Data Repository Material
Summary of $^{40}Ar/^{39}Ar$ data for Yakutia
Appendix 1

Sample location and geochronology summary for "Tectonic setting of the plutonic belts of Yakutia, northeast Russia, based on $^{40}Ar/^{39}Ar$ geochronology and trace element geochemistry" by P.W. Layer, R. Newberry, K. Fujita, L. Parfenov, V. Trunilina, and A. Bakharev.

This appendix contains a base map showing the sample locations (numbers) of the plutons dated in this study. The table contains the integrated and plateau ages for the dated samples. For each pluton, the geochemical affinity is also listed.

Map #	Name	Sample Number	Rock Type	Geo-chem	Min	Integrated age (Ma)	Plateau age (Ma)	Fractions total/plat.	Plateau %39Ar
	Ulakhan-Tas								
1	Chaidakhski	725-4/p-83	Qtz. diorite	S	BI	133.1 ± 1.0	132.6 ± 1.0	16/9	87
2	Chaidakhski	734/p-83	Granodiorite	S	BI	134.3 ± 0.8	134.6 ± 1.1	16/7	50
3	Ulakhan-Tas	926/p-83	Granite	S	BI	123.1 ± 0.2	123.7 ± 0.2	11/8	93
4	Ulakhan-Tas	95/b-82	Granodiorite	S	BI	122.9 ± 0.4	123.2 ± 0.4	16/10	89
5	Ulakhan-Tas	864/p-83	Syenite	S	BI	129.9 ± 0.4	132.0 ± 0.4	16/12	96
6	Ulakhan-Tas	326/B-83	Granite	S	BI	127.9 ± 0.5	129.3 ± 0.4	13/8	96
7	Ulakhan-Tas	888/p-83	Adamellite	S	BI	124.2 ± 0.2	124.2 ± 0.2	11/8	91
8	Ulakhan-Tas	805-4/p-83	Qtz. monzonite	S	BI	127.2 ± 0.2	127.3 ± 0.2	13/7	94
9	Ulakhan-Tas	791/p-83	Adamellite	S	BI	124.1 ± 0.4	125.5 ± 0.4	16/12	92
10	Pravoalazeya	780/p-83	Granite	S	BI	122.7 ± 0.2	123.3 ± 0.2	11/6	87
11	Sievernyi (Sundrunskii)	198-12/P83	Granite	E	BI	101.9 ± 0.4	102.0 ± 0.4	11/7	97
12	Sievernyi (Sundrunskii)	749/P83	Granite	E	BI	101.5 ± 0.4	103.6 ± 0.4	13/5	70
	Polousnyi Range								
13	Uyandin	I-16/1	Granite	S	BI	136.5 ± 0.6	136.9 ± 0.6	13/8	96
14	Kyuyubyat	6449	Granodiorite	S	BI	127.4 ± 0.6	134.4 ± 0.7	11/9	87
					HO	128.1 ± 0.8	131.4 ± 0.8	10/4	86
15	Ilin-Emneken	2565	Bio-hbd granite	S	BI	127.9 ± 0.6	131.5 ± 0.6	11/6	85
	Ilin-Emneken	2565	Bio-hbd granite		HO	127.9 ± 0.7	131.5 ± 0.7	12/7	82
16	Omchikandin	50290	Granite porphyry	E	BI	121.2 ± 0.9	121.3 ± 0.9	11/10	100
17	Bakin	14-08/100	Biotite granite	E	BI	120.0 ± 0.9	120.2 ± 0.9	11/6	99
	Svyatoi Nos								
18	Nyul'kuchan	2412	Granite	E	BI	106.4±0.8	107.8 ± 0.8	12/8	95
19	Khamnyanya	9111/3	Granite	E	BI	104.1 ± 0.7	104.1 ± 0.7	9/9	100
					HO	81.5 ± 3.5	--		
20	Brakchan'in (Maksunokha)	2419	Granite porphyry	E	BI	105.7±0.8	105.9 ± 0.8	14/8	98
21	Khar-Stan	2434/6	Granite porphyry	E	BI	105.7±0.8	106.4 ± 0.8	14/10	98
22	Bolshoi Lyakhov Is. west (Kigilyakh)	0350-9	Granite	E	BI	104.7±0.5	106.4 ± 0.5	12/10	94
23	Bolshoi Lyakhov Is. east (Shalaurova)	0340-2	Granite	S	BI	113.3±0.5	114.4 ± 0.5	11/7	95

