

Two-Stage Late Jurassic to Early Cretaceous Hydrothermal Activity in the Sakar Unit of Southeastern Bulgaria

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Table S1. EMPA patterns, crystals, and reference materials.

Amphibole						
Spectrometer	Elements and Analytical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	F K α	TAP	71284		-800	800
Sp3	Na K α	TAP	46373		-800	800
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp2	Fe K α	LIF	48083			950
Sp3	Si K α	TAP	27737			750
Sp2	Mn K α	LIF	52194			600
Sp1	Ca K α	PET	38388			700
Sp1	Cr K α	PET	26177		-600	600
Sp1	Ti K α	PET	31414			600
Sp4	K K α	LPET	42770			600
Sp4	Cl K α	LPET	54069		-550	850
Sp2	Zn K α	LIF	35654			600

Table S1. *Cont.*

Ilmenite						
Spectrometer	Elements and Analitical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	Ti K α K α	PET	31414			600
Sp2	Fe K α	LIF	48083			950
Sp2	Mn K α	LIF	52199			600
Sp2	V K α	LIF	62173		-500	500
Sp1	Nb K α	PET	65420		-1100	800
Sp4	Sc K α	LPET	34634		-900	1100
Sp4	Ca K α	LPET	38389			700
Sp4	Sn K α	LPET	41143		-650	500
Sp4	Zr K α	LPET	69419		-900	800
Sp2	Zn K α	LIF	35654			600
Sp1	Cr K α	PET	26177		-600	600
Feldspar						
Spectrometer	Elements and Analitical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	Na K α	TAP	46373		-800	800
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	Ca K α	PET	38388			700
Sp1	K K α	PET	42762			600
Sp2	Fe K α	LIF	48083			950
Sp2	Mn K α	LIF	52199			600
Sp4	Sr K α	LPET	78494		-800	500
Sp4	Ba K α	LPET	31695		-500	500
Apatite						
Spectrometer	Elements and Analitical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	F K α	TAP	71290		-250	300
Sp3	Na K α	TAP	46373		-800	800
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	P K α	PET	70356		-800	1150
Sp1	Ca K α	PET	38388			700
Sp1	K K α	PET	42762			600
Sp1	Cl K α	PET	54033		-550	400
Sp1	S K α	PET	61378		-600	600
Sp2	Mn K α	LIF	52199			600
Sp2	Fe K α	LIF	48083			950
Sp4	Ce K α	LPET	29232		-350	400
Sp4	La K α	LPET	30424		-500	500
Sp4	Ba K α	LPET	31695		-500	500
Sp4	Sr K α	LPET	78498		-800	500

Table S1. *Cont.*

Chlorite						
Spectrometer	Elements and Analytical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	Na K α	TAP	46373		-800	800
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	K K α	PET	42762			600
Sp1	Ca K α	PET	38388			700
Sp2	Fe K α	LIF	48083			950
Sp2	Mn K α	LIF	52194			600
Sp4	Cr K β	LPET	23756		-500	500
Sp1	Ti K α	PET	31414			600
Rutile						
Spectrometer	Elements and Analytical Line	Position	Bg+	Bg-	Slope	Bias
Sp1	Ti K α	PET	31414			600
Sp2	Mn K α	LIF	52199			600
Sp2	Fe K α	LIF	48083			950
Sp4	Zr K α	LPET	69419		-900	800
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	Ca K α	PET	38388			700
Sp1	Nb K α	PET	65420		-1100	800
Sp2	V K α	LIF	62173		-500	
Sp4	Cr K β	LPET	23756		-500	500
Titanite						
Spectrometer	Elements and Analytical Line	Position	Bg+	Bg-	Slope	Bias
Sp3	F K α	TAP	71284		-800	800
Sp3	Na K α	TAP	46373		-800	800
Sp3	Mg K α	TAP	38516		-1100	1100
Sp3	Al K α	TAP	32476			800
Sp3	Si K α	TAP	27737			750
Sp1	Ca K α	PET	38388			700
Sp1	Ti K α	PET	31414			600
Sp2	Fe K α	LIF	48083			950
Sp4	Zr L α	LPET	69419		-900	800
Sp4	Nb L α	LPET	65457		-1000	800
Sp3	Y L α	TAP	25077		-480	650
Sp4	Cr K β	LPET	23756		-500	500
Sp2	Mn K α	LIF	52194			600
Sp2	V K α	LIF	62173		-500	500

