-0.42	
Dy	*	*	-0.93	*	*	-0.19	-1.15	*	-0.97	*	*	1.09	*	0.21	-0.21	*	*	-0.47	
Er	*	*	-0.25	*	*	-0.25	-0.28	*	-1.10	*	*	1.03	*	-0.09	-0.15	*	*	-0.41	
Eu	*	*	-1.11	*	*	-0.21	-1.22	*	-0.68	*	*	0.81	*	-0.26	-0.21	*	*	-0.56	
Ga	*	0.37	-0.19	4.86	-2.39	-0.19	-2.90	*	0.34	*	1.14	0.17	0.32	-0.07	-0.13	-0.87	0.64	-0.19	
Gd	*	*	-0.45	*	*	-0.02	-1.26	*	-2.45	*	*	1.61	*	-0.08	-0.19	*	*	-0.18	
Ge	*	*	-2.62	*	*	*	-1.37	*	*	*	*	*	*	0.92	0.12	*	*	*	
Hf	*	*	0.19	*	*	0.01	0.04	*	-0.84	*	5.44	0.47	1.77	-0.34	-0.37	*	-5.94	*	
Ho	*	*	-0.66	*	*	-0.20	-0.77	*	-0.57	*	*	1.03	*	0.06	-0.12	*	*	-0.43	
La	*	0.00	-0.67	11.06	*	1.29	-2.55	*	-0.34	*	14.82	0.80	3.06	-0.49	-0.43	2.33	74.25	0.12	
Li	*	*	0.03	*	*	-0.02	-2.84	*	-4.75	*	*	0.52	*	0.24	0.68	*	*	-0.20	
Lu	*	*	-0.11	*	*	-0.33	-0.70	*	-0.57	*	*	0.28	*	-0.23	-0.11	*	*	0.10	
Mo	*	*	-0.40	*	*	0.20	-2.48	*	*	*	*	0.48	0.00	-0.16	*	*	2.39	-0.40	
Nb	*	0.61	-0.13	-5.31	1.86	-0.24	-2.77	*	-1.33	*	-1.75	-0.55	-0.55	1.01	0.45	-2.06	-1.32	0.40	
Nd	*	0.34	-0.41	25.87	*	0.56	-2.36	*	-0.64	*	2.30	0.96	-3.65	-0.40	-0.31	*	2.30	-0.58	
Ni	*	0.93	0.09	-2.92	3.39	0.98	-3.93	*	0.54	*	-0.74	3.11	-1.10	2.50	1.07	-0.60	-2.85	-0.80	
Pb	*	*	-0.85	4.63	*	-0.05	-4.50	*	0.48	*	9.85	-0.37	-3.96	-0.10	-0.16	4.07	33.82	0.26	
Pr	*	*	-0.13	*	*	-0.44	-1.98	*	-0.76	*	*	0.89	*	-0.42	-0.23	*	*	-0.53	
Rb	*	-1.14	-0.56	-2.29	-0.23	0.69	-1.44	*	2.19	*	1.03	0.32	-0.25	0.04	-0.29	-1.39	0.67	-0.11	
Sc	*	*	-0.28	*	0.44	0.42	-4.87	*	1.84	*	-4.86	3.04	-1.78	1.14	0.47	*	-1.56	0.72	
Sm	*	*	-0.62	*	*	-2.15	-1.54	*	-0.19	*	*	1.16	-2.03	0.20	-0.11	*	-1.59	-0.52	
Sn	*	*	1.44	*	*	0.62	-1.40	*	*	*	*	-2.61	1.44	0.09	*	11.86	*	-0.61	
Sr	*	0.23	-0.28	13.00	-0.30	-0.28	-4.56	*	-0.64	*	-0.23	0.47	-0.43	0.64	0.23	-2.75	-0.05	0.19	
Ta	*	*	0.23	-4.24	*	0.00	0.31	*	-0.20	*	3.89	0.12	-1.79	-0.40	-0.68	*	*	-2.27	
Tb	*	*	-0.79	*	*	-0.22	-1.42	*	-0.48	*	*	0.62	*	0.04	-0.22	*	*	-0.63	
Th	*	*	-0.55	*	*	-0.17	-1.74	*	0.00	*	*	0.14	2.62	-0.35	-0.32	-5.70	2.94	-0.55	
Tl	*	*	1.05	*	*	1.05	-1.20	*	-1.73	*	*	-0.35	*	1.14	*	*	*	*	
Tm	*	*	-0.99	*	*	-0.23	-0.43	*	-0.54	*	*	0.92	*	0.29	-0.04	*	*	0.33	
U	*	*	-0.12	*	*	-0.82	-1.07	*	-0.24	*	*	0.24	12.46	-0.42	-0.30	*	23.18	0.31	
V	*	-0.13	0.40	28.62	0.64	-0.37	-8.03	*	0.46	*	-3.75	1.93	-3.19	-1.08	0.15	1.17	-1.94	-1.32	
Y	*	0.84	-0.86	21.03	3.01	-0.20	-4.04	*	-0.49	*	-0.02	-0.03	-0.25	1.31	0.42	-0.68	0.17	0.56	
Yb	*	*	-0.71	*	*	-0.18	-1.04	*	-0.77	*	*	0.49	-3.53	-0.20	-0.18	*	*	-0.58	
Zn	*	0.58	-0.03	-3.42	-0.05	0.46	-6.30	*	1.41	*	-0.30	0.44	-0.08	0.68	0.10	-2.54	-0.30	-1.00	
Zr	*	-0.50	-0.37	6.60	0.26	0.13	-4.41	*	1.06	*	0.00	1.46	-0.38	-0.14	0.13	-1.21	0.26	-0.07	

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																	
Lab Code	G34	G35	G35	G36	G36	G37	G38	G39	G40	G41	G42	G43	G44	G45	G46	G47	G48	G48
Data Quality	1	1	2	1	2	2	1	2	1	2	2	1	2	2	1	2	1	2
SiO2	*	0.80	*	-0.64	*	0.38	1.86	0.21	0.29	0.32	-0.37	*	1.10	0.70	0.00	0.19	0.02	*
TiO2	*	-2.19	*	-1.25	*	0.31	0.94	-0.31	-0.25	-0.78	-0.31	0.00	0.62	1.41	-0.36	0.34	-0.69	*
Al2O3	*	0.62	*	-1.04	*	0.60	1.30	0.03	1.01	-0.49	0.03	*	-1.87	0.88	0.21	-0.16	-0.16	*
Fe2O3T	*	-0.38	*	-1.34	*	0.54	*	-1.11	-0.49	0.22	-0.16	*	-0.25	-1.97	-1.50	0.35	-0.37	*
Fe(II)O	*	*	*	-0.61	*	*	1.86	*	*	*	*	*	*	1.10	*	*	*	*
MnO	*	1.75	*	-0.86	*	0.48	-0.86	3.48	-0.34	6.08	-0.43	0.45	0.87	-0.43	0.37	0.09	0.18	*
MgO	*	1.53	*	-1.71	*	0.45	0.54	1.98	0.13	-0.81	0.58	*	-0.99	-1.57	-0.49	-0.31	0.27	*
CaO	*	0.08	*	-1.07	*	0.41	0.57	-0.62	0.44	-0.57	1.03	*	0.21	-0.74	-0.13	-0.41	0.02	*
Na2O	*	0.57	*	-3.82	*	-0.10	5.16	0.57	-0.50	-4.59	-0.29	*	-0.77	0.00	0.31	-2.68	-0.52	*
K2O	*	0.37	*	-1.95	*	0.18	-0.21	-2.13	0.08	0.47	0.47	*	-0.11	-0.11	0.31	-0.63	0.83	*
P2O5	*	-1.56	*	-2.99	*	0.51	1.30	1.36	1.44	-2.21	0.65	*	-0.07	-0.78	0.73	0.29	1.14	*
Ba	-0.31	1.48	*	-1.74	*	-0.55	1.74	0.28	1.31	-4.41	-2.16	1.09	1.64	-1.19	-0.32	2.48	0.31	*
Ce	-0.66	-1.01	*	-3.55	*	*	6.98	0.39	*	*	0.07	-0.04	*	-0.07	0.19	7.95	*	-0.34
Co	0.27	-2.28	*	-0.30	*	*	1.00	0.48	-1.09	*	0.55	1.05	-8.84	0.55	*	0.10	*	*
Cs	-0.64	*	*	*	*	*	1.45	0.20	*	*	0.58	-0.19	*	-0.10	-0.01	*	*	*
Cu	0.28	0.84	*	-4.93	*	*	4.48	1.60	0.76	*	-0.46	1.33	-4.92	0.71	-0.22	-1.24	0.43	*
Dy	0.31	*	*	*	*	*	6.08	0.11	*	*	-0.19	0.40	*	-0.23	1.88	-0.10	*	*
Er	-0.17	*	*	*	*	*	5.97	0.22	*	*	-0.25	0.11	*	0.39	0.54	0.29	*	*
Eu	0.06	*	*	*	*	*	9.34	0.09	*	*	-0.26	0.34	*	0.04	1.30	-0.30	*	*
Ga	0.14	0.84	*	0.64	*	*	3.97	0.47	1.24	*	-0.64	*	-3.71	0.32	1.04	-0.19	0.44	*
Gd	0.75	*	*	*	*	*	7.79	0.50	*	*	-0.11	0.09	*	0.08	1.32	0.79	*	*
Ge	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Hf	-0.41	-4.59	*	*	*	*	3.00	*	*	*	-0.26	*	*	1.55	-0.02	*	*	*
Ho	0.07	*	*	*	*	*	8.65	0.18	*	*	0.11	0.46	*	-0.05	1.32	-0.05	*	*
La	-0.88	10.90	*	-2.94	*	*	1.35	0.06	*	*	0.12	0.43	*	-0.06	0.11	1.94	*	*
Li	*	*	*	*	*	*	1.43	0.21	*	*	*	-0.10	*	1.86	*	*	*	*
Lu	0.04	*	*	*	*	*	3.62	-0.11	*	*	-0.75	-0.01	*	0.53	0.59	-0.11	*	*
Mo	*	0.80	*	10.36	*	*	-2.63	-0.28	*	*	-1.99	1.12	21.11	0.60	*	*	*	*
Nb	0.95	0.16	*	6.11	*	*	*	-0.17	-0.15	*	0.67	*	-0.13	1.46	-0.54	-0.13	-0.26	*
Nd	-0.09	-1.58	*	5.54	*	*	7.06	0.36	*	*	-0.20	0.98	*	-0.20	0.12	-0.55	*	1.80
Ni	2.47	-3.31	*	1.97	*	*	2.68	2.71	-1.31	*	0.89	1.61	-5.08	-0.09	0.56	1.43	-0.92	*
Pb	1.06	-1.26	*	-6.14	*	*	25.83	-0.45	5.85	*	-5.07	1.68	*	0.48	-0.20	-0.81	*	0.48
Pr	0.11	*	*	*	*	*	6.64	0.06	*	*	0.06	0.99	*	-0.02	0.18	-0.51	*	*
Rb	-0.46	-0.14	*	-9.19	*	*	3.72	0.31	1.12	*	0.11	0.40	18.26	0.02	-0.17	-0.02	0.22	*
Sc	2.88	0.04	*	1.44	*	*	5.94	-0.16	1.24	*	0.07	*	-3.78	-0.58	1.12	-0.13	*	-1.03
Sm	-0.20	-4.76	*	*	*	*	5.08	0.26	*	*	-0.09	0.59	*	-0.27	0.77	-0.59	*	*
Sn	*	*	*	11.05	*	*	*	*	*	*	*	*	*	1.44	*	*	*	*
Sr	-0.86	-0.57	*	-1.07	*	-0.24	1.66	1.14	1.04	4.87	-0.62	1.66	-6.92	1.00	0.84	-0.70	0.10	*
Ta	-1.84	*	*	*	*	*	*	0.33	*	*	0.23	*	*	0.48	-0.28	2.88	*	*
Tb	0.03	*	*	*	*	*	7.16	0.26	*	*	*	-0.03	*	0.42	1.17	-0.06	*	*
Th	-0.02	1.79	*	8.70	*	*	*	0.23	-1.09	*	-0.26	-0.29	*	6.65	0.15	0.72	*	*
Tl	*	*	*	*	*	*	1.04	-1.08	*	*	-1.61	-1.04	*	-0.01	*	*	*	*
Tm	0.52	*	*	*	*	*	7.08	0.33	*	*	-0.04	0.02	*	-0.23	0.63	-0.04	*	*
U	-0.19	0.45	*	5.70	*	*	15.66	0.58	*	*	-0.21	0.04	20.33	0.75	-0.09	-0.12	*	*
V	-0.55	-2.56	*	-3.32	*	1.26	-0.74	0.53	0.00	*	0.23	1.50	-3.47	0.23	1.39	0.49	-0.65	*
Y	0.86	-0.49	*	-4.57	*	*	8.51	-0.63	1.97	*	0.56	0.79	*	-0.34	0.94	-0.51	0.36	*
Yb	0.26	1.01	*	*	*	*	4.24	0.63	*	*	-0.30	-0.04	*	0.10	-0.10	0.14	*	*
Zn	-1.31	-2.00	*	-1.51	*	0.83	-0.78	2.22	-0.95	4.72	0.22	1.17	-4.29	-0.27	1.38	0.83	1.26	*
Zr	-0.24	0.90	*	0.26	*	-0.07	*	-0.22	0.04	-4.35	-0.67	*	-10.23	-0.47	-0.21	-0.47	0.70	*

