G-Probe 27 — an International Proficiency Test for Microanalytical Laboratories — Report on Round 27 (Basanite glass, BOOS-1G) / November 2023

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Abstract

Results are presented for Round 27 of the G-Probe Proficiency Testing programme for microanalytical laboratories, organised by the International Association of Geoanalysts (IAG). The test material distributed in this round of G-Probe was the Basanite glass, BOOS-1G, produced at the United States Geological Survey (USGS) by Steve Wilson from material provided by Regina Mertz-Kraus of Johannes Gutenberg University Mainz, Germany. The starting material for the glass was a basanite collected from the Eifel volcanic field in Germany. In this report, the data contributed by 42 laboratories are listed, together with an assessment of consensus values as best estimates of the true value, consequent *z*-scores and a series of charts that show the distribution of contributed values thus revealing the overall performance of participating laboratories. Assigned values were conferred for 44 elements, and provisional values for a further 12, out of 63 elements reported, but 7 were either reported in insufficient numbers or the results were too variable to be assessed in any way.

Introduction

This twenty-seventh round of G-Probe, the international proficiency testing programme for microanalytical laboratories, was conducted in a similar manner to recent rounds. The programme is organised by the IAG and conforms with the published G-Probe Protocol (IAG, 2020).

The overall aim of the programme is to provide participating laboratories with *z*-score information for their reported measurement results so that each laboratory can decide whether the quality of their data is satisfactory in relation both to the G-Probe fitness-for-purpose criterion and to the results submitted by other laboratories contributing to the round. In circumstances where *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate its procedures for unsuspected analytical bias and to take corrective action if it appears justified. The programme is designed to be part of the routine quality assurance procedures employed by microanalytical geochemistry laboratories.

G-Probe Steering Committee:

D. Garbe-Schönberg (principal organiser), P.C. Webb (results coordinator and website administrator), P.J. Potts (results reviewer), M. Thompson (statistical advisor), C.J.B. Gowing (distribution coordinator), L. Danyushevsky, R. Mertz-Kraus and A. Kronz (analytical advisors).

Timetable for Round 27 of G-Probe:

Distribution of test material: May 2023
Results submission deadline: 6th September 2023
Release of report: November 2023

G-Probe 27 Test Material details

The basanite starting material for this test sample was collected as sample “BOOS” from the West Eifel volcanic field, Germany, and milled to a powder under the supervision of Dr R. Mertz-Kraus. The material was subsequently converted to glass by Dr S. Wilson at the USGS by fusion in a platinum bowl at 1500 °C for six hours. The molten material was poured into a platinum boat and rapidly lowered into a water bath for quenching and subsequent fragmentation. Glass fragments were collected for supplying either as loose chips or mounted into 12.5 mm (½”) epoxy plugs, with final polishing at University of Göttingen (A. Kronz). These items were provided as the test material BOOS-1G for G-Probe Round 27.

The IAG G-Probe Protocol (IAG, 2020) requires assessment of homogeneity of the glass test material following ISO Guide 35:2017. Two fragments of the test material were initially evaluated for homogeneity at Johannes Gutenberg University Mainz with 11 x 8 point analyses using EPMA, and 10 x 10 single-spot analyses using LA-ICP-MS. A subset of 10 chips was analysed by LA-ICP-MS at Kiel University with 10 points per chip to assess between-chip heterogeneity. In addition, one chip was analysed with 100 points for estimating within-chip micro-heterogeneity. After careful assessment of all these homogeneity data, the basanite glass fragments were considered suitable for use in this proficiency test.

Submission of results

For G-Probe 27, participants were instructed to apply their routine measurement procedures to provide a measurement result for each glass fragment representative of its average composition (Result A and Result B).

A total of 2740 measurement results submitted by 42 laboratories are listed in Table 1. Where results A and B were provided, the average was used for the subsequent data assessment. Of the resultant 1654 values reported for individual analytes, 1408 values were by LA-ICP-MS from 31 laboratories, 132 by EPMA from 13 laboratories, 37 by SEM from four laboratories, 10 by µ-XRF by one laboratory and two laboratories provided 67 values without defining a method.

Target values and results summary

Robust statistical procedures were used to derive a consensus value from the contributed data for each elemental component in the test material. These procedures included the evaluation for each dataset of the Huber robust mean, the median or a mode derived from a kernel density distribution as detailed by Thompson (2017). Evaluations of consensus values involved a critical assessment of the distribution of sequentially ordered results for each measurand.

Consensus values were credited with assigned status on the basis that:

(i) sufficient laboratories had contributed data for estimating a measurand (usually a minimum of 15);

(ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed about the consensus;

(iii) the ratio of the uncertainty in the location estimate to the target precision (as defined below) was an acceptably small value; and

(iv) where possible, an evaluation of measurement results by procedure was judged to provide no clear evidence of procedural bias among the measurement results from which the consensus was derived.

Where these criteria were nearly, but not fully met, measurands were credited with 'provisional' rather than ‘assigned’ status. Instances of provisional status were identified because either:

(i) a smaller number of results (less than 15 but at least 8) contributed to the consensus, or

(ii) the results were unduly dispersed in relation to the target precision (H_a, see below), or

(iii) the distribution of results was significantly skewed (but not severely enough to preclude the recognition of a clear consensus), or

(iv) procedural bias was identified but a target value could nevertheless be recognised based on the most coherent part of the overall data distribution conforming approximately to a random sample from a normal distribution.

Where data were either insufficient in number, or the distribution was too variable or too highly skewed for

the confident estimation of a consensus to provide *z*-scores, data distributions are presented 'for information' only.

The resulting consensus values were those judged to be the best available estimates of the true composition of the test material and therefore suitable for use as target values for proficiency testing. It should be noted, however, that in many cases, these estimates are derived from a single analytical method.

Data distributions for those measurands given 'assigned' or 'provisional' status are presented in Figure 1, and those for which no status could be conferred are shown 'for information' in Figure 2. Measurement results in the Figure 1 and 2 data distribution plots are presented in order of increasing magnitude and identified according to laboratory code. Data symbols are coded by colour and shape according to the method of measurement. For major elements, results were obtained by EPMA, LA-ICP-MS, SEM and µ-XRF. Electron beam results for major elements are broadly in agreement with LA-ICP-MS results, although the LA-ICP-MS results are often more variable. Consensus values were generally reasonably well defined for most major elements, but less so for Na_2O, Fe_2O_3, and P_2O_5, the latter two being credited only with provisional status because, although a significant amount of data was available, a clear point of inflection was not apparent and a large proportion of the data fell outside the (z=2) data quality limits. There were also a number of discordant results for SiO_2, TiO_2, MgO, Na_2O and K_2O, but sufficient numbers were in accord to warrant assigned status.

For most trace elements there is no option other than to make assessments based on LA-ICP-MS data. Concerns, therefore, about the possibility of single method bias, noted above, must be in principle kept in mind and the outcomes should be regarded with caution in the reflection of true values. Nevertheless, the derived consensus values represent the best that currently can be obtained and therefore are considered appropriate for the purposes of this proficiency test.

For the majority of trace elements the agreement among almost all of the results submitted is remarkably good, especially so for Cs, Eu, Hf, Ho, La, Li, Lu, Pr, Sm, Tb, Tm, and U, with very clear consensus values defined by robust means or medians. The mode frequently provides a better estimate of the consensus value when the data distribution exhibits asymmetry. However, all of those distributions merited only provisional status. Ag, As, Bi, Ge, In, Sb, Sn and Tl were considered to be of provisional status in part because of less well-defined data distributions and in part because there were only marginally sufficient values contributing to the consensus. Sr was designated provisional on account of the apparent bimodality of the data, and Zn owing to the high level of dispersion of the data although the distribution overall was relatively symmetrical.

Several laboratories in this round required values of a major element oxide for internal standardisation of LA-ICP-MS data. Values of 43.4 g/100g for SiO_2 and/or 12.0 g/100g for CaO were provided for laboratories coded H3, H13, H16, H18, H25, H30, H33, H38, H42, H46 and H56. These values compare well with G-Probe 27 consensus values of 43.82 g/100g (SiO2) and 11.78 g/100g (CaO). When assessing data distributions for major elements, notice was taken of the more coherent sets of data derived by EPMA. For trace elements a tendency was noted for results derived from calibrations involving USGS reference materials to be relatively more consistent. That consideration was incorporated in the choice of an appropriate consensus value.

Table 2 lists assigned and provisional values for 9 major components and 47 trace elements in G-Probe 27 (BOOS-1G). Data distribution charts for the 56 measurands that were judged to have satisfactory distributions for consensus values to be conferred with assigned or provisional status are shown in Figure 1. These are: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T*, MgO, CaO, Na_2O, K_2O, P_2O_5*, Ag*, As*, Ba, Be, Bi*, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge*, Hf, Ho, In*, La, Li, Lu, Mn, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sb*, Sc, Sm, Sn*, Sr*, Ta, Tb, Th, Tl*, Tm, U, V, W, Y, Yb, Zn* and Zr. Of these, values of the 12 analytes marked '*' were credited with provisional status for reasons given above.

Data distribution plots for the 4 analytes: Au, B, Cd and S are plotted in Figure 2 for information only, as the data were either insufficient in number, or the data distribution was too highly dispersed or too highly skewed for the estimation of a consensus to provide *z*-scores.

Observations

The form of data distribution plots for most elements provides sufficient, and in many cases solid justification for conferring assigned values. It was apparent, however, that data distributions of many major elements exhibited notably high (SiO_2, Al_2O_3, Fe_2O_3, CaO, Na_2O and P_2O_5) and low (SiO_2, TiO_2, Fe_2O_3, MgO, Na_2O, K_2O and P_2O_5) tails. While many of the high and low values are reported from LA-ICP-MS measurements, EPMA provides some of the low values for TiO_2, Fe_2O_3 and Na_2O; possibly in the latter case caused by too high beam currents and/or insufficient defocusing of the beam resulting in loss of Na due to migration and/or volatilisation during measurement. In contrast, two Ba measurements by EPMA and one for Ni are high. It is clear that the SEM and µ-XRF measurements are more variable than the EPMA results for major elements.

The remarkable consistency of data (though provided entirely by LA-ICP-MS) for most trace elements is apparent, as only a few trace elements, including Ga, Ge, Sc, Sn, and Zn, exhibit notable high tails, and likewise there are small low tails for some elements but they are significant only for Cr, Mn, Sr, V, Y, Zn and Zr. High values for Ga might be caused by an unidentified interference from doubly charged Ba given its relatively high mass fraction of 710 mg kg^{-1} in this basanite.

While no systematic influence of the ICP-MS instrument type or laser wavelength could be detected, there is some evidence for systematic bias depending on the choice of calibration materials. From the metadata provided by participating laboratories it is possible to recognise a calibration that was made solely using NIST-SRM600 series glasses, or solely by using matrix-matched calibration materials, e.g., from USGS, or indeed, by both. It appears that results for most REE, Y, Sr, Zr, Hf, Ta, Th, U and also V when the calibration involves matrix-matched materials tend to be more consistent and slightly higher in comparison to results from calibrations using NIST glasses only, or conversely, NIST-calibrated results for these elements tend to be lower than those acquired from matrix-matched calibrations.

Z-score analysis

Assessment of submitted results followed the strategy adopted in recent rounds of G-Probe (Wilson et al. 2019; Wilson et al. 2020; Garbe-Schönberg et al. 2021) and detailed in the G-Probe protocol (IAG, 2020). Based on an assessment of the variation of measurement results in earlier rounds, and in order to provide sufficient discrimination for the proficiency test to be helpful to participating laboratories, the fitness for purpose criterion applied throughout was provided by a modified form of the Horwitz function:

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

Where-H_a is the standard deviation for proficiency, also referred to as the target precision, calculated for each measurand; and X_a is the best estimate of the true composition, also known as the 'target value' (and may be credited with assigned or provisional status). The values of H_a and X_a are represented in units of mass fraction. The factor k = 0.01, is regarded as appropriate 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.

Z-scores were calculated for the average measurement result submitted by each laboratory from:

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

where X is the (average) measurement result submitted, X_a is the target value (assigned and provisional) and H_a is the target precision (all as mass fractions).

Z-score values for results submitted to G-Probe 27 are listed in Table 3. *Z*-scores derived from provisional values of measurands are shown in italics.

Participating laboratories are invited to assess their performance using the following criteria:

> *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 $-3<z<3$, laboratories are advised to examine their procedures and, if necessary, take action to ensure that their determinations are not subject to unsuspected analytical bias.

Should a participating laboratory decide that this performance standard is not appropriate for assessment of their measurement results, they are invited to recalculate their *z*-scores by substituting the appropriate value of the standard deviation for proficiency testing, H_a, into the equation for the calculation of *z*-scores (i.e., $z = [X - X_a] / H_a$). Adoption of such an approach should include a justification as to why an amended value of H_a is more appropriate for assessment of their data.

Overall performance

A summary of the overall performance of individual laboratories for this round is plotted in multiple *z*-score charts in Figure 3. In these charts, the *z*-score performance for each element is distinguished by symbols that make it easy to identify whether the measurements results were satisfactory or gave *z*-scores that exceeded the action limits. This chart is designed to help individual laboratories judge their overall performance in this proficiency test. Note, however, that participants should always review their *z*-scores in accordance 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 Rounds 29 and 30 of G-Probe, the test samples for which will be distributed in spring 2024.

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References

Garbe-Schönberg D., Webb P.C., Wilson S.A., Mertz-Kraus R., and Potts P. J. (2021) G-Probe 24 — an International Proficiency Test for Microanalytical Laboratories — Report on Round 24 (Basanite glass, BKWE-1G) / February 2021. International Association of Geoanalysts: Unpublished report.

IAG (2020) Protocol for the Operation of the G-Probe Proficiency Testing Scheme. International Association of Geoanalysts (Keyworth, UK), 20pp. *http://www.geoanalyst.org/wp-content/uploads/2020/08/G-Probe-protocol-August-2020.pdf*.

ISO (2017) GUIDE 35:2017(E): Reference materials – Guidance for characterization and assessment of homogeneity and stability**.** – International Organisation for Standardisation (Geneva, Switzerland), 105pp.

Thompson, M. (2017) On the role of the mode as a location parameter for the results of proficiency tests in chemical measurement. *Anal. Methods*, **9**, p.5534-5540.

Wilson S., Webb P.C. and Garbe-Schönberg D. (2019) G-Probe 22 – an International Proficiency Test for Microanalytical Laboratories – Report on Round 22 (Synthetic basanite, SynB-1G(GSC-2G)) / October 2019. 30pp. International Association of Geoanalysts: Unpublished report.

Wilson S., Webb P.C., Garbe-Schönberg, D., Potts P.J. and Danyushevsky, L. (2020) G-Probe 23 — an International Proficiency Test for Microanalytical Laboratories — Report on Round 23 (Norite glass, NoSM-1G) / February 2020. International Association of Geoanalysts: Unpublished report.

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H1A	H1B	H3A	H3B	H5A	H5B	H6A	H6B	H7A	H7B	H8A	H8B
SiO2	g 100g^{-1}	44.65		42.8	42.9	45.584		44.483	43.802	43.78	43.83	43.34	43.52
TiO2	g 100g^{-1}	2.98		2.77	2.88	2.564		2.984	2.926	2.87	2.88	2.19	2.18
Al2O3	g 100g^{-1}	12.609		11.6	11.8	12.843		12.243	12.389	12.79	12.79	12.31	12.32
Fe2O3T	g 100g^{-1}	11.895		10.5	10.8	11.333		11.618	11.99	11.6	11.57	10.87	10.85
MgO	g 100g^{-1}	11.188		7.85	7.93	10.294		10.844	10.85	10.78	10.77	11.07	11.08
CaO	g 100g^{-1}	11.588		14	14	11.516		11.406	11.375	11.77	11.78	11.38	11.37
Na2O	g 100g^{-1}	3.322				3.227		3.049	3.342	3.44	3.42	3.09	3.13
K2O	g 100g^{-1}	1.766		1.66	1.77	1.787		1.75	1.673	1.79	1.79	1.76	1.75
P2O5	g 100g^{-1}			5.36	6.49	0.689		0.617	0.58	0.697	0.701	0.69	0.68
Ag	mg kg^{-1}	0.376										0.54	0.53
As	mg kg^{-1}	1.219		2.06	2.18	1.43						1.81	1.62
Au	mg kg^{-1}												
B	mg kg^{-1}			4.63	4.16	4.68						9.11	7.05
Ba	mg kg^{-1}	714.351		730	740	652						692	691
Be	mg kg^{-1}	1.411				1.43						1.58	1.55
Bi	mg kg^{-1}	0.028				0.022						0.023	0.025
Cd	mg kg^{-1}	0.132										0.155	0.147
Ce	mg kg^{-1}	109.109		119	118	102						106	106
Cl	mg kg^{-1}			392	323								
Co	mg kg^{-1}	49.183		47.7	48.8	50						50.5	50.9
Cr	mg kg^{-1}	583.89		534	530	478						525	526
Cs	mg kg^{-1}	0.673		0.66	0.59	0.7						0.64	0.64
Cu	mg kg^{-1}	56.273				61.2						53.7	52.9
Dy	mg kg^{-1}	5.302		5.8	5.72	5.09						5.26	5.28
Er	mg kg^{-1}	2.351		2.64	2.47	2.3						2.25	2.31
Eu	mg kg^{-1}	2.859		2.91	2.61	2.61						2.74	2.74
Ga	mg kg^{-1}	18.596		52.6	53.5	94.4						19	18.2
Gd	mg kg^{-1}	7.413		8.52	8.47	7.17						7.24	7.22
Ge	mg kg^{-1}	1.301		1.46	1.57	4.02						6.26	5.65
Hf	mg kg^{-1}	5.052		5.32	5.37	4.8						4.86	4.88
Ho	mg kg^{-1}	0.924		0.95	0.99	0.9						0.91	0.9
In	mg kg^{-1}	0.078										0.072	0.074
La	mg kg^{-1}	57.779		60.5	60.1	54.7						56.3	56.7
Li	mg kg^{-1}	6.195		6.47	6.26	6.07						5.99	6.03
Lu	mg kg^{-1}	0.25		0.27	0.29	0.24						0.24	0.25
Mn	mg kg^{-1}	1353.03		1291	1297	1409				1384	1370	1376	1392
Mo	mg kg^{-1}	2.876		2.35	2.61	2.88						2.69	2.67
Nb	mg kg^{-1}	79.222		78	79	74.1						75.7	75.7
Nd	mg kg^{-1}	45.289		48.1	47.7	44.1						45.9	45.8
Ni	mg kg^{-1}	201.623		215	218	198						212	214
Pb	mg kg^{-1}	4.72		4.81	4.28	4.83						4.97	4.98
Pr	mg kg^{-1}	11.529		12.2	11.8	11.3						11.6	11.6
Rb	mg kg^{-1}	47.009		49	48.6	48						45	44.8
Re	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.127		0.06	0.06	0.149						0.18	0.19
Sc	mg kg^{-1}	28.178		32.9	33	27.7						41.2	38.5
Se	mg kg^{-1}												
Sm	mg kg^{-1}	8.252		9.42	9.26	8.5						8.66	8.72
Sn	mg kg^{-1}	1.51		1.28	1.48	1.77						1.86	1.82
Sr	mg kg^{-1}	832.015		830	820	692						807	805
Ta	mg kg^{-1}	4.608		3.48	3.74	3.82						3.83	3.79
Tb	mg kg^{-1}	0.956		1.02	0.98	0.94						0.95	0.95
Te	mg kg^{-1}												
Th	mg kg^{-1}	7.079		7.08	6.98	6.76						6.69	6.69
Tl	mg kg^{-1}	0.029										0.037	0.034
Tm	mg kg^{-1}	0.294		0.39	0.35	0.279						0.282	0.281
U	mg kg^{-1}	1.805		1.93	2.17	1.65						1.71	1.72
V	mg kg^{-1}	295.357		262	283	266.9						274	275
W	mg kg^{-1}	0.98		0.73	0.72	1.08						1.08	1.05
Y	mg kg^{-1}	25.32		24.8	25.1	23.2						23.6	23.7
Yb	mg kg^{-1}	1.865		1.5	1.59	1.75						1.75	1.77
Zn	mg kg^{-1}	97.031		116	118	129.4						105	106
Zr	mg kg^{-1}	232.292		258	240	204						216	217

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H9A	H9B	H11A	H11B	H13A	H13B	H14A	H14B	H16A	H16B	H17A	H17B
SiO2	g 100g^{-1}	44.15	44.08	43.69	43.56	40.72		44.12	44.046			45.918	45.796
TiO2	g 100g^{-1}	0.842	0.85	3.001	2.972	2.799		2.834	2.827	2.689		2.7139	2.7097
Al2O3	g 100g^{-1}	12.75	12.73	12.87	12.86	12.06		12.883	12.722	13.317		13.087	12.987
Fe2O3T	g 100g^{-1}	10.46	10.4	11.9	11.94	11.05		11.565	11.639	11.45		11.624	11.644
MgO	g 100g^{-1}	6.8	6.61	10.9	11.11			10.871	10.751	9.668		9.9174	9.9887
CaO	g 100g^{-1}	12.06	12.1	12.06	12.02			11.726	11.73	11.448		11.643	11.651
Na2O	g 100g^{-1}	2.17	2.2	3.561	3.538			3.469	3.455	3.217		3.6706	3.6589
K2O	g 100g^{-1}	0.831	0.832	1.854	1.849			1.769	1.756	1.77		2.0077	2.0102
P2O5	g 100g^{-1}	0.82	0.783	0.7105	0.7123			0.685	0.675	0.5702		0.6474	0.6455
Ag	mg kg^{-1}			0.3141	0.3237					0.3877		0.6226	0.485
As	mg kg^{-1}			1.527	1.436							1.8271	1.8473
Au	mg kg^{-1}											0.05	0.0416
B	mg kg^{-1}			6.48	5.92	4.433						7.9449	7.2571
Ba	mg kg^{-1}	872	845	715.7	709.5	714.9		726	805	708.255		718.68	724.76
Be	mg kg^{-1}			1.564	1.489	1.56				1.359		1.4715	1.3187
Bi	mg kg^{-1}			0.023	0.0222								
Cd	mg kg^{-1}			0.2883	0.2091							0.3737	0.3943
Ce	mg kg^{-1}			112.2	111.6	114.1				106.318		108.11	109.97
Cl	mg kg^{-1}	526	439										
Co	mg kg^{-1}			51.34	51.25	50.48				48.115		52.303	53.199
Cr	mg kg^{-1}	65	78	503.1	495.3	353.8				490.169		496.39	504.04
Cs	mg kg^{-1}			0.7196	0.7147	0.678				0.655		0.7227	0.7236
Cu	mg kg^{-1}			64.24	61.97	54.39				57.618		64.409	64.835
Dy	mg kg^{-1}			5.731	5.72	5.47				5.258		5.1142	5.2938
Er	mg kg^{-1}			2.572	2.573	2.31				2.248		2.3687	2.3652
Eu	mg kg^{-1}			2.858	2.855	2.802				2.655		2.6952	2.7416
Ga	mg kg^{-1}			19.55	19.39	36.22				17.6		19.469	19.792
Gd	mg kg^{-1}			8.237	8.09	7.466				7.174		7.5463	7.5883
Ge	mg kg^{-1}			1.545	1.568							1.6755	1.546
Hf	mg kg^{-1}			5.36	5.287	4.95				5.218		5.0715	5.0887
Ho	mg kg^{-1}			0.9791	0.9826	0.913				0.8923		0.9348	0.9177
In	mg kg^{-1}			0.075	0.077					0.0833		0.2891	0.2411
La	mg kg^{-1}			59.37	58.89	58.97				56.127		56.822	57.065
Li	mg kg^{-1}			6.333	6.371	6.01				6.144		6.5656	6.7498
Lu	mg kg^{-1}			0.2666	0.2658	0.24				0.2266		0.2555	0.232
Mn	mg kg^{-1}	1283	1242	1451	1459	1348.6		1362	1352	1346.761		1406.5	1405.6
Mo	mg kg^{-1}			2.961	2.886	2.825				2.772		2.9921	2.6962
Nb	mg kg^{-1}			81.65	81.28	80.13				76.576		78.776	78.387
Nd	mg kg^{-1}			48.68	48.8	47.38				44.488		44.733	44.029
Ni	mg kg^{-1}	311	335	206.9	206.9	198.41				192.991		216	218.08
Pb	mg kg^{-1}			5.046	5.038	4.629				4.862		5.4108	5.4196
Pr	mg kg^{-1}			12.35	12.31	12.5				11.544		11.818	11.949
Rb	mg kg^{-1}	133	95	50.07	49.66	44.13				47.024		53.049	54.169
Re	mg kg^{-1}												
S	mg kg^{-1}	231	240							502.33		502.76	465.76
Sb	mg kg^{-1}			0.1431	0.1439	0.133							
Sc	mg kg^{-1}			29.89	29.73	29.16				28.311		34.158	33.64
Se	mg kg^{-1}												
Sm	mg kg^{-1}			9.218	9.205	9.326				8.416		8.4448	8.5568
Sn	mg kg^{-1}			1.99	1.97	1.803				1.964		2.0439	2.0241
Sr	mg kg^{-1}	933	919	876.5	878.2	788.7		763	783	789.47		815.73	820.81
Ta	mg kg^{-1}			4.338	4.335	4.07				3.977		3.9712	3.9867
Tb	mg kg^{-1}			1.044	1.038	1.01				0.9105		0.9605	0.9749
Te	mg kg^{-1}												
Th	mg kg^{-1}			7.254	7.265	6.69				6.745		6.7503	6.8766
Tl	mg kg^{-1}			0.034	0.032								
Tm	mg kg^{-1}			0.3069	0.3101	0.28				0.283		0.2778	0.2789
U	mg kg^{-1}			1.762	1.766	1.628				1.768		1.7713	1.8193
V	mg kg^{-1}	486	487	284.1	283	282.1				275.226		281.3	280.74
W	mg kg^{-1}			1.157	1.125	1.064						1.138	1.1659
Y	mg kg^{-1}			26.21	26.05	23.29				23.037		23.272	23.355
Yb	mg kg^{-1}			1.914	1.955	1.952				1.692		1.7136	1.7079
Zn	mg kg^{-1}			92.36	90.11	110.5				121.425		117.82	119.75
Zr	mg kg^{-1}	378	378	229.4	227	206.8				208.672		209.54	206.37

