Table S1. Representative compositional mineral analysis for garnet, biotite, muscovite and feldspar in metamorphic specimens.

Garnet	Specimen UM04																											
Analysis #	1/2.	1/3.	1/4.	1/5.	1/6.	1/7.	1/8.	1/9.	1/10.	1/11.	1/12.	1/13.	1/14.	1/15.	1/16.	1/17.	1/18.	1/19.	1/20.	1/21.	1/22.	1/23.	1/24.	1/25.	1/26.	1/27.	1/28.	1/29.	1/30.
SiO2	37.16	37.12	37.03	37.11	36.82	36.75	37.07	36.76	36.80	36.58	36.88	36.78	36.75	36.83	36.67	36.52	36.63	36.63	36.70	36.74	36.71	36.70	36.74	36.75	36.81	36.83	36.59	36.61	36.45
TiO2	0.09	0.10	0.10	0.09	0.11	0.11	0.12	0.10	0.10	0.12	0.11	0.11	0.11	0.12	0.11	0.10	0.09	0.11	0.11	0.11	0.12	0.09	0.13	0.11	0.10	0.11	0.09	0.10	0.08
Al2O3	21.27	21.23	21.07	21.12	21.11	20.98	21.17	20.94	21.05	21.12	21.01	21.03	20.84	21.18	21.05	21.02	21.09	20.91	21.02	20.99	21.16	21.04	21.10	21.03	20.99	20.93	21.15	21.00	20.86
FeO	35.03	34.98	34.52	34.50	34.55	33.97	33.60	33.45	33.29	33.00	32.74	32.59	32.39	32.02	32.03	32.34	32.44	32.43	32.52	33.08	33.01	33.35	33.40	33.67	34.21	34.45	35.21	35.22	35.11
MnO	2.58	2.97	3.26	3.54	3.96	4.23	4.41	4.72	4.77	4.80	5.00	5.32	5.58	5.54	5.45	5.61	5.52	5.39	5.18	5.12	4.79	4.67	4.34	4.06	3.69	3.38	3.18	2.71	2.42
MgO	2.52	2.36	2.23	2.14	2.01	1.96	1.92	1.91	1.84	1.84	1.77	1.76	1.77	1.74	1.72	1.72	1.73	1.74	1.79	1.81	1.81	1.86	1.88	1.95	2.06	2.15	2.28	2.45	2.56
CaO	2.32	2.42	2.48	2.44	2.46	2.62	2.78	2.65	2.77	2.89	2.90	2.84	2.75	3.02	2.92	2.96	3.03	3.02	3.09	2.83	2.97	2.79	3.11	2.82	2.58	2.58	2.44	2.46	2.24
Na2O	0.01	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.02	0.02	0.01	0.01	0.01	0.01	0.00
K2O	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.03
P2O5	0.06	0.03	0.05	0.06	0.05	0.07	0.04	0.07	0.05	0.06	0.04	0.05	0.04	0.05	0.05	0.05	0.06	0.04	0.05	0.05	0.05	0.06	0.05	0.05	0.06	0.07	0.05	0.06	0.06
Total	101.05	101.23	100.77	101.03	101.12	100.71	101.15	100.62	100.69	100.44	100.48	100.52	100.25	100.54	100.03	100.35	100.63	100.30	100.49	100.76	100.65	100.58	100.79	100.48	100.54	100.53	101.03	100.64	99.81
Si	2.98	2.97	2.98	2.98	2.96	2.97	2.98	2.97	2.97	2.96	2.98	2.97	2.98	2.97	2.98	2.96	2.96	2.97	2.97	2.97	2.96	2.97	2.96	2.97	2.97	2.97	2.95	2.95	2.96
Al iv	0.02	0.03	0.02	0.02	0.04	0.03	0.02	0.03	0.03	0.04	0.02	0.03	0.02	0.03	0.02	0.04	0.04	0.03	0.03	0.03	0.04	0.03	0.04	0.03	0.03	0.03	0.05	0.05	0.04
Al vi	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.97	1.97	1.98	1.98	1.98	1.97	1.99	1.99	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.95	1.95	1.96
Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Fe3+	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.03
Fe2+	2.34	2.33	2.31	2.30	2.30	2.27	2.24	2.24	2.23	2.22	2.20	2.19	2.18	2.16	2.17	2.17	2.17	2.18	2.18	2.21	2.22	2.23	2.23	2.26	2.29	2.30	2.33	2.34	2.36
Mn	0.18	0.20	0.22	0.24	0.27	0.29	0.30	0.32	0.33	0.33	0.34	0.36	0.38	0.38	0.37	0.39	0.38	0.37	0.35	0.35	0.33	0.32	0.30	0.28	0.25	0.23	0.22	0.19	0.17
Mg	0.30	0.28	0.27	0.26	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.25	0.26	0.27	0.29	0.31
Ca	0.20	0.21	0.21	0.21	0.21	0.23	0.24	0.23	0.24	0.25	0.25	0.25	0.24	0.26	0.25	0.26	0.26	0.26	0.27	0.24	0.26	0.24	0.27	0.24	0.22	0.22	0.21	0.21	0.19
Alm	0.78	0.77	0.77	0.77	0.76	0.75	0.74	0.74	0.74	0.73	0.73	0.73	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.74	0.74	0.75	0.76	0.76	0.77	0.77	0.78
Grs	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.08	0.09	0.09	0.09	0.09	0.08	0.09	0.08	0.09	0.08	0.07	0.07	0.07	0.07	0.06
Prp	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10
Sps	0.06	0.07	0.07	0.08	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.13	0.13	0.12	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Garnet	Specimen UM05																																	
Analysis #	6/2.	6/3.	6/4.	6/5.	6/6.	6/7.	6/8.	6/9.	6/10.	6/13.	6/14.	6/23.	6/30.	6/34.	6/36.	6/38.	6/41.	6/46.	6/49.	6/50.	6/52.	6/53.	6/54.	6/56.	6/59.	6/60.	6/61.	6/62.	6/63.	6/64.	6/65.	6/66.	6/67.	6/68.	6/69.
SiO2	36.47	36.63	36.55	36.78	36.72	36.59	36.72	36.83	36.84	36.82	36.45	36.59	36.71	36.59	36.57	36.87	36.64	36.63	36.60	36.50	36.63	36.58	36.56	36.35	36.58	36.56	36.61	36.53	36.65	36.99	36.54	36.68	36.61	36.78	37.00
TiO2	0.12	0.12	0.12	0.12	0.15	0.15	0.14	0.13	0.16	0.15	0.16	0.17	0.18	0.19	0.18	0.18	0.16	0.18	0.18	0.17	0.16	0.17	0.16	0.14	0.15	0.14	0.13	0.13	0.11	0.12	0.13	0.13	0.11	0.10	0.11
Al2O3	19.74	19.86	19.75	19.59	19.63	19.72	19.43	19.74	19.47	19.64	19.66	19.67	19.69	19.68	19.66	19.63	19.64	19.45	19.68	19.62	19.46	19.77	19.59	20.05	19.70	19.61	19.62	19.57	19.63	20.01	19.64	19.78	19.70	19.74	19.98
FeO	34.79	33.89	33.23	32.74	32.36	31.82	31.47	31.05	30.46	30.06	29.92	28.58	28.23	28.03	28.09	27.73	28.38	28.65	29.01	28.92	29.37	29.35	29.71	30.16	30.61	30.93	31.48	32.23	32.93	32.64	33.16	33.67	34.38	34.86	35.45
MnO	2.03	2.64	3.33	3.72	4.26	4.68	5.07	5.55	5.90	6.58	6.58	7.61	7.85	8.07	8.21	8.08	8.08	7.61	7.38	7.25	6.93	6.82	6.42	6.11	5.78	5.51	4.99	4.60	3.98	3.48	3.19	2.74	2.34	1.88	1.66
MgO	2.24	1.97	1.82	1.61	1.56	1.50	1.43	1.38	1.33	1.29	1.31	1.23	1.22	1.14	1.15	1.14	1.19	1.21	1.21	1.20	1.24	1.25	1.29	1.33	1.36	1.39	1.47	1.54	1.67	1.65	1.80	1.97	2.15	2.33	2.41
CaO	3.34	3.87	4.02	4.30	4.16	4.18	4.37	4.53	4.39	4.26	4.56	4.73	4.76	4.86	4.69	4.80	4.41	4.73	4.76	4.79	4.76	4.76	4.77	4.29	4.71	4.35	4.40	4.12	3.83	4.09	4.00	3.80	3.35	3.22	2.61
Na2O	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.01
K2O	0.04	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.04	0.02	0.03	0.04	0.03	0.03	0.04	0.03	0.02	0.03	0.03	0.05
P2O5	0.02	0.03	0.03	0.03	0.05	0.03	0.02	0.05	0.02	0.03	0.03	0.04	0.05	0.05	0.04	0.03	0.03	0.06	0.05	0.04	0.04	0.05	0.05	0.04	0.03	0.03	0.02	0.05	0.04	0.04	0.04	0.03	0.02	0.04	0.03
Total	98.80	99.06	98.90	98.93	98.93	98.71	98.69	99.30	98.60	98.86	98.71	98.65	98.72	98.65	98.62	98.49	98.57	98.56	98.90	98.53	98.61	98.78	98.60	98.53	98.95	98.56	98.77	98.82	98.88	99.08	98.55	98.83	98.70	98.99	99.31
Si	2.99	3.00	3.00	3.02	3.01	3.01	3.02	3.01	3.03	3.02	3.00	3.01	3.02	3.01	3.01	3.03	3.02	3.02	3.01	3.01	3.02	3.01	3.01	3.00	3.00	3.01	3.01	3.01	3.01	3.02	3.01	3.01	3.01	3.01	3.02
Al iv	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	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
Al vi	1.91	1.92	1.91	1.90	1.90	1.92	1.89	1.91	1.89	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.89	1.91	1.91	1.89	1.92	1.91	1.95	1.91	1.91	1.91	1.90	1.91	1.93	1.91	1.92	1.91	1.91	1.92
Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fe3+	0.07	0.07	0.07	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.07	0.06	0.05	0.06	0.06	0.04	0.05	0.07	0.06	0.06	0.07	0.06	0.06	0.04	0.07	0.06	0.07	0.07	0.07	0.04	0.07	0.06	0.07	0.07	0.05
Fe2+	2.31	2.25	2.21	2.18	2.16	2.13	2.09	2.06	2.04	2.01	1.99	1.91	1.89	1.87	1.88	1.87	1.90	1.91	1.93	1.93	1.95	1.96	1.98	2.04	2.03	2.07	2.10	2.14	2.19	2.20	2.22	2.25	2.29	2.32	2.37
Mn	0.14	0.18	0.23	0.26	0.30	0.33	0.35	0.38	0.41	0.46	0.46	0.53	0.55	0.56	0.57	0.56	0.56	0.53	0.51	0.51	0.48	0.47	0.45	0.43	0.40	0.38	0.35	0.32	0.28	0.24	0.22	0.19	0.16	0.13	0.11
Mg	0.27	0.24	0.22	0.20	0.19	0.18	0.18	0.17	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.22	0.24	0.26	0.28	0.29
Ca	0.29	0.34	0.35	0.38	0.37	0.37	0.39	0.40	0.39	0.37	0.40	0.42	0.42	0.43	0.41	0.42	0.39	0.42	0.42	0.42	0.42	0.42	0.42	0.38	0.41	0.38	0.39	0.36	0.34	0.36	0.35	0.33	0.29	0.28	0.23
Alm	0.77	0.75	0.73	0.72	0.72	0.71	0.70	0.68	0.68	0.67	0.66	0.63	0.63	0.62	0.62	0.62	0.63	0.63	0.64	0.64	0.65	0.65	0.66	0.68	0.67	0.69	0.70	0.71	0.73	0.73	0.74	0.75	0.76	0.77	0.79
Grs	0.10	0.11	0.12	0.13	0.12	0.12	0.13	0.13	0.13	0.12	0.13	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.13	0.13	0.12	0.11	0.12	0.12	0.11	0.10	0.09	0.08
Prp	0.09	0.08	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.09	0.09	0.10
Sps	0.05	0.06	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.15	0.18	0.18	0.19	0.19	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.11	0.09	0.08	0.07	0.06	0.05	0.04	0.04
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Garnet	Specimen UM07																															
Analysis #	1/2.	1/3.	1/4.	1/5.	1/6.	1/7.	1/8.	1/9.	1/10.	1/11.	1/12.	1/13.	1/14.	1/15.	1/16.	1/17.	1/20.	1/22.	1/23.	1/24.	1/25.	1/26.	1/27.	1/28.	1/29.	1/30.	1/31.	1/32.	1/33.	1/34.	1/35.	1/36.
SiO2	36.79	36.93	36.64	36.67	36.68	36.60	36.60	36.43	36.58	36.62	36.69	36.61	36.49	36.62	36.60	36.60	36.44	36.63	36.57	36.50	36.69	36.60	36.67	36.72	36.53	36.71	36.64	36.71	36.70	36.68	36.65	36.97
TiO2	0.10	0.11	0.15	0.13	0.13	0.12	0.12	0.14	0.13	0.13	0.13	0.15	0.13	0.14	0.13	0.14	0.11	0.12	0.12	0.11	0.14	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.11	0.14	0.12
Al2O3	19.69	19.57	19.48	19.53	19.56	19.50	19.56	19.39	19.51	19.67	19.70	19.55	19.36	19.44	19.58	19.53	19.45	19.44	19.50	19.48	19.42	19.49	19.50	19.53	19.51	19.46	19.57	19.46	19.51	19.53	19.70	19.66
FeO	36.19	36.23	36.25	35.75	35.75	36.00	35.00	35.18	35.01	34.82	34.83	34.36	33.92	33.85	33.55	33.19	33.06	32.93	33.06	33.49	33.62	33.38	33.53	34.06	34.19	34.53	34.98	35.44	35.57	35.88	36.18	36.12
MnO	1.79	1.81	2.10	2.31	2.50	2.64	2.85	3.31	3.51	3.74	3.89	4.13	4.37	4.54	4.72	4.64	4.85	4.90	4.76	4.72	4.62	4.59	4.27	4.18	3.92	3.72	3.39	2.98	2.72	2.41	2.10	1.80
MgO	2.38	2.41	2.23	2.08	1.99	1.97	1.86	1.72	1.71	1.65	1.63	1.57	1.53	1.52	1.51	1.48	1.44	1.45	1.46	1.46	1.50	1.51	1.52	1.58	1.60	1.63	1.70	1.82	1.92	2.02	2.18	2.39
CaO	2.38	2.50	2.35	2.45	2.61	2.47	2.72	2.77	2.79	2.74	2.87	2.81	2.99	3.15	3.06	3.05	3.05	3.13	3.05	3.10	3.10	3.14	3.20	3.12	2.97	2.97	2.79	2.81	2.70	2.66	2.49	2.33
Na2O	0.02	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.03	0.02	0.03	0.05	0.06	0.05	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.01
K2O	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.02	0.03	0.04
P2O5	0.04	0.05	0.04	0.05	0.05	0.05	0.04	0.05	0.05	0.04	0.03	0.07	0.03	0.04	0.05	0.03	0.04	0.04	0.05	0.03	0.01	0.06	0.05	0.05	0.05	0.03	0.06	0.05	0.06	0.05	0.06	0.06
Total	99.41	99.67	99.29	99.01	99.30	99.39	98.80	99.04	99.34	99.44	99.82	99.29	98.85	99.35	99.25	98.71	98.51	98.72	98.64	98.95	99.15	98.98	98.93	99.43	98.96	99.25	99.31	99.45	99.37	99.38	99.55	99.50
Si	3.01	3.01	3.00	3.01	3.01	3.00	3.01	3.00	3.00	3.00	3.00	3.01	3.01	3.01	3.01	3.02	3.02	3.02	3.02	3.01	3.02	3.01	3.02	3.01	3.01	3.01	3.01	3.01	3.01	3.00	3.00	3.02
Al iv	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al vi	1.90	1.89	1.89	1.90	1.90	1.89	1.90	1.89	1.89	1.91	1.90	1.90	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.90	1.90	1.89	1.90	1.89	1.90	1.89	1.89	1.89	1.90	1.90
Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fe3+	0.08	0.09	0.09	0.07	0.08	0.09	0.07	0.09	0.08	0.07	0.08	0.08	0.07	0.08	0.07	0.06	0.07	0.07	0.06	0.08	0.08	0.07	0.07	0.08	0.07	0.09	0.08	0.08	0.08	0.08	0.08	0.07
Fe2+	2.40	2.38	2.40	2.38	2.37	2.38	2.34	2.34	2.32	2.32	2.30	2.29	2.26	2.24	2.23	2.23	2.22	2.21	2.22	2.23	2.23	2.23	2.24	2.26	2.28	2.29	2.33	2.34	2.36	2.37	2.39	2.39
Mn	0.12	0.12	0.15	0.16	0.17	0.18	0.20	0.23	0.24	0.26	0.27	0.29	0.31	0.32	0.33	0.32	0.34	0.34	0.33	0.33	0.32	0.32	0.30	0.29	0.27	0.26	0.24	0.21	0.19	0.17	0.15	0.12
Mg	0.29	0.29	0.27	0.25	0.24	0.24	0.23	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.22	0.23	0.25	0.27	0.29
Ca	0.21	0.22	0.21	0.22	0.23	0.22	0.24	0.24	0.25	0.24	0.25	0.25	0.26	0.28	0.27	0.27	0.27	0.28	0.27	0.27	0.27	0.28	0.28	0.27	0.26	0.26	0.25	0.25	0.24	0.23	0.22	0.20
Alm	0.79	0.79	0.79	0.79	0.79	0.79	0.78	0.77	0.77	0.77	0.76	0.76	0.75	0.74	0.74	0.74	0.74	0.73	0.74	0.74	0.74	0.74	0.75	0.75	0.76	0.76	0.77	0.78	0.78	0.79	0.79	0.79
Grs	0.07	0.07	0.07	0.08	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07
Prp	0.10	0.10	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.10
Sps	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.09	0.09	0.08	0.07	0.06	0.06	0.05	0.04
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Garnet — Specimen UM08

Analysis #	1/1.	1/2.	1/3.	1/4.	1/5.	1/6.	1/7.	1/8.	1/9.	1/10.	1/11.	1/12.	1/13.	1/15.	1/16.	1/17.	1/18.	1/19.	1/20.	1/21.	1/22.	1/23.	1/24.	1/25.	1/26.	1/27.	1/28.	1/29.	1/30.
SiO2	37.65	37.22	37.23	37.23	37.10	37.06	37.12	37.09	36.68	37.44	36.97	37.11	36.67	37.02	37.08	36.91	37.08	37.08	37.18	36.97	37.27	37.17	37.33	37.23	37.21	37.35	37.40	37.10	37.56
TiO2	0.04	0.01	0.02	0.09	0.10	0.10	0.13	0.14	0.16	0.13	0.13	0.36	0.35	0.10	0.11	0.15	0.14	0.13	0.15	0.11	0.13	0.11	0.09	0.11	0.10	0.09	0.05	0.04	0.03
Al2O3	21.15	21.28	21.16	21.08	20.84	20.99	21.02	21.08	20.92	20.97	20.86	21.10	20.80	20.85	20.93	20.78	21.00	20.99	20.85	20.93	20.87	21.03	21.03	20.92	20.99	21.06	20.84	21.04	21.47
FeO	31.93	31.52	30.57	28.73	28.31	27.58	27.09	26.81	26.79	25.95	25.35	25.32	24.98	24.80	24.76	24.54	24.79	25.27	25.39	25.53	26.02	26.55	26.71	27.14	27.71	28.40	29.27	31.06	31.76
MnO	5.51	6.33	7.21	7.99	8.53	9.13	9.32	9.51	9.74	10.04	10.62	10.88	11.14	11.50	11.48	11.45	11.59	10.98	10.73	10.58	10.13	10.07	9.60	9.35	8.70	8.18	7.39	6.45	5.92
MgO	1.61	1.56	1.45	1.32	1.24	1.19	1.13	1.17	1.18	0.61	1.07	1.06	1.04	1.01	1.04	1.04	1.01	1.09	1.08	1.08	1.11	1.18	1.15	1.18	1.26	1.26	1.39	1.55	1.63
CaO	2.85	2.79	2.96	4.29	4.38	4.48	4.84	4.61	4.54	4.77	5.01	4.90	4.71	4.83	4.86	5.09	4.86	5.07	4.97	4.88	4.85	4.53	4.67	4.73	4.45	4.43	4.02	3.41	3.07
Na2O	0.02	0.03	0.02	0.02	0.02	0.04	0.02	0.01	0.04	0.00	0.05	0.05	0.07	0.04	0.03	0.04	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.03	0.02	0.03	0.05
K2O	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
P2O5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.76	100.74	100.62	100.76	100.52	100.57	100.67	100.42	100.07	99.92	100.08	100.79	99.78	100.16	100.30	100.01	100.50	100.65	100.37	100.11	100.43	100.66	100.60	100.69	100.45	100.80	100.38	100.69	101.49
Si	3.01	2.99	3.00	2.99	2.99	2.99	2.99	2.99	2.98	3.02	2.99	2.98	2.98	3.00	3.00	2.99	2.99	2.99	3.00	2.99	3.00	2.99	3.00	3.00	3.00	3.00	3.02	2.99	2.99
Al iv	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Al vi	2.00	2.01	2.01	1.99	1.98	1.98	1.98	1.99	1.98	2.00	1.98	1.98	1.98	1.99	1.99	1.98	1.99	1.98	1.98	1.99	1.98	1.99	1.99	1.98	1.99	1.99	1.98	1.99	2.01
Ti	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Fe3+	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00
Fe2+	2.16	2.13	2.07	1.93	1.89	1.85	1.82	1.81	1.80	1.78	1.71	1.71	1.70	1.67	1.67	1.65	1.67	1.69	1.71	1.72	1.75	1.78	1.80	1.82	1.87	1.91	1.97	2.09	2.13
Mn	0.37	0.43	0.49	0.54	0.58	0.62	0.64	0.65	0.67	0.69	0.73	0.74	0.77	0.79	0.79	0.79	0.79	0.75	0.73	0.73	0.69	0.69	0.65	0.64	0.59	0.56	0.50	0.44	0.40
Mg	0.19	0.19	0.17	0.16	0.15	0.14	0.14	0.14	0.14	0.07	0.13	0.13	0.13	0.12	0.13	0.13	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.17	0.19	0.19
Ca	0.24	0.24	0.26	0.37	0.38	0.39	0.42	0.40	0.39	0.41	0.43	0.42	0.41	0.42	0.42	0.44	0.42	0.44	0.43	0.42	0.42	0.39	0.40	0.41	0.38	0.38	0.35	0.29	0.26
Alm	0.73	0.71	0.69	0.64	0.63	0.62	0.60	0.60	0.60	0.60	0.57	0.57	0.57	0.56	0.56	0.55	0.56	0.56	0.57	0.57	0.58	0.59	0.60	0.60	0.62	0.64	0.66	0.69	0.71
Grs	0.08	0.08	0.09	0.12	0.13	0.13	0.14	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.15	0.14	0.14	0.14	0.13	0.13	0.14	0.13	0.13	0.12	0.10	0.09
Prp	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
Sps	0.13	0.14	0.16	0.18	0.19	0.21	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.26	0.26	0.26	0.26	0.25	0.24	0.24	0.23	0.23	0.22	0.21	0.20	0.19	0.17	0.15	0.13
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Garnet — Specimen UM09