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																	
Lab Code	G49	G50	G51	G52	G53	G54	G55	G56	G57	G58	G59	G60	G61	G62	G63	G64	G65	
Data Quality	1	2	2	1	2	2	2	1	2	1	2	2	1	1	1	1	2	1
SiO2	0.74	*	-0.79	*	1.80	0.17	0.11	-0.32	*	-2.43	-0.20	0.00	0.13	0.05	0.65	*	-0.47	0.54
TiO2	-1.81	1.14	-0.31	-17.49	-0.62	0.06	0.97	0.59	*	2.19	-0.31	1.98	0.22	-0.44	-0.31	*	0.62	-0.62
Al2O3	-1.29	*	0.42	-23.93	0.39	0.42	0.72	1.64	*	3.23	-0.13	1.38	0.31	-0.27	-0.94	*	0.47	0.83
Fe2O3T	-0.51	-0.76	0.45	-11.59	-1.62	0.11	0.32	-0.11	*	1.91	-0.03	1.44	0.48	-0.13	1.02	*	-0.13	-0.70
Fe(II)O	-3.83	*	-0.14	*	*	*	0.22	*	*	*	*	*	*	1.37	-7.71	*	*	*
MnO	1.49	-0.04	-0.43	-9.97	0.74	0.48	-0.43	*	-0.56	-3.46	0.48	1.26	0.71	0.45	1.75	*	0.09	1.75
MgO	-1.36	*	0.54	-27.02	-11.90	0.42	-0.49	*	0.46	-16.25	-0.63	1.15	0.72	0.27	-1.89	*	-0.72	-0.36
CaO	-1.48	-0.82	0.29	-25.09	0.00	0.27	0.37	*	-1.24	-0.08	-1.60	0.57	1.53	0.13	-0.90	*	-0.12	-0.49
Na2O	-0.71	*	1.24	-17.02	4.78	0.79	-0.55	0.77	*	4.59	-0.77	0.52	-0.10	0.06	-2.29	*	-0.29	0.00
K2O	3.02	0.50	-0.11	-17.54	1.05	0.70	1.05	0.37	*	4.41	-0.16	0.39	-0.79	0.13	0.37	*	0.85	1.52
P2O5	-3.98	-2.92	-0.07	-12.98	-0.78	0.36	-0.07	*	-0.49	-8.70	-0.92	0.72	-0.13	1.01	-0.13	*	0.36	1.30
Ba	*	0.03	-0.35	-10.59	-0.42	1.55	0.16	*	2.67	-4.06	*	-0.35	-1.18	0.77	-0.97	-0.77	-0.03	-1.71
Ce	0.87	0.34	-0.44	-5.00	-0.13	1.21	0.91	0.49	*	*	*	-0.23	0.00	0.23	0.20	-1.07	*	-1.44
Co	*	-0.47	-1.76	-5.27	0.87	-0.05	-0.89	*	-1.39	1.69	*	0.78	0.47	0.32	4.37	-1.74	-0.40	-1.05
Cs	*	-0.69	*	-5.41	0.02	*	-0.10	*	0.05	*	*	*	-0.09	1.30	*	-0.79	*	3.09
Cu	*	0.60	-0.83	-3.50	0.19	-0.11	0.42	*	-0.01	1.21	*	-0.03	-2.35	0.54	-1.25	-3.62	4.28	5.74
Dy	-0.64	0.38	0.73	-2.41	-0.13	*	-0.32	1.14	*	*	*	-0.04	0.16	0.40	-0.01	-0.90	*	-0.90
Er	-0.90	0.09	0.93	-2.98	-0.01	*	-0.21	1.73	*	*	*	0.19	0.09	-0.02	-0.02	-0.56	*	-0.76
Eu	1.54	0.43	0.39	-3.77	-0.08	*	-0.43	0.77	*	*	*	0.09	-0.06	0.60	-0.26	-0.60	*	-0.60
Ga	*	-0.19	0.17	-7.35	0.77	0.27	-1.70	*	-0.15	-7.43	*	0.67	0.71	-0.47	1.24	*	*	-1.11
Gd	-4.24	0.67	0.91	-3.87	0.06	*	-0.18	1.27	*	*	*	-0.58	0.00	0.56	-0.08	-0.76	*	-0.11
Ge	*	*	*	11.48	*	3.74	-0.32	*	0.31	*	*	*	-0.18	-1.03	*	*	*	*
Hf	*	1.91	*	-3.86	0.19	21.87	0.24	*	0.30	*	*	-0.08	-0.42	-1.24	*	*	-2.97	*
Ho	0.06	-0.12	0.57	-3.47	-0.05	*	-0.12	0.83	*	*	*	0.34	0.06	1.29	0.22	-0.40	*	-0.55
La	0.12	0.31	-0.18	-4.91	-0.37	2.45	0.37	-0.34	*	*	*	-0.23	-0.41	0.45	0.00	-1.72	*	0.43
Li	*	0.97	-0.43	-8.30	0.22	*	*	*	-1.57	*	*	*	0.75	*	1.21	1.89	0.72	*
Lu	0.63	0.10	0.31	-2.79	0.10	*	-0.11	1.06	*	*	*	0.10	-0.01	*	1.06	-0.65	*	-0.23
Mo	*	0.48	*	-4.54	0.80	-0.40	-1.19	*	0.40	*	*	-0.68	-0.26	11.07	*	*	*	*
Nb	*	-0.13	-0.08	-12.01	-1.19	-0.24	-0.66	*	1.21	3.98	*	-0.65	0.77	0.63	0.80	*	*	3.15
Nd	-0.18	0.29	0.29	-4.79	-0.25	1.42	0.07	0.45	*	*	*	-0.13	0.43	1.09	-1.15	-1.04	*	-1.16
Ni	*	-0.80	*	-9.87	0.36	-0.52	-0.35	*	0.09	0.54	*	2.85	0.72	-0.23	-3.20	-1.78	-2.23	1.52
Pb	*	0.79	*	-8.49	-0.07	-0.63	-1.07	*	0.06	56.02	*	0.26	-0.74	1.68	*	*	*	*
Pr	0.08	0.00	2.90	-4.52	-0.21	*	*	0.00	*	*	*	-0.13	1.98	*	0.27	-0.76	*	-1.25
Rb	*	-0.11	-0.11	-8.14	-0.16	0.16	-1.91	*	-1.91	6.94	*	-0.05	0.25	-0.72	9.99	-1.03	*	-1.39
Sc	*	-0.28	*	-6.51	0.72	-1.38	-1.28	*	1.72	2.44	*	-0.38	0.31	-3.01	-2.86	-1.26	*	*
Sm	-0.22	0.38	0.08	-4.16	-0.06	*	0.06	0.45	*	*	*	-0.11	0.22	1.46	0.09	-0.33	*	-0.54
Sn	*	0.70	*	-8.25	0.82	2.25	-1.43	*	2.66	*	*	3.93	*	-3.51	*	*	*	*
Sr	*	-0.15	-0.41	-11.76	-0.62	0.24	0.19	*	0.19	2.59	*	-0.05	0.75	-0.72	-1.49	-0.98	-0.19	0.93
Ta	*	1.29	*	-13.37	*	-0.28	4.49	*	0.15	*	*	-0.68	0.39	0.00	*	*	*	2.78
Tb	0.20	0.02	1.07	-2.07	-0.22	*	-0.22	0.68	*	*	*	-0.06	-1.03	0.52	-0.13	-0.61	*	-0.61
Th	*	0.00	*	-3.11	*	-2.28	2.91	*	0.49	*	*	-0.26	-0.23	-5.70	0.46	-1.04	*	2.07
Tl	*	0.52	*	-4.29	0.41	*	-1.08	*	12.77	*	*	*	-0.03	*	*	*	*	*
Tm	-0.09	0.33	-0.42	-3.11	-0.04	*	-0.23	0.29	*	*	*	0.14	-0.47	*	-0.09	-0.47	*	-0.47
U	*	0.49	*	-2.69	-0.05	3.72	-0.21	*	1.71	*	*	-0.30	-0.05	-0.59	-0.42	-0.42	*	-0.24
V	*	-0.97	0.32	-0.67	0.83	-1.14	-0.11	*	-0.46	1.15	*	-0.25	0.87	0.14	-5.21	1.89	*	-1.19
Y	0.17	0.09	0.04	-4.48	-0.10	3.83	-0.86	*	-0.13	*	*	-0.55	-0.43	-0.68	1.50	-2.20	1.03	-1.96
Yb	-0.61	0.18	*	-3.75	0.06	18.65	-0.54	0.36	*	*	*	-0.06	0.20	0.85	0.20	-0.44	*	-0.28
Zn	*	0.22	-0.39	-8.94	0.95	0.17	-0.64	*	-0.64	2.14	*	2.12	1.25	-0.13	-3.95	-1.44	0.83	*
Zr	*	0.03	-0.37	-5.08	-0.97	0.38	-2.06	*	3.92	7.63	*	-1.07	-3.72	-0.96	-0.14	*	-4.45	-5.26

