SHRIMP data acquisition logsheet **SHRIMP A or B** **Zircon or Titanite**

Date	Sample/Mount(s)	Sample owner	SH operator	Night-runner(s)
1/11/11	11-27/28/30 11-32	AISRF	McN	

Deadtime 25 ns Kohler aperture 100 Retard 14.4 volts Resoln 5224

Primary O_2^- on: epoxy .....nA standard .....nA PostESA BM on std .....

Raster: Time (mins) 2 Aperture 120 No. of scans 67

Zircon/Badd.	196	204	Bk	206	207	208	238	248	254
Count time (secs)	2	10	10	10/20	30/10	10	5	5	2
Delay time (secs)	8	4	2	4	2	2	3	3	3
Peak centring time (secs)	3	-	-	6	-	-	3	3	2
Titanite	200*	204	Bk	206	207	208	248	254	270
Count time (secs)	2	10	10	10/20	40/10	5	5	5	75
Delay time (secs)	8	3	2	4	2	2	4	3	3
Peak centring time (secs)	3	-	-	6	-	-	2	3	3

Offsets					
Zircon/Badd.	196-204	204-Bk	204-206	206-207	206-208
Expected offset	8.170	0.040	2.001/9	1.001/5	2.001/9
Setup offsets					
Titanite	200*-204	204-Bk	204-206	206-207	206-208
Expected offset	4.136	0.040	2.001/9	1.001/5	2.001/9
Setup offsets	4.137	.040	~2.005	1.004	2.006

Standards

Zircon:

BR266	206/238 age = 559 Ma; 903 ppm U
TEM2	206/238 age = 416.78+/-0.33 Ma; U = variable
OGC-1	207/206 age = 3467+/-3 Ma; U = variable
CZ3	206/238 age = 561.5 Ma; 551 ppm U
M257	206/238 age = 561.3 Ma; 840 ppm U

Titanite:

Khan	206/238 age = 522.2 Ma; 700 ppm U
ORBA	207/206 age = 2687+/-5 Ma; 150-220 ppm U (ave = 188 ppm)

* Titanite reference peak for m/z 200 is a doublet: use low-mass peak.

Date 1/11/11 Mount 11-32 → Std, 11-27 (11-28 & 11-30) Page no. 1

Filename	Time	UO/U 254/238 UO2/UO 270/254	196 Kcps Ref. Kcps	206 -cps-	f206 (%)	U ppm 254/270 Kcps	Sensitivity	Age/Ma 206/238 Pb/U ratio 206/270 cps	Age/Ma 207/206 207/206	SBM (%)
KH. 1-1	9:37	.94	1.8	1900	.76	16	—	.119	435±84	5.8
KH. 1-2	10:08	.92	2.4	2600	.49	22	—	.118	521±38	12.6
KH. 1-3	10:32	.92	2.5	2700	.52	22	—	.123	476±36	12.4
ORBA 1-1	10:54	1.00	2.5	3000	1.50	4.0	—	.750	2683±14	14.9
" 1-2	11:18	.97	2.7	3000	1.44	3.9	—	.769	2677±16	13.5
KH. 2-1	11:44	.92	2.4	2800	.42	23	—	.1436	519±36	14.3
A. 1-1	11:51	aborted — high 204						(1st scan saved)		
A. 1-2	11:57	"						"		
A. 1-3	12:29	"						"		
A. 2-1	12:35	"						"		
A. 3-1	12:42	"						"		
A. 4-1	12:47	"						"		
KH. 2-2	13:10	.91	2.3	2600	.47	21	—	.124	507±37	11.3
A. 5-1	13:25	aborted — high 204						(1st scan saved)		
A. 6-1	13:47	.91	2.3	3200	1.33	4.1	—	.780	2701±22	16.9
A. 6-2	13:54	aborted — high 204						(1st scan saved)		
A. 7-1	14:00	"						"		
A. 8-1	—	low U → aborted → No other shots worth analysing!!								
KH. 2-3	14:31	.88	2.3	2700	.54	23	—	.1417	474±35	12.4
C. 1-1	14:55	aborted → low U.								
C. 2-1	15:18	.84	1.8	1500	.93	2.0	-	.750	2490±19	13.4
C. 2-2	15:40	.85	1.7	1300	.65	1.7	-	.765	2503±25	12.8
C. 3-1	16:03	.85	1.9	1700	.57	2.3	-	.739	2484±17	15.1
C. 4-1	16:27	.85	2.2	1800	.54	2.4	-	.750	2459±27	15.5
C. 4-2	16:49	.86	2.1	1700	.84	2.5	-	.680	2477±18	11.5
KH. 2-4	17:17	.91	2.4	2600	.52	22	-	.118	502±40	11.9
C. 5-1	17:23	aborted → low U.								
C. 6-1	17:47	.83	1.7	1100	1.15	1.5	-	.733	2489±28	13.8
C. 7-1	17:54	aborted → low U.								
C. 8-1	18:17	.82	1.9	2000	.76	2.8	-	.714	2500±15	15.0
C. 9-1	18:40	.90	2.1	1300	.92	1.9	-	.722	2501±25	12.9
C. 10-1	18:49	aborted → low U.								
KH. 2-5	19:14	.92	2.3	2700	.56	24	-	.113	460±50	12.7
C. 11-1	19:39	0.83	1.9	1500	0.72	2.0	-	0.750	2476±20	13.9
C. 11-2	20:01	0.80	2.1	1300	0.57	1.7	—	0.764	2490±20	11.7

