

Table S.2 – Representative microprobe mineral chemistry analysis on pyroxene crystals. Atoms per formula unit (a.p.f.u.) were calculated on the basis of 6 oxygens.

Sample	TGL-13						TGL-32						TGL-58						MAG-11				
Analysis	1_1	1_2	3_1	3_3	5_3	7_1	5	8	10	13	16	18	13	17	21	22	23	25	13	14	19	22	30
SiO ₂	50.12	51.31	51.37	51.55	51.17	50.15	50.38	50.58	50.61	50.04	51.09	51.51	49.35	50.83	50.08	50.21	49.50	50.70	51.70	52.02	51.39	50.08	51.11
TiO ₂	0.63	0.35	0.09	0.12	0.13	0.59	0.11	0.47	0.47	0.50	0.12	0.06	0.63	0.09	0.08	0.62	0.66	0.09	0.08	0.08	0.04	0.24	0.26
Al ₂ O ₃	5.39	3.86	2.98	2.69	2.48	5.06	2.64	4.39	4.64	4.52	2.87	1.92	5.98	3.37	3.79	6.00	6.12	2.98	3.54	3.47	4.03	5.90	4.63
Cr ₂ O ₃	0.04	0.06	0.03	0.02	0.03	0.01	0.02	0.04	0.04	0.05	0.04	0.03	0.13	0.06	0.05	0.12	0.11	0.06	0.03	0.02	0.06	0.10	0.04
FeO	10.05	9.62	22.84	23.42	23.49	9.48	24.51	10.29	9.86	10.25	23.34	23.83	10.15	23.87	23.85	9.08	9.81	24.14	20.45	20.20	20.06	8.25	8.24
MnO	0.16	0.12	0.29	0.28	0.25	0.14	0.45	0.21	0.23	0.19	0.36	0.43	0.21	0.45	0.44	0.09	0.12	0.45	0.42	0.39	0.42	0.20	0.21
MgO	11.48	12.60	20.87	21.04	20.85	11.44	19.35	11.59	11.39	11.16	20.23	20.60	11.07	20.04	19.82	11.39	11.42	20.02	23.02	22.69	22.75	12.22	12.81
CaO	20.72	21.30	0.89	0.56	0.54	21.17	0.64	21.10	21.26	21.27	0.92	0.49	21.22	0.48	0.55	21.17	20.38	0.57	0.44	0.75	0.67	22.03	21.30
Na ₂ O	1.12	0.77	0.05	0.02	0.02	1.00	0.01	0.89	0.88	0.94	0.03	0.02	1.01	0.03	0.03	1.14	1.14	0.01	0.00	0.04	0.02	0.85	0.92
K ₂ O	0.00	0.01	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
Total	99.72	99.99	99.43	99.69	98.97	99.06	98.12	99.57	99.37	98.93	99.00	98.89	99.76	99.22	98.69	99.82	99.25	99.03	99.69	99.67	99.43	99.88	99.52
Si	1.88	1.92	1.93	1.93	1.94	1.89	1.94	1.91	1.91	1.90	1.93	1.96	1.86	1.92	1.91	1.88	1.87	1.93	1.91	1.92	1.91	1.87	1.91
Al ^{IV}	0.12	0.08	0.07	0.07	0.06	0.11	0.06	0.09	0.09	0.10	0.07	0.04	0.14	0.08	0.09	0.12	0.13	0.07	0.09	0.08	0.09	0.13	0.09
Sum 2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Al ^{VI}	0.12	0.09	0.06	0.05	0.05	0.12	0.06	0.10	0.11	0.10	0.06	0.04	0.12	0.07	0.08	0.14	0.14	0.06	0.07	0.08	0.08	0.13	0.11
Ti	0.02	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.01	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01
Cr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	0.64	0.70	1.17	1.18	1.18	0.64	1.11	0.65	0.64	0.63	1.14	1.17	0.62	1.13	1.13	0.63	0.64	1.13	1.27	1.25	1.26	0.68	0.71
Fe ²⁺	0.32	0.30	0.72	0.74	0.74	0.30	0.79	0.32	0.31	0.33	0.74	0.76	0.32	0.76	0.76	0.28	0.31	0.77	0.63	0.62	0.62	0.26	0.26
Mn	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Ca	0.83	0.85	0.04	0.02	0.02	0.86	0.03	0.85	0.86	0.87	0.04	0.02	0.86	0.02	0.02	0.85	0.82	0.02	0.02	0.03	0.03	0.88	0.85
Na	0.08	0.06	0.00	0.00	0.00	0.07	0.00	0.07	0.06	0.07	0.00	0.00	0.07	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.06	0.07
Sum 2	2.02	2.01	2.00	2.00	2.00	2.01	2.00	2.02	2.01	2.02	2.00	2.00	2.02	2.00	2.01	2.01	2.02	2.00	2.01	2.00	2.00	2.02	2.02
ΣCations	4.02	4.01	4.00	4.00	4.00	4.01	4.00	4.02	4.01	4.02	4.00	4.00	4.02	4.00	4.01	4.01	4.02	4.00	4.01	4.00	4.00	4.02	4.02
Wo	46	46	2	1	1	47	1	46	47	47	2	1	43	0	0	42	41	0	0	0	0	43	43
En	36	38	61	61	60	36	57	36	35	35	59	60	33	58	57	34	35	58	64	64	64	36	38
Fs	18	16	38	38	39	17	41	18	18	18	39	39	17	38	39	15	17	39	32	32	32	14	14