Analysis #	9/3.	9/5.	9/7.	9/9.	9/10.	9/11.	9/13.	9/14.	9/16.	9/17.	9/18.	9/19.	9/20.	9/21.	9/22.	9/23.	9/25.	9/26.	9/27.	9/29.	9/30.	9/32.	9/33.	9/34.	9/35.	9/36.	9/37.	9/38.	9/39.
SiO2	37.69	37.49	37.56	37.59	37.53	37.70	36.69	36.43	37.31	36.75	36.85	37.15	37.22	36.70	37.08	37.21	37.69	37.51	37.67	37.50	37.34	36.92	37.31	37.28	38.01	37.21	37.08	36.97	37.11
TiO2	0.05	0.09	0.11	0.09	0.11	0.12	0.11	0.11	0.13	0.09	0.10	0.10	0.09	0.08	0.08	0.09	0.07	0.08	0.06	0.07	0.07	0.08	0.07	0.07	0.07	0.06	0.08	0.09	0.09
Al2O3	20.62	20.57	20.54	20.55	20.68	20.85	21.60	22.17	21.01	22.48	22.11	21.37	21.34	21.90	21.61	21.23	20.70	20.80	20.63	20.78	20.97	21.77	21.28	21.40	21.00	20.96	21.18	22.03	21.54
FeO	38.00	37.85	37.42	37.02	36.78	36.27	36.13	35.20	35.64	34.91	34.83	35.21	35.03	34.58	34.76	34.57	34.86	34.76	34.74	34.60	34.42	33.96	33.92	33.73	34.27	34.24	33.98	33.97	33.79
MnO	1.02	1.46	1.89	2.20	2.33	2.44	2.68	2.76	3.02	2.98	3.17	3.18	3.23	3.23	3.29	3.30	3.42	3.36	3.33	3.38	3.41	3.36	3.40	3.40	3.36	3.33	3.30	3.25	3.36
MgO	2.50	2.29	2.15	2.07	2.06	2.02	1.95	1.90	1.95	1.89	1.86	1.90	1.86	1.87	1.88	1.90	1.89	1.88	1.89	1.93	1.89	1.90	1.88	1.90	1.87	1.92	1.87	1.88	1.88
CaO	1.44	1.59	1.74	1.78	1.84	1.95	2.01	2.08	2.18	2.12	2.23	2.35	2.38	2.50	2.53	2.49	2.57	2.60	2.61	2.60	2.60	2.65	2.67	2.59	2.63	2.65	2.67	2.74	2.72
Na2O	0.01	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.03	0.01	0.04	0.03	0.02	0.04	0.04	0.03	0.04	0.05	0.04	0.05	0.05	0.05	0.05	0.04	0.06
K2O	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	0.00	0.00	0.00	0.00	0.00	0.00
P2O5	0.05	0.03	0.04	0.05	0.05	0.05	0.07	0.03	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.02	0.03	0.03	0.03	0.02	0.05	0.02	0.00	0.03	0.01	0.04	0.01	0.03	0.03
Total	101.38	101.40	101.48	101.38	101.40	101.43	101.27	100.70	101.32	101.29	101.22	101.32	101.22	100.91	101.31	100.84	101.25	101.06	101.00	100.91	100.79	100.71	100.57	100.45	101.27	100.46	100.22	101.00	100.58
Si	3.01	3.00	3.01	3.01	3.01	3.02	2.95	2.92	2.99	2.92	2.94	2.98	2.98	2.94	2.97	2.99	3.02	3.01	3.02	3.01	3.00	2.96	2.99	2.99	3.03	3.00	2.99	2.95	2.98
Al iv	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.08	0.01	0.08	0.06	0.02	0.02	0.06	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.00	0.00	0.01	0.05	0.02
Al vi	1.95	1.95	1.94	1.94	1.96	1.97	2.00	2.03	1.98	2.04	2.03	2.00	2.00	2.02	2.01	2.00	1.96	1.97	1.95	1.97	1.99	2.02	2.01	2.02	1.98	1.99	2.01	2.03	2.02
Ti	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Fe3+	0.03	0.04	0.04	0.03	0.03	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fe2+	2.51	2.50	2.47	2.45	2.44	2.42	2.43	2.40	2.38	2.38	2.37	2.36	2.35	2.35	2.34	2.33	2.32	2.32	2.31	2.31	2.31	2.31	2.30	2.29	2.30	2.31	2.31	2.31	2.30
Mn	0.07	0.10	0.13	0.15	0.16	0.17	0.18	0.19	0.21	0.20	0.21	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.22	0.23
Mg	0.30	0.27	0.26	0.25	0.25	0.24	0.23	0.23	0.23	0.22	0.22	0.23	0.22	0.22	0.22	0.23	0.23	0.22	0.23	0.23	0.23	0.23	0.22	0.23	0.22	0.23	0.22	0.22	0.22
Ca	0.12	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.18	0.19	0.20	0.20	0.21	0.22	0.21	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.22	0.22	0.23	0.23	0.23	0.23
Alm	0.84	0.83	0.82	0.82	0.81	0.81	0.80	0.80	0.79	0.80	0.79	0.79	0.78	0.78	0.78	0.78	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Grs	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.08	0.08	0.07	0.08	0.08	0.08	0.08	0.08
Prp	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.08	0.08	0.07	0.08
Sps	0.02	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.08
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Analysis #	9/40.	9/41.	9/42.	9/43.	9/44.	9/45.	9/46.	9/47.	9/48.	9/49.	9/50.	9/51.	9/52.	9/54.	9/55.	9/56.	9/57.	9/60.	9/61.	9/62.	9/63.	9/65.	9/68.
SiO2	37.58	38.25	36.36	37.39	37.62	37.37	37.50	37.49	37.53	37.60	37.50	37.65	37.30	37.39	37.23	36.82	37.33	37.31	37.55	36.71	37.20	36.85	37.25
TiO2	0.08	0.04	0.07	0.06	0.08	0.10	0.09	0.11	0.09	0.10	0.11	0.10	0.11	0.12	0.10	0.06	0.09	0.10	0.10	0.10	0.08	0.08	0.07
Al2O3	20.68	21.04	22.66	20.79	20.69	20.63	20.65	20.63	20.61	20.54	20.81	20.88	21.39	21.16	21.10	22.17	21.22	21.03	20.61	22.04	21.28	21.97	21.71
FeO	34.44	34.04	33.65	34.53	34.20	34.45	34.69	35.04	34.71	35.06	35.10	34.83	35.07	35.15	35.32	35.25	35.79	36.47	36.85	36.26	37.02	36.95	37.34
MnO	3.46	3.32	3.31	3.38	3.34	3.43	3.42	3.41	3.46	3.36	3.33	3.34	3.24	3.13	3.03	2.89	2.85	2.51	2.34	2.22	2.00	1.67	1.03
MgO	1.91	1.73	1.86	1.88	1.87	1.89	1.90	1.89	1.88	1.94	1.91	1.89	1.89	1.93	1.94	1.90	1.94	1.99	2.02	2.02	2.09	2.17	2.42
CaO	2.62	2.56	2.55	2.76	2.69	2.67	2.60	2.52	2.55	2.54	2.48	2.44	2.36	2.23	2.17	2.05	2.04	1.90	1.79	1.77	1.78	1.68	1.54
Na2O	0.04	0.05	0.05	0.05	0.05	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.02	0.04	0.01	0.03	0.02	0.02	0.02	0.03	0.02	0.03	0.02
K2O	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
P2O5	0.03	0.03	0.03	0.02	0.03	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.04	0.01	0.03	0.07	0.05	0.04	0.03	0.04	0.05
Total	100.84	101.06	100.54	100.86	100.57	100.58	100.91	101.14	100.89	101.19	101.30	101.18	101.41	101.20	100.94	101.18	101.31	101.40	101.33	101.19	101.50	101.44	101.43
Si	3.02	3.04	2.90	3.01	3.03	3.01	3.01	3.01	3.02	3.02	3.00	3.02	2.98	3.00	2.99	2.94	2.99	2.99	3.01	2.94	2.98	2.94	2.97
Al iv	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.06	0.01	0.01	0.00	0.06	0.02	0.06	0.03
Al vi	1.96	1.98	2.05	1.97	1.96	1.96	1.96	1.95	1.95	1.94	1.97	1.97	2.00	2.00	1.99	2.03	2.00	1.98	1.95	2.02	1.99	2.01	2.01
Ti	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Fe3+	0.01	0.00	0.00	0.02	0.00	0.02	0.02	0.03	0.02	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.00
Fe2+	2.30	2.30	2.32	2.31	2.30	2.30	2.31	2.33	2.31	2.32	2.33	2.33	2.35	2.36	2.37	2.40	2.40	2.43	2.44	2.46	2.47	2.49	2.51
Mn	0.24	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.24	0.23	0.23	0.23	0.22	0.21	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.11	0.07
Mg	0.23	0.21	0.22	0.23	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.25	0.26	0.29
Ca	0.23	0.22	0.22	0.24	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.20	0.19	0.19	0.18	0.18	0.16	0.15	0.15	0.15	0.14	0.13
Alm	0.77	0.78	0.78	0.77	0.77	0.77	0.77	0.78	0.77	0.77	0.78	0.78	0.78	0.79	0.79	0.80	0.80	0.81	0.82	0.82	0.82	0.83	0.84
Grs	0.08	0.07	0.07	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.04
Prp	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.10
Sps	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.02
Oxygen	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Biotite — Specimen UM04

Analysis #	3/1.	3/2.	3/3.	3/4.	3/5.	3/6.	3/7.	3/9.	3/10.	3/12.	3/13.	3/16.	3/17.	3/19.	5/1.	5/2.	5/3.	5/4.	5/5.	5/6.	5/7.	5/8.	5/10.	5/11.	5/12.	5/16.	5/18.
Location	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt
SiO2	36.01	36.58	37.25	36.79	36.04	35.71	35.67	36.14	35.05	34.93	36.45	37.01	36.80	36.61	35.94	36.09	36.71	36.23	36.60	36.52	36.99	36.75	36.58	36.70	36.59	35.95	35.16
TiO2	1.80	1.67	1.51	1.68	1.80	1.83	1.55	1.73	1.73	1.91	1.87	1.07	1.70	1.80	2.06	2.01	1.76	1.78	1.69	1.80	1.73	1.66	1.70	1.91	1.17	1.46	1.34
Al2O3	19.41	19.29	19.78	19.27	19.49	18.97	19.50	19.95	19.42	19.50	19.09	20.40	20.27	19.70	19.70	19.52	19.64	19.53	19.73	19.85	19.57	19.94	19.78	19.69	20.24	19.58	19.73
FeO	19.40	19.49	19.15	19.18	20.51	20.28	19.85	19.05	19.93	19.91	19.45	18.96	18.68	19.37	19.64	19.45	19.58	19.81	19.75	19.68	19.45	19.38	19.32	19.66	19.36	19.65	20.38
MnO	0.03	0.05	0.04	0.06	0.04	0.06	0.04	0.05	0.07	0.07	0.04	0.04	0.06	0.04	0.06	0.06	0.03	0.04	0.07	0.02	0.04	0.05	0.05	0.06	0.07	0.05	0.07
MgO	10.33	10.03	9.82	9.91	10.30	9.94	9.73	9.19	10.60	9.91	9.75	9.45	9.22	9.78	8.95	8.77	9.21	9.65	9.34	9.47	9.63	10.05	9.99	9.86	10.03	10.09	9.67
CaO	0.00	0.00	0.02	0.03	0.03	0.06	0.10	0.04	0.05	0.04	0.01	0.02	0.02	0.03	0.05	0.04	0.05	0.05	0.03	0.07	0.03	0.01	0.01	0.00	0.02	0.06	0.04
Na2O	0.11	0.10	0.10	0.18	0.10	0.18	0.14	0.11	0.13	0.12	0.11	0.16	0.24	0.13	0.13	0.14	0.12	0.09	0.11	0.14	0.16	0.12	0.13	0.13	0.12	0.17	0.15
K2O	9.97	9.63	9.43	9.76	8.86	8.95	8.46	9.07	8.79	8.52	9.61	9.83	9.51	9.42	9.20	9.33	9.48	9.01	9.20	8.94	9.54	9.42	9.21	9.37	9.67	9.08	8.38
P2O5	0.02	0.03	0.02	0.01	0.08	0.13	0.24	0.11	0.02	0.01	0.03	0.02	0.02	0.01	0.03	0.01	0.02	0.02	0.02	0.02	0.01	0.04	0.02	0.02	0.01	0.01	0.03
Cl	0.02	0.04	0.02	0.03	0.03	0.06	0.04	0.03	0.03	0.04	0.03	0.04	0.05	0.03	0.06	0.05	0.02	0.03	0.02	0.04	0.03	0.02	0.03	0.02	0.02	0.03	0.05
F	0.59	0.57	0.62	0.46	0.54	0.38	0.43	0.45	0.48	0.35	0.42	0.56	0.40	0.44	0.32	0.46	0.50	0.44	0.33	0.39	0.45	0.47	0.53	0.52	0.58	0.44	0.33
H2O	3.73	3.73	3.75	3.79	3.76	3.77	3.74	3.75	3.73	3.76	3.79	3.76	3.82	3.81	3.80	3.73	3.77	3.78	3.85	3.82	3.82	3.82	3.77	3.79	3.76	3.77	3.76
Total	101.42	101.21	101.51	101.15	101.58	100.32	99.49	99.67	100.03	99.07	100.65	101.32	100.79	101.17	99.94	99.66	100.89	100.46	100.74	100.76	101.45	101.73	101.12	101.73	101.64	100.34	99.09
Si	5.38	5.46	5.52	5.49	5.37	5.40	5.41	5.45	5.31	5.33	5.47	5.50	5.48	5.45	5.43	5.47	5.49	5.44	5.47	5.45	5.49	5.44	5.45	5.44	5.43	5.41	5.36
Al iv	2.62	2.54	2.48	2.51	2.63	2.60	2.59	2.55	2.69	2.67	2.53	2.50	2.52	2.55	2.57	2.53	2.51	2.56	2.53	2.55	2.51	2.56	2.55	2.56	2.57	2.59	2.64
Al vi	0.80	0.86	0.97	0.88	0.80	0.78	0.90	1.00	0.77	0.83	0.85	1.07	1.04	0.91	0.93	0.95	0.95	0.90	0.95	0.95	0.92	0.92	0.92	0.88	0.97	0.88	0.91
Ti	0.20	0.19	0.17	0.19	0.20	0.21	0.18	0.20	0.20	0.22	0.21	0.12	0.19	0.20	0.23	0.23	0.20	0.20	0.19	0.20	0.19	0.18	0.19	0.21	0.13	0.17	0.15
Fe	2.43	2.43	2.37	2.39	2.56	2.56	2.52	2.40	2.52	2.54	2.44	2.36	2.33	2.41	2.48	2.46	2.45	2.49	2.47	2.46	2.42	2.40	2.41	2.44	2.40	2.47	2.60
Mn	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mg	2.30	2.23	2.17	2.20	2.29	2.24	2.20	2.07	2.39	2.25	2.18	2.09	2.05	2.17	2.01	1.98	2.05	2.16	2.08	2.11	2.13	2.22	2.22	2.18	2.22	2.26	2.20
Ca	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Na	0.03	0.03	0.03	0.05	0.03	0.05	0.04	0.03	0.04	0.04	0.03	0.05	0.07	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.05	0.03	0.04	0.04	0.03	0.05	0.04
K	1.90	1.83	1.78	1.86	1.68	1.73	1.64	1.75	1.70	1.66	1.84	1.86	1.81	1.79	1.77	1.80	1.81	1.73	1.75	1.70	1.81	1.78	1.75	1.77	1.83	1.74	1.63
OH	3.72	3.72	3.70	3.78	3.74	3.80	3.78	3.78	3.76	3.82	3.79	3.73	3.80	3.79	3.83	3.77	3.76	3.78	3.84	3.81	3.78	3.77	3.74	3.75	3.72	3.78	3.83
F	0.28	0.27	0.29	0.22	0.25	0.18	0.21	0.21	0.23	0.17	0.20	0.26	0.19	0.21	0.15	0.22	0.24	0.21	0.16	0.18	0.21	0.22	0.25	0.24	0.27	0.21	0.16
Cl	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
XMg	0.49	0.48	0.48	0.48	0.47	0.47	0.47	0.46	0.49	0.47	0.47	0.47	0.47	0.47	0.45	0.45	0.46	0.46	0.46	0.46	0.47	0.48	0.48	0.47	0.48	0.48	0.46
Oxygen	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Biotite — Specimen UM05

Analysis #	1/1.	1/2.	1/6.	1/10.	6/6.	6/7.	6/8.	10/1.	10/2.	10/4.	10/5.	10/7.	12/2.	12/6.	12/9.	12/12.
Location	Matrix	Matrix	Matrix	Matrix	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Matrix	Matrix	Matrix	Matrix
SiO2	35.53	35.43	35.45	35.67	34.76	35.28	35.73	35.45	35.83	35.22	35.97	35.24	35.35	35.69	35.40	38.04
TiO2	1.62	1.76	1.57	1.47	1.16	1.10	1.04	1.65	1.53	1.54	1.50	1.65	1.58	1.53	1.71	1.38
Al2O3	18.65	18.48	18.49	19.12	18.92	18.83	19.08	18.15	19.19	18.35	19.14	18.73	18.50	18.43	18.39	19.41
FeO	20.53	20.63	20.53	19.92	20.26	20.74	20.55	20.86	20.13	20.70	20.08	20.10	20.47	20.63	20.22	19.62
MnO	0.01	0.03	0.00	0.00	0.03	0.02	0.00	0.01	0.02	0.01	0.04	0.00	0.03	0.04	0.03	0.01
MgO	9.37	9.26	9.47	9.38	9.63	9.76	9.87	9.51	9.23	10.12	9.62	9.35	9.40	9.67	9.44	9.19
CaO	0.00	0.01	0.03	0.00	0.02	0.00	0.00	0.06	0.03	0.08	0.00	0.00	0.07	0.00	0.00	0.06
Na2O	0.17	0.16	0.18	0.15	0.18	0.18	0.18	0.17	0.19	0.23	0.20	0.17	0.19	0.18	0.16	0.20
K2O	9.62	9.42	9.26	8.87	9.55	9.51	9.57	8.73	8.86	8.63	9.48	9.58	9.21	9.68	9.77	8.52
P2O5	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.00	0.01	0.02	0.00	0.02	0.02
Cl	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.05	0.00	0.03	0.00	0.01	0.01	0.01	0.01	0.04
F	0.41	0.34	0.34	0.58	0.54	0.62	0.44	0.50	0.53	0.67	0.52	0.56	0.50	0.37	0.45	0.60
H2O	3.73	3.74	3.74	3.64	3.62	3.62	3.74	3.65	3.68	3.58	3.72	3.63	3.66	3.75	3.69	3.75
Total	99.67	99.29	99.08	98.82	98.70	99.68	100.21	98.81	99.24	99.19	100.27	99.03	98.99	99.98	99.29	100.84
Si	5.43	5.43	5.44	5.46	5.37	5.40	5.42	5.46	5.46	5.40	5.44	5.42	5.44	5.44	5.44	5.64
Al iv	2.57	2.57	2.56	2.54	2.63	2.60	2.58	2.54	2.54	2.60	2.56	2.58	2.56	2.56	2.56	2.36
Al vi	0.79	0.78	0.79	0.91	0.82	0.80	0.84	0.75	0.91	0.72	0.85	0.81	0.79	0.75	0.76	1.04
Ti	0.19	0.20	0.18	0.17	0.13	0.13	0.12	0.19	0.18	0.18	0.17	0.19	0.18	0.18	0.20	0.15
Fe	2.62	2.65	2.64	2.55	2.62	2.66	2.61	2.69	2.57	2.66	2.54	2.58	2.63	2.63	2.60	2.43
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Mg	2.14	2.12	2.17	2.14	2.22	2.23	2.23	2.18	2.10	2.31	2.17	2.14	2.15	2.20	2.16	2.03
Ca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01		0.00	0.01
Na	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.06	0.07	0.06	0.05	0.06	0.05	0.05	0.06
K	1.88	1.84	1.81	1.73	1.88	1.86	1.85	1.71	1.72	1.69	1.83	1.88	1.81	1.88	1.91	1.61
OH	3.80	3.83	3.83	3.71	3.73	3.70	3.79	3.74	3.74	3.67	3.75	3.73	3.75	3.82	3.78	3.71
F	0.20	0.16	0.17	0.28	0.26	0.30	0.21	0.24	0.26	0.33	0.25	0.27	0.24	0.18	0.22	0.28
Cl	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
XMg	0.45	0.44	0.45	0.46	0.46	0.46	0.46	0.45	0.45	0.47	0.46	0.45	0.45	0.46	0.45	0.46
Oxygen	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Biotite — **Specimen UM07**

Analysis #	1/1.	1/2.	1/3.	1/4.	1/5.	1/6.	1/7.	1/9.	1/10.	1/11.	1/12.	1/13.	3/3.	5/6.	5/8.	5/10.	7/2.	7/3.	7/4.	7/6.	7/9.	9/15.	9/17.
Location	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt
SiO2	35.98	35.70	35.67	35.34	35.24	35.74	35.41	35.43	35.32	34.80	35.23	35.49	35.33	35.76	36.06	35.41	35.29	36.09	35.68	38.34	37.38	35.41	37.15
TiO2	1.50	1.35	1.48	1.49	1.35	1.50	1.44	1.37	1.77	1.84	1.72	1.82	1.51	1.61	1.41	1.42	1.79	1.89	1.83	1.20	1.42	1.38	1.58
Al2O3	19.04	19.25	18.93	18.47	18.91	18.79	18.75	18.76	18.55	18.20	18.33	18.57	18.00	18.67	20.14	18.87	18.30	18.87	18.36	19.15	18.26	18.76	18.91
FeO	21.14	20.90	21.06	21.47	20.64	20.39	20.70	20.13	21.47	21.65	21.21	21.51	21.60	20.71	19.97	20.51	21.44	20.86	21.06	19.20	19.60	20.85	19.28
MnO	0.02	0.01	0.02	0.00	0.02	0.00	0.00	0.02	0.01	0.01	0.02	0.01	0.06	0.01	0.00	0.00	0.03	0.02	0.01	0.01	0.00	0.00	0.00
MgO	9.18	9.24	9.49	9.36	9.55	9.32	9.55	9.63	9.53	9.15	9.19	9.31	9.27	9.59	8.44	9.37	8.71	8.56	8.96	8.73	9.33	9.74	8.94
CaO	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
Na2O	0.25	0.25	0.26	0.23	0.24	0.23	0.22	0.22	0.23	0.27	0.25	0.24	0.21	0.23	0.19	0.25	0.21	0.25	0.25	0.24	0.22	0.28	0.27
K2O	9.17	9.20	9.10	8.95	8.99	9.13	9.12	9.14	9.10	8.67	8.85	9.16	9.17	9.21	8.68	9.39	8.89	8.80	8.94	8.40	8.69	9.17	9.03
P2O5	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.03	0.01	0.09	0.03	0.00	0.01
Cl	0.01	0.01	0.01	0.02	0.03	0.02	0.03	0.02	0.01	0.04	0.03	0.01	0.01	0.01	0.06	0.01	0.02	0.01	0.01	0.03	0.00	0.06	0.03
F	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
H2O	3.96	3.95	3.95	3.90	3.90	3.92	3.91	3.90	3.93	3.86	3.88	3.94	3.89	3.94	3.93	3.91	3.88	3.93	3.91	4.00	3.96	3.91	3.96
Total	100.30	99.86	99.98	99.24	98.87	99.04	99.13	98.62	99.92	98.54	98.72	100.07	99.05	99.75	98.90	99.14	98.58	99.31	99.02	99.42	98.90	99.56	99.16
Si	5.45	5.42	5.42	5.42	5.41	5.46	5.42	5.44	5.39	5.39	5.43	5.40	5.45	5.44	5.48	5.42	5.45	5.50	5.47	5.74	5.66	5.41	5.61
Al iv	2.55	2.58	2.58	2.58	2.59	2.54	2.58	2.56	2.61	2.61	2.57	2.60	2.55	2.56	2.52	2.58	2.55	2.50	2.53	2.26	2.34	2.59	2.39
Al vi	0.84	0.87	0.81	0.76	0.83	0.85	0.80	0.83	0.72	0.71	0.76	0.74	0.72	0.79	1.08	0.83	0.78	0.88	0.79	1.11	0.92	0.78	0.98
Ti	0.17	0.15	0.17	0.17	0.16	0.17	0.17	0.16	0.20	0.21	0.20	0.21	0.18	0.18	0.16	0.16	0.21	0.22	0.21	0.14	0.16	0.16	0.18
Fe	2.68	2.66	2.67	2.75	2.65	2.61	2.65	2.58	2.74	2.80	2.73	2.74	2.78	2.63	2.54	2.63	2.77	2.66	2.70	2.40	2.48	2.66	2.44
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	2.07	2.09	2.15	2.14	2.18	2.12	2.18	2.20	2.17	2.11	2.11	2.11	2.13	2.17	1.91	2.14	2.01	1.94	2.05	1.95	2.11	2.22	2.01
Ca	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
Na	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.06	0.07	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.08	0.08
K	1.77	1.78	1.76	1.75	1.76	1.78	1.78	1.79	1.77	1.71	1.74	1.78	1.80	1.79	1.68	1.83	1.75	1.71	1.75	1.60	1.68	1.79	1.74
OH	4.00	4.00	4.00	3.99	3.99	3.99	3.99	4.00	3.99	3.99	4.00	4.00	4.00	4.00	3.98	4.00	3.99	4.00	4.00	3.99	4.00	3.98	3.99
F	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
Cl	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.01
XMg	0.44	0.44	0.45	0.44	0.45	0.45	0.45	0.46	0.44	0.43	0.44	0.44	0.43	0.45	0.43	0.45	0.42	0.42	0.43	0.45	0.46	0.45	0.45
Oxygen	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Biotite — **Specimen UM08**