Table S4. Representative electron microprobe analyses (EMPA) of chlorites and number of a.p.f.u. calculated on the basis of 12 O²⁻ of the investigated sample from the Kanarata quarry, Bulgaria.

Compound	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SiO ₂ (wt%)	28.16	28.52	28.76	28.18	28.49	28.28	28.72	28.25	28.17	28.61	27.97	28.86	28.79	28.37	30.31	28.87
TiO ₂	b.d.l.	0.05	0.04	0.04	0.13	0.06	0.08	0.05	0.03	0.12	0.06	b.d.l.	0.08	0.06	0.08	b.d.l.
Al ₂ O ₃	21.10	20.53	20.02	20.52	20.63	20.72	20.68	20.84	20.44	20.38	20.75	20.14	20.85	20.09	19.45	20.51
FeO	12.64	12.70	13.44	13.21	12.48	13.16	12.82	12.53	13.25	12.85	12.48	13.60	12.66	12.76	12.10	12.60
MnO	0.17	0.25	0.25	0.19	0.16	0.18	0.12	0.15	0.24	0.19	0.16	0.20	0.11	0.12	0.28	0.22
MgO	24.20	24.09	23.50	23.51	24.16	24.36	24.20	24.23	23.61	24.16	23.84	23.42	24.00	23.88	22.10	23.89
H ₂ O	12.034	12.021	11.953	11.907	12.015	12.059	12.114	12.004	11.915	12.03	11.9	12.002	12.083	11.906	11.892	12.033
Total	98.30	98.16	97.96	97.57	98.07	98.82	98.73	98.04	97.66	98.34	97.16	98.22	98.57	97.18	96.20	98.13
Si (a.p.f.u.)	5.61	5.68	5.76	5.67	5.51	5.62	5.69	5.63	5.66	5.69	5.63	5.76	5.70	5.71	6.08	5.53
Al iv	2.39	2.32	2.24	2.33	2.49	2.38	2.31	2.37	2.34	2.31	2.37	2.24	2.30	2.29	1.92	2.47
Al vi	2.57	2.52	2.50	2.54	1.87	2.48	2.53	2.54	2.52	2.49	2.56	2.52	2.58	2.49	2.72	1.90
Ti	-	0.01	0.01	0.01	0.02	0.01	0.01	0.01	-	0.02	0.01	-	0.01	0.01	0.01	-
Fe ³⁺	0.09	0.12	0.15	0.12	0.00	0.06	0.13	0.11	0.10	0.12	0.12	0.16	0.17	0.13	0.46	0.00
Fe ²⁺	2.01	2.00	2.10	2.10	2.53	2.12	1.99	1.98	2.12	2.02	1.99	2.11	1.93	2.02	1.57	2.56
Mn	0.03	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.04	0.03	0.03	0.03	0.02	0.02	0.05	0.04
Mg	7.18	7.16	7.01	7.05	7.90	7.22	7.15	7.20	7.08	7.17	7.15	6.97	7.08	7.17	6.61	7.84
OH	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
T ₁	324	311	299	314	340	321	310	319	314	309	320	298	309	306	247	336
T ₂	313	300	288	303	329	311	300	309	304	299	309	288	298	296	237	326
T ₃	289	285	282	286	294	288	285	288	286	285	288	281	284	284	266	293

Table S5. Representative LA-ICP-MS U–Pb apatite and titanite data from the Kanarata quarry, Bulgaria.

