

Table C3: Continued

Sample Analysis #	DRS_3_9_4_1	DRS_3_9_4_4	DRS_3_9_4_5	DRS_3_9_4_6	DRS_3_9_4_8	DRS_3_9_4_9
Trace element concentrations (µg/g)						
Li	23.4	10.5	29.0	25.2	18.9	19.3
Si	275927	275148	278957	266350	258608	284604
Ca	60717	61693	56856	72271	80894	49399
Ti	78	239	97	165	127	53
V		0.8		1.0		0.4
Rb		1.2	1.1	1.2	1.1	1.2
Sr	1051	529	925	906	1069	851
Sr	1081	535	958	937	1104	878
Y		0.3				
Zr						
Nb						
Cs						
Ba	78	172	112	56	45	122
La	2.3	4.4	2.4	1.3	1.6	4.3
Ce	4.0	8.7	3.5	2.7	2.8	7.1
Pr	0.4	0.8	0.3	0.2	0.3	0.7
Nd	0.9	2.6	0.7	0.7	0.7	1.6
Sm						
Eu	0.7	1.3	0.8	0.5	0.5	1.2
Pb	2.8	4.8	2.7	1.7	1.4	5.6
Th						
U						

Table C3: Continued

Sample Analysis #	DRS_3_9_4_10	DRS_3_9_4_11	DRS_3_9_4_12	DRS_3_9_4_13	DRS_3_9_4_16	DRS_3_9_4_19	DRS_3_9_4_21
Trace element concentrations (µg/g)							
Li	26.7	28.0	24.2	26.4	20.3	17.2	22.6
Si	276647	284348	264573	283353	265713	275973	271513
Ca	59808	49745	74307	51081	73005	60659	66165
Ti	91	64	112	186	101	181	214
V				0.8			0.9
Rb		1.3		52.1		1.0	6.2
Sr	931	796	996	585	1130	822	734
Sr	965	822	1029	600	1160	853	760
Y	0.2	0.2		0.9		0.3	0.4
Zr				12.5			5.7
Nb				0.5			0.3
Cs							
Ba	118	121	44	135	66	130	86
La	4.3	4.3	1.3	4.6	2.0	2.9	2.1
Ce	7.3	6.8	2.2	8.2	3.3	4.6	3.8
Pr	0.7	0.5	0.2	0.7	0.3	0.4	0.4
Nd	2.0	1.7	0.9	2.4	1.0	1.3	1.3
Sm		0.2		0.3			
Eu	1.0	1.0	0.5	1.0	0.5	0.9	0.6
Pb	3.5	4.7	2.6	5.9	2.0	2.7	2.6
Th				0.3			0.2
U				0.2			0.1

Table C3: Continued

Sample Analysis #	DRS_3_9_4_22	DRS_3_9_4_24	DRS_3_9_4_27	DRS_3_9_4_31	DRS_3_9_4_32	DRS_3_9_4_33	DRS_3_9_4_34
Trace element concentrations (µg/g)							
Li	28.0	26.1	16.2	24.1	20.9	25.1	18.0
Si	278046	280238	267135	280211	280863	271158	271078
Ca	58028	55195	71362	55231	54377	66594	66690
Ti	77	56	131	182	116	105	107
V				0.6			
Rb	1.5	1.1	1.2				1.1
Sr	987	1015	937	780	826	1085	991
Sr	1015	1064	967	805	854	1127	1019
Y	0.3			0.3			
Zr			0.7				
Nb							
Cs							
Ba	79	111	59	135	120	67	51
La	2.6	4.0	1.6	3.1	3.3	1.9	1.6
Ce	4.5	6.3	2.9	5.3	5.4	3.2	3.1
Pr	0.4	0.5	0.3	0.5	0.4	0.3	0.3
Nd	1.4	1.5	0.8	1.5	1.4	0.9	1.0
Sm							
Eu	0.7	0.9	0.6	1.0	0.8	0.6	0.5
Pb	3.3	3.9	2.2	2.6	3.1	2.0	1.6
Th							
U							

Table C3: Continued

Sample	SH303-1g	SH303-1g	SH303-1g	SH303-1g	SH303-1g	SH303-1g	SH303-1g	SH303-1g
Analysis #	26	27	28	30	32	33	34	
Trace element concentrations (µg/g)								
Li	23.3	21.5	19.1	16.8	17.1	22.6	25.1	
Si	238416	238155	236905	235381	203691	233535	235677	
Ca	100362	100585	101643	102911	123628	104413	102667	
Ti	572	547	553	536	203	593	516	
V	1.7	2.1	1.7	2.0		3.6	1.4	
Rb		2.3	2.7	2.8		2.4		
Sr	1376	1230	1310	1297	1420	1353	1269	
Sr	1435	1290	1373	1373	1482	1395	1317	
Y						1.1		
Zr								
Nb								
Cs		1.9			2.3	1.8		
Ba	166	143	161	138	50	143	148	
La	3.7	3.4	3.3	3.6	2.0	3.7	3.8	
Ce	6.7	5.5	6.0	5.6	3.5	5.5	6.1	
Pr	0.6	0.7	0.8	0.6	0.5	0.6	0.7	
Nd	2.2	2.3	2.4	2.0	1.5	2.0	1.6	
Sm								
Eu	1.2	1.2	1.2	0.8	0.5	1.1	1.6	
Pb	1.9	1.7	1.8	2.1	0.6	1.4	2.2	
Th								
U								

Table C3: Continued

Sample Analysis #	SH307-1g 19	SH307-1g 21	SH307-1g 22	SH307-1g 23	SH307-1g 24	SH307-1g 26	SH307-1g 27	SH307-1g 31
Trace element concentrations (µg/g)								
Li	23.6	29.9	19.8	21.8	22.9	14.1	22.0	22.7
Si	269610	254096	238555	242625	254061	217905	228489	263074
Ca	68449	85624	100243	96664	85659	115666	108332	75999
Ti	173	106	151	128	310	168	189	257
V					1.5			
Rb	4.9		3.0		13.1			13.8
Sr	805	1406	1272	1459	1219	1286	1271	931
Sr	846	1490	1385	1577	1335	1364	1342	978
Y					1.2		1.1	
Zr	2.5				8.9			5.3
Nb					0.5			0.4
Cs	1.5	2.4			1.8			2.3
Ba	327	174	68	109	225	70	95	276
La	6.9	6.7	2.1	4.5	5.3	3.0	2.6	6.3
Ce	11.0	8.1	3.4	6.0	8.2	4.4	4.3	9.6
Pr	0.7	0.9		0.6	1.0	0.7		1.0
Nd	3.0	2.2	1.0	1.7	3.0	2.0		3.2
Sm								
Eu	1.5	1.6	0.8	0.8	1.8		1.6	2.2
Pb	6.4	4.0	2.4	3.3	4.9	1.8	2.2	5.2
Th								
U								

Table C3: Continued

Sample Analysis #	SH307-1g 32	SH307-1g 34	SH307-1g 35	SH307-1g 36	SH307-1g 37	JP1020-fine 1	JP1020-fine 3
Trace element concentrations (µg/g)							
Li	22.1	22.6	31.6	24.4	25.9	17.4	17.4
Si	236771	243549	232625	228753	253147		
Ca	101756	95827	105140	108134	86590	212382	176295
Ti	185	151	160	144	232	66	91
V		1.5		1.0		0.1	0.2
Rb	3.0		2.6		2.9	0.2	0.0
Sr	1438	1518	1269	1254	1055		
Sr	1545	1621	1361	1381	1126	1224	1062
Y						0.1	0.2
Zr							
Nb		0.5					
Cs							
Ba	131	121	61	55	206	47	106
La	3.4	3.1	2.6	2.5	4.8	2.1	3.3
Ce	4.7	5.4	4.4	3.7	6.5	3.3	5.0
Pr	0.7		0.5	0.5	0.6	0.3	0.5
Nd	2.4	1.7			2.5	1.0	1.5
Sm						0.2	0.2
Eu	1.0	1.3			1.1		
Pb	2.3	2.9	1.6	1.6	3.7	1.7	2.4
Th							
U							

Table C3: Continued

Sample	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine	JP1020-fine
Analysis #	4	5	7	8	11	12	13			
Trace element concentrations (µg/g)										
Li	18.7	20.1	24.1	21.7	17.4	36.2	36.4			
Si										
Ca	222959	193358	170130	178630	165926	107402	161275			
Ti	92	78	166	236	32	39	72			
V	0.3	0.2	0.7	1.9	0.1	0.3	0.4			
Rb	0.3	0.3	0.4	0.5	0.4	1.8	0.5			
Sr										
Sr	1196	1216	1062	981	1149	881	1256			
Y	0.1	0.1	0.2	0.3	0.2	0.1	0.2			
Zr		0.1	0.4	0.3	0.4	0.2	0.7			
Nb			0.0	0.0						
Cs										
Ba	38	88	132	126	57	178	60			
La	1.7	3.2	3.2	2.8	2.7	5.4	2.0			
Ce	2.7	5.0	5.0	4.9	4.7	7.8	3.9			
Pr	0.3	0.4	0.5	0.5	0.5	0.6	0.4			
Nd	1.0	1.5	1.5	1.5	1.6	1.9	1.2			
Sm	0.1	0.2	0.2	0.2	0.2	0.1	0.2			
Eu										
Pb	1.2	2.6	2.7	2.2	3.5	6.0	2.5			
Th										
U										

Table C3: Continued

Sample	JP10/20-1fine	JP10/20-1fine
Analysis #	12	15
Trace element concentrations (µg/g)		
Li	15.5	25.4
Si	284051	284736
Ca	50146	49221
Ti	127	45
V		
Rb		
Sr	735	900
Sr	762	948
Y	0.4	
Zr		
Nb		
Cs		
Ba	143	107
La	3.3	3.4
Ce	5.8	5.6
Pr	0.5	0.5
Nd	1.5	1.1
Sm		
Eu	1.0	1.0
Pb	3.0	4.8
Th		
U		

APPENDIX D

SULFUR PEAK SHIFT DATA

Tables D1 and D2 report peak positions determined by fitting a gaussian curve to the electron microprobe wavescan data. Peaks are determined using the computer program Igor Pro. Sulfur wavescans made at the University of Oregon were conducted on a Cameca SX 50 microprobe with 3 PET crystals. Results are presented in Table D1. Peak positions are reported in angstroms (\AA). Peak positions calculated from wavescans on the SX 100 at Oregon State University are reported in Table D2. Spectrometers 4 and 5 are fitted with PET crystals while spectrometer 3 has a LPET crystal with higher sensitivity. Units are reported in $\sin \theta$ units $\times 10^5$ which can be converted to angstroms following equation 4 in Appendix A. The error reported for calculated peak fits is reported to 1σ .

Melt inclusion sample numbers correspond to peak shift analysis numbers. Mineral standards pyrrhotite (po) and troilite (tr) are analyzed before and after every unknown while anhydrite (anhy), barite (bar), and pyrite (py) are typically analyzed one to two times over the course of each analytical session. Appendix D data is available upon request.

Table D1: Sulfur K α peak position determined from microprobe analysis (U of O).