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																	
Lab Code	G66	G67	G68	G69	G70	G71	G72	G73	G74	G75	G76	G77	G78	G79	G80	G81	G82	G83
Data Quality	1	2	1	2	2	2	2	2	2	1	1	2	1	2	1	1	2	1
SiO2	-0.22	-0.67	-8.16	0.32	-0.02	-0.26	-1.59	0.24	-0.40	-1.31	*	0.25	-0.39	0.19	-1.51	-0.88	-0.05	-0.05
TiO2	-0.62	*	1.25	0.31	-0.16	1.86	1.41	-0.31	0.22	-9.68	*	-0.02	-1.87	0.62	0.31	0.16	4.06	0.00
Al2O3	0.26	-0.26	-1.20	0.00	-0.62	0.57	5.18	0.13	0.65	3.43	*	0.21	5.98	-0.16	-1.25	-1.25	-0.08	-0.57
Fe2O3T	1.85	1.15	-3.95	-0.25	0.03	-1.24	0.67	-0.03	-0.13	-4.01	*	0.35	-1.97	0.86	-0.44	0.00	0.26	-0.13
Fe(II)O	-0.61	*	*	-0.80	*	-0.55	*	5.64	*	*	*	*	*	-6.75	-2.35	-0.28	*	*
MnO	-0.86	*	-0.86	-0.43	-0.17	-0.56	-0.43	0.87	-0.30	-3.98	*	0.22	-3.72	0.87	-0.86	0.45	-0.17	-0.86
MgO	0.18	-2.56	-0.54	0.22	-0.18	1.82	-12.12	0.22	1.08	-29.54	*	0.41	-6.37	-0.36	-2.42	0.45	-0.72	0.36
CaO	-2.30	0.04	-0.25	0.12	-0.21	0.07	1.64	0.41	-0.78	-12.71	*	0.11	-2.05	-0.41	-0.16	-0.33	0.00	0.33
Na2O	-5.55	*	-1.72	-0.38	-0.38	-0.38	5.83	0.00	1.34	13.00	*	0.41	4.97	-3.44	-4.59	-1.15	0.12	-0.77
K2O	-4.26	*	-15.23	0.76	-0.39	-0.08	4.23	0.47	-0.39	0.02	*	0.04	-3.68	0.18	-0.21	-0.79	0.18	-1.95
P2O5	-4.41	*	*	-0.07	-0.78	-0.64	3.50	-0.78	0.58	-9.84	*	0.01	3.15	-0.07	-1.56	0.15	0.01	-0.13
Ba	3.13	*	5.54	-0.23	-0.68	1.26	*	-1.71	-0.19	9.85	-0.47	0.34	1.48	0.48	-3.54	-0.06	*	-1.09
Ce	16.30	*	2.93	-0.44	-0.77	-0.83	*	0.00	0.40	*	-2.21	0.20	-2.28	-0.23	0.40	0.00	*	*
Co	-3.74	*	-1.56	0.10	0.35	0.22	*	0.35	-0.40	-0.74	*	1.01	-0.59	-1.14	-4.76	-0.30	0.85	0.70
Cs	*	*	2.34	-0.39	*	-0.63	*	0.13	0.06	*	0.44	*	*	*	-1.23	0.11	*	*
Cu	1.97	*	3.31	-0.62	-1.40	-0.68	8.98	0.40	-2.26	-4.44	*	0.24	1.62	0.40	0.80	0.80	-2.05	1.21
Dy	-6.77	*	2.46	0.00	*	-0.13	*	0.27	0.36	*	-0.02	0.64	-1.34	0.11	0.43	-0.16	*	*
Er	-11.87	*	*	0.76	*	-0.41	*	0.22	0.29	*	-0.72	0.39	-1.57	0.29	0.11	-0.43	*	*
Eu	0.00	*	-2.57	1.89	*	-0.26	*	0.13	0.39	*	-0.97	0.26	-1.11	-0.30	1.03	-0.17	*	*
Ga	*	*	*	0.82	-0.39	-0.53	*	-0.08	-0.19	*	*	*	0.64	-0.69	*	*	*	3.66
Gd	1.74	*	*	-0.11	*	-0.62	*	0.48	0.62	*	0.00	0.52	-0.32	-6.78	-0.01	-0.42	*	*
Ge	*	*	*	*	*	1.45	*	13.22	*	*	*	*	*	*	*	*	*	*
Hf	*	*	-1.42	*	*	-0.62	*	*	3.80	*	-0.37	*	-1.79	0.48	-4.81	-0.16	*	*
Ho	-9.76	*	-0.55	0.11	*	-0.94	*	0.26	0.34	*	-0.49	0.34	-1.01	-0.20	0.52	0.37	*	*
La	-2.94	*	-0.89	-0.25	*	-0.81	*	0.25	0.00	*	-1.99	-0.09	-2.08	0.00	0.00	0.00	*	*
Li	*	*	*	0.49	*	-0.47	*	*	0.49	*	-0.35	*	*	-2.70	*	*	*	*
Lu	-7.96	*	-0.65	0.74	*	0.51	*	0.10	0.31	*	-1.17	*	-0.65	-0.54	0.20	-0.23	*	*
Mo	0.00	*	23.98	0.00	0.80	1.10	72.89	*	0.29	*	2.02	0.00	*	*	1.51	*	*	*
Nb	*	*	*	-0.61	-1.24	0.19	0.93	-0.82	0.93	*	1.03	*	-3.12	-0.66	2.92	2.71	*	-0.26
Nd	-1.81	*	10.09	0.07	-1.55	-0.34	*	0.13	0.42	*	-0.49	0.13	-2.23	-0.25	-1.91	-0.07	*	*
Ni	1.32	*	-9.17	-0.44	-0.89	0.30	-4.36	-0.80	-0.80	-0.35	*	0.96	0.18	-0.71	0.18	0.36	-3.65	-1.60
Pb	23.61	*	*	0.04	*	-0.17	*	*	-0.25	131.51	-0.24	-0.25	*	*	16.06	0.12	12.47	*
Pr	-1.29	*	*	0.06	*	-0.50	*	0.08	0.28	*	-1.52	0.11	-1.97	-0.15	-0.57	0.04	*	*
Rb	*	*	-1.87	0.25	0.29	-0.16	-1.46	-0.47	1.68	*	*	*	-0.76	-0.11	1.57	-0.23	*	-0.23
Sc	0.44	*	-0.23	2.37	0.67	-0.68	*	0.37	1.22	*	*	*	-1.06	-0.78	-2.56	0.64	*	*
Sm	1.46	*	-1.03	0.43	*	0.05	*	0.26	0.36	*	-0.34	0.29	-1.07	-0.09	1.08	0.20	*	*
Sn	*	*	*	*	*	0.12	*	0.33	0.47	7.78	*	*	*	*	*	*	*	*
Sr	3.36	*	0.09	1.04	-0.83	-0.56	1.89	-0.70	-1.13	-4.39	0.00	0.82	-2.17	-0.45	-2.68	-0.13	*	5.83
Ta	*	*	-1.26	*	*	-0.53	*	0.83	*	*	-4.45	*	0.91	-0.91	2.83	-6.21	*	*
Tb	-2.55	*	-7.25	1.23	*	-0.44	*	0.26	0.10	*	-0.43	0.34	-0.77	32.80	56.86	0.20	*	*
Th	*	*	-1.79	0.32	*	-0.38	*	0.37	0.72	*	0.47	0.58	-0.98	-0.55	2.53	-0.23	*	*
Tl	*	*	*	-0.55	*	*	*	*	-1.02	*	11.80	*	*	*	4.23	*	*	*
Tm	*	*	*	0.14	*	0.18	*	0.33	0.33	*	-1.30	*	-1.22	-0.42	0.29	-0.09	*	*
U	*	*	-1.99	0.14	*	0.00	*	-0.12	-0.15	*	8.71	0.14	0.28	0.05	0.45	-0.59	*	*
V	0.43	*	2.92	0.15	-1.66	-1.92	3.85	-0.63	-0.80	0.46	*	0.87	0.64	-2.09	21.80	0.46	*	*
Y	-0.21	*	*	0.09	-0.72	0.07	*	-0.06	-0.06	*	-2.71	0.57	-2.49	-0.39	0.17	0.08	*	21.98
Yb	*	*	-0.04	0.50	*	-0.64	*	0.10	0.22	*	-0.63	0.46	-1.49	0.18	0.85	-0.28	*	*
Zn	2.87	*	-10.61	-0.39	-1.12	-0.71	-0.51	1.31	-0.27	-3.34	*	0.22	-0.78	-0.51	-8.08	0.19	-1.49	1.65
Zr	13.81	*	6.14	1.72	-0.37	-0.56	-3.06	0.13	2.02	*	3.85	*	-0.14	0.03	-1.93	-0.74	3.92	4.05

Table 1	GeoPT32 Z-scores for contributed data for Woodstock basalt, WG-1 (Dec. 2012)																
Lab Code	G83	G84	G85	G86	G87	G88	G89	G90	G91	G92	G93	G94	G95	G96	G97	G98	G99*
Data Quality	2	1	2	1	1	2	1	1	2	2	2	2	2	2	2	2	2
SiO2	*	4.21	-0.11	-0.46	0.82	-0.20	0.01	0.01	*	-0.46	-0.41	-0.36	0.06	0.13	0.13	0.14	0.39
TiO2	*	-24.96	0.16	0.00	-1.24	-0.31	3.12	-0.62	0.44	*	0.31	-0.16	-0.16	0.00	-0.50	-0.16	0.00
Al2O3	*	-5.57	0.18	-0.10	-0.25	-0.39	2.13	0.68	2.11	*	0.00	-0.05	2.21	0.23	0.22	0.05	-1.69
Fe2O3T	*	-4.20	0.19	0.07	-0.69	0.29	3.25	-0.51	3.00	*	0.70	-0.19	0.29	-0.19	0.22	0.29	-0.16
Fe(II)O	*	*	*	*	*	*	*	*	*	*	*	*	*	1.39	*	*	*
MnO	*	*	0.87	1.75	-1.12	-0.56	-0.86	-0.86	-0.04	*	1.00	*	-0.43	-0.43	-1.73	0.87	-0.43
MgO	*	-1.08	0.94	1.71	0.82	0.13	-9.25	1.26	3.38	*	0.40	0.23	-0.36	0.81	0.35	-0.09	-0.90
CaO	*	-6.31	-0.57	0.33	0.50	0.04	-2.54	0.16	-2.44	*	0.70	0.07	-0.29	-2.17	0.57	-0.29	-2.17
Na2O	*	-6.31	-0.48	1.53	0.77	0.19	4.97	0.00	2.89	*	0.77	-0.93	-2.20	0.38	0.36	0.00	-0.57
K2O	*	-1.83	0.18	0.94	1.18	0.30	0.37	-0.21	1.97	*	0.47	*	-0.68	-0.68	0.33	-0.11	-0.97
P2O5	*	4.29	-0.07	-0.13	0.15	0.15	-0.13	1.30	0.93	*	0.15	*	-0.78	0.65	1.65	-0.07	-0.06
Ba	*	-1.22	*	8.05	0.23	*	1.09	-1.35	0.62	*	2.03	*	3.31	-0.55	1.06	*	-0.55
Ce	*	*	*	3.15	0.98	*	-2.08	0.01	1.24	*	3.92	*	*	0.40	-0.10	*	*
Co	*	-2.23	*	0.70	-2.26	-0.25	-0.30	1.42	1.10	*	0.35	*	*	0.50	*	-0.15	1.34
Cs	*	-0.79	*	*	0.95	*	*	-0.52	0.94	*	*	*	*	-1.44	*	*	*
Cu	*	-1.94	*	-3.29	0.02	0.60	0.80	1.57	0.68	*	1.01	*	*	-0.58	0.81	-0.21	-1.24
Dy	*	*	*	*	1.05	*	-1.86	0.68	1.08	*	*	*	*	-0.39	*	*	*
Er	*	*	*	*	1.01	*	-0.49	0.81	0.95	*	*	*	*	-0.65	*	*	*
Eu	*	*	*	*	0.61	*	-2.23	0.50	0.96	*	*	*	*	-0.17	*	*	*
Ga	*	-3.70	*	-0.37	-0.46	*	*	0.13	-0.35	*	*	*	*	-0.03	0.32	*	*
Gd	*	*	*	*	1.26	*	-1.23	0.58	1.07	*	*	*	*	-0.26	*	*	*
Ge	*	*	*	*	*	*	*	*	*	*	5.20	*	*	*	*	*	*
Hf	*	*	*	-2.78	0.28	*	*	-0.07	0.73	*	0.19	*	*	0.55	*	*	*
Ho	*	*	*	*	0.89	*	-1.32	1.15	0.36	*	*	*	*	-0.35	*	*	*
La	*	*	*	9.31	0.77	*	0.25	0.32	0.86	*	0.98	*	*	0.80	2.21	*	*
Li	*	-3.95	*	*	13.16	*	1.43	-0.49	-0.10	*	*	*	*	-0.55	*	*	*
Lu	*	*	*	*	0.60	*	7.04	0.63	0.14	*	*	*	*	-0.54	*	*	*
Mo	*	-1.04	*	*	-2.65	*	*	0.00	0.56	*	*	*	*	0.76	*	*	*
Nb	*	-6.81	*	0.80	-4.85	*	1.86	0.55	0.18	*	4.11	*	*	1.09	-0.13	*	*
Nd	*	*	*	6.62	0.26	*	-3.10	0.03	1.16	*	1.69	*	*	0.29	*	*	*
Ni	*	-1.96	*	1.07	17.38	-0.09	1.79	-0.30	1.55	*	0.54	*	*	-0.44	-0.35	0.09	0.09
Pb	-6.40	-2.10	*	-1.26	*	*	*	-0.08	0.26	*	10.25	*	*	1.86	3.59	12.47	*
Pr	*	*	*	*	0.39	*	0.11	0.05	0.66	*	9.35	*	*	0.11	*	*	*
Rb	*	1.44	*	1.57	0.89	*	-1.12	0.13	0.41	*	-0.11	*	*	-1.59	0.78	*	*
Sc	*	1.20	*	-0.56	1.24	*	-0.16	1.21	*	*	5.72	*	*	-0.68	-0.28	*	*
Sm	*	*	*	*	0.62	*	0.16	0.84	0.96	*	0.96	*	*	-0.08	*	*	*
Sn	*	*	*	*	-1.17	*	*	0.69	-0.24	*	4.30	*	*	1.64	*	*	*
Sr	*	-0.81	*	0.81	0.30	*	0.72	0.38	0.69	*	0.15	*	-0.24	-1.77	0.49	-0.24	*
Ta	*	*	*	3.48	-8.84	*	*	-3.92	0.15	*	-0.28	*	*	0.98	*	*	*
Tb	*	*	*	*	0.40	*	-0.61	0.83	0.62	*	*	*	*	0.02	*	*	*
Th	-2.56	-0.40	*	21.37	0.70	*	*	0.48	0.15	*	-0.26	*	*	-0.58	1.47	*	*
Tl	*	-0.78	*	*	*	*	*	-0.03	-0.01	*	*	*	*	0.57	*	*	*
Tm	*	*	*	*	0.84	*	1.04	0.82	0.39	*	*	*	*	-0.42	*	*	*
U	0.23	-1.59	*	*	0.48	*	0.45	0.10	-0.11	*	5.47	*	*	-0.04	2.85	*	*
V	*	-2.80	*	-1.43	-2.48	*	0.64	-1.60	2.08	*	-0.11	*	*	-0.46	-1.14	5.57	-0.46
Y	*	-3.22	*	1.12	0.40	*	3.01	0.76	0.97	*	0.56	*	*	-0.82	1.03	*	-0.39
Yb	*	*	*	*	0.65	*	-1.41	0.39	0.66	*	*	*	*	-0.83	*	*	*
Zn	*	-2.19	*	0.44	2.99	*	0.92	-0.10	0.98	*	0.22	*	*	1.92	-0.39	-0.03	-1.61
Zr	*	*	*	1.85	-0.34	*	2.85	0.27	0.79	*	0.13	*	-0.07	0.03	-0.77	*	-7.04