APATITE																		
Sample/spot#	²⁰⁷ Pb/ ²³⁵ Pb	±2σ	²⁰⁶ Pb/ ²³⁵ U	±2σ	q	²³⁸ U/ ²⁰⁶ Pb	±2σ	²⁰⁷ Pb/ ²⁰⁶ Pb	±2σ	q	²⁰⁶ Pb/ ²³⁸ U age	±2σ Ma	²⁰⁷ Pb/ ²³⁵ U age	±2σ Ma	²⁰⁷ Pb/ ²⁰⁶ Pb age	±2σ Ma	²⁰⁷ Pb age	±2σ Ma
BULG1_1	19.53	0.94	0.207	0.007	0.437	4.82	0.17	0.69	0.03	0.40443	1214.42	43.35	3068.37	147.7	4700	233.3	275	56.6
BULG1_2	20.53	0.99	0.216	0.010	0.331	4.64	0.21	0.70	0.04	0.48588	1259.11	56.62	3116.66	150.3	4727	250.6	263	64.2
BULG1_3	20.17	0.93	0.210	0.007	0.150	4.76	0.16	0.70	0.04	0.67972	1228.82	40.96	3099.54	142.9	4729	270.6	254	66.9
BULG1_4	10.25	0.51	0.119	0.005	0.249	8.44	0.35	0.63	0.04	0.44895	721.92	29.85	2457.60	122.3	4581	283.1	205	37.7
BULG1_5	7.47	0.26	0.093	0.004	-0.229	10.71	0.45	0.57	0.03	0.8144	575.61	24.04	2169.40	75.5	4431	264.8	208	26.7
BULG1_6	5.02	0.20	0.066	0.002	0.332	15.13	0.50	0.55	0.02	0.57336	412.62	13.73	1822.70	72.6	4376	175.7	157	12.9
BULG1_7	4.06	0.20	0.060	0.002	0.301	16.75	0.51	0.50	0.03	0.44635	373.80	11.27	1646.31	81.1	4229	230.2	167	13.9
BULG1_8	3.65	0.15	0.056	0.002	0.213	17.76	0.66	0.47	0.02	0.47842	353.08	13.17	1560.51	64.1	4143	212.5	170	12.6
BULG1_9	3.77	0.14	0.056	0.002	-0.179	18.02	0.58	0.49	0.02	0.7188	348.20	11.29	1586.38	58.9	4208	197.9	158	11.5
BULG1_10	3.99	0.15	0.062	0.002	-0.033	16.26	0.53	0.47	0.03	0.68576	384.74	12.51	1632.16	61.4	4150	229.6	185	14.1
BULG1_11	4.04	0.21	0.059	0.002	0.102	16.84	0.57	0.49	0.03	0.43165	371.98	12.52	1642.29	85.4	4205	258.5	170	15.4
BULG1_12	4.11	0.16	0.061	0.002	0.454	16.45	0.62	0.49	0.02	0.55105	380.49	14.39	1656.29	64.5	4208	154.9	174	11.1
BULG1_13	3.84	0.16	0.060	0.002	0.378	16.69	0.61	0.46	0.02	0.5105	375.02	13.77	1601.17	66.7	4118	188.0	185	12.2
BULG1_14	4.01	0.13	0.059	0.002	0.284	16.86	0.51	0.50	0.02	0.3962	371.37	11.27	1636.22	53.0	4235	144.6	165	9.7
BULG1_15	4.20	0.19	0.060	0.002	0.302	16.64	0.50	0.51	0.03	0.48537	376.23	11.27	1674.02	75.7	4256	219.1	164	13.5
BULG1_16	3.94	0.15	0.057	0.002	0.196	17.48	0.58	0.49	0.03	0.57158	358.57	11.91	1621.94	61.7	4211	214.9	163	12.7
BULG1_17	3.89	0.22	0.059	0.003	0.755	16.84	0.74	0.48	0.03	0.42891	371.98	16.28	1611.61	91.1	4181	252.6	174	15.7
