

10/17

CSL with ^{232}U alpha source

Shaper gain at 170, signal 30 mV, noise ~2 mV ptp

Shaper 1 in speed offset -2 mV
 2 " " " -7 mV

S4 silicon 3058-18, 1006 um L. Truche's Silicon

Initial V	Fire up current μA	10/1/18 $G_{R\text{front}}$	- bias on Π 's V	1" ringd. current	$G_{R\text{front}}$
-10	0.8	(sloot)	-10	0.8	(0.06)
-20	1.2		-30	1.49	(0.10)
-30	1.6		-50	1.82	(0.16)
-40	1.8		-70	2.06	(0.22)
-50	1.94		-90	2.31	(0.26)
-60	2.1		-100	2.45	(0.28)
-70	2.25		-100	3.08	(0.39)

Front GR biased (same as Π 's)
 Back GR Gcd.

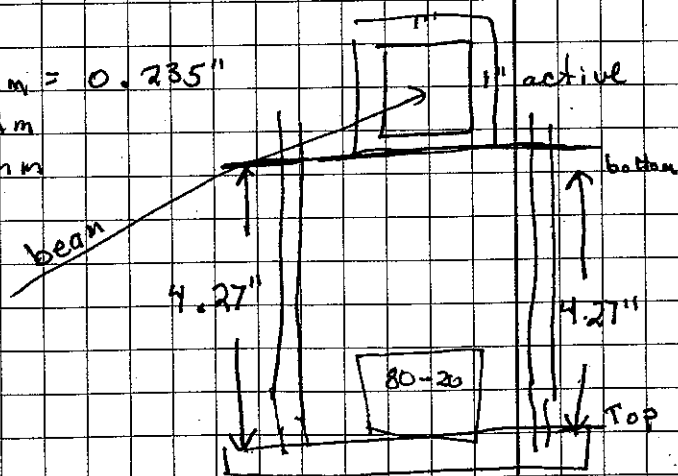
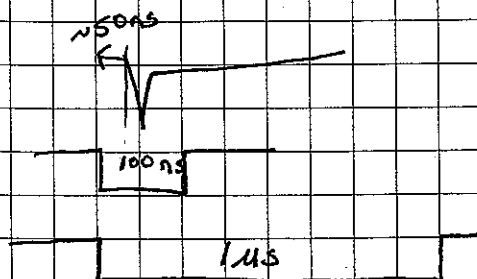
100V return

• Si protector plate 2.25 mm

• Scintillator Stop beam detector

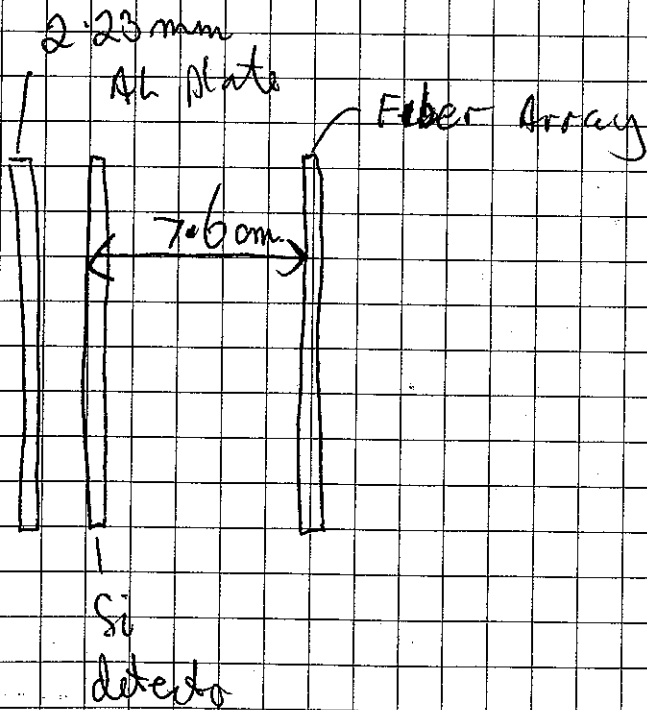
Stopping	BC444	5.96 mm = 0.235"
Thin	BC408	0.97 mm
Thick-Thin	BC408	1.97 mm