Analysis #	1/1.	1/3.	1/4.	1/6.	3/1.	3/2.	3/3.	3/6.	3/8.	3/9.	3/11.	6/2.	6/3.	6/7.	6/10.	6/11.	6/12.	6/13.	6/15.	10/2.
Location	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Near Grt	Near Grt	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix
SiO2	37.25	36.91	36.89	36.33	37.25	37.07	36.70	36.63	36.74	36.86	36.83	37.43	36.67	37.03	36.85	37.17	36.55	37.48	37.41	37.20
TiO2	1.74	1.71	1.72	2.34	1.72	1.86	1.98	1.76	1.73	1.48	1.37	1.60	1.75	1.59	1.58	1.91	1.80	1.77	1.64	1.67
Al2O3	19.88	19.26	19.43	18.32	19.09	19.19	18.79	19.04	19.47	19.39	19.46	20.16	19.39	18.96	19.52	19.59	19.03	19.77	20.09	20.58
FeO	20.11	21.02	20.70	21.33	20.55	20.89	21.72	21.84	20.68	21.47	20.56	20.09	20.61	20.49	19.73	20.39	21.16	19.89	19.25	19.08
MnO	0.09	0.13	0.08	0.08	0.08	0.09	0.10	0.07	0.09	0.11	0.09	0.14	0.17	0.13	0.12	0.13	0.17	0.08	0.07	0.06
MgO	8.32	8.58	8.71	8.03	8.53	8.63	8.64	8.67	8.34	8.57	8.71	8.33	8.55	8.48	8.22	8.23	8.81	7.96	8.14	7.96
CaO	0.04	0.07	0.09	0.11	0.07	0.08	0.03	0.06	0.10	0.10	0.02	0.01	0.04	0.04	0.11	0.02	0.04	0.06	0.10	0.07
Na2O	0.14	0.15	0.13	0.11	0.11	0.15	0.15	0.15	0.13	0.12	0.09	0.11	0.11	0.11	0.10	0.12	0.09	0.14	0.14	0.12
K2O	9.45	9.26	9.10	8.73	8.97	9.25	9.05	8.99	8.85	9.04	9.43	8.85	9.12	8.85	8.86	9.51	9.36	8.72	8.27	8.26
P2O5	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.00
Cl	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.01	0.00	0.00
F	0.37	0.39	0.45	0.46	0.59	0.53	0.57	0.48	0.48	0.60	0.54	0.52	0.69	0.54	0.55	0.54	0.61	0.60	0.43	0.45
H2O	3.85	3.82	3.80	3.71	3.72	3.77	3.73	3.78	3.75	3.72	3.74	3.79	3.66	3.71	3.69	3.76	3.71	3.72	3.79	3.78
Total	101.24	101.31	101.10	99.56	100.71	101.47	101.42	101.47	100.40	101.47	100.88	101.01	100.77	99.95	99.37	101.35	101.37	100.17	99.33	99.23
Si	5.55	5.52	5.52	5.54	5.59	5.53	5.51	5.49	5.53	5.51	5.53	5.56	5.51	5.59	5.58	5.55	5.49	5.61	5.61	5.58
Al iv	2.45	2.48	2.48	2.46	2.41	2.47	2.49	2.51	2.47	2.49	2.47	2.44	2.49	2.41	2.42	2.45	2.51	2.39	2.39	2.42
Al vi	1.03	0.92	0.94	0.83	0.96	0.91	0.83	0.86	0.98	0.93	0.97	1.10	0.95	0.97	1.06	0.99	0.85	1.11	1.17	1.22
Ti	0.19	0.19	0.19	0.27	0.19	0.21	0.22	0.20	0.20	0.17	0.15	0.18	0.20	0.18	0.18	0.21	0.20	0.20	0.19	0.19
Fe	2.50	2.63	2.59	2.72	2.58	2.61	2.73	2.74	2.60	2.69	2.58	2.50	2.59	2.59	2.50	2.54	2.66	2.49	2.42	2.39
Mn	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Mg	1.85	1.91	1.94	1.83	1.91	1.92	1.93	1.94	1.87	1.91	1.95	1.85	1.92	1.91	1.86	1.83	1.97	1.78	1.82	1.78
Ca	0.01	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.02	0.01
Na	0.04	0.04	0.04	0.03	0.04	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03
K	1.79	1.77	1.74	1.70	1.72	1.76	1.73	1.72	1.70	1.73	1.81	1.68	1.75	1.71	1.71	1.81	1.79	1.67	1.58	1.58
OH	3.83	3.81	3.79	3.78	3.72	3.75	3.73	3.77	3.77	3.72	3.74	3.76	3.67	3.74	3.73	3.75	3.71	3.71	3.80	3.79
F	0.17	0.18	0.21	0.22	0.28	0.25	0.27	0.23	0.23	0.28	0.26	0.24	0.33	0.26	0.26	0.25	0.29	0.28	0.20	0.21
Cl	0.00	0.00	0.00	0.00	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	0.00	0.00
XMg	0.42	0.42	0.43	0.40	0.43	0.42	0.41	0.41	0.42	0.42	0.43	0.42	0.43	0.42	0.43	0.42	0.43	0.42	0.43	0.43
Oxygen	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Biotite — **Specimen UM09**

Analysis #	1/1.	1/2.	1/4.	1/5.	1/6.	1/7.	1/9.	1/10.	1/11.	1/13.	1/14.	1/15.	2/2.	2/5.	2/6.	2/7.	2/8.	2/10.	4/2.	4/3.	4/4.	4/5.	4/6.	4/7.	4/8.	4/9.	4/10.	7/1.	7/2.	7/4.	7/5.	7/6.	7/7.	7/8.	7/9.	7/10.	7/11.	9/4.	9/12.	9/13.
Location	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Near Grt	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Matrix	Near Grt	Near Grt	Near Grt
SiO2	34.76	35.07	34.93	35.02	35.09	34.46	34.75	34.60	34.46	34.15	34.74	33.73	34.51	33.95	34.23	34.03	34.17	34.73	34.62	33.95	34.38	34.75	34.81	34.50	34.25	34.73	35.03	34.64	34.78	34.42	34.20	34.50	34.30	34.48	34.53	34.35	34.36	34.82	34.47	34.57
TiO2	2.45	2.46	2.50	2.53	2.49	2.51	2.39	1.61	1.78	1.67	1.88	1.78	2.06	2.00	2.00	2.27	2.25	2.30	2.31	2.21	2.09	2.67	2.50	2.39	2.36	2.42	2.45	2.63	2.60	2.36	2.52	2.53	2.66	2.71	2.64	2.63	2.71	2.37	2.34	2.56
Al2O3	18.28	18.44	18.29	18.53	18.61	18.16	18.03	18.96	19.20	18.42	18.72	19.66	18.73	18.34	18.38	18.07	18.18	19.13	18.26	18.69	18.52	18.45	18.56	18.34	18.21	18.58	18.85	18.31	18.38	18.09	18.43	18.49	18.63	18.45	18.15	18.89	18.56	18.75	18.89	18.23
FeO	22.84	22.96	22.91	22.33	22.80	22.72	22.75	23.43	23.23	23.94	22.58	22.67	23.67	24.38	24.23	23.90	23.60	22.44	23.46	23.08	23.37	22.62	23.31	22.62	23.35	22.41	21.86	22.58	22.64	23.25	22.92	22.95	23.00	22.91	23.22	22.40	22.72	21.76	22.56	22.76
MnO	0.02	0.01	0.04	0.01	0.02	0.00	0.00	0.02	0.02	0.02	0.00	0.01	0.04	0.02	0.00	0.03	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.03	0.03	0.02	0.01	0.03	0.00	0.00	0.02	0.01	0.01	0.02
MgO	7.40	7.45	7.45	7.29	7.38	7.44	7.62	7.40	7.36	7.52	7.61	7.43	7.06	7.06	7.34	7.19	7.65	6.90	7.51	7.56	7.49	7.12	7.50	7.54	7.78	7.39	7.23	7.37	7.36	7.64	7.47	7.44	7.37	7.35	7.37	7.21	7.32	7.46	7.37	7.23
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.03	0.03	0.07	0.02	0.03	0.00	0.00
Na2O	0.37	0.34	0.38	0.39	0.41	0.36	0.38	0.39	0.37	0.32	0.40	0.40	0.29	0.31	0.38	0.30	0.31	0.28	0.34	0.35	0.34	0.35	0.32	0.34	0.34	0.35	0.38	0.33	0.35	0.33	0.37	0.36	0.37	0.38	0.36	0.38	0.36	0.33	0.34	0.28
K2O	9.10	9.21	9.23	9.10	9.16	9.18	9.12	9.11	9.24	9.07	9.24	9.18	9.21	9.13	9.10	9.28	9.21	9.46	9.09	9.01	9.15	9.26	9.12	9.08	8.79	9.19	9.26	9.25	9.34	9.26	9.18	9.16	9.39	9.24	9.20	9.31	9.25	9.17	9.21	9.34
P2O5	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.03	0.02	0.03	0.03	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.01	0.00
F	0.27	0.27	0.31	0.22	0.41	0.33	0.23	0.25	0.22	0.28	0.36	0.27	0.19	0.20	0.37	0.33	0.31	0.41	0.39	0.33	0.31	0.22	0.35	0.31	0.29	0.23	0.41	0.35	0.39	0.23	0.39	0.34	0.31	0.32	0.40	0.26	0.28	0.27	0.33	0.33
H2O	3.73	3.77	3.73	3.77	3.70	3.69	3.74	3.74	3.77	3.69	3.69	3.70	3.77	3.73	3.67	3.67	3.70	3.68	3.68	3.68	3.71	3.76	3.73	3.70	3.71	3.76	3.68	3.70	3.69	3.75	3.67	3.71	3.73	3.72	3.67	3.74	3.73	3.73	3.71	3.69
Total	99.23	100.00	99.79	99.22	100.09	98.86	99.03	99.54	99.68	99.11	99.25	98.82	99.54	99.13	99.61	99.08	99.40	99.36	99.68	98.88	99.38	99.22	100.22	98.84	99.11	99.09	99.18	99.18	99.55	99.42	99.19	99.51	99.77	99.62	99.58	99.05	99.33	98.72	99.24	99.01
Si	5.39	5.40	5.39	5.41	5.39	5.37	5.40	5.36	5.33	5.34	5.39	5.26	5.36	5.32	5.33	5.33	5.32	5.38	5.37	5.30	5.34	5.39	5.36	5.37	5.33	5.38	5.41	5.38	5.38	5.35	5.32	5.35	5.31	5.34	5.36	5.33	5.33	5.40	5.34	5.38
Al iv	2.61	2.60	2.61	2.59	2.61	2.63	2.60	2.64	2.67	2.66	2.61	2.74	2.64	2.68	2.67	2.67	2.68	2.62	2.63	2.70	2.66	2.61	2.64	2.63	2.67	2.62	2.59	2.62	2.62	2.65	2.68	2.65	2.69	2.66	2.64	2.67	2.67	2.60	2.66	2.62
Al vi	0.73	0.74	0.72	0.79	0.76	0.71	0.70	0.83	0.83	0.73	0.81	0.87	0.78	0.71	0.71	0.67	0.66	0.87	0.70	0.74	0.74	0.76	0.72	0.74	0.67	0.78	0.84	0.73	0.73	0.67	0.71	0.72	0.71	0.71	0.68	0.78	0.72	0.83	0.80	0.73
Ti	0.29	0.28	0.29	0.29	0.29	0.29	0.28	0.19	0.21	0.20	0.22	0.20	0.24	0.24	0.23	0.27	0.26	0.27	0.27	0.26	0.24	0.31	0.29	0.28	0.28	0.28	0.28	0.31	0.30	0.28	0.30	0.29	0.31	0.32	0.31	0.31	0.32	0.28	0.27	0.30
Fe	2.96	2.96	2.96	2.89	2.93	2.96	2.96	3.04	3.01	3.13	2.93	2.96	3.07	3.20	3.16	3.13	3.08	2.91	3.04	3.01	3.04	2.93	3.00	2.95	3.04	2.91	2.82	2.93	2.93	3.02	2.98	2.97	2.98	2.97	3.01	2.91	2.95	2.82	2.92	2.96
Mn	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	1.71	1.71	1.71	1.68	1.69	1.73	1.77	1.71	1.70	1.75	1.76	1.73	1.63	1.65	1.70	1.68	1.78	1.59	1.74	1.76	1.74	1.65	1.72	1.75	1.81	1.71	1.66	1.71	1.70	1.77	1.73	1.72	1.70	1.70	1.70	1.67	1.69	1.72	1.70	1.68
Ca	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	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Na	0.11	0.10	0.11	0.12	0.12	0.11	0.11	0.12	0.11	0.10	0.12	0.12	0.09	0.09	0.08	0.09	0.09	0.08	0.10	0.11	0.10	0.11	0.10	0.10	0.10	0.11	0.11	0.10	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.08
K	1.80	1.81	1.82	1.79	1.80	1.83	1.81	1.80	1.82	1.81	1.83	1.83	1.82	1.83	1.81	1.86	1.83	1.87	1.80	1.79	1.81	1.83	1.79	1.80	1.75	1.82	1.82	1.83	1.84	1.84	1.82	1.81	1.85	1.82	1.82	1.80	1.83	1.81	1.82	1.86
OH	3.86	3.87	3.84	3.89	3.80	3.83	3.88	3.87	3.89	3.85	3.82	3.85	3.90	3.90	3.82	3.83	3.84	3.80	3.81	3.83	3.84	3.89	3.83	3.84	3.85	3.88	3.80	3.83	3.81	3.88	3.81	3.83	3.85	3.84	3.80	3.87	3.86	3.86	3.84	3.84
F	0.13	0.13	0.15	0.11	0.20	0.16	0.11	0.12	0.11	0.14	0.18	0.13	0.09	0.10	0.18	0.16	0.15	0.20	0.19	0.16	0.15	0.11	0.17	0.15	0.14	0.11	0.20	0.17	0.19	0.11	0.19	0.17	0.15	0.16	0.20	0.13	0.14	0.13	0.16	0.16
Cl	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	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	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	0.01	0.00	0.00
XMg	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.38	0.37	0.35	0.34	0.35	0.35	0.37	0.35	0.36	0.37	0.36	0.36	0.36	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.38	0.37	0.36
Oxygen	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Muscovite	Specimen UM04								
Analysis #	4 / 1 .	4 / 5 .	4 / 6 .	4 / 7 .	4 / 8 .	4 / 10 .	4 / 13 .	4 / 14 .	4 / 15 .
SiO2	47.61	47.67	47.64	47.55	47.68	48.56	47.33	47.96	47.66
TiO2	0.31	0.37	0.45	0.32	0.27	0.25	0.40	0.32	0.37
Al2O3	35.10	35.31	35.50	34.99	35.20	34.81	34.73	35.34	35.80
FeO	1.07	1.08	0.97	0.82	0.90	0.95	1.78	1.00	0.89
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.65	0.59	0.56	0.56	0.56	0.76	0.97	0.63	0.47
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.67	0.89	0.86	0.82	0.83	0.80	0.87	0.77	0.99
K2O	10.65	10.32	10.66	10.32	10.44	10.61	10.37	10.68	10.46
P2O5	0.01	0.01	0.01	0.01	0.00	0.03	0.02	0.01	0.00
Cl	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.01	0.01
F	0.04	0.00	0.08	0.14	0.17	0.16	0.13	0.15	0.20
H2O	4.53	4.56	4.54	4.46	4.47	4.51	4.49	4.51	4.49
Total	100.65	100.82	101.28	100.02	100.53	101.45	101.10	101.38	101.34
Si	6.27	6.26	6.24	6.29	6.28	6.34	6.23	6.27	6.23
Al iv	1.73	1.74	1.76	1.71	1.72	1.66	1.77	1.73	1.77
Al vi	3.72	3.73	3.72	3.75	3.75	3.70	3.63	3.72	3.75
Ti	0.03	0.04	0.04	0.03	0.03	0.02	0.04	0.03	0.04
Fe	0.12	0.12	0.11	0.09	0.10	0.10	0.20	0.11	0.10
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	0.13	0.12	0.11	0.11	0.11	0.15	0.19	0.12	0.09
Ca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na	0.17	0.23	0.22	0.21	0.21	0.20	0.22	0.20	0.25
K	1.79	1.73	1.78	1.74	1.75	1.77	1.74	1.78	1.74
OH	3.98	4.00	3.96	3.93	3.93	3.93	3.94	3.94	3.92
F	0.02	0.00	0.03	0.06	0.07	0.07	0.05	0.06	0.08
Cl	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
XMg	0.52	0.49	0.51	0.55	0.53	0.59	0.49	0.53	0.48
Oxygen	22	22	22	22	22	22	22	22	22

Muscovite	Specimen UM05			
Analysis #	2 / 10 .	3 / 4 .	3 / 6 .	4 / 8 .
SiO2	46.33	46.21	46.12	45.69
TiO2	0.28	0.24	0.57	0.31
Al2O3	37.82	38.02	37.51	38.40
FeO	0.86	0.76	0.85	0.79
MnO	0.00	0.00	0.01	0.00
MgO	0.55	0.54	0.56	0.45
CaO	0.00	0.00	0.00	0.00
Na2O	0.84	0.89	0.82	0.96
K2O	9.73	9.65	9.73	9.85
P2O5	n/a	n/a	n/a	n/a
Cl	n/a	n/a	n/a	n/a
F	n/a	n/a	n/a	n/a
H2O	4.59	4.59	4.58	4.59
Total	101.00	100.90	100.75	101.04
Si	6.05	6.03	6.04	5.97
Al iv	1.95	1.97	1.96	2.03
Al vi	3.87	3.89	3.83	3.89
Ti	0.03	0.02	0.06	0.03
Fe	0.09	0.08	0.09	0.09
Mn	0.00	0.00	0.00	0.00
Mg	0.11	0.11	0.11	0.09
Ca	0.00	0.00	0.00	0.00
Na	0.21	0.23	0.21	0.24
K	1.62	1.61	1.63	1.64
OH	4.00	4.00	4.00	4.00
F	n/a	n/a	n/a	n/a
Cl	n/a	n/a	n/a	n/a
XMg	0.53	0.56	0.54	0.50
Oxygen	22	22	22	22

Muscovite	Specimen UM07					
Analysis #	6 / 3 .	6 / 4 .	6 / 5 .	6 / 6 .	6 / 8 .	6 / 10 .
SiO2	46.51	46.87	47.38	47.14	47.73	47.29
TiO2	0.32	0.32	0.35	0.23	0.30	0.26
Al2O3	35.91	35.67	35.04	35.71	35.35	35.79
FeO	0.95	1.08	0.88	0.89	0.94	0.85
MnO	0.00	0.02	0.01	0.00	0.01	0.01
MgO	0.44	0.48	0.68	0.51	0.66	0.56
CaO	0.02	0.02	0.01	0.03	0.02	0.03
Na2O	1.19	1.14	0.95	1.15	1.16	1.11
K2O	10.29	10.17	10.54	10.20	10.33	10.07
P2O5	0.02	0.03	0.02	0.02	0.03	0.02
Cl	0.02	0.01	0.01	0.02	0.01	0.02
F	0.29	0.20	0.13	0.21	0.16	0.18
H2O	4.39	4.44	4.48	4.44	4.50	4.47
Total	100.35	100.45	100.48	100.55	101.20	100.66
Si	6.16	6.19	6.25	6.21	6.25	6.22
Al iv	1.84	1.81	1.75	1.79	1.75	1.78
Al vi	3.76	3.75	3.71	3.76	3.71	3.76
Ti	0.03	0.03	0.03	0.02	0.03	0.03
Fe	0.11	0.12	0.10	0.10	0.10	0.09
Mn	0.00	0.00	0.00	0.00	0.00	0.00
Mg	0.09	0.09	0.13	0.10	0.13	0.11
Ca	0.00	0.00	0.00	0.00	0.00	0.00
Na	0.31	0.29	0.24	0.29	0.29	0.28
K	1.74	1.71	1.77	1.71	1.73	1.69
OH	3.87	3.91	3.94	3.91	3.93	3.92
F	0.12	0.08	0.05	0.09	0.07	0.07
Cl	0.00	0.00	0.00	0.00	0.00	0.00
XMg	0.45	0.44	0.58	0.51	0.56	0.54
Oxygen	22	22	22	22	22	22

Muscovite	**Specimen UM08**							
Analysis #	2 / 4 .	2 / 7 .	4 / 3 .	5 / 1 .	5 / 2 .	9 / 4 .	9 / 6 .	11 / 11 .
SiO2	49.43	48.26	48.32	48.37	48.52	48.10	47.32	47.73
TiO2	0.45	0.21	0.63	0.34	0.38	0.14	0.21	0.22
Al2O3	33.30	35.92	34.97	34.96	34.83	35.41	35.00	35.10
FeO	1.32	0.63	0.91	1.01	0.92	0.87	0.85	0.80
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	1.08	0.35	0.63	0.68	0.65	0.56	0.60	0.58
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.79	1.12	1.13	0.89	0.80	0.73	0.56	0.71
K2O	10.45	9.39	10.22	10.55	10.64	10.75	11.08	10.69
P2O5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00
H2O	4.61	4.64	4.65	4.65	4.59	4.66	4.47	4.60
Total	101.44	100.52	101.46	101.45	101.33	101.22	100.21	100.43
Si	6.45	6.30	6.30	6.32	6.34	6.30	6.27	6.29
Al iv	1.55	1.70	1.70	1.68	1.66	1.70	1.73	1.71
Al vi	3.58	3.83	3.68	3.70	3.70	3.76	3.74	3.75
Ti	0.04	0.02	0.06	0.03	0.04	0.01	0.02	0.02
Fe	0.14	0.07	0.10	0.11	0.10	0.10	0.09	0.09
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	0.21	0.07	0.12	0.13	0.13	0.11	0.12	0.11
Ca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na	0.20	0.28	0.29	0.23	0.20	0.19	0.14	0.18
K	1.74	1.56	1.70	1.76	1.77	1.79	1.87	1.80
OH	4.02	4.04	4.04	4.05	4.00	4.07	3.95	4.04
F	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Cl	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XMg	0.59	0.50	0.55	0.55	0.56	0.53	0.56	0.56
Oxygen	22	22	22	22	22	22	22	22