BULG1_18	3.95	0.16	0.061	0.002	0.583	16.47	0.60	0.47	0.02	0.27791	379.88	13.77	1623.99	65.8	4162	158.1	181	11.0
BULG1_19	4.23	0.18	0.062	0.002	0.056	16.21	0.50	0.49	0.03	0.66017	385.96	11.89	1679.86	71.5	4223	230.8	174	14.4
BULG1_20	4.18	0.15	0.062	0.002	0.009	16.26	0.63	0.49	0.02	0.73633	384.74	15.01	1670.11	59.9	4208	197.9	176	13.3
BULG1_21	4.47	0.18	0.066	0.002	0.125	15.17	0.44	0.49	0.02	0.45684	411.41	11.86	1725.42	69.5	4214	180.2	187	12.4
BULG1_22	4.76	0.20	0.066	0.003	0.221	15.08	0.61	0.51	0.02	0.60773	413.83	16.85	1777.87	74.7	4259	176.7	180	13.4
BULG1_23	5.35	0.20	0.070	0.003	-0.067	14.22	0.67	0.55	0.03	0.79772	437.96	20.56	1876.89	70.2	4373	271.8	168	20.7
BULG1_24	6.02	0.22	0.078	0.003	0.022	12.79	0.49	0.56	0.04	0.71474	485.37	18.62	1978.74	72.3	4405	283.7	180	23.5
BULG1_25	17.00	1.10	0.190	0.009	0.402	5.25	0.24	0.66	0.05	0.53306	1123.54	50.75	2934.83	189.9	4648	323.5	290	69.7
BULG1_26	3.97	0.19	0.058	0.002	-0.015	17.18	0.53	0.49	0.03	0.51798	364.67	11.28	1628.09	77.9	4205	215.4	167	12.8
BULG1_27	3.92	0.11	0.059	0.002	0.186	16.95	0.57	0.48	0.02	0.66715	369.54	12.53	1617.82	45.4	4175	183.4	174	11.6
BULG1_28	4.04	0.17	0.059	0.002	0.612	16.92	0.43	0.49	0.02	0.34795	370.15	9.39	1642.29	69.1	4223	179.5	166	10.9
BULG1_29	4.14	0.23	0.058	0.002	0.563	17.12	0.67	0.51	0.03	0.3898	365.89	14.41	1662.24	92.3	4259	218.8	159	13.7
BULG1_30	4.12	0.22	0.060	0.002	0.279	16.69	0.59	0.49	0.02	0.3724	375.02	13.15	1658.28	88.5	4199	198.7	172	12.6
BULG1_31	4.28	0.17	0.062	0.002	0.286	16.10	0.54	0.50	0.02	0.53212	388.38	13.13	1689.52	67.1	4232	195.9	173	12.9
BULG1_32	4.07	0.18	0.061	0.002	0.566	16.39	0.56	0.49	0.02	0.42131	381.70	13.14	1648.31	72.9	4202	207.1	175	13.2
BULG1_33	4.17	0.19	0.063	0.002	0.066	15.85	0.53	0.49	0.03	0.47942	394.45	13.13	1668.15	76.0	4211	223.5	180	14.4
BULG1_34	4.21	0.20	0.058	0.001	0.452	17.15	0.41	0.52	0.02	0.17415	365.28	8.77	1675.97	79.6	4293	174.1	153	10.6
BULG1_35	4.30	0.19	0.061	0.002	0.345	16.42	0.51	0.52	0.02	0.31212	381.10	11.89	1693.36	74.8	4307	181.2	157	11.9
BULG1_36	4.18	0.20	0.059	0.002	0.429	16.84	0.45	0.50	0.02	0.18973	371.98	10.02	1670.11	79.9	4253	177.2	162	11.0