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H18A	H18B	H20A	H20B	H21A	H21B	H25A	H25B	H26A	H26B	H27A	H27B
SiO2	g 100g^{-1}	43.4		42.75802603	42.59729564	43.41						46.7	46.7
TiO2	g 100g^{-1}	2.42		5.745045598	5.713988778	2.817						2.9	2.9
Al2O3	g 100g^{-1}	12.51		12.61859974	12.55382447	12.86						12.4	12.4
Fe2O3T	g 100g^{-1}	6.2		12.04	12.11	11.33						11.1	11.1
MgO	g 100g^{-1}	8.43		10.68277387	10.84578532	10.29						10.8	10.8
CaO	g 100g^{-1}	12		12.76665281	12.75648198	11.85						11.5	11.4
Na2O	g 100g^{-1}	3.36		3.28911341	3.280966767	3.436						3.3	3.3
K2O	g 100g^{-1}	1.56		1.18444141	1.171737989	1.759						1.8	2
P2O5	g 100g^{-1}	0.53		0.646727093	0.668359416	0.706						0.6	0.6
Ag	mg kg^{-1}	0.36						0.305					
As	mg kg^{-1}	1.34		1.299333333	1.624666667			1.49					
Au	mg kg^{-1}	0.01						0.011					
B	mg kg^{-1}	236.1		4.303	4.239666667	4.124							
Ba	mg kg^{-1}	622		761.3433333	757.4336667	702.9		681		705.31	720.08		
Be	mg kg^{-1}	1.25		1.234666667	1.381666667	1.331		1.2		1.75	1.33		
Bi	mg kg^{-1}	0.04						0.016					
Cd	mg kg^{-1}	0.32						0.194					
Ce	mg kg^{-1}	98.9		119.1893333	120.0246667	108.1		102		106.18	114.27		
Cl	mg kg^{-1}												
Co	mg kg^{-1}	47.7		55.70033333	57.118	50.09		49.3		46.21	48.76		
Cr	mg kg^{-1}	457		546.2736667	553.3006667	514		486		556.64	545.4		
Cs	mg kg^{-1}	0.68		0.757466667	0.736066667	0.694		0.633					
Cu	mg kg^{-1}	57.8		69.79166667	68.57666667	62.08		53.2		57.03	68.61		
Dy	mg kg^{-1}	4.9		5.923	5.972666667	5.479		4.73		5.34	5.66		
Er	mg kg^{-1}	2.06		2.639666667	2.678	2.415		2.03		2.3	2.41		
Eu	mg kg^{-1}	2.62		2.979333333	3.016	2.784		2.52		2.77	2.94		
Ga	mg kg^{-1}	18.49		20.12033333	20.40833333	18.9		17.6		19.74	20.22		
Gd	mg kg^{-1}	7.42		8.602333333	8.523	7.839		6.58		7.73	8.27		
Ge	mg kg^{-1}	1.81				1.443		1.45					
Hf	mg kg^{-1}	4.66		5.671666667	5.625	5.227		4.43		5.11	5.29		
Ho	mg kg^{-1}	0.89		1.026033333	1.0431	0.969		0.827		0.95	0.99		
In	mg kg^{-1}	0.09						0.075					
La	mg kg^{-1}	55.4		63.44366667	64.21333333	57.42		53.9		56.83	59		
Li	mg kg^{-1}	6.27		6.812	7.014666667	6.059		5.94		6.7	5.94		
Lu	mg kg^{-1}	0.23		0.270933333	0.277833333	0.251		0.213		0.25	0.27		
Mn	mg kg^{-1}	1258		1555.186667	1563.953	1391		1390		1312.66	1390.56		
Mo	mg kg^{-1}	2.42		2.984333333	3.086666667			2.63		2.56	2.58		
Nb	mg kg^{-1}	64.6		84.379	83.98666667	79.71		74.4		87.68	96.23		
Nd	mg kg^{-1}	42.59		52.61133333	51.50066667	46.53		43		45.8	48.88		
Ni	mg kg^{-1}	187.7		219.5503333	218.1133333	195		190		138.16	203.49		
Pb	mg kg^{-1}	5.35		5.612	6.080333333	5.304		5.24		4.93	4.85		
Pr	mg kg^{-1}	10.59		12.933	13.07233333	11.89		11.3		11.76	12.46		
Rb	mg kg^{-1}	49.7		52.336	53.26933333	49.3		45.3		47.2	48.71		
Re	mg kg^{-1}	0.008											
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.15						0.143					
Sc	mg kg^{-1}	27.22		31.77566667	32.08166667	29.88		26.2		27.44	28.99		
Se	mg kg^{-1}	1.11											
Sm	mg kg^{-1}	8.26		9.833333333	9.799666667	8.991		8.16		9.03	9.87		
Sn	mg kg^{-1}	3.7		2.39	2.495666667			1.89		1.95	2.22		
Sr	mg kg^{-1}	737		898.1723333	902.5556667	834		767		815.42	861.42		
Ta	mg kg^{-1}	3.1		4.319333333	4.338	4.156		3.69		4.32	4.62		
Tb	mg kg^{-1}	0.95		1.094633333	1.088266667	1.009		0.885		1.05	1.04		
Te	mg kg^{-1}												
Th	mg kg^{-1}	6.42		8.133333333	8.094	7.012		6.24		7.23	7.77		
Tl	mg kg^{-1}	0.03						0.024					
Tm	mg kg^{-1}	0.26		0.319833333	0.310966667	0.302		0.252		0.29	0.32		
U	mg kg^{-1}	1.64		1.834866667	1.879333333	1.672		1.69		1.72	1.77		
V	mg kg^{-1}	251.5		310.1423333	308.2923333	281.4		271		279.75	274.66		
W	mg kg^{-1}	1.1		1.177333333	1.238666667			1.15					
Y	mg kg^{-1}	22.04		27.48166667	27.97366667	25.18		21		24.97	26.49		
Yb	mg kg^{-1}	1.75		2.132	2.033	1.84		1.52		1.9	1.91		
Zn	mg kg^{-1}	101.2		128.3873333	129.0133333	113.4		125		96.08	97.61		
Zr	mg kg^{-1}	198.7		240.5826667	241.732	222.1		188		216.51	238.4		

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H29A	H29B	H30A	H30B	H33A	H33B	H34A	H34B	H36A	H36B	H37A	H37B
SiO2	g 100g^{-1}	44.02	44.05	47.03	46.85	44.43006775	44.1389	43.609	43.393	44.05	44.47	39.06	
TiO2	g 100g^{-1}	2.93	2.92	2.95	2.95	2.798	2.798	2.844	2.888	2.96	2.94	3.4	
Al2O3	g 100g^{-1}	12.82	12.82			12.82	12.54	12.636	12.671	12.98	13.5	14.15	
Fe2O3T	g 100g^{-1}	11.82	11.82	12.3	12.27	12.16	11.96	11.891	11.822	11.05	10.66	13.02	
MgO	g 100g^{-1}	10.71	10.72			10.212	10.382	10.669	10.752	10.97	10.78	11.1	
CaO	g 100g^{-1}	12.28	12.24					11.821	11.897	11.75	11.85	13.51	
Na2O	g 100g^{-1}	3.16	3.16	3.6	3.65	3.366	3.346	3.458	3.468	3.57	3.55	3.43	
K2O	g 100g^{-1}	1.65	1.64			1.772	1.754	1.778	1.807	1.7	1.7	1.88	
P2O5	g 100g^{-1}	0.35	0.36	0.77	0.77			0.667	0.671	0.765	0.763	0.47	
Ag	mg kg^{-1}	0.28	0.28	0.38	0.39			0.366	0.348				
As	mg kg^{-1}	1.11	1.15			1.195571609	1.044159859	1.408	1.459				
Au	mg kg^{-1}							0.011	0.014				
B	mg kg^{-1}	31.05	30.09			12.83087614	9.648727584	15.278	13.936				
Ba	mg kg^{-1}	687.69	688.91	718	724	729.6421182	734.5355169	706.993	709.884	727	689		
Be	mg kg^{-1}	1.59	1.63			1.324695399	1.357656258	1.549	1.491				
Bi	mg kg^{-1}	0.02	0.02			0.0389	0.0312	0.024	0.025				
Cd	mg kg^{-1}	0.13	0.13			0.37850955	0.279846172	0.27	0.322				
Ce	mg kg^{-1}	110.08	110.57	111.4	111	108.4079283	107.6662483	111.46	111.649	112.1	108.4		
Cl	mg kg^{-1}												
Co	mg kg^{-1}	51.13	51.09	54.9	54.5	51.33367568	50.789572	50.734	51	49.6	48.2		
Cr	mg kg^{-1}	534.14	532.73	518	520	549.8712378	549.7944196	525.998	534.328	502.7	500.2		
Cs	mg kg^{-1}	0.68	0.71	0.74	0.75	0.682662244	0.686820298	0.697	0.695				
Cu	mg kg^{-1}	60.08	60.01	65.6	66.6	61.56552441	58.71362694	61.714	63.633	61.8	58.5		
Dy	mg kg^{-1}	5.59	5.7	5.35	5.41	5.428094649	5.278611904	5.625	5.628	6.01	5.79		
Er	mg kg^{-1}	2.32	2.24	2.42	2.42	2.483922982	2.398320479	2.511	2.518	2.57	2.48		
Eu	mg kg^{-1}	2.83	2.95	2.84	2.83	2.792284908	2.762190599	2.83	2.836	3.04	2.81		
Ga	mg kg^{-1}	19.17	18.97	20.3	20.3	18.86605303	18.23649552	18.753	18.903	19.6	18.6		
Gd	mg kg^{-1}	7.95	8.06	7.29	7.69	8.107859191	7.798604441	7.955	7.951	8.05	7.68		
Ge	mg kg^{-1}	1.24	1.24			1.412116178	1.416857106						
Hf	mg kg^{-1}	5.38	5.27	4.98	4.96	5.188087119	5.065580132	5.25	5.267	5.38	5.25		
Ho	mg kg^{-1}	1	0.99	0.96	0.96	0.952167921	0.935182522	0.971	0.975	1.01	0.95		
In	mg kg^{-1}	0.07	0.08	0.1	0.1	0.0756	0.0737	0.084	0.08	0.087	0.079		
La	mg kg^{-1}	59.15	59.46	58.77	59.17	57.96912059	57.22884336	58.708	58.988	58.35	56.16		
Li	mg kg^{-1}	6.39	6.36	6.7	6.71	6.191966013	6.220701826	6.25	6.269	6.1	6		
Lu	mg kg^{-1}	0.26	0.25	0.24	0.24	0.251910265	0.243560709	0.26	0.264	0.28	0.28		
Mn	mg kg^{-1}	1428.17	1428.6	1462	1454	1458.391882	1469.520066	1406.078	1412.912	1398	1392		
Mo	mg kg^{-1}	2.8	2.83	2.78	2.65	2.856866982	2.832377695	2.893	2.861	2.7	2.5		
Nb	mg kg^{-1}	79.89	80.45	80	80.7	78.74428575	77.41430591	80.772	81.349	88.06	82.51		
Nd	mg kg^{-1}	47.55	48.03	47.14	47.32	47.49788711	46.46966981	48.382	48.354	48.3	46.6		
Ni	mg kg^{-1}	199.84	199.89	216	215	208.4631335	206.2603826	204.713	203.3	189.7	184.7		
Pb	mg kg^{-1}	17.52	18.03	5.28	5.36	5.116939621	5.001850235	5.09	5.063	4.81	4.78		
Pr	mg kg^{-1}	12.14	12.23	12.03	12.15	11.8353403	11.76751483	12.226	12.274	13.05	12.41		
Rb	mg kg^{-1}	45.4	45.15	52.1	52.6	47.90794531	47.10259644	48.7	48.813	49.3	46.2		
Re	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.14	0.16			0.187791323	0.178031521	0.156	0.154				
Sc	mg kg^{-1}	34.04	33.7	29.09	29.69	29.94087706	29.24088466	29.189	29.356				
Se	mg kg^{-1}												
Sm	mg kg^{-1}	9.14	9.24	8.96	8.88	8.914743955	8.847651883	9.134	9.122	9.7	9.1		
Sn	mg kg^{-1}	1.46	1.44	2.42	2.51	1.685956782	1.662675874	2.277	2.2	3.17	2.88		
Sr	mg kg^{-1}	827.9	829.7	825	827	853.0611579	856.7299937	835.388	838.024	880	814		
Ta	mg kg^{-1}	4.03	4.08	4.08	4.09	4.042749895	3.959984296	4.236	4.224	4.66	4.45		
Tb	mg kg^{-1}	1.02	1.06	1	1.01	0.994417774	0.968780828	1.028	1.028	1.06	1.02		
Te	mg kg^{-1}												
Th	mg kg^{-1}	6.37	6.41	6.91	6.96	7.272750448	7.14118162	7.29	7.281	7.82	7.08		
Tl	mg kg^{-1}	0.02	0.02	0.04	0.03			0.038	0.04				
Tm	mg kg^{-1}	0.31	0.31	0.29	0.29	0.0468	0.0323	0.304	0.306	0.32	0.32		
U	mg kg^{-1}	1.8	1.83	1.83	1.83	0.29514675	0.286025074	1.758	1.759	1.89	1.58		
V	mg kg^{-1}	294.97	294.1	285	288	1.745238824	1.716783131	278.206	281.023	267	265		
W	mg kg^{-1}	1.13	1.11	1.17	1.2	299.2904267	300.870013	1.11	1.106	0.89	1.09		
Y	mg kg^{-1}	25.46	25.35	24	24.9	1.153619743	1.12239443	25.728	25.912	27.3	25.7		
Yb	mg kg^{-1}	1.94	1.93	1.8	1.88	25.65954207	24.75474383	1.917	1.894	2.01	1.97		
Zn	mg kg^{-1}	89.96	93.91	123	124	1.839389545	1.798266976	101.375	101.528	106.3	102.5		
Zr	mg kg^{-1}	227.79	228.8	222	222	116.874233	116.1002167	224.948	226.073	236.5	221.1		

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H38A	H38B	H41A	H41B	H42A	H42B	H43A	H43B	H45A	H45B	H46A	H46B
SiO2	g 100g^{-1}	43.76		40.18	40.14	48.21		43.831	43.532	45.27	45.14		
TiO2	g 100g^{-1}	2.79		2.7	2.68	2.744		2.845	2.843	2.91	2.89		
Al2O3	g 100g^{-1}	12.79		12	12	13.73		12.536	12.546	12.8	12.68	12.95	
Fe2O3T	g 100g^{-1}	11.39		11.2	11.15	12.02		11.509	11.818	10.27	10.3		
MgO	g 100g^{-1}	10.83		9.92	10.59	10.93		10.759	10.677	11.01	11.14	10.5	
CaO	g 100g^{-1}	11.74		11.06	11.16	12.03		11.672	11.72	11.63	11.57	12	
Na2O	g 100g^{-1}	3.31		3.26	3.32	3.909		3.464	3.478	3.51	3.46	3.63	
K2O	g 100g^{-1}	1.8		1.62	1.64	1.853		1.801	1.799	1.79	1.77		
P2O5	g 100g^{-1}	0.74		0.72	0.75	0.7486		0.664	0.655	0.7	0.69		
Ag	mg kg^{-1}											0.4	
As	mg kg^{-1}	1.45		0.99	1.07					1.57	1.56		
Au	mg kg^{-1}												
B	mg kg^{-1}	5.89										6.13	
Ba	mg kg^{-1}	711		663.73	668.21	733				690	681	694.26	
Be	mg kg^{-1}	1.27											
Bi	mg kg^{-1}									0.024	0.024		
Cd	mg kg^{-1}									0.13	0.17	0.79	
Ce	mg kg^{-1}	107.3		101.54	102.18	109.2				109	108	106.44	
Cl	mg kg^{-1}												
Co	mg kg^{-1}	50.98		45.79	45.84	52.94				52.5	52.3		
Cr	mg kg^{-1}	482.2				571.1				508	501	539.9	
Cs	mg kg^{-1}	0.718		0.64	0.64					0.74	0.73		
Cu	mg kg^{-1}	59.23		55.32	54.7	66.28				63.4	63.1	73.53	
Dy	mg kg^{-1}	5.14		5.31	5.46	5.14				5.5	5.44		
Er	mg kg^{-1}	2.306		2.32	2.37	2.3				2.52	2.49		
Eu	mg kg^{-1}	2.707		2.6	2.64	2.723				2.79	2.77		
Ga	mg kg^{-1}	18.36		42.55	33.66	18.99				19.1	19	19.19	
Gd	mg kg^{-1}	7.35		7.31	7.47	7.299				7.93	7.9		
Ge	mg kg^{-1}			1.86	1.66					1.45	1.47		
Hf	mg kg^{-1}	4.975		5.06	5.16	5.059				5.06	5.01		
Ho	mg kg^{-1}	0.903		0.94	0.95	0.9241				0.95	0.95		
In	mg kg^{-1}									0.07	0.07		
La	mg kg^{-1}	56.16		55.73	56.63	57.02				58.9	58.2	56.47	
Li	mg kg^{-1}	6.11		5.09	5.15					6.35	6.29	7.08	
Lu	mg kg^{-1}	0.232		0.25	0.26	0.2446				0.25	0.25		
Mn	mg kg^{-1}	0.171		1437.36	1426.71	1448		1291	1283	1485	1477	1359.74	
Mo	mg kg^{-1}									2.89	2.89		
Nb	mg kg^{-1}	79.02		79.35	79.19	80.74				77.2	77.1		
Nd	mg kg^{-1}	44.58		44.78	44.76	45.51				47.8	47.4	41.14	
Ni	mg kg^{-1}	202.3		180.28	181.93	205.7				206	208	200.67	
Pb	mg kg^{-1}	5.235		4.69	4.96	5.71				5	4.98	4.98	
Pr	mg kg^{-1}	11.71		11.46	11.51	11.82				12	11.9	11.65	
Rb	mg kg^{-1}	50.16		44.72	45.29	53.96				50.8	50.2		
Re	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}									0.16	0.18		
Sc	mg kg^{-1}	28.82		28.14	28.55					30	29.7		
Se	mg kg^{-1}									0.42	0.4		
Sm	mg kg^{-1}	8.575		8.4	8.63	8.729				9.08	8.97		
Sn	mg kg^{-1}			1.29	1.3					1.62	1.64	6.23	
Sr	mg kg^{-1}	789.6		778.97	775.93	834.1				853	849	815.2	
Ta	mg kg^{-1}	3.93		4.17	4.2	4.021				3.95	3.93		
Tb	mg kg^{-1}	0.935		0.99	1	0.9841				1	0.99		
Te	mg kg^{-1}												
Th	mg kg^{-1}	6.73		6.86	6.96	6.835				7.1	6.99	6.927594	
Tl	mg kg^{-1}									0.032	0.032		
Tm	mg kg^{-1}	0.282		0.29	0.31	0.2829				0.3	0.29		
U	mg kg^{-1}	1.758		1.61	1.6	1.776				1.72	1.68	1.72	
V	mg kg^{-1}	274.5		284.77	282.95	287.5				287	284		
W	mg kg^{-1}					1.187				1.15	1.12		
Y	mg kg^{-1}	23.28		25.44	25.75	23.67				25.4	25.4	23.83	
Yb	mg kg^{-1}	1.755		1.83	1.91	1.761				1.85	1.84		
Zn	mg kg^{-1}	122.4				121.9				114	114	118.01	
Zr	mg kg^{-1}	195.8		221.17	220.2	211				222	221		

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H47A	H47B	H48A	H48B	H50A	H50B	H51A	H51B	H53A	H53B	H54A	H54B
SiO2	g 100g^{-1}	44.92	44.99	36.21	38.96	43.9	44	43.4	43.6	43.3	44.1	44.2	44.12
TiO2	g 100g^{-1}	2.81	2.94	1.35	1.52	2.88	2.88	2.73	2.72	2.9	2.9	2.93	2.89
Al2O3	g 100g^{-1}	13.24	13.23	13.35	14.24	12.9	13	12.5	12.5	12.9	13	13	12.94
Fe2O3T	g 100g^{-1}	12.96	12.95	5.85	6.05	11.4	11.5	11.7	11.7	12.2	11.5	11.98	11.79
MgO	g 100g^{-1}	10.78	10.76	13.64	14.12	10.7	10.6	11.8	11.3	10.8	10.9	10.53	10.75
CaO	g 100g^{-1}	11.16	11.19	7.31	8.56	11.9	11.9	12.6	12.4	12.1	12	12.01	11.9
Na2O	g 100g^{-1}	3.28	3.27	9.42	10.24	3.37	3.41	3.39	3.43	3.7	3.5	3.59	3.49
K2O	g 100g^{-1}	1.8	1.8	1.49	1.38	1.81	1.8	1.77	1.79	1.9	1.9	1.81	1.75
P2O5	g 100g^{-1}	0.66	0.67	0.45	0.39	0.7	0.7	0.624	0.638	0.7	0.7	0.67	0.69
Ag	mg kg^{-1}							0.583	0.541				
As	mg kg^{-1}												
Au	mg kg^{-1}												
B	mg kg^{-1}							13.2	9.04	7.4	5.9		
Ba	mg kg^{-1}			1274.96	1265.52	694	676.8	668	676	721	715	699.92	709.73
Be	mg kg^{-1}							3.61	5.08			1.75	1.81
Bi	mg kg^{-1}												
Cd	mg kg^{-1}												
Ce	mg kg^{-1}					106.6	104.1	103	104	110	111	109.75	111.55
Cl	mg kg^{-1}			36150.85	37120.96								
Co	mg kg^{-1}			17.36	16.13	52.1	51.5	53.4	54.5	49.4	48.8	49.38	49.44
Cr	mg kg^{-1}			378.49	364.13	541.2	508.4	517	516	523	540	513.14	512.33
Cs	mg kg^{-1}							0.687	0.74	0.73	0.78	0.68	0.69
Cu	mg kg^{-1}			26.23	24.92	62.6	58.7	55.8	55.5	88.6	58.7	61.37	61.26
Dy	mg kg^{-1}					5.4	5.2	5.47	5.38	5.57	5.59	5.65	5.67
Er	mg kg^{-1}					2.4	2.3	2.4	2.38	2.47	2.55	2.53	2.62
Eu	mg kg^{-1}					2.7	2.6	2.66	2.62	2.8	2.82	2.84	2.91
Ga	mg kg^{-1}			38.53	37.84			19.7	20.1	18.6	18.5	19.3	19.57
Gd	mg kg^{-1}					7.6	7.3	7.57	7.62	8.02	7.8	7.8	7.87
Ge	mg kg^{-1}												
Hf	mg kg^{-1}					5.4	5.1	5.25	5.21	5.24	5.2	5.38	5.47
Ho	mg kg^{-1}					1	0.9	0.989	0.946	0.97	0.97	0.99	0.96
In	mg kg^{-1}												
La	mg kg^{-1}			30.59	31.48	58.2	55.1	56.6	56.4	57.6	57.7	59.24	59.12
Li	mg kg^{-1}					6.5	6.5	6.16	6.83	8.02	6.48	6.13	6.18
Lu	mg kg^{-1}					0.3	0.3	0.245	0.244	0.28	0.28	0.27	0.26
Mn	mg kg^{-1}			507.58	499.91	1332	1356	1174	1176	1864	1813	1440.03	1442.11
Mo	mg kg^{-1}											2.88	2.92
Nb	mg kg^{-1}					81.8	80	76.1	75.9	82.09	83.01	82.33	82.4
Nd	mg kg^{-1}					45.3	44.8	45.8	46	47.3	48.3	48.12	48.22
Ni	mg kg^{-1}					211.1	201.7	227	221	199	191	196.79	195.45
Pb	mg kg^{-1}			3.37	3.92	5.4	5.1	5.11	5.03	5.92	5.13	5.03	5.09
Pr	mg kg^{-1}					11.9	11.8			12.44	12.44	12.4	12.55
Rb	mg kg^{-1}			12.05	11.8	50.1	49.5	47.8	48.3	48.4	50.2	49.86	48.45
Re	mg kg^{-1}												
S	mg kg^{-1}			607.72	591.43								
Sb	mg kg^{-1}												
Sc	mg kg^{-1}					27.8	27	26.7	26.2	30.2	30.3	29.91	29.78
Se	mg kg^{-1}												
Sm	mg kg^{-1}					9.1	8.7	8.58	8.31	8.9	8.8	9	9.03
Sn	mg kg^{-1}												
Sr	mg kg^{-1}			227.85	219.6	811.8	790.7	780	782	846	839	837.5	834.34
Ta	mg kg^{-1}					4.2	4.1	3.94	3.91	4.36	4.42	4.24	4.42
Tb	mg kg^{-1}					1	1	1.02	1.01	1.08	1.09	1.06	1.04
Te	mg kg^{-1}												
Th	mg kg^{-1}			3.85	4.12	7.1	6.9	6.85	6.77	7.14	7.13	7.34	7.21
Tl	mg kg^{-1}												
Tm	mg kg^{-1}					0.3	0.3	0.316	0.288	0.3	0.31	0.33	0.33
U	mg kg^{-1}					1.7	1.7	1.62	1.64	1.72	1.71	1.71	1.83
V	mg kg^{-1}			15.64	16.12	290.9	285.5	264	266	266	270	276.41	273.34
W	mg kg^{-1}												
Y	mg kg^{-1}			6.3	5.9	24.9	24.5	23.8	23.7	25.9	25.9	26.1	26.24
Yb	mg kg^{-1}					1.9	1.9	1.94	1.91	1.86	1.82	1.89	1.91
Zn	mg kg^{-1}			39.52	37.84	144.3	138.2	106	111	106	105	102.61	101.77
Zr	mg kg^{-1}			399.43	386.45	219.5	212.8	209	207	224	227	233.09	228.97