Muscovite	**Specimen UM09**				
Analysis #	3 / 1 .	3 / 9 .	4 / 2 .	4 / 4 .	4 / 6 .
SiO2	45.48	45.19	45.51	45.25	45.21
TiO2	0.80	0.76	0.45	0.50	0.57
Al2O3	38.47	37.83	38.61	38.34	38.05
FeO	0.86	1.02	0.96	1.13	1.16
MnO	0.00	0.00	0.00	0.00	0.00
MgO	0.33	0.38	0.33	0.35	0.39
CaO	0.00	0.01	0.02	0.01	0.00
Na2O	1.08	1.05	1.14	1.06	1.13
K2O	9.65	9.67	9.62	9.86	9.80
P2O5	n/a	n/a	n/a	n/a	n/a
Cl	n/a	n/a	n/a	n/a	n/a
F	n/a	n/a	n/a	n/a	n/a
H2O	4.60	4.55	4.59	4.57	4.56
Total	101.27	100.46	101.23	101.07	100.87
Si	5.93	5.95	5.94	5.93	5.94
Al iv	2.07	2.05	2.06	2.07	2.06
Al vi	3.85	3.83	3.88	3.86	3.83
Ti	0.08	0.08	0.04	0.05	0.06
Fe	0.09	0.11	0.10	0.12	0.13
Mn	0.00	0.00	0.00	0.00	0.00
Mg	0.06	0.07	0.06	0.07	0.08
Ca	0.00	0.00	0.00	0.00	0.00
Na	0.27	0.27	0.29	0.27	0.29
K	1.61	1.62	1.60	1.65	1.64
OH	4.00	4.00	4.00	4.00	4.00
F	n/a	n/a	n/a	n/a	n/a
Cl	n/a	n/a	n/a	n/a	n/a
XMg	0.41	0.40	0.38	0.36	0.37
Oxygen	22	22	22	22	22

Feldspar	**Specimen UM04**				
Analysis #	1 / 14 .	1 / 17 .	2 / 4 .	2 / 8 .	2 / 9 .
SiO2	58.75	58.40	58.43	58.57	57.86
TiO2	0.03	0.01	0.02	0.02	0.02
Al2O3	25.26	27.12	26.69	25.82	26.58
FeO	0.37	0.17	0.13	0.20	0.31
MnO	0.02	0.00	0.00	0.00	0.00
MgO	0.23	0.02	0.04	0.00	0.02
CaO	5.22	7.81	7.65	6.05	7.09
Na2O	7.04	7.20	7.01	7.71	7.01
K2O	1.78	0.24	0.47	0.58	0.44
P2O5	0.01	0.03	0.02	0.03	0.04
Total	98.71	101.00	100.46	98.98	99.37
Si	2.66	2.59	2.60	2.64	2.60
Al	1.35	1.42	1.40	1.37	1.41
Ti	0.00	0.00	0.00	0.00	0.00
Fe	0.01	0.01	0.00	0.01	0.01
Mn	0.00	0.00	0.00	0.00	0.00
Mg	0.02	0.00	0.00	0.00	0.00
Ca	0.25	0.37	0.37	0.29	0.34
Na	0.62	0.62	0.61	0.67	0.61
K	0.10	0.01	0.03	0.03	0.03
An	0.26	0.37	0.37	0.29	0.35
Ab	0.63	0.62	0.61	0.67	0.62
Or	0.11	0.01	0.03	0.03	0.03
Oxygen	8	8	8	8	8

Feldspar	Specimen UM05				
Analysis #	1 / 3 .	2 / 3 .	2 / 4 .	2 / 5 .	5 / 9 .
SiO2	60.40	60.35	60.84	60.63	61.88
TiO2	0.01	0.10	0.00	0.04	0.01
Al2O3	24.76	24.63	24.06	24.40	23.67
FeO	0.04	0.23	0.12	0.25	0.11
MnO	0.00	0.00	0.00	0.00	0.00
MgO	0.02	0.05	0.01	0.03	0.03
CaO	7.29	4.95	6.88	5.91	6.32
Na2O	7.44	7.78	8.15	7.79	7.54
K2O	0.20	0.47	0.10	0.37	0.32
P2O5	0.02	0.04	0.20	0.02	0.04
Total	100.18	98.60	100.36	99.44	99.92
Si	2.69	2.72	2.71	2.71	2.75
Al	1.30	1.31	1.26	1.29	1.24
Ti	0.00	0.00	0.00	0.00	0.00
Fe	0.00	0.01	0.00	0.01	0.00
Mn	0.00	0.00	0.00	0.00	0.00
Mg	0.00	0.00	0.00	0.00	0.00
Ca	0.35	0.24	0.33	0.28	0.30
Na	0.64	0.68	0.70	0.68	0.65
K	0.01	0.03	0.01	0.02	0.02
An	0.35	0.25	0.32	0.29	0.31
Ab	0.64	0.72	0.68	0.69	0.67
Or	0.01	0.03	0.01	0.02	0.02
Oxygen	8	8	8	8	8

Feldspar	Specimen UM07					
Analysis #	1 / 1 .	1 / 2 .	2 / 3 .	2 / 6 .	2 / 7 .	2 / 14 .
SiO2	60.33	59.93	60.41	60.31	61.02	60.73
TiO2	0.01	0.01	0.02	0.03	0.02	0.01
Al2O3	23.78	23.76	23.58	24.04	23.60	23.39
FeO	0.11	0.34	0.16	0.10	0.09	0.12
MnO	0.01	0.00	0.01	0.00	0.03	0.03
MgO	0.00	0.00	0.04	0.00	0.00	0.01
CaO	6.79	6.43	6.21	6.85	6.39	6.37
Na2O	8.00	8.08	8.23	8.18	8.50	8.37
K2O	0.09	0.12	0.42	0.06	0.07	0.27
P2O5	0.02	0.02	0.03	0.04	0.03	0.04
Total	99.14	98.69	99.11	99.61	99.75	99.34
Si	2.71	2.71	2.72	2.70	2.73	2.73
Al	1.26	1.27	1.25	1.27	1.24	1.24
Ti	0.00	0.00	0.00	0.00	0.00	0.00
Fe	0.00	0.01	0.01	0.00	0.00	0.00
Mn	0.00	0.00	0.00	0.00	0.00	0.00
Mg	0.00	0.00	0.00	0.00	0.00	0.00
Ca	0.33	0.31	0.30	0.33	0.31	0.31
Na	0.70	0.71	0.72	0.71	0.74	0.73
K	0.01	0.01	0.02	0.00	0.00	0.02
An	0.32	0.30	0.29	0.32	0.29	0.29
Ab	0.68	0.69	0.69	0.68	0.70	0.69
Or	0.01	0.01	0.02	0.00	0.00	0.01
Oxygen	8	8	8	8	8	8

Feldspar	Specimen UM08			
Analysis #	1 / 1 .	1 / 4 .	1 / 8 .	1 / 9 .
SiO2	59.93	59.31	59.52	58.87
TiO2	0.01	0.01	0.00	0.00
Al2O3	25.64	25.37	25.84	25.53
FeO	0.16	0.31	0.13	0.20
MnO	0.03	0.00	0.00	0.01
MgO	0.01	0.02	0.00	0.00
CaO	6.40	6.59	6.88	7.03
Na2O	7.91	7.81	7.84	7.70
K2O	0.39	0.16	0.11	0.13
P2O5	0.03	0.02	0.01	0.01
Total	100.51	99.60	100.33	99.48
Si	2.66	2.66	2.65	2.64
Al	1.34	1.34	1.35	1.35
Ti	0.00	0.00	0.00	0.00
Fe	0.01	0.01	0.00	0.01
Mn	0.00	0.00	0.00	0.00
Mg	0.00	0.00	0.00	0.00
Ca	0.30	0.32	0.33	0.34
Na	0.68	0.68	0.68	0.67
K	0.02	0.01	0.01	0.01
An	0.30	0.32	0.32	0.33
Ab	0.68	0.68	0.67	0.66
Or	0.02	0.01	0.01	0.01
Oxygen	8	8	8	8

Feldspar	Specimen UM09																														
Analysis #	2 / 4 .	2 / 5 .	2 / 6 .	4 / 4 .	4 / 5 .	5 / 2 .	5 / 3 .	5 / 5 .	6 / 9 .	7 / 8 .	7 / 9 .	7 / 11 .	7 / 15 .	7 / 16 .	7 / 17 .	7 / 18 .	8 / 1 .	8 / 3 .	8 / 7 .	8 / 9 .	8 / 11 .	8 / 13 .	10 / 2 .	10 / 5 .	10 / 8 .	10 / 10 .	10 / 11 .	11 / 1 .	11 / 3 .	11 / 5 .
SiO2	63.54	64.99	62.05	63.06	62.36	63.64	62.26	63.03	63.50	62.26	61.72	62.65	63.62	63.65	63.73	63.72	63.59	63.47	63.90	64.50	62.68	62.46	64.51	63.07	62.99	62.58	62.14	61.86	62.91	62.64
TiO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Al2O3	23.07	22.53	24.22	23.23	23.70	23.25	23.26	23.30	23.69	23.85	24.09	23.16	23.43	23.33	23.42	23.42	23.64	23.59	23.30	22.82	24.05	23.48	21.96	23.17	23.67	23.92	23.90	24.93	24.14	22.95
FeO	0.12	0.02	0.10	0.20	0.13	0.00	0.00	0.00	0.00	0.16	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	0.14	0.00	0.00	0.00	0.00	0.00	0.38
MnO	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	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
CaO	4.63	4.53	4.47	4.77	4.74	4.66	4.58	5.05	4.91	5.19	5.00	4.77	4.73	4.71	4.78	4.79	4.83	4.79	4.60	4.19	5.52	5.06	3.10	4.68	4.94	4.78	4.94	5.90	5.52	4.75
Na2O	9.22	9.12	8.79	9.27	9.27	9.35	9.22	9.15	9.28	9.04	8.87	9.23	9.33	9.47	9.34	9.39	9.24	9.34	9.41	9.69	8.80	8.82	9.97	9.28	9.08	8.93	8.84	8.55	8.73	9.21
K2O	0.05	0.01	0.12	0.04	0.05	0.03	0.01	0.04	0.04	0.04	0.05	0.02	0.09	0.09	0.07	0.08	0.08	0.06	0.11	0.12	0.04	0.04	0.13	0.01	0.12	0.20	0.09	0.01	0.00	0.01
P2O5	0.05	0.06	0.07	0.01	0.02	0.01	0.01	0.15	0.00	0.00	0.00	0.01	0.07	0.06	0.07	0.07	0.06	0.08	0.06	0.07	0.00	0.00	0.04	0.05	0.01	0.00	0.00	0.01	0.03	0.07
Total	100.68	101.26	99.82	100.58	100.27	100.94	99.34	100.72	101.42	100.57	99.74	99.84	101.27	101.31	101.41	101.47	101.44	101.33	101.38	101.39	101.09	99.86	99.71	100.40	100.81	100.41	99.91	101.26	101.33	100.12
Si	2.80	2.84	2.75	2.78	2.76	2.79	2.78	2.78	2.78	2.75	2.74	2.78	2.79	2.79	2.79	2.79	2.78	2.78	2.80	2.82	2.75	2.77	2.86	2.79	2.77	2.76	2.76	2.72	2.76	2.78
Al	1.20	1.16	1.27	1.21	1.24	1.20	1.22	1.21	1.22	1.24	1.26	1.21	1.21	1.21	1.21	1.21	1.22	1.22	1.20	1.18	1.25	1.23	1.15	1.21	1.23	1.25	1.25	1.29	1.25	1.20
Ti	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fe	0.00	0.00	0.00	0.01	0.00	-0.01	0.00	0.00	-0.01	0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01
Mn	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ca	0.22	0.21	0.21	0.23	0.22	0.22	0.22	0.24	0.23	0.25	0.24	0.23	0.22	0.22	0.22	0.22	0.23	0.22	0.22	0.20	0.26	0.24	0.15	0.22	0.23	0.23	0.23	0.28	0.26	0.23
Na	0.79	0.77	0.76	0.79	0.80	0.80	0.80	0.78	0.79	0.77	0.76	0.79	0.79	0.80	0.79	0.80	0.78	0.79	0.80	0.82	0.75	0.76	0.86	0.79	0.78	0.76	0.76	0.73	0.74	0.79
K	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00
An	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.22	0.22	0.21	0.22	0.22	0.22	0.22	0.21	0.19	0.26	0.24	0.15	0.22	0.23	0.23	0.23	0.28	0.26	0.22
Ab	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.76	0.77	0.76	0.76	0.78	0.78	0.78	0.78	0.78	0.77	0.78	0.78	0.80	0.74	0.76	0.85	0.78	0.76	0.76	0.76	0.72	0.74	0.78
Or	0.00	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	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00
Oxygen	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Table S2. Trace element composition (ppm) of garnet in metamorphic specimens.

Specimen UM04

Spot number	Y89	1SE	La139	1SE	Ce140	1SE	Pr141	1SE	Nd146	1SE	Sm147	1SE	Eu153	1SE	Gd157	1SE	Tb159	1SE	Dy163	1SE	Ho165	1SE	Er166	1SE	Tm169	1SE	Yb172	1SE
UM04_1	226.4	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.4	0.2	0.3	0.0	9.2	0.8	3.5	0.1	33.1	1.1	8.5	0.3	28.4	0.6	4.9	0.2	32.6	1.2
UM04_2	248.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.5	0.2	0.3	0.0	9.2	0.8	4.0	0.2	38.3	1.1	9.2	0.3	29.4	0.9	4.7	0.2	36.8	1.1
UM04_3	456.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.2	0.1	0.0	9.0	0.7	4.7	0.1	63.0	1.8	15.8	0.5	58.2	1.5	9.1	0.3	74.4	2.0
UM04_4	815.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.2	0.0	8.0	0.6	5.8	0.2	91.9	1.3	27.6	0.5	107.1	1.7	18.0	0.3	144.9	3.0
UM04_5	865.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.1	0.3	0.0	8.5	0.6	6.3	0.2	92.7	1.9	29.5	0.7	116.1	2.0	20.7	0.5	151.6	3.1
UM04_6	718.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.8	0.1	0.4	0.1	7.8	0.5	5.6	0.2	85.3	1.8	25.1	0.5	86.2	2.2	14.4	0.3	105.3	2.1
UM04_7	458.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	0.3	0.1	11.4	0.6	5.3	0.2	64.7	1.4	15.9	0.3	56.3	1.3	9.2	0.2	70.8	1.7
UM04_8	297.1	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.1	0.1	0.3	0.1	9.9	0.4	4.3	0.1	44.3	1.1	10.6	0.3	36.4	0.9	6.5	0.2	45.1	1.0
UM04_9	227.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	1.3	0.2	0.2	0.0	10.7	0.5	4.1	0.1	36.2	1.0	8.1	0.2	29.2	0.8	4.8	0.2	34.3	1.0
UM04_10	225.8	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.2	0.3	0.0	11.7	0.8	3.5	0.1	36.4	1.0	8.7	0.3	29.1	0.6	4.9	0.2	30.6	0.8

Specimen UM05

Spot number	Y89	1SE	La139	1SE	Ce140	1SE	Pr141	1SE	Nd146	1SE	Sm147	1SE	Eu153	1SE	Gd157	1SE	Tb159	1SE	Dy163	1SE	Ho165	1SE	Er166	1SE	Tm169	1SE	Yb172	1SE
UM05_1	277.3	4.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.0	7.3	0.4	3.5	0.2	39.3	1.1	10.5	0.3	37.3	1.0	7.0	0.2	55.1	1.4
UM05_2	144.8	1.8	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.1	0.4	0.1	4.3	0.4	1.6	0.1	18.0	0.6	4.2	0.2	16.9	0.5	2.8	0.1	23.9	0.7
UM05_3	92.9	1.9	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.1	0.6	0.1	0.5	0.1	3.3	0.3	1.0	0.1	8.2	0.3	2.6	0.1	10.2	0.4	2.2	0.1	17.4	0.6
UM05_4	131.6	2.2	0.0	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.1	0.7	0.1	3.1	0.3	1.0	0.1	11.6	0.4	3.5	0.1	17.5	0.7	3.6	0.2	33.1	1.1
UM05_5	88.3	1.8	0.0	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.7	0.1	1.4	0.2	0.6	0.0	6.5	0.4	2.0	0.1	8.8	0.4	2.1	0.1	20.7	0.8
UM05_6	529.0	6.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.3	0.0	2.7	0.2	1.8	0.1	28.9	0.6	12.3	0.3	79.6	2.0	24.3	0.8	271.0	6.5
UM05_7	831.0	18.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.1	3.6	0.3	2.5	0.1	43.9	1.2	18.7	0.7	122.0	4.8	36.7	1.9	414.0	22.5
UM05_8	258.6	3.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.7	0.1	3.7	0.3	1.5	0.1	16.7	0.5	5.5	0.2	30.6	0.7	8.0	0.2	75.2	1.5
UM05_9	101.0	7.5	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.5	0.1	2.1	0.3	0.7	0.1	8.5	0.8	2.8	0.2	13.9	1.4	2.6	0.2	27.0	2.9
UM05_10	138.0	5.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.1	0.5	0.1	4.1	0.3	1.2	0.1	12.4	0.7	4.3	0.2	19.7	1.1	4.2	0.3	40.3	2.9
UM05_11	149.2	3.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.4	0.1	4.6	0.3	1.5	0.1	15.4	0.5	4.4	0.2	19.6	0.8	4.1	0.2	33.0	1.4
UM05_12	296.2	4.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.1	0.1	0.0	7.2	0.5	3.5	0.1	38.5	0.8	10.9	0.2	40.4	1.1	8.0	0.3	62.9	1.7

Specimen UM07

Spot number	Y89	1SE	La139	1SE	Ce140	1SE	Pr141	1SE	Nd146	1SE	Sm147	1SE	Eu153	1SE	Gd157	1SE	Tb159	1SE	Dy163	1SE	Ho165	1SE	Er166	1SE	Tm169	1SE	Yb172	1SE
UM07_1	231.6	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.4	0.1	0.3	0.0	3.6	0.2	4.0	0.2	36.0	1.4	8.1	0.3	23.2	0.9	3.3	0.2	20.2	0.8
UM07_2	112.5	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.7	0.1	0.4	0.0	3.2	0.2	2.7	0.1	19.7	0.8	3.8	0.1	10.3	0.4	1.5	0.1	9.1	0.4
UM07_3	134.9	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.4	0.1	0.4	0.0	3.6	0.2	3.2	0.2	22.9	0.9	4.6	0.2	12.6	0.5	1.8	0.1	11.3	0.4
UM07_4	188.1	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.3	0.1	0.4	0.0	3.9	0.3	4.2	0.2	32.3	1.3	6.1	0.2	17.0	0.7	2.4	0.1	15.2	0.6
UM07_5	325.9	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.2	0.1	0.4	0.0	4.5	0.3	5.8	0.3	51.9	2.1	10.6	0.4	29.3	1.1	4.2	0.2	28.3	1.1
UM07_6	1211.9	45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.0	0.3	0.0	4.0	0.3	8.3	0.4	130.5	5.3	38.6	1.5	122.2	4.8	18.3	1.0	124.0	4.9
UM07_7	2214.4	83.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6	0.0	0.2	0.0	3.3	0.2	7.7	0.4	157.0	6.4	65.2	2.5	281.6	11.1	47.8	2.5	340.0	13.5
UM07_8	2798.3	106.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.0	1.2	0.1	3.4	0.2	101.4	4.2	80.2	3.1	720.2	28.7	257.5	13.8	3150.6	126.5
UM07_9	2788.5	107.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	1.3	0.1	3.8	0.2	121.9	5.1	94.9	3.7	834.7	33.5	273.8	14.9	3045.9	123.6
UM07_10	2657.4	106.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.2	0.0	3.0	0.3	6.9	0.4	170.7	7.5	87.4	3.6	448.9	19.0	86.8	5.1	662.3	28.5
UM07_11	1874.7	76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.2	0.0	3.7	0.3	7.7	0.4	154.1	6.8	61.0	2.5	251.3	10.8	41.8	2.5	293.8	12.8
UM07_12	566.2	23.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.1	0.1	0.4	0.0	5.6	0.5	7.4	0.4	81.7	3.7	18.4	0.8	52.4	2.3	7.9	0.5	52.6	2.3
UM07_13	314.8	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.2	0.1	0.4	0.0	5.3	0.5	5.7	0.3	49.9	2.3	10.1	0.4	28.0	1.2	4.1	0.3	28.6	1.3
UM07_14	197.6	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.4	0.1	0.4	0.0	5.0	0.5	4.3	0.3	34.2	1.6	6.6	0.3	18.1	0.8	2.6	0.2	17.7	0.8
UM07_15	135.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.4	0.1	0.4	0.0	4.5	0.5	3.1	0.2	23.5	1.1	4.7	0.2	12.8	0.6	1.8	0.1	11.8	0.5
UM07_16	112.9	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.4	0.1	0.3	0.0	4.2	0.4	2.5	0.2	19.5	0.9	4.0	0.2	11.4	0.5	1.6	0.1	10.3	0.5
UM07_17	114.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.5	0.1	0.3	0.0	4.1	0.4	2.4	0.2	19.4	0.9	4.0	0.2	11.2	0.5	1.5	0.1	10.0	0.5

Specimen UM08

Spot number	Y89	1SE	La139	1SE	Ce140	1SE	Pr141	1SE	Nd146	1SE	Sm147	1SE	Eu153	1SE	Gd157	1SE	Tb159	1SE	Dy163	1SE	Ho165	1SE	Er166	1SE	Tm169	1SE	Yb172	1SE
UM08_1	499.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.0	5.8	0.4	3.0	0.1	44.7	1.5	17.3	0.4	84.5	1.5	18.0	0.4	164.4	3.0
UM08_2	415.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.2	0.0	5.9	0.4	2.8	0.1	35.2	0.9	13.1	0.3	60.9	1.1	13.9	0.4	127.8	2.1
UM08_3	368.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.4	0.0	4.9	0.4	2.5	0.1	31.9	0.6	10.6	0.3	47.9	1.3	11.5	0.2	109.8	2.0
UM08_4	307.5	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.3	0.0	5.3	0.5	2.2	0.1	27.8	0.8	8.2	0.2	34.5	0.9	7.2	0.2	68.3	1.5
UM08_5	194.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.1	0.6	0.0	2.9	0.3	1.2	0.1	15.0	0.7	5.0	0.2	24.1	1.0	5.7	0.3	67.0	3.2
UM08_6	114.6	2.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	1.0	0.2	0.7	0.1	4.1	0.3	1.1	0.1	9.0	0.4	2.8	0.1	11.8	0.4	2.8	0.1	30.2	0.8
UM08_7	120.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.7	0.1	0.6	0.1	3.8	0.3	1.2	0.1	10.7	0.4	2.6	0.1	12.8	0.4	3.0	0.1	31.8	1.0
UM08_8	98.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.8	0.1	0.6	0.1	4.0	0.5	0.9	0.1	9.2	0.4	2.6	0.1	10.7	0.3	2.5	0.1	22.9	0.7
UM08_9	201.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.1	0.3	0.0	6.0	0.5	2.3	0.1	20.9	0.6	5.1	0.2	18.1	0.5	3.4	0.1	30.2	1.0
UM08_10	376.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.6	0.1	0.3	0.1	5.7	0.4	2.7	0.1	36.4	0.9	12.1	0.4	50.2	1.0	10.0	0.3	78.7	2.1

Specimen UM09

Spot number	Y89	1SE	La139	1SE	Ce140	1SE	Pr141	1SE	Nd146	1SE	Sm147	1SE	Eu153	1SE	Gd157	1SE	Tb159	1SE	Dy163	1SE	Ho165	1SE	Er166	1SE	Tm169	1SE	Yb172	1SE
UM09_1	42.4	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.5	0.3	1.0	0.3	8.0	1.4	2.5	0.5	11.4	1.9	1.8	0.4	4.2	1.1	0.5	0.1	4.2	1.1
UM09_2	137.4	29.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.5	0.5	1.6	0.4	13.7	2.4	5.8	1.3	37.7	6.3	6.0	1.4	12.6	3.3	1.5	0.3	8.3	2.2