Table S5. Cont.

APATITE																			
Sample/spot#	²⁰⁷ Pb/ ²³⁵ Pb	±2σ	²⁰⁶ Pb/ ²³⁵ U	±2σ	ρ	²³⁸ U/ ²⁰⁶ Pb	±2σ	²⁰⁷ Pb/ ²⁰⁶ Pb	±2σ	ρ	²⁰⁶ Pb/ ²³⁸ U age	±2σ Ma	²⁰⁷ Pb/ ²³⁵ U age	±2σ Ma	²⁰⁷ Pb/ ²⁰⁶ Pb age	±2σ Ma	²⁰⁷ Pb age	±2σ Ma	
BULG1_37	3.89		0.19	0.059	0.002	0.367	17.01	0.64	0.48	0.02	0.44589	368.32	13.78	1611.61	78.7	4178	209.3	173	13.0
BULG1_38	4.25	0.16	0.062	0.002	0.114	16.21	0.47	0.50	0.02	0.68851	385.96	11.26	1683.74	63.4	4244	194.8	170	12.5	
BULG1_39	4.15	0.17	0.060	0.001	0.231	16.69	0.31	0.49	0.02	0.33923	375.02	6.89	1664.21	68.2	4202	189.8	172	11.1	
BULG1_40	3.97	0.17	0.059	0.002	0.432	17.06	0.61	0.49	0.02	0.55994	367.11	13.16	1628.09	69.7	4208	197.9	167	12.4	
BULG1_41	4.00	0.17	0.060	0.002	0.279	16.56	0.44	0.48	0.02	0.58991	378.06	10.01	1634.20	69.5	4190	208.2	175	12.5	
BULG1_42	3.83	0.11	0.057	0.002	0.068	17.57	0.53	0.49	0.02	0.65784	356.75	10.66	1599.07	45.9	4205	155.1	163	9.7	
BULG1_43	3.74	0.13	0.058	0.002	0.643	17.24	0.71	0.47	0.02	0.41305	363.45	15.04	1579.97	54.9	4140	168.4	176	11.5	
BULG1_44	3.85	0.18	0.058	0.001	0.162	17.12	0.38	0.48	0.02	0.2872	365.89	8.14	1603.27	75.0	4184	200.1	170	11.5	
BULG1_45	3.89	0.18	0.057	0.002	0.198	17.61	0.56	0.49	0.02	0.43364	356.14	11.29	1611.61	74.6	4214	206.0	161	12.1	
BULG1_46	3.80	0.21	0.059	0.002	0.445	16.84	0.57	0.46	0.02	0.12612	371.98	12.52	1592.75	88.0	4115	170.3	184	11.0	
BULG1_47	3.84	0.19	0.057	0.002	0.642	17.64	0.65	0.48	0.02	0.34583	355.53	13.17	1601.17	79.2	4190	173.5	165	11.0	
BULG1_48	3.65	0.13	0.058	0.002	0.376	17.18	0.68	0.45	0.02	0.60115	364.67	14.41	1560.51	55.6	4098	180.5	182	11.8	
BULG1_49	3.70	0.16	0.058	0.002	0.237	17.15	0.53	0.48	0.02	0.42235	365.28	11.28	1571.37	68.0	4178	174.4	171	10.8	
TITANITE																			
Sample/Spot	²⁰⁷ Pb/ ²³⁵ Pb	±2σ	²⁰⁶ Pb/ ²³⁵ U	±2σ	ρ	²³⁸ U/ ²⁰⁶ Pb	±2σ	²⁰⁷ Pb/ ²⁰⁶ Pb	±2σ	ρ	²⁰⁶ Pb/ ²³⁸ U age	±2σ Ma	²⁰⁷ Pb/ ²³⁵ U age	±2σ Ma	²⁰⁷ Pb/ ²⁰⁶ Pb age	±2σ Ma	²⁰⁷ Pb age	±2σ Ma	
BULGtnt_01	2.51	0.10	0.04	0.001	0.14	23.47	0.72	0.42	0.019	0.38	268.93	8.21	1276.09	49.7	3993	179.4	144	7.9	
BULGtnt_02	2.05	0.14	0.04	0.001	0.26	26.67	1.00	0.40	0.034	0.43	237.32	8.86	1132.30	77.3	3909	332.3	134	11.4	
BULGtnt_03	2.45	0.69	0.04	0.005	0.14	23.98	2.93	0.37	0.028	-0.11	263.36	32.21	1257.42	354.1	3791	286.9	159	21.4	