Sample	Analysis		Angstroms				
	Date	spec 4	(+/-)	spec 2	(+/-)	spec 3	(+/-)
Pyrrhotite	10/28/2003	5.3738	2.07E-05	5.374	1.52E-05	5.3739	1.90E-05
anhydrite	10/28/2003	5.3708	2.32E-05	5.3704	1.50E-05	5.3709	1.90E-05
pyrite	10/28/2003	5.3735	2.45E-05	5.3731	1.24E-05	5.3736	1.94E-05
03-061-3	10/28/2003	5.3721	3.07E-05	5.3717	2.54E-05	5.3722	2.20E-05
Pyrrhotite	10/28/2003	5.3739	2.57E-05	5.3736	1.39E-05	5.3741	1.95E-05
Pyrrhotite	10/28/2003	5.374	2.26E-05	5.3736	1.36E-05	5.3741	1.72E-05
03-058-10	10/28/2003	5.3726	4.57E-05	5.3722	3.59E-05	5.3727	3.16E-05
Pyrrhotite	10/28/2003	5.3741	2.19E-05	5.3737	1.53E-05	5.3743	1.87E-05
03-058-15	10/28/2003	5.3727	4.86E-05	5.3724	3.17E-05	5.3729	2.81E-05
Pyrrhotite	10/28/2003	5.3742	2.47E-05	5.3738	1.44E-05	5.3743	1.29E-05
03-063-5	10/28/2003	5.3725	5.63E-05	5.3723	4.88E-05	5.3729	4.65E-05
Pyrrhotite	10/28/2003	5.3742	2.27E-05	5.3739	1.47E-05	5.3744	1.92E-05
anhydrite	10/28/2003	5.3712	2.56E-05	5.3709	1.49E-05	5.3714	2.03E-05
pyrite	10/28/2003	5.3738	2.33E-05	5.3735	1.42E-05	5.374	1.93E-05
anhy.std	7/2/2004	5.3704	2.29E-05	5.3709	1.34E-05	5.3708	1.91E-05
pyrite.std	7/2/2004	5.3731	2.04E-05	5.3736	1.41E-05	5.3735	1.95E-05
po.1	7/2/2004	5.3736	2.24E-05	5.3741	1.39E-05	5.3739	1.93E-05
03-014b-1	7/2/2004	5.3733	9.83E-05	5.3741	6.56E-05	5.3738	7.56E-05
po.2	7/2/2004	5.3736	2.21E-05	5.3742	1.45E-05	5.374	1.92E-05
03-014b-16	7/2/2004	5.373	6.14E-05	5.3736	4.99E-05	5.3733	4.95E-05
po.3	7/2/2004	5.3738	2.05E-05	5.3744	1.51E-05	5.374	1.88E-05
04-036-1	7/2/2004	5.3717	6.40E-05	5.3724	4.72E-05	5.372	5.21E-05
po.4	7/2/2004	5.3738	2.06E-05	5.3745	1.46E-05	5.374	1.80E-05
po.5	7/2/2004	5.3738	2.21E-05	5.3745	1.51E-05	5.374	1.91E-05
04-036-9	7/2/2004	5.3711	4.18E-05	5.3718	3.64E-05	5.3714	3.04E-05
po.6	7/2/2004	5.3737	2.23E-05	5.3745	1.47E-05	5.374	1.92E-05
03-041-8	7/2/2004	5.3736	1.27E-04	5.3746	8.39E-05	5.3738	7.22E-05
po.7	7/2/2004	5.3738	2.25E-05	5.3746	1.45E-05	5.3741	1.87E-05
03-041-9	7/2/2004	5.3735	1.35E-04	5.3743	1.07E-04	5.3737	9.19E-05
po.8	7/2/2004	5.3737	2.23E-05	5.3744	1.35E-05	5.374	1.84E-05
03-041-13	7/2/2004	5.3728	1.35E-04	5.3737	8.58E-05	5.3731	7.76E-05
po.9	7/2/2004	5.3736	2.19E-05	5.3741	1.38E-05	5.374	1.96E-05
troilite	7/2/2004	5.3737	1.89E-05	5.3741	1.40E-05	5.3741	1.90E-05
po.10	7/2/2004	5.3736	2.11E-05	5.3739	1.20E-05	5.3739	1.95E-05
anhydrite	7/2/2004	5.3706	1.98E-05	5.3709	1.45E-05	5.371	1.91E-05
po.11	7/2/2004	5.3735	2.13E-05	5.3737	1.29E-05	5.3739	1.85E-05
pyrite	7/2/2004	5.3733	2.23E-05	5.3736	1.43E-05	5.3737	1.94E-05
po.12	7/2/2004	5.3734	2.05E-05	5.3737	1.41E-05	5.3739	1.89E-05
14-3glass	7/2/2004	5.3733	7.13E-05	5.3734	4.20E-05	5.3737	5.32E-05
po.13	7/2/2004	5.3733	2.00E-05	5.3734	1.54E-05	5.3737	1.87E-05
11-49glass	7/2/2004	5.3733	1.06E-04	5.3734	6.37E-05	5.3738	7.98E-05
po.14	7/2/2004	5.3732	2.18E-05	5.3732	1.50E-05	5.3736	1.93E-05
qvscoria	7/2/2004	5.3711	5.07E-05	5.3711	3.26E-05	5.3714	3.26E-05
po.15	7/2/2004	5.3732	2.21E-05	5.3732	1.38E-05	5.3737	1.89E-05
JDF D2	7/2/2004	5.3732	6.09E-05	5.3732	5.41E-05	5.3737	4.92E-05
po.16	7/2/2004	5.3732	2.31E-05	5.3732	1.43E-05	5.3736	1.95E-05
10-34glass	7/2/2004	5.3731	8.91E-05	5.3732	5.87E-05	5.3737	6.73E-05
po.17	7/2/2004	5.3732	2.08E-05	5.3732	1.43E-05	5.3736	1.84E-05
anhy.std	7/2/2004	5.3702	2.18E-05	5.3702	1.34E-05	5.3704	2.05E-05

Table D1: Continued

Sample	Analysis		Angstroms				
	Date	spec 4	(+/-)	spec 2	(+/-)	spec 3	(+/-)
pyrite.std	7/2/2004	5.373	2.15E-05	5.3729	1.40E-05	5.3734	1.91E-05
po.1	12/1/2004	5.3744	2.04E-05	5.3745	1.57E-05	5.3747	1.84E-05
py.1	12/1/2004	5.3743	1.98E-05	5.3743	1.50E-05	5.3745	1.88E-05
any.1	12/1/2004	5.3714	2.07E-05	5.3715	1.24E-05	5.3717	1.87E-05
po.2	12/1/2004	5.3746	1.89E-05	5.3747	1.46E-05	5.3749	1.94E-05
03-072-8.1	12/1/2004	5.3743	8.21E-05	5.3747	5.76E-05	5.3748	5.85E-05
po.3	12/1/2004	5.3746	2.15E-05	5.3747	1.52E-05	5.3749	1.85E-05
03-072-19.1	12/1/2004	5.3746	8.48E-05	5.3748	6.32E-05	5.3748	6.47E-05
po.4	12/1/2004	5.3745	2.08E-05	5.3747	1.37E-05	5.3748	1.92E-05
03.072-7.1	12/1/2004	5.3744	1.03E-04	5.3745	8.08E-05	5.3747	7.87E-05
po.5	12/1/2004	5.3745	2.02E-05	5.3746	1.53E-05	5.3747	1.84E-05
po.6	12/1/2004	5.3746	2.02E-05	5.3746	1.41E-05	5.3747	1.87E-05
04-028-7.1	12/1/2004	5.3745	7.51E-05	5.3746	7.08E-05	5.3748	5.64E-05
po.7	12/1/2004	5.3747	2.20E-05	5.3747	1.30E-05	5.3748	1.87E-05
04-028-14.2	12/1/2004	5.3736	1.57E-04	5.3737	1.06E-04	5.3741	1.13E-04
po.8	12/1/2004	5.3747	2.15E-05	5.3747	1.58E-05	5.3749	1.82E-05
04-050-17.1	12/1/2004	5.3725	5.08E-05	5.3724	3.06E-05	5.3725	3.24E-05
po.9	12/1/2004	5.3748	2.19E-05	5.3748	1.43E-05	5.375	1.84E-05
po.10	12/1/2004	5.3749	2.14E-05	5.3749	1.45E-05	5.375	1.83E-05
04-028-17.1	12/1/2004	5.3733	2.02E-04	5.3731	1.93E-04	5.374	1.10E-04
po.11	12/1/2004	5.3749	2.06E-05	5.3749	1.41E-05	5.3752	1.92E-05
03-015-26.1	12/1/2004	5.3739	9.77E-05	5.3739	8.83E-05	5.3743	7.28E-05
po.12	12/1/2004	5.3749	2.10E-05	5.3748	1.42E-05	5.3753	1.87E-05
03-015-47.1	12/1/2004	5.3738	9.95E-05	5.3738	7.61E-05	5.3744	7.09E-05
po.13	12/1/2004	5.3749	2.04E-05	5.3747	1.56E-05	5.3752	1.99E-05
03-015-77.1	12/1/2004	5.3734	1.06E-04	5.3733	8.19E-05	5.3737	7.56E-05
po.14	12/1/2004	5.3749	2.04E-05	5.3748	1.47E-05	5.3752	1.84E-05
04-050-20.1	12/1/2004	5.3722	3.53E-05	5.372	2.49E-05	5.3726	2.85E-05
po.15	12/1/2004	5.3749	2.17E-05	5.3747	1.36E-05	5.3752	1.88E-05
py.2	12/1/2004	5.3747	2.03E-05	5.3745	1.40E-05	5.375	1.88E-05
any.2	12/1/2004	5.3718	2.51E-05	5.3717	1.26E-05	5.3722	2.14E-05

Table D2: Sulfur Ka peak position determined from microprobe analysis (OSU).

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
tr8-30.1	2/26/2005	61450	0.325	61459	0.214	61456	0.382
tr-8-30incremental	2/26/2005	61450	0.308	61459	0.218	61456	0.384
QV-50-30incremental	2/26/2005	61422	0.79	61430	0.788	61426	0.645
tr-8-30.1	2/26/2005	61448	0.32	61456	0.207	61455	0.39
QV-9-30	2/26/2005	61422	0.522	61428	0.778	61426	0.792
tr-8-30.2	2/26/2005	61449	0.316	61457	0.215	61455	0.38
QV-12-30	2/26/2005	61421	0.518	61428	0.852	61427	0.828
tr-8-30.3	2/26/2005	61449	0.32	61457	0.205	61455	0.377
QV-15-30	2/26/2005	61421	0.521	61429	0.7	61424	0.684
tr-8-30.4	2/26/2005	61449	0.326	61457	0.214	61454	0.385
QV-18-30	2/26/2005	61421	0.498	61429	0.619	61427	0.67
tr-8-30.5	2/26/2005	61450	0.314	61459	0.187	61456	0.376
QV-21-30	2/26/2005	61421	0.516	61430	0.662	61426	0.763
tr-8-30.6	2/26/2005	61450	0.321	61458	0.227	61455	0.373
QV-30-30	2/26/2005	61423	0.444	61428	0.539	61426	0.596
tr-8-30.7	2/26/2005	61451	0.315	61459	0.22	61456	0.373
QV-50-30	2/26/2005	61421	0.393	61429	0.424	61425	0.455
tr-8-30.8	2/26/2005	61451	0.319	61459	0.203	61456	0.388
anhy-9-30	2/26/2005	61416	0.328	61424	0.2	61421	0.37
tr-8-30.9	2/26/2005	61451	0.328	61459	0.239	61456	0.376
anhy-12-30	2/26/2005	61415	0.323	61423	0.175	61420	0.393
tr-8-30.10	2/26/2005	61452	0.326	61459	0.201	61456	0.357
anhy-15-30	2/26/2005	61415	0.334	61423	0.185	61420	0.369
tr-8-30.11	2/26/2005	61450	0.321	61458	0.217	61455	0.375
anhy-18-30	2/26/2005	61415	0.312	61423	0.195	61420	0.373
tr-8-30.12	2/26/2005	61451	0.317	61459	0.214	61455	0.383
anhy-21-30	2/26/2005	61414	0.301	61423	0.191	61419	0.41
tr-8-30.13	2/26/2005	61451	0.328	61459	0.197	61456	0.386
anhy-30-30	2/26/2005	61415	0.347	61423	0.196	61419	0.415
tr-8-30.14	2/26/2005	61452	0.33	61460	0.216	61457	0.377
tr-9-30	2/26/2005	61451	0.312	61460	0.21	61456	0.38
tr-8-30.15	2/26/2005	61451	0.325	61459	0.224	61456	0.375
tr-12-30	2/26/2005	61451	0.322	61460	0.201	61456	0.377
tr-8-30.16	2/26/2005	61452	0.317	61460	0.215	61456	0.368
tr-15-30	2/26/2005	61452	0.318	61460	0.207	61457	0.389
tr-8-30.17	2/26/2005	61450	0.331	61458	0.217	61455	0.392
tr-18-30	2/26/2005	61451	0.321	61460	0.199	61456	0.387
tr-8-30.18	2/26/2005	61451	0.327	61459	0.218	61455	0.377
tr-21-30	2/26/2005	61452	0.328	61460	0.207	61456	0.386
tr-8-30.19	2/26/2005	61451	0.33	61459	0.218	61455	0.38
tr-30-30	2/26/2005	61451	0.318	61459	0.205	61455	0.38
tr-8-30.20	2/26/2005	61452	0.325	61460	0.209	61456	0.401
QV-50-50	2/26/2005	61421	0.4	61428	0.332	61425	0.455
tr-8-30.21	2/26/2005	61451	0.315	61459	0.208	61456	0.378
anhy-30-50	2/26/2005	61416	0.321	61424	0.2	61420	0.406
tr-8-30.22	2/26/2005	61452	0.329	61460	0.194	61456	0.372
tr-30-50	2/26/2005	61452	0.327	61460	0.209	61456	0.386
tr-8-30.23	2/26/2005	61452	0.328	61460	0.222	61456	0.363
tr-8-50	2/26/2005	61451	0.321	61459	0.212	61455	0.374
tr-8-30.24	2/26/2005	61452	0.324	61460	0.223	61456	0.367
tr-8-30.1	2/28/2005	61451	0.318	61461	0.215	61455	0.367
14-3-5-30	2/28/2005	61451	1.06	61460	1.67	61451	1.85
tr-8-30.2	2/28/2005	61452	0.312	61462	0.205	61455	0.37

Table D2: Continued.

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
14-3-9-30	2/28/2005	61453	1.85	61456	1.39	61453	1.85
tr-8-30.3	2/28/2005	61452	0.315	61463	0.193	61455	0.378
14-3-12-30	2/28/2005	61448	0.72	61456	1.21	61451	1.2
tr-8-30.4	2/28/2005	61452	0.305	61463	0.212	61455	0.366
14-3-15-30	2/28/2005	61448	0.732	61458	1.25	61451	1.11
tr-8-30.5	2/28/2005	61453	0.33	61463	0.215	61456	0.396
14-3-18-30	2/28/2005	61447	0.655	61458	0.245	61449	0.981
tr-8-30.6	2/28/2005	61453	0.328	61464	0.205	61456	0.373
14-3-21-30	2/28/2005	61446	0.613	61457	0.9	61448	0.909
tr-8-30.7	2/28/2005	61453	0.322	61464	0.207	61456	0.35
14-3-30-30	2/28/2005	61455	0.417	61454	0.772	61447	0.827
tr-8-30.8	2/28/2005	61453	0.327	61464	0.226	61456	0.364
14-3-50-30	2/28/2005	61444	0.409	61454	0.681	61446	0.653
tr-8-30.9	2/28/2005	61454	0.322	61461	0.21	61456	0.375
anhy-5-30	2/28/2005	61419	0.334	61429	0.183	61421	0.365
tr-8-30.10	2/28/2005	61454	0.322	61464	0.215	61456	0.372
tr-5-30	2/28/2005	61454	0.315	61464	0.192	61456	0.378
tr-8-30.11	2/28/2005	61454	0.32	61464	0.185	61456	0.362
tr-8-30.1	3/7/2005	61422	0.311	61431	0.189	61424	0.382
VG2-5-30	3/7/2005	61420	1.15	61426	1.54	61415	1.7
tr-8-30.2	3/7/2005	61422	0.325	61431	0.195	61424	0.384
VG2-9-30	3/7/2005	61419	0.877	61427	1.33	61424	1.63
tr-8-30.3	3/7/2005	61423	0.32	61432	0.196	61425	0.373
VG2-12-30	3/7/2005	61419	0.619	61427	1.58	61419	1.14
tr-8-30.4	3/7/2005	61424	0.311	61433	0.196	61425	0.376
VG2-15-30	3/7/2005	61417	0.698	61426	1.23	61420	1.19
tr-8-30.5	3/7/2005	61424	0.316	61433	0.204	61426	0.378
VG2-18-30	3/7/2005	61417	0.656	61427	1.01	61417	1.06
tr-8-30.6	3/7/2005	61425	0.32	61434	0.199	61426	0.384
VG2-21-30	3/7/2005	61416	0.652	61430	1.1	61420	1.18
tr-8-30.7	3/7/2005	61425	0.317	61434	0.192	61426	0.382
VG2-30-30	3/7/2005	61417	0.463	61425	0.973	61419	0.979
tr-8-30.8	3/7/2005	61426	0.327	61435	0.2	61427	0.386
VG2-50-30	3/7/2005	61416	0.414	61425	0.644	61415	0.73
tr-8-30.9	3/7/2005	61426	0.316	61435	0.189	61427	0.386
tr.1	6/3/2005	61425	0.313	61430	0.207	61421	0.372
anhy.1	6/3/2005	61388	0.327	61393	0.189	61384	0.388
barite.1	6/3/2005	61393	0.336	61398	0.165	61389	0.352
tr.2	6/3/2005	61425	0.327	61430	0.193	61421	0.35
05-011-4	6/3/2005	61421	0.399	61426	0.626	61417	0.697
tr.3	6/3/2005	61425	0.32	61430	0.212	61422	0.362
05-011-6	6/3/2005	61417	0.448	61421	0.483	61413	0.569
tr.4	6/3/2005	61425	0.316	61430	0.179	61421	0.375
05-011-7	6/3/2005	61424	0.449	61427	0.51	61419	0.613
tr.5	6/3/2005	61425	0.316	61430	0.189	61422	0.363
tr.6	6/3/2005	61426	0.315	61430	0.189	61421	0.366
NEF 05-013-3	6/3/2005	61426	0.491	61431	0.751	61420	0.939
tr.7	6/3/2005	61425	0.313	61430	0.193	61421	0.366
NEF 05-013-14	6/3/2005	61419	0.767	61425	1.31	61416	1.3
tr.8	6/3/2005	61424	0.307	61430	0.198	61421	0.365
NEF 05-013-22	6/3/2005	61424	0.496	61430	0.878	61421	0.828
tr.9	6/3/2005	61424	0.313	61429	0.185	61421	0.366
tr.10	6/3/2005	61424	0.306	61429	0.194	61421	0.369