Table 1 - G-Probe 27 Contributed data for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code		H55A	H55B	H56A	H56B	H57A	H57B	H59A	H59B	H61A	H61B	H64A	H64B
SiO2	g 100g^{-1}	44.48	44.11			43.248		43.99	43.67	43.78			
TiO2	g 100g^{-1}	2.84	2.87			2.891		2.87	2.86	3.02			
Al2O3	g 100g^{-1}	12.99	12.94			12.771		13.03	12.89	12.32			
Fe2O3T	g 100g^{-1}	11.54	11.58			11.709		11.89	11.82	13.86			
MgO	g 100g^{-1}	11.03	10.86			10.51		10.62	10.57	11.16			
CaO	g 100g^{-1}	11.58	11.65			11.753		11.93	11.82	11.25			
Na2O	g 100g^{-1}	3.44	3.4			3.428		3.4	3.39	2.94			
K2O	g 100g^{-1}	1.7	1.72			1.736		1.78	1.78	1.98			
P2O5	g 100g^{-1}	0.68	0.68			0.718		0.71	0.71	0.37			
Ag	mg kg^{-1}												
As	mg kg^{-1}											2.05	1.97
Au	mg kg^{-1}												
B	mg kg^{-1}									7.8		4.33	3.39
Ba	mg kg^{-1}	723.31	725.54	770.4				713.11	708.44	682		691	711
Be	mg kg^{-1}							2.79	2.42			1.53	1.53
Bi	mg kg^{-1}												
Cd	mg kg^{-1}								3.01				
Ce	mg kg^{-1}	110.96	111.26	115.75				111.61	112.68	103		105	110
Cl	mg kg^{-1}												
Co	mg kg^{-1}	51.68	51.98					48.64	47.85	48		49.1	50.9
Cr	mg kg^{-1}	487.76	487.83					516.45	517.66	453		479	494
Cs	mg kg^{-1}			0.73				0.83	0.82				
Cu	mg kg^{-1}	62.03	62.47					65.08	65.72			56.6	55.4
Dy	mg kg^{-1}	5.25	5.55	5.84				5.88	5.67	4.7		5.25	5.2
Er	mg kg^{-1}	2.36	2.41	2.58				2.75	2.75	2		2.33	2.29
Eu	mg kg^{-1}	2.75	2.79	3.13				2.9	2.79	2.5		2.65	2.69
Ga	mg kg^{-1}			18.74				19.19	19.49	17		20.1	19.7
Gd	mg kg^{-1}	7.44	7.61	8.27				7.9	7.85	6.8		7.44	7.36
Ge	mg kg^{-1}							1.94	1.54			1.38	1.48
Hf	mg kg^{-1}	5.18	5.38	5.48				5.24	4.99	4.6		5.23	5.19
Ho	mg kg^{-1}	0.95	0.98	1.01				1	1.02	0.8		0.92	0.92
In	mg kg^{-1}			0.09									
La	mg kg^{-1}	58.16	59.1	63.17				59.06	59.53	53		55.9	57.8
Li	mg kg^{-1}	6.37	6.62					6.05	5.91	5.7		6.36	5.96
Lu	mg kg^{-1}	0.26	0.28	0.29				0.36	0.28	0.2		0.25	0.25
Mn	mg kg^{-1}	1388.57	1391.53			831.2		1382.97	1380.65	1581		1286	1302
Mo	mg kg^{-1}			2.65				3.04	2.59			2.62	2.62
Nb	mg kg^{-1}	80.09	79.89	88.82						77		77.4	77.9
Nd	mg kg^{-1}	46.83	47.7	48.81						40		44.7	45.7
Ni	mg kg^{-1}	203.21	205.09					187.5	191.44	193		219	235
Pb	mg kg^{-1}	4.39	4.29					5.27	5.04	5		3.62	4.39
Pr	mg kg^{-1}	12.27	12.31	12.21						10.7		11.6	12
Rb	mg kg^{-1}	48.47	48.94							48		44.4	45.3
Re	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}												
Sc	mg kg^{-1}	28.44	28.97							30		29	28.5
Se	mg kg^{-1}												
Sm	mg kg^{-1}	9.05	9.06	9.07						7.6		8.57	8.71
Sn	mg kg^{-1}												
Sr	mg kg^{-1}	831.73	834.32					840.6	829.07	741		791	791
Ta	mg kg^{-1}	4.15	4.23							3.6		4.07	4.08
Tb	mg kg^{-1}	0.96	1.04	1.08						0.8		0.98	0.97
Te	mg kg^{-1}												
Th	mg kg^{-1}	6.88	7.24							6.4		6.99	7.02
Tl	mg kg^{-1}												
Tm	mg kg^{-1}	0.29	0.31	0.34						0.2		0.29	0.29
U	mg kg^{-1}	1.8	1.77					1.79	1.8	1.6		1.74	1.77
V	mg kg^{-1}	278.36	278.78					265.08	262.88	274		275	276
W	mg kg^{-1}			1.07								1.07	1.1
Y	mg kg^{-1}	23.79	24.67	27.55				27.51	27.12	21		23.8	23.6
Yb	mg kg^{-1}	1.85	2	2.01						1.5		1.8	1.8
Zn	mg kg^{-1}							95.67	98.44	131		407	410
Zr	mg kg^{-1}	212.09	219.54	229.16				235.87	232.06	195		213	211

Table 2 - G-Probe 27 Designated values and statistical summary for Basanite, BOOS-1G Glass.

	Designated Value	Uncertainty of designated value	Horwitz Quality	Horwitz Target Precision	Uncertainty/ Target Precision	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of designated value	Type of designated value
	X_{pt}	$u(x_{pt})$	$k \times 0.01$	σ_{pt}	$u(x_{pt}) / \sigma_{pt}$	n					
	g 100g^{-1}	g 100g^{-1}		g 100g^{-1}			g 100g^{-1}	g 100g^{-1}	g 100g^{-1}		
SiO2	43.82	0.1332	1	0.4961	0.2684	36	43.92	1.037	43.82	Assigned	Median
TiO2	2.865	0.02291	1	0.04891	0.4685	37	2.838	0.1344	2.865	Assigned	Median
Al2O3	12.78	0.06042	1	0.1741	0.347	37	12.78	0.3675	12.79	Assigned	Robust Mean
Fe2O3T	11.55	0.09808	1	0.1599	0.6135	37	11.55	0.5966	11.63	Provisional	Robust Mean
MgO	10.77	0.07665	1	0.1506	0.509	36	10.69	0.407	10.77	Assigned	Median
CaO	11.78	0.06496	1	0.1625	0.3996	35	11.78	0.3843	11.78	Assigned	Robust Mean
Na2O	3.415	0.03871	1	0.05677	0.6819	36	3.401	0.1792	3.415	Assigned	Median
K2O	1.78	0.01382	1	0.03264	0.4234	35	1.766	0.09288	1.78	Assigned	Median
P2O5	0.692	0.0142	1	0.01463	0.9707	34	0.6724	0.07838	0.6825	Provisional	Mode
	mg kg^{-1}	mg kg^{-1}		mg kg^{-1}			mg kg^{-1}	mg kg^{-1}	mg kg^{-1}		
Ag	0.368	0.0255	1	0.03422	0.7453	12	0.4013	0.1041	0.3805	Provisional	Mode
As	1.456	0.08199	1	0.1101	0.745	16	1.472	0.3017	1.456	Provisional	Median
Ba	709.7	4.878	1	21.13	0.2308	35	709.7	28.86	710.8	Assigned	Robust Mean
Be	1.469	0.04097	1	0.1109	0.3695	20	1.469	0.1832	1.475	Assigned	Robust Mean
Bi	0.02315	0.00105	1	0.003264	0.3217	10	0.02503	0.006372	0.024	Provisional	Mode
Ce	109.1	0.84	1	4.306	0.1951	32	108.6	4.427	109.1	Assigned	Median
Co	50.21	0.4013	1	2.227	0.1802	31	50.21	2.234	50.09	Assigned	Robust Mean
Cr	513.4	8.01	1	16.05	0.499	32	508.1	36.94	513.4	Assigned	Median
Cs	0.6972	0.00881	1	0.05887	0.1496	24	0.6972	0.04316	0.6955	Assigned	Robust Mean
Cu	60.93	1.188	1	2.625	0.4525	30	60.63	5.233	60.93	Assigned	Median
Dy	5.421	0.05339	1	0.3362	0.1588	31	5.421	0.2973	5.4	Assigned	Robust Mean
Er	2.367	0.02902	1	0.1663	0.1745	31	2.395	0.1478	2.367	Assigned	Median
Eu	2.777	0.02645	1	0.1905	0.1389	31	2.763	0.1214	2.777	Assigned	Median
Ga	19.1	0.1836	1	0.98	0.1873	31	19.33	1.15	19.1	Assigned	Median
Gd	7.649	0.07447	1	0.4504	0.1653	31	7.649	0.4146	7.567	Assigned	Robust Mean
Ge	1.455	0.0358	1	0.11	0.3255	15	1.572	0.2357	1.515	Provisional	Mode
Hf	5.2	0.04172	1	0.3245	0.1285	31	5.141	0.2168	5.2	Assigned	Median
Ho	0.947	0.007768	1	0.07637	0.1017	31	0.947	0.04325	0.95	Assigned	Robust Mean
In	0.08	0.002573	1	0.009358	0.2749	14	0.08143	0.009065	0.08	Provisional	Median
La	57.48	0.328	1	2.499	0.1313	33	57.48	1.884	57.42	Assigned	Robust Mean
Li	6.233	0.06053	1	0.3785	0.1599	30	6.266	0.2961	6.233	Assigned	Median
Lu	0.25	0.004005	1	0.02463	0.1626	31	0.2544	0.02152	0.25	Assigned	Median
Mn	1384	14.67	1	37.27	0.3937	37	1375	89.3	1384	Assigned	Median
Mo	2.815	0.03664	1	0.1927	0.1902	22	2.763	0.1543	2.815	Assigned	Median
Nb	79.43	0.5964	1	3.289	0.1813	30	79.43	3.266	79.49	Assigned	Robust Mean
Nd	46.53	0.4572	1	2.088	0.219	31	46.19	2.129	46.53	Assigned	Median
Ni	202	2.615	1	7.267	0.3599	32	202.5	12.73	202	Assigned	Median
Pb	5.044	0.06384	1	0.3162	0.2019	32	5.044	0.3611	5.051	Assigned	Robust Mean
Pr	11.92	0.08459	1	0.6567	0.1288	30	11.92	0.4633	11.89	Assigned	Robust Mean
Rb	48.7	0.4856	1	2.171	0.2237	31	48.47	2.953	48.7	Assigned	Median
Sb	0.1495	0.006169	1	0.01592	0.3876	12	0.1503	0.02235	0.1495	Provisional	Median
Sc	29.27	0.3438	1	1.409	0.2441	27	29.34	1.853	29.27	Assigned	Median
Sm	8.891	0.108	1	0.5118	0.2109	30	8.838	0.4405	8.891	Assigned	Median
Sn	1.803	0.13	1	0.132	0.985	20	1.982	0.4988	1.927	Provisional	Mode
Sr	831.2	5.51	1	24.17	0.228	34	814.5	40.81	825.5	Provisional	Mode
Ta	4.072	0.0521	1	0.2636	0.1976	29	4.072	0.2806	4.07	Assigned	Robust Mean
Tb	0.9964	0.009671	1	0.07974	0.1213	30	0.9964	0.05297	1	Assigned	Robust Mean
Th	6.922	0.06384	1	0.4138	0.1543	31	6.922	0.3554	6.935	Assigned	Robust Mean
Tl	0.032	0.001858	1	0.004297	0.4325	9	0.03111	0.005755	0.032	Provisional	Median
Tm	0.2946	0.003863	1	0.02833	0.1364	30	0.2946	0.02116	0.2975	Assigned	Robust Mean
U	1.745	0.01669	1	0.1284	0.13	31	1.73	0.08141	1.745	Assigned	Median
V	277.4	2.075	1	9.514	0.2181	32	277.4	11.74	276.4	Assigned	Robust Mean
W	1.108	0.01772	1	0.08726	0.2031	19	1.108	0.07726	1.108	Assigned	Robust Mean
Y	24.44	0.334	1	1.208	0.2764	33	24.44	1.919	24.45	Assigned	Robust Mean
Yb	1.855	0.02951	1	0.1352	0.2183	30	1.847	0.1243	1.855	Assigned	Median
Zn	111.5	2.908	1	4.385	0.6631	30	111.5	15.93	112	Provisional	Robust Mean
Zr	221.5	3.396	1	7.86	0.4321	33	219.2	16.63	221.5	Assigned	Median

Table 3 - G-Probe 27 Z-scores for Basanite, BOOS-1G Glass. 06/09/2023

Lab Code	H1	H3	H5	H6	H7	H8	H9	H11	H13	H14	H16	H17	H18
SiO2: 1	1.68	-1.95	3.56	0.66	-0.03	-0.78	0.60	-0.39	-6.24	0.54	*	4.11	-0.84
TiO2: 1	2.35	-0.82	-6.15	1.84	0.20	-13.90	-41.28	2.48	-1.35	-0.71	-3.60	-3.13	-9.10
Al2O3: 1	-0.95	-6.17	0.39	-2.64	0.09	-2.64	-0.20	0.52	-4.11	0.16	3.11	1.50	-1.52
Fe2O3T: 1	*2.15*	*-5.64*	*-1.36*	*1.58*	*0.21*	*-4.32*	*-7.01*	*2.31*	*-3.14*	*0.32*	*-0.63*	*0.52*	*-33.47*
MgO: 1	2.79	-19.11	-3.14	0.53	0.05	2.04	-26.97	1.58	*	0.29	-7.30	-5.41	-15.52
CaO: 1	-1.18	13.66	-1.63	-2.40	-0.03	-2.49	1.84	1.60	*	-0.32	-2.04	-0.82	1.35
Na2O: 1	-1.64	*	-3.31	-3.87	0.26	-5.37	-21.67	2.37	*	0.83	-3.49	4.40	-0.97
K2O: 1	-0.43	-1.99	0.21	-2.10	0.31	-0.77	-29.06	2.19	*	-0.54	-0.31	7.01	-6.74
P2O5: 1	*	*357.73*	*-0.20*	*-6.39*	*0.48*	*-0.48*	*7.49*	*1.33*	*	*-0.82*	*-8.33*	*-3.11*	*-11.07*
Ag: 1	*0.23*	*	*	*	*	*4.88*	*	*-1.44*	*	*	*0.57*	*5.43*	*-0.23*
As: 1	*-2.15*	*6.03*	*-0.24*	*	*	*2.35*	*	*0.23*	*	*	*	*3.46*	*-1.05*
Ba: 1	0.22	1.20	-2.73	*	*	-0.86	7.04	0.14	0.25	2.64	-0.07	0.57	-4.15
Be: 1	-0.52	*	-0.35	*	*	0.87	*	0.52	0.82	*	-0.99	-0.67	-1.97
Bi: 1	*1.49*	*	*-0.35*	*	*	*0.26*	*	*-0.17*	*	*	*	*	*5.16*
Ce: 1	0.01	2.19	-1.64	*	*	-0.71	*	0.66	1.17	*	-0.64	-0.01	-2.36
Co: 1	-0.46	-0.88	-0.09	*	*	0.22	*	0.49	0.12	*	-0.94	1.14	-1.12
Cr: 1	4.39	1.16	-2.20	*	*	0.76	-27.53	-0.88	-9.94	*	-1.45	-0.82	-3.51
Cs: 1	-0.41	-1.23	0.05	*	*	-0.97	*	0.34	-0.33	*	-0.72	0.44	-0.29
Cu: 1	-1.77	*	0.10	*	*	-2.90	*	0.83	-2.49	*	-1.26	1.41	-1.19
Dy: 1	-0.36	1.01	-0.99	*	*	-0.45	*	0.90	0.14	*	-0.49	-0.65	-1.55
Er: 1	-0.10	1.13	-0.40	*	*	-0.52	*	1.24	-0.34	*	-0.72	0.00	-1.85
Eu: 1	0.43	-0.09	-0.88	*	*	-0.20	*	0.42	0.13	*	-0.64	-0.31	-0.83
Ga: 1	-0.51	34.64	76.83	*	*	-0.51	*	0.38	17.47	*	-1.53	0.54	-0.62
Gd: 1	-0.52	1.88	-1.06	*	*	-0.93	*	1.14	-0.41	*	-1.05	-0.18	-0.51
Ge: 1	*-1.40*	*0.55*	*23.32*	*	*	*40.91*	*	*0.92*	*	*	*	*1.42*	*3.23*
Hf: 1	-0.46	0.45	-1.23	*	*	-1.02	*	0.38	-0.77	*	0.06	-0.37	-1.66
Ho: 1	-0.30	0.30	-0.62	*	*	-0.55	*	0.44	-0.45	*	-0.72	-0.27	-0.75
In: 1	*-0.21*	*	*	*	*	*-0.75*	*	*-0.43*	*	*	*0.35*	*19.78*	*1.07*
La: 1	0.12	1.13	-1.11	*	*	-0.39	*	0.66	0.60	*	-0.54	-0.22	-0.83
Li: 1	-0.10	0.35	-0.43	*	*	-0.59	*	0.31	-0.59	*	-0.23	1.12	0.10
Lu: 1	0.00	1.22	-0.41	*	*	-0.20	*	0.66	-0.41	*	-0.95	-0.25	-0.81
Mn: 1	-0.83	-2.41	0.67	*	-0.19	0.00	-3.26	1.90	-0.95	-0.72	-1.00	0.59	-3.38
Mo: 1	0.32	-1.74	0.34	*	*	-0.70	*	0.56	0.05	*	-0.22	0.15	-2.05
Nb: 1	-0.06	-0.28	-1.62	*	*	-1.13	*	0.62	0.21	*	-0.87	-0.26	-4.51
Nd: 1	-0.59	0.66	-1.16	*	*	-0.33	*	1.06	0.41	*	-0.98	-1.03	-1.89
Ni: 1	-0.05	2.00	-0.55	*	*	1.52	16.66	0.68	-0.49	*	-1.23	2.08	-1.96
Pb: 1	-1.02	-1.58	-0.68	*	*	-0.22	*	-0.01	-1.31	*	-0.58	1.17	0.97
Pr: 1	-0.60	0.12	-0.95	*	*	-0.49	*	0.62	0.88	*	-0.58	-0.06	-2.03
Rb: 1	-0.78	0.04	-0.32	*	*	-1.75	30.08	0.53	-2.11	*	-0.77	2.26	0.46
Sb: 1	*-1.41*	*-5.62*	*-0.03*	*	*	*2.23*	*	*-0.38*	*-1.04*	*	*	*	*0.03*
Sc: 1	-0.78	2.61	-1.12	*	*	7.51	*	0.38	-0.08	*	-0.68	3.28	-1.46
Sm: 1	-1.25	0.88	-0.76	*	*	-0.39	*	0.63	0.85	*	-0.93	-0.76	-1.23
Sn: 1	*-2.22*	*-3.21*	*-0.25*	*	*	*0.28*	*	*1.34*	*-0.00*	*	*1.22*	*1.75*	*14.37*
Sr: 1	*0.03*	*-0.26*	*-5.76*	*	*	*-1.04*	*3.92*	*1.91*	*-1.76*	*-2.41*	*-1.73*	*-0.53*	*-3.90*
Ta: 1	2.03	-1.75	-0.96	*	*	-0.99	*	1.00	-0.01	*	-0.36	-0.35	-3.69
Tb: 1	-0.51	0.05	-0.71	*	*	-0.58	*	0.56	0.17	*	-1.08	-0.36	-0.58
Th: 1	0.38	0.26	-0.39	*	*	-0.56	*	0.82	-0.56	*	-0.43	-0.26	-1.21
Tl: 1	*-0.70*	*	*	*	*	*0.81*	*	*0.23*	*	*	*	*	*-0.47*
Tm: 1	-0.02	2.66	-0.55	*	*	-0.46	*	0.49	-0.52	*	-0.41	-0.58	-1.22
U: 1	0.47	2.38	-0.74	*	*	-0.23	*	0.15	-0.91	*	0.18	0.39	-0.82
V: 1	1.89	-0.51	-1.10	*	*	-0.30	21.98	0.65	0.50	*	-0.23	0.38	-2.72
W: 1	-1.47	-4.39	-0.32	*	*	-0.49	*	0.38	-0.50	*	*	0.51	-0.09
Y: 1	0.73	0.42	-1.02	*	*	-0.65	*	1.40	-0.95	*	-1.16	-0.93	-1.98
Yb: 1	0.07	-2.29	-0.78	*	*	-0.70	*	0.59	0.72	*	-1.21	-1.07	-0.78
Zn: 1	*-3.29*	*1.26*	*4.09*	*	*	*-1.36*	*	*-4.61*	*-0.22*	*	*2.27*	*1.67*	*-2.34*
Zr: 1	1.37	3.50	-2.23	*	*	-0.64	19.91	0.85	-1.87	*	-1.63	-1.72	-2.90