BC444 ~ 240 ns decay



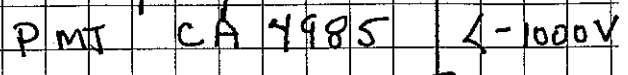
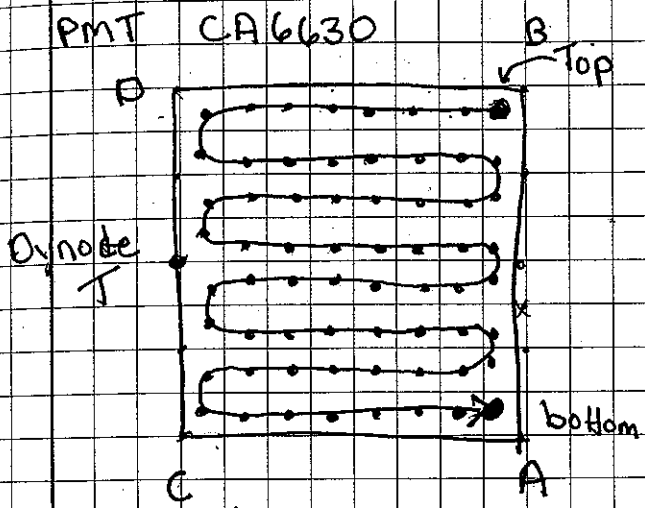
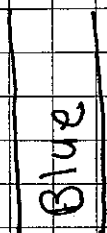
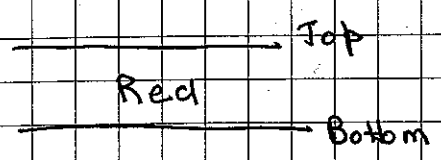
Early runs with different array fibres

Run	title
0	timestamp test
1	time stamp tests - short timeat wads 5MHz
2	Si at 90V + alphas
3	timing test run
4	timing test run
5	timing test run
6	timing test run 10MHz
7	timing test run 10MHz clock from S800 ULM
8	Kr 78 beam Singles trigger (glan 50)
9	" " coincidence trigger "
10	" " " " "
11	U232 α with 110V, pie trigger, no TDC
12	U232 α , 110V, pie trigger, all module



Each fiber is separated by 0.002"

Scint. Fiber Array SFA

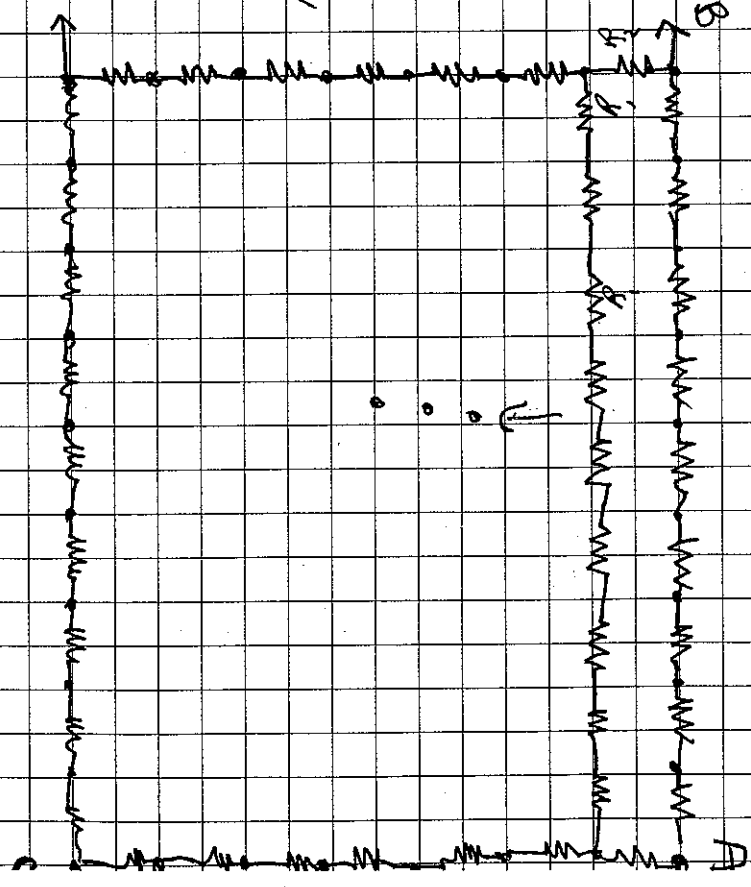


Beam left

IS

$$x' = \frac{(B+D)}{(A+B+C+D)}$$

$$y' = \frac{(C+D)}{(\quad)}$$



HIRA FANOU

- 1 CFD } inspect
- 2 C
- 3 OR_A
- 4 OR_B
- 5 OR_C
- 6 CSA } inspect
- 7 Shap }
- 8
- 9
- 10
- 11 + Pul A ←
- 12 -
- 13 + Pul B
- 14
- 15 - Pul A
- 16