Table S.3 – Representative microprobe mineral chemistry analysis on feldspar (plagioclase and orthoclase) crystals. Atoms per formula unit (a.p.f.u.) were calculated on the basis of 8 oxygens.

Sample	TGL-13					TGL-32					TGL-58					MAG-11		
	7_1	4_1	4_6	4	10	8	14	15	1	9	1	2	4	1	2	18	20	21
SiO₂	59.62	59.45	59.09	63.75	64.70	58.60	58.91	58.92	64.73	65.11	59.19	59.11	58.95	63.66	63.33	55.14	55.57	55.31
Al₂O₃	25.88	25.88	26.53	18.92	19.23	26.27	26.24	26.12	19.21	19.29	26.07	25.75	25.74	19.03	19.18	29.12	28.79	28.85
Fe₂O₃	0.15	0.09	0.10	0.61	0.04	0.18	0.14	0.13	0.01	0.02	0.07	0.13	0.08	0.07	0.04	0.07	0.07	0.09
BaO	0.01	0.00	0.00	0.94	1.12	0.02	0.00	0.02	0.75	0.52	0.00	0.00	0.00	0.82	1.02	0.00	0.00	0.02
CaO	7.00	6.97	7.53	0.00	0.00	7.68	7.30	7.35	0.00	0.00	7.14	7.25	7.15	0.00	0.00	10.67	10.30	10.32
Na₂O	7.04	7.15	7.05	0.32	0.32	6.83	6.91	7.06	0.95	1.31	7.19	7.20	7.17	0.61	0.86	5.50	5.67	5.47
K₂O	0.58	0.56	0.45	14.77	15.09	0.57	0.51	0.55	14.39	13.94	0.34	0.30	0.34	14.68	14.43	0.12	0.13	0.12
Total	100.27	100.09	100.75	99.30	100.50	100.15	100.02	100.16	100.03	100.18	100.00	99.74	99.43	98.87	98.86	100.63	100.53	100.19
Si	2.65	2.65	2.62	2.97	2.98	2.62	2.63	2.63	2.98	2.98	2.64	2.64	2.64	2.97	2.96	2.47	2.49	2.48
Al	1.36	1.36	1.39	1.04	1.04	1.38	1.38	1.37	1.04	1.04	1.37	1.36	1.36	1.05	1.06	1.54	1.52	1.53
Sum 4	4.01	4.01	4.01	4.01	4.02	4.00	4.01	4.00	4.02	4.02	4.01	4.00	4.01	4.02	4.02	4.01	4.01	4.01
Fe³⁺	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ba	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00
Ca	0.33	0.33	0.36	0.00	0.00	0.37	0.35	0.35	0.00	0.00	0.34	0.35	0.34	0.00	0.00	0.51	0.49	0.50
Na	0.61	0.62	0.61	0.03	0.03	0.59	0.60	0.61	0.08	0.12	0.62	0.62	0.62	0.06	0.08	0.48	0.49	0.48
K	0.03	0.03	0.03	0.88	0.89	0.03	0.03	0.03	0.84	0.81	0.02	0.02	0.02	0.87	0.86	0.01	0.01	0.01
Sum 1	0.98	0.99	0.99	0.95	0.94	1.00	0.98	1.00	0.94	0.94	0.98	0.99	0.99	0.95	0.96	1.00	1.00	0.98
Σ Cations	4.99	4.99	5.00	4.95	4.96	5.00	4.99	5.00	4.96	4.96	4.99	5.00	5.00	4.97	4.98	5.00	5.00	4.99
Ab	62	63	61	3	3	60	61	61	9	13	63	63	63	6	8	48	50	49
An	34	34	36	0	0	37	36	35	0	0	35	35	35	0	0	51	50	51
Or	3	3	3	97	97	3	3	3	91	87	2	2	2	94	92	1	1	1

Table S.4 – Representative microprobe mineral chemistry analysis on amphibole crystals. Atoms per formula unit (a.p.f.u.) were calculated on the basis of 23 oxygens.