* Submitted late

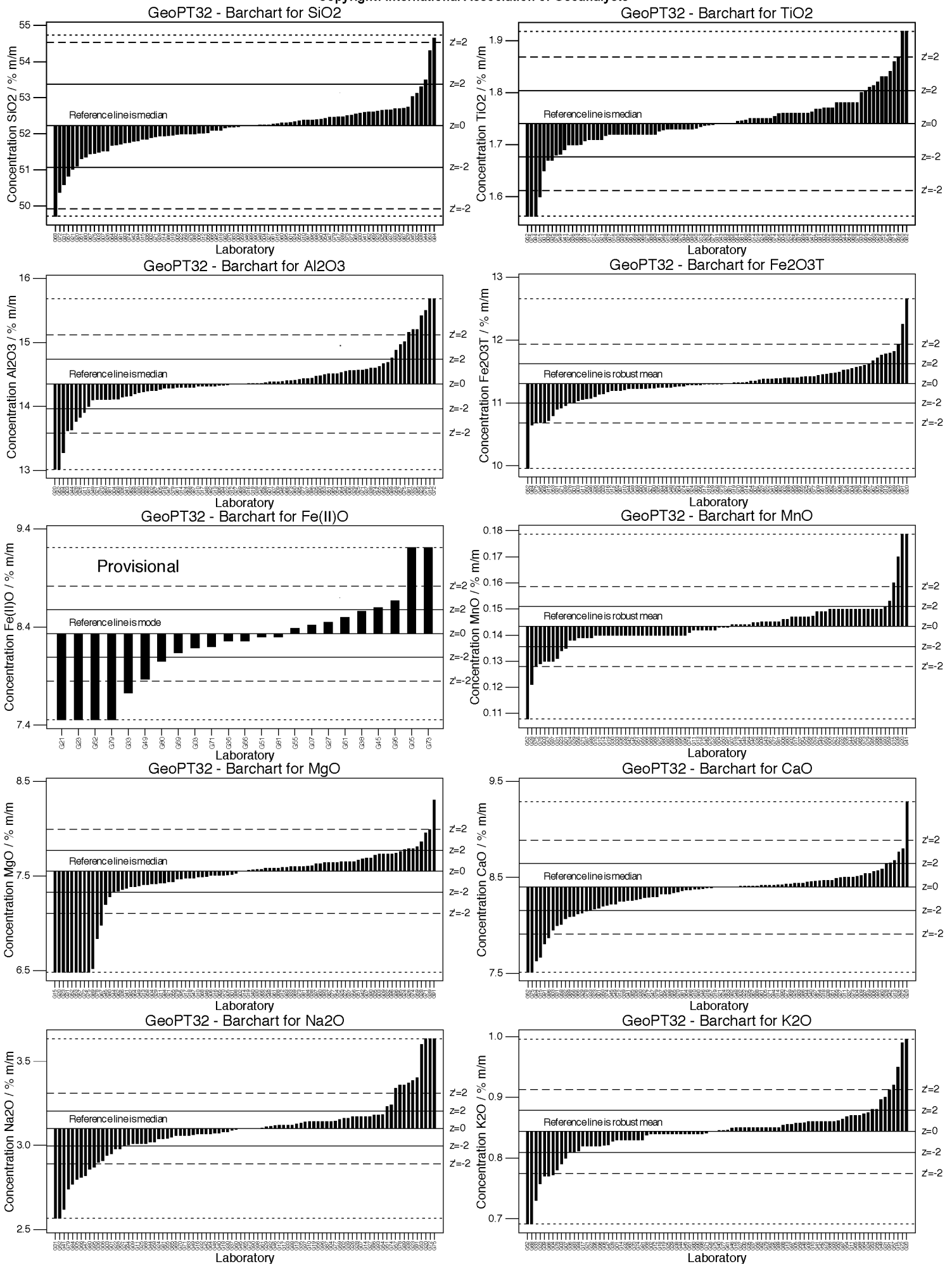


Figure 1.1: GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

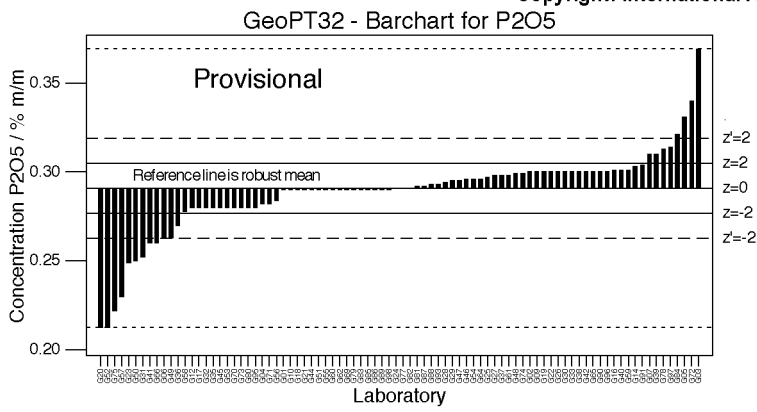


Figure 1.1 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

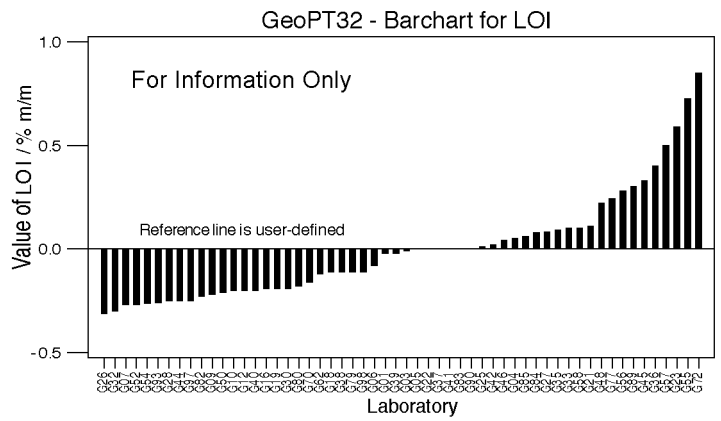
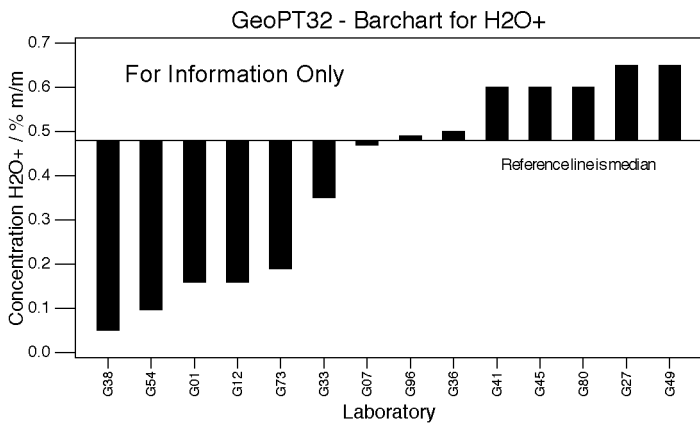


Figure 2.1: GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for information only for elements for which values could not be assigned.