Offsets: 200-196-204 = 4.137 204-Bkg = .040 204-206 = ~2.005 206-207 = 1.004 206-208 = 2.006

☒ 200-204 offset changed from 4.135 to 4.134

☒ " " " 4.134 to 4.132

* IRF did retune; scans to 7 scans, new calibrating std

⊕ 200-204 offset changed from 4.137 to 4.135

Date 1-2/11/11 Mount 1128 (1127 ↑) Page no. 2

	Filename	Time	~~UO/U~~ 254/238	~~196~~ 200 Kcps	206 -cps-	f206 (%)	~~U ppm~~ 254/270	Sensitivity	~~Age/Ma 206/238~~	Age/Ma 207/206	SBM (%)
	Alternatives		*UO2/UO*	*Ref.*					*Pb/U ratio*	*207/206*	
			270/254	*Kcps*			*Kcps*		206/270		
1127	C.12-1	20:24	0.87	2.0	2.0	0.53	2.8		0.714	2523±16	12.5
	C.13-1	20:49	0.84	2.1	2.5	0.54	3.3		0.757	2490±16	13.8
	C.13-2	21:11	0.84	2.0	1.5	0.78	2.2		0.681	2529±17	16.6
	C.14-1	21:35	0.84	2.2	2.4	0.96	3.3		0.727	2503±12	12.2
	KH.2-6	22:01	0.92	2.1	2.4	0.83	23		0.100	533±42	13.8
	C.15-1	22:35	0.78	1.7	1.1	1.57	1.5		0.733	2483±38	17.3
	B.1-1	23:00	0.94	2.6	2.5	1.17	3.5		0.714	2472±17	13.1
	B.1-2	23:22	0.86	2.5	2.4	1.05	3.4		0.705	2455±18	18.4
	B.2-1	aborted due to low U									
	B.3-1	23:59	0.92	2.4	3.0	0.62	3.9		0.769	2580±21	13.1
	B.4-1	aborted due to high 204									
	B.5-1	00:26	0.92	2.3	1.8	1.04	2.3		0.782	2694±20	18.4
	B.6-1	00:49	0.95	2.2	1.5	0.09	1.9		0.784	2716±14	14.9
	B.6-2	01:12	0.86	1.8	1.0	0.98	1.3		0.769	2675±25	12.9
	KH.3-1	07:40	0.91	2.4	2.5	0.56	21		0.119	508±45	9.3
	B.7-1	02:14	0.92	1.8	0.92	2.96	1.2		0.766	2666±34	13.0
	— Chemical reagents —										
1128	B.1-1	03:08	0.94	2.5	3.7	0.49	4.9		0.755	2566±11	16.2
	B.1-2	03:30	0.92	2.4	3.8	0.71	5.0		0.760	2548±10	15.9
	B.1-3	03:52	0.92	2.4	3.7	0.67	4.8		0.770	2565±11	19.6
	B.1-4	04:14	0.88	1.6	3.1	0.76	3.9		0.794	2544±10	16.9
	B.1-5	04:36	0.87	1.1	2.8	0.80	3.5		0.800	2548±12	15.9
	~~C.1~~ KH.3-2	05:17	0.87	2.3	2.4	1.05	21		0.114	501±49	17.3
1128	C.1-1	05:53	0.81	1.7	1.3	1.17	1.8		0.722	2528±23	10.9
	C.2-1	06:17	0.80	1.7	1.5	1.29	2.0		0.750	2518±34	11.8
	C.2-2	06:41	0.84	1.3	0.84	1.43	1.1		0.763	2546±29	10.3
	C.2-3	07:05	0.68	1.0	0.87	1.89	1.1		0.790	2509±29	8.7
	C.2-4	07:27	0.73	0.96	0.88	1.73	1.1		0.800	2525±27	8.6
1132	KH.3-3	07:54	0.87	2.3	2.4	1.01	21		0.114	430±57	16.8
	KH.4-1	8:24	.92	2.4	2700	.45	22		.123	515±38	13.9
			HV off → new samples in rack.								
→	KH.5-1	8:55	.87	2.3	2600	.77	733 ppm		.124	522±39	18.7
1128	ORBA.2-1	9:18	.95	2.7	4300	.91	280		.782	2690±12	16.5
	C.3-1	9:47	.86	1.7	500	1.63	6.1		.246	2601±47	11.9
	C.4-1	9:59		aborted → Low U.							
	C.5-1	10:32	.83	1.6	1100	1.04	10.9		.733	2575±24	9.8