Sample	TGL-13			TGL-58			MAG-11		
Analysis	2_1	4_1	4_3	1	3	4	26	29	35
SiO₂	41.82	41.19	41.54	41.27	42.49	41.08	41.22	40.87	40.83
TiO₂	2.57	2.98	2.97	2.73	2.86	2.42	1.51	2.06	2.02
Al₂O₃	12.27	12.65	12.54	12.98	12.21	13.21	14.02	14.01	14.13
Cr₂O₃	0.02	0.02	0.03	0.13	0.19	0.17	0.09	0.11	0.09
FeO	14.43	14.05	13.58	13.08	12.41	14.02	13.77	13.49	13.47
MnO	0.06	0.08	0.08	0.05	0.07	0.11	0.13	0.14	0.14
MgO	11.13	11.20	11.25	11.30	11.96	10.81	11.51	11.32	11.45
CaO	11.28	11.41	11.46	11.55	11.68	11.38	11.11	11.15	11.25
Na₂O	1.49	1.57	1.48	1.53	1.34	1.41	2.53	2.27	2.24
K₂O	1.88	1.97	1.90	2.09	1.87	2.07	0.86	1.08	1.12
Total	96.96	97.13	96.84	96.71	97.08	96.69	96.74	96.50	96.74
Si	6.30	6.20	6.25	6.21	6.33	6.21	6.19	6.15	6.13
Al^{IV}	1.70	1.80	1.75	1.79	1.67	1.79	1.81	1.85	1.87
Sum 8	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Al^{VI}	0.48	0.45	0.47	0.52	0.47	0.56	0.66	0.64	0.63
Ti	0.29	0.34	0.34	0.31	0.32	0.27	0.17	0.23	0.23
Cr	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.01	0.01
Mg	2.50	2.51	2.52	2.53	2.66	2.44	2.57	2.54	2.56
Fe²⁺	1.73	1.70	1.66	1.62	1.53	1.71	1.58	1.58	1.57
Sum 5	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Fe²⁺	0.09	0.07	0.04	0.02	0.02	0.06	0.15	0.12	0.12
Mn	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Ca	1.82	1.84	1.85	1.86	1.87	1.84	1.79	1.80	1.81
Na	0.08	0.08	0.10	0.11	0.11	0.08	0.05	0.07	0.05
Sum 2	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Na	0.35	0.38	0.33	0.34	0.28	0.34	0.69	0.60	0.60
K	0.36	0.38	0.37	0.40	0.36	0.40	0.16	0.21	0.21

Sum 1	0.71	0.76	0.70	0.74	0.64	0.74	0.85	0.80	0.82
Σ Cations	15.71	15.76	15.70	15.74	15.64	15.74	15.85	15.80	15.82

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Table S.5 - Representative microprobe mineral chemistry analysis on biotite crystals. Atoms per formula unit (a.p.f.u.) were calculated on the basis of 22 oxygens.

Sample	TGL-58				
	1	3	4	5	7
Analysis					
SiO₂	37.25	37.35	37.25	37.47	37.44
TiO₂	5.60	5.62	5.50	5.73	5.59
Al₂O₃	14.00	14.12	14.04	14.06	14.14
Cr₂O₃	0.12	0.08	0.15	0.12	0.10
FeO	11.02	11.49	12.29	11.61	11.27
MnO	0.00	0.02	0.02	0.01	0.03
MgO	15.81	15.44	15.19	15.28	15.54
BaO	0.25	0.36	0.30	0.30	0.28
CaO	0.00	0.00	0.00	0.00	0.00
Na₂O	0.04	0.05	0.02	0.03	0.02
K₂O	9.63	9.51	9.24	9.46	9.49
Total	93.75	94.08	94.03	94.11	93.94
Si	5.58	5.59	5.59	5.60	5.60
Al^{IV}	2.42	2.41	2.42	2.40	2.40
Sum 8	8.00	8.00	8.00	8.00	8.00
Al^{VI}	0.05	0.08	0.07	0.08	0.09
Ti	0.63	0.63	0.62	0.64	0.63
Cr	0.01	0.01	0.02	0.01	0.01
Mg	3.53	3.44	3.39	3.40	3.46
Fe²⁺	1.38	1.44	1.54	1.45	1.41
Mn	0.00	0.00	0.00	0.00	0.00
Sum 6	5.61	5.60	5.64	5.59	5.60

Ba	0.02	0.02	0.02	0.02	0.02
Ca	0.00	0.00	0.00	0.00	0.00
Na	0.01	0.01	0.01	0.01	0.00
K	1.84	1.82	1.77	1.80	1.81
Sum 2	1.87	1.85	1.79	1.83	1.83
Σ Cations	15.47	15.45	15.43	15.42	15.43
XMg	0.72	0.71	0.69	0.70	0.71

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