Table D2: Continued.

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
anhy.2	6/3/2005	61388	0.302	61392	0.177	61384	0.375
barite.2	6/3/2005	61394	0.324	61398	0.168	61390	0.35
py.1	6/3/2005	61422	0.322	61427	0.194	61419	0.363
tr.11	6/3/2005	61425	0.326	61430	0.184	61421	0.357
tr.12	6/3/2005	61426	0.317	61431	0.186	61422	0.362
QV 05-014-1	6/3/2005	61404	0.434	61408	0.442	61401	0.504
tr.13	6/3/2005	61425	0.319	61430	0.201	61421	0.37
tr.14	6/3/2005	61425	0.315	61429	0.203	61421	0.362
QV 05-014-7	6/3/2005	61398	0.423	61402	0.383	61394	0.43
tr.15	6/3/2005	61424	0.31	61429	0.189	61421	0.364
anhy.3	6/3/2005	61390	0.302	61394	0.188	61386	0.383
py.2	6/3/2005	61422	0.322	61427	0.18	61419	0.36
tr.16	6/3/2005	61424	0.327	61429	0.166	61421	0.402
tr.1	7/19/2005	61418	0.32	61426	0.18	61412	0.367
05-017-12	7/19/2005	61416	0.641	61423	0.84	61409	0.992
tr.2	7/19/2005	61418	0.345	61426	0.201	61412	0.264
anhy.1	7/19/2005	61382	0.331	61390	0.182	61376	0.416
py.1	7/19/2005	61416	0.342	61425	0.172	61411	0.356
tr.3	7/19/2005	61418	0.326	61426	0.188	61412	0.359
05-017-20	7/19/2005	61417	1.01	61426	1.81	61411	1.46
tr.4	7/19/2005	61418	0.338	61426	0.197	61412	0.351
15xglass-A-1	7/19/2005	61406	0.545	61412	0.128	61400	0.791
tr.5	7/19/2005	61418	0.332	61426	0.194	61413	0.369
15xcrystal-A-3	7/19/2005	61409	0.54	61414	0.663	61403	0.719
tr.6	7/19/2005	61418	0.334	61426	0.199	61412	0.362
15xcrystal-B-2	7/19/2005	61406	0.554	61417	0.919	61399	0.863
tr.7	7/19/2005	61418	0.331	61426	0.195	61412	0.362
30x-A-1	7/19/2005	61407	0.518	61414	0.804	61402	0.723
tr.8	7/19/2005	61418	0.332	61426	0.19	61412	0.368
30x-B-1	7/19/2005	61411	0.47	61420	0.551	61406	0.598
tr.9	7/19/2005	61418	0.324	61426	0.186	61412	0.381
30x-C-2	7/19/2005	61412	0.469	61419	0.588	61406	0.677
tr.10	7/19/2005	61418	0.32	61426	0.185	61412	0.371
lo-02-04iiglass	7/19/2005	61403	0.722	61410	0.859	61395	0.975
tr.11	7/19/2005	61418	0.325	61426	0.182	61413	0.267
14-3glass	7/19/2005	61417	0.494	61424	0.708	61412	0.818
tr.12	7/19/2005	61419	0.32	61426	0.191	61414	0.38
tr.13	7/19/2005	61419	0.328	61427	0.187	61413	0.378
anhy.2	7/19/2005	61383	0.367	61392	0.197	61378	0.386
py.2	7/19/2005	61417	0.331	61426	0.185	61412	0.36
tr.14	7/19/2005	61420	0.322	61427	0.196	61414	0.37
tr.1	10/29/2005	61418	0.316	61423	0.187	61403	0.383
lo-02-02-unheated.3	10/29/2005	61413	0.574	61417	0.629	61397	0.754
tr.2	10/29/2005	61418	0.308	61423	0.198	61403	0.377
lo-02-02-unheated.2	10/29/2005	61411	0.471	61415	0.741	61395	0.655
tr.3	10/29/2005	61418	0.313	61422	0.194	61403	0.379
lo-02-02-unheated.1	10/29/2005	61411	0.553	61416	0.755	61393	0.964
tr.4	10/29/2005	61418	0.309	61423	0.202	61403	0.383
py.1	10/29/2005	61416	0.326	61420	0.184	61401	0.368
anhy.1	10/29/2005	61385	0.329	61390	0.172	61371	0.359
tr.5	10/29/2005	61419	0.309	61423	0.198	61403	0.385
tr.6	10/30/2005	61419	0.313	61423	0.198	61403	0.377
tr.7	10/30/2005	61418	0.298	61422	0.175	61403	0.38

Table D2: Continued.

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
31-7b1177-1.2	10/30/2005	61409	0.248	61412	0.591	61393	0.759
tr.8	10/30/2005	61417	0.314	61421	0.186	61402	0.385
31.7b1231-3.1	10/30/2005	61413	0.771	61417	0.985	61397	1.05
tr.9	10/30/2005	61417	0.312	61421	0.179	61402	0.389
py.2	10/30/2005	61414	0.316	61419	0.185	61399	0.384
anhy.2	10/30/2005	61383	0.343	61287	0.185	61369	0.366
tr.10	10/30/2005	61417	0.315	61421	0.206	61402	0.396
tr.11	11/1/2005	61409	0.302	61424	0.167	61405	0.399
31.7b1177-1.1	11/1/2005	61396	0.509	61409	0.635	61390	0.813
tr.12	11/1/2005	61408	0.303	61423	0.2	61404	0.388
tr.13	11/1/2005	61407	0.314	61422	0.185	61403	0.396
31-7b1206-1.2	11/1/2005	61396	0.802	61411	1.26	61390	1.35
tr.14	11/1/2005	61407	0.308	61422	0.179	61304	0.382
tr.15	11/1/2005	61406	0.306	61421	0.173	61402	0.374
14-3.1	11/1/2005	61407	0.463	61422	0.504	61402	0.698
tr.16	11/1/2005	61406	0.304	61421	0.178	61402	0.286
14-3.2	11/1/2005	61408	0.444	61422	0.496	61403	0.672
tr.17	11/1/2005	61406	0.299	61421	0.179	61402	0.418
py.3	11/1/2005	61404	0.322	61419	0.184	61400	0.37
anhy.3	11/1/2005	61373	0.324	61388	0.208	61370	0.366
tr.18	11/1/2005	61406	0.309	61421	0.179	61402	0.396
tr.1	11/9/2005	61421	0.303	61425	0.202	61406	0.383
py.1	11/9/2005	61420	0.334	61424	0.186	61404	0.383
anhy.1	11/9/2005	61386	0.315	61390	0.168	61371	0.41
tr.2	11/9/2005	61421	0.318	61425	0.18	61406	0.399
tr.3	11/9/2005	61421	0.315	61425	0.19	61405	0.372
31-7b-26	11/9/2005	61406	0.543	61408	0.756	61388	0.656
tr.4	11/9/2005	61420	0.317	61424	0.195	61405	0.382
31-7b-15	11/9/2005	61409	0.473	61411	0.554	61393	0.762
tr.5	11/9/2005	61420	0.307	61424	0.187	61405	0.294
31-7b-1	11/9/2005	61415	0.57	61417	0.732	61399	1.01
tr.6	11/9/2005	61420	0.308	61423	0.187	61405	0.382
14-3.3	11/9/2005	61419	0.534	61424	0.606	61404	1.12
tr.7	11/9/2005	61420	0.31	61423	0.179	61405	0.395
tr.8	11/9/2005	61420	0.305	61423	0.186	61405	0.392
tr.9	11/9/2005	61420	0.317	61423	0.169	61404	0.281
M7	11/9/2005	61419	0.638	61420	1.05	61401	1.05
tr.10	11/9/2005	61420	0.316	61423	0.186	61405	0.291
31-7b1177-2.1rpt	11/9/2005	61412	0.498	61417	0.575	61395	0.866
tr.11	11/9/2005	61420	0.318	61423	0.199	61405	0.4
31-7b1206-2.1	11/9/2005	61416	0.502	61416	0.836	61399	0.764
tr.12	11/9/2005	61420	0.313	61423	0.173	61405	0.385
31-7b1206-3.1	11/9/2005	61411	0.456	61414	0.641	61394	0.908
tr.13	11/9/2005	61420	0.311	61423	0.178	61405	0.393
14-3.4	11/9/2005	61419	0.478	61421	0.534	61404	0.694
tr.14	11/9/2005	61420	0.304	61423	0.198	61404	0.379
tr.15	11/9/2005	61420	0.306	61423	0.195	61404	0.393
lo-02-04ii	11/9/2005	61407	0.542	61410	0.774	61391	0.751
tr.16	11/9/2005	61420	0.326	61423	0.187	61405	0.387
anhy.2	11/9/2005	61385	0.342	61388	0.177	61370	0.353
py.2	11/9/2005	61417	0.33	61420	0.179	61402	0.372
tr.17	11/9/2005	61420	0.311	61423	0.181	61405	0.39
bar-5-30	11/9/2005	61390	0.322	61393	0.198	61374	0.386

Table D2: Continued.

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
tr.18	11/9/2005	61420	0.307	61423	0.181	61405	0.387
bar-9-30	11/9/2005	61390	0.319	61393	0.19	61374	0.376
tr.19	11/9/2005	61420	0.315	61424	0.205	61405	0.399
bar-12-30	11/9/2005	61390	0.329	61393	0.177	61374	0.382
tr.20	11/9/2005	61420	0.298	61424	0.181	61405	0.379
bar-15-30	11/9/2005	61390	0.32	61394	0.184	61374	0.376
tr.21	11/9/2005	61420	0.301	61424	0.194	61405	0.37
bar-18-30	11/9/2005	61391	0.322	61394	0.182	61374	0.365
tr.22	11/9/2005	61421	0.309	61424	0.185	61405	0.37
bar-21-30	11/9/2005	61389	0.315	61393	0.17	61373	0.578
tr.23	11/9/2005	61421	0.317	61425	0.197	61405	0.393
bar-30-30	11/9/2005	61392	0.339	61395	0.168	61375	0.363
tr.24	11/9/2005	61421	0.316	61424	0.199	61405	0.396
tr.1	11/21/2005	61419	0.327	61425	0.208	61404	0.39
anhy.1	11/21/2005	61386	0.332	61392	0.216	61371	0.353
py.1	11/21/2005	61417	0.332	61423	0.187	61402	0.383
tr.2	11/21/2005	61419	0.311	61425	0.193	61404	0.382
31-7b-gm3	11/21/2005	61409	1.06	61410	1.87	61389	1.87
tr.3	11/21/2005	61419	0.313	61424	0.185	61404	0.395
31-7b-25a	11/21/2005	61405	0.627	61410	0.947	61391	0.855
tr.4	11/21/2005	61418	0.328	61424	0.193	61403	0.402
31-7b-28a	11/21/2005	61401	0.649	61405	1.01	61384	0.148
tr.5	11/21/2005	61418	0.308	61424	0.187	61403	0.409
tr.6	11/21/2005	61418	0.308	61424	0.186	61403	0.393
tr.1	12/28/2005	61453	0.329	61428	0.196	61433	0.384
10-3-1	12/28/2005	61442	0.423	61416	0.579	61421	0.685
tr.2	12/28/2005	61453	0.322	61428	0.178	61433	0.388
10-4-1b	12/28/2005	61443	0.589	61416	0.889	61423	0.883
tr.3	12/28/2005	61453	0.322	61427	0.203	61432	0.399
10-6-1	12/28/2005	61438	0.511	61413	0.57	61417	0.721
tr.4	12/28/2005	61452	0.329	61427	0.175	61432	0.391
tr.5	12/28/2005	61452	0.33	61426	0.188	61432	0.379
anhy.1	12/28/2005	61418	0.335	61393	0.175	61398	0.332
tr.6	12/28/2005	61452	0.337	61426	0.173	61432	0.387
bar.1	12/28/2005	61421	0.336	61395	0.195	61400	0.374
tr.7	12/28/2005	61452	0.328	61427	0.168	61432	0.388
py.1	12/28/2005	61449	0.342	61424	0.181	61429	0.383
tr.8	12/28/2005	61453	0.345	61427	0.175	61432	0.382
tr.9	12/29/2005	61454	0.331	61428	0.188	61433	0.367
IW-4-2	12/29/2005	61443	0.464	61417	0.776	61421	0.789
tr.10	12/29/2005	61452	0.534	61427	0.187	61433	0.391
IW-6-1	12/29/2005	61444	0.576	61416	0.894	61423	1
tr.11	12/29/2005	61451	0.331	61426	0.195	61432	0.386
anhy.2	12/29/2005	61419	0.367	61393	0.164	61399	0.351
py.2	12/29/2005	61450	0.338	61425	0.177	61431	0.37
tr.12	12/29/2005	61451	0.331	61426	0.18	61432	0.398
tr.13	12/29/2005	61453	0.329	61427	0.182	61433	0.391
IW-1-1	12/29/2005	61438	0.543	61413	0.661	61420	0.697
tr.14	12/29/2005	61453	0.329	61427	0.18	61433	0.381
20-1-2b	12/29/2005	61446	0.546	61422	0.885	61426	0.992
tr.15	12/29/2005	61453	0.34	61427	0.185	61433	0.398
20-3-1	12/29/2005	61440	0.412	61413	0.534	61419	0.75
tr.16	12/29/2005	61453	0.319	61427	0.177	61433	0.387

Table D2: Continued.