UM09_3	204.7	43.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.7	0.5	1.7	0.4	16.0	2.8	6.9	1.5	49.4	8.1	8.6	2.0	20.5	5.3	2.3	0.4	14.2	3.6
UM09_4	249.1	51.6	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	3.6	0.6	1.8	0.4	21.4	3.7	8.7	1.8	54.3	8.8	10.6	2.4	25.1	6.3	2.8	0.5	15.2	3.8
UM09_5	214.6	43.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	3.8	0.7	1.2	0.3	16.8	2.8	5.4	1.1	37.4	6.0	7.9	1.8	22.6	5.6	2.7	0.5	16.3	4.0
UM09_6	72.7	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	3.3	0.5	1.0	0.2	10.0	1.5	2.5	0.5	14.6	2.1	2.8	0.6	7.0	1.6	0.9	0.1	5.9	1.3
UM09_7	97.2	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	2.6	0.4	0.9	0.2	11.5	1.7	3.3	0.6	19.9	2.8	3.7	0.7	8.8	2.0	1.1	0.2	7.7	1.7
UM09_8	152.8	27.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	2.4	0.4	0.7	0.1	13.6	2.0	5.0	0.9	31.9	4.5	5.9	1.2	15.0	3.3	1.9	0.3	12.7	2.7
UM09_9	295.3	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.0	0.3	0.6	0.1	16.7	2.4	7.5	1.3	55.0	7.6	11.1	2.2	27.6	5.9	3.7	0.6	24.1	5.1
UM09_10	712.9	124.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.5	0.2	0.4	0.1	16.1	2.3	10.8	1.9	110.9	15.1	25.3	4.8	66.3	14.0	9.0	1.4	61.9	13.0
UM09_11	2073.0	355.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.9	0.1	0.3	0.1	12.2	1.7	11.7	2.0	191.5	25.7	70.0	13.1	257.2	53.3	37.8	5.6	275.2	56.6
UM09_12	2146.9	362.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6	0.1	0.2	0.0	7.8	1.1	8.3	1.4	166.5	22.0	80.8	14.9	370.5	75.5	69.2	10.1	564.3	114.1
UM09_13	2403.6	369.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.2	0.0	7.3	0.9	7.8	1.2	171.3	20.7	88.9	14.9	472.9	87.5	103.6	13.8	886.3	162.6
UM09_14	2386.5	361.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.1	0.2	0.0	7.1	0.9	7.9	1.2	168.5	20.0	92.5	15.3	523.0	95.2	102.2	13.4	1006.7	181.9
UM09_15	2411.9	359.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.2	0.0	6.6	0.8	7.7	1.2	169.0	19.8	88.5	14.4	514.8	92.3	113.9	14.8	1034.4	184.0
UM09_16	2311.6	339.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.2	0.0	7.2	0.9	8.3	1.2	161.4	18.6	91.6	14.7	439.0	77.5	92.7	11.9	787.9	138.0
UM09_17	1895.5	274.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.1	0.2	0.0	11.1	1.3	11.0	1.6	179.4	20.4	71.8	11.4	265.9	46.3	42.1	5.3	304.5	52.6
UM09_18	1615.1	230.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.9	0.1	0.3	0.0	10.9	1.3	10.7	1.6	168.0	18.9	60.9	9.5	193.2	33.1	29.2	3.6	201.9	34.3
UM09_19	222.5	31.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	2.4	0.3	0.8	0.1	16.2	1.9	7.2	1.0	45.6	5.1	7.9	1.2	18.8	3.2	2.3	0.3	15.4	2.6
UM09_20	213.6	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.4	0.3	0.7	0.1	16.1	1.8	6.3	0.9	41.1	4.2	7.6	1.1	18.8	2.9	2.2	0.3	15.4	2.4
UM09_21	100.6	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.6	0.3	0.7	0.1	12.6	1.4	3.5	0.5	20.9	2.1	3.8	0.5	9.1	1.4	1.2	0.1	7.4	1.1
UM09_22	58.2	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	2.7	0.3	0.7	0.1	8.7	0.9	2.3	0.3	12.2	1.2	2.3	0.3	5.4	0.8	0.7	0.1	4.1	0.6
UM09_23	78.8	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	3.4	0.4	0.9	0.1	10.3	1.1	2.5	0.3	15.3	1.5	2.8	0.4	7.1	1.1	0.8	0.1	4.9	0.7
UM09_24	262.9	33.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	3.5	0.4	1.4	0.2	19.9	2.1	8.3	1.1	55.8	5.5	10.2	1.4	24.6	3.7	2.8	0.3	15.0	2.2
UM09_25	156.5	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	2.7	0.3	1.6	0.2	14.9	1.6	6.5	0.8	42.6	4.2	7.0	1.0	15.1	2.3	1.7	0.2	10.2	1.5
UM09_26	38.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	2.1	0.2	1.1	0.2	9.4	1.0	2.7	0.3	11.3	1.1	1.7	0.2	3.9	0.6	0.5	0.1	4.2	0.6
UM09_27	44.3	5.5	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	1.4	0.2	0.8	0.1	7.5	0.8	2.3	0.3	11.4	1.1	1.9	0.3	4.6	0.7	0.7	0.1	5.9	0.9

Table S3. Monazite U-Th-Pb geochronology data and trace elements (ppm).

IGNEOUS SPECIMENS

Specimen GG10

Spot analysis numb Comment	207Pb/206Pb	2 SE %	207Pb/235U	2 SE %	206Pb/238U	2 SE %	208Pb/232Th	2 SE %	207Pb/206Pb Age (Ma)	2 SE abs.	207Pb/235U Age (Ma)	2 SE abs.	206Pb/238U Age (Ma)	2 SE abs.	208Pb/232Th Age (Ma)	2 SE abs.
UM10_1	0.0514	1.74	0.0237	3.04	0.0033	2.63	0.0011	2.78	258.7	39.9	23.8	0.7	21.5	0.6	21.5	0.6
UM10_2	0.0500	1.77	0.0227	3.15	0.0033	2.59	0.0011	2.53	196.9	41.1	22.8	0.7	21.2	0.5	21.3	0.5
UM10_3	0.0478	1.65	0.0207	3.06	0.0031	2.78	0.0012	2.99	91.3	39.0	20.8	0.6	20.2	0.6	24.1	0.7
UM10_4	0.0477	1.72	0.0206	3.24	0.0031	2.66	0.0012	3.13	83.2	40.7	20.7	0.7	20.2	0.5	25.0	0.8
UM10_5	0.0498	1.79	0.0258	2.82	0.0038	2.48	0.0012	2.61	185.5	41.8	25.8	0.7	24.2	0.6	23.9	0.6
UM10_6	0.0494	1.67	0.0239	2.86	0.0035	2.55	0.0010	2.87	167.8	39.1	24.0	0.7	22.6	0.6	20.6	0.6
UM10_7	0.0491	1.72	0.0221	2.53	0.0033	2.20	0.0011	2.25	154.7	40.4	22.2	0.6	21.0	0.5	21.4	0.5
UM10_8	0.0546	2.07	0.0263	2.92	0.0035	2.46	0.0011	2.49	395.5	46.3	26.3	0.8	22.5	0.6	22.6	0.6
UM10_9	0.0474	1.87	0.0219	2.81	0.0034	2.65	0.0011	2.66	67.9	44.5	22.0	0.6	21.6	0.6	21.7	0.6
UM10_10	0.0512	1.82	0.0215	3.45	0.0031	3.12	0.0010	3.18	248.7	42.0	21.6	0.7	19.6	0.6	19.8	0.6
UM10_11	0.0577	3.20	0.0324	5.55	0.0041	5.63	0.0009	5.64	519.6	70.2	32.3	1.8	26.2	1.5	18.9	1.1
UM10_12	0.0478	1.83	0.0219	3.37	0.0033	2.89	0.0011	2.89	88.2	43.4	22.0	0.7	21.4	0.6	21.3	0.6
UM10_13	0.0509	2.00	0.0224	3.47	0.0032	3.00	0.0011	2.70	238.1	46.1	22.5	0.8	20.5	0.6	21.3	0.6
UM10_14	0.0472	1.81	0.0210	3.72	0.0032	3.49	0.0011	3.63	61.7	43.1	21.1	0.8	20.8	0.7	22.5	0.8
UM10_15	0.0577	1.99	0.0271	3.41	0.0034	2.75	0.0011	3.01	517.3	43.7	27.1	0.9	21.9	0.6	23.2	0.7
UM10_16	0.0528	1.75	0.0229	3.38	0.0031	3.27	0.0011	3.19	318.7	39.9	23.0	0.8	20.2	0.7	22.4	0.7
UM10_17	0.0580	1.91	0.0282	5.10	0.0035	5.10	0.0011	3.87	531.6	41.8	28.3	1.4	22.7	1.2	22.0	0.9
UM10_18	0.0648	2.17	0.0304	3.87	0.0034	3.05	0.0011	3.14	766.9	45.8	30.4	1.2	21.9	0.7	21.5	0.7
UM10_19	0.0554	1.79	0.0255	4.06	0.0033	3.94	0.0011	3.88	427.0	39.9	25.6	1.0	21.5	0.8	21.5	0.8
UM10_20	0.0791	2.98	0.0413	4.11	0.0038	2.77	0.0011	2.71	1173.4	59.1	41.1	1.7	24.4	0.7	21.3	0.6
UM10_21	0.0489	1.74	0.0231	3.95	0.0034	3.58	0.0010	3.66	144.9	40.7	23.2	0.9	22.0	0.8	21.1	0.8
UM10_22	0.0501	1.74	0.0232	3.72	0.0034	3.36	0.0010	3.47	197.9	40.4	23.3	0.9	21.6	0.7	20.4	0.7
UM10_23	0.0519	2.24	0.0239	2.79	0.0033	2.00	0.0010	2.17	281.4	51.4	24.0	0.7	21.5	0.4	19.2	0.4
UM10_24	0.0687	6.27	0.0535	9.31	0.0056	5.13	0.0023	12.98	891.2	129.4	52.9	4.9	36.3	1.9	46.1	6.0
UM10_25	0.0488	1.72	0.0222	3.56	0.0033	3.14	0.0011	3.15	140.0	40.3	22.3	0.8	21.2	0.7	22.1	0.7
UM10_26	0.0480	1.83	0.0211	3.47	0.0032	3.09	0.0010	3.21	99.3	43.2	21.2	0.7	20.5	0.6	20.2	0.7
UM10_27	0.0514	1.78	0.0240	4.70	0.0034	4.17	0.0011	4.58	261.0	40.8	24.1	1.1	21.8	0.9	21.2	1.0
UM10_28	0.0539	1.81	0.0251	3.52	0.0034	3.34	0.0010	3.30	368.9	40.9	25.2	0.9	21.8	0.7	21.0	0.7
UM10_29	0.0483	1.88	0.0223	3.09	0.0033	2.71	0.0011	2.71	112.9	44.5	22.4	0.7	21.6	0.6	21.3	0.6
UM10_30	0.0558	1.95	0.0263	2.53	0.0034	2.24	0.0011	2.35	445.0	43.3	26.4	0.7	22.0	0.5	21.3	0.5
UM10_31	0.1275	16.87	0.0601	19.02	0.0034	4.97	0.0012	7.13	2063.8	297.4	59.3	11.3	22.0	1.1	24.2	1.7
UM10_32	0.0662	3.43	0.0317	7.81	0.0035	6.57	0.0010	7.09	812.6	71.7	31.6	2.5	22.3	1.5	20.8	1.5
UM10_33	0.0513	2.21	0.0220	3.53	0.0031	2.45	0.0010	4.04	256.4	50.9	22.1	0.8	20.0	0.5	20.0	0.8
UM10_34	0.0532	1.78	0.0235	3.17	0.0032	2.92	0.0010	2.85	336.2	40.3	23.6	0.7	20.7	0.6	20.8	0.6
UM10_35	0.0560	1.79	0.0253	3.76	0.0033	3.16	0.0011	3.40	453.9	39.8	25.3	1.0	21.1	0.7	21.6	0.7
UM10_36	0.0633	2.05	0.0297	3.88	0.0034	3.32	0.0010	3.34	717.3	43.6	29.8	1.2	21.9	0.7	20.7	0.7
UM10_37	0.0573	2.13	0.0238	3.30	0.0030	2.75	0.0010	2.76	501.7	46.9	23.9	0.8	19.4	0.5	20.0	0.6
UM10_38	0.0549	1.83	0.0242	4.12	0.0032	3.81	0.0010	3.44	406.8	40.9	24.2	1.0	20.6	0.8	20.7	0.7
UM10_39	0.0540	1.90	0.0240	2.69	0.0032	2.54	0.0011	2.60	369.7	42.9	24.1	0.6	20.8	0.5	21.5	0.6
UM10_40	0.0569	2.01	0.0253	3.89	0.0032	3.49	0.0010	3.46	488.7	44.4	25.4	1.0	20.8	0.7	21.2	0.7

Specimen GG12

Spot analysis numb Comment	207Pb/206Pb	2 SE %	207Pb/235U	2 SE %	206Pb/238U	2 SE %	208Pb/232Th	2 SE %	207Pb/206Pb Age (Ma)	2 SE abs.	207Pb/235U Age (Ma)	2 SE abs.	206Pb/238U Age (Ma)	2 SE abs.	208Pb/232Th Age (Ma)	2 SE abs.
UM12_1	0.0567	6.30	0.0247	10.34	0.0032	4.76	0.0009	4.77	480.4	139.1	24.7	2.6	20.3	1.0	18.1	0.9
UM12_2	0.0499	1.77	0.0213	4.01	0.0031	3.62	0.0010	3.89	191.2	41.2	21.4	0.9	19.9	0.7	20.8	0.8
UM12_3	0.0512	1.78	0.0228	3.38	0.0032	3.19	0.0010	3.47	250.5	40.9	22.9	0.8	20.8	0.7	20.4	0.7
UM12_4	0.0506	1.77	0.0220	3.20	0.0032	3.00	0.0011	2.60	222.8	41.0	22.1	0.7	20.3	0.6	21.4	0.6
UM12_5	0.0513	1.86	0.0226	3.02	0.0032	2.93	0.0010	3.08	253.2	42.7	22.7	0.7	20.6	0.6	21.2	0.7
UM12_6	0.0592	5.22	0.0269	6.65	0.0033	3.41	0.0009	3.41	573.0	113.5	27.0	1.8	21.3	0.7	19.0	0.6
UM12_7	0.0493	1.70	0.0214	2.81	0.0032	2.37	0.0011	2.51	161.5	39.8	21.5	0.6	20.3	0.5	21.5	0.5
UM12_8	0.0507	1.67	0.0220	3.26	0.0032	2.83	0.0011	3.05	225.1	38.7	22.1	0.7	20.3	0.6	22.1	0.7
UM12_9	0.0514	1.87	0.0219	4.53	0.0031	4.25	0.0010	4.22	259.2	42.9	22.0	1.0	19.9	0.8	21.1	0.9
UM12_10	0.0547	1.84	0.0242	3.55	0.0032	3.04	0.0011	2.90	398.8	41.2	24.3	0.9	20.7	0.6	22.7	0.7
UM12_11	0.0583	4.62	0.0260	6.86	0.0032	3.48	0.0011	3.55	542.7	101.0	26.1	1.8	20.8	0.7	21.8	0.8
UM12_12	0.0628	3.72	0.0278	5.47	0.0032	4.38	0.0011	4.38	702.6	79.3	27.9	1.5	20.7	0.9	21.7	1.0
UM12_13	0.1897	9.26	0.1712	13.89	0.0065	10.38	0.0039	23.38	2739.7	152.4	160.4	22.3	42.1	4.4	78.4	18.3
UM12_14	0.2178	4.47	0.1297	6.25	0.0043	3.33	0.0013	6.45	2964.3	72.1	123.8	7.7	27.8	0.9	26.2	1.7
UM12_15	0.0533	2.26	0.0243	4.55	0.0033	3.40	0.0010	3.48	339.7	51.1	24.4	1.1	21.3	0.7	21.0	0.7
UM12_16	0.0531	1.76	0.0235	3.10	0.0032	2.78	0.0011	2.76	333.6	39.9	23.6	0.7	20.7	0.6	21.6	0.6
UM12_17	0.0570	2.21	0.0248	4.20	0.0032	3.56	0.0011	3.72	492.2	48.8	24.9	1.0	20.3	0.7	21.3	0.8
UM12_18	0.0505	1.68	0.0215	3.09	0.0031	2.55	0.0010	2.51	218.6	38.8	21.6	0.7	19.9	0.5	20.6	0.5
UM12_19	0.0521	1.75	0.0231	3.77	0.0032	3.50	0.0010	3.39	287.6	40.0	23.1	0.9	20.7	0.7	21.0	0.7
UM12_20	0.0517	1.84	0.0231	3.26	0.0032	3.01	0.0010	3.03	273.2	42.2	23.2	0.8	20.9	0.6	20.9	0.6
UM12_21	0.0531	2.16	0.0239	3.32	0.0033	2.91	0.0011	2.83	332.7	49.0	24.0	0.8	21.0	0.6	21.8	0.6
UM12_22	0.0536	1.77	0.0238	3.52	0.0032	3.50	0.0010	3.27	355.6	39.9	23.8	0.8	20.7	0.7	21.2	0.7
UM12_23	0.0507	1.83	0.0221	3.17	0.0032	2.53	0.0011	2.52	226.5	42.3	22.2	0.7	20.4	0.5	21.4	0.5
UM12_24	0.3427	12.89	0.3236	13.90	0.0069	5.81	0.0032	10.08	3674.9	196.7	284.6	39.6	44.0	2.6	63.6	6.4
UM12_25	0.0615	2.90	0.0279	5.30	0.0033	3.71	0.0010	3.99	657.0	62.3	28.0	1.5	21.2	0.8	20.8	0.8
UM12_26	0.0509	1.68	0.0225	3.66	0.0032	3.51	0.0011	3.42	237.1	38.8	22.6	0.8	20.6	0.7	22.0	0.8
UM12_27	0.0519	1.80	0.0226	3.80	0.0032	3.08	0.0011	3.23	280.0	41.3	22.7	0.9	20.4	0.6	21.5	0.7
UM12_28	0.0568	1.86	0.0267	3.23	0.0034	3.32	0.0011	3.32	484.7	41.0	26.8	0.9	21.9	0.7	21.5	0.7
UM12_29	0.0510	1.87	0.0239	4.21	0.0034	3.60	0.0011	3.68	239.0	43.2	24.0	1.0	21.9	0.8	21.6	0.8
UM12_30	0.0955	9.42	0.0449	11.48	0.0034	4.71	0.0011	6.12	1537.4	177.1	44.6	5.1	21.9	1.0	23.2	1.4
UM12_31	0.0721	5.17	0.0318	5.52	0.0032	4.69	0.0010	5.63	989.2	105.2	31.8	1.8	20.6	1.0	20.4	1.2
UM12_32	0.1095	4.80	0.0521	9.30	0.0034	8.58	0.0012	8.39	1791.9	87.5	51.6	4.8	22.2	1.9	24.7	2.1
UM12_33	0.0577	2.74	0.0256	4.07	0.0032	2.81	0.0011	2.86	519.6	60.2	25.6	1.0	20.7	0.6	21.5	0.6
UM12_34	0.0530	1.75	0.0238	3.63	0.0033	3.46	0.0011	3.43	329.6	39.7	23.9	0.9	20.9	0.7	22.0	0.8
UM12_35	0.0528	1.69	0.0238	3.39	0.0033	3.45	0.0011	3.16	321.3	38.3	23.8	0.8	21.0	0.7	22.0	0.7
UM12_36	0.0520	1.75	0.0232	3.33	0.0032	2.79	0.0011	2.87	286.3	40.0	23.3	0.8	20.8	0.6	21.4	0.6
UM12_37	0.0499	1.96	0.0242	3.09	0.0035	2.62	0.0011	2.75	192.2	45.7	24.3	0.8	22.7	0.6	21.7	0.6
UM12_38	0.0521	2.04	0.0251	3.96	0.0035	3.52	0.0011	3.66	290.8	46.7	25.1	1.0	22.5	0.8	21.6	0.8
UM12_39	0.0522	2.08	0.0245	4.62	0.0034	3.88	0.0010	3.81	294.8	47.6	24.5	1.1	21.9	0.8	20.8	0.8
UM12_40	0.0510	1.93	0.0236	3.22	0.0034	2.86	0.0010	3.09	239.5	44.6	23.7	0.8	21.6	0.6	21.2	0.7

METAMORPHIC SPECIMENS

Specimen UM05

Spot analysis numt	Comment	207Pb/206Pb	2 SE %	207Pb/235U	2 SE %	206Pb/238U	2 SE %	208Pb/232Th	2 SE %	207Pb/206Pb Age (Ma)	2 SE abs.	207Pb/235U Age (Ma)	2 SE abs.	206Pb/238U Age (Ma)	2 SE abs.	208Pb/232Th Age (Ma)	2 SE abs.	Si	Sr	Y89	Zr90	La139	Ce140	Pr141	Nd146	Sm147	Eu153	Gd157	Tb159	Dy163	Ho165	Er166	Tm169	Yb172	Lu175
UM05A_M2_1		0.2056	4.66	0.1020	5.11	0.0037	3.05	0.0010	3.49	2864.0	75.7	98.6	5.0	23.5	0.7	19.9	0.7	120000	79	13700	38	104000	254000	24700	94000	17300	1005	12100	1450	5250	630	825	62.1	156	13
UM05A_M2_2		0.1909	3.35	0.0911	4.33	0.0035	2.53	0.0010	2.85	2746.0	55.1	88.5	3.8	22.4	0.6	19.3	0.5	36200	78.6	15000	35	103900	257000	24800	97700	19800	1020	14100	1570	5430	646	873	68.3	207	14.8
UM05A_M2_3		0.3980	6.41	0.2690	11.33	0.0049	5.45	0.0011	3.78	3890.0	96.5	241.0	27.3	31.7	1.7	21.3	0.8	46000	74	11600	53	108000	253000	23700	90800	16700	1090	12700	1360	5190	556	736	57.5	171	11.9
~~UM05A_M2_4~~	~~Excluded (matrix)~~	~~0.6680~~	~~6.13~~	~~1.0700~~	~~12.31~~	~~0.0115~~	~~9.77~~	~~0.0015~~	~~8.96~~	~~4665.0~~	~~88.3~~	~~734.0~~	~~90.4~~	~~73.7~~	~~7.2~~	~~30.5~~	~~2.7~~	~~8000000~~	~~690~~	~~7900~~	~~17~~	~~92000~~	~~221000~~	~~20900~~	~~87000~~	~~12200~~	~~1300~~	~~9700~~	~~1180~~	~~3950~~	~~401~~	~~510~~	~~45~~	~~250~~	~~41~~
~~UM05A_M3_1~~	~~Excluded (matrix)~~	~~0.7280~~	~~2.44~~	~~2.7200~~	~~9.41~~	~~0.0268~~	~~9.54~~	~~0.0042~~	~~11.13~~	~~4799.0~~	~~34.9~~	~~1327.0~~	~~124.8~~	~~171.0~~	~~16.3~~	~~83.6~~	~~9.3~~	~~3280000~~	~~321~~	~~9000~~	~~19~~	~~87000~~	~~229000~~	~~24100~~	~~79000~~	~~15000~~	~~1360~~	~~10900~~	~~1100~~	~~4200~~	~~445~~	~~540~~	~~46~~	~~150~~	~~8~~
~~UM05A_M3_3~~	~~Excluded (matrix)~~	~~0.4660~~	~~4.48~~	~~0.3620~~	~~4.85~~	~~0.0056~~	~~3.95~~	~~0.0011~~	~~5.33~~	~~4135.0~~	~~66.5~~	~~314.0~~	~~15.2~~	~~35.8~~	~~1.4~~	~~23.2~~	~~1.2~~	~~790000~~	~~122~~	~~11500~~	~~64~~	~~103000~~	~~287000~~	~~26000~~	~~90000~~	~~17600~~	~~1180~~	~~13300~~	~~1500~~	~~4950~~	~~525~~	~~790~~	~~64~~	~~165~~	~~12.7~~
UM05A_M5_1		0.1450	2.99	0.0662	3.62	0.0033	2.41	0.0010	2.90	2287.0	51.4	65.1	2.4	21.1	0.5	19.2	0.6	38300	48.2	12700	64	119000	285000	26100	102600	17100	1105	13400	1460	4950	586	790	60.8	169	12.4
~~UM05A_M14_1~~	~~Excluded (matrix)~~	~~0.6210~~	~~3.62~~	~~0.8890~~	~~10.32~~	~~0.0103~~	~~7.62~~	~~0.0014~~	~~6.77~~	~~4555.0~~	~~52.5~~	~~640.0~~	~~66.0~~	~~66.3~~	~~5.1~~	~~27.6~~	~~1.9~~	~~720000~~	~~129~~	~~9300~~	~~26~~	~~90600~~	~~248000~~	~~23500~~	~~84000~~	~~15600~~	~~1270~~	~~11300~~	~~1160~~	~~4210~~	~~486~~	~~611~~	~~44.8~~	~~168~~	~~10.6~~
UM05A_M18_1		0.4140	3.40	0.3000	4.77	0.0053	3.96	0.0011	3.63	3959.0	50.9	266.0	12.7	33.8	1.3	22.2	0.8	172000	166	14700	34	127000	252000	26300	100000	18200	1160	13000	1540	5480	658	920	67.6	195	16.6
~~UM05A_M8_1~~	~~Excluded (matrix)~~	~~0.5700~~	~~13.05~~	~~0.7200~~	~~18.17~~	~~0.0092~~	~~5.71~~	~~0.0015~~	~~10.37~~	~~4420.0~~	~~190.3~~	~~548.0~~	~~99.5~~	~~58.8~~	~~3.4~~	~~30.1~~	~~3.1~~	~~1090000~~	~~178~~	~~12200~~	~~10~~	~~102000~~	~~240000~~	~~25100~~	~~91000~~	~~16000~~	~~840~~	~~11400~~	~~1290~~	~~4870~~	~~480~~	~~740~~	~~69~~	~~166~~	~~8.1~~
~~UM05A_M8_2~~	~~Excluded (matrix)~~	~~0.3830~~	~~6.40~~	~~0.2430~~	~~8.47~~	~~0.0046~~	~~4.38~~	~~0.0010~~	~~4.52~~	~~3835.0~~	~~96.6~~	~~220.0~~	~~18.6~~	~~29.7~~	~~1.3~~	~~19.8~~	~~0.9~~	~~255000~~	~~124~~	~~13500~~	~~10.2~~	~~114000~~	~~307000~~	~~27700~~	~~93400~~	~~19400~~	~~1300~~	~~12900~~	~~1420~~	~~5070~~	~~609~~	~~798~~	~~63.6~~	~~191~~	~~13.9~~