10/10/18

Fiber test with ⁷⁶Kr 150 MeV/A

Patch panel notes

Cable	Patch #	Length (ns)	Signal			
1	31	380 380	Blue	Dynode	Lin	OR A
2	32	380	Red	Dynode	Lin	OR B
3	33	380	Blue	Dynode	Log	
4	34	384	Red	Dynode	Log	
5	35	380	Dynode	Coincidence		
6	36	380	Blue Red	A	B	
7	37	378	Red Blue	A	C	
8	38	382	Blue	B	D	

First test of SFA - 800 V

Blue 10 mv, noise worse.
Red 60 mv

~~upstream~~ downstream
~~downstream~~ upstream

2nd test of SFA - 1000 V (0.32 ma)
Blue time has new Amplifier

3rd Test

Chan

Friday 10/12/2018

12:30 pumping for long time, gate valves closed $8 \cdot 10^{-6}$

V	ua (GR)
-50	1.82 (0.15)
-75	2.11 (0.22)
-90	2.30 (0.24)

+100	2.40 (0.26)	✓
	2.38	after a while
+110	2.54 (0.27)	

Run 11

α calibration
in S4.

232 U.

8 Gbytes

PI or trigger

GUI Jon's switcher

0	1	CsI OR #1 (16) outer
1	2	CsI OR #2 (4) inner
2	3	CsI OR of OR's
3	4	CsI Logic inspect
4	5	CsI Lin inspect from Shaper #1 (16)
5	6	CsI Lin inspect from Shaper #2 (4)
6	7	
7	8	Si TY OR
8	9	Si Ring OR
9	10	Si CSA inspect
10	11	Si Shaper inspect
11	12	SFA chosen Lin (Blue) Dynode
12	13	SFA OR Blue Dynode Blue
13	14	SFA OR " Red
14	15	SFA AND (BPR)
15	16	SFA chosen Lin (Red Blue) Dynode
16	17	SFA S gate
17	18	CsI A
18	19	CsI B
19	20	CsI C
20	21	CsI D
21	22	Ceasar enable
22	23	Ceasar narrow
	24	XLM complete
	25	Busy
	26	XLM trigger
	27	
	28	
	29	
	30	
	31	
	32	

Scalers

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----

CST OR1

CST OR2

CST OR of ORS

Sc Ring OR

Sc Ring OR

Blive dynamite

Red dynamite

Red And Blive

Caesar OR

PRE MASTER OR

PRE MASTER OR

MASTER OR

CST A

CST B

CST C

CST D

XFP

OSJ

Random Row
Random Row
Random Row

live triggars
live triggars

TDC 1

0-15

outer CsI detectors

16

CsI A

17

B

18

C

19

D

20

Reference

21

xfp.

22

BJ

23

RF enabled

24

RF raw

25

dynode Blue

26

dynode Red.

27

CsI OR of OR S.

Run 12 alpha calibration

^{232}U

11

Sunday 14th 6:30

Sun day
Night

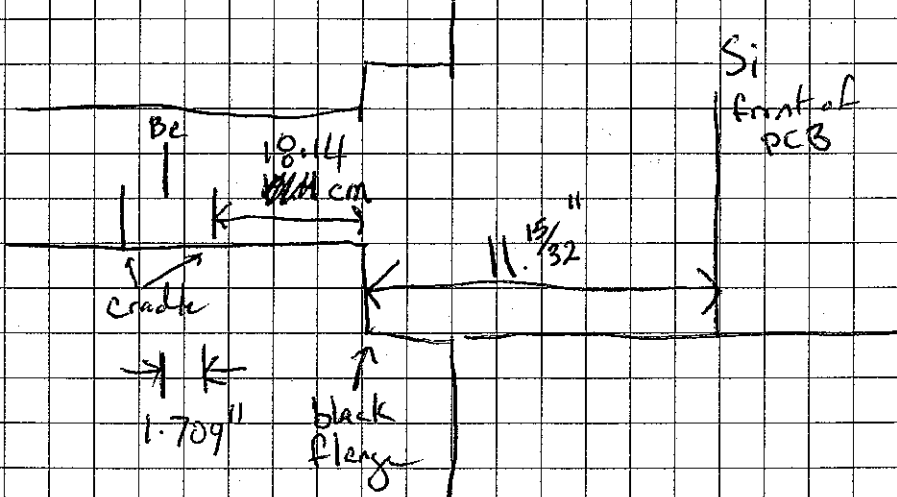
CEASAR calibrations.

