

**Supplementary File 2a.** Major and trace element compositions of granitic rocks of the Bokan Mountain Complex

Sample	757	758	772	774	776	777	778	780	781	782	783	795
(wt%)												
SiO <sub>2</sub>	73.86	72.74	73.76	75.32	74.40	73.90	73.90	74.16	74.96	73.56	75.58	72.72
TiO <sub>2</sub>	0.13	0.12	0.12	0.20	0.16	0.19	0.15	0.19	0.12	0.16	0.15	0.10
Al <sub>2</sub> O <sub>3</sub>	11.46	11.11	11.79	8.61	11.05	10.91	11.21	11.26	11.13	11.23	11.22	11.37
Fe <sub>2</sub> O <sub>3</sub> <sup>t</sup>	4.30	6.30	4.01	7.38	4.69	4.90	4.66	4.58	4.04	4.91	4.28	6.50
MnO	0.11	0.06	0.08	0.09	0.09	0.05	0.08	0.07	0.12	0.15	0.11	0.54
MgO	0.02	0.03	0.03	0.01	0.05	0.01	0.02	0.02	0.02	0.03	0.02	0.01
CaO	0.35	0.63	0.42	0.19	0.40	0.39	0.36	0.31	0.29	0.31	0.36	0.47
Na <sub>2</sub> O	5.58	5.40	5.51	5.13	5.28	5.38	5.24	6.22	5.61	5.59	3.96	4.39
K <sub>2</sub> O	4.17	3.60	4.27	3.06	3.87	4.26	4.35	3.18	3.70	4.05	4.30	3.89
P <sub>2</sub> O <sub>5</sub>	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
LOI	0.35	1.49	0.41	0.09	0.47	0.30	0.33	0.30	0.33	0.32	1.10	2.22
Total	100.35	101.49	100.41	100.09	100.47	100.30	100.33	100.30	100.33	100.32	101.10	102.22
(ppm)												
Cr	60	10	71	92	71	10	61	70	10	70	10	72
Rb	246	182	198	140	194	235	251	238	270	284	225	148
Ba	101	66	40	51	38	17	25	51	15	114	64	81
Sr	19	6	18	6	25	21	8	8	4	9	110	19
Ga	38	40	43	33	40	38	35	40	39	38	42	45
Ta	1.40	2.74	7.70	3.87	7.10	5.91	2.84	6.81	2.75	4.83	2.46	2.26
Nb	24.0	69.0	151.0	53.9	82.2	88.7	33.4	93.1	37.7	75.5	53.3	31.8
Hf	11.18	12.07	28.37	25.95	87.74	23.75	57.71	18.52	48.30	21.14	11.27	13.33
Zr	480	407	1193	976	3819	981	2893	576	2154	873	353	542
Y	140	255	468	122	405	260	308	307	111	444	746	121
Th	23.66	32.57	51.58	145.51	54.47	51.06	27.84	63.88	52.17	63.22	136.3	12.61
U	7.49	11.46	24.72	12.41	29.11	19.06	12.05	21.53	25.27	47.82	16.91	7.07
La	56.20	102.5	104.4	131.3	164.3	113.1	85.76	97.22	90.18	111.8	219.3	97.10
Ce	109.8	209.0	231.0	285.9	348.9	254.8	179.2	210.3	184.4	238.6	476.5	209.2
Pr	12.18	24.25	27.26	32.77	43.01	31.70	21.36	24.73	20.28	28.99	61.69	23.17
Nd	44.32	93.44	105.4	130.2	171.4	122.3	82.62	92.61	70.10	112.8	250.1	93.00
Sm	9.28	23.03	29.39	29.51	45.34	29.76	21.36	23.63	12.64	33.93	70.30	22.04
Eu	0.95	2.36	3.16	2.68	4.70	3.11	2.39	2.48	1.10	3.97	7.47	1.93
Gd	10.68	25.77	36.99	25.95	51.53	34.55	27.74	30.44	10.60	49.43	86.39	19.28
Tb	2.60	5.38	8.71	4.88	10.55	7.24	6.48	6.51	2.04	11.78	18.96	3.38
Dy	18.97	33.78	61.71	30.53	67.86	46.27	45.46	43.05	13.96	78.53	125.03	20.30
Ho	4.59	7.00	14.39	6.31	14.40	9.68	11.14	9.31	3.57	17.01	25.93	4.31
Er	15.37	19.38	45.70	20.05	40.78	27.62	38.98	28.73	16.30	51.24	72.56	13.43
Tm	2.73	2.79	7.26	3.69	5.77	4.08	7.33	4.88	4.94	8.60	9.75	2.19
Yb	19.57	17.65	44.99	28.19	34.18	26.91	50.53	36.54	56.86	59.60	53.19	14.15
Lu	3.41	2.87	6.50	4.47	5.16	4.58	7.93	6.07	11.41	8.86	7.24	2.02
A/CNK	0.80	0.80	0.82	0.74	0.81	0.77	0.8	0.79	0.81	0.79	0.95	0.93
A/NK	0.84	0.87	0.86	0.73	0.86	0.81	0.84	0.82	0.84	0.83	1.00	1.00

A/CNK = molar Al<sub>2</sub>O<sub>3</sub>/(CaO+Na<sub>2</sub>O+K<sub>2</sub>O); A/NK = molar Al<sub>2</sub>O<sub>3</sub>/(Na<sub>2</sub>O+K<sub>2</sub>O); Fe<sub>2</sub>O<sub>3</sub><sup>t</sup> - total iron as Fe<sub>2</sub>O<sub>3</sub>; LOI - loss on ignition.