Specimen UM07

Spot analysis numt	Comment	207Pb/206Pb	2 SE %	207Pb/235U	2 SE %	206Pb/238U	2 SE %	208Pb/232Th	2 SE %	207Pb/206Pb Age (Ma)	2 SE abs.	207Pb/235U Age (Ma)	2 SE abs.	206Pb/238U Age (Ma)	2 SE abs.	208Pb/232Th Age (Ma)	2 SE abs.	Si	Sr	Y89	Zr90	La139	Ce140	Pr141	Nd146	Sm147	Eu153	Gd157	Tb159	Dy163	Ho165	Er166	Tm169	Yb172	Lu175
UM07A_M1_1		0.0815	1.96	0.0348	2.76	0.0031	2.42	0.0010	2.85	1231.0	38.5	34.8	1.0	19.9	0.5	19.3	0.5	8100	85.1	14300	58	93000	237000	24000	78200	15300	1550	10400	1360	5420	627	930	69.5	189	12
UM07A_M1_2		0.0840	2.51	0.0351	3.18	0.0030	2.46	0.0009	2.81	1302.0	48.8	35.0	1.1	19.4	0.5	18.9	0.5	26300	80	14100	51	107000	281000	26600	89500	15900	2010	11400	1400	5440	644	953	74.2	214	13.9
~~UM07A_M1_3~~	~~Excluded (matrix)~~	~~0.0993~~	~~4.04~~	~~0.0423~~	~~4.49~~	~~0.0031~~	~~2.64~~	~~0.0010~~	~~3.17~~	~~1609.0~~	~~75.3~~	~~42.1~~	~~1.9~~	~~19.9~~	~~0.5~~	~~19.8~~	~~0.6~~	~~83000~~	~~51.1~~	~~10300~~	~~39~~	~~96000~~	~~263000~~	~~24700~~	~~84000~~	~~13900~~	~~2150~~	~~8700~~	~~1010~~	~~3930~~	~~485~~	~~780~~	~~59.5~~	~~143~~	~~11.8~~
UM07A_M1_4		0.0884	2.14	0.0381	2.96	0.0032	2.34	0.0010	2.80	1393.0	41.0	38.0	1.1	20.3	0.5	19.4	0.5	18100	80.4	12400	2600	85000	252000	21100	75600	14700	1430	10500	1340	5070	534	813	61.1	174	12.4
UM07A_M1_5		0.0933	2.79	0.0391	3.45	0.0031	2.50	0.0009	2.91	1487.0	52.7	39.0	1.3	19.7	0.5	19.1	0.6	8000	52.4	10700	60	102000	244000	23300	83000	13400	2100	8920	1100	4070	501	744	56	147	10.5
UM07A_M1_6		0.0875	2.34	0.0384	3.28	0.0032	2.60	0.0010	2.97	1373.0	45.0	38.2	1.3	20.5	0.5	20.2	0.6	18300	75	11900	59	110000	294000	26600	91500	16400	1900	10800	1440	5160	628	869	60.6	161	11.9
UM07A_M1_7		0.0874	2.44	0.0367	3.60	0.0031	2.61	0.0010	3.01	1364.0	46.9	36.6	1.3	20.0	0.5	19.2	0.6	15700	79	11800	60	105000	258000	25500	91000	15000	1720	10700	1250	4860	594	849	60.5	166	11
UM07A_M1_8		0.0956	2.37	0.0409	3.35	0.0031	2.49	0.0010	3.03	1543.0	44.7	40.7	1.4	20.1	0.5	20.0	0.6	65000	89.7	13900	42	99000	258000	23200	86500	15900	1350	11800	1380	5300	606	836	61.8	170	12.1
UM07A_M1_9		0.0883	2.05	0.0389	3.00	0.0032	2.38	0.0010	2.82	1386.0	39.4	38.7	1.2	20.5	0.5	20.1	0.6	29800	84.3	13100	56	85900	231000	19900	76300	13700	1160	10850	1300	5020	592	865	61.8	170	11.1
UM07A_M1_10		0.0890	2.40	0.0396	3.42	0.0032	2.55	0.0010	2.93	1398.0	46.1	39.4	1.3	20.9	0.5	19.9	0.6	22400	98	15500	47	97700	248000	21700	83500	16100	1130	12100	1530	5640	689	941	68.2	180	12.7
UM07A_M1_11		0.0882	2.42	0.0387	3.48	0.0032	2.46	0.0010	2.99	1381.0	46.5	38.5	1.3	20.3	0.5	19.8	0.6	4100	68.1	14800	67	136000	328000	30300	109000	19100	2580	12200	1470	5430	719	936	79.7	219	13
UM07A_M2_1		0.1310	7.74	0.0609	9.73	0.0034	3.07	0.0010	3.36	2060.0	135.8	59.8	5.8	21.9	0.7	20.7	0.7	33000	65.5	10600	49	104000	301000	24600	85800	13300	2630	9920	1120	4060	493	708	59.2	158	9.4
UM07A_M2_2		0.1496	5.50	0.0684	8.43	0.0033	4.64	0.0010	4.40	2337.0	94.2	67.2	5.7	21.5	1.0	19.6	0.9	240000	173	11600	28	106000	277000	23800	94700	15200	2970	9300	1190	4040	508	800	57	143	12.1
UM07A_M2_3		0.0955	2.65	0.0410	3.01	0.0032	2.57	0.0010	2.94	1532.0	49.8	40.8	1.2	20.4	0.5	19.6	0.6	7300	68.8	12600	58	113000	290000	27200	90000	16700	2060	9730	1260	4710	584	758	61.8	163	11.1
UM07A_M2_4		0.1650	10.38	0.0750	13.48	0.0032	5.08	0.0009	4.91	2520.0	174.7	73.3	9.9	20.7	1.1	17.7	0.9	154000	122	10800	35	114000	286000	23600	94000	15600	3390	10200	1160	3940	472	707	59.2	156	15.7
UM07A_M2_5		0.1450	9.06	0.0639	8.99	0.0033	3.31	0.0009	3.63	2270.0	155.9	62.8	5.6	21.5	0.7	18.4	0.7	128000	165	13000	1200	109000	277000	23700	92000	16200	2540	10400	1240	4600	531	780	67.6	172	13
UM07A_M2_6		0.1860	6.58	0.0877	9.90	0.0034	4.29	0.0010	3.55	2690.0	108.6	85.3	8.4	22.1	0.9	20.8	0.7	296000	96	11200	27	80200	243000	19600	79000	13000	1300	9180	1090	4120	464	681	57.7	153	10.7
UM07A_M2_7		0.0998	2.47	0.0433	3.42	0.0032	2.59	0.0010	2.88	1623.0	46.0	43.1	1.5	20.4	0.5	19.7	0.6	28000	74.3	11600	330	99000	255000	23500	82000	13700	1940	10400	1230	4470	520	740	58.5	149	10.5
UM07A_M2_8		0.0972	4.91	0.0408	4.84	0.0030	3.28	0.0010	3.91	1585.0	91.9	40.6	2.0	19.3	0.6	20.1	0.8	170000	84	12900	21	105000	266000	25800	97000	17800	2010	11500	1340	5140	595	822	59.3	158	11.9
UM07A_M2_9		0.0861	3.94	0.0362	5.88	0.0031	3.07	0.0009	3.30	1333.0	76.1	36.1	2.1	19.8	0.6	18.8	0.6	49000	109	14000	59	107800	281000	24600	92400	16600	2000	10860	1300	5060	619	855	64.5	174	11.4
~~UM07A_M3_1~~	~~Excluded (matrix)~~	~~0.2560~~	~~4.86~~	~~0.1359~~	~~5.46~~	~~0.0039~~	~~3.45~~	~~0.0012~~	~~3.20~~	~~3216.0~~	~~76.8~~	~~129.3~~	~~7.1~~	~~25.2~~	~~0.9~~	~~23.3~~	~~0.7~~	~~179000~~	~~68~~	~~9200~~	~~21.5~~	~~96000~~	~~263000~~	~~20000~~	~~77600~~	~~12600~~	~~2200~~	~~8270~~	~~910~~	~~3370~~	~~414~~	~~621~~	~~48.9~~	~~127~~	~~10.1~~
~~UM07A_M3_3~~	~~Excluded (matrix)~~	~~0.6260~~	~~3.75~~	~~0.8320~~	~~7.72~~	~~0.0095~~	~~4.67~~	~~0.0020~~	~~4.87~~	~~4569.0~~	~~54.3~~	~~613.0~~	~~47.3~~	~~60.9~~	~~2.8~~	~~40.1~~	~~2.0~~	~~930000~~	~~164~~	~~10000~~	~~11.6~~	~~108000~~	~~276000~~	~~26100~~	~~91000~~	~~16800~~	~~3370~~	~~9200~~	~~1050~~	~~4230~~	~~484~~	~~666~~	~~54~~	~~160~~	~~13.5~~
UM07A_M3_4		0.0826	2.04	0.0354	2.93	0.0031	2.53	0.0010	2.97	1258.0	39.9	35.3	1.0	20.3	0.5	20.2	0.6	17100	76.2	14400	50	100000	275000	24400	84600	15800	1610	11800	1360	5490	629	810	65.6	179	12
UM07A_M3_5		0.1819	3.34	0.0899	4.38	0.0036	2.65	0.0010	3.18	2673.0	55.3	87.4	3.8	22.9	0.6	20.6	0.7	47800	109	14600	59	106000	271000	22600	86300	18100	1410	12800	1520	5550	672	903	70.9	187	12.9
UM07A_M4_1		0.0900	2.39	0.0393	3.16	0.0032	2.61	0.0010	2.96	1420.0	45.6	39.1	1.2	20.3	0.5	19.2	0.6	6700	69.2	12600	62	105000	273000	25100	84100	15200	1840	10460	1280	4830	564	781	58	148	12.2
UM07A_M4_2		0.0928	2.61	0.0414	2.83	0.0033	2.52	0.0010	2.86	1484.0	49.4	41.2	1.2	21.0	0.5	20.2	0.6	64500	63.3	11100	50	102000	259000	24300	93000	14500	1830	9900	1230	4570	551	765	58.2	151	9.7
UM07A_M4_3		0.0990	3.02	0.0434	3.99	0.0032	2.36	0.0010	2.97	1607.0	56.3	43.1	1.7	20.5	0.5	20.1	0.6	31000	78.6	13700	51	116000	309000	26700	99000	16100	1950	11800	1430	5000	586	910	61.8	173	10.8
UM07A_M4_4		0.0904	2.38	0.0394	3.23	0.0032	2.67	0.0009	3.03	1436.0	45.4	39.2	1.3	20.4	0.5	18.9	0.6	30000	91	14200	38	97000	259000	22700	84000	15700	1470	12000	1510	5710	627	890	66	166	13
UM07A_M4_5		0.0973	2.97	0.0445	3.54	0.0033	2.37	0.0010	3.03	1573.0	55.6	44.2	1.6	21.4	0.5	20.2	0.6	bdl	74.9	13700	45	116000	304000	24900	92500	16000	1940	11500	1360	5000	648	796	60	178	12.3
UM07A_M4_6		0.0919	2.72	0.0397	3.62	0.0031	2.39	0.0010	3.01	1460.0	51.7	39.5	1.4	20.1	0.5	19.2	0.6	48400	108	16500	48	97800	273000	22100	84400	16300	1370	12900	1730	6220	735	1000	73.3	198	13.6
UM07A_M4_7		0.0872	2.84	0.0389	3.46	0.0032	2.71	0.0010	2.99	1366.0	54.7	38.7	1.3	20.7	0.6	19.7	0.6	2200	79	13700	71	100000	262000	24000	84100	15100	1590	11200	1490	5200	621	889	60.2	171	10.7
~~UM07A_M5_1~~	~~Excluded (matrix)~~	~~0.7350~~	~~2.31~~	~~2.7000~~	~~18.26~~	~~0.0264~~	~~16.41~~	~~0.0035~~	~~13.62~~	~~4815.0~~	~~33.0~~	~~1310.0~~	~~239.2~~	~~168.0~~	~~27.6~~	~~70.7~~	~~9.6~~	~~155000~~	~~340~~	~~11500~~	~~26~~	~~105000~~	~~332000~~	~~27700~~	~~95000~~	~~16300~~	~~2490~~	~~10500~~	~~1200~~	~~4470~~	~~550~~	~~830~~	~~62.9~~	~~164~~	~~12.7~~
~~UM07A_M6_1~~	~~Excluded (matrix)~~	~~0.1348~~	~~6.37~~	~~0.0571~~	~~6.61~~	~~0.0031~~	~~3.17~~	~~0.0010~~	~~3.56~~	~~2160.0~~	~~111.0~~	~~56.3~~	~~3.7~~	~~19.7~~	~~0.6~~	~~19.9~~	~~0.7~~	~~98000~~	~~44.6~~	~~15900~~	~~34~~	~~121000~~	~~312000~~	~~25400~~	~~95000~~	~~16500~~	~~3970~~	~~10000~~	~~1160~~	~~4280~~	~~615~~	~~1300~~	~~149~~	~~605~~	~~56.6~~
~~UM07A_M6_2~~	~~Excluded (matrix)~~	~~0.1499~~	~~6.53~~	~~0.0700~~	~~7.28~~	~~0.0034~~	~~3.29~~	~~0.0012~~	~~4.14~~	~~2300.0~~	~~111.8~~	~~68.6~~	~~5.0~~	~~22.0~~	~~0.7~~	~~23.9~~	~~1.0~~	~~238000~~	~~61.2~~	~~15700~~	~~34~~	~~110000~~	~~291000~~	~~23800~~	~~84000~~	~~14700~~	~~3480~~	~~8640~~	~~1010~~	~~4020~~	~~605~~	~~1240~~	~~159~~	~~661~~	~~63.7~~
~~UM07A_M6_3~~	~~Excluded (matrix)~~	~~0.1152~~	~~3.23~~	~~0.0495~~	~~4.15~~	~~0.0031~~	~~3.00~~	~~0.0009~~	~~3.41~~	~~1873.0~~	~~58.1~~	~~49.1~~	~~2.0~~	~~19.8~~	~~0.6~~	~~19.2~~	~~0.7~~	~~12400~~	~~39.1~~	~~16700~~	~~44~~	~~116000~~	~~299000~~	~~23300~~	~~90000~~	~~15300~~	~~3660~~	~~9400~~	~~1110~~	~~4300~~	~~686~~	~~1380~~	~~179~~	~~770~~	~~72~~
~~UM07A_M6_4~~	~~Excluded (matrix)~~	~~0.1386~~	~~4.24~~	~~0.0575~~	~~4.47~~	~~0.0031~~	~~2.66~~	~~0.0010~~	~~3.06~~	~~2216.0~~	~~73.6~~	~~56.7~~	~~2.5~~	~~19.8~~	~~0.5~~	~~20.7~~	~~0.6~~	~~73000~~	~~47.7~~	~~18400~~	~~50~~	~~101700~~	~~268000~~	~~23100~~	~~81300~~	~~14400~~	~~3430~~	~~9200~~	~~1052~~	~~4540~~	~~662~~	~~1520~~	~~198~~	~~926~~	~~96.4~~
~~UM07A_M7_2~~	~~Excluded (matrix)~~	~~0.5390~~	~~8.82~~	~~0.5500~~	~~10.91~~	~~0.0076~~	~~7.79~~	~~0.0012~~	~~4.80~~	~~4340.0~~	~~129.2~~	~~444.0~~	~~48.4~~	~~48.6~~	~~3.8~~	~~25.2~~	~~1.2~~	~~550000~~	~~202~~	~~15800~~	~~510~~	~~127000~~	~~355000~~	~~29600~~	~~130000~~	~~19600~~	~~4010~~	~~12400~~	~~1310~~	~~4890~~	~~510~~	~~890~~	~~64~~	~~193~~	~~12~~
~~UM07A_M7_3~~	~~Excluded (matrix)~~	~~0.5180~~	~~11.66~~	~~0.4810~~	~~14.28~~	~~0.0068~~	~~12.44~~	~~0.0011~~	~~7.97~~	~~4290.0~~	~~171.3~~	~~398.0~~	~~56.8~~	~~43.9~~	~~5.5~~	~~21.9~~	~~1.7~~	~~520000~~	~~143~~	~~11100~~	~~27~~	~~145000~~	~~275000~~	~~27700~~	~~91000~~	~~17200~~	~~3390~~	~~9800~~	~~1120~~	~~3310~~	~~481~~	~~800~~	~~52~~	~~134~~	~~14.5~~
UM07A_M7_4		0.1088	3.22	0.0481	3.70	0.0032	2.56	0.0010	3.00	1779.0	58.7	47.7	1.8	20.9	0.5	19.6	0.6	24500	48	9580	58	110000	271000	25700	88200	14700	2460	9060	990	3910	446	656	55.2	154	10
UM07A_M7_5		0.0943	2.86	0.0405	3.57	0.0032	2.72	0.0010	3.04	1506.0	53.9	40.3	1.4	20.6	0.6	19.8	0.6	9900	72.9	11500	52	107200	270000	23500	96500	15500	1920	10500	1200	4640	567	762	59.6	154	9.9
~~UM07A_M7_6~~	~~Excluded (overlapping)~~	~~0.1108~~	~~3.42~~	~~0.0488~~	~~4.20~~	~~0.0032~~	~~2.66~~	~~0.0010~~	~~2.90~~	~~1812.0~~	~~62.1~~	~~48.4~~	~~2.0~~	~~20.5~~	~~0.5~~	~~19.3~~	~~0.6~~	~~16300~~	~~73.6~~	~~13400~~	~~60~~	~~130000~~	~~327000~~	~~29200~~	~~105700~~	~~17700~~	~~2520~~	~~11900~~	~~1380~~	~~5210~~	~~626~~	~~910~~	~~65.1~~	~~194~~	~~12.7~~
UM07A_M7_7		0.0976	2.09	0.0437	3.02	0.0033	2.90	0.0010	3.29	1581.0	39.1	43.4	1.3	21.2	0.6	19.9	0.7	14400	91.2	13900	50	105000	270000	22400	88000	15500	1140	11600	1480	5370	615	855	58.2	163	10.5
UM07A_M7_8		0.1083	5.87	0.0450	5.08	0.0031	3.09	0.0009	3.75	1750.0	107.2	44.7	2.3	20.2	0.6	18.7	0.7	7200	63.5	10900	53	115000	292000	24200	83000	17300	2250	10700	1190	4440	520	719	59.1	179	8.4
UM07A_M7_9		0.0908	2.28	0.0393	3.24	0.0032	2.92	0.0010	3.36	1443.0	43.4	39.1	1.3	20.3	0.6	19.8	0.7	15700	69.4	14900	61	113000	283000	25100	89000	16300	1750	11900	1450	5370	663	866	65.5	169	10.4
UM07A_M7_10		0.1011	2.97	0.0460	4.01	0.0033	2.67	0.0011	3.02	1645.0	55.1	45.6	1.8	21.5	0.6	21.4	0.6	99000	102	16000	46	111000	263000	24300	98000	18600	1070	14100	1640	5890	733	1060	79.9	210	13.2
UM07A_M8_1		0.0846	3.56	0.0360	5.13	0.0031	3.14	0.0010	3.39	1295.0	69.0	35.9	1.8	20.0	0.6	19.4	0.7	9200	103	13400	49	98700	242000	22800	82000	14800	1230	12100	1570	6210	678	960	70.1	189	12.1
UM07A_M8_2		0.0819	2.25	0.0336	3.54	0.0030	2.75	0.0009	3.22	1238.0	44.0	33.5	1.2	19.4	0.5	19.0	0.6	17600	89.1	15700	57	108900	297000	26400	88600	16400	1500	12570	1700	6420	729	1025	77.1	214	14.7
UM07A_M8_3		0.0797	2.29	0.0335	3.25	0.0031	2.74	0.0010	3.16	1186.0	45.2	33.5	1.1	19.9	0.5	19.8	0.6	4700	74.8	13300	75	97000	243000	23400	77600	15300	1660	11000	1450	5510	670	990	73	189	11.7
UM07A_M8_4		0.0861	2.46	0.0360	3.65	0.0031	3.02	0.0009	3.45	1335.0	47.6	35.9	1.3	19.9	0.6	18.7	0.6	10800	96.3	13100	60	96000	271000	21700	79300	16300	1090	11500	1440	5460	645	902	71.9	186	14
UM07A_M8_5		0.0885	2.61	0.0382	3.51	0.0032	3.13	0.0010	3.47	1388.0	50.0	38.1	1.3	20.3	0.6	20.1	0.7	9300	84.7	14800	46	97800	263000	20600	84300	16400	1240	12200	1450	5370	672	980	69.4	180	12.9
UM07A_M8_6		0.0791	2.40	0.0329	2.99	0.0031	2.85	0.0010	3.37	1169.0	47.6	32.8	1.0	19.7	0.6	19.6	0.7	700	73	13900	54	105000	268000	23700	85000	16300	1520	11300	1380	5630	641	860	67.7	179	12.9
UM07A_M8_7		0.0857	2.27	0.0354	4.43	0.0030	3.44	0.0009	3.76	1333.0	44.0	35.3	1.6	19.3	0.7	18.7	0.7	4900	66.7	12200	55	101500	273000	24600	87200	14800	1580	10980	1410	5160	629	828	61.8	166	10.6
UM07A_M8_8		0.0784	2.64	0.0317	3.58	0.0029	2.46	0.0009	2.99	1150.0	52.3	31.7	1.1	18.8	0.5	18.4	0.6	39600	79	15000	40	111000	304000	25300	101000	18700	2010	12800	1620	6020	715	960	73.9	192	11.8
~~UM07A_M8_9~~	~~Excluded (matrix)~~	~~0.2240~~	~~10.35~~	~~0.1200~~	~~15.96~~	~~0.0037~~	~~5.75~~	~~0.0010~~	~~5.67~~	~~2990.0~~	~~166.2~~	~~114.0~~	~~18.2~~	~~23.8~~	~~1.4~~	~~21.0~~	~~1.2~~	~~106000~~	~~106~~	~~13900~~	~~43~~	~~125000~~	~~316000~~	~~26000~~	~~99000~~	~~18000~~	~~2740~~	~~11300~~	~~1350~~	~~4830~~	~~588~~	~~892~~	~~64.8~~	~~182~~	~~12.4~~
UM07A_M8_10		0.0950	2.47	0.0418	3.50	0.0032	2.88	0.0010	3.34	1529.0	46.6	41.6	1.5	20.8	0.6	20.1	0.7	14500	99	14100	43	106000	260000	24200	85000	15800	1070	13500	1540	5590	708	970	78	198	13.5
~~UM07A_M8_11~~	~~Excluded (matrix)~~	~~0.0825~~	~~2.75~~	~~0.0357~~	~~3.67~~	~~0.0031~~	~~2.97~~	~~0.0010~~	~~3.23~~	~~1249.0~~	~~53.8~~	~~35.6~~	~~1.3~~	~~20.2~~	~~0.6~~	~~19.8~~	~~0.6~~	~~3900~~	~~73.7~~	~~14300~~	~~51~~	~~113000~~	~~273000~~	~~25200~~	~~88100~~	~~17100~~	~~1740~~	~~11500~~	~~1460~~	~~5890~~	~~666~~	~~968~~	~~75.3~~	~~187~~	~~11.8~~
UM07A_M8_12		0.0770	2.24	0.0319	3.09	0.0030	2.98	0.0010	3.32	1116.0	44.6	31.8	1.0	19.5	0.6	19.5	0.6	3700	83	13200	76	98000	260000	25000	86700	16400	1580	12200	1490	5740	645	931	72	196	13.4
UM07A_M8_13		0.0849	2.19	0.0360	3.01	0.0031	2.42	0.0010	2.85	1315.0	42.5	36.1	1.1	19.8	0.5	19.3	0.5	6300	100	13300	51	99000	247000	23300	83300	15800	1230	12300	1580	5960	700	960	74.8	196	11.2
UM07A_M8_14		0.0915	2.45	0.0389	3.46	0.0031	2.74	0.0010	3.44	1464.0	46.6	38.8	1.3	20.3	0.6	19.7	0.7	8100	94	13600	36	102000	257000	21700	83700	14800	1080	11200	1420	5370	601	930	69.3	181	11.1
UM07A_M10_1		0.0938	2.41	0.0417	3.50	0.0032	2.65	0.0010	3.20	1499.0	45.5	41.4	1.5	20.7	0.5	20.2	0.6	42200	96.9	14500	40	100100	246000	21500	77300	15900	1060	12400	1450	5630	673	936	69.7	186	11.5
UM07A_M10_2		0.2000	7.12	0.1060	9.64	0.0038	4.18	0.0010	3.74	2790.0	116.2	101.9	9.8	24.6	1.0	20.4	0.8	12000	112	12900	50	91000	239000	22500	83300	16200	1310	12100	1430	5310	648	873	62.8	162	10.9
UM07A_M10_3		0.2450	9.88	0.1340	12.84	0.0040	4.72	0.0010	4.96	3130.0	156.8	127.0	16.3	25.6	1.2	20.8	1.0	6900	135	12600	51	88700	243000	22300	75400	15400	1370	11400	1360	5010	599	870	60.7	173	11.4
UM07A_M10_4		0.1253	2.87	0.0574	3.57	0.0033	2.63	0.0010	3.02	2034.0	50.7	56.7	2.0	21.5	0.6	20.3	0.6	23100	75.6	11200	35	104000	265000	22500	82900	15500	1590	10550	1310	4870	558	815	59.4	145	8.8
UM07A_M10_5		0.1073	4.12	0.0473	4.87	0.0032	2.51	0.0010	2.93	1737.0	75.5	46.9	2.3	20.9	0.5	19.9	0.6	10000	49.6	10600	41	101000	250000	22500	81800	14300	2010	8650	1050	3940	469	685	52.6	141	9
UM07A_M10_6		0.1407	5.69	0.0647	6.50	0.0034	2.81	0.0010	3.06	2217.0	98.5	63.6	4.1	21.8	0.6	19.5	0.6	25100	57.3	12500	1400	118000	304000	24000	94700	16200	2880	10500	1220	4570	560	855	71.3	186	12.9
UM07A_M11_1		0.1025	2.59	0.0455	3.86	0.0032	2.86	0.0010	3.23	1664.0	48.0	45.1	1.7	20.7	0.6	19.8	0.6	35000	113	16300	57	106000	288000	25300	90000	16200	1540	13400	1690	6380	700	940	71	190	12.8
UM07A_M11_2		0.0943	3.54	0.0411	4.38	0.0032	3.18	0.0009	3.61	1501.0	66.7	40.9	1.8	20.5	0.7	18.6	0.7	13100	102	14400	51	100000	248000	21100	81700	15600	1400	11800	1470	5670	662	950	70.9	187	12.4
~~UM07A_M11_3~~	~~Excluded (matrix)~~	~~0.0915~~	~~2.93~~	~~0.0406~~	~~3.78~~	~~0.0032~~	~~2.88~~	~~0.0010~~	~~3.28~~	~~1449.0~~	~~55.7~~	~~40.4~~	~~1.5~~	~~20.8~~	~~0.6~~	~~20.0~~	~~0.7~~	~~34900~~	~~92~~	~~17700~~	~~113~~	~~105000~~	~~281000~~	~~24100~~	~~91000~~	~~16800~~	~~1720~~	~~12400~~	~~1550~~	~~6040~~	~~765~~	~~1270~~	~~120~~	~~410~~	~~57~~
UM07A_M11_4		0.1371	4.57	0.0609	4.86	0.0032	3.29	0.0009	3.62	2180.0	79.4	60.0	2.9	20.7	0.7	18.5	0.7	65000	140	16800	13	119000	299000	27100	110000	19700	2730	14300	1700	6440	754	1090	78	223	18.1
UM07A_M11_5		0.0912	2.27	0.0405	3.57	0.0032	3.35	0.0010	3.58	1460.0	43.3	40.3	1.4	20.6	0.7	19.8	0.7	50000	73.7	11500	40	94000	286000	23700	82500	15000	1660	10800	1390	5030	612	815	62.5	165	11.9
UM07A_M11_6		0.0895	2.30	0.0399	3.13	0.0033	2.80	0.0010	3.19	1411.0	44.0	39.8	1.2	21.1	0.6	20.3	0.6	5600	91	13200	55	108000	286000	24500	88000	16100	1830	11200	1350	5460	653	880	64.4	182	11.7
UM07A_M12_1		0.0887	2.32	0.0397	3.20	0.0032	2.65	0.0010	3.13	1393.0	44.4	39.5	1.3	20.8	0.6	20.5	0.6	34000	98.9	16500	70	106700	256000	25900	87800	17800	1230	13600	1520	5570	658	1050	74.6	201	14.5
UM07A_M12_2		0.0879	2.92	0.0387	3.69	0.0032	3.05	0.0010	3.39	1380.0	56.1	38.5	1.4	20.4	0.6	20.4	0.7	65000	92.6	16000	46	109000	287000	23200	88000	16300	1570	13400	1550	5890	743	1016	77.7	195	13
UM07A_M12_3		0.0969	5.62	0.0420	6.51	0.0031	3.04	0.0010	3.32	1550.0	105.4	41.7	2.7	20.2	0.6	19.4	0.6	6700	72.1	13900	51	112000	322000	28700	101000	17100	2350	11300	1360	5600	619	930	71	176	14.4
UM07A_M12_4		0.1370	8.13	0.0565	8.56	0.0031	4.08	0.0009	5.06	2140.0	141.4	55.7	4.8	19.9	0.8	17.9	0.9	97000	99	11600	39	121000	324000	26700	93000	16900	2500	11500	1190	4910	618	790	64.1	155	12
UM07A_M12_5		0.1450	5.20	0.0667	6.75	0.0033	2.80	0.0010	3.32	2272.0	89.5	65.5	4.4	21.3	0.6	19.4	0.6	30000	61	11600	48	121000	342000	27700	100700	17900	3250	10300	1225	4210	538	839	66.6	185	14
UM07A_M12_6		0.1119	4.65	0.0478	5.80	0.0031	2.77	0.0009	3.20	1840.0	84.3	47.4	2.7	19.9	0.5	19.2	0.6	24600	51.6	11800	57	120000	318000	27800	93300	17800	2770	10270	1174	4410	534	815	63.8	166	13.1
UM07A_M12_7		0.0922	2.72	0.0407	3.56	0.0032	2.72	0.0010	3.04	1479.0	51.6	40.5	1.4	20.9	0.6	19.8	0.6	2300	80.5	16000	50	100000	267000	24700	79200	14600	1760	11600	1320	5140	579	850	57.8	161	13.6
UM07A_M12_8		0.1215	4.47	0.0538	5.75	0.0032	3.48	0.0010	3.86	1981.0	79.7	53.2	3.1	20.8	0.7	20.6	0.8	175000	63.1	11900	37	108000	281000	22100	87000	15000	2300	10100	1190	4240	516	722	62.1	154	12.8
UM07A_M12_9		0.0903	3.06	0.0419	4.96	0.0033	3.90	0.0010	3.98	1441.0	58.4	41.7	2.1	21.1	0.8	20.2	0.8	130000	79.4	12900	57	93400	235000	22700	81000	14700	1180	11300	1340	4760	614	764	60.6	152	11.3
UM07A_M12_10		0.0883	2.14	0.0384	3.14	0.0032	2.96	0.0010	3.17	1386.0	41.1	38.2	1.2	20.3	0.6	19.7	0.6	6100	67.5	12300	55	103000	268000	21200	86800	14400	1770	10200	1240	4780	579	810	62	177	12.4
UM07A_M12_11		0.0896	2.03	0.0396	3.63	0.0032	3.08	0.0010	3.36	1413.0	38.9	39.4	1.4	20.6	0.6	19.8	0.7	8700	93	13100	34	117000	304000	26000	95000	16800	1770	12500	1570	6190	692	980	68.7	181	14.4
UM07A_M12_12		0.0950	2.30	0.0408	3.76	0.0032	3.08	0.0010	3.27	1531.0	43.3	40.6	1.5	20.4	0.6	20.2	0.7	4400	51.6	12000	62	114000	316000	26700	92800	15400	2520	9910	1220	4640	584	820	63.3	185	13.3
UM07A_M12_13		0.0951	3.61	0.0416	4.34	0.0032	2.99	0.0010	3.19	1518.0	67.9	41.4	1.8	20.5	0.6	20.3	0.6	4500	48.1	10600	55	106000	278000	24300	79900	15600	2230	9050	1041	4160	540	728	55.1	156	11.5
UM07A_M13_1		0.1537	3.69	0.0768	5.22	0.0036	2.76	0.0011	3.38	2393.0	62.7	75.0	3.9	22.9	0.6	21.4	0.7	28500	93	12800	44	99000	280000	21900	82400	15700	1000	11700	1360	5120	614	831	63.3	174	12
UM07A_M13_2		0.0826	1.86	0.0364	3.25	0.0032	2.83	0.0010	3.19	1262.0	36.4	36.3	1.2	20.6	0.6	20.6	0.7	11300	76.5	12900	57	96200	274000	20700	74100	15400	745	11800	1300	4940	609	876	62.8	169	13.7
UM07A_M13_3		0.1017	4.61	0.0457	5.62	0.0033	3.37	0.0010	3.75	1634.0	85.4	45.3	2.5	20.9	0.7	19.6	0.7	26000	63.9	12700	31	112000	314000	26900	89000	16100	2110	11100	1320	5000	571	890	64.9	176	16.4
~~UM07A_M13_4~~	~~Excluded (matrix)~~	~~0.2930~~	~~5.95~~	~~0.1840~~	~~9.45~~	~~0.0045~~	~~6.07~~	~~0.0014~~	~~6.43~~	~~3421.0~~	~~92.3~~	~~171.0~~	~~16.2~~	~~29.2~~	~~1.8~~	~~27.6~~	~~1.8~~	~~93000~~	~~192~~	~~13200~~	~~46~~	~~93000~~	~~277000~~	~~20600~~	~~78700~~	~~16000~~	~~752~~	~~11700~~	~~1230~~	~~4470~~	~~497~~	~~666~~	~~53~~	~~125~~	~~10.8~~
UM07A_M13_6		0.1470	7.60	0.0720	10.06	0.0035	4.20	0.0010	4.07	2270.0	130.3	70.4	7.1	22.6	1.0	20.8	0.8	24400	58.1	13600	75	111000	308000	25700	89000	17100	2600	10600	1130	4170	525	755	57	185	14.3
~~UM07A_M13_7~~	~~Excluded (matrix)~~	~~0.5290~~	~~9.17~~	~~0.5320~~	~~17.97~~	~~0.0073~~	~~10.54~~	~~0.0013~~	~~7.39~~	~~4310.0~~	~~134.5~~	~~430.0~~	~~77.3~~	~~46.6~~	~~4.9~~	~~27.0~~	~~2.0~~	~~268000~~	~~175~~	~~12100~~	~~14~~	~~128000~~	~~345000~~	~~32000~~	~~117000~~	~~20500~~	~~3350~~	~~11000~~	~~1200~~	~~4610~~	~~610~~	~~920~~	~~78~~	~~173~~	~~14.8~~
UM07A_M13_8		0.0915	2.54	0.0414	3.33	0.0033	2.97	0.0010	3.30	1452.0	48.4	41.2	1.4	21.1	0.6	20.6	0.7	16300	88.7	12600	68	103400	256000	22900	87500	15000	1390	11220	1520	5340	616	863	59.9	157	12.6
~~UM07A_M15_1~~	~~Excluded (matrix)~~	~~0.5410~~	~~3.92~~	~~0.5810~~	~~5.38~~	~~0.0078~~	~~4.21~~	~~0.0015~~	~~3.41~~	~~4354.0~~	~~57.4~~	~~465.0~~	~~25.0~~	~~50.3~~	~~2.1~~	~~30.4~~	~~1.0~~	~~138000~~	~~152~~	~~13600~~	~~32~~	~~143000~~	~~332000~~	~~30200~~	~~99000~~	~~17800~~	~~3350~~	~~10200~~	~~1210~~	~~4740~~	~~549~~	~~790~~	~~65.9~~	~~178~~	~~15.7~~
UM07A_M15_2		0.1368	5.42	0.0606	7.21	0.0032	3.29	0.0010	3.26	2191.0	94.3	59.6	4.3	20.7	0.7	19.3	0.6	90000	49	12200	27	128500	316000	27500	102000	16700	2850	10130	1220	4690	557	824	60.1	187	16.9
UM07A_M15_3		0.0952	3.51	0.0427	4.04	0.0032	2.95	0.0010	3.36	1518.0	66.0	42.5	1.7	20.7	0.6	20.7	0.7	66000	53.1	11800	40	109000	293000	23600	83300	14900	1780	9730	1160	4510	522	770	62.2	166	10.5
UM07A_M15_4		0.1019	4.23	0.0474	6.04	0.0033	3.67	0.0010	3.65	1649.0	78.3	47.1	2.8	20.9	0.8	19.7	0.7	17200	86	12700	54	112000	271000	26000	88600	16400	1630	11300	1350	5300	617	851	65.6	172	12.2
UM07A_M20_1		0.0811	2.36	0.0354	3.46	0.0032	3.18	0.0010	3.46	1219.0	46.4	35.4	1.2	20.8	0.7	20.2	0.7	4800	67.5	12400	36	109000	278000	26300	91400	16200	1810	10100	1360	4800	616	867	70.4	179	13.1
UM07A_M20_2		0.0824	2.75	0.0366	4.08	0.0032	2.77	0.0010	3.07	1248.0	53.9	36.5	1.5	20.8	0.6	20.3	0.6	20100	66.5	13300	60	103500	268000	25000	85000	15600	1620	10480	1310	5080	605	884	68.7	191	11.5
UM07A_M20_3		0.0808	2.37	0.0363	3.25	0.0033	2.87	0.0010	3.14	1211.0	46.6	36.2	1.2	20.9	0.6	20.2	0.6	2300	69.6	13100	63	119000	274000	25300	91000	16200	1840	11150	1380	5180	642	928	67.6	195	13
UM07A_M20_4		0.0864	2.55	0.0389	3.46	0.0032	3.17	0.0010	3.48	1348.0	49.3	38.8	1.3	20.9	0.7	20.0	0.7	8200	89.6	14200	56	90500	248000	21800	77800	14200	1037	12090	1600	5880	706	990	71.5	200	13.8
UM07A_M20_5		0.2219	3.75	0.1256	5.77	0.0041	3.96	0.0011	4.32	2990.0	60.3	120.0	6.9	26.4	1.0	21.2	0.9	9500	84.3	13100	54	96000	256000	21200	90000	16000	1330	10900	1380	5330	612	872	58.1	166	11.4
UM07A_M20_6		0.0944	2.14	0.0431	3.43	0.0033	2.75	0.0010	3.10	1519.0	40.3	42.8	1.5	21.4	0.6	19.8	0.6	7000	95.8	12100	60	89700	228000	20700	83600	14800	1050	11600	1330	5110	618	827	63.8	169	11.1
UM07A_M20_7		0.0894	2.30	0.0411	3.74	0.0033	2.96	0.0010	3.33	1414.0	44.1	40.9	1.5	21.5	0.6	20.2	0.7	6900	89.6	12900	58	90000	239000	20100	74600	14200	1000	11100	1350	5140	627	890	69.4	172	11.4
UM07A_M20_8		0.0876	2.53	0.0391	3.45	0.0033	2.67	0.0010	3.15	1376.0	48.6	38.9	1.3	21.1	0.6	20.0	0.6	200	57.9	11300	51	114000	277000	25000	89000	14800	1890	9420	1200	4660	556	806	64.5	154	12.6
UM07A_M21_1		0.0939	3.25	0.0421	4.94	0.0032	3.42	0.0010	3.99	1513.0	61.5	42.1	2.1	20.9	0.7	20.8	0.8	61000	65.7	11700	27	99700	262000	24200	87000	15500	1760	10300	1230	4800	570	870	61.1	152	11.8
UM07A_M21_2		0.2020	11.46	0.1080	15.87	0.0037	4.80	0.0010	4.28	2760.0	186.8	103.0	16.3	23.6	1.1	21.0	0.9	101000	114	14100	25	105000	268000	25200	87500	16700	2060	11250	1420	5420	599	908	66.5	191	12.5