5000 magnets ON.

Run 13	^{88}Y	11 minutes	time
14	^{133}Ba	17 minutes	
15	^{137}Cs	16 minutes	
16	background with ^{232}U source	1 hr 19 min	

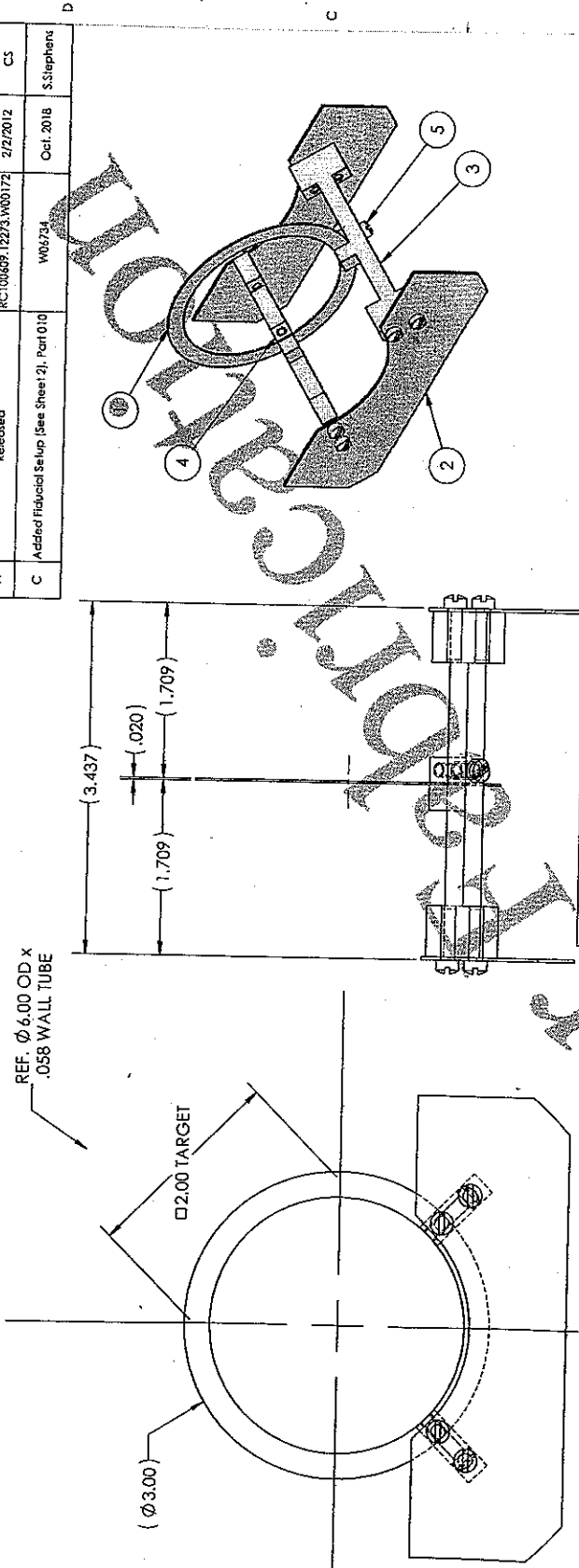
0.5 mm Be Target info

• 540 μm or 100 mg/cm^2



$$\text{dist} = 29.1 + \frac{18.14}{\cancel{2.54}} + 4.5 = 51.7 \text{ cm}$$

REVISIONS				
REV.	DESCRIPTION	MD W/O #	DATE	BY
A	Released	RC10060P.12273.W00172	2/2/2012	CS
C	Added Fiducial Setup (See Sheet 2), Part 010	W06734	Oct. 2018	S.Stephens



ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	Sheet 1 - Target Setup/Default/Qty.
1	7gea02_005	Target Frame	G-10 Phenolic	1
2	7gea02_006	Cross Piece	G-10 Phenolic	2
3	7gea02_007	Target Frame Holder	G-10 Phenolic	2
4	7gea02_008	Target Frame Clamp	Nylon 6/6	2
5	SI-FIMS 0.138-32X0.5x0.5-N	Rillister Head Screw, Drive Type Slotted, Size #6-32, Length 0.5, Thread Length 0.5	Nylon	10

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 BREAK ALL SHARP EDGES TO MAX.
 REMOVE ALL BURRS
 FINISH ALL SURFACES TO
 MACHINE SURFACE FINISH