**Supplementary File 2a cont.**

Sample	797	800	803	805	807	808	809	810	811	812	815	816
(wt%)												
SiO <sub>2</sub>	76.86	74.70	75.34	74.72	73.73	75.98	74.16	73.93	74.58	74.68	74.27	74.68
TiO <sub>2</sub>	0.10	0.16	0.14	0.15	0.15	0.17	0.17	0.18	0.16	0.17	0.19	0.13
Al <sub>2</sub> O <sub>3</sub>	9.85	11.00	11.08	11.13	11.39	11.36	11.45	11.32	10.85	11.20	8.78	10.91
Fe <sub>2</sub> O <sub>3</sub> <sup>t</sup>	4.84	4.39	3.78	4.13	4.65	3.70	4.36	4.43	4.67	4.17	8.08	4.43
MnO	0.07	0.13	0.10	0.02	0.14	0.11	0.05	0.03	0.05	0.03	0.15	0.11
MgO	0.02	0.02	0.03	0.03	0.02	0.02	0.05	0.03	0.03	0.02	0.01	0.02
CaO	0.21	0.36	0.30	0.34	0.28	0.43	0.35	0.44	0.43	0.31	0.29	0.45
Na <sub>2</sub> O	4.48	5.13	5.02	5.28	5.38	3.94	5.32	5.33	5.18	5.30	5.30	4.96
K <sub>2</sub> O	3.57	4.11	4.18	4.19	4.25	4.27	4.06	4.30	4.03	4.12	2.92	4.29
P <sub>2</sub> O <sub>5</sub>	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
LOI	0.37	0.34	0.29	0.27	0.50	1.43	0.49	0.76	0.42	0.30	0.12	0.40
Total	100.37	100.34	100.29	100.27	100.50	101.43	100.49	100.76	100.42	100.30	100.12	100.40
(ppm)												
Cr	90	10	61	80	80	10	71	10	91	10	71	10
Rb	147	214	221	227	251	172	217	222	209	204	125	217
Ba	16	28	25	26	46	43	35	30	34	25	47	50
Sr	9	31	7	20	10	61	13	10	7	14	12	34
Ga	38	40	39	39	41	40	40	40	38	42	38	39
Ta	2.00	5.19	4.67	8.22	2.91	10.82	7.56	4.92	5.28	7.86	2.43	6.55
Nb	30.0	93.7	50.7	97.3	63.2	261.8	175.4	121.0	83.3	108.2	38.4	93.7
Hf	20.38	31.81	63.81	76.52	20.66	38.72	26.91	55.48	100.73	78.82	22.55	20.55
Zr	800	1226	3210	3166	735	1709	1122	2234	4178	3270	918	851
Y	48	249	198	139	694	567	396	2356	470	207	94	273
Th	14.49	53.25	48.79	37.01	219.7	247.7	212.7	270.8	65.80	75.35	12.24	34.25
U	5.79	16.55	25.46	26.18	17.45	40.64	22.88	26.15	26.71	35.22	7.79	20.15
La	26.58	126.6	103.5	151.4	150.5	159.7	150.2	186.7	84.89	198.1	40.45	225.6
Ce	61.34	295.2	236.4	326.9	349.1	382.1	354.8	445.1	197.0	461.5	97.79	504.7
Pr	6.89	33.71	26.27	36.61	39.72	43.17	41.73	52.20	22.03	53.71	11.73	56.21
Nd	27.37	134.6	103.5	143.4	159.5	169.8	168.3	219.5	89.76	210.3	49.95	220.6
Sm	7.49	35.40	29.62	30.99	52.76	51.46	46.07	72.30	25.18	49.72	13.65	49.56
Eu	0.75	3.52	3.15	2.81	6.16	5.39	4.60	8.83	2.69	4.38	1.36	4.38
Gd	7.09	34.50	32.66	25.87	70.82	57.83	43.85	111.8	28.74	37.47	14.16	41.10
Tb	1.20	6.88	6.59	4.41	18.36	14.66	10.38	31.18	7.51	7.35	2.73	7.45
Dy	7.69	44.28	43.21	26.98	132.41	109.18	76.81	256.40	60.01	49.62	16.79	45.73
Ho	1.70	9.37	9.03	5.62	29.09	25.17	17.64	66.15	15.54	11.23	3.54	9.37
Er	5.99	27.82	27.69	17.95	84.16	77.84	54.83	213.3	53.61	37.57	11.63	26.49
Tm	1.29	4.31	4.72	3.17	12.04	11.93	8.26	30.67	9.05	6.51	2.39	3.89
Yb	11.59	25.93	32.26	21.76	66.51	72.08	50.30	159.99	55.44	43.50	19.52	23.47
Lu	1.96	3.56	4.49	3.24	8.18	9.16	6.61	18.15	7.21	6.11	3.32	3.14
	0.85	0.81	0.83	0.80	0.82	0.96	0.83	0.80	0.79	0.82	0.71	0.80
	0.88	0.85	0.87	0.84	0.85	1.02	0.87	0.84	0.84	0.85	0.74	0.85

A/CNK = molar Al<sub>2</sub>O<sub>3</sub>/(CaO+Na<sub>2</sub>O+K<sub>2</sub>O); A/NK = molar Al<sub>2</sub>O<sub>3</sub>/(Na<sub>2</sub>O+K<sub>2</sub>O); Fe<sub>2</sub>O<sub>3</sub><sup>t</sup> - total iron as Fe<sub>2</sub>O<sub>3</sub>; LOI - loss on ignition.