



Fig. S1

Table S1

depth [m]	Qtz	Pl	Kfs	Opx	background
29	8.7	12.7	10.4	2.4	65.8
56	8.2	13.0	8.8	2.2	67.8
76	6.3	15.8	10.3	2.2	65.4
102	9.2	15.3	10.6	2.7	62.2
128	6.9	14.2	15.8	2.6	60.5
155	9.0	8.3	13.6	2.9	66.2
175	8.9	14.1	15.4	3.3	58.3
197	8.6	11.4	16.2	3.8	60.0
201	10.4	13.4	8.9	3.5	63.8
225	9.9	12.3	12.4	2.6	62.8
245	13.4	11.7	9.9	3.6	61.4
281	7.8	7.4	17.6	2.2	65.0
304	8.9	14.3	10.4	1.9	64.5
357	7.0	10.2	18.2	1.8	62.8
378	8.6	8.8	9.7	3.6	69.3
400	9.2	11.2	13.5	4.5	61.6
452	8.2	10.4	12.4	2.0	67.0
481	8.9	13.5	11.3	4.2	62.1
29	<i>9.9</i>	<i>13.7</i>	<i>8.8</i>	<i>2.0</i>	<i>65.6</i>
56	<i>7.2</i>	<i>13.8</i>	<i>7.2</i>	<i>3.1</i>	<i>68.7</i>
76	<i>5.7</i>	<i>12.7</i>	<i>12.3</i>	<i>2.6</i>	<i>66.7</i>
102	<i>30.8</i>	<i>13.0</i>	<i>8.2</i>	<i>0.9</i>	<i>47.1</i>
128	<i>6.0</i>	<i>9.1</i>	<i>11.5</i>	<i>4.3</i>	<i>69.1</i>
155	<i>12.2</i>	<i>8.7</i>	<i>11.7</i>	<i>3.0</i>	<i>64.4</i>
175	<i>5.5</i>	<i>10.6</i>	<i>17.5</i>	<i>3.7</i>	<i>62.7</i>
197	<i>8.3</i>	<i>10.5</i>	<i>12.0</i>	<i>3.9</i>	<i>65.3</i>
201	<i>8.7</i>	<i>12.7</i>	<i>7.4</i>	<i>3.0</i>	<i>68.2</i>
225	<i>11.6</i>	<i>6.9</i>	<i>15.0</i>	<i>2.5</i>	<i>64.0</i>
245	<i>11.3</i>	<i>9.7</i>	<i>8.6</i>	<i>3.9</i>	<i>66.5</i>

Table S2: Reference materials (RM) and preparation duplicates (PD) of analysed rhyolite samples

Method	Analyte	Unit	MDL	LA 430	LA 430	LA 304	LA 304	STD SO-18	STD SO-18	BLK	QUARTZ	QUARTZ	QUARTZ
				PD Rock	PD REP	PD Rock	PD DUP	RM STD	RM STD	RM BLK	RM Prep Blank	RM Prep Blank	RM Prep Blank
WGHT	Wgt	KG	0.01	0.19		0.12							
LF200	SiO <sub>2</sub>	%	0.01	72.32	72.26	72.23	72.13	58.14	58.13	0.02	98.86	98.64	98.86
LF200	Al <sub>2</sub> O <sub>3</sub>	%	0.01	13.31	13.31	13.07	13.24	14.22	14.10	<0.01	0.50	0.55	0.50
LF200	Fe <sub>2</sub> O <sub>3</sub>	%	0.04	2.19	2.17	2.52	2.53	7.62	7.57	<0.04	0.32	0.28	0.32
LF200	MgO	%	0.01	1.02	1.00	0.59	0.61	3.38	3.41	<0.01	0.03	0.04	0.03
LF200	CaO	%	0.01	0.64	0.64	0.75	0.85	6.34	6.37	<0.01	0.01	<0.01	0.01
LF200	Na <sub>2</sub> O	%	0.01	2.77	2.76	2.42	2.40	3.59	3.65	<0.01	<0.01	<0.01	<0.01
LF200	K <sub>2</sub> O	%	0.01	5.75	5.85	5.91	5.74	2.14	2.20	<0.01	0.04	0.08	0.04
LF200	TiO <sub>2</sub>	%	0.01	0.21	0.21	0.21	0.21	0.68	0.69	<0.01	0.08	0.10	0.08
LF200	P <sub>2</sub> O <sub>5</sub>	%	0.01	0.06	0.06	0.06	0.06	0.78	0.79	<0.01	<0.01	0.01	<0.01
LF200	MnO	%	0.01	0.02	0.02	0.02	0.02	0.39	0.39	<0.01	<0.01	<0.01	<0.01
LF200	Cr <sub>2</sub> O <sub>3</sub>	%	0.002	<0.002	<0.002	<0.002	<0.002	0.542	0.543	<0.002	0.003	0.003	0.003
LF200	Ni	ppm	20	<20	<20	<20	<20	50	46	<20	<20	<20	<20
LF200	Sc	ppm	1	6	6	6	5	24	24	<1	<1	<1	<1
LF200	LOI	%	-5.1	1.6	1.6	2.1	2.1	1.9	1.9	0.0	0.2	0.3	0.2
LF200	Sum	%	0.01	99.86	99.86	99.88	99.89	99.73	99.74	<0.01	99.99	99.99	99.99
LF200	Ba	ppm	1	555	542	422	407	533	518	<1	13	15	13
LF200	Be	ppm	1	1	2	3	2	<1	<1	<1	<1	<1	<1
LF200	Co	ppm	0.2	1.7	1.5	2.5	2.2	26.1	26.7	<0.2	0.3	0.2	0.3
LF200	Cs	ppm	0.1	11.2	10.4	3.1	3.3	7.4	7.1	<0.1	0.2	<0.1	0.2
LF200	Ga	ppm	0.5	19.3	17.7	18.4	19.0	17.3	17.3	<0.5	<0.5	0.9	<0.5
LF200	Hf	ppm	0.1	5.7	5.3	5.5	5.5	9.4	9.5	<0.1	4.3	5.2	4.3
LF200	Nb	ppm	0.1	19.5	17.7	18.4	18.4	18.8	20.3	0.2	1.8	2.2	1.8
LF200	Rb	ppm	0.1	259.4	262.1	229.0	227.2	27.4	27.8	0.1	3.2	3.4	3.2
LF200	Sn	ppm	1	8	7	5	6	14	14	<1	<1	<1	<1
LF200	Sr	ppm	0.5	40.5	40.7	23.1	22.9	379.3	375.2	<0.5	12.2	11.8	12.2
LF200	Ta	ppm	0.1	1.5	1.4	1.7	1.3	7.1	6.5	<0.1	0.1	0.1	0.1
LF200	Th	ppm	0.2	17.7	17.7	18.2	17.6	9.3	9.4	<0.2	1.2	1.5	1.2
LF200	U	ppm	0.1	4.7	4.8	4.4	4.3	14.8	15.0	<0.1	0.4	0.3	0.4
LF200	V	ppm	8	15	32	24	15	211	202	<8	<8	<8	<8