Table 3 - G-Probe 27 Z-scores for Basanite, BOOS-1G Glass. 06/09/2023

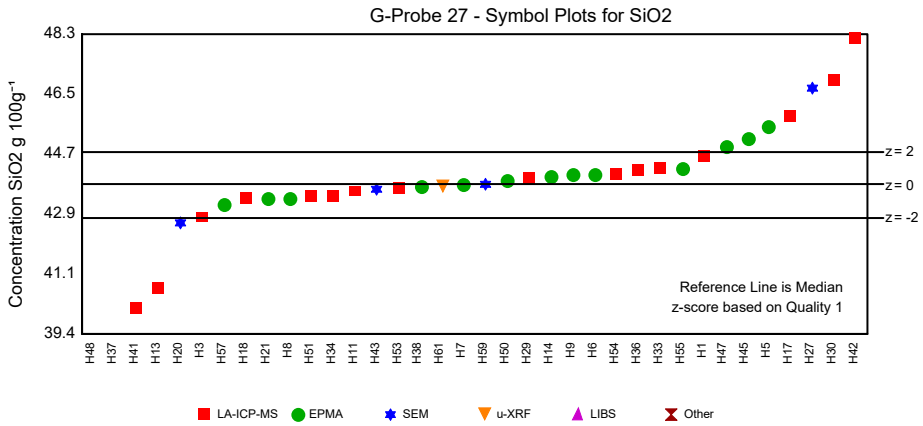
Lab Code	H20	H21	H25	H26	H27	H29	H30	H33	H34	H36	H37	H38	H41
SiO2: 1	-2.30	-0.82	*	*	5.81	0.44	6.29	0.94	-0.64	0.89	-9.59	-0.12	-7.37
TiO2: 1	58.57	-0.98	*	*	0.72	1.23	1.74	-1.37	0.02	1.74	10.94	-1.53	-3.58
Al2O3: 1	-1.08	0.49	*	*	-2.15	0.26	*	-0.55	-0.70	2.67	7.90	0.09	-4.45
Fe2O3T: 1	*3.28*	*-1.38*	*	*	*-2.82*	*1.68*	*4.59*	*3.18*	*1.91*	*-4.35*	*9.19*	*-1.01*	*-2.35*
MgO: 1	-0.02	-3.17	*	*	0.22	-0.35	*	-3.12	-0.38	0.72	2.21	0.42	-3.40
CaO: 1	6.04	0.43	*	*	-2.03	2.95	*	*	0.48	0.12	10.64	-0.25	-4.12
Na2O: 1	-2.29	0.37	*	*	-2.03	-4.49	3.70	-1.04	0.85	2.55	0.26	-1.85	-2.20
K2O: 1	-18.44	-0.64	*	*	3.68	-4.14	*	-0.52	0.38	-2.45	3.06	0.61	-4.60
P2O5: 1	*-2.35*	*0.96*	*	*	*-6.29*	*-23.04*	*5.33*	*	*-1.57*	*4.92*	*-15.18*	*3.28*	*2.94*
Ag: 1	*	*	*-1.84*	*	*	*-2.57*	*0.50*	*	*-0.32*	*	*	*	*
As: 1	*0.05*	*	*0.31*	*	*	*-2.96*	*	*-3.05*	*-0.20*	*	*	*-0.05*	*-3.87*
Ba: 1	2.35	-0.32	-1.36	0.14	*	-1.01	0.54	1.06	-0.06	-0.08	*	0.06	-2.07
Be: 1	-1.45	-1.24	-2.43	0.64	*	1.27	*	-1.15	0.46	*	*	-1.79	*
Bi: 1	*	*	*-2.19*	*	*	*-0.97*	*	*3.64*	*0.41*	*	*	*	*
Ce: 1	2.45	-0.23	-1.64	0.27	*	0.29	0.49	-0.24	0.58	0.27	*	-0.41	-1.68
Co: 1	2.79	-0.05	-0.41	-1.22	*	0.41	2.02	0.38	0.30	-0.59	*	0.35	-1.97
Cr: 1	2.27	0.04	-1.71	2.35	*	1.25	0.35	2.27	1.05	-0.74	*	-1.94	*
Cs: 1	0.84	-0.05	-1.09	*	*	-0.04	0.81	-0.21	-0.02	*	*	0.35	-0.97
Cu: 1	3.15	0.44	-2.94	0.72	*	-0.34	1.97	-0.30	0.67	-0.30	*	-0.65	-2.25
Dy: 1	1.57	0.17	-2.06	0.23	*	0.66	-0.12	-0.20	0.61	1.42	*	-0.84	-0.11
Er: 1	1.76	0.29	-2.03	-0.07	*	-0.52	0.32	0.45	0.89	0.95	*	-0.37	-0.13
Eu: 1	1.16	0.04	-1.35	0.41	*	0.59	0.30	0.00	0.29	0.78	*	-0.37	-0.83
Ga: 1	1.19	-0.20	-1.53	0.90	*	-0.03	1.22	-0.56	-0.28	0.00	*	-0.76	19.39
Gd: 1	2.03	0.42	-2.37	0.78	*	0.79	-0.35	0.68	0.67	0.48	*	-0.66	-0.58
Ge: 1	*	*-0.11*	*-0.05*	*	*	*-1.95*	*	*-0.37*	*	*	*	*	*2.77*
Hf: 1	1.38	0.08	-2.37	0.00	*	0.39	-0.71	-0.23	0.18	0.35	*	-0.69	-0.28
Ho: 1	1.15	0.29	-1.57	0.30	*	0.63	0.17	-0.04	0.34	0.43	*	-0.58	-0.03
In: 1	*	*	*-0.53*	*	*	*-0.53*	*2.14*	*-0.57*	*0.21*	*0.32*	*	*	*
La: 1	2.54	-0.02	-1.43	0.17	*	0.73	0.60	0.05	0.55	-0.09	*	-0.53	-0.52
Li: 1	1.80	-0.46	-0.77	0.23	*	0.38	1.25	-0.07	0.07	-0.48	*	-0.32	-2.94
Lu: 1	0.99	0.04	-1.50	0.41	*	0.20	-0.41	-0.09	0.49	1.22	*	-0.73	0.20
Mn: 1	4.71	0.19	0.16	-0.87	*	1.19	1.99	2.15	0.68	0.30	*	-37.13	1.29
Mo: 1	1.14	*	-0.96	-1.27	*	0.00	-0.52	0.15	0.32	-1.12	*	*	*
Nb: 1	1.44	0.08	-1.53	3.81	*	0.22	0.28	-0.41	0.50	1.78	*	-0.13	-0.05
Nd: 1	2.65	0.00	-1.69	0.39	*	0.60	0.34	0.22	0.88	0.44	*	-0.93	-0.84
Ni: 1	2.32	-0.96	-1.65	-4.28	*	-0.29	1.86	0.74	0.28	-2.03	*	0.05	-2.87
Pb: 1	2.54	0.82	0.62	-0.49	*	40.26	0.87	0.05	0.10	-0.79	*	0.60	-0.69
Pr: 1	1.64	-0.05	-0.95	0.29	*	0.40	0.25	-0.18	0.50	1.23	*	-0.32	-0.67
Rb: 1	1.89	0.27	-1.57	-0.35	*	-1.58	1.68	-0.55	0.02	-0.44	*	0.67	-1.70
Sb: 1	*	*	*-0.41*	*	*	*0.03*	*	*2.10*	*0.35*	*	*	*	*
Sc: 1	1.89	0.43	-2.18	-0.75	*	3.26	0.08	0.23	0.00	*	*	-0.32	-0.66
Sm: 1	1.81	0.20	-1.43	1.09	*	0.58	0.06	-0.02	0.46	1.00	*	-0.62	-0.73
Sn: 1	*4.85*	*	*0.66*	*2.14*	*	*-2.68*	*5.01*	*-0.98*	*3.30*	*9.26*	*	*	*-3.85*
Sr: 1	*2.86*	*0.12*	*-2.65*	*0.30*	*	*-0.10*	*-0.21*	*0.98*	*0.23*	*0.65*	*	*-1.72*	*-2.22*
Ta: 1	0.97	0.32	-1.45	1.51	*	-0.06	0.05	-0.27	0.60	1.83	*	-0.54	0.43
Tb: 1	1.19	0.16	-1.40	0.61	*	0.55	0.11	-0.18	0.40	0.55	*	-0.77	-0.02
Th: 1	2.88	0.22	-1.65	1.40	*	-1.29	0.03	0.69	0.88	1.28	*	-0.46	-0.03
Tl: 1	*	*	*-1.86*	*	*	*-2.79*	*0.70*	*	*1.63*	*	*	*	*
Tm: 1	0.73	0.26	-1.51	0.37	*	0.54	-0.16	-9.01	0.37	0.90	*	-0.45	0.19
U: 1	0.87	-0.57	-0.43	0.00	*	0.55	0.66	-11.33	0.11	-0.08	*	0.10	-1.09
V: 1	3.35	0.42	-0.67	-0.02	*	1.80	0.96	-28.97	0.24	-1.19	*	-0.30	0.68
W: 1	1.15	*	0.48	*	*	0.14	0.88	3426.37	0.00	-1.35	*	*	*
Y: 1	2.72	0.61	-2.84	1.07	*	0.80	0.01	-19.28	1.14	1.71	*	-0.96	0.96
Yb: 1	1.68	-0.11	-2.48	0.37	*	0.59	-0.11	172.73	0.37	1.00	*	-0.74	0.11
Zn: 1	*3.93*	*0.44*	*3.09*	*-3.33*	*	*-4.45*	*2.75*	*-25.00*	*-2.28*	*-1.61*	*	*2.50*	*
Zr: 1	2.50	0.08	-4.26	0.76	*	0.86	0.06	-13.36	0.51	0.93	*	-3.27	-0.10

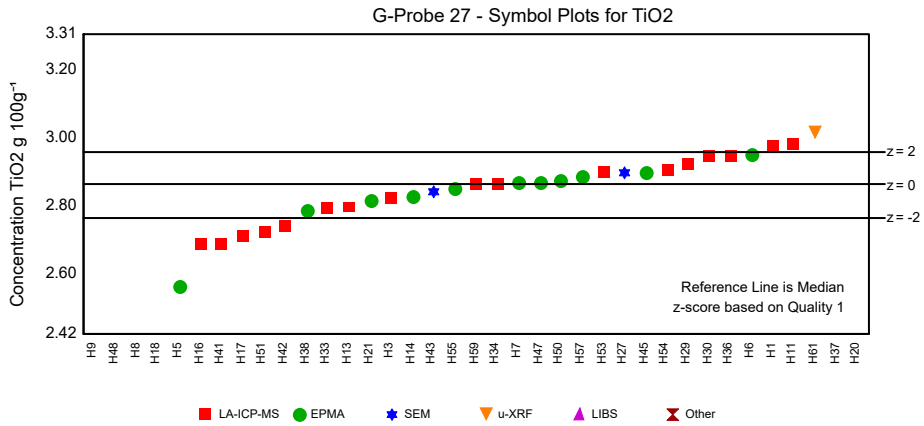
Table 3 - G-Probe 27 Z-scores for Basanite, BOOS-1G Glass. 06/09/2023

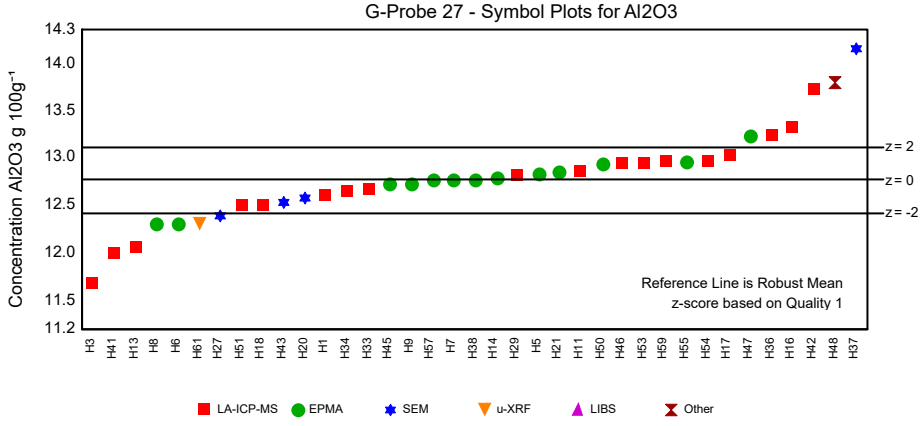
Lab Code	H42	H43	H45	H46	H47	H48	H50	H51	H53	H54	H55	H56	H57
SiO2: 1	8.85	-0.27	2.80	*	2.29	-12.56	0.27	-0.64	-0.24	0.69	0.96	*	-1.15
TiO2: 1	-2.47	-0.43	0.72	*	0.20	-29.24	0.31	-2.86	0.72	0.92	-0.20	*	0.53
Al2O3: 1	5.48	-1.34	-0.20	1.00	2.64	5.86	1.00	-1.58	1.00	1.12	1.09	*	-0.02
Fe2O3T: 1	*2.93*	*0.70*	*-7.92*	*	*8.78*	*-35.04*	*-0.63*	*0.93*	*1.87*	*2.09*	*0.06*	*	*0.99*
MgO: 1	1.08	-0.33	2.04	-1.77	0.02	20.67	-0.78	5.20	0.55	-0.84	1.18	*	-1.71
CaO: 1	1.54	-0.52	-1.11	1.35	-3.72	-23.66	0.74	4.43	1.66	1.08	-1.02	*	-0.17
Na2O: 1	8.70	0.99	1.23	3.79	-2.47	112.99	-0.44	-0.09	3.26	2.20	0.09	*	0.23
K2O: 1	2.24	0.61	0.00	*	0.61	-10.57	0.77	0.00	3.68	0.00	-2.14	*	-1.35
P2O5: 1	*3.87*	*-2.22*	*0.21*	*	*-1.85*	*-18.59*	*0.55*	*-4.17*	*0.55*	*-0.82*	*-0.82*	*	*1.78*
Ag: 1	*	*	*	*0.93*	*	*	*	*5.67*	*	*	*	*	*
As: 1	*	*	*0.99*	*	*	*	*	*	*	*	*	*	*
Ba: 1	1.10	*	-1.14	-0.73	*	26.52	-1.15	-1.78	0.39	-0.23	0.70	2.87	*
Be: 1	*	*	*	*	*	*	*	25.94	*	2.81	*	*	*
Bi: 1	*	*	*0.26*	*	*	*	*	*	*	*	*	*	*
Ce: 1	0.03	*	-0.13	-0.61	*	*	-0.87	-1.29	0.33	0.37	0.47	1.55	*
Co: 1	1.23	*	0.99	*	*	-15.02	0.72	1.68	-0.50	-0.36	0.73	*	*
Cr: 1	3.60	*	-0.55	1.65	*	-8.85	0.71	0.20	1.13	-0.04	-1.59	*	*
Cs: 1	*	*	0.64	*	*	*	*	0.28	0.98	-0.21	*	0.56	*
Cu: 1	2.04	*	0.89	4.80	*	-13.46	-0.10	-2.01	4.85	0.15	0.50	*	*
Dy: 1	-0.84	*	0.14	*	*	*	-0.36	0.01	0.47	0.71	-0.06	1.24	*
Er: 1	-0.40	*	0.83	*	*	*	-0.10	0.14	0.86	1.25	0.11	1.28	*
Eu: 1	-0.28	*	0.01	*	*	*	-0.67	-0.72	0.17	0.51	-0.04	1.85	*
Ga: 1	-0.11	*	-0.05	0.09	*	19.47	*	0.82	-0.56	0.34	*	-0.37	*
Gd: 1	-0.78	*	0.59	*	*	*	-0.44	-0.12	0.58	0.41	-0.28	1.38	*
Ge: 1	*	*	*0.05*	*	*	*	*	*	*	*	*	*	*
Hf: 1	-0.43	*	-0.51	*	*	*	0.15	0.09	0.06	0.69	0.25	0.86	*
Ho: 1	-0.30	*	0.04	*	*	*	0.04	0.27	0.30	0.37	0.24	0.82	*
In: 1	*	*	*-1.07*	*	*	*	*	*	*	*	*	*1.07*	*
La: 1	-0.18	*	0.43	-0.40	*	-10.58	-0.33	-0.39	0.07	0.68	0.46	2.28	*
Li: 1	*	*	0.23	2.24	*	*	0.71	0.69	2.69	-0.21	0.69	*	*
Lu: 1	-0.22	*	0.00	*	*	*	2.03	-0.22	1.22	0.61	0.81	1.62	*
Mn: 1	1.72	-2.60	2.60	-0.65	*	-23.62	-1.07	-5.61	12.19	1.53	0.16	*	-14.83
Mo: 1	*	*	0.39	*	*	*	*	*	*	0.44	*	-0.86	*
Nb: 1	0.40	*	-0.69	*	*	*	0.45	-1.04	0.95	0.89	0.17	2.85	*
Nd: 1	-0.49	*	0.51	-2.58	*	*	-0.71	-0.30	0.61	0.79	0.35	1.09	*
Ni: 1	0.51	*	0.69	-0.18	*	*	0.61	3.03	-0.96	-0.80	0.30	*	*
Pb: 1	2.11	*	-0.17	-0.20	*	-4.42	0.65	0.08	1.52	0.05	-2.23	*	*
Pr: 1	-0.16	*	0.04	-0.42	*	*	-0.11	*	0.79	0.84	0.56	0.44	*
Rb: 1	2.42	*	0.83	*	*	-16.94	0.50	-0.30	0.27	0.21	0.00	*	*
Sb: 1	*	*	*1.29*	*	*	*	*	*	*	*	*	*	*
Sc: 1	*	*	0.41	*	*	*	-1.33	-2.00	0.69	0.41	-0.40	*	*
Sm: 1	-0.32	*	0.26	*	*	*	0.02	-0.87	-0.08	0.24	0.32	0.35	*
Sn: 1	*	*	*-1.31*	*33.54*	*	*	*	*	*	*	*	*	*
Sr: 1	*0.12*	*	*0.82*	*-0.66*	*	*-25.13*	*-1.24*	*-2.08*	*0.47*	*0.20*	*0.08*	*	*
Ta: 1	-0.19	*	-0.50	*	*	*	0.30	-0.56	1.21	0.98	0.45	*	*
Tb: 1	-0.15	*	-0.02	*	*	*	0.05	0.23	1.11	0.67	0.05	1.05	*
Th: 1	-0.21	*	0.30	0.01	*	-7.10	0.19	-0.27	0.51	0.85	0.33	*	*
Tl: 1	*	*	*0.00*	*	*	*	*	*	*	*	*	*	*
Tm: 1	-0.41	*	0.01	*	*	*	0.19	0.26	0.37	1.25	0.19	1.60	*
U: 1	0.24	*	-0.35	-0.19	*	*	-0.35	-0.90	-0.23	0.19	0.31	*	*
V: 1	1.07	*	0.85	*	*	-27.48	1.14	-1.30	-0.98	-0.26	0.13	*	*
W: 1	0.91	*	0.31	*	*	*	*	*	*	*	*	-0.43	*
Y: 1	-0.63	*	0.80	-0.50	*	-15.18	0.22	-0.57	1.21	1.43	-0.17	2.58	*
Yb: 1	-0.70	*	-0.07	*	*	*	0.33	0.52	-0.11	0.33	0.52	1.15	*
Zn: 1	*2.38*	*	*0.58*	*1.49*	*	*-16.59*	*6.79*	*-0.67*	*-1.36*	*-2.11*	*	*	*
Zr: 1	-1.34	*	0.00	*	*	21.81	-0.68	-1.72	0.51	1.21	-0.72	0.97	*

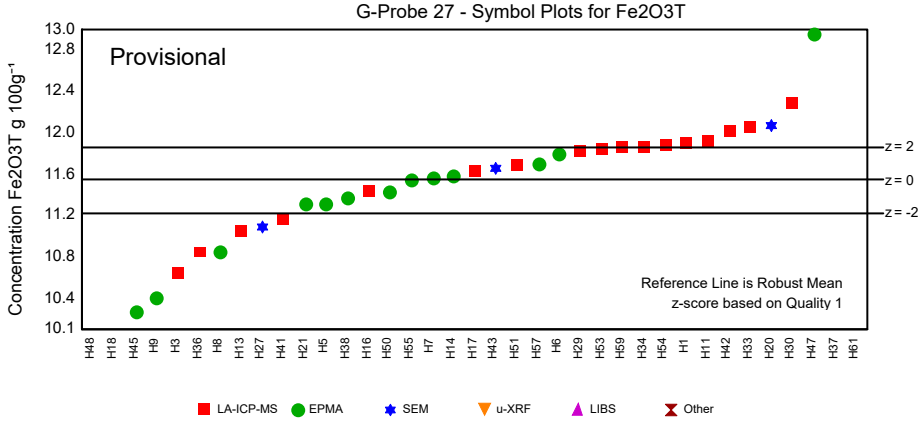
Table 3 - G-Probe 27 Z-scores for Basanite, BOOS-1G Glass. 06/09/2023

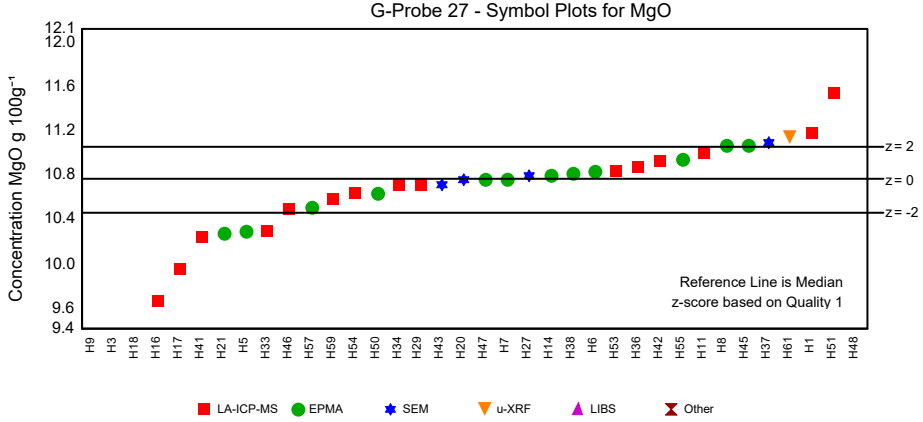
Lab Code	H59	H61	H64
SiO2: 1	0.03	-0.08	*
TiO2: 1	0.00	3.17	*
Al2O3: 1	1.06	-2.61	*
Fe2O3T: 1	*1.90*	*14.44*	*
MgO: 1	-1.14	2.61	*
CaO: 1	0.58	-3.26	*
Na2O: 1	-0.35	-8.37	*
K2O: 1	0.00	6.13	*
P2O5: 1	*1.23*	*-22.01*	*
Ag: 1	*	*	*
As: 1	*	*	*5.03*
Ba: 1	0.05	-1.31	-0.41
Be: 1	10.25	*	0.55
Bi: 1	*	*	*
Ce: 1	0.71	-1.41	-0.37
Co: 1	-0.88	-0.99	-0.09
Cr: 1	0.23	-3.76	-1.67
Cs: 1	2.17	*	*
Cu: 1	1.70	*	-1.88
Dy: 1	1.05	-2.15	-0.58
Er: 1	2.30	-2.21	-0.34
Eu: 1	0.36	-1.46	-0.56
Ga: 1	0.24	-2.14	0.82
Gd: 1	0.50	-1.88	-0.55
Ge: 1	*2.59*	*	*-0.23*
Hf: 1	-0.26	-1.85	0.03
Ho: 1	0.82	-1.93	-0.35
In: 1	*	*	*
La: 1	0.73	-1.79	-0.25
Li: 1	-0.67	-1.41	-0.19
Lu: 1	2.84	-2.03	0.00
Mn: 1	-0.06	5.29	-2.41
Mo: 1	0.00	*	-1.01
Nb: 1	*	-0.74	-0.54
Nd: 1	*	-3.13	-0.64
Ni: 1	-1.72	-1.23	3.45
Pb: 1	0.35	-0.14	-3.29
Pr: 1	*	-1.86	-0.19
Rb: 1	*	-0.32	-1.78
Sb: 1	*	*	*
Sc: 1	*	0.52	-0.37
Sm: 1	*	-2.52	-0.49
Sn: 1	*	*	*
Sr: 1	*0.15*	*-3.73*	*-1.66*
Ta: 1	*	-1.79	0.01
Tb: 1	*	-2.46	-0.27
Th: 1	*	-1.26	0.20
Tl: 1	*	*	*
Tm: 1	*	-3.34	-0.16
U: 1	0.39	-1.13	0.08
V: 1	-1.41	-0.35	-0.20
W: 1	*	*	-0.26
Y: 1	2.38	-2.84	-0.61
Yb: 1	*	-2.63	-0.41
Zn: 1	*-3.28*	*4.46*	*67.73*
Zr: 1	1.59	-3.37	-1.21

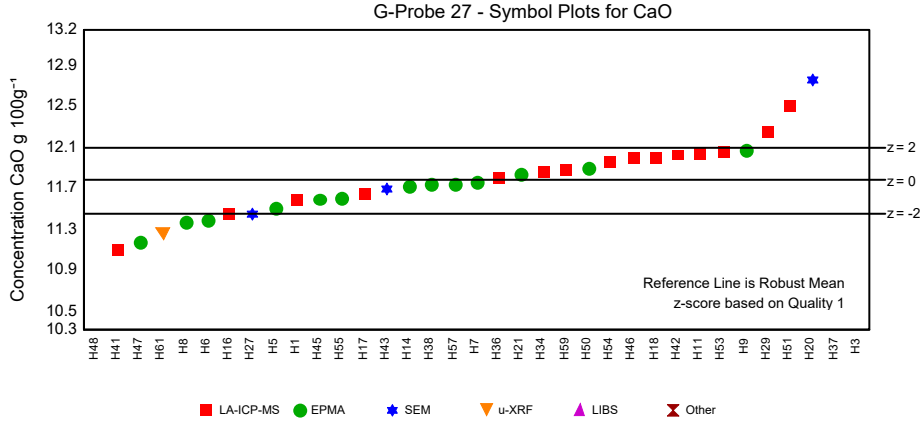

G-Probe 27 - Symbol Plots for SiO2
Concentration SiO2 g 100g⁻¹
48.3
46.5
44.7
42.9
41.1
39.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H48 H37 H41 H13 H20 H3 H57 H18 H21 H8 H51 H34 H11 H43 H53 H38 H61 H7 H59 H50 H29 H14 H9 H6 H54 H36 H33 H55 H1 H47 H45 H5 H17 H27 H30 H42
LA-ICP-MS EPMA SEM u-XRF LIBS Other