BULGtnt_04	2.21	0.14	0.04	0.001	0.28	25.58	0.78	0.41	0.022	-0.17	247.25	7.59	1184.21	75.0	3928	213.4	138	8.1	
BULGtnt_05	2.07	0.08	0.04	0.001	0.56	26.95	0.94	0.41	0.021	0.45	234.83	8.23	1139.59	41.8	3931	203.4	130	7.8	
BULGtnt_06	1.97	0.07	0.04	0.002	0.05	26.60	1.13	0.38	0.018	0.59	237.94	10.13	1103.60	37.6	3828	181.8	140	8.1	
BULGtnt_07	1.97	0.11	0.04	0.002	0.31	26.67	1.07	0.38	0.022	-0.30	237.32	9.49	1105.31	61.7	3832	221.8	140	8.7	
BULGtnt_08	0.25	0.01	0.02	0.000	0.42	51.55	1.01	0.09	0.002	0.17	123.86	2.43	223.57	7.1	1482	33.6	117	2.3	
BULGtnt_09	0.25	0.01	0.02	0.000	0.45	51.73	1.02	0.09	0.002	0.40	123.42	2.43	225.68	6.1	1474	35.1	117	2.3	
BULGtnt_10	0.25	0.01	0.02	0.000	0.30	52.52	0.91	0.09	0.004	-0.22	121.59	2.11	223.65	5.6	1506	57.7	115	2.1	
BULGtnt_11	0.24	0.01	0.02	0.000	-0.10	51.81	0.91	0.09	0.003	0.25	123.23	2.17	220.22	7.5	1442	44.5	117	2.1	
BULGtnt_12	0.25	0.01	0.02	0.000	0.63	51.79	0.80	0.09	0.002	0.05	123.29	1.92	225.19	5.8	1482	27.2	116	1.8	
BULGtnt_13	0.27	0.04	0.02	0.000	0.21	51.60	0.96	0.10	0.010	-0.23	123.74	2.30	242.69	36.9	1605	162.2	116	2.6	
BULGtnt_14	0.25	0.01	0.02	0.000	0.46	51.47	0.69	0.09	0.003	-0.21	124.05	1.66	223.65	6.3	1469	41.5	117	1.6	
BULGtnt_15	0.24	0.01	0.02	0.000	0.51	52.91	1.15	0.09	0.003	0.05	120.70	2.62	218.42	9.1	1463	52.6	114	2.5	
BULGtnt_16	0.25	0.01	0.02	0.001	0.49	52.19	1.58	0.10	0.004	0.25	122.34	3.70	227.39	10.0	1532	57.9	115	3.5	
BULGtnt_17	0.21	0.01	0.02	0.000	-0.01	53.45	0.86	0.08	0.002	0.05	119.50	1.92	193.80	5.8	1229	36.3	115	1.9	
BULGtnt_18	0.21	0.01	0.02	0.000	-0.11	53.76	1.07	0.08	0.003	0.34	118.80	2.36	196.74	5.8	1286	39.9	114	2.3	
BULGtnt_19	0.21	0.01	0.02	0.000	0.39	53.73	0.75	0.08	0.002	-0.34	118.87	1.66	196.99	5.5	1262	32.0	114	1.6	
BULGtnt_20	0.21	0.01	0.02	0.000	0.14	53.45	1.00	0.08	0.002	-0.13	119.50	2.24	197.24	7.0	1272	35.2	114	2.2	
BULGtnt_21	0.21	0.01	0.02	0.000	0.62	53.19	0.93	0.08	0.002	0.01	120.07	2.11	192.97	5.4	1204	30.0	115	2.0	
BULGtnt_22	1.90	0.08	0.04	0.001	-0.01	27.32	0.90	0.38	0.022	0.40	231.72	7.60	1082.49	42.6	3812	223.6	138	7.9	
BULGtnt_23	1.79	0.14	0.04	0.002	0.34	28.17	1.19	0.37	0.030	0.02	224.88	9.50	1041.83	81.5	3804	305.9	134	10.2	