LF200	W	ppm	0.5	3.3	4.5	1.5	2.0	14.8	15.3	<0.5	<0.5	<0.5	<0.5
LF200	Zr	ppm	0.1	183.9	179.5	187.0	200.1	294.0	295.0	0.2	178.3	212.4	178.3
LF200	Y	ppm	0.1	33.0	31.8	39.2	38.5	30.2	30.7	<0.1	3.2	3.4	3.2
LF200	La	ppm	0.1	50.1	52.2	52.1	47.9	13.5	13.2	<0.1	8.4	7.9	8.4
LF200	Ce	ppm	0.1	105.6	105.1	107.3	101.2	25.7	26.8	<0.1	17.0	17.3	17.0
LF200	Pr	ppm	0.02	12.20	12.07	12.58	11.61	3.22	3.29	<0.02	1.83	1.88	1.83
LF200	Nd	ppm	0.3	42.2	42.9	44.6	42.6	13.6	13.7	<0.3	6.9	6.6	6.9
LF200	Sm	ppm	0.05	7.74	7.80	8.25	7.51	2.93	2.66	<0.05	0.98	0.99	0.98
LF200	Eu	ppm	0.02	0.70	0.74	0.86	0.85	0.78	0.83	<0.02	0.15	0.16	0.15
LF200	Gd	ppm	0.05	6.56	6.47	7.50	7.08	2.84	2.97	<0.05	0.67	0.75	0.67
LF200	Tb	ppm	0.01	1.02	1.02	1.18	1.19	0.47	0.46	<0.01	0.11	0.11	0.11
LF200	Dy	ppm	0.05	5.80	5.83	7.03	6.92	2.81	3.14	<0.05	0.52	0.62	0.52
LF200	Ho	ppm	0.02	1.11	1.10	1.34	1.34	0.53	0.59	<0.02	0.10	0.11	0.10
LF200	Er	ppm	0.03	3.19	3.29	3.99	3.95	1.72	1.76	<0.03	0.38	0.38	0.38
LF200	Tm	ppm	0.01	0.50	0.46	0.61	0.56	0.27	0.24	<0.01	0.05	0.05	0.05
LF200	Yb	ppm	0.05	2.96	2.97	3.66	3.63	1.69	1.76	<0.05	0.33	0.35	0.33
LF200	Lu	ppm	0.01	0.46	0.44	0.54	0.52	0.27	0.26	<0.01	0.05	0.07	0.05
TC000	TOT/C	%	0.02	0.11		0.14	0.16				<0.02	<0.02	<0.02
TC000	TOT/S	%	0.02	<0.02		<0.02	<0.02				<0.02	<0.02	<0.02
AQ200	Mo	ppm	0.1	0.6		0.5	0.6				0.5	0.3	0.5
AQ200	Cu	ppm	0.1	5.1		3.0	5.8				3.6	3.5	3.6
AQ200	Pb	ppm	0.1	6.0		2.4	2.6				1.9	1.7	1.9
AQ200	Zn	ppm	1	13		39	48			3	6		3
AQ200	Ni	ppm	0.1	2.4		2.8	4.1			1.2	1.6		1.2
AQ200	As	ppm	0.5	1.1		1.1	1.4			1.3	1.0		1.3