Offsets: 196-204 = 4.137* 204-Bkg = .040 204-206 = ~2.005 206-207 = 1.004 206-208 = 2.006

* changed 200-204 offset by .005 amu!! → 4.132 to 4.137

Date 2/11/11 Mount 11-28 Page no. 3

	Filename	Time	UO/U 254/238 / UO2/UO 270/254	196 Kcps Ref. Kcps	206 -cps-	f206 (%)	U ppm 254/270 Kcps	Sensit-ivity	Age/Ma 206/238 Pb/U ratio (206/270) cps	Age/Ma 207/206 207/206	SBM (%)
	Alternatives										
1128	C-5-2	10:55	.84	1.3	910	.81	7.9		.758	2563 ± 25	10.4
1132	KH. 5-2	11:19	.95	2.1	2400	.48	734		.120	523 ± 36	13.8
1128	C-5-3	11:47	.79	1.1	860	.66	9.9		.782	2569 ± 33	7.5
Mislabel →	C-6-1										
	B-2-1	12:24	.86	1.9	1400	.23	72.7		.778	2686 ± 17	10.6
	B-2-2	12:50	.87	1.8	1100	2.34	56.2		.786	2626 ± 31	10.4
	B-3-1	13:15	.93	1.8	620	.88	36.6		.805	2709 ± 34	10.4
	B-4-1	13:48	.94	1.9	2600	1.22	145		.765	2547 ± 14	12.1
	B-5-1	14:12	.94	2.3	1200	.18	53		.800	2671 ± 19	14.7
1132	KH. 6-1	14:36	.90	1.6	2400	2.05	1420		.086	427 ± 102	15.5
	KH. 6-2	14:59	.81	2.3	2500	0.56	665		.125	468 ± 39	12.9
1128	B. 6-1	15:29	.93	2.4	2100	.23	107.1		.777	2663 ± 14	16.9
	B. 6-2	15:53	.87	1.8	1100	.28	86.7		.785	2697 ± 19	14.6
	B. 7-1	16:26	.90	2.2	1400	.23	91.7		.777	2681 ± 17	11.4
	B. 7-2	16:49	.85	2.1	1300	.81	93.4		.722	2681 ± 18	14.3
Mislabel	KH. 6-3	17:23	.91	2.4	2400	.56	697		.1114	499 ± 34	16.3
			SAMPLE				CHANGE		→ 11-28 out + 11-30 in		
1130	A. 1-1	18:11	.92	2.4	1700	1.05	106.5		.739	2544 ± 15	16.1
	A. 1-2	18:34	.87	2.2	1500	.78	101.9		.750	2550 ± 19	15.5
	A. 1-3	18:58	.91	2.1	1500	.95	103.7		.750	2543 ± 8	15.5
	A. 1-4	19:20	.90	2.1	1300	1.32	93.4		.722	2557 ± 20	16.1
	A. 2-1	19:49	.90	2.1	1500	.95	103.7		.750	2543 ± 20	18.2
	A. 2-2	20:11	.95	2.3	2800	.84	134.0		.756	2517 ± 13	17.2
	A. 2-3	20:42	.95	2.3	3000	.59	142.1		.750	2543 ± 12	15.2
	KH. 1-1	21:09	.90	2.2	2400	.30	686.4		.1126	536 ± 35	15.2
	KH. 1-2	21:33	.90	2.4	2500	.48	658.8		.1125	511 ± 36	15.7
	ORBA. 1-1	21:58	.95	2.2	3200	1.03	252.1		.780	2705 ± 12	18.2
1130	A. 2-4	22:23	.92	2.4	2900	.48	133.7		.763	2566 ± 11	14.8
	A. 2-5	22:47	.93	2.4	3100	.50	138.0		.738	2541 ± 11	17.5
	A. 3-1	23:10	.92	2.4	8500	1.51	61.8		.708	2549 ± 31	19.9
	A. 4-1	23:36	.90	2.4	2700	.57	112.0		.750	2562 ± 13	19.3
	A. 4-2	23:59	.93	2.3	2100	.90	90.5		.750	2540 ± 13	17.6
	KH. 1-3	00:24	.90	2.4	2500	.48	660.5		.1125	521 ± 35	19.5
1130	A. 4-3	00:50	.90	2.3	1400	.76	64.9		.778	2574 ± 25	17.6
	A. 5-1	01:13	1.00	2.5	1200	1.23	76.1		~~.723~~ .750	2529 ± 9	12.4