Sample	Analysis Date	Sin θ					
		spec 3	(+/-)	spec 4	(+/-)	spec 5	(+/-)
20-6-1	12/29/2005	61439	0.437	61414	0.528	61417	0.729
tr.17	12/29/2005	61452	0.336	61426	0.194	61432	0.384
30-2-1a	12/29/2005	61442	0.663	61416	0.898	61420	0.974
tr.18	12/29/2005	61452	0.33	61426	0.176	61432	0.4
30-6-1	12/29/2005	61443	0.485	61416	0.696	61424	0.765
tr.19	12/29/2005	61452	0.334	61426	0.209	61432	0.388
tr.20	12/29/2005	61452	0.338	61427	0.188	61432	0.409
30-1-1	12/29/2005	61443	0.694	61416	1.04	61422	1.03
tr.21	12/29/2005	61452	0.337	61426	0.186	61432	0.388
tr.22	12/29/2005	61452	0.325	61426	0.208	61432	0.401
tr.23	12/29/2005	61452	0.329	61426	0.176	61432	0.4
anhy.3	12/29/2005	61419	0.35	61394	0.295	61400	0.352
py.3	12/29/2005	61450	0.341	61424	0.286	61430	0.385
tr.24	12/29/2005	61453	0.333	61427	0.201	61432	0.393

APPENDIX E **$^{40}\text{Ar}/^{39}\text{Ar}$ AGE DATING**

Argon-argon age determination of forearc shoshonitic basalts were conducted at The Geochronology Laboratory at Oregon State University by J. Huard on a Mass Analyser Products model 215-50 rare gas mass spectrometer. Whole rock measurements were made for Quartzville basalt (QV03-1) and Pepper Mountain basalt (PEP03-1; Latitude 45.427°N, -122.173°W) following the method of Duncan et al (1997) and Duncan and Keller (2004). The following appendix includes incremental heating step data and plots of age plateaus and inverse isochrons.

Table E1: Incremental heating data for $^{40}\text{Ar}/^{39}\text{Ar}$ age determination of Quartzville basalt (QV03-1).

Incremental Heating		36Ar(a)	37Ar(ca)	38Ar(cl)	39Ar(k)	40Ar(r)	Age $\pm 2\sigma$ (ka)	40Ar(r) 39Ar(k) (%) (%)	K/Ca $\pm 2\sigma$
04C1990	600 °C	0.00003	0.41923	0.00106	1.04561	0.03888	117.9 \pm 19.2	65.78 6.99	1.072 \pm 0.023
04C1991	750 °C	0.00007	1.90279	0.00290	5.94230	0.15592	83.2 \pm 4.2	66.29 39.71	1.343 \pm 0.027
04C1992	850 °C	0.00006	1.49410	0.00402	4.60832	0.11724	80.7 \pm 4.7	64.35 30.79	1.326 \pm 0.026
04C1993	950 °C	0.00005	0.51556	0.00351	1.20247	0.03285	86.6 \pm 17.6	56.14 8.03	1.003 \pm 0.020
04C1994	1050 °C	0.00009	0.41050	0.00472	0.60099	0.01586	83.7 \pm 51.8	32.99 4.02	0.630 \pm 0.013
04C1996	1400 °C	0.00126	9.86717	0.01184	1.56607	0.05560	112.6 \pm 49.4	12.51 10.46	0.068 \pm 0.001
Σ		0.00156	14.60936	0.02805	14.96576	0.41635			

Information on Analysis		40(r)/39(k) $\pm 2\sigma$	Age $\pm 2\sigma$ (ka)	MWD	39Ar(k) (%,n)	K/Ca $\pm 2\sigma$
Sample	MRQV03-1					
Material	whole rock					
Location	E					
Analyst	jh					
Project	Cascades					
Irradiation	OSU2C04					
J-value	0.0017576					
Standard	28.03					
Weighted P Plateau		0.0260 \pm 0.0010 \pm 3.74%	82.3 \pm 3.1 \pm 3.78%	0.60	93.01 5	0.086 \pm 0.126
Total Fusion Age		0.0278 \pm 0.0020 \pm 7.15%	88.2 \pm 6.3 \pm 7.17%	2.78	Statistical T ratio	
			External Error \pm 3.4 Analytical Error \pm 3.1	1.0000	Error Magnification	
			External Error \pm 6.5 Analytical Error \pm 6.3			

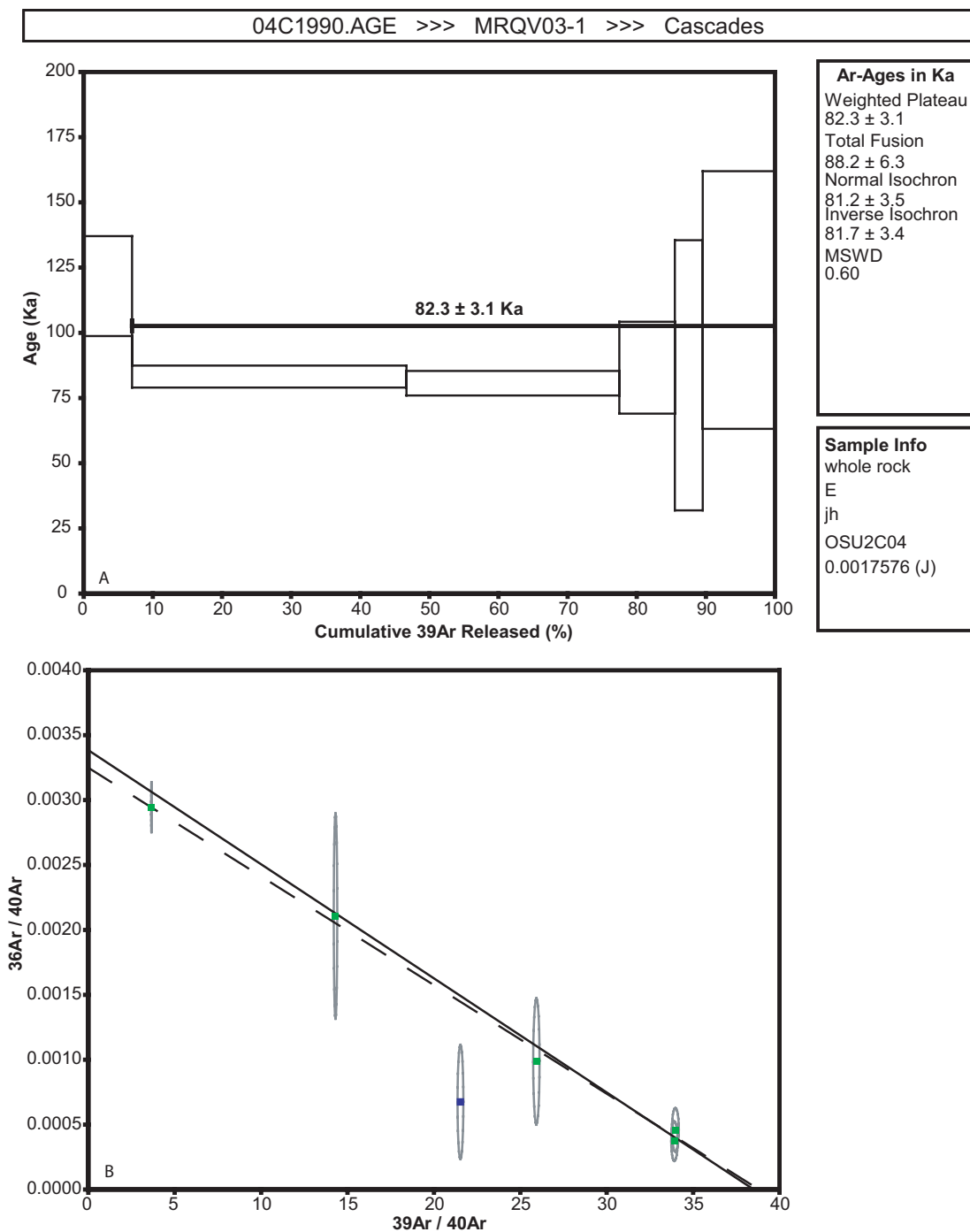


Figure E1: (A) Age plateau and (B) inverse isochron plots for age determination of QV-03-1 forearc shoshonite, indicating a plateau age of 82.3 ± 3.1 ka.

Table E2: Incremental heating data for $^{40}\text{Ar}/^{39}\text{Ar}$ age determination of Pepper Mtn. basalt (PEP03-1).

Incremental Heating		36Ar(a)	37Ar(ca)	38Ar(cl)	39Ar(k)	40Ar(r)	Age $\pm 2\sigma$ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca $\pm 2\sigma$
04C1969	500 °C	4	0.00041	0.13359	0.01605	0.16941	1.14 \pm 0.13	33.47	2.13	0.545 \pm 0.011
04C1970	600 °C	4	0.00034	0.23892	0.03634	0.40574	1.25 \pm 0.06	60.96	5.09	0.730 \pm 0.014
04C1971	700 °C	4	0.00033	0.65836	0.07294	1.28143	1.26 \pm 0.02	82.34	16.08	0.837 \pm 0.016
04C1972	800 °C	4	0.00021	1.23964	0.02556	2.41706	1.24 \pm 0.01	91.81	30.33	0.838 \pm 0.016
04C1973	875 °C	4	0.00016	1.23512	0.00342	1.55128	1.26 \pm 0.02	90.88	19.46	0.540 \pm 0.010
04C1974	950 °C	4	0.00017	0.88798	0.00126	0.66319	1.25 \pm 0.03	82.57	8.32	0.321 \pm 0.006
04C1975	1025 °C	4	0.00024	0.60385	0.00120	0.42247	1.24 \pm 0.06	68.44	5.30	0.301 \pm 0.006
04C1976	1125 °C	4	0.00056	0.95439	0.00123	0.33850	1.24 \pm 0.10	43.99	4.25	0.153 \pm 0.003
04C1977	1225 °C		0.00201	13.44679	0.00513	0.70876	1.51 \pm 0.13	36.16	8.89	0.023 \pm 0.000
04C1978	1400 °C		0.00077	0.96567	0.00005	0.01217	4.96 \pm 2.21	7.76	0.15	0.005 \pm 0.000
Σ			0.00518	20.36431	0.16319	7.97001	3.23074			

Information on Analysis	Results	40(r)/39(k) $\pm 2\sigma$	Age $\pm 2\sigma$ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca $\pm 2\sigma$
Sample Material Location Analyst	Weighted Plateau	0.3965 \pm 0.0022 \pm 0.55%	1.25 \pm 0.01 \pm 0.77%	0.91	90.95 8	0.278 \pm 0.139
		External Error \pm 0.02 Analytical Error \pm 0.01		2.36	Statistical T ratio Error Magnification	
Project Irradiation J-value Standard	Total Fusion Age	0.4054 \pm 0.0048 \pm 1.19%	1.28 \pm 0.02 \pm 1.31%		10	0.168 \pm 0.002
		External Error \pm 0.03 Analytical Error \pm 0.02				

