UWA SHRIMP DATA LOG: ZIRCON U-Pb

Date 11/7/95 UWA Mount No. 95-12 Whose sample? Andreas M. Adrienne R. Operator(s) McN A.Ross

Indicate any change to the following:		196	204	bkg	206	207	208	238	248	254
Precambrian	Count time (secs):	2	10	10	10	30 40	10	5	5	2
	Delay time (secs):	~~7~~ 6	3	1	2	1	1	3	2	2
~~Phanerozoic~~	Count time (secs):	2	10	10	10	10	10	5	5	2
	Delay time (secs):	6	3	1	2	1	1	3	2	2

expected 196-204 = 8.170 amu expected 204-bkg = 0.040 amu Dead-time = ~~36~~ 32 nanosecs

actual 196-204 = 8.171 actual 204-bkg = 0.040 expected resolution = >4200

Primary = 2.~~8~~3 nA PESABM = 40 pA actual resolution = ...

expected Primary : PESABM ≈ 50:1 actual Primary : PESABM = 57

Comments from Log Book: Group E = Andreas Meuller

Kitb
Lear
Clemens
Jackson

Rejection over-ride	Sample/ Std ID	Time - printout	196 cps	206 cps	U ppm	^{204}Pb ppb	f_{206} %	Age ±1σ (Ma) 206/238	207/206	Corr.
	std 1-1	13:12	14.3K	1175	220	1.4	.09	572±1	596±21	208
	std 1-2	13:37	17.5K	1314	220	0.9	.08	572±1	591±20	208
adjusted spot shape →	std 1-3	14:12	18.7K	1357	220	1.4	.03	572±1	533±20	208
Group E:	unk 1-1	14:49	14.2K	4287	138	16.1	.26	3015±8	2871±6	204
	std 1-4	15:11	15.1K	1104	231	0.6	.05	585±1	—	208
	unk 1-2	15:37	16.2K	8622	220	0.7	.01	2734±5	2716±4	204
	unk 2-1	16:07	21.6K	2886	81	4.4	.14	2600±8	2805±7	204
	std 1-5	—	19.2K	1435	211	0.9	.08	575±1	550±24	204
	unk 2-2	16:54	19.0K	3738	100	5.3	.12	2950±8	2885±6	204
	unk 3-1	17:15	19.0K	19635	717	6.1	.03	2153±2	2491±3	204
	std 1-6	17:39	~~19.0K~~ 21.5K	1583	214	0.9	.08	562±1	526±28	204
	unk 4-1	18:02	20.4K	24144	678	9.3	.04	2516±3	2572±3	204
	unk 5-1	18:24	23.1K	14856	297	32.8	.30	2591±4	2756±3	204

Rejection over-ride	Sample/ Std ID	Time - printout	196 cps	206 cps	U ppm	^{204}Pb ppb	f_{206} %	Age ±1σ (Ma) 206/238	207/206	Corr.
Scan 1th, removed, others restored	std ~~[illegible]~~ 1-7	18:47	21.3K	1588	220	0.6	.003	586 ±1	541 ± 18	208
all restored	U512A-3-2	19.20	20.7	1795	474	10.8	.62	2611 +/-9	2665 +/-11	204
all restored	U512A-10-3.	19.45	22.9	3896	85	0.4	.01	2673	2668.	204
~~[crossed out]~~	U512A-10-4	Oops! Didn't push "GO"!!								
Non-linearity	S1512.1-8	20.31	10.1	847	235.5	0.5	.09	530 —	517.0 —	~~208~~
didn't do, other answer; NON-linearity	U512A-10-5	20:58	16.5	1660	636	0.9	.04	2621	2687	204
primary beam drifted during analysis; Removed second scan [2-0]	U512A 11-2	21.32	5.7	9989	556.3	38.8	.18	2840	2503	204
~~(dropped)~~ Non-linearity restore all	U512A 11-3	21:57	34	2222	35.5	56.0	3.90	2712	2693	204
→ TRY omitting 3rd scan; Non-linearity, all restored	S1512.1-9	22.21	23	1638	247	1.6	.09?	666.6	556.4	208
NON-linearity all restored	U512A 5-2	22.55	29	19363	267	53.7	.64	2336	2467	204
→ adjusting matching lens to decrease 1° and stabilize beam ←										
* problem → reject 1st scan 206+248. Restore 238, 207, 254	S11512.1-10	23.39	26	1589	214.7	0.4	.12	508.2	768.7	208
restore all Non-linearity	S1512A25-3	00:08	26	1698	209.9	2.6	.08	566.9	509.3	208
restore-all, Non-linearity	S1512A 25-4	00:33	25	1760	211.4	0.2	.02	579.1	528.4	208
204-restored, Non linearity	U512A 5-3	— abandoned ↑ common Pb.						—	—	—
all restored; → primary dropped, during analysis, but not reflected in counts.	U512A2-2	1:20	25	12588	212.6	15.3	0.18	2736	2628	204
Try cutting last 2 scans, ↑204; Scary data, delete [illegible]; → restored all, then deleted scan 7. yuck!	U512A 2-3	1:49	27	2540	49	113.4	5.7	2701.1	2637	204
→ primary dropped during analysis; No linearity	U512A2-4	2:17	19	8930	202	27.5	.37	2560	2552	204
→ Restore all No linearity	S1512A 25-5	2:43	24	1674	201	0.4	.04	—	—	208
→ delete scan 5, no linearity	U512A26-2	3:09	29	8332	150	37.2	.66	2677.5	2612	204
No linearity No changes	U512A26-3	3:33	26	8672	174	-0.3	X	2576	2717	?
Non-linearity, No As	U512A17-3	4.04	22	5691	115	8.1	.19	2625	2712	204
restore all Non-linearity	S1512.25-6	4:29	29	1987	207	-0.4	.02	567.8	545.2	208
non-linearity, restore all	U512A-17-4	4:53	29	1776	34	0.2	.01	2656	2725	204
Non-linearity, restore all	U512A-17-5	5:17	35	953	18.4	10.2	1.5	2618	2665	204