Table S5. *Cont.*

TITANITE																			
Sample/Spot	²⁰⁷ Pb/ ²³⁵ Pb	±2σ	²⁰⁶ Pb/ ²³⁵ U	±2σ	q	²³⁸ U/ ²⁰⁶ Pb	±2σ	²⁰⁷ Pb/ ²⁰⁶ Pb	±2σ	q	²⁰⁶ Pb/ ²³⁸ U age	±2σ Ma	²⁰⁷ Pb/ ²³⁵ U age	±2σ Ma	²⁰⁷ Pb/ ²⁰⁶ Pb age	±2σ Ma	²⁰⁷ Pb age	±2σ Ma	
BULGtnt_24	1.82	0.07	0.04	0.002	0.03	26.74		1.29	0.36	0.019	0.70	236.70	11.39	1053.05	41.6	3729	199.6	147	9.1
BULGtnt_25	1.95	0.10	0.04	0.001	0.39	26.82		0.64	0.38	0.021	0.10	236.01	5.63	1099.82	55.2	3816	213.1	140	7.1
BULGtnt_26	1.79	0.07	0.04	0.002	-0.01	27.70		1.30	0.36	0.023	0.29	228.61	10.77	1042.55	42.5	3746	240.0	140	9.4
BULGtnt_27	2.01	0.16	0.05	0.013	0.21	21.28		5.89	0.37	0.026	0.60	296.08	81.89	1118.89	89.1	3808	264.7	177	49.6
BULGtnt_28	1.95	0.18	0.04	0.001	-0.06	26.74		0.79	0.38	0.040	0.05	236.70	6.96	1098.45	101.4	3836	402.7	139	12.6
BULGtnt_29	2.30	0.09	0.04	0.001	0.03	24.10		0.64	0.41	0.017	0.08	262.12	6.95	1211.98	44.8	3935	164.4	146	6.9
BULGtnt_30	2.20	0.12	0.04	0.002	-0.14	24.69		1.04	0.40	0.029	0.67	255.93	10.74	1181.04	64.4	3920	282.1	143	11.1
BULGtnt_31	2.11	0.15	0.04	0.002	0.04	25.25		1.40	0.39	0.034	0.27	250.35	13.91	1152.08	81.9	3875	336.9	144	13.4
BULGtnt_32	2.09	0.08	0.04	0.001	-0.13	25.64		0.72	0.39	0.022	0.46	246.63	6.96	1143.88	43.9	3852	220.1	144	8.0
BULGtnt_33	2.28	0.15	0.04	0.002	0.00	24.75		0.92	0.41	0.033	0.15	255.31	9.48	1206.12	79.3	3931	319.6	142	11.9
BULGtnt_34	2.28	0.20	0.04	0.002	-0.05	24.39		1.37	0.39	0.024	0.24	259.03	14.53	1206.12	105.8	3883	237.1	148	11.4
BULGtnt_35	2.05	0.09	0.04	0.002	0.20	25.71		0.99	0.38	0.020	0.80	246.01	9.49	1132.96	47.5	3848	200.4	144	8.3
BULGtnt_36	1.69	0.13	0.03	0.001	-0.21	29.41		1.04	0.36	0.031	0.26	215.53	7.61	1004.76	77.3	3741	324.0	133	9.6
BULGtnt_37	0.28	0.07	0.02	0.000	1.00	51.71		1.04	0.09	0.004	-0.05	123.48	2.49	249.07	58.2	1474	57.5	117	2.4
BULGtnt_38	0.27	0.05	0.02	0.000	0.46	51.05		0.94	0.10	0.017	-0.40	125.06	2.30	241.89	45.0	1605	275.7	117	3.4
BULGtnt_39	0.24	0.01	0.02	0.000	0.15	52.25		0.74	0.09	0.003	0.01	122.22	1.72	217.52	7.3	1436	39.7	116	1.7
BULGtnt_40	0.23	0.01	0.02	0.000	0.38	52.03		0.70	0.09	0.002	-0.02	122.72	1.66	209.37	5.9	1338	32.7	117	1.6
