

Table S6: Results of apatite (U-Th-Sm)/He analyses

Name	U (ppm)	Th (ppm)	Sm (ppm)	He (ncc)	Mass (mg)	Ft ¹	Radius (µm)	Length (µm)	Uncorrected Age (Ma)	Corrected Age (Ma)	Age Error (Ma) ²	Sample Age (Ma)	Error (Ma) ³
<u>SVANETI</u>													
CT15004Ba	12.7	1.1	104.2	0.031	0.00384	0.79	62.5	121.9	4.80	6.04	0.09	5.79	0.56
CT15004Bc	49.1	3.9	241.3	0.104	0.00483	0.81	66.9	133.8	3.46	4.28	0.05		
CT15004Bd	34.2	0.2	229.3	0.278	0.01309	0.86	85.3	223.5	5.05	5.91	0.07		
CT15004Be	37.6	2.1	145.4	0.143	0.00545	0.81	62.5	173.2	5.60	6.96	0.08		
C16034Ba	2.5	6.9	37.1	0.014	0.00118	0.70	41.1	87.0	19.7	28.23	0.31	45.73	20.89*
C16034Bb	15.7	4.8	166.0	0.112	0.00165	0.73	46.4	95.4	32.5	44.54	0.45		
C16034Bc	8.0	12.8	82.3	0.051	0.00228	0.75	48.6	120.1	15.9	21.31	0.20		
C16034Bd	1.0	10.7	30.8	0.181	0.00413	0.80	62.3	132.1	100.4	125.99	1.11		
C16034Be	27.1	67.8	225.5	0.130	0.00360	0.79	59.4	126.8	6.8	8.59	0.07		
C16014Bb	16.4	1.1	75.3	0.021	0.00419	0.78	54.6	174.9	2.2	2.78	0.04	3.19	0.34
C16014Bc	26.5	1.6	130.7	0.022	0.00277	0.75	47.1	155.5	2.2	2.92	0.03		
C16014Bd	15.5	0.6	33.4	0.042	0.00653	0.83	79.7	127.6	3.2	3.85	0.05		
<u>KAZBEGI</u>													
V16046Db	33.4	50.0	350.1	0.021	0.00248	0.72	40.4	188.6	1.41	1.96	0.03	2.16	0.13
V16046Dc	21.7	23.5	198.0	0.017	0.00290	0.75	47.9	156.8	1.49	1.98	0.03		
V16046Dd	15.7	22.3	175.8	0.015	0.00263	0.77	55.4	106.5	1.93	2.51	0.04		
V16046De	64.4	94.0	578.3	0.034	0.00186	0.74	48.6	97.9	1.62	2.18	0.02		
V16052Bc	10.8	20.6	141.9	0.013	0.00227	0.76	56.3	88.8	2.56	3.35	0.05	2.86	0.34
V16052Be	14.3	28.2	212.9	0.012	0.00159	0.72	44.0	102.0	2.54	3.53	0.05		
V16052Bg	17.9	39.4	250.9	0.014	0.00210	0.74	45.7	125.0	1.75	2.38	0.03		
V16052Bh	24.5	54.1	309.9	0.014	0.00166	0.73	46.4	95.9	1.61	2.20	0.03		
<u>AVDEEV (2011)</u>													
AB0909a	32.2	0.6	165.3	0.208	0.01044	0.85	90.5	158.1	5.01	5.87	0.07	6.23	0.53
AB0909b	14.6	0.3	149.2	0.106	0.00404	0.80	63.8	123.2	14.28	17.87†	0.21		
AB0909c	20.6	0.5	177.9	0.037	0.00258	0.74	45.7	153.3	5.40	7.27	0.08		
AB0909e	21.9	0.5	146.9	0.047	0.00381	0.80	64.8	112.7	4.43	5.55	0.06		
AB0938b	41.0	46.9	296.7	0.031	0.00277	0.77	56.1	109.3	2.70	3.50	0.04	3.17	0.46
AB0938c	36.6	30.2	271.3	0.027	0.00441	0.80	66.3	124.4	1.62	2.01	0.02		
AB0938d	23.8	43.1	361.0	0.028	0.00219	0.73	42.9	147.9	2.49	3.42	0.03		
AB0938e	49.6	56.0	321.7	0.040	0.00484	0.82	80.7	92.2	2.24	2.73	0.03		
AB0938f	32.2	31.5	230.7	0.011	0.00205	0.75	52.0	94.1	1.70	2.27	0.03		
AB0938g	32.7	24.5	217.1	0.043	0.00372	0.79	62.2	119.5	4.04	5.09	0.05		

1. Ft is alpha-ejection correction after Farley et al. (1996)

2. Analytical uncertainty of individual grain ages reported at 1σ.

3. Sample age error reported as 1 standard error on individual grain age replicates.

* = Standard error on replicate grain ages exceeds 25%.

† = Grain determined to be an outlier based on Q-test (Dean and Dixon, 1956). Not considered in mean age of sample or further analysis.