Specimen UM09

Spot analysis numt	Comment	207Pb/206Pb	2 SE %	207Pb/235U	2 SE %	206Pb/238U	2 SE %	208Pb/232Th	2 SE %	207Pb/206Pb Age (Ma)	2 SE abs.	207Pb/235U Age (Ma)	2 SE abs.	206Pb/238U Age (Ma)	2 SE abs.	208Pb/232Th Age (Ma)	2 SE abs.	Si	Sr	Y89	Zr90	La139	Ce140	Pr141	Nd146	Sm147	Eu153	Gd157	Tb159	Dy163	Ho165	Er166	Tm169	Yb172	Lu175
~~UM09_M1_1~~	~~Excluded (matrix)~~	~~0.4750~~	~~7.69~~	~~0.4220~~	~~15.30~~	~~0.0064~~	~~9.39~~	~~0.0016~~	~~9.59~~	~~4160.0~~	~~113.8~~	~~356.0~~	~~54.5~~	~~41.3~~	~~3.9~~	~~32.7~~	~~3.1~~	~~310000~~	~~400~~	~~6600~~	~~21~~	~~129000~~	~~349000~~	~~30400~~	~~114000~~	~~22500~~	~~3980~~	~~15000~~	~~1000~~	~~2270~~	~~298~~	~~470~~	~~34.4~~	~~185~~	~~25.3~~
~~UM09_M1_2~~	~~Excluded (matrix)~~	~~0.1560~~	~~6.54~~	~~0.0735~~	~~8.80~~	~~0.0034~~	~~3.19~~	~~0.0010~~	~~3.87~~	~~2390.0~~	~~111.1~~	~~71.9~~	~~6.3~~	~~21.8~~	~~0.7~~	~~20.5~~	~~0.8~~	~~262000~~	~~88.9~~	~~3700~~	~~9.4~~	~~113300~~	~~247000~~	~~25900~~	~~99570~~	~~20200~~	~~3090~~	~~10770~~	~~739~~	~~1740~~	~~198~~	~~283~~	~~33~~	~~151~~	~~11.9~~
UM09_M3_1		0.1026	2.59	0.0493	3.81	0.0035	3.01	0.0011	3.57	1665.0	47.9	48.9	1.9	22.3	0.7	23.0	0.8	2500	53.4	4630	49	116000	225000	26100	89600	17000	3050	10300	859	2460	253	306	24	57.2	5.27
UM09_M3_2		0.1073	2.43	0.0525	3.65	0.0035	3.28	0.0011	3.61	1754.0	44.4	51.9	1.9	22.8	0.7	22.5	0.8	3600	75.7	5940	34	126000	249000	27500	102000	19900	3320	12000	1040	3050	329	448	29.4	71.8	6.46
UM09_M3_3		0.1238	2.33	0.0598	4.34	0.0034	3.46	0.0010	3.80	2008.0	41.4	58.9	2.6	22.2	0.8	21.2	0.8	12100	110	4260	53	143000	319000	31900	117000	23900	3690	12400	1050	2330	232	302	24.4	74	7.7
UM09_M3_4		0.1142	3.25	0.0552	3.98	0.0035	3.33	0.0011	3.63	1866.0	58.6	54.5	2.2	22.3	0.7	21.5	0.8	3500	67.9	4970	37	120000	265000	27400	94100	20800	3390	12300	1060	2990	263	339	22	63	5.1
UM09_M3_5		0.1315	3.10	0.0651	3.67	0.0036	3.67	0.0011	3.93	2115.0	54.3	64.0	2.3	23.0	0.8	22.0	0.9	27000	85	5040	64	121000	254000	26200	103000	21100	3350	12900	1090	2770	273	358	31	99	11.8
UM09_M5_1		0.1000	1.91	0.0461	3.28	0.0033	3.25	0.0010	3.60	1626.0	35.5	45.7	1.5	21.3	0.7	21.0	0.8	5500	81.5	4600	30	117000	262000	27300	105000	20800	3200	12060	946	2400	229	345	34.4	148	15.9