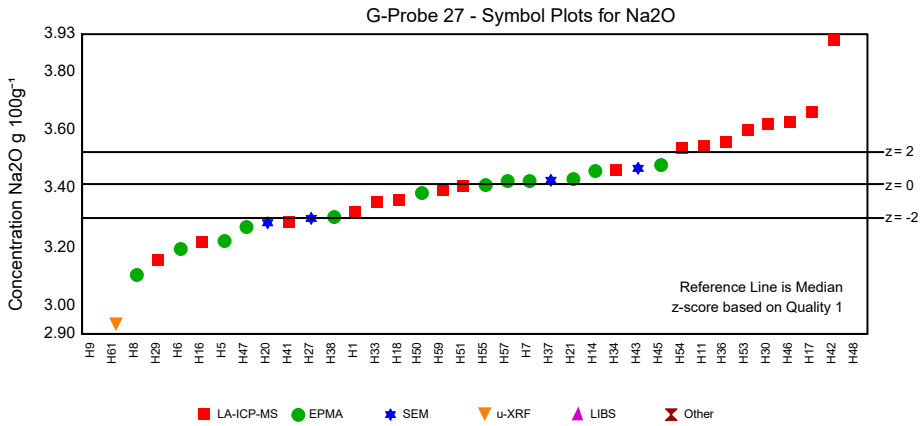

G-Probe 27 - Symbol Plots for TiO2
Concentration TiO2 g 100g⁻¹
3.31
3.20
3.00
2.80
2.60
2.42
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H9 H48 H8 H18 H5 H16 H41 H17 H51 H42 H38 H33 H13 H21 H3 H14 H43 H55 H59 H34 H7 H47 H50 H57 H53 H27 H45 H54 H29 H30 H36 H6 H1 H11 H61 H37 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

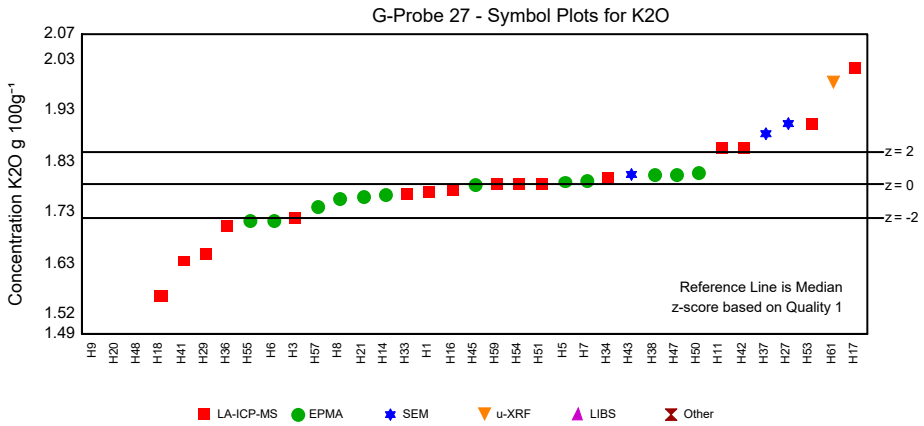

G-Probe 27 - Symbol Plots for Al2O3
Concentration Al2O3 g 100g⁻¹
14.3
14.0
13.5
13.0
12.5
12.0
11.5
11.2
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H3 H41 H13 H8 H6 H61 H27 H51 H18 H43 H20 H1 H34 H33 H45 H9 H57 H7 H38 H14 H29 H5 H21 H11 H50 H46 H53 H59 H55 H54 H17 H47 H36 H16 H42 H48 H37
LA-ICP-MS EPMA SEM u-XRF LIBS Other

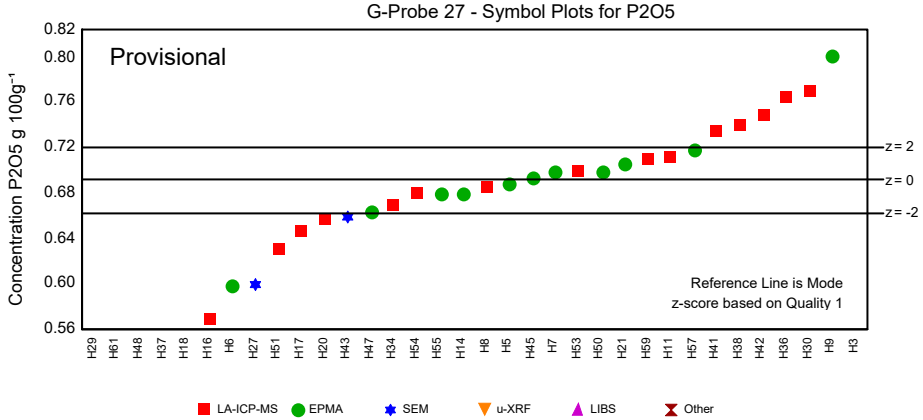

G-Probe 27 - Symbol Plots for Fe2O3T
Provisional
Concentration Fe2O3T g 100g⁻¹
13.0
12.8
12.4
12.0
11.6
11.2
10.8
10.4
10.1
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H18 H45 H9 H3 H36 H8 H13 H27 H41 H21 H5 H38 H16 H50 H55 H7 H14 H17 H43 H51 H57 H6 H29 H53 H59 H34 H54 H1 H11 H42 H33 H20 H30 H47 H37 H61
LA-ICP-MS EPMA SEM u-XRF LIBS Other

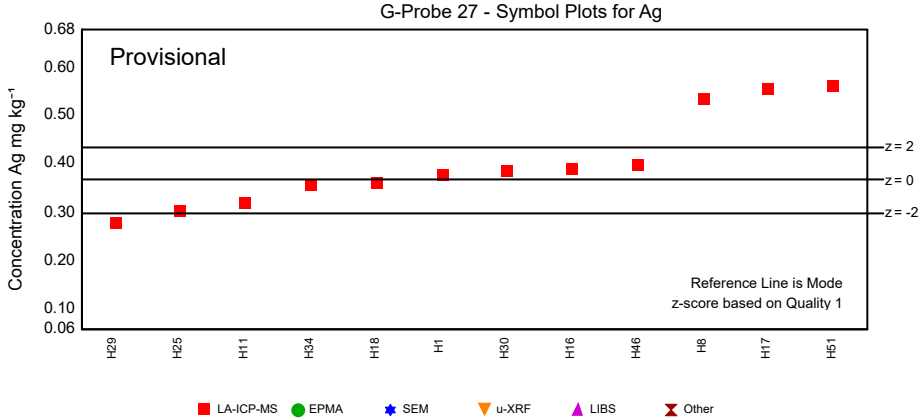

G-Probe 27 - Symbol Plots for MgO
Concentration MgO g 100g⁻¹
12.1
12.0
11.6
11.2
10.8
10.4
10.0
9.6
9.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H9 H3 H18 H16 H17 H41 H21 H5 H33 H46 H57 H59 H54 H50 H34 H29 H43 H20 H47 H7 H27 H14 H38 H6 H53 H36 H42 H55 H11 H8 H45 H37 H61 H1 H51 H48
LA-ICP-MS EPMA SEM u-XRF LIBS Other

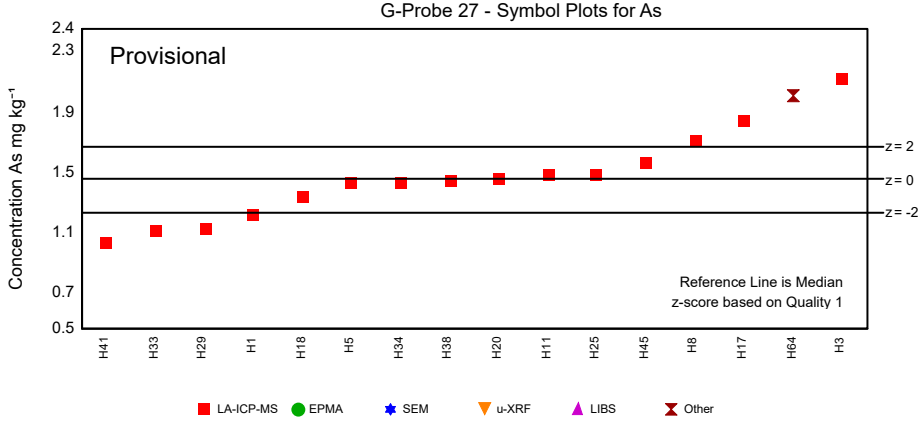

G-Probe 27 - Symbol Plots for CaO
Concentration CaO g 100g⁻¹
13.2
12.9
12.5
12.1
11.7
11.3
10.9
10.5
10.3
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H41 H47 H61 H8 H6 H16 H27 H5 H1 H45 H55 H17 H43 H14 H38 H57 H7 H36 H21 H34 H59 H50 H54 H46 H18 H42 H11 H53 H9 H29 H51 H20 H37 H3
LA-ICP-MS EPMA SEM u-XRF LIBS Other

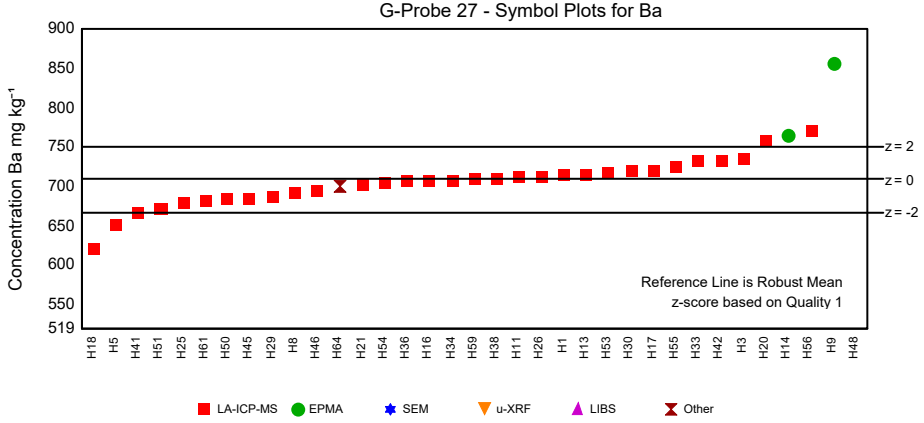

G-Probe 27 - Symbol Plots for Na2O
Concentration Na2O g 100g⁻¹
3.93
3.80
3.60
3.40
3.20
3.00
2.90
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H9 H61 H8 H29 H6 H16 H5 H47 H20 H41 H27 H38 H1 H33 H18 H50 H59 H51 H55 H57 H7 H37 H21 H14 H34 H43 H45 H54 H11 H36 H53 H30 H46 H17 H42 H48
LA-ICP-MS EPMA SEM u-XRF LIBS Other

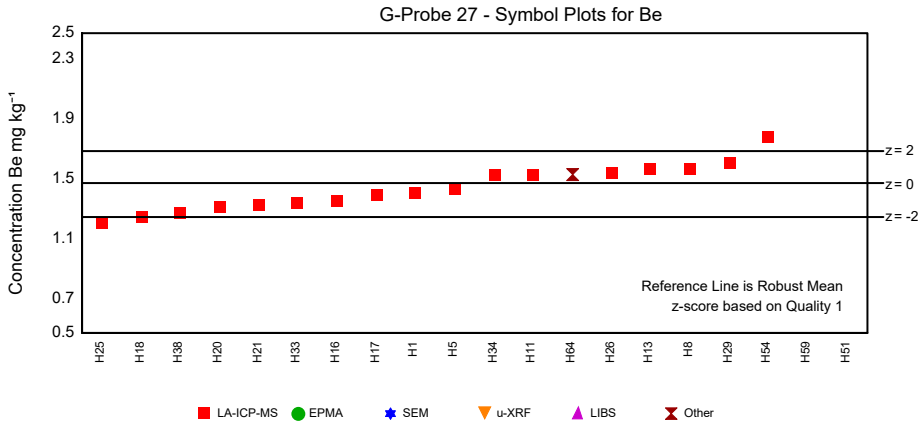

G-Probe 27 - Symbol Plots for K2O
Concentration K2O g 100g⁻¹
2.07
2.03
1.93
1.83
1.73
1.63
1.52
1.49
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H9 H20 H48 H18 H41 H29 H36 H55 H6 H3 H57 H8 H21 H14 H33 H1 H16 H45 H59 H54 H51 H5 H7 H34 H43 H38 H47 H50 H11 H42 H37 H27 H53 H61 H17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

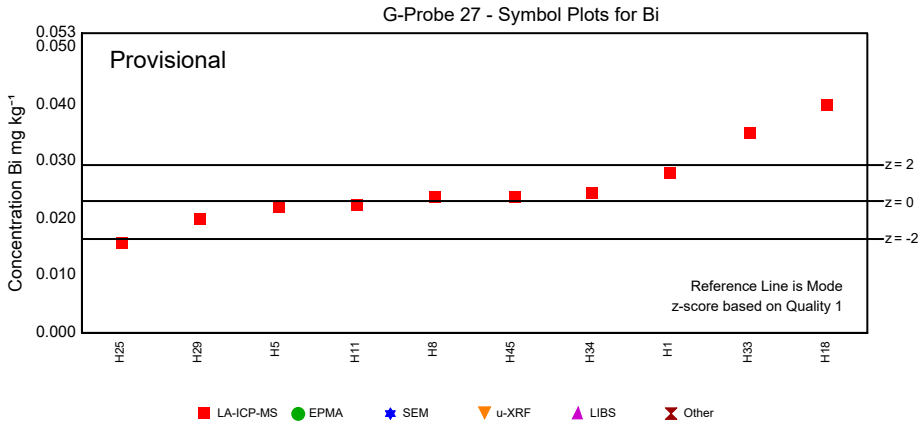

G-Probe 27 - Symbol Plots for P2O5
Concentration P2O5 g 100g⁻¹
Provisional
0.82
0.80
0.76
0.72
0.68
0.64
0.60
0.56
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H29 H61 H48 H37 H18 H16 H6 H27 H51 H17 H20 H43 H47 H34 H54 H55 H14 H8 H5 H45 H7 H53 H50 H21 H59 H11 H57 H41 H38 H42 H36 H30 H9 H3
LA-ICP-MS EPMA SEM u-XRF LIBS Other

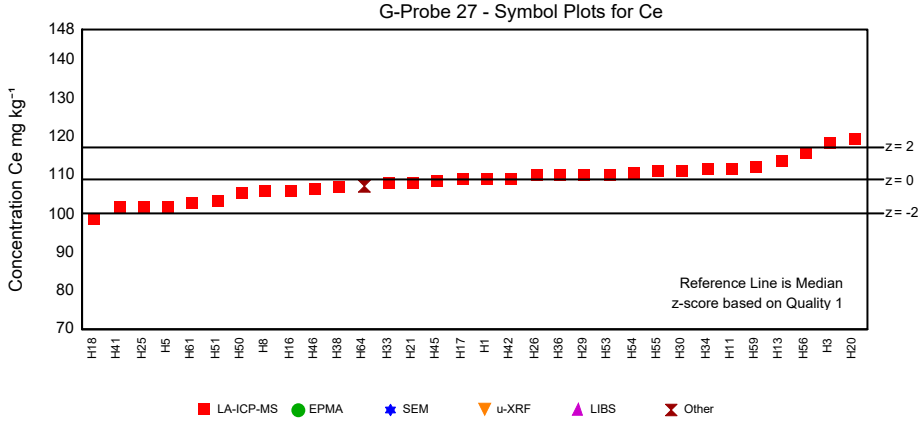

G-Probe 27 - Symbol Plots for Ag
Concentration Ag mg kg⁻¹
Provisional
0.68
0.60
0.50
0.40
0.30
0.20
0.10
0.06
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H29 H25 H11 H34 H18 H1 H30 H16 H46 H8 H17 H51
LA-ICP-MS EPMA SEM u-XRF LIBS Other

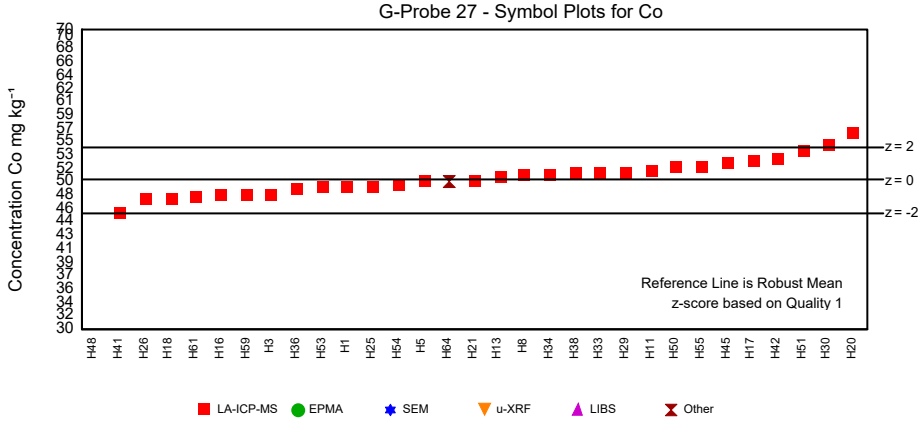

G-Probe 27 - Symbol Plots for As
Concentration As mg kg⁻¹
Provisional
2.4
2.3
1.9
1.5
1.1
0.7
0.5
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H41 H33 H29 H1 H18 H5 H34 H38 H20 H11 H25 H45 H8 H17 H64 H3
LA-ICP-MS EPMA SEM u-XRF LIBS Other

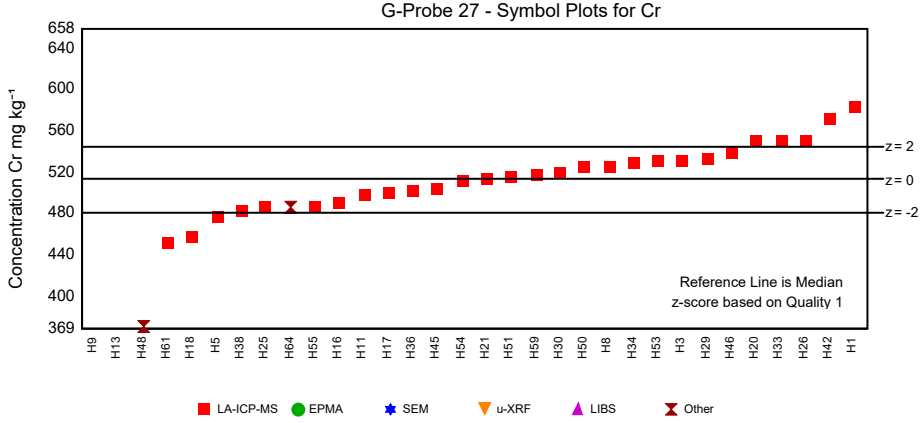

G-Probe 27 - Symbol Plots for Ba
Concentration Ba mg kg⁻¹
900
850
800
750
700
650
600
550
519
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H18 H5 H41 H51 H25 H61 H50 H45 H29 H8 H46 H64 H21 H54 H36 H16 H34 H59 H38 H11 H26 H1 H13 H53 H30 H17 H55 H33 H42 H3 H20 H14 H56 H9 H48
LA-ICP-MS EPMA SEM u-XRF LIBS Other

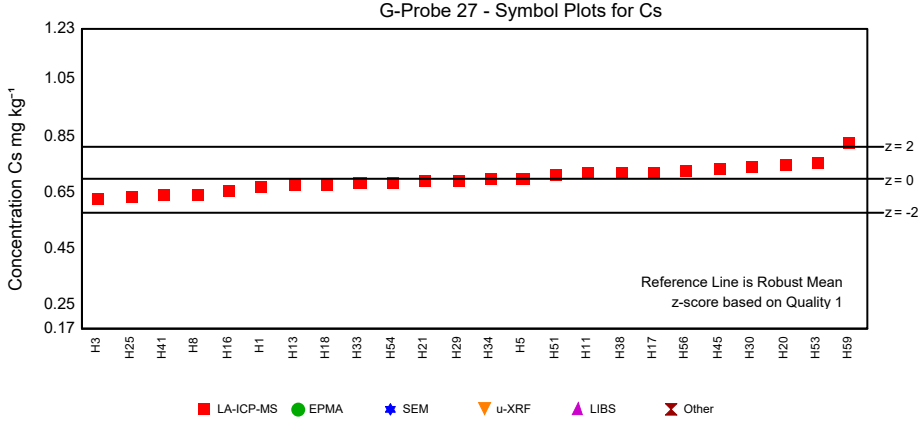

G-Probe 27 - Symbol Plots for Be
Concentration Be mg kg⁻¹
2.5
2.3
1.9
1.5
1.1
0.7
0.5
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H25 H18 H38 H20 H21 H33 H16 H17 H1 H5 H34 H11 H64 H26 H13 H8 H29 H54 H59 H51
LA-ICP-MS EPMA SEM u-XRF LIBS Other

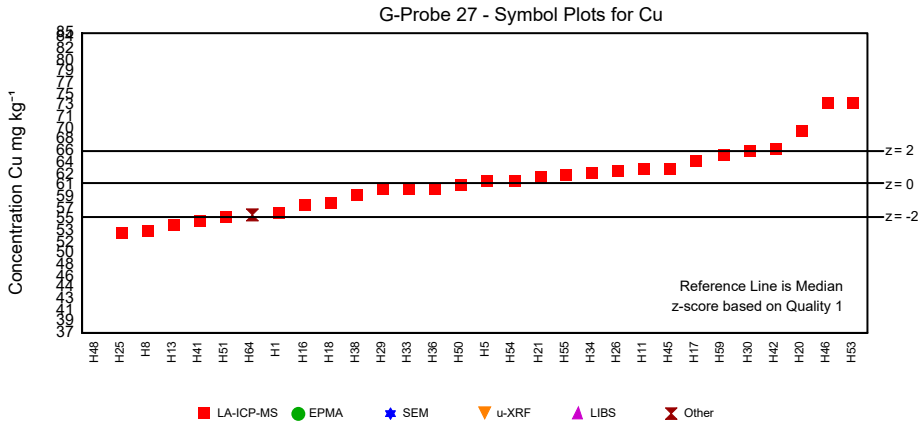

G-Probe 27 - Symbol Plots for Bi
Provisional
Concentration Bi mg kg⁻¹
0.053
0.050
0.040
0.030
0.020
0.010
0.000
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H25 H29 H5 H11 H8 H45 H34 H1 H33 H18
LA-ICP-MS EPMA SEM u-XRF LIBS Other

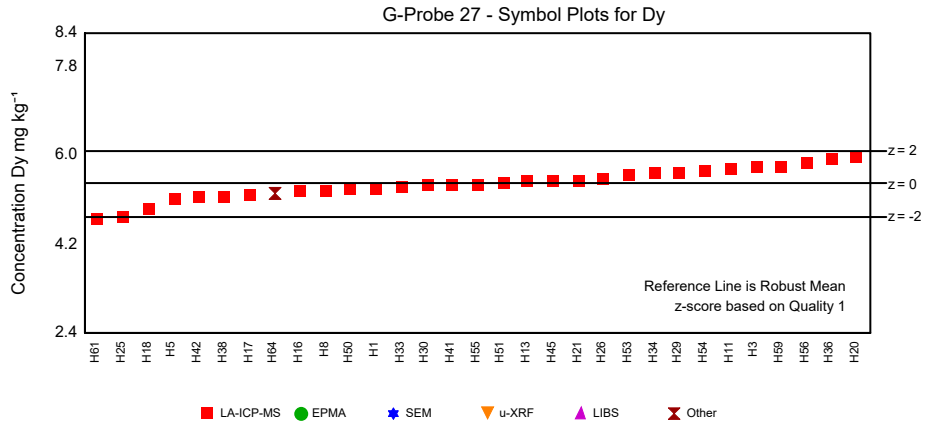

G-Probe 27 - Symbol Plots for Ce
Concentration Ce mg kg⁻¹
148
140
130
120
110
100
90
80
70
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H18 H41 H25 H5 H61 H51 H50 H8 H16 H46 H38 H64 H33 H21 H45 H17 H1 H42 H26 H36 H29 H53 H54 H55 H30 H34 H11 H59 H13 H56 H3 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

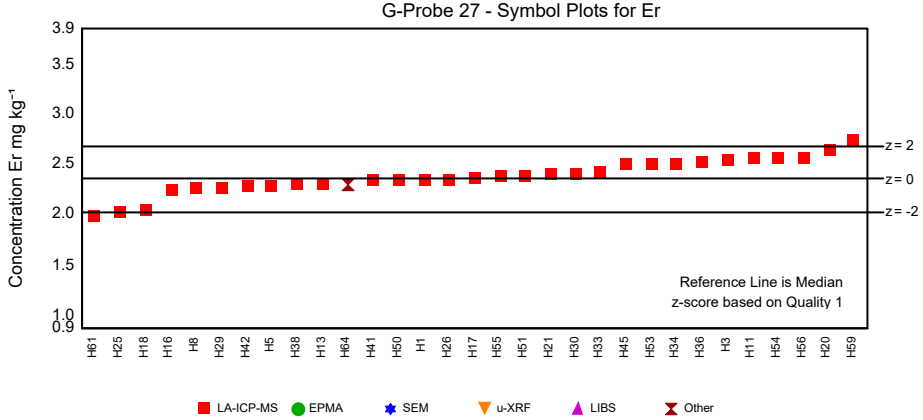

G-Probe 27 - Symbol Plots for Co
Concentration Co mg kg⁻¹
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H41 H26 H18 H61 H16 H59 H3 H36 H53 H1 H25 H54 H5 H64 H21 H13 H8 H34 H38 H33 H29 H11 H50 H55 H45 H17 H42 H51 H30 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

