

Supplementary material

Table S1

Table S1: Major-element (wt%, LOI corrected) composition of Aldynbulak and Chingin forearc basalts

Group	Aldynbulak basalts			Chingin basalts								
	Shat			Izinziul'								
Sample	KhSh-314/1	Kh12-315/1	KhA-5-11	KI-329/1	KI-329/2	KI-329/3	KI-330/1	KI-330/2	KI-330/4	KI-330/5	KI-331/2	KI-331/3
SiO ₂	46.23	47.84	50.07	50.15	50.35	49.86	48.73	48.08	49.29	49.96	55.88	53.02
TiO ₂	3.72	4.08	2.39	1.53	1.51	1.52	1.54	1.48	1.66	0.98	0.98	1.17
Al ₂ O ₃	14.89	13.78	12.60	14.76	14.29	15.04	14.77	16.48	14.96	13.10	14.18	14.68
Fe ₂ O ₃	15.05	17.35	16.24	13.95	13.38	14.15	14.75	12.34	14.35	12.12	13.60	14.18
MnO	0.23	0.17	0.26	0.21	0.21	0.22	0.23	0.20	0.22	0.20	0.21	0.22
MgO	3.58	4.75	6.84	5.97	7.10	5.91	6.33	4.17	6.99	10.17	3.71	4.68
CaO	10.41	6.26	7.84	9.39	9.28	8.67	10.15	16.00	8.84	10.83	6.99	8.11
Na ₂ O	4.40	4.27	3.36	3.49	3.50	4.00	3.22	0.88	3.33	2.34	3.94	3.47
K ₂ O	1.00	1.11	0.20	0.31	0.22	0.36	0.08	0.15	0.15	0.18	0.27	0.22
P ₂ O ₅	0.49	0.39	0.19	0.23	0.17	0.26	0.19	0.23	0.19	0.11	0.24	0.25
LOI	4.21	5.17	4.93	2.28	3.15	2.26	4.7	3.93	3.65	3.31	2.56	3.11
Total	100.26	99.86	99.14	100.18	100.08	100.17	100.09	100.14	100.01	100.13	100.05	100.11
Mg#	0.32	0.35	0.45	0.46	0.51	0.45	0.46	0.40	0.49	0.62	0.35	0.40

Group	Chingin basalts				
	Izinziul'				
Sample	KI-333	KI-19a/15	KI-19b/15	KI-19c/15	KI-19d/15
SiO ₂	52.44	48.12	49.18	49.41	51.51
TiO ₂	0.82	1.87	0.64	0.77	1.62
Al ₂ O ₃	15.63	15.09	15.17	17.65	14.71
Fe ₂ O ₃	11.07	15.35	11.85	11.82	15.92
MnO	0.33	0.34	0.26	0.17	0.24
MgO	6.96	5.85	8.73	5.93	4.39
CaO	7.73	9.34	10.53	10.00	5.84
Na ₂ O	4.53	3.67	3.33	3.84	5.22
K ₂ O	0.38	0.08	0.22	0.24	0.28
P ₂ O ₅	0.11	0.29	0.09	0.17	0.27
LOI	2.77	2.69	2.30	2.62	1.55
Total	99.99	100.23	100.22	100.24	100.14
Mg#	0.55	0.43	0.59	0.50	0.35

(Continued)

Table S1: *Continued*

Group	Chingin basalts				
	Iziniul'				
Site	KI-333	KI-19a/15	KI-19b/15	KI-19c/15	KI-19d/15
Rb			2.97	2.25	11.21
Sr			205	316	186
Y			14.70	16.75	33.03
Zr			23.47	19.45	27.38
Nb			0.80	2.62	4.17
Cs			0.03	0.04	0.44
Ba			88.25	87.61	56.89
La			3.21	6.89	9.15
Ce			6.64	15.61	20.76
Pr			1.06	2.09	3.03
Nd			5.28	9.74	14.30
Sm			1.57	2.55	3.97
Eu			0.60	0.90	1.21
Gd			2.17	3.11	5.03
Tb			0.36	0.45	0.78
Dy			2.31	2.75	5.21
Ho			0.51	0.57	1.10
Er			1.44	1.67	3.26
Tm			0.21	0.23	0.44
Yb			1.32	1.35	2.59
Lu			0.18	0.22	0.43
Hf			0.62	0.71	0.88
Ta			0.10	0.07	0.16
Pb			3.45	0.91	0.88
Th			0.21	0.40	0.27
U			0.39	0.81	0.78
Thn/Ybn			0.9	1.6	0.6
Lan/Ybn			1.7	3.5	2.4
Lan/Nbn			4.08	2.66	2.22

Please note that the trace element composition of samples KI-19b/15, KI-19c/15 and KI-19d/15 were not plotted on the trace element-relevant diagrams.