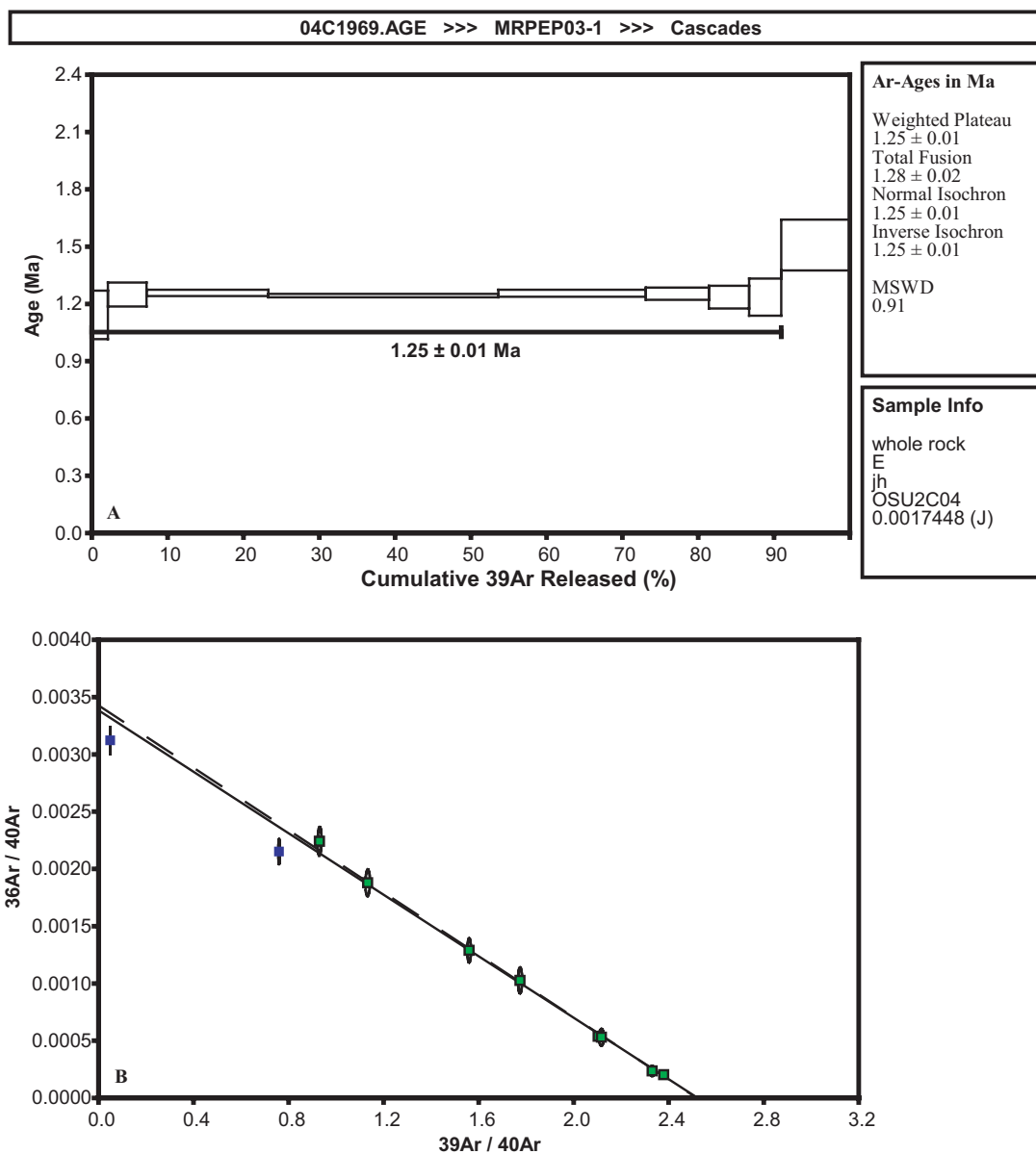


Figure E2: (A) Age plateau and (B) inverse isochron plots for age determination of Pepper Mountain (PEP03-1) forearc shoshonite, indicating a plateau age of 1.25 ± 0.01 Ma. Sample location is 45.427°N , -122.173°W .

APPENDIX F

FLUX MELT MODELING

Calculated results of flux melt modeling are presented in Tables F1 and F2.

Results have been reduced to 1% melting (Table F1) and 0.5% melting (Table F2) for enriched and depleted peridotite sources, respectively. Enriched peridotite source is from Reiners et al (2000) and depleted peridotite source is from Borg et al (1997). The modeled subduction component is from Reiners et al (2000) with Pb from Borg et al (1997) and Cl from Kent et al (2002) and Stolper and Newman (1994). Bulk partition coefficients (D's) are from Borg et al (1997) assuming a mineralogy of 55% olivine, 30% orthopyroxene, 10% clinopyroxene, 2.5% garnet, and 2.5% spinel for the enriched peridotite and 64% olivine, 26% orthopyroxene, 4% garnet, and 6% amphibole for the depleted peridotite. Flux melting was calculated following Reiners et al (2000) using equation 1:

$$\frac{dF}{dSC} = 3 * 10^{-6} e^{[0.012*(T_o - F\Delta H_f / C_p)]} \quad \text{equation 1}$$

Where:

$$\Delta H_f = 753 \text{ J/g}$$

$$C_p = 1.3 \text{ J/g}\cdot\text{K}$$

T_o = Initial peridotite temperature (K)

SC = 0.01 wt% increment of subduction component

Equation 1 is iteratively solved for degree melting assuming the initial step has 0% melt (F=0). Melting is modeled as a modal batch partial melt of the peridotite source

with calculated amount of subduction component added based on the percentage of melt generated. Initial peridotite temperatures for the enriched peridotite range from 1250°C to 1500°C and 1075°C and 1175°C for the depleted peridotite.

Table F1: Flux melt models with an enriched mantle source.

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
Peridotite	0.00465	0.413	9	0.07	0.02	1.5	0.14	283.85	0.815
SC	3.5	120	1500	13	5.3	8	0.05	45000	99
D	0.000762	0.000614	0.0003035	0.001894	0.00236	0.01475	0.0183	0.000674	0.01322
Δ SC %	F%								
1250C									
0.01	0.00	6.57	692.12	30145.30	37.64	8.70	101.74	427776.88	62.39
0.12	1.04	0.79	50.39	1004.96	6.95	2.06	60.24	30399.20	39.66
0.23	2.02	0.61	33.14	607.48	4.53	1.43	43.76	18570.24	31.43
0.35	3.01	0.55	27.11	468.22	3.61	1.19	34.31	14331.51	27.01
0.48	4.01	0.52	24.26	400.13	3.15	1.07	28.23	12237.35	24.37
0.62	5.01	0.52	22.76	361.75	2.89	1.01	24.01	11048.30	22.71
0.77	6.02	0.52	21.95	338.65	2.74	0.97	20.93	10327.40	21.63
0.93	7.02	0.52	21.56	324.49	2.64	0.95	18.60	9881.23	20.95
1.1	8.01	0.53	21.43	316.04	2.59	0.95	16.78	9610.96	20.54
1.29	9.04	0.55	21.50	311.33	2.57	0.95	15.25	9455.45	20.32
1.48	10.00	0.56	21.70	309.70	2.57	0.96	14.09	9395.73	20.26
1.69	11.00	0.58	22.02	310.18	2.58	0.97	13.08	9400.90	20.32
1.92	12.01	0.59	22.45	312.52	2.61	0.99	12.21	9462.85	20.49
2.16	13.00	0.61	22.95	316.30	2.65	1.02	11.48	9569.24	20.75
2.42	14.00	0.63	23.53	321.42	2.70	1.04	10.85	9716.85	21.08
2.7	15.00	0.66	24.19	327.75	2.76	1.07	10.31	9901.37	21.49
3	16.01	0.68	24.91	335.16	2.83	1.10	9.83	10119.04	21.97
3.32	17.00	0.71	25.70	343.56	2.91	1.14	9.41	10366.62	22.51
3.67	18.02	0.74	26.57	353.12	3.00	1.17	9.04	10649.57	23.13
4.03	19.00	0.76	27.47	363.22	3.09	1.21	8.73	10949.32	23.78
4.43	20.01	0.79	28.47	374.65	3.19	1.26	8.44	11288.92	24.52
4.85	21.00	0.83	29.52	386.78	3.30	1.30	8.19	11649.91	25.30
5.31	22.01	0.86	30.66	400.14	3.41	1.35	7.97	12047.97	26.16
5.79	23.00	0.90	31.84	414.11	3.54	1.41	7.78	12464.39	27.07
6.32	24.01	0.94	33.13	429.50	3.67	1.46	7.60	12923.85	28.06
6.88	25.01	0.98	34.48	445.70	3.81	1.52	7.46	13407.72	29.11
7.47	26.00	1.02	35.89	462.67	3.96	1.58	7.33	13914.82	30.21

Table F1: Continued

Element	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
Peridotite	2.47	0.17	18	1.4	0.35	25	0.4	0.13	1000
SC	297	17	3500	130	35	500	20	9	30000
D	0.02155	0.001458	0.01026	0.0263	0.043525	0.10375	0.07475	0.0523	0.0537
Δ SC %	F%								
1250C									
0.01	115.98	117.79	1788.32	53.72	8.12	241.42	5.38	2.50	18675.98
0.12	88.90	16.01	1077.22	42.63	7.32	226.08	5.02	2.26	16276.78
0.23	76.25	9.67	860.75	36.92	6.84	214.19	4.77	2.11	14656.43
0.35	68.68	7.27	754.22	33.29	6.52	203.99	4.57	1.99	13407.12
0.48	63.90	6.04	695.15	30.88	6.31	195.31	4.42	1.91	12431.90
0.62	60.84	5.32	661.01	29.25	6.17	187.94	4.30	1.85	11663.61
0.77	58.90	4.87	641.68	28.15	6.10	181.73	4.22	1.81	11054.65
0.93	57.74	4.56	631.95	27.43	6.08	176.52	4.17	1.79	10570.58
1.1	57.15	4.36	628.85	26.99	6.09	172.19	4.14	1.78	10185.97
1.29	56.99	4.22	630.79	26.75	6.13	168.46	4.12	1.77	9867.34
1.48	57.18	4.13	636.32	26.70	6.20	165.61	4.12	1.78	9632.81
1.69	57.66	4.08	645.16	26.79	6.29	163.24	4.14	1.79	9444.50
1.92	58.41	4.06	656.98	27.01	6.41	161.39	4.18	1.81	9300.96
2.16	59.37	4.06	670.89	27.32	6.54	160.07	4.22	1.83	9202.76
2.42	60.54	4.09	687.16	27.75	6.70	159.21	4.28	1.86	9140.57
2.7	61.91	4.13	705.59	28.26	6.87	158.78	4.35	1.90	9112.07
3	63.46	4.18	726.02	28.87	7.07	158.78	4.43	1.94	9114.82
3.32	65.18	4.26	748.29	29.55	7.28	159.17	4.53	1.99	9146.38
3.67	67.11	4.34	772.96	30.33	7.51	159.97	4.64	2.04	9206.46
4.03	69.13	4.44	798.53	31.16	7.75	161.10	4.75	2.10	9289.42
4.43	71.41	4.55	826.99	32.10	8.02	162.65	4.88	2.16	9400.67
4.85	73.80	4.67	856.85	33.09	8.31	164.54	5.02	2.23	9533.91
5.31	76.44	4.81	889.43	34.20	8.62	166.84	5.17	2.30	9694.45
5.79	79.18	4.95	923.22	35.35	8.94	169.44	5.34	2.38	9874.27
6.32	82.20	5.11	960.25	36.63	9.30	172.50	5.52	2.47	10083.77
6.88	85.37	5.29	999.02	37.98	9.67	175.90	5.71	2.56	10314.44
7.47	88.70	5.47	1039.47	39.39	10.06	179.62	5.91	2.65	10565.11

Table F1: Continued

Element	Gd	Yb	Cl
Peridotite	0.45	0.5	4
SC	30	12	11500
D	0.070185	0.19305	0.001
Δ SC %	F%		
1250C			
0.01	0.00	2.60	5149.60
0.12	1.04	2.55	1557.54
0.23	2.02	2.52	1439.76
0.35	3.01	2.49	1425.01
0.48	4.01	2.46	1441.75
0.62	5.01	2.45	1473.24
0.77	6.02	2.44	1513.45
0.93	7.02	2.43	1559.62
1.1	8.01	2.43	1610.32
1.29	9.04	2.44	1667.71
1.48	10.00	2.45	1725.19
1.69	11.00	2.46	1788.42
1.92	12.01	2.49	1857.04
2.16	13.00	2.51	1927.81
2.42	14.00	2.54	2003.45
2.7	15.00	2.58	2083.71
3	16.01	2.62	2168.37
3.32	17.00	2.67	2257.22
3.67	18.02	2.72	2352.80
4.03	19.00	2.78	2449.49
4.43	20.01	2.85	2555.12
4.85	21.00	2.92	2664.16
5.31	22.01	3.00	2781.58
5.79	23.00	3.08	2902.04
6.32	24.01	3.17	3032.81
6.88	25.01	3.27	3168.67
7.47	26.00	3.37	3309.45

Table F1: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
Δ SC %									
F%									
8.12	27.01	1.07	37.42	4.13	1.65	7.22	0.47	14469.66	31.42
8.81	28.01	1.11	39.03	4.30	1.72	7.13	0.45	15053.79	32.69
9.55	29.01	1.16	40.73	4.48	1.80	7.06	0.43	15674.47	34.03
10.34	30.00	1.22	42.53	4.67	1.88	7.00	0.42	16330.44	35.46
1300C									
0.01	0.00	6.57	692.12	37.64	8.70	101.74	7.65	427776.88	62.39
0.07	1.04	0.64	45.12	938.51	1.86	60.19	4.91	28473.10	37.63
0.13	2.01	0.44	27.46	536.33	1.20	43.66	3.68	16474.78	28.52
0.2	3.06	0.37	20.88	387.38	0.93	33.67	2.89	11929.71	23.28
0.27	4.05	0.34	17.93	319.69	0.80	27.79	2.41	9843.92	20.33
0.35	5.09	0.33	16.15	277.74	0.72	23.46	2.05	8543.21	18.26
0.43	6.06	0.32	15.15	252.93	0.68	20.51	1.79	7769.88	16.93
0.52	7.09	0.32	14.49	235.47	0.65	18.14	1.59	7222.75	15.94
0.61	8.04	0.32	14.11	224.27	0.63	16.38	1.43	6869.59	15.28
0.71	9.03	0.32	13.89	216.21	0.62	14.91	1.30	6613.54	14.78
0.82	10.05	0.33	13.79	210.69	0.62	13.66	1.19	6435.90	14.42
0.93	11.00	0.34	13.80	207.45	0.62	12.68	1.10	6328.92	14.20
1.06	12.04	0.34	13.89	205.54	0.62	11.76	1.02	6262.69	14.05
1.19	13.02	0.35	14.05	205.04	0.63	11.03	0.95	6240.71	14.00
1.33	14.00	0.36	14.26	205.59	0.64	10.39	0.89	6251.01	14.01
1.49	15.04	0.38	14.54	207.18	0.65	9.80	0.84	6292.79	14.09
1.65	16.01	0.39	14.85	209.48	0.66	9.32	0.79	6357.05	14.22
1.83	17.04	0.40	15.22	212.67	0.68	8.87	0.75	6448.24	14.40
2.02	18.04	0.42	15.64	216.53	0.69	8.47	0.71	6559.89	14.63
2.22	19.03	0.43	16.08	220.96	0.71	8.13	0.67	6689.49	14.90
2.43	20.00	0.45	16.56	225.92	0.73	7.83	0.64	6835.05	15.20
2.67	21.03	0.46	17.11	231.85	0.76	7.54	0.61	7009.75	15.57
2.92	22.03	0.48	17.69	238.22	0.78	7.29	0.59	7198.27	15.97
3.18	23.00	0.50	18.29	245.00	0.81	7.07	0.56	7399.14	16.39
3.47	24.01	0.52	18.96	252.68	0.84	6.86	0.54	7626.96	16.88
3.78	25.02	0.55	19.68	260.96	0.87	6.68	0.52	7873.21	17.40