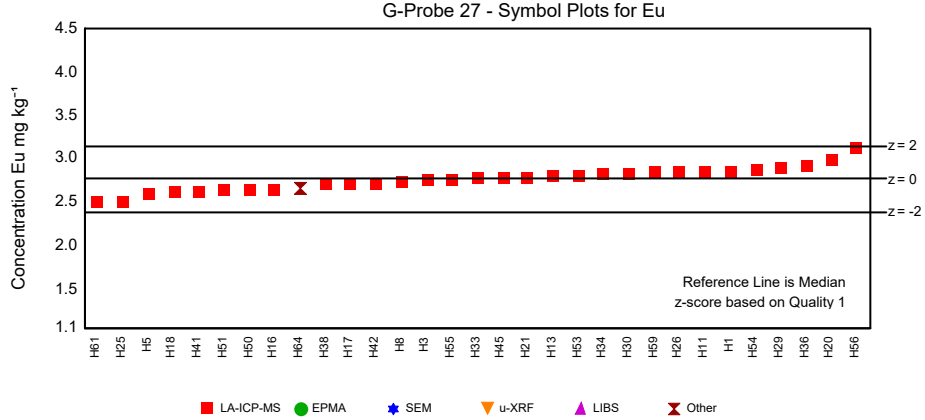

G-Probe 27 - Symbol Plots for Cr
Concentration Cr mg kg⁻¹
658
640
600
560
520
480
440
400
369
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H9 H13 H48 H61 H18 H5 H38 H25 H64 H55 H16 H11 H17 H36 H45 H54 H21 H51 H59 H30 H50 H8 H34 H53 H3 H29 H46 H20 H33 H26 H42 H1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

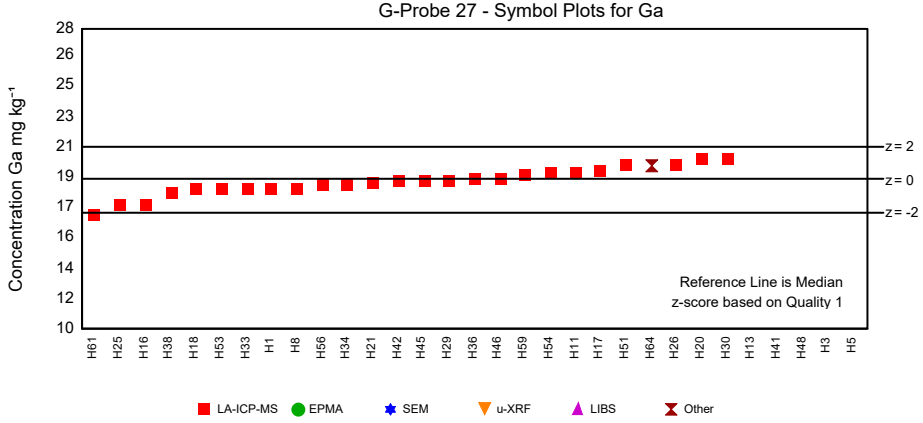

G-Probe 27 - Symbol Plots for Cs
Concentration Cs mg kg⁻¹
1.23
1.05
0.85
0.65
0.45
0.25
0.17
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H3 H25 H41 H8 H16 H1 H13 H18 H33 H54 H21 H29 H34 H5 H51 H11 H38 H17 H56 H45 H30 H20 H53 H59
LA-ICP-MS EPMA SEM u-XRF LIBS Other

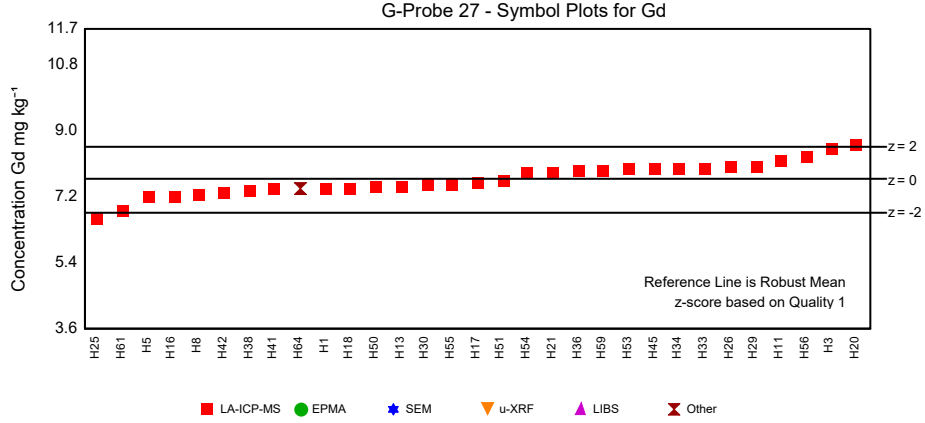

G-Probe 27 - Symbol Plots for Cu
Concentration Cu mg kg⁻¹
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

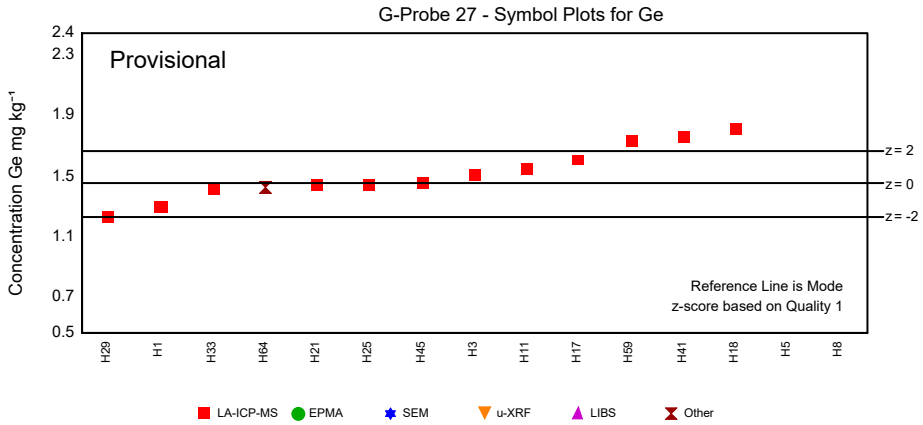

G-Probe 27 - Symbol Plots for Dy
Concentration Dy mg kg⁻¹
8.4
7.8
6.0
4.2
2.4
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

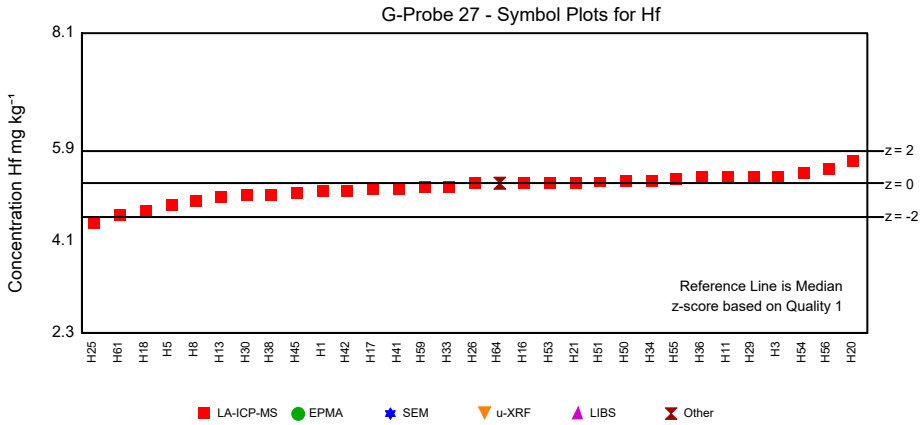

G-Probe 27 - Symbol Plots for Er
Concentration Er mg kg⁻¹
3.9
3.5
3.0
2.5
2.0
1.5
1.0
0.9
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

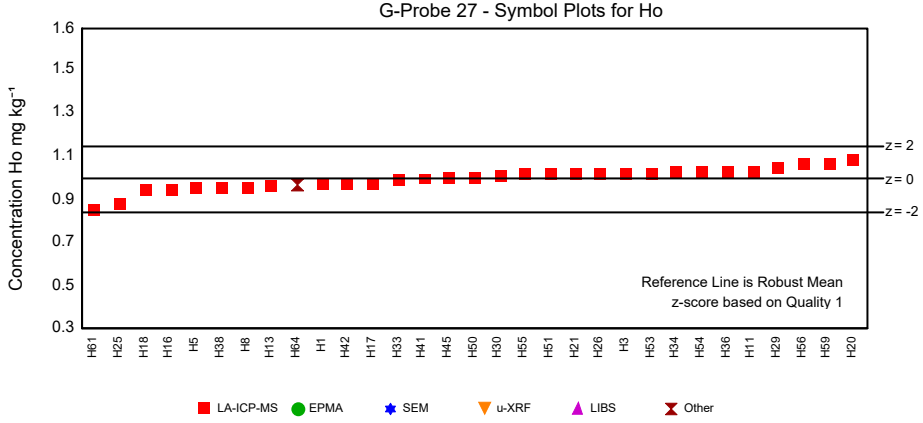

G-Probe 27 - Symbol Plots for Eu
Concentration Eu mg kg⁻¹
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.1
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

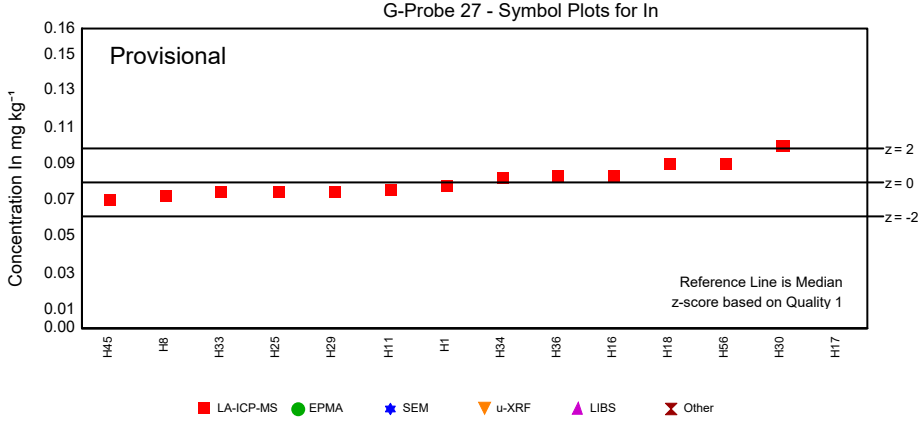

G-Probe 27 - Symbol Plots for Ga
Concentration Ga mg kg⁻¹
28
26
25
23
21
19
17
16
14
12
10
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

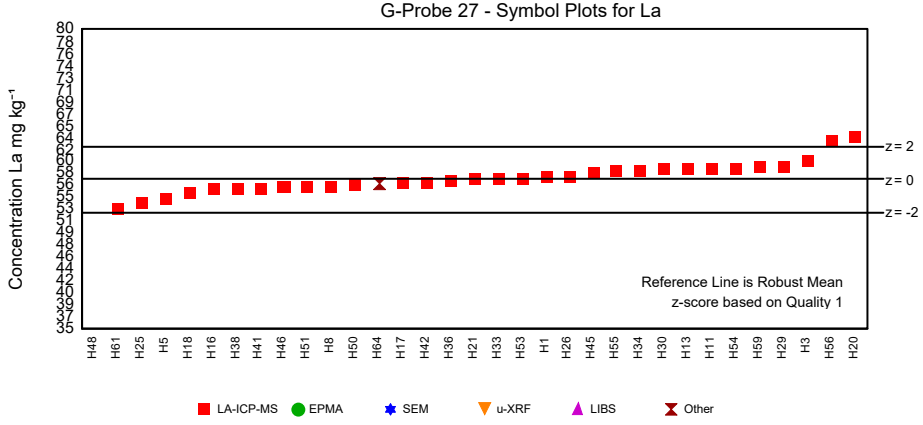

G-Probe 27 - Symbol Plots for Gd
Concentration Gd mg kg⁻¹
11.7
10.8
9.0
7.2
5.4
3.6
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

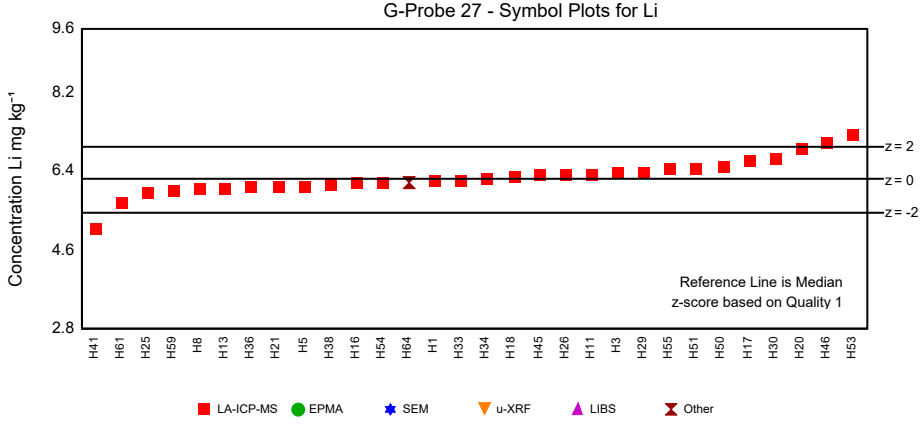

G-Probe 27 - Symbol Plots for Ge
Provisional
Concentration Ge mg kg⁻¹
2.4
2.3
1.9
1.5
1.1
0.7
0.5
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H29 H1 H33 H64 H21 H25 H45 H3 H11 H17 H59 H41 H18 H5 H8
LA-ICP-MS EPMA SEM u-XRF LIBS Other

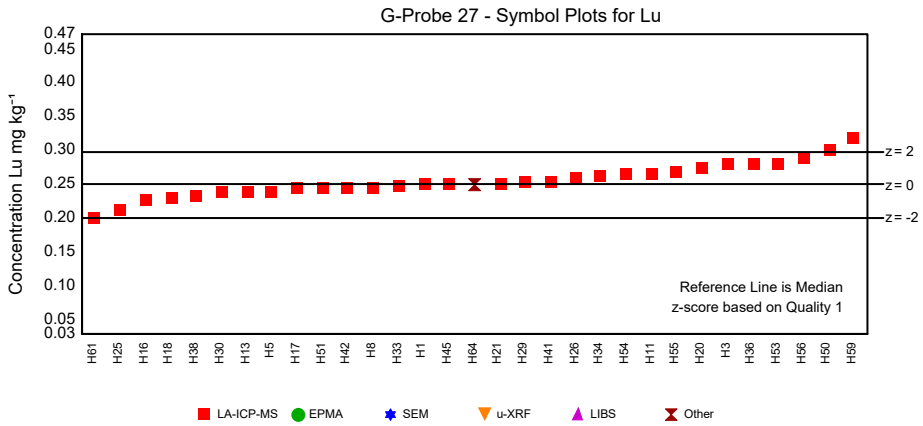

G-Probe 27 - Symbol Plots for Hf
Concentration Hf mg kg⁻¹
8.1
5.9
4.1
2.3
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H25 H61 H18 H5 H8 H13 H30 H38 H45 H1 H42 H17 H41 H59 H33 H26 H64 H16 H53 H21 H51 H50 H34 H55 H36 H11 H29 H3 H54 H56 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

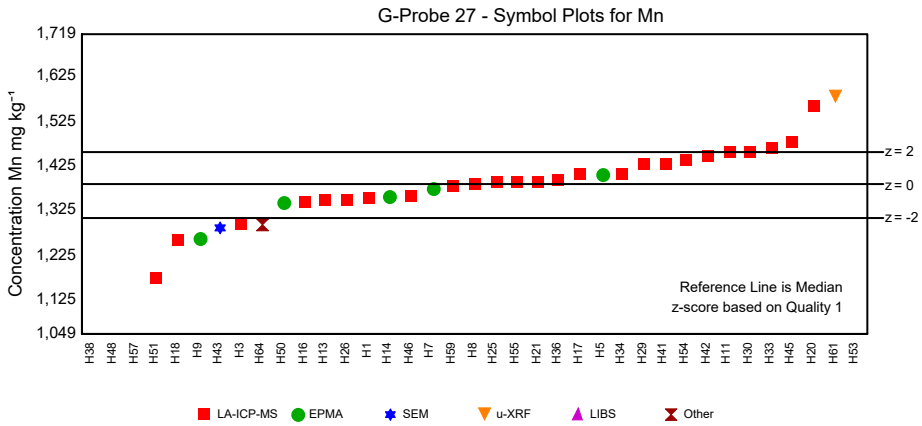

G-Probe 27 - Symbol Plots for Ho
Concentration Ho mg kg⁻¹
1.6
1.5
1.3
1.1
0.9
0.7
0.5
0.3
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H61 H25 H18 H16 H5 H38 H8 H13 H64 H1 H42 H17 H33 H41 H45 H50 H30 H55 H51 H21 H26 H3 H53 H34 H54 H36 H11 H29 H56 H59 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

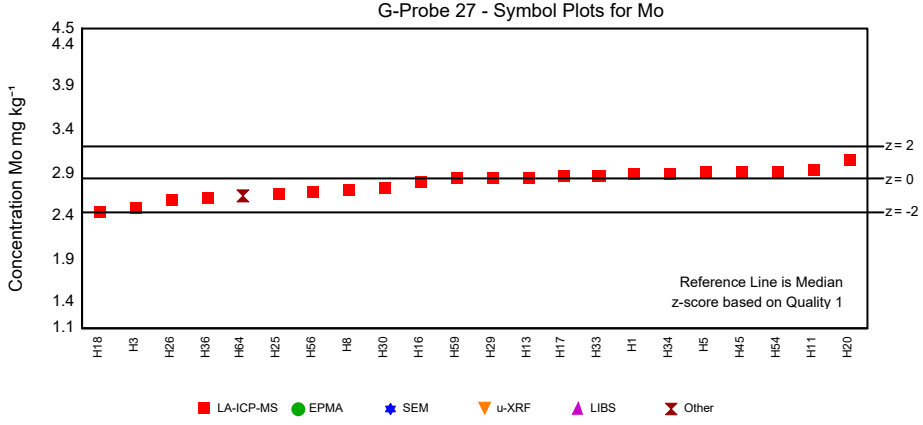

G-Probe 27 - Symbol Plots for In
Provisional
Concentration In mg kg⁻¹
0.16
0.15
0.13
0.11
0.09
0.07
0.05
0.03
0.01
0.00
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H45 H8 H33 H25 H29 H11 H1 H34 H36 H16 H18 H56 H30 H17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

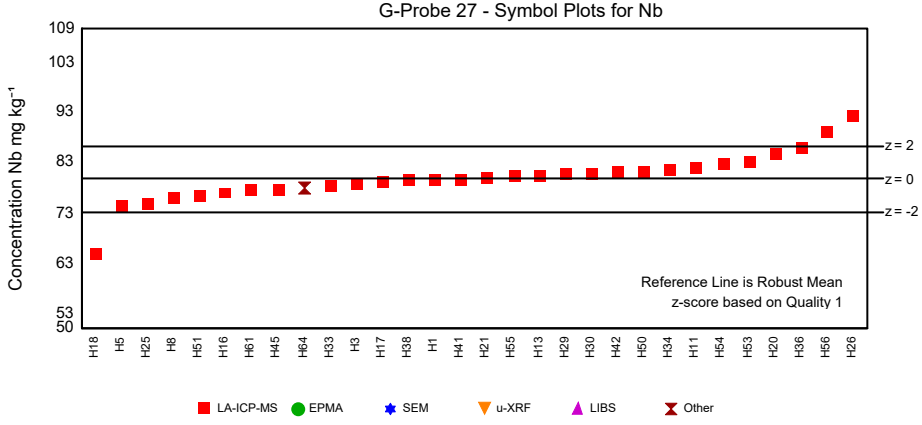

G-Probe 27 - Symbol Plots for La
Concentration La mg kg⁻¹
80
78
76
74
73
71
69
67
65
64
62
60
58
56
55
53
51
49
48
46
44
42
40
39
37
35
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H61 H25 H5 H18 H16 H38 H41 H46 H51 H8 H50 H64 H17 H42 H36 H21 H33 H53 H1 H26 H45 H55 H34 H30 H13 H11 H54 H59 H29 H3 H56 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

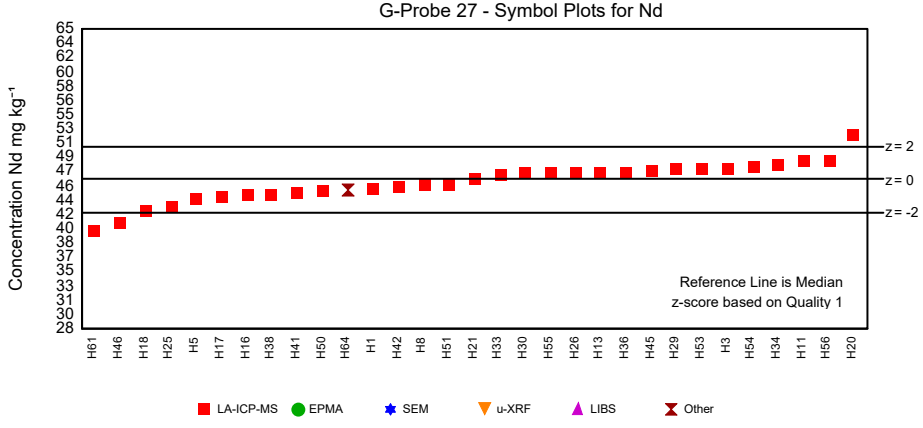

G-Probe 27 - Symbol Plots for Li
Concentration Li mg kg⁻¹
9.6
8.2
6.4
4.6
2.8
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H41 H61 H25 H59 H8 H13 H36 H21 H5 H38 H16 H54 H64 H1 H33 H34 H18 H45 H26 H11 H3 H29 H55 H51 H50 H17 H30 H20 H46 H53
LA-ICP-MS EPMA SEM u-XRF LIBS Other

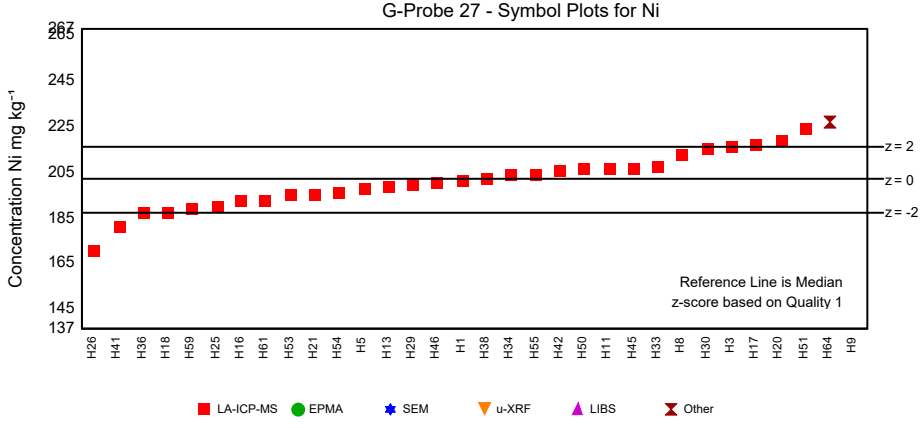

G-Probe 27 - Symbol Plots for Lu
Concentration Lu mg kg⁻¹
0.47
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.03
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H61 H25 H16 H18 H38 H30 H13 H5 H17 H51 H42 H8 H33 H1 H45 H64 H21 H29 H41 H26 H34 H54 H11 H55 H20 H3 H36 H53 H56 H50 H59
LA-ICP-MS EPMA SEM u-XRF LIBS Other