Map #	Name	Sample Number	Rock Type	Geo-chem	Min	Integrated age (Ma)	Plateau age (Ma)	Fractions total/plat.	Plateau %39Ar
	Kular Range								
24	Tirekhtyakh	3001/1	Hornfels aplite	E	MU	102.9 ± 0.5	102.8 ± 0.4	12/7	92
25	Tirekhtyakh	3006/2	Qtz. monzonite	E	BI	102.7 ± 0.4	103.6 ± 0.4	11/9	97
26	Tarbagannakh	3218/2	Granite greisen	E	MU	102.3 ± 0.4	102.2 ± 0.3	11/7	94
27	Tarbagannakh	3231	Qtz. monzonite	E	BI	102.9 ± 0.5	103.2 ± 0.5	11/9	97
	Chersky Range	**Main Belt**							
28	Takalkan	P29-5	Granodiorite	E	WR	95.7 ± 0.4	96.4 ± 0.4	10/6	85
29		P29-7	Granodiorite	E	WR	99.2 ± 0.6	97.0 ± 0.6	10/7	90
30	Takalkan River	TRI	Granite	E	BI	134.4 ± 0.4	134.3 ± 0.4	10/5	99
31	Saltaga-Tas	O119-8	Bi Granite	S	BI	137.9 ± 0.5	140.5 ± 0.5	10/7	93
32	Saltaga-Tas	O124	Bi Granite	S	BI	142.2 ± 0.7	144.8 ± 0.7	13/7	89
33	Sakhan'in	P-1067/3	Granite	S	BI	132.2 ± 0.6	139.7 ± 0.7	12/8	81
34	Sakhan'in	P-1070/5	Granodiorite	S	BI	133.0 ± 0.6	135.6 ± 0.7	13/11	87
35	Suiachan	P-1028/1	Granite	S	BI	135.2 ± 0.9	136.5 ± 0.9	10/9	98
36	Agdai	O100-1	Granite	E	HO	136.1 ± 1.2	136.9 ± 1.0	13/6	92
37	Agdai	O95-4	Granite	E	HO	135.8 ± 2.6	135.9 ± 2.5	10/9	100
38	Kigilyakh	V-85	2-mica granite	E	BI	116.9 ± 0.4	119.5 ± 0.5	12/10	94
					MU	122.6 ± 0.4	122.6 ± 0.4	12/7	97
39	Khadaranya	93DH05	Quartz-mica vein	S	MU	134.5 ± 0.9	134.6 ± 0.9	12/10	100
40	Khadaranya	93DH10	Granite (4340 ft)	S	BI	136.5 ± 0.9	148.3 ± 1.0	12/10	91
41	Khadaranya	93DH03	Granite (3200 ft)	S	BI	133.5 ± 0.7	144.1 ± 0.8	13/8	67
42	Kyolikh-Ottokh	K-0-1	Granite	S	BI	141.6 ± 1.0	146.2 ± 1.0	14/10	91
43	Kyolikh-Ottokh	K-0-2	Granite	S	BI	140.2 ± 1.0	145.1 ± 1.0	12/11	94
44	Geramdatchan	T-983/1	Granite	S	HO	136.6 ± 3.8	158.3 ± 3.5	15/4	46
45	Verkne-Tirektyakh	W-525	Biotite-Amph. granite	S	BI	138.5 ± 0.6	140.7 ± 0.6	14/12	98
46	Verkne-Tirektyakh	1112	Fine Granite	S	BI	141.0 ± 1.0	144.6 ± 1.0	11/8	91
47	Verkne-Tirektyakh	1112/1	Medium Granite	S	BI	140.1 ± 1.0	144.5 ± 1.0	13/10	90
48	Verkne-Tirektyakh	93DH12	Granite (3060 ft)	S	BI	138.9 ± 0.7	140.5 ± 0.7	14/11	92
49	Verkne-Tirektyakh	93DH13	Granite (3620 ft)	S	BI	137.7 ± 0.7	143.1 ± 0.7	14/11	89
50	Verkne-Tirektyakh	93DH14	Granite (4340 ft)	S	BI	140.8 ± 0.5	141.4 ± 0.5	13/8	97
51	Munilkan	92PL34	Granite	S	BI	141.3 ± 1.1	142.9 ± 1.1	11/7	95
52	Munilkan	92PL42	Granite	S	BI	143.2 ± 1.1	144.2 ± 1.1	11/7	99
					KS	108.6 ± 0.4	108.6 ± 0.4	19/8	90
53	Munilkan	92PL30	Lamprophyre dike	E	WR	119.3 ± 0.9	120.4 ± 0.9	9/5	95
54	Dogdo	463-33/b-84	Adamellite	S	BI	137.4 ± 0.6	140.4 ± 0.7	13/8	90
55	Dogdo	WS-26	Biotite-Amph. granite	S	BI	141.6 ± 0.7	143.3 ± 0.7	11/8	86
56	Sinekandin	466-56/b-84	Granodiorite	S	BI	140.0 ± 1.0	141.3 ± 1.0	12/9	92
57	Kere-Yuryakh	2191/3	Biotite granite	C	BI	136.8 ± 1.0	137.8 ± 1.0	11/9	97

