

Supplemental Table S2: Representative amphibole analyses from mantle xenoliths, megacrystals and from hornblendites investigated in this study.

	EIF-09-	FIN-01	146493	MM110	SHP-10	FEN-MG	120091	SHP-26
wt. %								
SiO ₂	43.67	47.07	45.71	43.40	41.74	43.10	42.30	42.05
Al ₂ O ₃	13.99	9.76	10.45	12.72	14.35	12.47	13.37	15.60
TiO ₂	0.52	0.59	3.28	1.98	4.44	2.88	3.88	3.35
Cr ₂ O ₃	1.71	2.08	0.07	2.20	0.23	0.00	0.17	0.16
FeO	3.95	3.29	6.03	4.40	10.39	8.20	7.71	9.07
MgO	18.48	19.81	17.83	17.71	13.71	15.83	15.27	14.14
MnO	0.05	0.06	0.10	0.13	0.11	0.06	0.08	0.07
CaO	11.24	11.77	10.33	11.22	10.21	10.87	11.11	10.34
Na ₂ O	2.29	2.93	3.60	3.01	3.00	2.80	2.49	3.05
K ₂ O	1.25	0.76	1.20	1.19	1.19	1.66	2.02	1.12
Cl	0.10	0.11	0.04	0.04	0.04	0.05	0.04	0.05
F	0.07	0.12	0.07	0.00	0.00	0.07	0.06	0.00
Total	97.95	98.35	98.70	98.03	99.41	98.00	98.54	99.02
Elements, atoms per formula unit. Calculations based on different cation sums to achieve charge balance								
Si	6.19	6.61	6.48	6.19	5.99	6.23	6.10	6.01
Al	2.34	1.62	1.75	2.14	2.43	2.13	2.27	2.63
Ti	0.06	0.06	0.35	0.21	0.48	0.31	0.42	0.36
Cr	0.19	0.23	0.01	0.25	0.03	0.00	0.02	0.02
Fe ³⁺	0.24	0.20	0.12	0.16	0.20	0.15	0.07	0.19
Fe ²⁺	0.23	0.19	0.59	0.37	1.05	0.84	0.86	0.89
Mg	3.90	4.15	3.77	3.76	2.93	3.41	3.28	3.01
Mn	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Ca	1.71	1.77	1.57	1.71	1.57	1.68	1.72	1.58
Na	0.80	0.80	0.99	0.83	0.83	0.79	0.70	0.85
K	0.23	0.14	0.22	0.21	0.22	0.31	0.37	0.20
Cl	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01
F	0.03	0.05	0.03	0.00	0.00	0.03	0.03	0.00
Cation Sum	15.89	15.77	15.84	15.85	15.73	15.86	15.83	15.74

	SHP-26	120091	EIF-02-	Lp-02-4	Lp-02-28	K-A1008	FIN-03	Ol-A-2	FEN-A-1	V-A-8
wt. %										
SiO ₂	43.14	42.26	39.91	39.83	39.55	40.04	45.19	40.82	41.25	39.17
Al ₂ O ₃	14.83	13.38	14.03	13.74	13.64	14.00	12.57	12.38	15.24	15.36
TiO ₂	4.06	3.68	3.68	6.01	5.79	3.34	1.01	3.30	3.21	2.86
Cr ₂ O ₃	0.13	0.41	0.00	0.00	0.03	0.00	1.18	0.02	0.03	0.00
FeO	9.75	7.59	10.27	9.93	10.90	12.37	4.81	11.13	6.50	9.57
MgO	13.51	15.28	14.01	13.56	12.73	12.51	17.94	14.36	15.92	14.68
MnO	0.09	0.07	0.14	0.09	0.14	0.16	0.11	0.13	0.10	0.06
CaO	9.85	11.05	12.22	12.35	12.14	11.58	12.21	11.78	11.62	12.69
Na ₂ O	2.93	2.47	2.28	2.71	2.82	2.40	2.45	2.67	2.22	2.05
K ₂ O	1.54	2.04	2.13	1.16	1.17	2.05	0.12	1.66	2.35	2.05
Cl	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.02	0.03
F	0.00	0.10	0.10	0.16	0.17	0.08	0.00	0.22	0.14	0.25
Total	99.89	98.36	98.86	99.60	99.09	98.62	97.59	98.54	98.66	98.93
Elements, atoms per formula unit. Calculations based on different cation sums to achieve charge balance										
Si	6.12	6.11	5.85	5.79	5.81	5.93	6.38	6.00	5.93	5.70
Al	2.48	2.28	2.42	2.36	2.36	2.44	2.09	2.14	2.58	2.64
Ti	0.43	0.40	0.41	0.66	0.64	0.37	0.11	0.37	0.35	0.31
Cr	0.02	0.05	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00
Fe ³⁺	0.14	0.08	0.15	0.00	0.00	0.10	0.27	0.29	0.11	0.40
Fe ²⁺	1.01	0.84	1.11	1.21	1.34	1.43	0.30	1.08	0.67	0.77
Mg	2.86	3.29	3.06	2.94	2.79	2.76	3.78	3.14	3.41	3.19
Mn	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.01
Ca	1.50	1.71	1.92	1.92	1.91	1.84	1.85	1.85	1.79	1.98
Na	0.81	0.69	0.65	0.76	0.80	0.69	0.67	0.76	0.62	0.58
K	0.28	0.38	0.40	0.22	0.22	0.39	0.02	0.31	0.43	0.38
Cl	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
F	0.00	0.05	0.05	0.08	0.08	0.04	0.00	0.10	0.07	0.10
Cation Sum	15.66	15.83	15.98	15.86	15.88	15.97	15.61	15.96	15.90	15.95