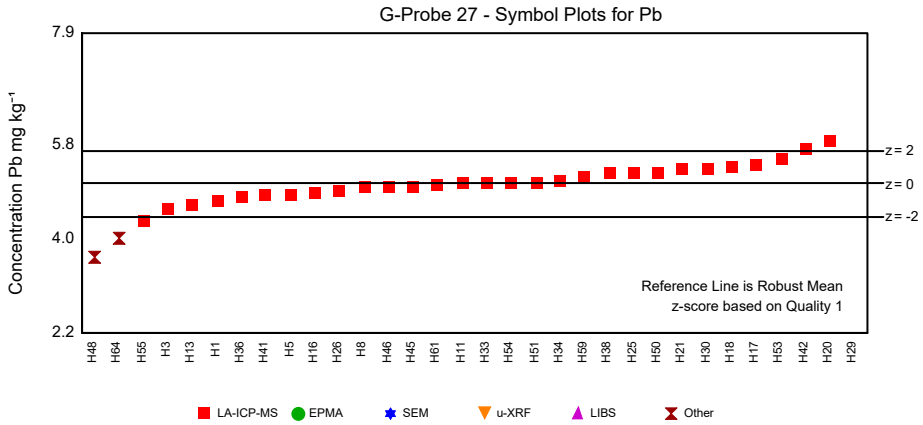

G-Probe 27 - Symbol Plots for Mn
Concentration Mn mg kg⁻¹
1,719
1,625
1,525
1,425
1,325
1,225
1,125
1,049
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H38 H48 H57 H51 H18 H9 H43 H3 H64 H50 H16 H13 H26 H1 H14 H46 H7 H59 H8 H25 H55 H21 H36 H17 H5 H34 H29 H41 H54 H42 H11 H30 H33 H45 H20 H61 H53
LA-ICP-MS EPMA SEM u-XRF LIBS Other

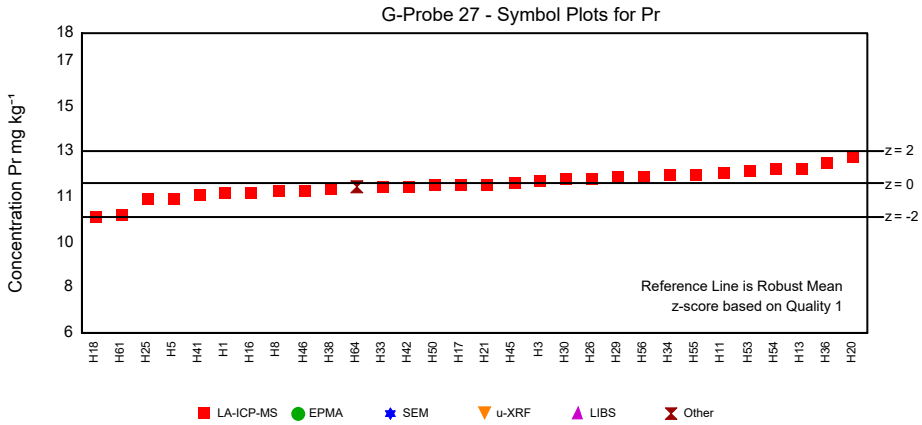

G-Probe 27 - Symbol Plots for Mo
Concentration Mo mg kg⁻¹
4.5
4.4
3.9
3.4
2.9
2.4
1.9
1.4
1.1
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H18 H3 H26 H36 H64 H25 H56 H8 H30 H16 H59 H29 H13 H17 H33 H1 H34 H5 H45 H54 H11 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

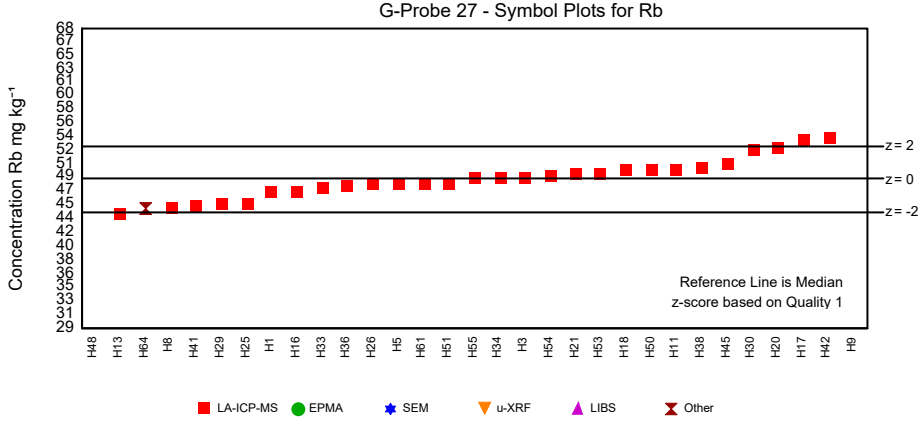

G-Probe 27 - Symbol Plots for Nb
Concentration Nb mg kg⁻¹
109
103
93
83
73
63
53
50
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H18 H5 H25 H8 H51 H16 H61 H45 H64 H33 H3 H17 H38 H1 H41 H21 H55 H13 H29 H30 H42 H50 H34 H11 H54 H53 H20 H36 H56 H26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

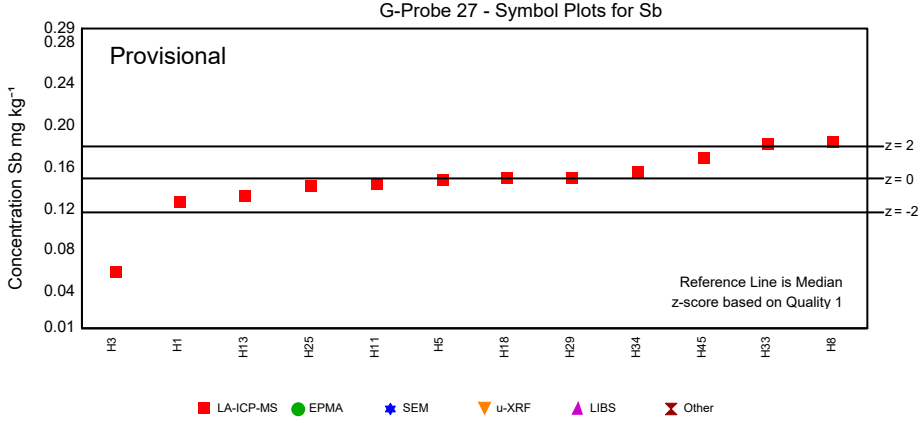

G-Probe 27 - Symbol Plots for Nd
Concentration Nd mg kg⁻¹
65
64
62
60
58
56
55
53
51
49
47
46
44
42
40
38
37
35
33
31
30
28
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H61 H46 H18 H25 H5 H17 H16 H38 H41 H50 H64 H1 H42 H8 H51 H21 H33 H30 H55 H26 H13 H36 H45 H29 H53 H3 H54 H34 H11 H56 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

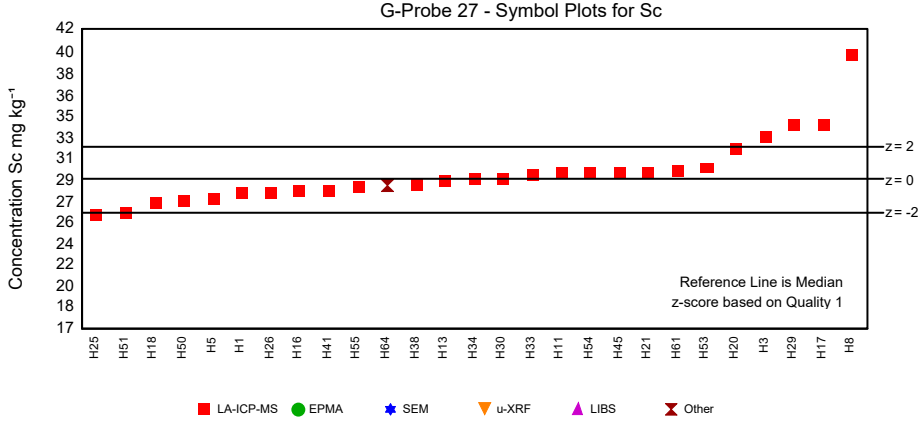

G-Probe 27 - Symbol Plots for Ni
Concentration Ni mg kg⁻¹
267
265
245
225
205
185
165
145
137
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H26 H41 H36 H18 H59 H25 H16 H61 H53 H21 H54 H5 H13 H29 H46 H1 H38 H34 H55 H42 H50 H11 H45 H33 H8 H30 H3 H17 H20 H51 H64 H9
LA-ICP-MS EPMA SEM u-XRF LIBS Other

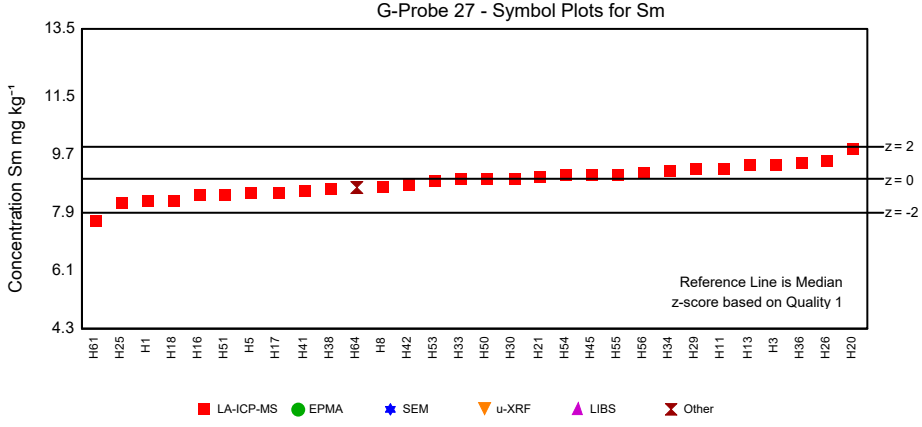

G-Probe 27 - Symbol Plots for Pb
Concentration Pb mg kg⁻¹
7.9
5.8
4.0
2.2
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H64 H55 H3 H13 H1 H36 H41 H5 H16 H26 H8 H46 H45 H61 H11 H33 H54 H51 H34 H59 H38 H25 H50 H21 H30 H18 H17 H53 H42 H20 H29
LA-ICP-MS EPMA SEM u-XRF LIBS Other

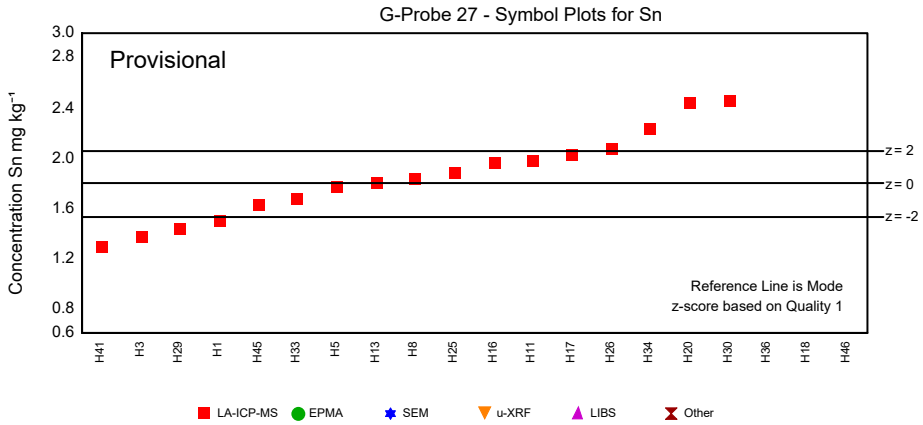

G-Probe 27 - Symbol Plots for Pr
Concentration Pr mg kg⁻¹
18
17
15
13
11
10
8
6
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H18 H61 H25 H5 H41 H1 H16 H8 H46 H38 H64 H33 H42 H50 H17 H21 H45 H3 H30 H26 H29 H56 H34 H55 H11 H53 H54 H13 H36 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

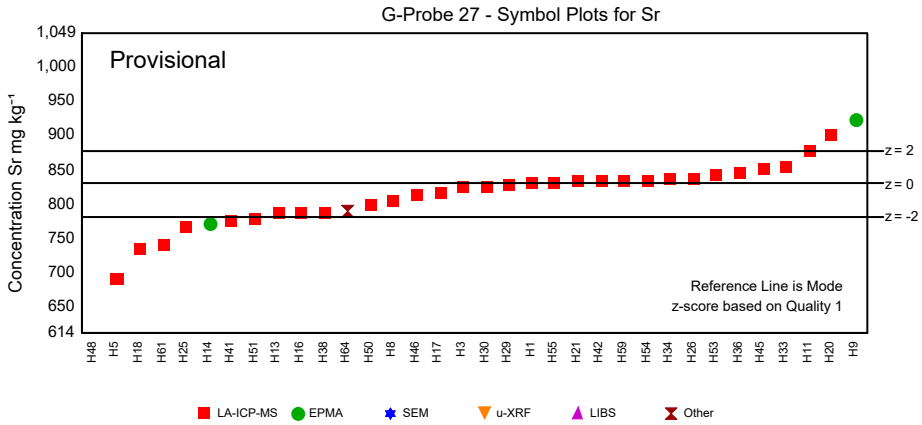

G-Probe 27 - Symbol Plots for Rb
Concentration Rb mg kg⁻¹
68
67
65
63
61
60
58
56
54
52
51
49
47
45
44
42
40
38
36
35
33
31
29
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H48 H13 H64 H8 H41 H29 H25 H1 H16 H33 H36 H26 H5 H61 H51 H55 H34 H3 H54 H21 H53 H18 H50 H11 H38 H45 H30 H20 H17 H42 H9
LA-ICP-MS EPMA SEM u-XRF LIBS Other

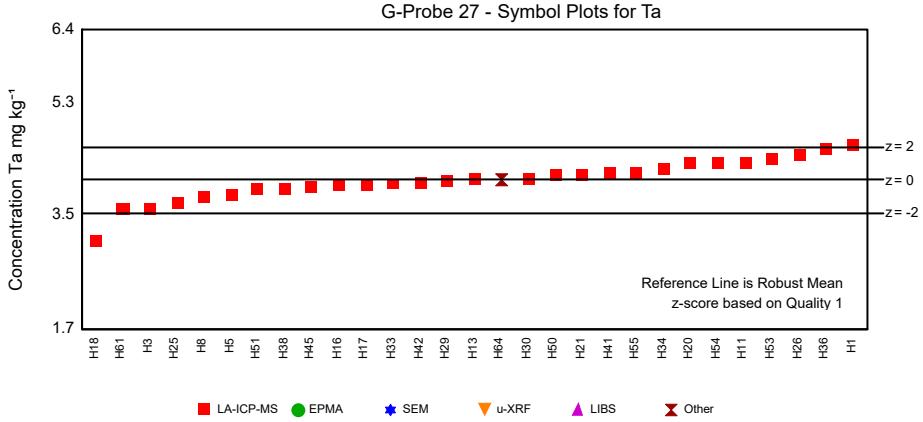

G-Probe 27 - Symbol Plots for Sb
Concentration Sb mg kg⁻¹
Provisional
0.29
0.28
0.24
0.20
0.16
0.12
0.08
0.04
0.01
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H3 H1 H13 H25 H11 H5 H18 H29 H34 H45 H33 H8
LA-ICP-MS EPMA SEM u-XRF LIBS Other

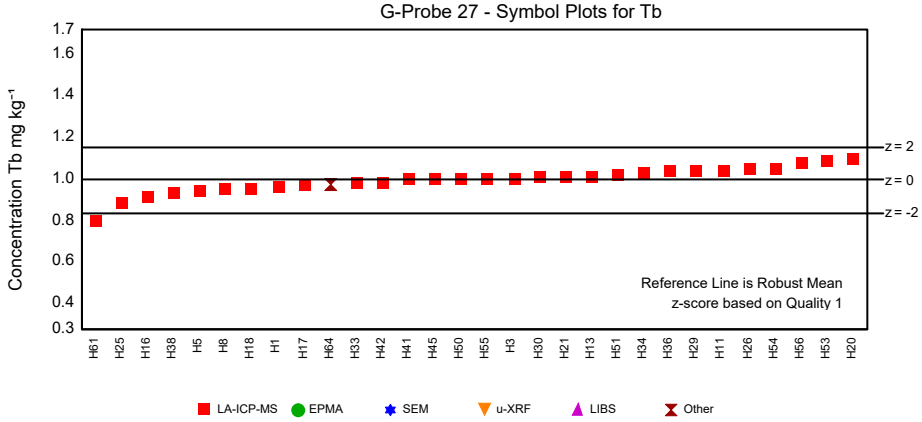

G-Probe 27 - Symbol Plots for Sc
Concentration Sc mg kg⁻¹
42
40
38
36
35
33
31
29
27
26
24
22
20
18
17
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H25 H51 H18 H50 H5 H1 H26 H16 H41 H55 H64 H38 H13 H34 H30 H33 H11 H54 H45 H21 H61 H53 H20 H3 H29 H17 H8
LA-ICP-MS EPMA SEM u-XRF LIBS Other

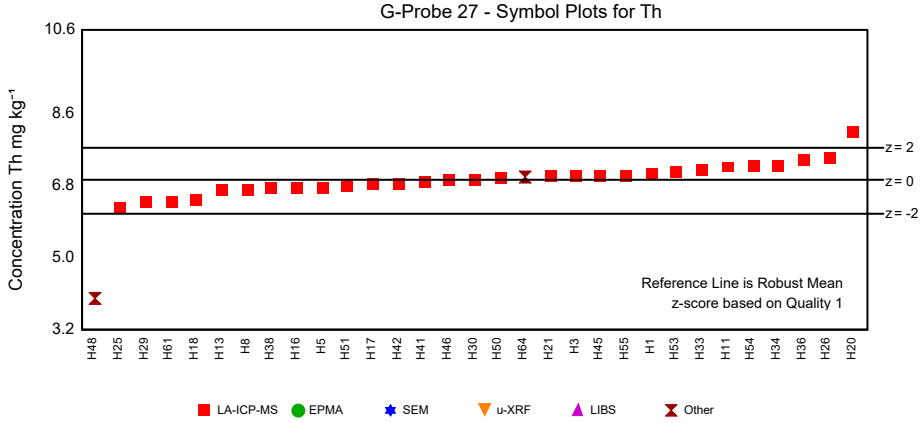

G-Probe 27 - Symbol Plots for Sm
Concentration Sm mg kg⁻¹
13.5
11.5
9.7
7.9
6.1
4.3
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H61 H25 H1 H18 H16 H51 H5 H17 H41 H38 H64 H8 H42 H53 H33 H50 H30 H21 H54 H45 H55 H56 H34 H29 H11 H13 H3 H36 H26 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

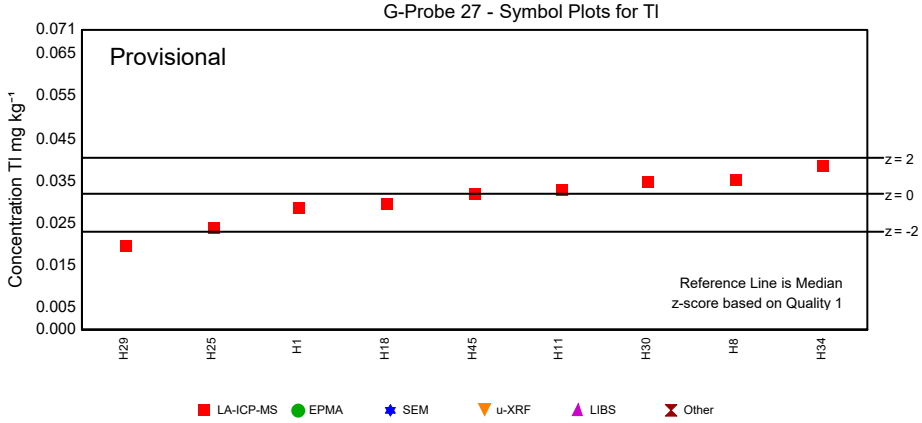

G-Probe 27 - Symbol Plots for Sn
Provisional
Concentration Sn mg kg⁻¹
3.0
2.8
2.4
2.0
1.6
1.2
0.8
0.6
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H41 H3 H29 H1 H45 H33 H5 H13 H8 H25 H16 H11 H17 H26 H34 H20 H30 H36 H18 H46
LA-ICP-MS EPMA SEM u-XRF LIBS Other

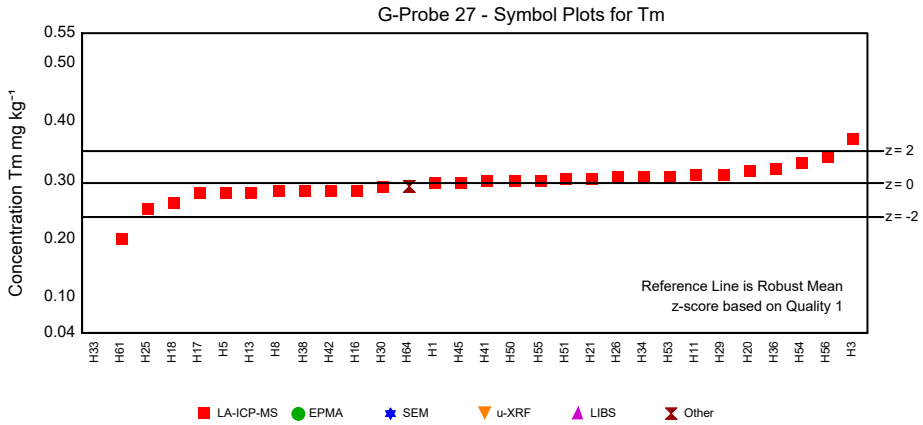

G-Probe 27 - Symbol Plots for Sr
Provisional
Concentration Sr mg kg⁻¹
1,049
1,000
950
900
850
800
750
700
650
614
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
H48 H5 H18 H61 H25 H14 H41 H51 H13 H16 H38 H64 H50 H8 H46 H17 H3 H30 H29 H1 H55 H21 H42 H59 H54 H34 H26 H53 H36 H45 H33 H11 H20 H9
LA-ICP-MS EPMA SEM u-XRF LIBS Other

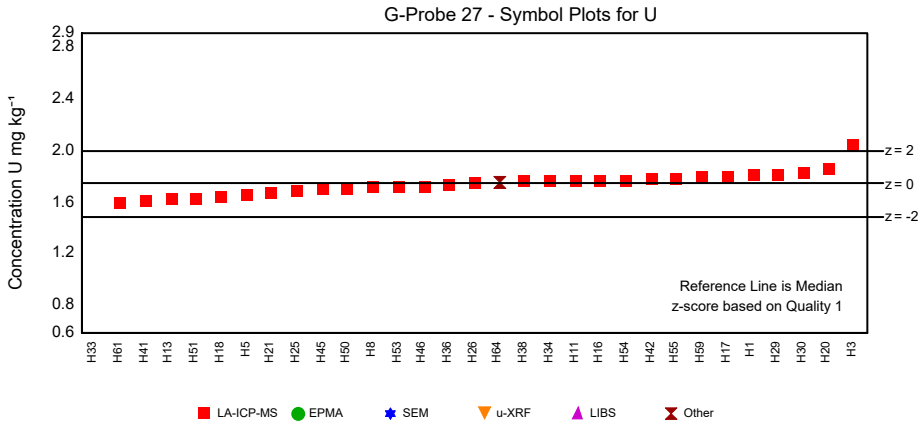

G-Probe 27 - Symbol Plots for Ta
Concentration Ta mg kg⁻¹
6.4
5.3
3.5
1.7
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H18 H61 H3 H25 H8 H5 H51 H38 H45 H16 H17 H33 H42 H29 H13 H64 H30 H50 H21 H41 H55 H34 H20 H54 H11 H53 H26 H36 H1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

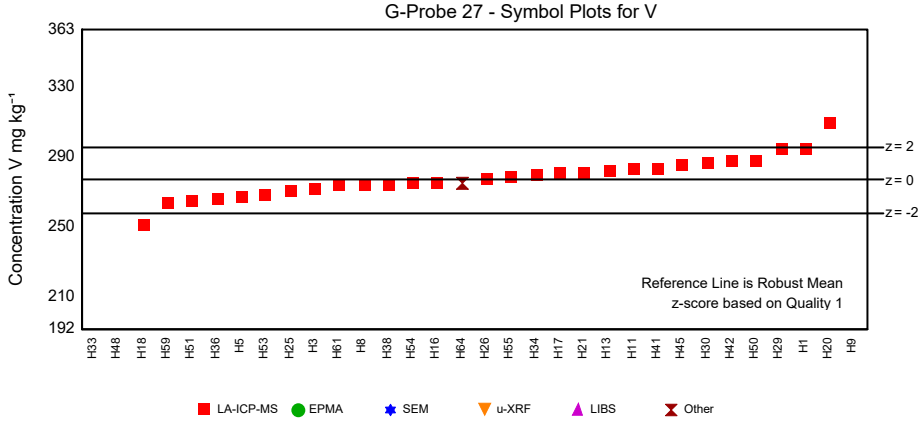

G-Probe 27 - Symbol Plots for Tb
Concentration Tb mg kg⁻¹
1.7
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.3
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H61 H25 H16 H38 H5 H8 H18 H1 H17 H64 H33 H42 H41 H45 H50 H55 H3 H30 H21 H13 H51 H34 H36 H29 H11 H26 H54 H56 H53 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