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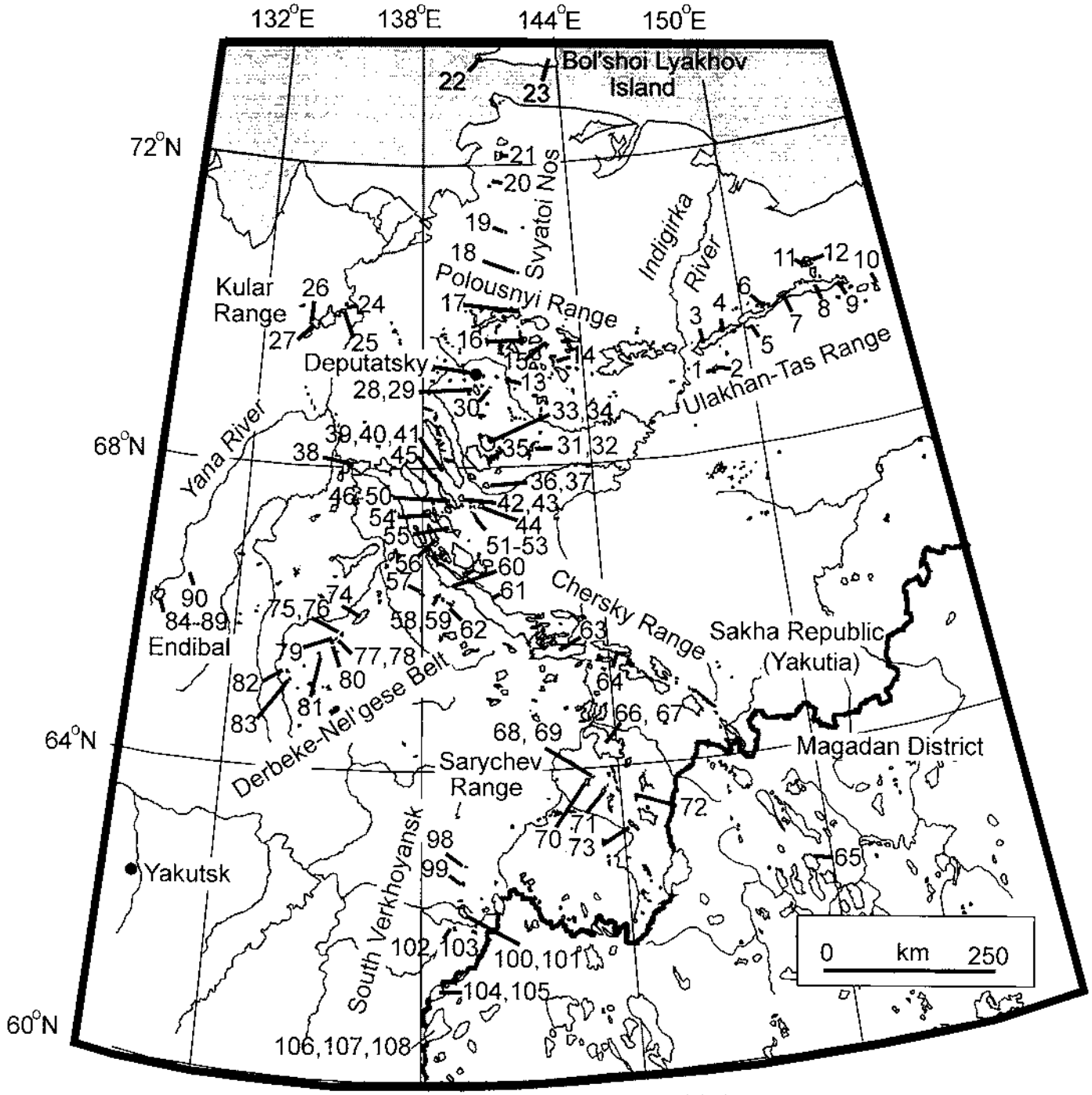
58	Chalba	3219	Granite	C	BI	137.2 ± 0.5	137.0 ± 0.5	12/8	99
					MU	134.8 ± 0.5	135.1 ± 0.5	10/8	98
59	Chalba	92PL01	Greisen	C	MU	134.7 ± 0.5	134.8 ± 0.5	11/8	100
60	Chibagalakh	3040	Granodiorite	C	BI	137.3 ± 0.5	138.0 ± 0.5	11/8	99
61	Chibagalakh	300-311	2-mica granite	C	BI	142.9 ± 0.5	143.3 ± 0.5	10/7	99
					MU	142.6 ± 0.5	142.7 ± 0.5	9/7	98
					KS	130.9 ± 0.5	131.6 ± 0.5	17/10	83
62	Khangassi	3152/6	Andesite	S	WR	131.0 ± .07	132.6 ± 0.6	8/4	87
63	Porozhnotsepin	V-1421	Biotite granite	S	BI	141.0 ± 0.5	142.7 ± 0.5	12/10	94
64	Volshebnik	205-N-85	Biotite granite	C	BI	139.8 ± 0.5	140.7 ± 0.7	7/6	86
		205-N-85	Biotite Granite		MU	141.8 ± 0.5	141.7 ± 0.5	11/8	99
65	Mayak	139/g-74	Granite	C	BI	140.1 ± 0.5	140.4 ± 0.5	11/10	95
	Sarychev Range								
66	Nel'kan	1000-2/b-89	Adamellite	S	BI	143.3 ± 0.5	144.8 ± 0.5	10/5	92
					BI	143.8 ± 0.4	144.5 ± 0.4	10/6	91
67		V-103	Granite	S	BI	141.2 ± 0.5	141.1 ± 0.5	13/8	88
68	Kurdat	1189/b-89	Granite	S	BI	139.9 ± 0.4	141.2 ± 0.4	11/9	98
69		1190/b-89	Granodiorite	S	BI	134.5 ± 0.4	136.7 ± 0.4	11/7	77
70	Yakutsk	1204/b-89	Adamellite	S	BI	144.0 ± 0.5	143.2 ± 0.6	11/8	97
71	Ergelyakh	1178-5/b-89	Granodiorite	S	BI	142.9 ± 0.4	142.9 ± 0.4	13/9	94
72	Kapriznii	1226-1/b-89	Quartz diorite	S	HO	152.1 ± 0.8	161.8 ± 0.8	10/5	72