Table F1: Continued

Element	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
Δ SC %	F%								
8.12	27.01	5.67	1083.55	40.94	10.48	183.84	6.13	2.76	10847.89
8.81	28.01	5.88	1129.81	42.57	10.93	188.43	6.37	2.87	11153.49
9.55	29.01	6.11	1178.82	44.31	11.40	193.45	6.62	2.99	11485.51
10.34	30.00	6.34	1230.51	46.15	11.90	198.88	6.89	3.11	11843.20
1300C									
0.01	0.00	117.79	1788.32	53.72	8.12	241.42	5.38	2.50	18675.98
0.07	1.04	15.35	994.29	40.90	7.00	224.04	4.90	2.19	16056.88
0.13	2.01	8.91	747.12	34.17	6.30	210.39	4.56	1.98	14270.16
0.2	3.06	6.35	615.14	29.52	5.76	197.78	4.26	1.82	12794.53
0.27	4.05	5.15	544.78	26.60	5.39	187.72	4.04	1.70	11723.10
0.35	5.09	4.38	497.78	24.39	5.11	178.50	3.85	1.60	10812.66
0.43	6.06	3.91	469.14	22.88	4.91	171.04	3.70	1.53	10124.31
0.52	7.09	3.57	449.09	21.71	4.76	164.23	3.58	1.47	9529.57
0.61	8.04	3.34	436.77	20.89	4.66	158.68	3.48	1.43	9067.81
0.71	9.03	3.16	428.74	20.25	4.59	153.62	3.41	1.40	8665.45
0.82	10.05	3.03	424.36	19.77	4.54	149.10	3.34	1.37	8319.92
0.93	11.00	2.93	423.06	19.47	4.52	145.42	3.30	1.36	8048.66
1.06	12.04	2.86	424.20	19.25	4.52	141.89	3.26	1.35	7798.40
1.19	13.02	2.82	427.32	19.15	4.54	139.07	3.24	1.34	7604.85
1.33	14.00	2.79	432.21	19.13	4.57	136.64	3.23	1.34	7443.86
1.49	15.04	2.77	439.15	19.20	4.62	134.46	3.24	1.35	7305.30
1.65	16.01	2.77	447.09	19.33	4.69	132.79	3.25	1.35	7203.48
1.83	17.04	2.79	456.86	19.53	4.77	131.39	3.26	1.37	7122.33
2.02	18.04	2.81	467.83	19.79	4.86	130.33	3.29	1.38	7066.05
2.22	19.03	2.84	479.88	20.11	4.96	129.59	3.33	1.41	7031.85
2.43	20.00	2.88	492.92	20.47	5.08	129.14	3.37	1.43	7017.35
2.67	21.03	2.93	508.13	20.92	5.21	128.95	3.43	1.46	7021.59
2.92	22.03	2.99	524.20	21.41	5.36	129.05	3.49	1.49	7044.29
3.18	23.00	3.05	541.04	21.93	5.51	129.41	3.56	1.52	7083.26
3.47	24.01	3.13	559.91	22.54	5.68	130.05	3.64	1.56	7141.09
3.78	25.02	3.21	580.09	23.19	5.87	130.95	3.72	1.61	7215.93

Table F1: Continued

Element	Gd	Yb	Cl
Δ SC %			
F%			
8.12	27.01	8.87	3.49
8.81	28.01	9.24	3.61
9.55	29.01	9.63	3.74
10.34	30.00	10.04	3.88
1300C			
0.01	0.00	6.45	2.60
0.07	1.04	5.89	2.52
0.13	2.01	5.50	2.46
0.2	3.06	5.16	2.40
0.27	4.05	4.91	2.35
0.35	5.09	4.71	2.31
0.43	6.06	4.56	2.27
0.52	7.09	4.44	2.24
0.61	8.04	4.35	2.21
0.71	9.03	4.28	2.19
0.82	10.05	4.23	2.17
0.93	11.00	4.20	2.15
1.06	12.04	4.19	2.14
1.19	13.02	4.19	2.14
1.33	14.00	4.21	2.13
1.49	15.04	4.24	2.14
1.65	16.01	4.28	2.14
1.83	17.04	4.33	2.15
2.02	18.04	4.40	2.16
2.22	19.03	4.48	2.18
2.43	20.00	4.56	2.20
2.67	21.03	4.66	2.22
2.92	22.03	4.77	2.25
3.18	23.00	4.89	2.29
3.47	24.01	5.03	2.32
3.78	25.02	5.17	2.37
			3462.00
			3621.27
			3789.31
			3965.83
			5149.60
			1057.61
			898.82
			854.01
			846.10
			853.09
			867.63
			888.34
			911.46
			938.61
			969.39
			1000.59
			1037.61
			1074.55
			1114.09
			1158.85
			1203.10
			1252.25
			1303.40
			1356.47
			1411.37
			1473.15
			1536.47
			1601.31
			1672.47
			1747.32

Table F1: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
Δ SC %	F%								
4.1	26.00	20.41	269.55	2.30	0.90	6.52	0.50	8129.03	17.95
4.46	27.02	21.24	279.24	2.38	0.94	6.37	0.48	8417.63	18.56
4.84	28.02	22.10	289.45	2.47	0.98	6.24	0.46	8722.26	19.22
5.24	29.00	22.99	300.17	2.57	1.02	6.12	0.45	9042.16	19.90
5.67	29.99	23.95	311.64	2.67	1.06	6.02	0.43	9384.62	20.64
1350									
0.01	0.00	692.12	30145.30	37.64	8.70	101.74	7.65	427776.88	62.39
0.04	0.96	45.35	973.92	6.58	1.86	62.19	5.06	29523.12	37.72
0.08	2.14	23.15	470.48	3.46	1.02	42.04	3.56	14510.39	26.05
0.11	2.96	18.02	355.60	2.68	0.81	34.30	2.95	10998.25	21.74
0.15	3.99	14.61	279.27	2.14	0.66	27.90	2.43	8645.37	18.28
0.19	4.96	12.77	237.36	1.84	0.58	23.79	2.09	7346.06	16.12
0.24	6.07	11.42	206.10	1.62	0.52	20.32	1.79	6373.15	14.36
0.29	7.11	10.60	186.62	1.48	0.48	17.91	1.59	5764.38	13.19
0.34	8.08	10.08	173.57	1.38	0.46	16.13	1.43	5354.99	12.36
0.39	8.98	9.73	164.41	1.32	0.44	14.77	1.31	5066.52	11.76
0.45	10.00	9.46	156.68	1.26	0.43	13.50	1.20	4821.97	11.23
0.52	11.10	9.28	150.57	1.22	0.42	12.36	1.10	4627.24	10.80
0.58	11.98	9.20	146.98	1.19	0.42	11.58	1.03	4511.97	10.53
0.66	13.08	9.16	143.80	1.17	0.41	10.75	0.95	4408.28	10.29
0.73	13.97	9.17	142.08	1.16	0.41	10.15	0.90	4350.59	10.14
0.82	15.04	9.23	140.86	1.16	0.42	9.53	0.84	4308.06	10.02
0.91	16.04	9.33	140.46	1.16	0.42	9.02	0.79	4291.02	9.96
1.01	17.07	9.46	140.70	1.16	0.42	8.56	0.75	4293.34	9.94
1.11	18.04	9.62	141.44	1.17	0.43	8.17	0.71	4311.89	9.96
1.22	19.03	9.81	142.70	1.19	0.44	7.81	0.68	4345.98	10.01
1.34	20.04	10.03	144.45	1.20	0.45	7.48	0.65	4395.19	10.10
1.47	21.05	10.29	146.68	1.23	0.46	7.18	0.62	4458.88	10.22
1.6	22.00	10.55	149.15	1.25	0.47	6.93	0.59	4530.50	10.36
1.75	23.03	10.86	152.24	1.28	0.48	6.68	0.57	4620.37	10.54
1.91	24.04	11.20	155.72	1.31	0.50	6.45	0.54	4722.47	10.74

Table F1: Continued

Element	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
Δ SC %	F%								
4.1	26.00	3.29	600.88	23.88	6.06	132.08	3.82	1.65	7304.15
4.46	27.02	3.39	624.18	24.66	6.28	133.53	3.92	1.70	7413.71
4.84	28.02	3.50	648.63	25.49	6.51	135.23	4.04	1.76	7538.51
5.24	29.00	3.61	674.19	26.36	6.75	137.17	4.16	1.82	7677.70
5.67	29.99	3.74	701.44	27.30	7.01	139.39	4.29	1.88	7834.18
1350									
0.01	0.00	117.79	1788.32	53.72	8.12	241.42	5.38	2.50	18675.98
0.04	0.96	16.07	983.67	40.77	6.91	224.29	4.88	2.18	16123.74
0.08	2.14	8.05	661.79	31.90	5.91	206.51	4.40	1.89	13841.96
0.11	2.96	6.07	551.50	27.95	5.40	195.87	4.13	1.74	12624.79
0.15	3.99	4.72	466.38	24.43	4.92	184.25	3.84	1.59	11404.51
0.19	4.96	3.96	414.99	22.05	4.57	174.81	3.63	1.48	10487.76
0.24	6.07	3.39	374.49	20.00	4.26	165.24	3.41	1.38	9620.22
0.29	7.11	3.02	348.42	18.56	4.04	157.49	3.25	1.30	8959.98
0.34	8.08	2.77	330.77	17.51	3.87	151.09	3.12	1.24	8441.65
0.39	8.98	2.58	318.44	16.71	3.75	145.73	3.02	1.20	8024.78
0.45	10.00	2.43	308.26	16.00	3.64	140.34	2.92	1.16	7622.02
0.52	11.10	2.29	300.59	15.40	3.54	135.17	2.83	1.12	7249.83
0.58	11.98	2.21	296.48	15.01	3.48	131.47	2.77	1.09	6992.47
0.66	13.08	2.13	293.41	14.64	3.43	127.34	2.70	1.07	6714.71
0.73	13.97	2.08	292.34	14.41	3.40	124.34	2.66	1.05	6518.25
0.82	15.04	2.03	292.52	14.21	3.38	121.12	2.62	1.04	6313.68
0.91	16.04	2.00	293.95	14.08	3.38	118.46	2.59	1.03	6150.38
1.01	17.07	1.98	296.60	14.02	3.38	116.04	2.57	1.03	6005.67
1.11	18.04	1.97	300.06	14.00	3.40	114.05	2.56	1.02	5890.76
1.22	19.03	1.96	304.53	14.03	3.43	112.27	2.55	1.02	5791.02
1.34	20.04	1.96	310.00	14.11	3.46	110.70	2.55	1.03	5707.05
1.47	21.05	1.97	316.42	14.23	3.51	109.36	2.55	1.03	5638.86
1.6	22.00	1.99	323.23	14.37	3.56	108.32	2.56	1.04	5589.25
1.75	23.03	2.01	331.41	14.57	3.63	107.41	2.58	1.05	5550.13
1.91	24.04	2.03	340.42	14.81	3.70	106.73	2.61	1.07	5525.25

Table F1: Continued

Element	Gd	Yb	Cl
Δ SC %	F%		
4.1	26.00	5.33	2.41
4.46	27.02	5.50	2.46
4.84	28.02	5.69	2.52
5.24	29.00	5.88	2.58
5.67	29.99	6.09	2.65
1350			
0.01	0.00	6.45	2.60
0.04	0.96	5.84	2.51
0.08	2.14	5.26	2.42
0.11	2.96	4.94	2.36
0.15	3.99	4.61	2.30
0.19	4.96	4.35	2.24
0.24	6.07	4.11	2.18
0.29	7.11	3.93	2.13
0.34	8.08	3.79	2.09
0.39	8.98	3.68	2.05
0.45	10.00	3.57	2.02
0.52	11.10	3.48	1.98
0.58	11.98	3.42	1.96
0.66	13.08	3.36	1.93
0.73	13.97	3.33	1.91
0.82	15.04	3.30	1.89
0.91	16.04	3.28	1.87
1.01	17.07	3.27	1.86
1.11	18.04	3.27	1.85
1.22	19.03	3.28	1.85
1.34	20.04	3.30	1.84
1.47	21.05	3.33	1.84
1.6	22.00	3.36	1.85
1.75	23.03	3.40	1.85
1.91	24.04	3.45	1.86
			1823.36
			1907.55
			1994.98
			2085.56
			2181.42
			5149.60
			815.54
			590.56
			544.02
			519.36
			511.58
			512.13
			518.29
			527.39
			538.17
			552.41
			570.05
			585.66
			606.84
			625.52
			649.58
			673.56
			700.03
			726.27
			754.83
			785.63
			818.56
			851.05
			888.03
			926.89