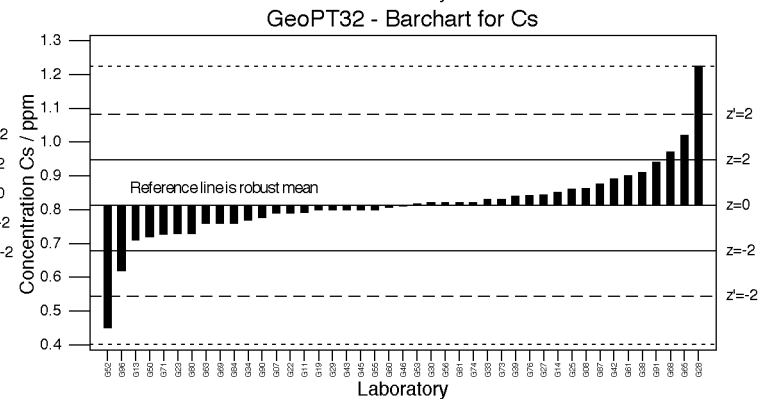
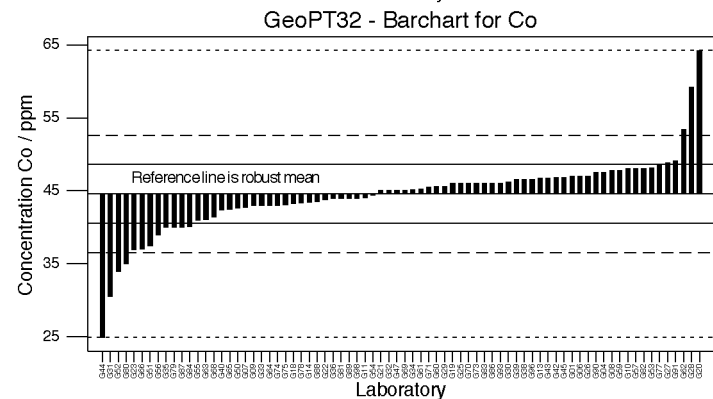
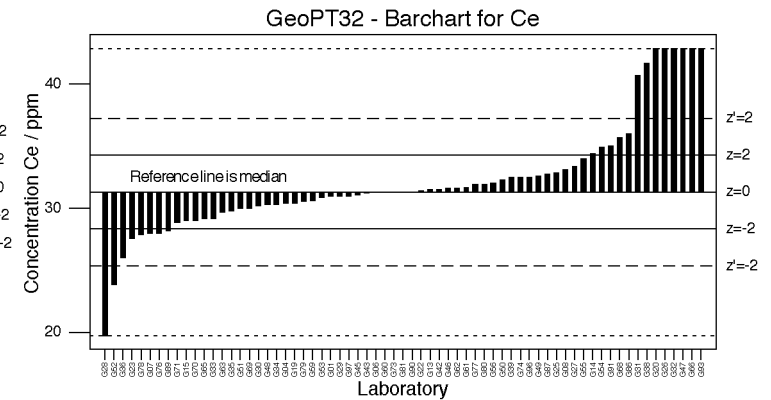
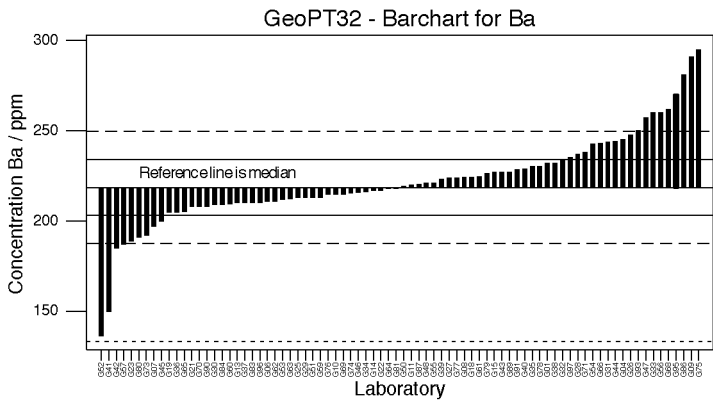


Figure 1.2: GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

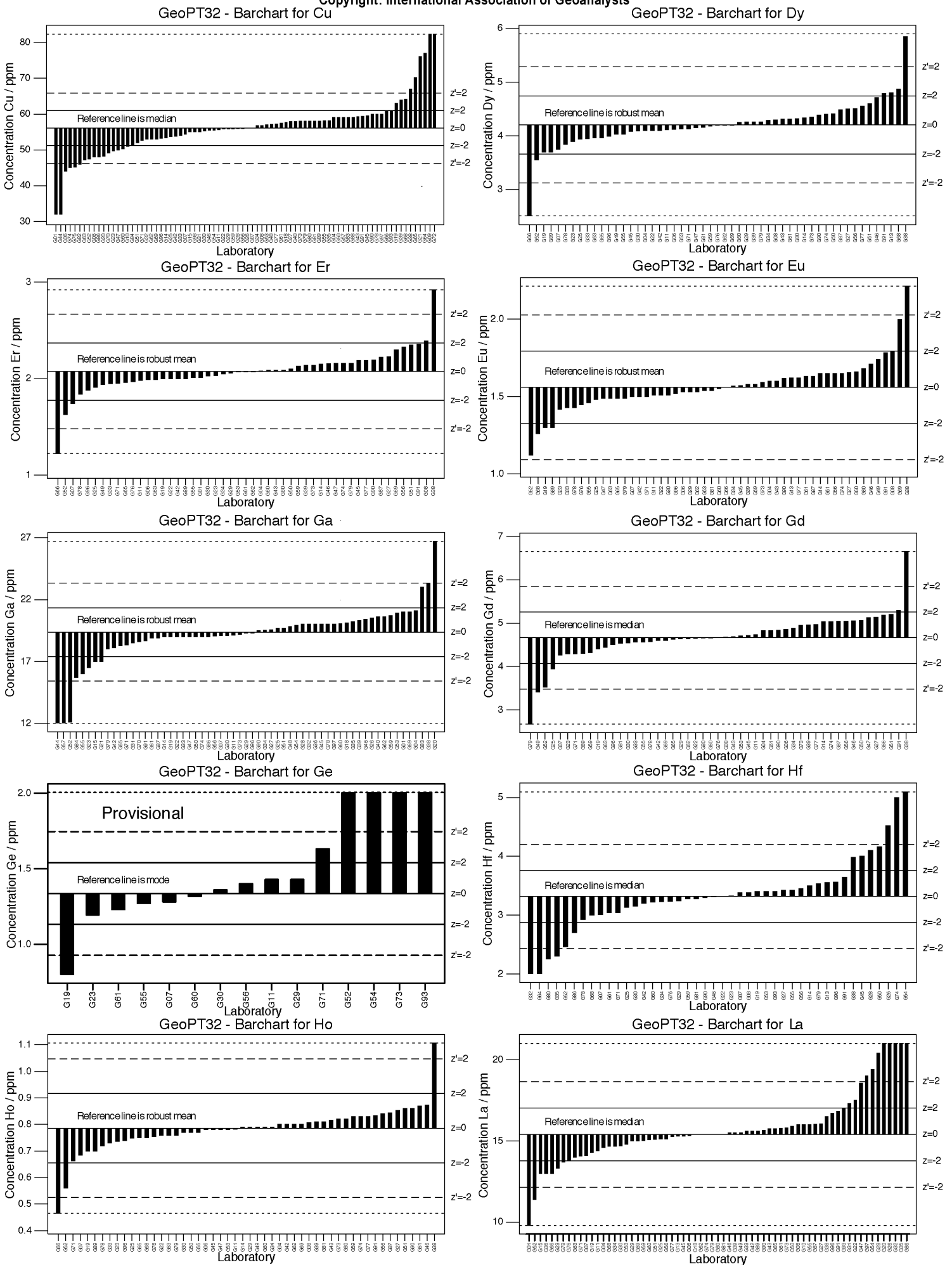


Figure 1.2 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

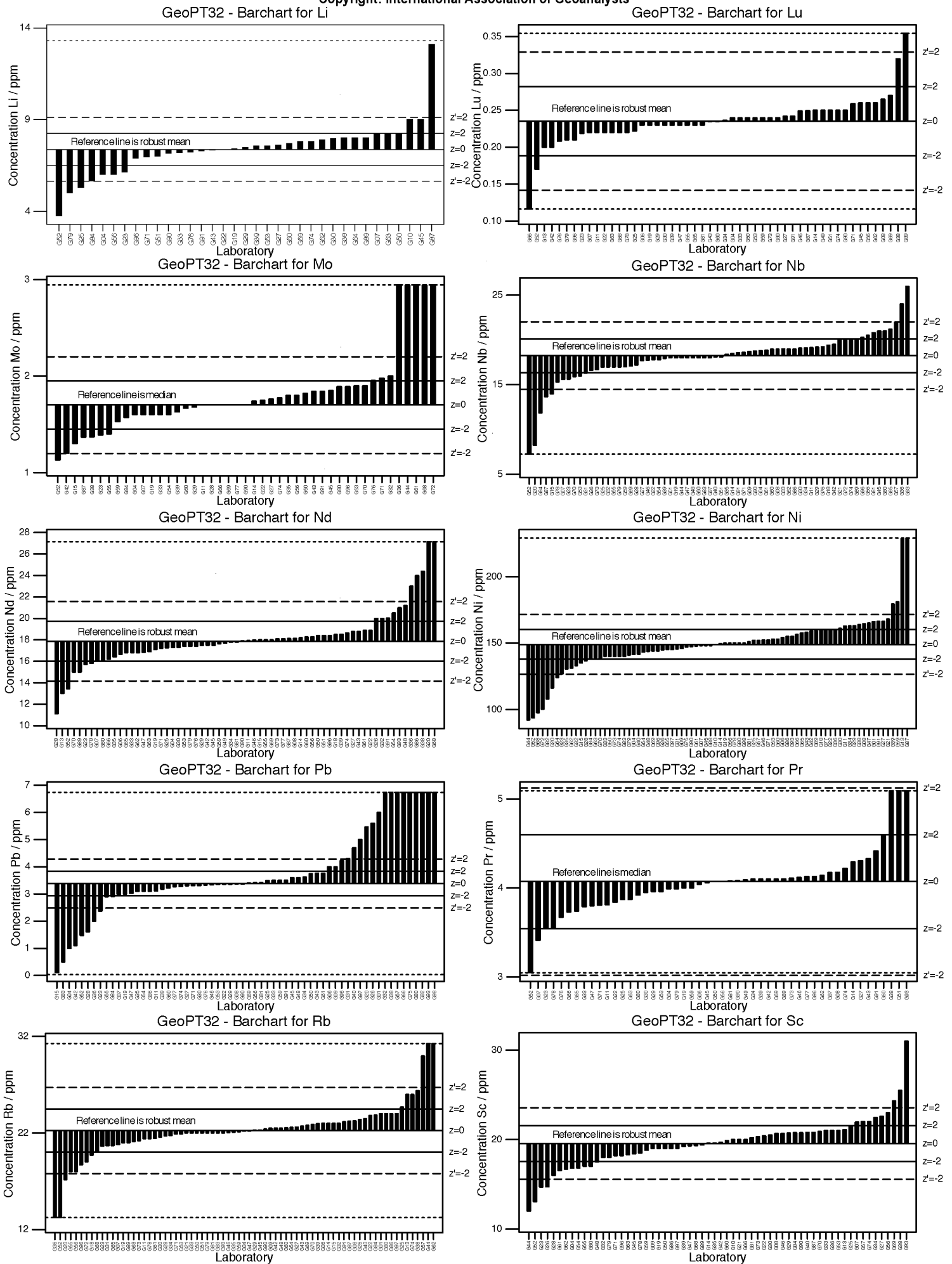
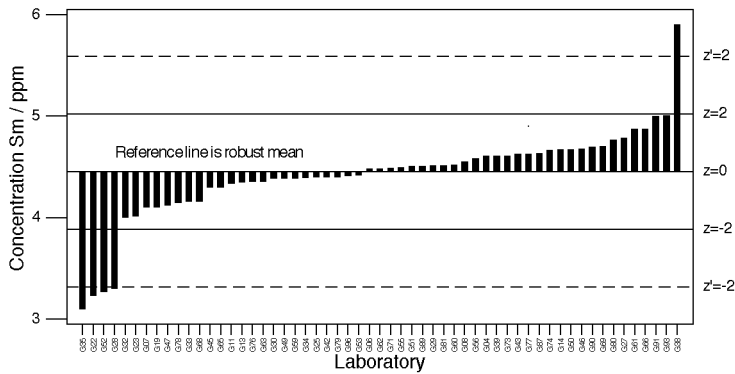
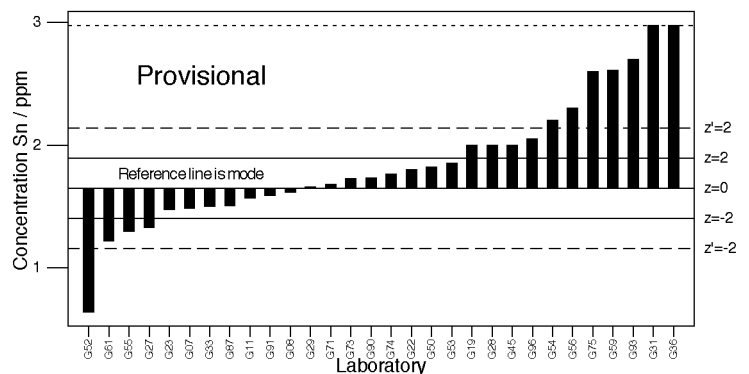