8:10 →

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Date	UWA Mount No.	Whose sample?	Operator(s)
12/1/95	95-12	Adrienne Ross	A. Ross

Indicate any change to the following:		196	204	bkg	206	207	208	238	248	254
Precambrian	Count time (secs):	2	10	10	10	~~40~~ 30	10	5	5	2
	Delay time (secs):	~~6~~ 7	3	1	2	1	1	3	2	2
Phanerozoic	~~Count time (secs):~~	~~2~~	~~10~~	~~10~~	~~10~~	~~10~~	~~10~~	~~5~~	~~5~~	~~2~~
	~~Delay time (secs):~~	~~6~~	~~3~~	~~1~~	~~2~~	~~1~~	~~1~~	~~3~~	~~2~~	~~2~~

expected 196-204 = 8.170 amu   expected 204-bkg = 0.040 amu   Dead-time = 36 nanosecs

actual 196-204 = ...   actual 204-bkg = ...   expected resolution = >4200

Primary = ... nA   PESABM = ... pA   actual resolution = ...

expected Primary : PESABM ≈ 50:1   actual Primary : PESABM = ...

Comments from Log Book:

Rejection over-ride	Sample/ Std ID	Time - printout	196 cps	206 cps	U ppm	^{204}Pb ppb	f_{206} %	Age ±1σ (Ma) 206/238	207/206	Corr.
			(k)							
Non-linearity, restore all	U512A 19-2	5:44	27	5208	99.3	4.7	.13	2670	2654	204
Non-linearity - restore all	S1 512-25-7	6:09	31	1981	195	0.4	.04	561.7	535.5	208
Non-linearity " "	U512A 19-3	6:33	31	4724	75	66.9	2.3	2640	2685	204
" " " "	U512A 21-2	6:59	29	8097	151	-0.3	X	2678	2672	—
Non-linearity, restore Zr	U512A 24-2	7:25	21	61584	959	143	.48	2374	2253	204
Non-linearity	U512A 24-3	7:51	25	45289	643	144	.79	2246	2116.7	204
Non-linearity, restore all, delete scan 1, restore others	S512.25-8	8:41	28	1740	201.4	-0.5	~~X~~ .05	541	627.8	+
↑204 ↑ → drop in primary during analysis	U512A 25-2	8:38	14	10962	285	85	.91	2502	2107	204
Non linearity, Restore all	U512A 25-3	9:01	28	10500	212	1.0	.014	2506	2683	204
~~X~~	U512A 20-2	– abandoned			↑ common Pb			—	—	—
~~X~~	U512A 22-2	—	"		"		"	—	—	—
Non linearity, restore all ↳ scary, ugly data	U512A 22-3	9:36	19	4091	113	167	4.0	2591	2709	204

Page 2 of 2
side 2

Rejection over-ride	Sample/ Std ID	Time - printout	196 cps	206 cps	U ppm	^{204}Pb ppb	f_{206} %	Age ±1σ (Ma) 206/238	207/206	Corr.
Restore all	u513A27-2	10:37	17K	850	622	300	0.9	3590	2596 ±20	204
Need to change label to 23-6 in files. Restore all. NON-linearity	sl572•23-(6)	11:01	17K	1250	200	–	–	542	624	208
Low Zr. NON-linearity, restore all	u512A•29-1	11:26	16K	1775	65	31	0.1	2170	2658 ±14	204
?? High U ? metamict grain → unstable 2°Y?? NON-lin, restore all	u512A,12-2	11:55	12.7K	97K	1750	256	0.4	2787	2155 ±2	204
all restored, NON linearity	u512A,12-2 (12-3)	12:19	12.7K	12K	313	66	0.6	2526	2501 ± 5	204
restore 196, 238, 248, 254; delete scan 1 of 206	sl512.23-7	12:41	16K	1035	197	0	–	487	791	208

Instability was at least partly due to Duo Y deflection having drifted — it was corrected before the final std. analysis. There are real instabilities in 1°Y, including an oscillation

3 std deleted:
Zr/U: 2.27026
UO/U: 5.88747
Pb*/U: 0.158972
No of std = 9
1% std dev = 3.4613% ☺!

Deleted:
"KBelle 5.88 ..."
Zr/U: 2.26477
UO/U: 5.85044
Pb*/U: 0.159129
No: 11
1 std dev = 5.9905%

Deleting scan std 1-10 made worse results

KB 5.88
~~having deleted~~
~~+ 1-10~~

~~Averages for Calibrations:~~
~~Zr/U: 2.26530~~
~~UO/U: 5.84803~~
~~Pb*/U: 0.248863~~
~~No. of standards = 12~~

~~Zr/U: 2.26530~~
~~UO/U: 5.84503 (803)~~
~~Pb*/U: 0.158869~~ ← only change.
~~No of Stds = 12~~

CRAR = 5.7242

Actions: 3rd std still a problem