BULGtnt_41	0.25	0.02	0.02	0.000	0.20	52.08		0.92	0.10	0.006	-0.16	122.60	2.17	228.20	15.4	1530	99.8	115	2.2
BULGtnt_42	0.25	0.01	0.02	0.000	0.02	51.47		1.14	0.09	0.004	0.02	124.05	2.75	227.23	8.9	1498	67.3	117	2.7
BULGtnt_43	0.24	0.02	0.02	0.000	0.58	52.36		0.96	0.09	0.005	-0.54	121.97	2.23	219.24	13.6	1465	81.3	115	2.2
BULGtnt_44	0.25	0.02	0.02	0.001	0.01	52.00		1.57	0.09	0.006	-0.02	122.79	3.70	229.01	13.6	1526	96.5	116	3.6
BULGtnt_45	0.24	0.01	0.02	0.000	0.47	51.65		0.99	0.09	0.002	0.15	123.61	2.36	219.65	5.5	1426	30.1	117	2.2
BULGtnt_46	0.24	0.01	0.02	0.001	0.62	52.77		1.62	0.09	0.002	0.40	121.02	3.70	219.08	6.4	1467	36.7	114	3.5
BULGtnt_47	0.25	0.01	0.02	0.000	0.16	52.38		0.71	0.09	0.003	0.06	121.90	1.66	223.00	7.2	1494	48.0	115	1.6
BULGtnt_48	0.17	0.00	0.02	0.000	-0.01	54.61		0.98	0.07	0.002	0.21	116.97	2.11	163.32	3.7	881	25.8	114	2.1
BULGtnt_49	0.18	0.01	0.02	0.000	0.02	54.35		0.77	0.07	0.004	0.08	117.54	1.66	164.01	8.7	838	50.0	115	1.7
BULGtnt_50	0.17	0.00	0.02	0.000	0.43	53.79		0.64	0.06	0.002	-0.01	118.74	1.41	155.33	3.9	755	18.8	116	1.4
BULGtnt_51	0.17	0.00	0.02	0.000	0.07	53.91		0.70	0.06	0.001	-0.04	118.49	1.53	156.20	4.0	771	16.6	116	1.5
BULGtnt_52	0.17	0.01	0.02	0.000	-0.05	53.97		0.93	0.07	0.005	0.05	118.36	2.04	158.55	12.2	790	59.1	116	2.1
BULGtnt_53	0.16	0.00	0.02	0.000	0.45	55.34		0.77	0.07	0.002	-0.32	115.45	1.60	154.46	3.9	806	19.5	113	1.6
BULGtnt_54	0.18	0.01	0.02	0.000	-0.24	54.05		0.58	0.07	0.002	0.29	118.17	1.28	168.66	4.7	940	26.7	115	1.3
BULGtnt_55	0.18	0.01	0.02	0.000	0.00	54.29		0.85	0.07	0.002	0.00	117.66	1.85	168.06	4.7	928	30.5	114	1.8
BULGtnt_56	0.18	0.00	0.02	0.000	0.21	54.79		0.72	0.07	0.001	0.50	116.59	1.53	166.94	3.1	943	16.1	113	1.5
BULGtnt_57	0.18	0.00	0.02	0.000	0.99	54.05		0.56	0.07	0.001	-0.93	118.17	1.21	169.78	3.3	969	19.0	115	1.2
BULGtnt_58	0.19	0.01	0.02	0.000	0.37	54.29		0.77	0.07	0.003	-0.09	117.66	1.66	174.58	6.6	1063	45.5	114	1.7
BULGtnt_59	0.19	0.01	0.02	0.000	-0.01	54.14		0.59	0.07	0.003	-0.01	117.98	1.28	172.78	6.5	1008	37.4	114	1.3
BULGtnt_60	0.23	0.01	0.02	0.000	0.50	51.71		0.91	0.09	0.002	-0.11	123.48	2.17	212.51	6.9	1365	36.0	118	2.1