Figure 1.2 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

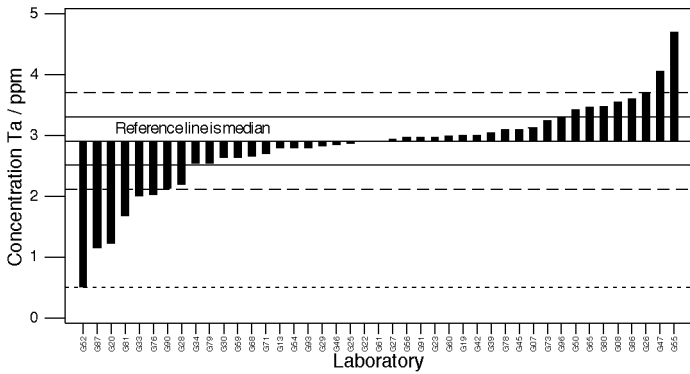
GeoPT32 - Barchart for Sm



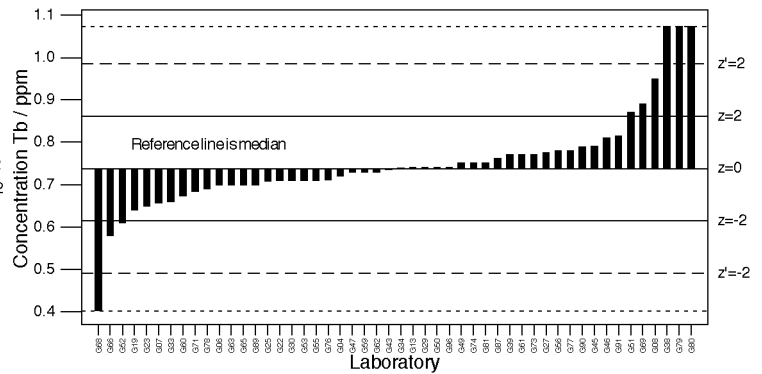
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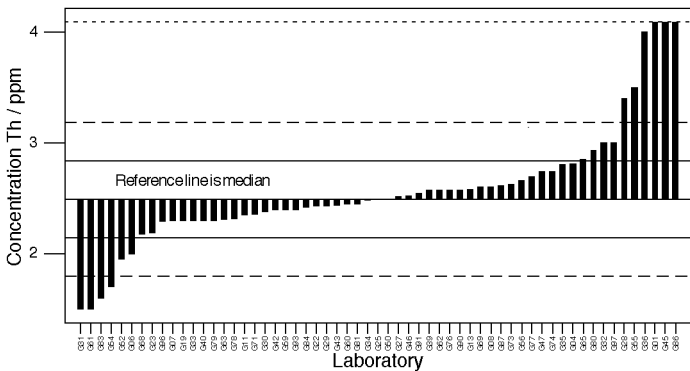
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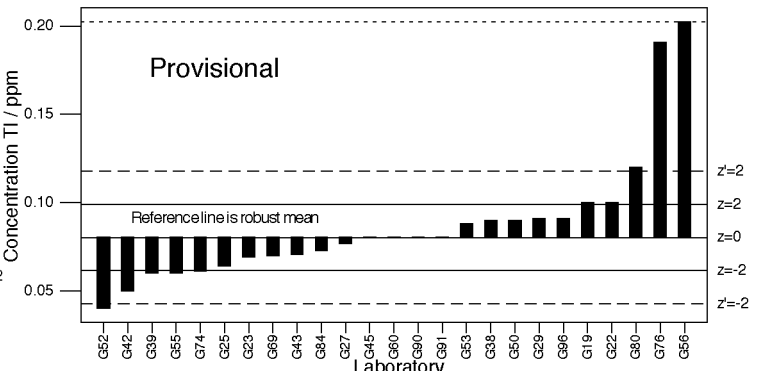
GeoPT32 - Barchart for Tb



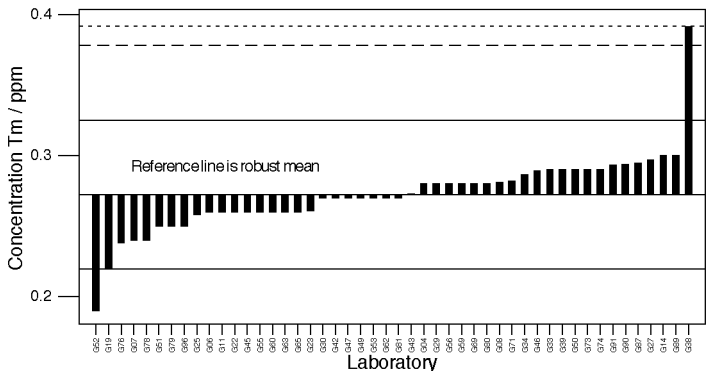
GeoPT32 - Barchart for Th



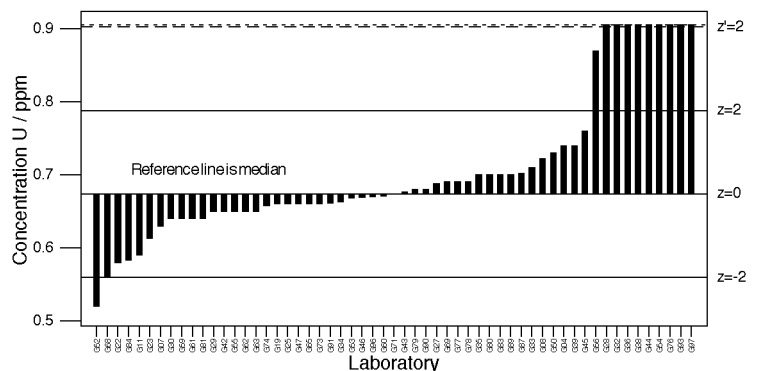
GeoPT32 - Barchart for Tl



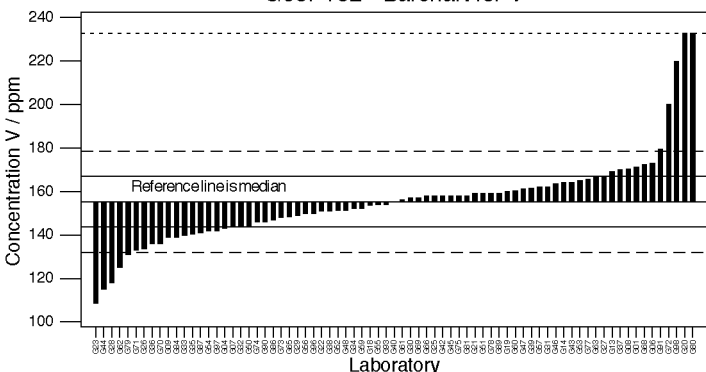
GeoPT32 - Barchart for Tm



GeoPT32 - Barchart for U



GeoPT32 - Barchart for V



GeoPT32 - Barchart for Y

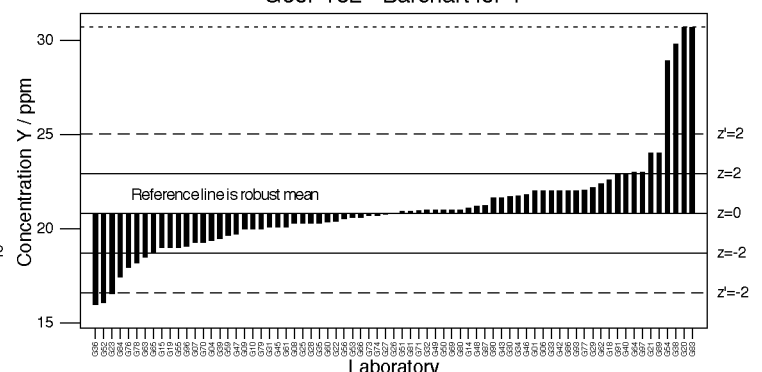


Figure 1.2 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

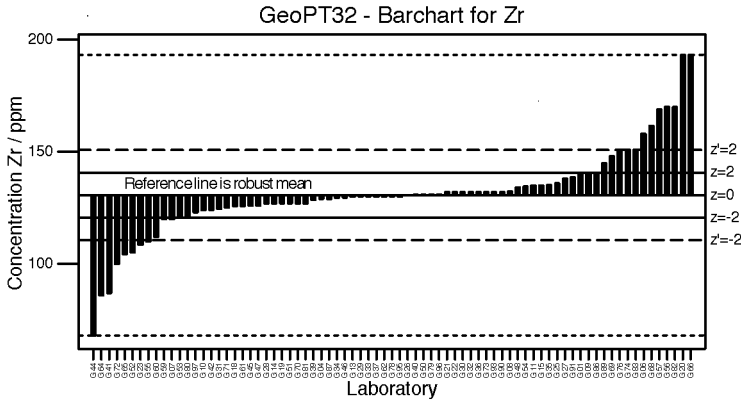
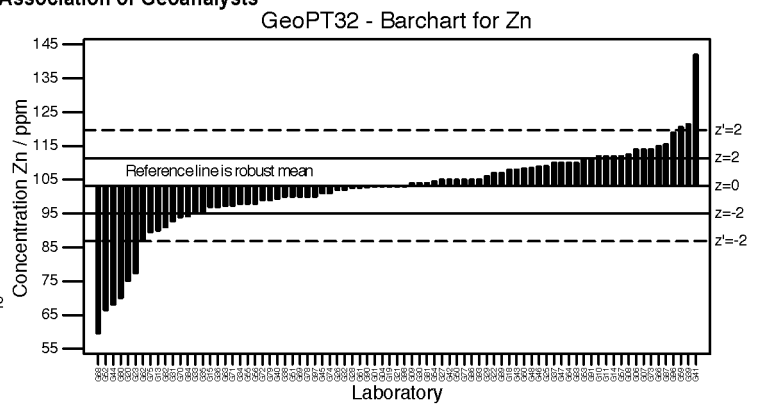
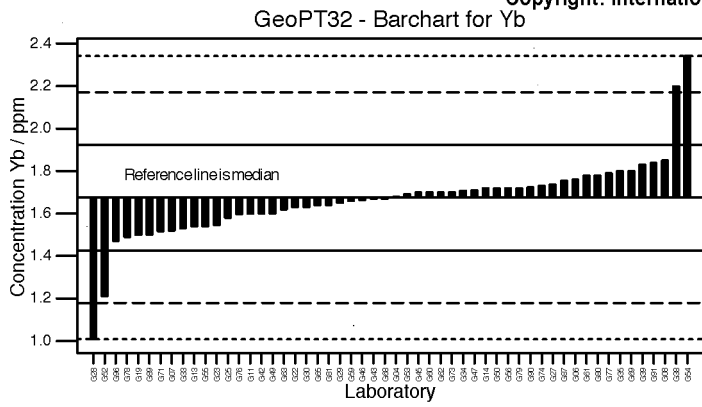


Figure 1.2 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z < 2$ for applied geochemistry labs (pecked lines).