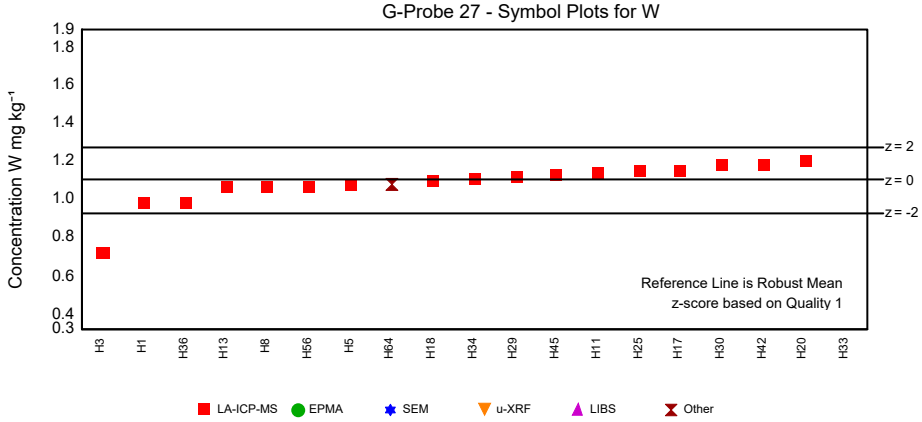

G-Probe 27 - Symbol Plots for Th
Concentration Th mg kg⁻¹
10.6
8.6
6.8
5.0
3.2
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H48 H25 H29 H61 H18 H13 H8 H38 H16 H5 H51 H17 H42 H41 H46 H30 H50 H64 H21 H3 H45 H55 H1 H53 H33 H11 H54 H34 H36 H26 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

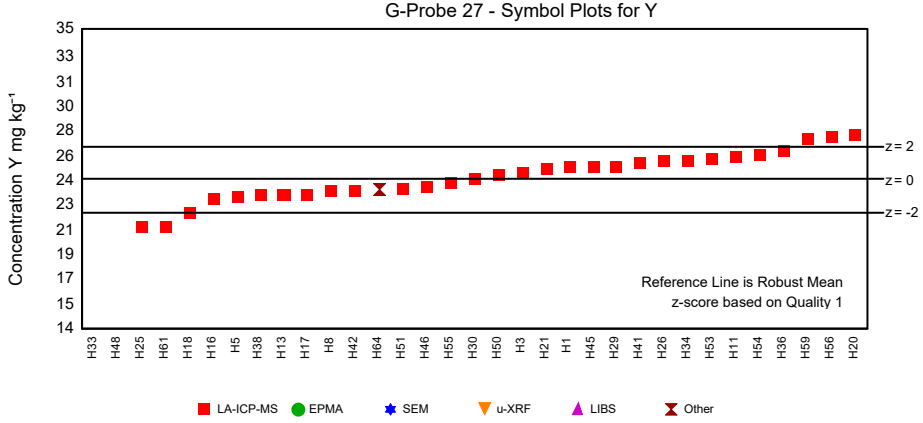

G-Probe 27 - Symbol Plots for Tl
Provisional
Concentration Tl mg kg⁻¹
0.071
0.065
0.055
0.045
0.035
0.025
0.015
0.005
0.000
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H29 H25 H1 H18 H45 H11 H30 H8 H34
LA-ICP-MS EPMA SEM u-XRF LIBS Other

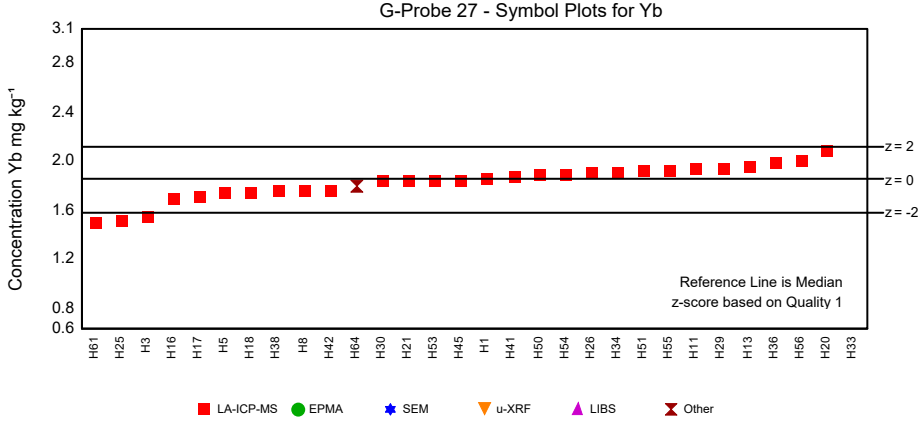

G-Probe 27 - Symbol Plots for Tm
Concentration Tm mg kg⁻¹
0.55
0.50
0.40
0.30
0.20
0.10
0.04
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H33 H61 H25 H18 H17 H5 H13 H8 H38 H42 H16 H30 H64 H1 H45 H41 H50 H55 H51 H21 H26 H34 H53 H11 H29 H20 H36 H54 H56 H3
LA-ICP-MS EPMA SEM u-XRF LIBS Other

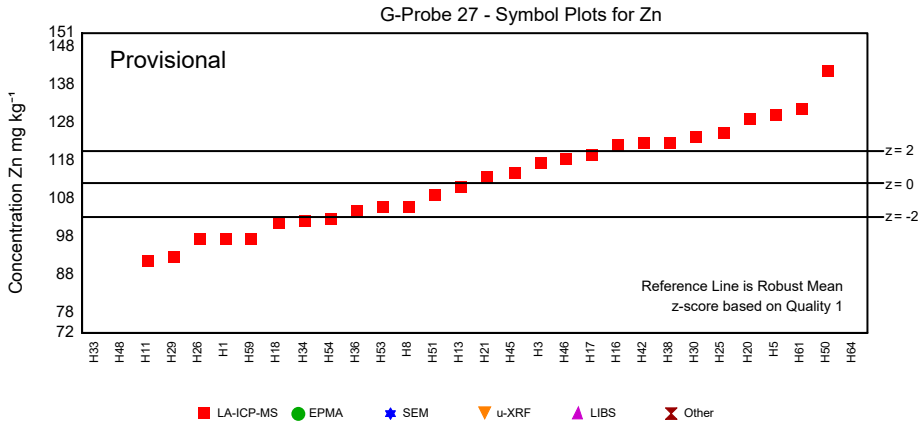

G-Probe 27 - Symbol Plots for U
Concentration U mg kg⁻¹
2.9
2.8
2.4
2.0
1.6
1.2
0.8
0.6
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H33 H61 H41 H13 H51 H18 H5 H21 H25 H45 H50 H8 H53 H46 H36 H26 H64 H38 H34 H11 H16 H54 H42 H55 H59 H17 H1 H29 H30 H20 H3
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 27 - Symbol Plots for V
Concentration V mg kg⁻¹
363
330
290
250
210
192
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H33 H48 H18 H59 H51 H36 H5 H53 H25 H3 H61 H8 H38 H54 H16 H64 H26 H55 H34 H17 H21 H13 H11 H41 H45 H30 H42 H50 H29 H1 H20 H9
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 27 - Symbol Plots for W
Concentration W mg kg⁻¹
1.9
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.3
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H3 H1 H36 H13 H8 H56 H5 H64 H18 H34 H29 H45 H11 H25 H17 H30 H42 H20 H33
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 27 - Symbol Plots for Y
Concentration Y mg kg⁻¹
35
33
31
30
28
26
24
23
21
19
17
15
14
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
H33 H48 H25 H61 H18 H16 H5 H38 H13 H17 H8 H42 H64 H51 H46 H55 H30 H50 H3 H21 H1 H45 H29 H41 H26 H34 H53 H11 H54 H36 H59 H56 H20
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 27 - Symbol Plots for Yb
Concentration Yb mg kg⁻¹
3.1
2.8
2.4
2.0
1.6
1.2
0.8
0.6
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
H61 H25 H3 H16 H17 H5 H18 H38 H8 H42 H64 H30 H21 H53 H45 H1 H41 H50 H54 H26 H34 H51 H55 H11 H29 H13 H36 H56 H20 H33
LA-ICP-MS EPMA SEM u-XRF LIBS Other



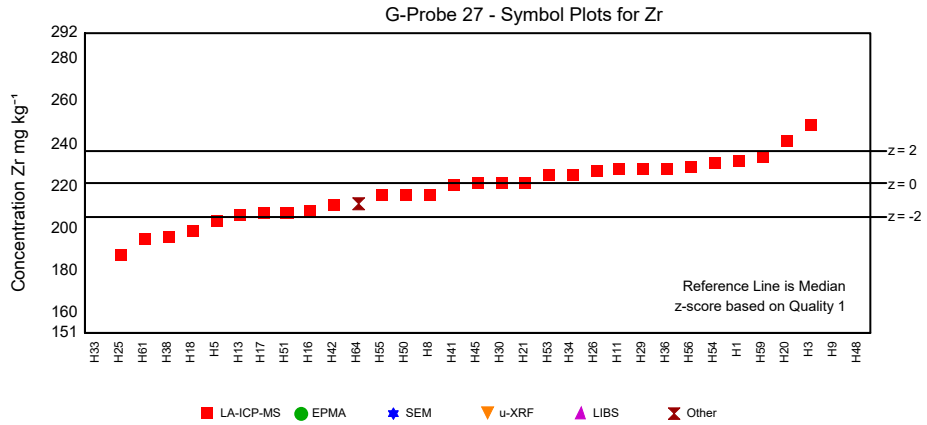


Figure 1: G-Probe 27 - Basanite, BOOS-1G Glass. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 where the z-score is derived according to the Quality specified.

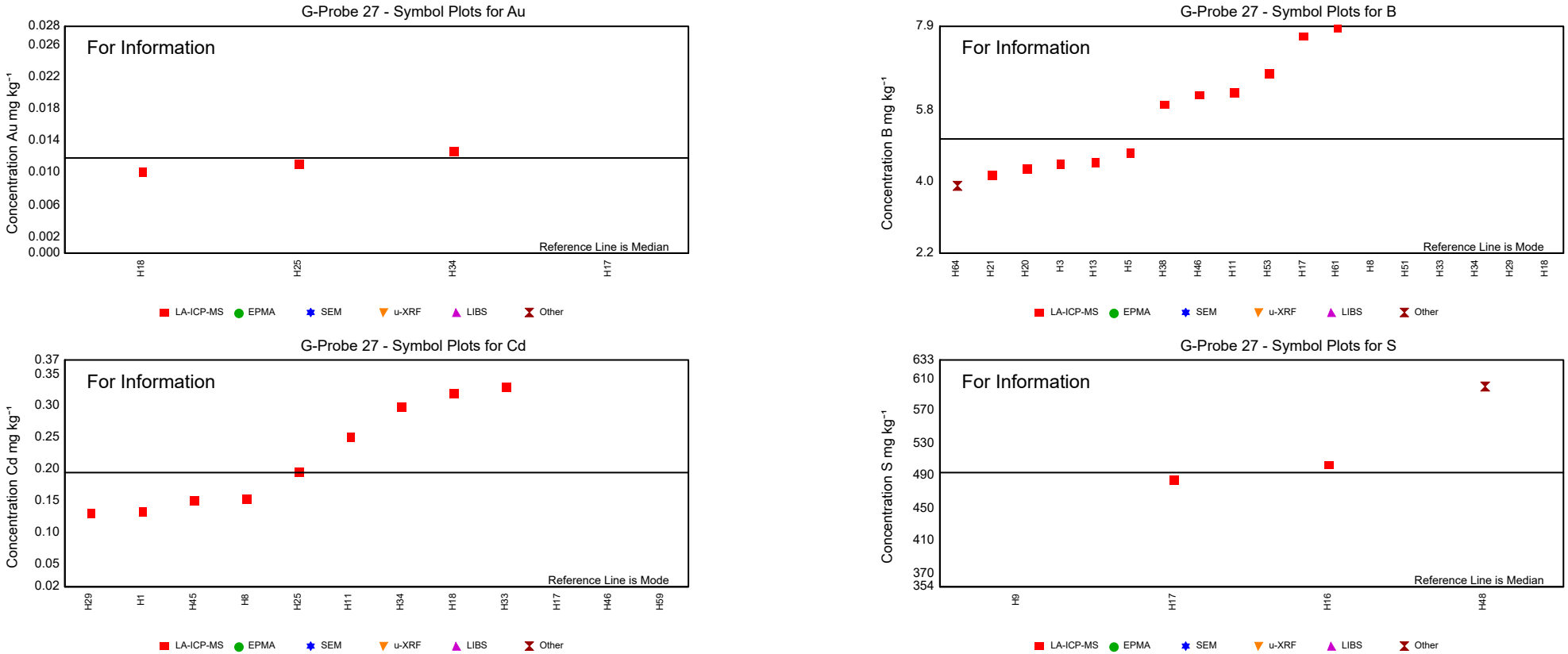
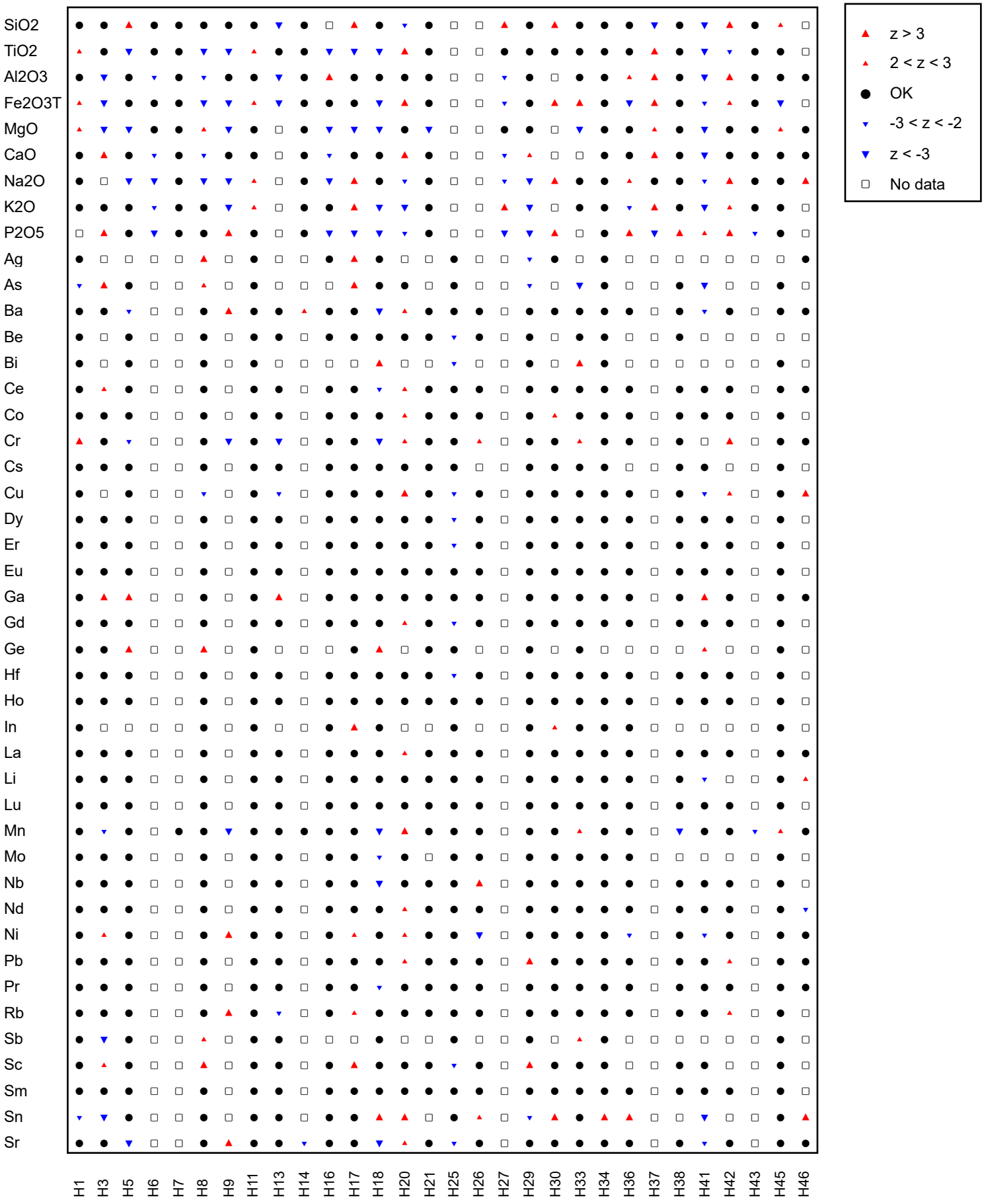


Figure 2: G-Probe 27 - Basanite, BOOS-1G Glass. Data distribution charts provided for information only for elements for which values could not be credited with assigned or provisional status.

Multiple Z-Score Chart for G-Probe 27



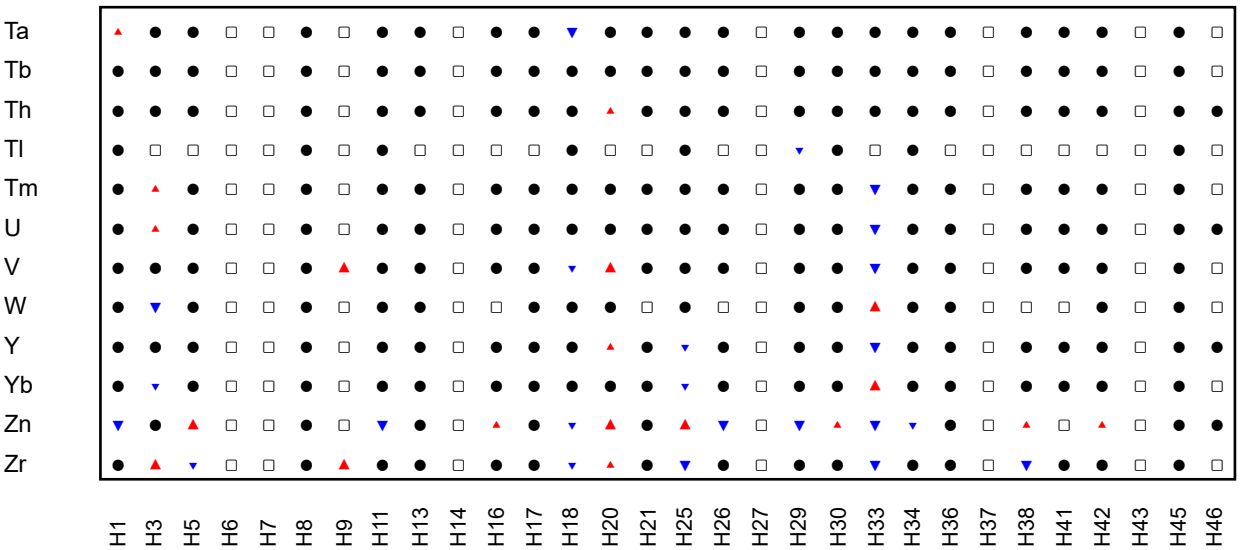
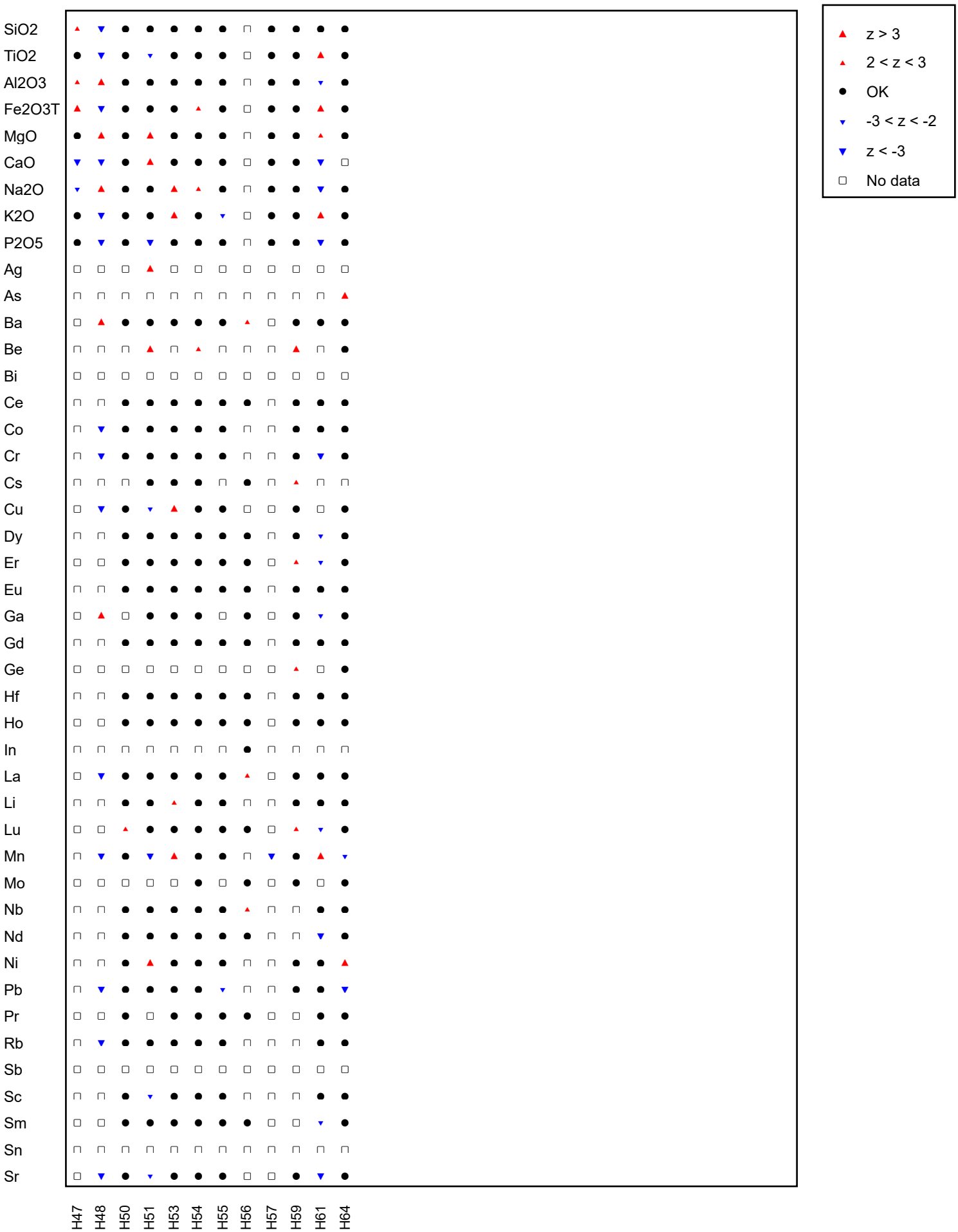


Figure 3: G-Probe 27 - Basanite, BOOS-1G Glass. Multiple z-score charts for laboratories participating in the G-Probe 27 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for G-Probe 27



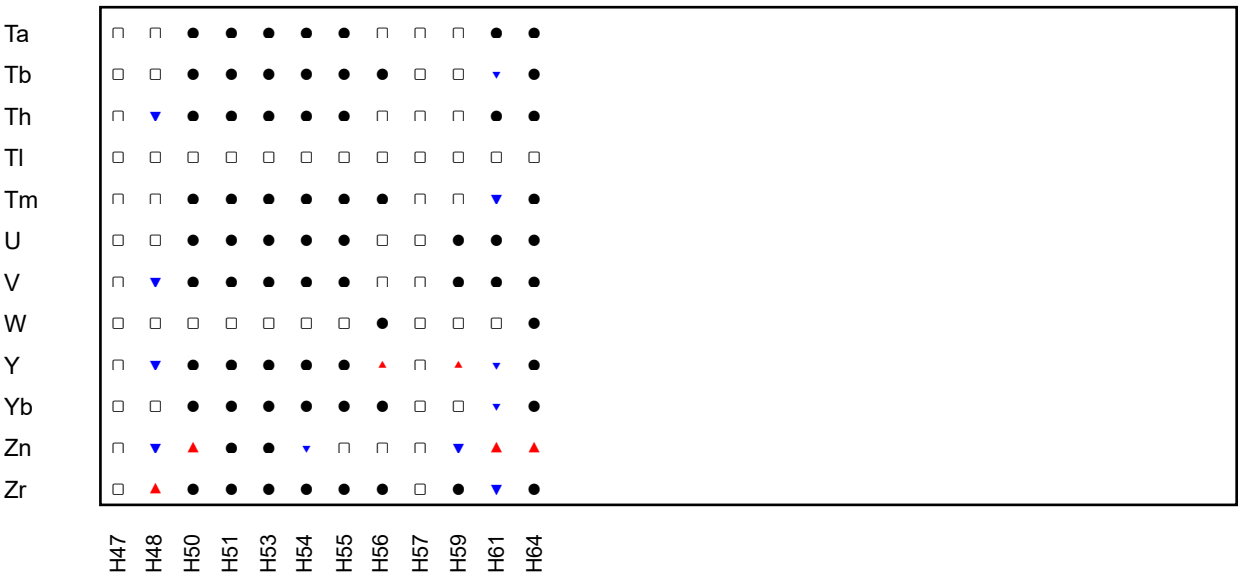


Figure 3: G-Probe 27 - Basanite, BOOS-1G Glass. Multiple z-score charts for laboratories participating in the G-Probe 27 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).