73	Kuranakh-Salin	1263/b-89	Granodiorite	E	BI	86.1 ± 0.3	86.9 ± 1.3	11/9	98
	Derbeke-Nelgese								
74	Bezymyanni	T-56/100	Granodiorite	E	BI	129.6±0.9	131.1±0.9	11/7	84
75	Khatakchan	P-2072/2	Dike	E	WR	126.4±0.6	128.9±0.6	9/7	77
76	Khatakchan	P-2073/6	Granodiorite	E	BI	129.6±0.6	131.3±0.6	14/8	97
					BI	132.7±0.5	136.6±0.5	14/11	95
					HO	80.8±1.9	115.3±5.9	7/5	65
77	Tengkeli	P-2273/12	Diorite porph. dike	E		Not dated			
78	Tengkeli	P-2268/1	Granodiorite	E	BI	128.0±0.6	128.3±0.6	13/9	96
79	Galechnii Stock	P-2237/5	Granodiorite	E	BI	127.2±0.6	127.2±0.6	12/11	99
					BI	132.7±0.5	133.4±3.7	13/6	75
					HO	106.6±2.1	none	6/0	
80	Burgachan	7031/24	Granodiorite	E	BI	126.3±0.6	131.2±0.6	12/7	66
81	Sordong Stock	P-2157/33	Monzodiorite	E	BI	126.7±0.5	127.9±0.5	13/9	92
82	Kondekan Stock	P-2172/9	Granodiorite	E	BI	127.1±0.5	129.9±0.5	13/9	95
83	Bugdogar	404/15	Granite	E	BI	123.4±0.9	124.4±0.9	11/9	81
	Endibal								
84	Endibal	6019/11	Qtz. porphyry dike	E	MU	94.9 ± 0.4	94.9 ± 0.4	11/8	96
85	Endibal	2597	Granite porphyry dike	E	HO	95.6 + 0.8	96.0 ± 0.8	14/3	98
					BI	101.2 ± 0.8	101.2 ± 0.8	10/8	95
86	Endibal	6019/3	Granite porphyry dike	E	BI	97.3 ± 0.4	97.3 ± 0.4	10/8	96
87	Endibal	6073	Granodiorite porphyry dike	E	BI	98.7 ± 1.0	104.4 ± 1.0	10/8	87
88	Endibal	6135	Kersantite (lamprophyre) dike	E	BI	124.0 ± 0.6	124.8 ± 0.5	11/9	98