Offsets: 196-204 = 4.137 204-Bkg = .040 204-206 = ~2.005 206-207 = 1.004 206-208 = 2.006

Date ..... Mount ..... Page no. .....

Filename	Time	UO/U 254/238 UO2/UO 270/254	196 Kcps Ref. Kcps	206 -cps-	f206 (%)	U ppm 254/270 Kcps	Sensit-ivity	Age/Ma 206/238 Pb/U ratio	Age/Ma 207/206 207/206	SBM (%)
A-6-1	01:35	.88	2.5	1200	.82	74.3	-	.800	2572 ± 24	15.9
A-7-1	01:57	.93	2.4	1000	1.09	66.5	-	.714	2574 ± 26	20.4
A-8-1	02:19	.86	2.5	1400	.93	95.2	-	.737	2580 ± 20	17.2
KH-2-1	02:42	.91	2.3	2600	.52	710.9	-	.1*238	452 ± 56.	17.0
1130 A-9-1	03:04	.91	2.5	3600	.71	148.7	-	.750	2571 ± 11	16.5
A-10-1	03:26	.95	2.6	3800	.55	156.8	-	.731	2584 ± 20	16.6
A-11-1	03:48	.96	2.6	3500	.73	138.1	-	.745	2549 ± 14	16.7
A-12-1	04:10	.90	2.7	1500	.70	88.1	-	.789	2550 ± 24	16.3
A-13-1	04:32	.95	2.7	1300	.79	78.9	-	.722	2588 ± 19	16.7
KH-3-1	04:55	.92	2.5	2800	.37	745.0		.1*167	520 ± 32	12.8
1130 A-14-1	05:17	.93	2.6	3200	.66	124.2	-	.762	2570 ± 12	18.1
A-15-1	05:39	.93	2.6	3700	.64	146.3		.725	2558 ± 11	18.2
A-16-1	06:01	.94	2.7	4300	.51	168.5	-	.741	2563 ± 9	17.0
A-17-1	06:23	.94	2.7	1100	.84	69.8		.733	2552 ± 25	19.0
A-18-1	06:45	.95	2.6	3000	.55	117.0	-	.750	2570 ± 13	18.8
KH-4-1	07:07	.91	2.2	2600	.29	734.8		.1*238	593 ± 36	17.7
ORBA-2-1-2	07:30	.95	2.3	3400	1.16	249.0		.810	2691 ± 12	19.7
A-19-1	07:53	.91	2.5	1500	1.30	113.3		.750	2564 ± 29	19.3
KH-5-1	8:16	.90	2.1	2300	.33	686		.128	524 ± 37	20.8
KH-6-1	8:38		1.8	2100	.33	704			504 ± 40	20.5

FINISHED

Offsets: 196-204 = ... 204-Bkg = ... 204-206 = ... 206-207 = ... 206-208 = ...

Date ……………………………… Mount …………………………… Page no. ……….

Filename	Time	UO/U 254/238	196 Kcps	206 -cps-	f206 (%)	U ppm	Sensit- ivity	Age/Ma 206/238	Age/Ma 207/206	SBM (%)
Alternatives		*UO2/UO*	*Ref.*			*254/270*		*Pb/U ratio*	*207/206*	
		270/254	*Kcps*			*Kcps*				

Offsets: 196-204 = ………. 204-Bkg = ……..… 204-206 = …………. 206-207 = ……..… 206-208 = …..…