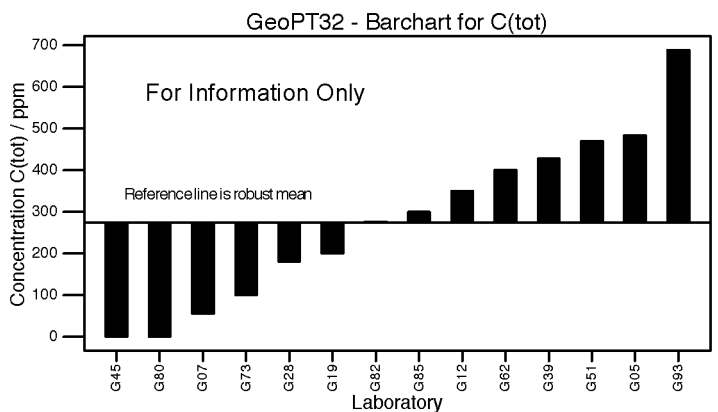
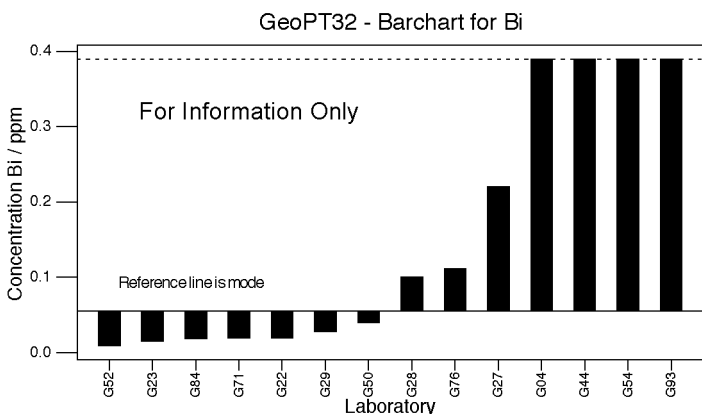
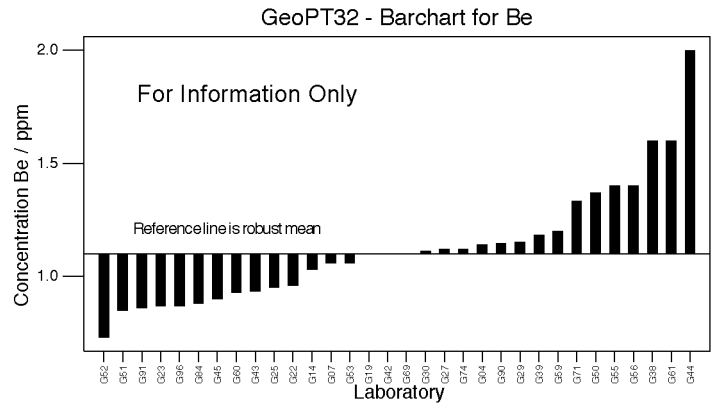
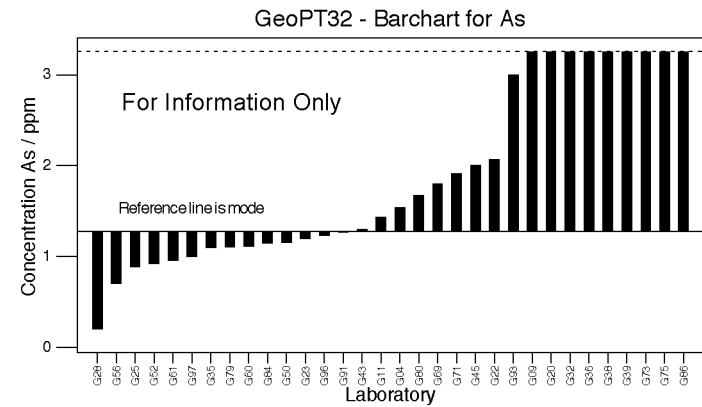
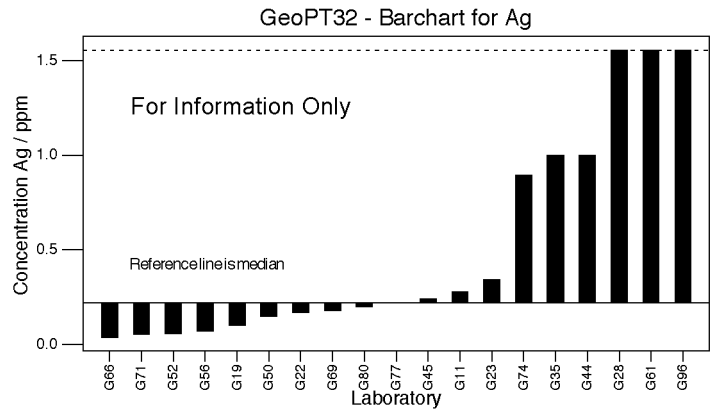


Figure 2.2: GeoPT32 – Woodstock basalt, WG-1. Data distribution charts provided for information only for elements for which values could not be assigned.

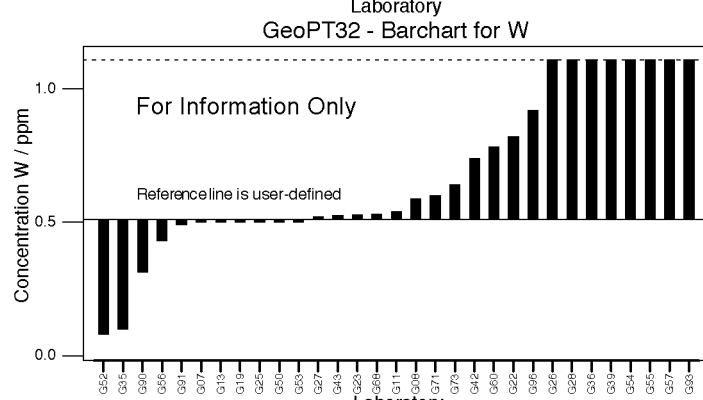
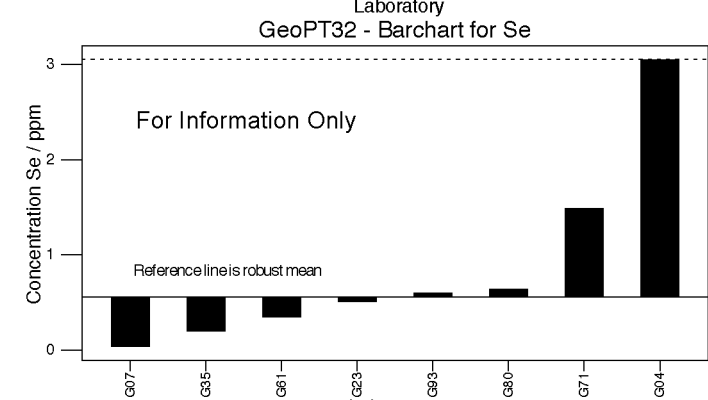
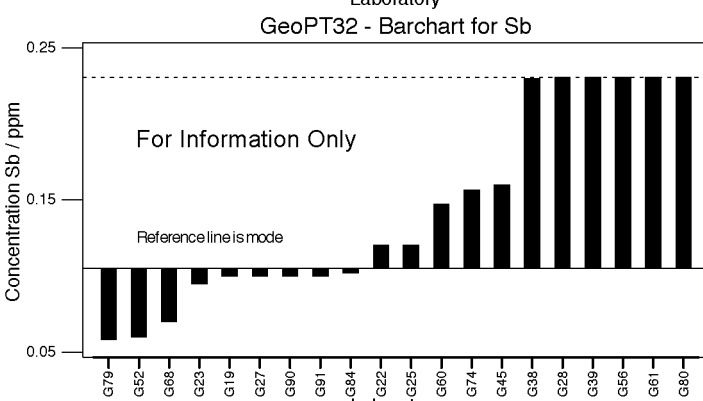
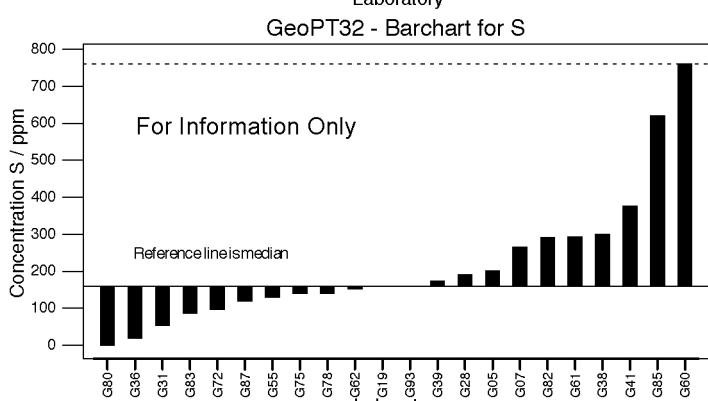
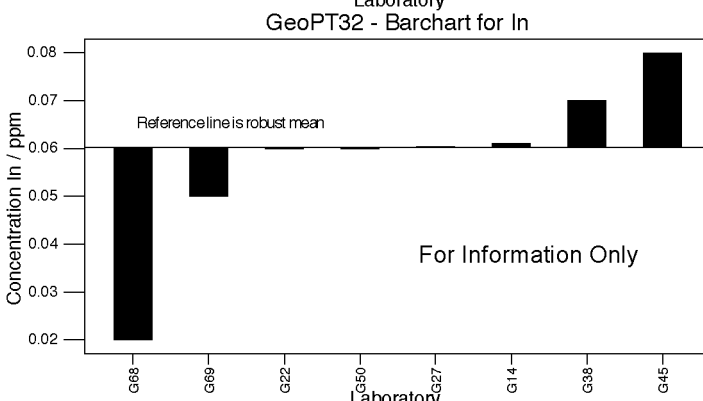
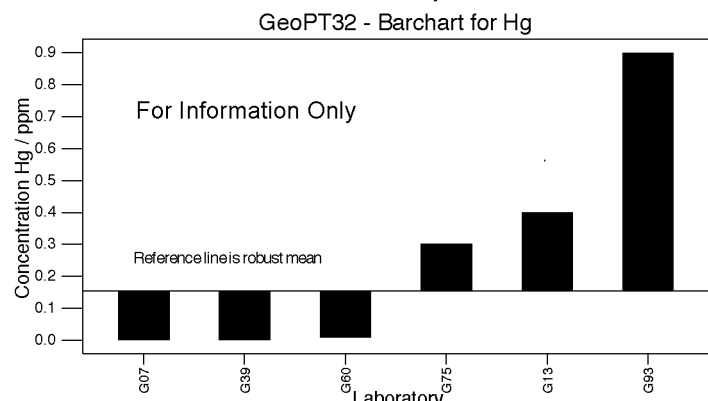
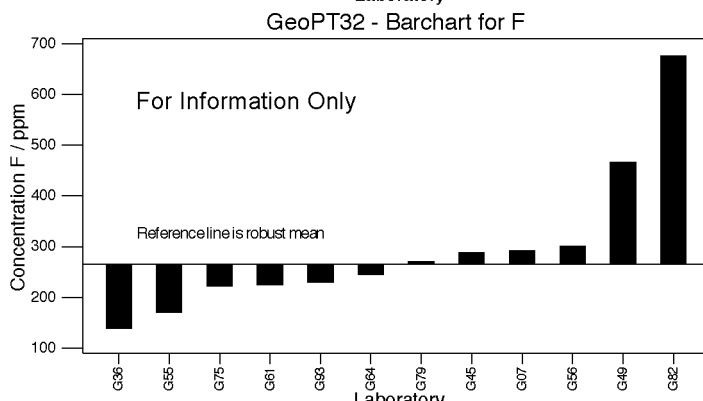
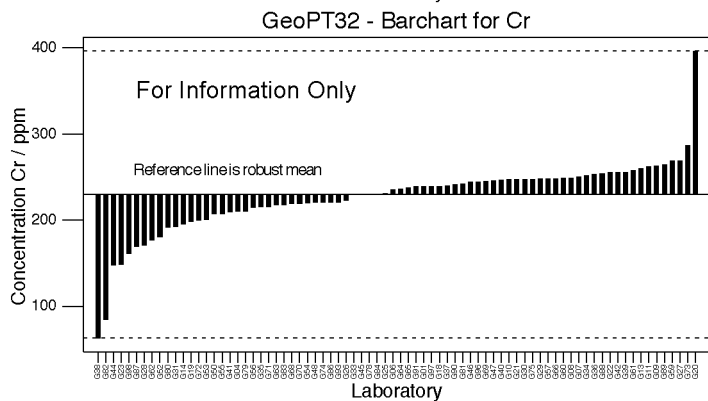
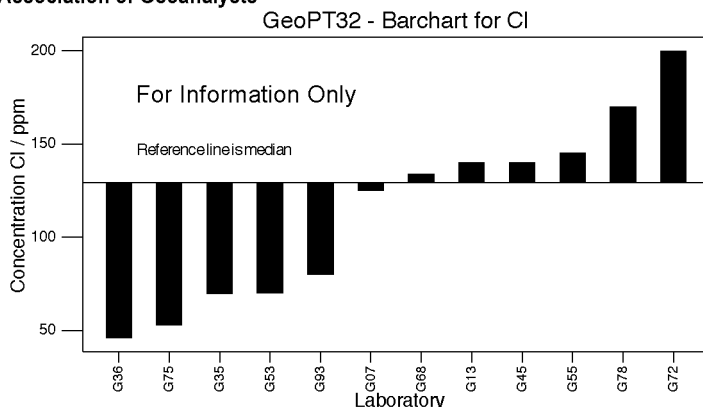
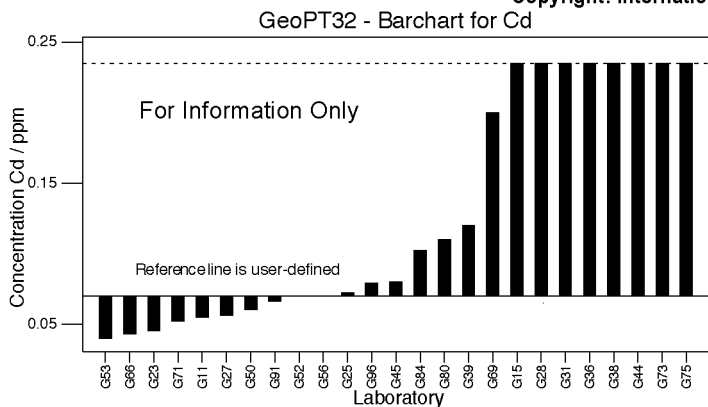