Map #	Name	Sample Number	Rock Type	Geo-chem	Min	Integrated age (Ma)	Plateau age (Ma)	Fractions total/plat.	Plateau %39Ar
89	Endibal	6145	Qtz. diorite dike	E	BI	121.2 ± 1.2	none		
90	Kus-Kyuel	6108	Qtz. diorite porphyry	E	BI	97.8 ± 0.6	97.8 ± 0.6	11/9	98
	Other Transverse Belts								
91	Arga-Innakh-Khai	127-N-80	Granodiorite	E	BI	128.0 ± 0.4	128.1 ± 0.4	12/10	99
92	Arga-Innakh-Khai	183/4-N-80	Alkali Granite	E	MU	120.8 ± 0.4	120.9 ± 0.4	11/10	100
93	Tirekhyakh	V-47	Granite	E	BI	133.3 ± 0.9	133.5 ± 0.9	12/11	100
94	Ust-Charkuin	438/b-84	Adamellite	S	BI	131.8 ± 0.5	132.9 ± 0.5	12/10	93
95	Ust-Charkuin	450/b-85	Adamellite	C	BI	133.6 ± 0.6	134.3 ± 0.6	13/12	92
					MU	135.6 ± 0.7	135.8 ± 0.7	10/7	91
96	Ust-Charkin	V-9	Granite	S	BI	132.0 ± 0.9	132.6 ± 0.9	12/10	95
97	Gargand'in	427/b-84	Granodiorite	?	BI	136.7 ± 0.7	137.7 ± 0.7	10/8	97
	South Verkhoyansk Belt								
98	Sup	1307/b-91	Qtz. diorite	E	BI	90.6 ± 0.5	92.3 ± 0.5	12/8	88
99	Dibin	1278/b-89	Granite	S	BI	120.5 ± 0.6	122.3 ± 0.4	11/8	94
100	Kurum	1266-1a/b89	Granite	E	BI	96.7 ± 0.4	99.1 ± 0.4	11/7	78
101	Kurum	1267/b-89	Granodiorite	E	BI	91.7 ± 0.3	92.9 ± 0.3	11/6	82
102	Gel'din	1273-2/b89	Qtz. diorite	E	BI	95.1 ± 0.4	95.8 ± 0.4	12/8	87
103	Gel'din	1274-2/b-89	Diorite	E	BI	92.1 ± 0.6	92.9 ± 0.3	11/8	98
104	Darlerchan	188/b-64	Granite	E	BI	105.4 ± 0.5	106.4 ± 0.5	11/7	78
105	Darlerchan	191-1/b-64	Granite	E	BI	107.3 ± 0.4	107.0 ± 0.4	11/10	99
106	Uemlliyakh	115/b-64	Granodiorite	S	BI	119.9 ± 0.4	121.3 ± 0.4	12/9	85
107	Uemlliyakh	170/b-64	Granodiorite	S	BI	123.1 ± 0.4	123.3 ± 0.4	13/8	95
					KS	114.5 ± 0.4	114.4 ± 0.4	15/10	95
					HO	122.9 ± 0.6	122.7 ± 0.5	13/8	99
108	Uemlliyakh	96/b-64	Qtz. diorite	S	BI	126.3 ± 1.0	127.0 ± 0.9	11/6	78
					BI	126.5 ± 0.4	128.6 ± 0.4	11/9	93

Samples run against standard Mmhb-1 with an age of 513.9 Ma and processed by using the standards of Steiger and Jäger (1977). All errors are $\pm 1\sigma$.

BI: Biotite, HO: Hornblende, MU: Muscovite, WR: Whole Rock, KS: potassium feldspar. Geochemical identification based on trace element diagrams (Pearce et al., 1984) S: Subduction-related, E: Extension-related, C: collision-related, ? not analysed.



40Ar/39Ar sample locations