Table F1: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
Δ SC %	F%								
2.08	25.05	11.56	159.58	1.35	0.51	6.25	0.52	4836.04	10.97
2.26	26.05	11.94	163.79	1.38	0.53	6.07	0.50	4960.35	11.23
2.45	27.03	12.35	168.33	1.42	0.55	5.90	0.49	5094.78	11.51
2.66	28.04	12.80	173.43	1.47	0.57	5.75	0.47	5245.97	11.82
2.88	29.02	13.27	178.83	1.52	0.59	5.61	0.45	5406.31	12.16
3.11	29.99	13.76	184.51	1.57	0.61	5.49	0.44	5575.24	12.51
1400C									
0.01	0.00	692.12	30145.30	37.64	8.70	101.74	7.65	427776.88	62.39
0.03	1.16	36.69	792.15	5.47	1.55	57.32	4.71	24182.98	34.20
0.05	2.24	20.59	430.01	3.16	0.92	40.86	3.48	13298.64	24.48
0.07	3.23	15.08	307.70	2.31	0.68	32.27	2.80	9550.04	19.58
0.09	4.17	12.32	246.46	1.88	0.56	26.98	2.36	7658.77	16.62
0.11	5.04	10.68	209.84	1.61	0.49	23.39	2.06	6522.76	14.66
0.14	6.26	9.19	176.31	1.37	0.42	19.75	1.75	5478.86	12.70
0.16	7.02	8.54	161.58	1.26	0.39	18.00	1.60	5019.19	11.79
0.19	8.08	7.86	145.87	1.15	0.36	16.02	1.43	4527.54	10.77
0.22	9.08	7.40	134.90	1.06	0.34	14.54	1.30	4183.36	10.03
0.23	9.39	7.28	131.96	1.04	0.33	14.12	1.27	4091.03	9.83
0.25	10.00	7.08	126.90	1.01	0.33	13.38	1.20	3931.60	9.48
0.29	11.15	6.78	119.19	0.95	0.31	12.19	1.09	3688.52	8.92
0.33	12.21	6.58	113.72	0.91	0.30	11.26	1.01	3514.97	8.52
0.37	13.20	6.45	109.72	0.88	0.29	10.52	0.94	3387.81	8.21
0.41	14.13	6.37	106.77	0.86	0.29	9.92	0.89	3293.12	7.98
0.45	15.00	6.32	104.57	0.85	0.29	9.41	0.84	3222.01	7.80
0.5	16.01	6.29	102.59	0.83	0.29	8.88	0.80	3157.45	7.63
0.56	17.15	6.30	101.04	0.82	0.29	8.36	0.75	3105.87	7.48
0.61	18.02	6.32	100.25	0.82	0.29	8.00	0.71	3078.64	7.40
0.67	19.01	6.37	99.75	0.82	0.29	7.64	0.68	3059.92	7.33
0.74	20.09	6.45	99.62	0.82	0.29	7.28	0.65	3052.48	7.29
0.81	21.08	6.54	99.86	0.82	0.30	6.98	0.62	3056.56	7.28
0.88	22.02	6.64	100.37	0.83	0.30	6.72	0.59	3069.29	7.29

Table F1: Continued

Element	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
Δ SC %	F%								
2.08	25.05	2.07	350.21	15.08	3.78	106.25	2.63	1.09	5513.77
2.26	26.05	2.10	360.73	15.38	3.87	105.98	2.67	1.10	5514.85
2.45	27.03	2.15	371.96	15.72	3.97	105.90	2.71	1.13	5527.68
2.66	28.04	2.19	384.45	16.11	4.08	106.01	2.76	1.15	5552.91
2.88	29.02	2.25	397.57	16.52	4.20	106.30	2.81	1.18	5589.20
3.11	29.99	2.30	411.29	16.96	4.32	106.77	2.87	1.21	5635.69
1400C									
0.01	0.00	117.79	1788.32	53.72	8.12	241.42	5.38	2.50	18675.98
0.03	1.16	13.40	874.94	38.24	6.60	220.22	4.75	2.10	15589.98
0.05	2.24	7.50	609.34	30.46	5.66	203.86	4.29	1.83	13550.97
0.07	3.23	5.38	483.43	25.78	5.03	190.84	3.95	1.64	12101.66
0.09	4.17	4.30	410.34	22.67	4.57	180.21	3.69	1.50	11017.56
0.11	5.04	3.64	362.87	20.45	4.23	171.36	3.47	1.40	10175.49
0.14	6.26	3.03	316.74	18.11	3.85	160.55	3.22	1.28	9213.67
0.16	7.02	2.75	295.67	16.97	3.66	154.58	3.09	1.21	8711.86
0.19	8.08	2.46	272.69	15.66	3.44	147.00	2.92	1.14	8103.76
0.22	9.08	2.25	256.39	14.68	3.27	140.72	2.79	1.08	7621.34
0.23	9.39	2.19	252.00	14.40	3.22	138.85	2.75	1.06	7481.97
0.25	10.00	2.09	244.42	13.92	3.14	135.41	2.68	1.03	7229.38
0.29	11.15	1.94	232.93	13.14	3.00	129.50	2.57	0.99	6808.61
0.33	12.21	1.83	224.86	12.56	2.90	124.60	2.47	0.95	6472.52
0.37	13.20	1.74	219.12	12.11	2.82	120.48	2.40	0.92	6198.26
0.41	14.13	1.68	215.03	11.76	2.75	116.97	2.34	0.89	5970.60
0.45	15.00	1.63	212.16	11.48	2.71	113.94	2.29	0.87	5778.97
0.5	16.01	1.57	209.83	11.21	2.66	110.71	2.23	0.85	5578.75
0.56	17.15	1.53	208.38	10.97	2.62	107.45	2.18	0.84	5382.71
0.61	18.02	1.50	208.00	10.82	2.60	105.16	2.15	0.83	5247.73
0.67	19.01	1.48	208.27	10.70	2.58	102.80	2.12	0.81	5112.17
0.74	20.09	1.46	209.36	10.60	2.57	100.49	2.09	0.81	4982.58
0.81	21.08	1.45	211.05	10.54	2.57	98.55	2.07	0.80	4876.95
0.88	22.02	1.44	213.19	10.52	2.58	96.92	2.06	0.80	4790.13

Table F1: Continued

Element	Gd	Yb	Cl
Δ SC %	F%		
2.08	25.05	3.51	1.87
2.26	26.05	3.58	1.88
2.45	27.03	3.65	1.90
2.66	28.04	3.74	1.92
2.88	29.02	3.83	1.95
3.11	29.99	3.92	1.97
1400C			
0.01	0.00	6.45	2.60
0.03	1.16	5.67	2.49
0.05	2.24	5.11	2.40
0.07	3.23	4.69	2.32
0.09	4.17	4.38	2.25
0.11	5.04	4.12	2.19
0.14	6.26	3.83	2.12
0.16	7.02	3.67	2.08
0.19	8.08	3.48	2.02
0.22	9.08	3.33	1.97
0.23	9.39	3.29	1.96
0.25	10.00	3.21	1.93
0.29	11.15	3.08	1.88
0.33	12.21	2.98	1.84
0.37	13.20	2.90	1.81
0.41	14.13	2.83	1.78
0.45	15.00	2.78	1.76
0.5	16.01	2.73	1.73
0.56	17.15	2.68	1.70
0.61	18.02	2.65	1.68
0.67	19.01	2.62	1.67
0.74	20.09	2.60	1.65
0.81	21.08	2.59	1.63
0.88	22.02	2.58	1.62
			5149.60
			590.49
			417.58
			361.61
			336.54
			324.05
			316.25
			314.91
			316.08
			319.55
			321.04
			324.40
			332.19
			340.89
			350.14
			359.72
			369.51
			381.90
			396.88
			409.38
			424.34
			441.70
			458.92
			475.99

Table F1: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
$\Delta SC\%$	F%								
0.96	23.01	6.77	101.20	0.84	0.30	6.47	0.57	3091.86	7.31
1.05	24.06	6.92	102.39	0.85	0.31	6.23	0.55	3124.98	7.37
1.14	25.03	7.08	103.77	0.86	0.32	6.02	0.53	3164.27	7.43
1.24	26.04	7.27	105.48	0.88	0.33	5.83	0.51	3213.37	7.52
1.35	27.07	7.48	107.51	0.90	0.34	5.64	0.49	3272.35	7.63
1.46	28.04	7.69	109.66	0.92	0.34	5.48	0.47	3335.24	7.76
1.58	29.02	7.92	112.11	0.94	0.35	5.33	0.46	3407.16	7.90
1.71	30.01	8.18	114.86	0.97	0.37	5.19	0.44	3487.98	8.06
1500									
0.01	0.00	692.12	30145.30	37.64	8.70	101.74	7.65	427776.88	62.39
0.02	1.97	21.52	465.01	3.37	0.96	43.95	3.72	14381.72	25.56
0.03	3.69	11.98	254.18	1.91	0.55	29.40	2.57	7921.86	17.02
0.04	5.21	8.74	183.11	1.39	0.41	22.73	2.01	5719.19	13.21
0.05	6.58	7.12	147.40	1.13	0.33	18.88	1.69	4607.33	11.05
0.06	7.83	6.15	125.92	0.97	0.29	16.37	1.47	3936.75	9.66
0.07	8.97	5.50	111.59	0.86	0.26	14.59	1.32	3488.48	8.68
0.08	10.03	5.04	101.36	0.79	0.24	13.26	1.20	3168.00	7.97
0.09	11.01	4.71	93.71	0.73	0.22	12.22	1.11	2927.81	7.41
0.1	11.93	4.45	87.77	0.69	0.21	11.39	1.03	2741.41	6.98
0.11	12.79	4.24	83.05	0.65	0.20	10.71	0.97	2592.84	6.62
0.13	14.36	3.94	76.03	0.60	0.18	9.65	0.88	2371.73	6.08
0.14	15.09	3.83	73.36	0.58	0.18	9.24	0.84	2287.65	5.88
0.15	15.78	3.74	71.10	0.56	0.17	8.87	0.81	2216.24	5.70
0.17	17.06	3.60	67.50	0.53	0.17	8.26	0.75	2102.06	5.41
0.19	18.24	3.50	64.78	0.51	0.16	7.78	0.71	2015.63	5.18
0.21	19.33	3.43	62.68	0.50	0.16	7.38	0.67	1948.75	5.01
0.23	20.34	3.37	61.04	0.49	0.16	7.04	0.64	1896.17	4.87
0.25	21.28	3.34	59.74	0.48	0.15	6.76	0.62	1854.38	4.75
0.27	22.17	3.31	58.70	0.47	0.15	6.51	0.59	1820.93	4.66
0.29	23.00	3.30	57.88	0.46	0.15	6.29	0.57	1794.06	4.58
0.32	24.16	3.29	56.94	0.46	0.15	6.02	0.55	1763.36	4.49

Table F1: Continued

Element Δ SC %	F%	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
0.96	23.01	21.47	1.43	216.06	10.52	2.59	95.35	2.04	0.80	4709.19
1.05	24.06	21.65	1.43	219.69	10.56	2.61	93.90	2.04	0.80	4636.58
1.14	25.03	21.87	1.44	223.63	10.61	2.63	92.71	2.04	0.80	4579.46
1.24	26.04	22.16	1.45	228.29	10.70	2.66	91.63	2.04	0.80	4530.39
1.35	27.07	22.50	1.46	233.66	10.82	2.70	90.69	2.04	0.81	4490.34
1.46	28.04	22.88	1.48	239.23	10.95	2.75	89.95	2.05	0.82	4461.92
1.58	29.02	23.32	1.50	245.45	11.11	2.80	89.34	2.07	0.83	4441.53
1.71	30.01	23.81	1.52	252.32	11.30	2.85	88.86	2.09	0.84	4429.49
1500										
0.01	0.00	115.98	117.79	1788.32	53.72	8.12	241.42	5.38	2.50	18675.98
0.02	1.97	61.95	8.21	628.33	31.35	5.72	206.71	4.34	1.86	13903.75
0.03	3.69	44.39	4.57	407.31	23.13	4.57	183.79	3.73	1.52	11385.48
0.04	5.21	35.67	3.30	313.57	18.84	3.90	167.42	3.32	1.31	9819.36
0.05	6.58	30.45	2.66	261.76	16.20	3.45	155.07	3.02	1.17	8745.97
0.06	7.83	26.96	2.26	228.93	14.41	3.13	145.38	2.80	1.07	7961.37
0.07	8.97	24.47	2.00	206.30	13.11	2.89	137.55	2.62	0.99	7361.00
0.08	10.03	22.61	1.81	189.80	12.13	2.71	131.07	2.48	0.93	6885.62
0.09	11.01	21.16	1.66	177.26	11.35	2.56	125.62	2.36	0.88	6499.11
0.1	11.93	20.00	1.55	167.44	10.73	2.44	120.94	2.27	0.84	6178.14
0.11	12.79	19.05	1.46	159.57	10.22	2.34	116.89	2.18	0.81	5906.98
0.13	14.36	17.60	1.32	147.81	9.43	2.18	110.20	2.05	0.75	5473.07
0.14	15.09	17.04	1.27	143.34	9.12	2.12	107.40	1.99	0.73	5296.46
0.15	15.78	16.55	1.23	139.55	8.85	2.07	104.88	1.95	0.71	5140.34
0.17	17.06	15.76	1.16	133.52	8.41	1.98	100.54	1.86	0.68	4876.49
0.19	18.24	15.14	1.10	129.01	8.06	1.91	96.92	1.80	0.65	4661.81
0.21	19.33	14.66	1.06	125.57	7.79	1.85	93.86	1.74	0.63	4483.55
0.23	20.34	14.27	1.02	122.93	7.56	1.80	91.22	1.69	0.61	4333.07
0.25	21.28	13.95	0.99	120.89	7.37	1.77	88.92	1.65	0.60	4204.31
0.27	22.17	13.69	0.97	119.32	7.22	1.74	86.91	1.62	0.59	4092.88
0.29	23.00	13.48	0.95	118.12	7.09	1.71	85.12	1.59	0.58	3995.52
0.32	24.16	13.23	0.92	116.86	6.93	1.68	82.80	1.55	0.56	3870.62