UM09_M5_2		0.1020	2.27	0.0490	3.16	0.0035	3.05	0.0011	3.40	1656.0	42.1	48.6	1.5	22.6	0.7	21.9	0.7	3900	91.4	4400	43	110700	269000	27800	98600	21400	3080	12700	980	2150	210	303	29	116	12.8
UM09_M5_3		0.1103	1.95	0.0486	3.68	0.0031	3.45	0.0010	3.82	1803.0	35.4	48.1	1.8	20.2	0.7	19.6	0.7	8700	85	5340	41	118000	255000	25100	96000	21200	3190	12600	940	2320	212	356	33.9	163	18.4
UM09_M6_1		0.1573	3.79	0.0784	4.78	0.0036	3.01	0.0011	3.24	2436.0	64.3	76.6	3.7	23.2	0.7	22.6	0.7	195000	90	4180	21	131000	274000	29200	118000	19600	1250	11400	860	2210	234	283	18.6	33	5.4
UM09_M7_1		0.1237	3.41	0.0625	5.20	0.0036	3.32	0.0011	3.71	2000.0	60.5	61.5	3.2	23.0	0.8	22.1	0.8	16800	93	2890	60	109000	248000	24600	87100	20500	2770	13300	918	1940	161	164	9.9	30.6	3.67
UM09_M7_2		0.2190	9.22	0.1250	11.38	0.0042	3.92	0.0012	4.06	2930.0	148.6	119.0	13.5	26.7	1.0	24.0	1.0	61000	103	3640	35	108000	235000	25800	98000	21000	3020	13300	930	2170	177	230	25.1	77	6.8
UM09_M8_1	Excluded (matrix)	0.1277	3.46	0.0637	4.83	0.0036	3.44	0.0012	4.06	2060.0	61.1	62.7	3.0	23.1	0.8	23.4	0.9	13600	106	3110	55	104700	230000	26400	88000	18500	3040	11500	827	1930	163	197	13.1	38.9	3.59
UM09_M8_2	Excluded (matrix)	0.2940	4.61	0.1890	7.67	0.0047	3.94	0.0014	3.63	3432.0	71.6	175.0	13.4	30.3	1.2	29.2	1.1	126000	112	3830	21.9	104000	254000	23700	87800	20400	2890	11400	814	2000	189	286	23.2	90	11.1
UM09_M8_3		0.1164	4.98	0.0569	5.80	0.0035	3.19	0.0011	3.45	1877.0	89.6	56.1	3.3	22.7	0.7	22.0	0.8	8300	82.1	2650	45	123000	236000	28000	101000	20500	3170	11300	752	1610	128	164	11.6	35.7	4.2
UM09_M8_4	Excluded (matrix)	0.1118	5.52	0.0527	5.15	0.0035	3.73	0.0012	4.42	1815.0	100.1	52.1	2.7	22.5	0.8	23.3	1.0	21500	184	3180	53	99900	218000	25000	83000	17100	2550	10300	744	1690	153	220	21.5	77	8.6
UM09_M9_1		0.1523	2.58	0.0773	3.69	0.0037	3.04	0.0011	3.26	2379.0	44.1	75.5	2.8	23.6	0.7	22.2	0.7	42900	95	1120	34	129000	264000	23300	90000	20200	3160	9700	653	1050	54.7	60.5	2.4	9.6	1.47
UM09_M9_2		0.1455	3.04	0.0725	4.47	0.0036	3.27	0.0011	3.48	2285.0	52.3	71.0	3.2	23.1	0.8	21.8	0.8	19100	82	1180	41	110000	261000	26400	95200	20500	3590	10800	632	919	49.4	55.1	2.46	10	1.62
UM09_M10_1		0.1325	2.88	0.0627	3.90	0.0034	2.83	0.0011	3.19	2125.0	50.3	61.7	2.4	22.2	0.6	21.4	0.7	57000	83.2	2750	31	117000	256000	23100	98000	18600	3160	10300	769	1640	148	190	18.2	68	9.7
UM09_M10_2		0.1392	3.69	0.0671	5.45	0.0035	3.94	0.0011	4.12	2205.0	63.9	65.9	3.6	22.7	0.9	22.8	0.9	160000	74.7	4090	20	102000	249000	23900	96000	18200	3250	11100	868	1980	190	280	21.7	84	10.6
UM09_M10_3		0.1091	3.98	0.0536	4.73	0.0035	3.02	0.0011	3.31	1779.0	72.5	53.0	2.5	22.7	0.7	21.4	0.7	bdl	64.1	4620	42	123900	261000	28400	93500	20000	3460	12170	1172	2870	253	263	15.7	35.3	3.47
UM09_M10_4		0.1413	5.81	0.0641	7.00	0.0033	2.91	0.0010	3.41	2224.0	100.4	63.0	4.4	21.3	0.6	20.1	0.7	21700	85.5	5170	36	126000	269000	26900	104400	21400	3430	12940	1106	2760	266	328	26.6	102.3	13.1
UM09_M10_5		0.0991	2.66	0.0447	3.72	0.0033	3.42	0.0010	3.71	1601.0	49.6	44.4	1.6	21.1	0.7	20.6	0.8	11200	72.1	5140	49	108800	252000	26500	95800	19100	3100	13110	1026	2630	252	351	27.7	108	13.6
UM09_M11_2	Excluded (matrix)	0.1552	3.53	0.0761	4.66	0.0035	3.30	0.0010	3.23	2402.0	60.1	74.4	3.5	22.6	0.7	20.8	0.7	31300	72.5	8000	26	121000	282000	25900	102000	20000	3970	11000	1040	3450	437	730	91	380	40.5
UM09_M11_4	Excluded (matrix)	0.1609	2.97	0.0781	5.02	0.0035	3.51	0.0010	3.65	2475.0	50.2	76.9	3.9	22.3	0.8	20.5	0.7	9500	71.6	10300	70	108000	249000	23500	89100	20000	4030	11900	1170	3930	514	940	113	478	53.6
UM09_M11_5	Excluded (matrix)	0.1653	4.03	0.0891	4.91	0.0040	3.64	0.0013	3.98	2508.0	67.7	86.6	4.3	25.4	0.9	25.5	1.0	89000	65.8	8700	57	106000	276000	25900	107000	20100	4310	11700	1110	4130	472	870	98	431	45.2
UM09_M11_6	Excluded (matrix)	0.1340	3.95	0.0634	5.72	0.0034	3.54	0.0011	3.91	2136.0	69.0	62.4	3.6	22.0	0.8	21.5	0.8	18500	64.6	5650	28	107000	251000	24100	89400	19100	3480	9400	910	2560	274	470	53.1	209	22.1
UM09_M12_1	Excluded (matrix)	0.1200	3.73	0.0523	5.01	0.0032	3.98	0.0011	4.78	1954.0	66.7	51.8	2.6	20.6	0.8	21.3	1.0	95000	80	5010	14.2	108000	270000	23900	103000	20200	3090	10300	849	2080	218	359	35.7	155	19
UM09_M12_2	Excluded (matrix)	0.0898	1.95	0.0404	3.18	0.0033	3.10	0.0010	3.41	1418.0	37.2	40.3	1.3	21.2	0.7	20.9	0.7	44200	93	9600	42	121000	284000	27700	116000	24300	4180	13600	1430	4370	472	685	51.3	162	15
UM09_M12_3	Excluded (matrix)	0.1260	3.07	0.0646	4.08	0.0037	3.83	0.0011	4.02	2035.0	54.2	63.6	2.6	23.7	0.9	23.1	0.9	50800	80	3930	32	114000	265000	24500	105000	20900	3500	11700	970	2160	209	276	22.8	72	8.1
UM09_M12_4		0.1159	2.74	0.0571	3.88	0.0036	3.10	0.0011	3.29	1887.0	49.3	56.3	2.2	23.1	0.7	21.7	0.7	6200	67.9	3930	44	119000	278000	27300	95000	20400	3550	11800	1005	2530	227	271	16.5	52.5	5.39
UM09_M12_5	Excluded (matrix)	0.2808	3.46	0.1740	6.63	0.0044	3.93	0.0013	4.09	3362.0	54.0	162.5	10.8	28.6	1.1	25.6	1.0	111000	94	4970	58	108000	268000	21500	96000	19200	3580	11400	940	2440	201	269	26.4	82	10.3
UM09_M12_6	Excluded (matrix)	0.3810	5.41	0.2330	6.74	0.0047	4.94	0.0013	6.35	3833.0	81.7	212.0	14.3	29.9	1.5	26.0	1.7	450000	94	7600	14	90000	235000	23600	100000	19800	3380	10900	1070	3020	336	566	61.7	243	21.6
UM09_M13_1	Excluded (matrix)	0.7100	7.16	2.9000	34.54	0.0292	30.54	0.0054	37.12	4760.0	102.8	1340.0	462.8	185.0	56.5	109.0	40.5	750000	81	910	9	62000	133000	14500	51800	9700	1670	5000	284	530	35	73	12.2	96	35
UM09_M13_2		0.0848	2.10	0.0408	3.56	0.0035	3.32	0.0011	3.46	1307.0	40.8	40.6	1.4	22.4	0.7	22.0	0.8	3000	75	5080	46	105300	233000	25100	87300	17900	2710	13230	1224	2980	220	193	7.8	17.5	2.6
UM09_M13_3		0.0843	1.76	0.0389	2.89	0.0034	2.85	0.0010	3.21	1297.0	34.2	38.7	1.1	21.6	0.6	21.0	0.7	4500	100.1	6460	27	105300	234000	22300	85200	17300	2830	15260	1438	3760	292	266	13.5	23.7	2.8
UM09_M13_4		0.0971	2.52	0.0463	3.81	0.0035	3.07	0.0010	3.46	1564.0	47.3	45.9	1.7	22.4	0.7	21.1	0.7	8400	85.9	4130	36	105400	244000	23400	90700	18200	3190	12900	1131	2670	200	158	7.26	15.6	1.63
UM09_M13_5		0.0926	2.08	0.0446	3.53	0.0035	3.21	0.0011	3.46	1476.0	39.4	44.3	1.6	22.6	0.7	22.0	0.8	26000	81	4330	33	113000	241000	26300	93500	17900	3430	12060	1150	2420	178	150	7.8	19.4	1.82
UM09_M13_6		0.0829	2.13	0.0382	3.51	0.0033	2.80	0.0010	3.11	1269.0	41.6	38.1	1.3	21.3	0.6	20.8	0.6	8500	94.2	6360	37	125000	279000	27000	99000	20800	3650	15800	1480	3620	279	242	11.8	21	2.59
UM09_M13_7		0.1131	2.56	0.0543	4.19	0.0034	2.87	0.0010	3.30	1858.0	46.4	53.7	2.3	21.9	0.6	20.6	0.7	24700	84.5	2880	53	115700	274000	26200	95500	20000	3360	11260	923	1880	122	106	5.28	13.2	1.84
UM09_M14_1		0.1521	2.99	0.0788	4.53	0.0037	3.36	0.0011	3.52	2370.0	51.0	76.9	3.5	23.9	0.8	22.0	0.8	22100	104	4370	51	135000	329000	30800	108000	26700	4110	14200	1310	2780	237	236	12.9	34.9	3.1
UM09_M14_2		0.1192	2.61	0.0592	3.93	0.0036	2.89	0.0011	3.23	1946.0	46.7	58.3	2.3	23.4	0.7	21.8	0.7	5500	79	4510	18.6	103000	247000	24300	92000	20400	3460	12400	1130	2850	236	235	11.8	28.2	3.27
UM09_M14_3		0.1058	2.29	0.0515	4.03	0.0035	2.76	0.0011	3.12	1724.0	42.1	50.9	2.0	22.6	0.6	21.6	0.7	3800	88.4	4800	23	116000	246000	25600	93800	20400	3730	12800	1180	3130	269	283	14.1	29.7	3.47
UM09_M14_4		0.1185	2.20	0.0599	3.75	0.0037	3.62	0.0011	3.89	1929.0	39.3	59.1	2.2	23.5	0.8	22.4	0.9	8200	67.2	3930	32	102000	241000	24100	85900	18800	3350	11000	948	2460	201	220	11.8	31.1	2.78
UM09_M14_5		0.1010	2.37	0.0473	3.40	0.0034	2.95	0.0011	3.20	1644.0	44.0	46.9	1.6	22.0	0.6	21.3	0.7	1300	81.1	5460	29	109900	264000	26600	90700	19600	3590	13100	1240	3360	290	276	15.3	32.5	3.13
UM09_M14_6		0.1056	2.62	0.0505	3.42	0.0035	2.69	0.0011	3.19	1718.0	48.1	50.0	1.7	22.5	0.6	21.4	0.7	10700	77	5400	40	98000	242000	20800	82800	18200	3280	12600	1100	2870	233	244	14.1	39.6	3.44
UM09_M14_7		0.1285	3.52	0.0614	5.13	0.0035	3.98	0.0010	4.11	2069.0	61.9	60.5	3.1	22.5	0.9	21.1	0.9	2200	87.4	4400	72	109000	255000	24400	97000	18500	3490	12500	1100	2810	214	226	11.2	34.6	4.4
UM09_M15_1	Excluded (inclusion)	0.1740	7.02	0.1050	10.67	0.0043	5.05	0.0014	5.41	2560.0	117.0	100.7	10.7	27.7	1.4	27.8	1.5	bdl	96	3940	23	51200	146000	12100	44000	9600	1040	8400	760	2000	200	217	14.3	40.4	5.46
UM09_M15_4	Excluded (matrix)	0.1319	3.44	0.0651	4.74	0.0036	3.05	0.0010	3.27	2111.0	60.2	64.0	3.0	23.2	0.7	21.0	0.7	46700	82.7	4570	28	128000	279000	26900	110000	22900	3710	13110	1060	2720	216	240	19.1	57	7.4
UM09_M15_5	Excluded (matrix)	0.1561	3.88	0.0772	6.53	0.0036	5.85	0.0011	6.65	2407.0	65.8	75.4	4.9	23.4	1.4	22.6	1.5	54000	74	4940	16	84000	222000	22700	86700	19200	2840	10800	990	2600	222	284	29.1	76	10.3
UM09_M15_6		0.0947	1.97	0.0459	3.12	0.0035	3.01	0.0011	3.32	1520.0	37.1	45.6	1.4	22.6	0.7	22.2	0.7	600	76.3	4070	51	101200	250000	27100	89500	19100	2850	12700	1100	2600	198	188	9.1	19.5	2.39
UM09_M15_7		0.1019	2.04	0.0501	3.12	0.0035	2.97	0.0011	3.34	1656.0	37.7	49.6	1.5	22.8	0.7	21.8	0.7	3700	91.4	3130	59	123000	285000	29300	106300	22600	3170	12900	940	2070	146	156	9.1	24.4	2.97
UM09_M15_8		0.0917	2.09	0.0444	3.18	0.0035	2.95	0.0011	3.00	1468.0	39.7	44.2	1.4	22.3	0.7	21.8	0.7	300	89.1	6040	44	104300	254000	24500	100600	20900	2850	14700	1320	3310	304	319	18.7	58	6.6
UM09_M15_9		0.0897	1.87	0.0441	3.75	0.0035	3.37	0.0011	3.83	1416.0	35.7	43.8	1.6	22.7	0.8	22.3	0.9	8100	132	10800	27	114000	238000	28900	93000	21500	2200	18600	1750	4640	472	520	29.6	62.1	5.22
UM09_M15_10		0.0893	1.79	0.0427	3.45	0.0035	2.97	0.0011	3.42	1413.0	34.3	42.4	1.5	22.3	0.7	21.7	0.7	3600	109	8100	66	115000	247000	24800	100000	21800	2510	17400	1580	4450	389	410	20.9	48.7	4.07
UM09_M15_11	Excluded (inclusion)	0.0897	1.95	0.0456	3.31	0.0037	3.33	0.0011	3.51	1417.0	37.2	45.2	1.5	23.9	0.8	22.9	0.8	5100	120	8600	65	100000	249000	24400	91000	18600	1880	17300	1590	4240	424	470	25.3	55.4	4.01
UM09_M15_12	Excluded (matrix)	0.1130	3.20	0.0479	4.82	0.0030	4.13	0.0009	4.29	1856.0	57.8	47.5	2.3	19.6	0.8	19.2	0.8	25000	77.3	10400	43	122000	260000	24400	102000	21700	3470	14400	1530	4730	465	756	81.9	299	36.9

bdl - below detection limit

Table S4. Modal proportions* (%) of minerals in metamorphic specimens.

Mineral	UM04	UM05	UM07	UM08	UM09
Quartz	35	39	33	55	45
Biotite	16	12	18	10	16
Muscovite	22	26	24	14	1
Feldspar	12	12	8	16	12
Garnet	2	2	3	1	5
Staurolite	10	6	12	0	16
Sillimanite	-	-	-	-	2
Accessory min.	3	3	2	4	3
	100	100	100	100	100

*Graphite not included

Table S5. Temperature and pressure estimates for metamorphic specimens.

Specimen UM04

Ti-in-biotite			Garnet-biotite		Garnet-biotite-muscovite-plagioclase	
Analysis number	Temp.	Location	Max. temp.	Location	Max. pressure	Location
3 / 1 .	588	Matrix	569	Near garnet	4.4	Near garnet
3 / 2 .	570	Matrix				
3 / 3 .	545	Matrix				
3 / 4 .	571	Matrix				
3 / 5 .	583	Matrix				
3 / 6 .	588	Matrix				
3 / 7 .	553	Matrix				
3 / 9 .	575	Matrix				
3 / 10 .	582	Matrix				
3 / 12 .	599	Matrix				
3 / 13 .	593	Matrix				
3 / 16 .	444	Matrix				
3 / 17 .	570	Matrix				
3 / 19 .	584	Matrix				
5 / 1 .	608	Near garnet				
5 / 2 .	603	Near garnet				
5 / 3 .	576	Near garnet				
5 / 4 .	581	Near garnet				
5 / 5 .	567	Near garnet				
5 / 6 .	581	Near garnet				
5 / 7 .	574	Near garnet				
5 / 8 .	567	Near garnet				
5 / 10 .	573	Near garnet				
5 / 11 .	594	Near garnet				
5 / 12 .	477	Near garnet				
5 / 16 .	540	Near garnet				
5 / 18 .	517	Near garnet				

Specimen UM05

Ti-in-biotite			Garnet-biotite		Garnet-biotite-muscovite-plagioclase	
Analysis number	Temp.	Location	Max. temp.	Location	Max. pressure	Location
1 / 1 .	561	Matrix	563	Near garnet	5.2	Near garnet
1 / 2 .	578	Matrix				
1 / 6 .	555	Matrix				
1 / 10 .	540	Matrix				
12 / 2 .	557	Matrix				
12 / 6 .	549	Matrix				
12 / 9 .	575	Matrix				
12 / 12 .	516	Matrix				
6 / 6 .	480	Near garnet				
6 / 7 .	459	Near garnet				
6 / 8 .	438	Near garnet				
10 / 1 .	566	Near garnet				
10 / 2 .	547	Near garnet				
10 / 4 .	554	Near garnet				
10 / 5 .	543	Near garnet				
10 / 7 .	567	Near garnet				

Specimen UM07

Ti-in-biotite

Analysis number	Temp.	Location
1 / 1 .	537	Matrix
1 / 2 .	513	Matrix
1 / 3 .	537	Matrix
1 / 4 .	539	Matrix
1 / 5 .	518	Matrix
1 / 6 .	543	Matrix
1 / 7 .	534	Matrix
1 / 9 .	525	Matrix
1 / 10 .	578	Matrix
1 / 11 .	586	Matrix
1 / 12 .	573	Matrix
1 / 13 .	582	Matrix
5 / 6 .	559	Matrix
5 / 8 .	521	Matrix
5 / 10 .	530	Matrix
3 / 3 .	543	Near garnet
7 / 2 .	578	Near garnet
7 / 3 .	587	Near garnet
7 / 4 .	584	Near garnet
7 / 6 .	476	Near garnet
7 / 9 .	530	Near garnet
9 / 15 .	523	Near garnet
9 / 17 .	553	Near garnet

Garnet-biotite

Max. temp.	Location
579	Near garnet

Garnet-biotite-muscovite-plagioclase

Max. pressure	Location
5.2	Near garnet

Specimen UM08

Ti-in-biotite

Analysis number	Temp.	Location
1 / 1 .	565	Matrix
1 / 3 .	562	Matrix
1 / 4 .	565	Matrix
1 / 6 .	625	Matrix
3 / 1 .	564	Matrix
3 / 2 .	580	Matrix
3 / 3 .	592	Matrix
3 / 6 .	567	Matrix
3 / 8 .	565	Matrix
3 / 9 .	526	Matrix
3 / 11 .	511	Matrix
6 / 7 .	548	Matrix
6 / 10 .	548	Matrix
6 / 11 .	584	Matrix
6 / 12 .	575	Matrix
6 / 13 .	569	Matrix
6 / 15 .	555	Matrix
10 / 2 .	558	Matrix
6 / 2 .	546	Near garnet
6 / 3 .	569	Near garnet

Garnet-biotite

Max. temp.	Location
562	Near garnet

Garnet-biotite-muscovite-plagioclase

Max. pressure	Location
5.0	Near garnet

Specimen UM09

Ti-in-biotite

Analysis number	Temp.	Location
1 / 1 .	631	Near garnet
1 / 2 .	631	Near garnet
1 / 4 .	634	Near garnet
1 / 5 .	636	Near garnet
1 / 6 .	632	Near garnet
1 / 7 .	637	Near garnet
1 / 9 .	628	Near garnet
1 / 10 .	545	Near garnet
1 / 11 .	568	Near garnet
1 / 13 .	555	Near garnet
1 / 14 .	582	Near garnet
1 / 15 .	562	Near garnet
2 / 2 .	597	Near garnet
2 / 5 .	592	Near garnet
2 / 6 .	592	Near garnet
2 / 7 .	617	Near garnet
2 / 8 .	617	Near garnet
2 / 10 .	618	Near garnet
9 / 4 .	627	Near garnet
9 / 12 .	623	Near garnet
9 / 13 .	639	Near garnet
4 / 2 .	620	Matrix
4 / 3 .	614	Matrix
4 / 4 .	602	Matrix
4 / 5 .	645	Matrix
4 / 6 .	633	Matrix
4 / 7 .	628	Matrix
4 / 8 .	626	Matrix
4 / 9 .	629	Matrix
4 / 10 .	631	Matrix
7 / 1 .	644	Matrix
7 / 2 .	641	Matrix
7 / 4 .	625	Matrix
7 / 5 .	637	Matrix
7 / 6 .	637	Matrix
7 / 7 .	645	Matrix
7 / 8 .	648	Matrix
7 / 9 .	644	Matrix
7 / 10 .	643	Matrix
7 / 11 .	648	Matrix

Garnet-biotite

Max. temp.	Location
615	Near garnet

Garnet-biotite-muscovite-plagioclase

Max. pressure	Location
5.3	Near garnet

Table S6. Whole rock XRF analysis (wt. %) of metamorphic specimens.

Oxide	UM04	UM05	UM07	UM08	UM09
SiO_2	63.64	59.47	61.69	69.87	64.38
TiO_2	1.08	1.17	1.18	0.85	1.25
Al_2O_3	17.25	18.7	16.96	12.86	13.94
Fe_2O_3	6.99	5.35	9.18	5.67	13.99
MnO	0.04	0.08	0.05	0.13	0.14
MgO	1.7	1.27	1.35	1.16	1.32
CaO	1.11	1.59	0.82	1.99	0.65
Na_2O	1.16	1.78	1.15	2.18	1.21
K_2O	3.11	3.5	3.13	1.16	1.74
P_2O_5	0.13	0.12	0.14	0.18	0.16
S	0.05	0.01	0.05	0.01	0.01
Total	96.26	93.04	95.71	96.05	98.79

Table 7. Thermal diffusion model of a sheet-like intrusion.

Initial temperature of country rocks set as 0 °C

	0 yr	10 000 yr	100 000 yr	500 000 yr	1 Myr	2 My
UM09 (22 m)	0 °C	367 °C	372 °C	374 °C	370 °C	346 °C
UM07 (361 m)	0 °C	243 °C	332 °C	356 °C	358 °C	339 °C
UM05 (445 m)	0 °C	216 °C	322 °C	351 °C	354 °C	337 °C
at 1500 m	0 °C	22 °C	206 °C	296 °C	316 °C	314 °C

Initial temperature of country rocks set as 450 °C (25 °C/km gradient)

	0 yr	10 000 yr	100 000 yr	500 000 yr	1 Myr	2 My
UM09 (22 m)	450 °C	587 °C	596 °C	598 °C	592 °C	554 °C
UM07 (361 m)	450 °C	450 °C	531 °C	569 °C	572 °C	543 °C
UM05 (445 m)	450 °C	450 °C	516 °C	562 °C	567 °C	540 °C
at 1500 m	450 °C	450 °C	450 °C	473 °C	506 °C	503 °C