Figure 2.2 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Data distribution charts provided for information only for elements for which values could not be assigned.

Multiple z-score chart for GeoPT32

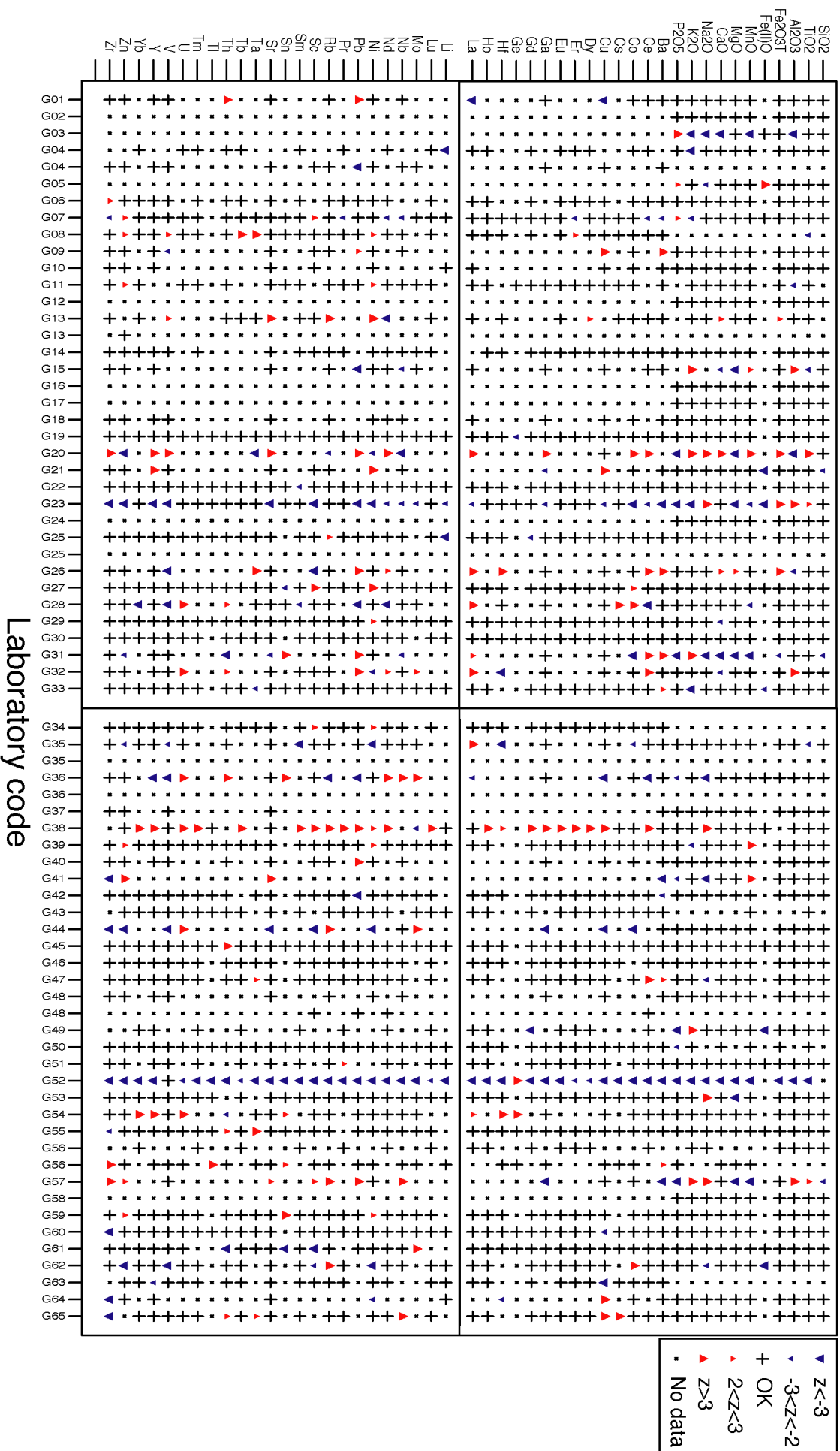


Figure 4.1: GeoPT32 – Woodstock basalt, WG-1. Multiple z-score charts for laboratories participating in the GeoPT32 round. Symbols indicate whether or not an elemental result complies with the $-2 < z < +2$ criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: $z < -3$ (∇), $-3 < z < -2$ (\blacktriangle), $+2 < z < +3$ (\blacktriangle), $Z > +3$ (\blacktriangle).

Multiple z-score chart for GeoPT32

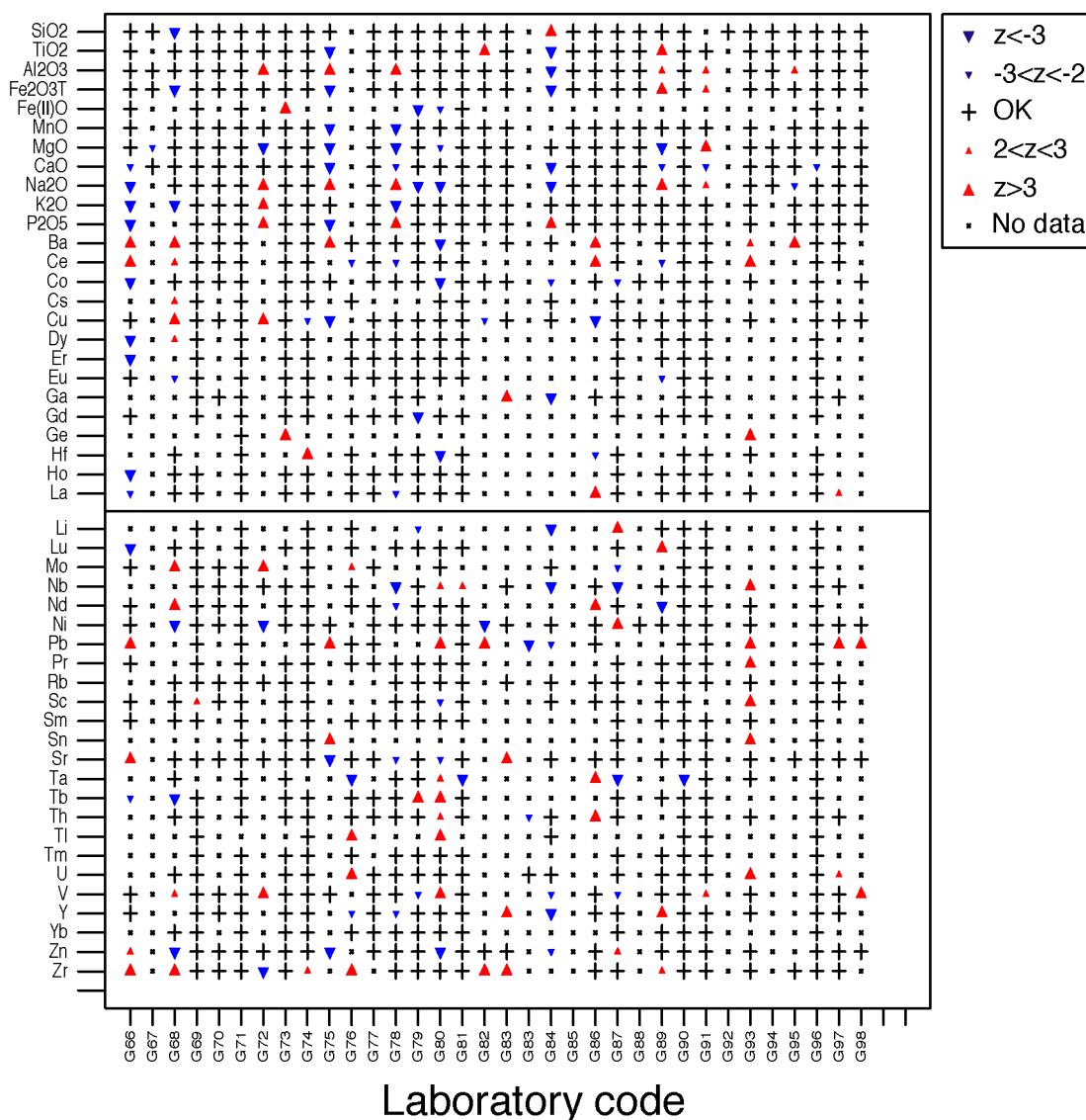


Figure 4.1 (cont'd): GeoPT32 – Woodstock basalt, WG-1. Multiple z-score charts for laboratories participating in the GeoPT32 round. Symbols indicate whether or not an elemental result complies with the $-2 < z < +2$ criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: $z < -3$ (∇), $-3 < z < -2$ (\blacktriangledown), $+2 < z < +3$ (\blacktriangle), $Z > +3$ (\blacktriangledown).