Table F1: Continued

Element	Gd	Yb	Cl
$\Delta SC\%$			
F%			
0.96	23.01	2.58	1.61
1.05	24.06	2.59	1.60
1.14	25.03	2.60	1.60
1.24	26.04	2.61	1.59
1.35	27.07	2.64	1.59
1.46	28.04	2.66	1.59
1.58	29.02	2.70	1.60
1.71	30.01	2.74	1.60
1500			
0.01	0.00	6.45	2.60
0.02	1.97	5.15	2.40
0.03	3.69	4.39	2.26
0.04	5.21	3.89	2.15
0.05	6.58	3.54	2.05
0.06	7.83	3.27	1.98
0.07	8.97	3.06	1.91
0.08	10.03	2.90	1.86
0.09	11.01	2.76	1.81
0.1	11.93	2.65	1.77
0.11	12.79	2.55	1.73
0.13	14.36	2.40	1.67
0.14	15.09	2.33	1.64
0.15	15.78	2.28	1.61
0.17	17.06	2.19	1.57
0.19	18.24	2.11	1.53
0.21	19.33	2.05	1.50
0.23	20.34	2.00	1.47
0.25	21.28	1.95	1.45
0.27	22.17	1.92	1.43
0.29	23.00	1.89	1.41
0.32	24.16	1.85	1.38
			5149.60
			304.63
			196.86
			162.03
			146.00
			137.56
			132.92
			130.42
			129.26
			128.98
			129.31
			131.13
			132.44
			133.93
			137.30
			141.03
			144.98
			149.08
			153.27
			157.52
			161.81
			168.29

Table F1: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La
Δ SC %									
F%									
0.35	25.24	0.07	56.29	0.45	0.15	5.78	0.53	1741.52	4.42
0.38	26.23	0.07	55.85	0.45	0.15	5.58	0.51	1726.40	4.37
0.41	27.17	0.07	55.58	0.45	0.15	5.41	0.49	1716.51	4.33
0.44	28.04	0.07	55.44	0.45	0.15	5.25	0.48	1710.77	4.30
0.48	29.13	0.07	55.42	0.45	0.15	5.07	0.46	1708.20	4.28
0.51	29.90	0.08	55.49	0.45	0.16	4.96	0.45	1709.32	4.27

Table F1: Continued

Element	Ce	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti
Δ SC %									
F%									
0.35	25.24	13.04	0.90	116.09	6.80	1.65	80.81	1.52	0.55
0.38	26.23	12.90	0.89	115.71	6.70	1.64	79.10	1.49	0.54
0.41	27.17	12.80	0.88	115.62	6.63	1.62	77.60	1.47	0.54
0.44	28.04	12.72	0.87	115.77	6.57	1.61	76.29	1.45	0.53
0.48	29.13	12.67	0.86	116.25	6.51	1.60	74.77	1.43	0.53
0.51	29.90	12.65	0.85	116.78	6.48	1.60	73.77	1.42	0.52

Table F1: Continued

Element	F%	Gd	Yb	Cl
Δ SC %	0.35	25.24	1.82	1.36
	0.38	26.23	1.79	1.34
	0.41	27.17	1.77	1.33
	0.44	28.04	1.75	1.31
	0.48	29.13	1.74	1.30
	0.51	29.90	1.73	1.29
				174.78
				181.25
				187.71
				194.13
				202.64
				208.97

Table F2: Flux melt models with a depleted mantle source.

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La	Ce
Peridotite	0.0003	0.026	2	0.006	0.0025	0.32	0.0075	27.7	1	0.49
SC	3.5	40	1500	13	5.3	8	0.05	45000	99	297
D	0.000575	0.000415	0.00024	0.000814	0.000328	0.0145	0.0189	0.000441	0.007156	0.00728
Δ SC %	F%									
1075C										
0.01	0.00	1.1	8942.6	9.0	9.2	22.1	0.4	72976.5	141.1	71.4
0.43	0.50	2.8	1623.7	10.7	4.8	18.2	0.3	40952.0	117.7	144.6
0.87	1.00	2.9	1471.5	11.0	4.7	15.9	0.3	40227.0	108.6	178.6
1.33	1.50	3.0	1434.7	11.3	4.7	14.4	0.2	40432.3	104.3	199.6
1.8	2.00	3.1	1428.4	11.5	4.8	13.4	0.2	40890.3	102.2	214.4
2.28	2.50	3.1	1434.3	11.7	4.9	12.7	0.2	41453.9	101.2	226.1
2.79	3.00	3.2	1446.9	12.0	5.0	12.1	0.2	42099.8	101.0	236.2
3.31	3.50	3.3	1463.4	12.2	5.0	11.7	0.2	42782.0	101.2	245.1
3.85	4.00	3.3	1482.7	12.4	5.1	11.4	0.2	43502.2	101.8	253.3
4.41	4.50	3.4	1504.1	12.6	5.2	11.2	0.1	44254.3	102.6	261.0
4.99	5.00	3.5	1527.2	12.9	5.3	11.0	0.1	45034.3	103.7	268.4
5.59	5.50	3.5	1551.6	13.1	5.4	10.9	0.1	45839.3	104.8	275.6
6.21	6.00	3.6	1577.2	13.4	5.5	10.8	0.1	46667.6	106.2	282.7
6.85	6.50	3.7	1603.8	13.6	5.6	10.8	0.1	47517.4	107.6	289.7
7.51	7.00	3.7	1631.4	13.9	5.7	10.7	0.1	48387.8	109.1	296.6
8.2	7.50	3.8	1660.2	14.2	5.8	10.7	0.1	49290.8	110.8	303.6
8.92	8.00	3.9	1690.3	14.4	5.9	10.8	0.1	50225.3	112.5	310.7
9.65	8.50	4.0	1720.6	14.7	6.0	10.8	0.1	51164.6	114.3	317.7
10.42	9.00	4.0	1752.4	15.0	6.1	10.9	0.1	52146.7	116.2	324.8
11.21	9.50	4.1	1784.9	15.3	6.3	10.9	0.1	53145.1	118.1	332.1
12.03	10.00	4.2	1818.4	15.6	6.4	11.0	0.1	54171.8	120.2	339.4
1175C										
0.01	0.00	1.1	8942.6	9.0	9.2	22.1	0.4	72976.5	141.1	71.4
0.14	0.51	0.9	767.5	4.1	1.8	16.9	0.3	16370.7	93.1	73.3
0.27	1.00	0.9	589.1	3.8	1.6	14.0	0.3	14256.6	73.9	74.9
0.41	1.51	0.9	529.3	3.7	1.6	11.9	0.2	13613.8	63.2	76.4
0.55	2.01	0.9	503.8	3.7	1.6	10.6	0.2	13403.1	56.8	77.9

Table F2: Continued

Element	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti	Gd	Yb	Cl
Peridotite	0.029	5.77	0.654	0.293	7.2	0.2	0.119	996	0.467	0.402	4
SC	17	3500	130	35	500	20	9	20000	30	10	11500
D	0.000422	0.002348	0.01056	0.02184	0.0732	0.0444	0.03146	0.02608	0.052408	0.23624	0.001
Δ SC %	F%										
1075C											
0.01	0.00	2606.2	63.2	13.6	99.0	4.5	3.8	38263.1	9.0	1.7	5149.6
0.43	0.50	2850.3	78.2	16.6	119.8	5.8	4.3	34866.1	10.4	1.8	8973.4
0.87	1.00	2940.0	87.1	18.8	139.3	6.9	4.8	32441.5	11.7	2.0	9483.4
1.33	1.50	3010.0	93.3	20.6	157.8	7.9	5.2	30658.1	12.9	2.1	9788.4
1.8	2.00	3073.3	98.1	22.1	175.1	8.8	5.5	29344.1	14.0	2.3	10033.7
2.28	2.50	3133.9	102.2	23.4	191.4	9.5	5.8	28357.9	15.0	2.4	10255.4
2.79	3.00	3195.8	105.8	24.6	207.3	10.3	6.1	27583.6	16.0	2.6	10474.2
3.31	3.50	3257.0	109.2	25.7	222.5	11.0	6.3	27001.5	16.9	2.7	10686.6
3.85	4.00	3319.2	112.3	26.7	237.3	11.6	6.6	26558.6	17.8	2.9	10899.4
4.41	4.50	3382.5	115.4	27.7	251.8	12.3	6.8	26228.8	18.6	3.0	11114.2
4.99	5.00	3447.0	118.4	28.6	265.9	12.9	7.0	25992.4	19.4	3.2	11331.5
5.59	5.50	3512.7	121.3	29.5	279.8	13.5	7.3	25834.0	20.3	3.4	11552.1
6.21	6.00	3579.6	124.2	30.4	293.4	14.0	7.5	25741.8	21.1	3.5	11776.0
6.85	6.50	3647.9	127.1	31.3	306.9	14.6	7.7	25706.1	21.8	3.7	12003.6
7.51	7.00	3717.3	130.0	32.1	320.3	15.2	7.9	25719.5	22.6	3.9	12235.0
8.2	7.50	3789.1	132.9	33.0	333.7	15.7	8.1	25776.7	23.4	4.1	12473.5
8.92	8.00	3863.1	135.9	33.9	347.2	16.3	8.4	25874.2	24.2	4.2	12719.2
9.65	8.50	3937.3	138.8	34.7	360.4	16.8	8.6	26004.5	25.0	4.4	12965.2
10.42	9.00	4014.6	141.9	35.6	373.9	17.4	8.8	26169.9	25.7	4.6	13221.5
11.21	9.50	4093.1	145.0	36.5	387.3	17.9	9.0	26363.6	26.5	4.8	13481.4
12.03	10.00	4173.7	148.1	37.3	400.8	18.4	9.3	26585.6	27.3	5.0	13748.0
1175C											
0.01	0.00	2606.2	63.2	13.6	99.0	4.5	3.8	38263.1	9.0	1.7	5149.6
0.14	0.51	1434.0	53.5	12.7	101.2	4.6	3.6	32938.3	8.9	1.7	3297.4
0.27	1.00	1231.3	49.0	12.2	103.4	4.7	3.5	29220.3	8.8	1.8	3181.5
0.41	1.51	1151.2	46.4	11.9	105.7	4.8	3.4	26302.6	8.8	1.8	3170.3
0.55	2.01	1116.1	44.9	11.7	107.9	4.9	3.3	24110.5	8.8	1.8	3190.9

Table F2: Continued

Element	Cs	Rb	Ba	Th	U	Nb	Ta	K	La	Ce
Δ SC %										
F%										
0.7	2.52	11.9	490.8	3.7	1.6	9.5	0.2	13361.1	52.4	79.4
0.85	3.01	12.0	485.0	3.8	1.6	8.7	0.2	13409.8	49.4	80.9
1.01	3.52	12.1	483.0	3.8	1.6	8.1	0.1	13515.0	47.2	82.5
1.17	4.01	12.2	483.6	3.9	1.6	7.6	0.1	13652.3	45.7	84.0
1.34	4.52	12.3	486.0	3.9	1.6	7.2	0.1	13819.5	44.5	85.6
1.51	5.01	12.5	489.5	4.0	1.6	6.8	0.1	14000.6	43.6	87.2
1.69	5.50	12.7	494.2	4.0	1.7	6.5	0.1	14202.2	43.0	88.8
1.88	6.01	12.8	499.7	4.1	1.7	6.3	0.1	14422.2	42.5	90.6
2.07	6.50	13.0	505.8	4.2	1.7	6.1	0.1	14646.8	42.2	92.3
2.27	7.00	13.3	512.5	4.3	1.7	5.9	0.1	14886.3	42.1	94.0
2.48	7.51	13.5	519.8	4.3	1.8	5.8	0.1	15139.8	42.0	95.9
2.69	8.00	13.7	527.4	4.4	1.8	5.6	0.1	15394.4	42.0	97.7
2.92	8.51	14.0	535.8	4.5	1.8	5.5	0.1	15673.6	42.1	99.6
3.15	9.01	14.2	544.4	4.6	1.9	5.4	0.1	15952.5	42.3	101.6
3.38	9.50	14.4	553.0	4.7	1.9	5.4	0.1	16230.7	42.5	103.5
3.63	10.00	14.7	562.4	4.7	1.9	5.3	0.1	16532.0	42.8	105.6

Table F2: Continued

Element	Pb	Sr	Nd	Sm	Zr	Hf	Eu	Ti	Gd	Yb	Cl
Δ SC %											
F%											
0.7	2.52	1099.5	43.9	11.5	110.3	4.9	3.2	22300.9	8.8	1.8	3226.7
0.85	3.01	1094.1	43.4	11.5	112.6	5.0	3.2	20879.8	8.9	1.9	3269.1
1.01	3.52	1095.0	43.2	11.4	115.0	5.1	3.2	19670.0	8.9	1.9	3318.2
1.17	4.01	1100.3	43.1	11.4	117.4	5.2	3.2	18692.1	9.0	1.9	3369.4
1.34	4.52	1108.8	43.2	11.5	119.9	5.3	3.2	17843.1	9.1	2.0	3425.0
1.51	5.01	1119.3	43.4	11.5	122.4	5.4	3.2	17143.3	9.1	2.0	3481.3
1.69	5.50	1131.9	43.7	11.6	125.0	5.5	3.2	16528.1	9.2	2.0	3541.2
1.88	6.01	1146.4	44.0	11.7	127.7	5.6	3.2	15988.3	9.3	2.1	3604.5
2.07	6.50	1161.6	44.5	11.8	130.4	5.7	3.2	15537.5	9.5	2.1	3667.7
2.27	7.00	1178.3	45.0	12.0	133.1	5.8	3.2	15139.6	9.6	2.1	3734.0
2.48	7.51	1196.3	45.5	12.1	136.0	5.9	3.3	14789.7	9.7	2.2	3803.3
2.69	8.00	1214.6	46.1	12.3	138.9	6.1	3.3	14496.3	9.8	2.2	3872.1
2.92	8.51	1234.9	46.7	12.4	141.9	6.2	3.3	14227.7	10.0	2.3	3946.9
3.15	9.01	1255.4	47.4	12.6	145.0	6.3	3.4	14004.3	10.1	2.3	4021.2
3.38	9.50	1275.9	48.1	12.8	148.0	6.4	3.4	13818.1	10.3	2.4	4094.9
3.63	10.00	1298.3	48.8	13.0	151.2	6.6	3.4	13650.8	10.5	2.4	4174.4