DO NOT SCALE DRAWING

Dimensional Tolerances:
 1 Hole Dia. ±.002
 2 Hole Dia. ±.003
 3 Hole Dia. ±.004
 4 Hole Dia. ±.005
 5 Hole Dia. ±.006

DATE: 2/1/2012
 SCALE: 1:1
 DRAWN BY: G. Show
 CHECKED BY: [Blank]
 PROJECT: Spoken Reference
 NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY
 MICHIGAN STATE UNIVERSITY - EAST LANSING, MICHIGAN

7gea02
 NEXT ASSEMBLY

7gea02_004
 sub-assembly

SEE SHEET 2 FOR FIDUCIAL SETUP

1010 FOR

Run 20 Rate measurement of ^{31}Ar
Monday 19:10 stop 19:20

Run 21: We returned the beam. # 21:41 21:43

$$\text{Rate } (^{31}\text{Ar}) = \frac{697 \times 18}{95 \text{ sec} \times 19 \text{ Be-A} \times 0.91} = 0.7 \text{ pps/puA}$$

We changed (lowered) voltage on OS₂ from 1.5 kV to 1.2

Run 22: start 21:59 Unreacted beam in S800

Run 23: CRDC Mask 1

Run 24: CRDC Mask 2

Run 25: Reaction setting done

Diffusion pump tripped

Run 26: More tuning $B_p = 1.99$

Setting B_p down 0.5 % to center ^{31}Ar charge - 30%

Run 27: start 23:19

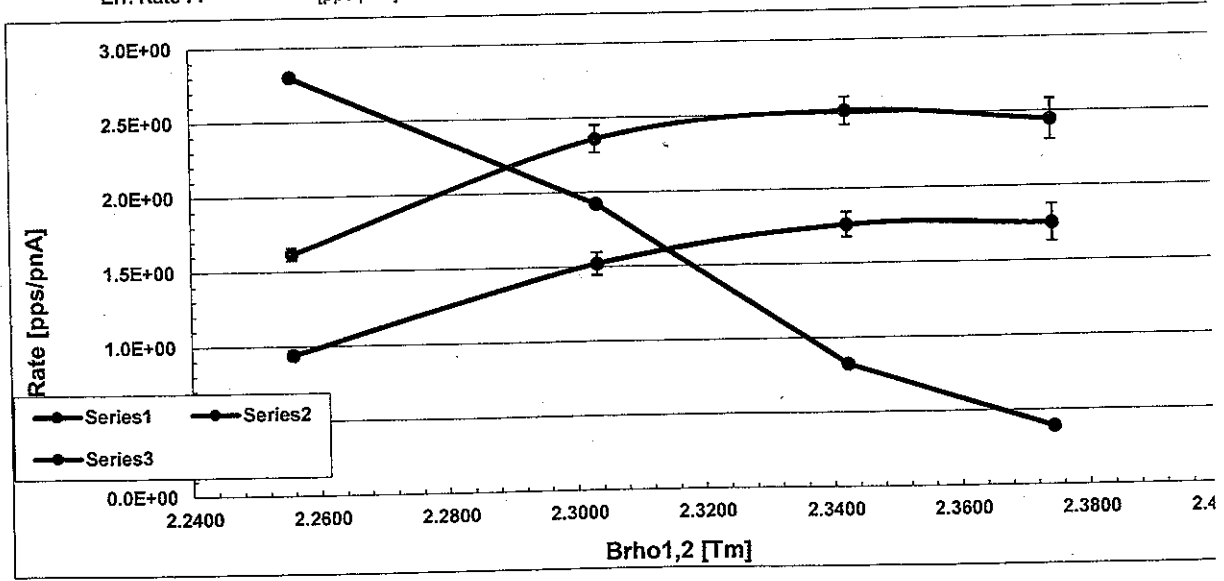
Going down another 0.5%

Run 28 start 23:23

Matched the dipole

Run 29 23:28

EXP:	Frag:	Qbeam:				
16001	Ar-31	18				
Run number		7764	7763	7762	7761	
Be target	[mg/cm2]	1175a	1175a	1175a	1175a	
Brho1,2 Step	[%]	-5.00%	-3.00%	-1.36%	0.00%	
Brho1,2	[Tm]	2.2557	2.3032	2.3422	2.3744	
Brho3,4	[Tm]	2.0886	2.1447	2.1903	2.2276	
FP_PIN dE	[MeV]	323.7	309.2	299.5	291	
FP_PIN dE (LISE)	[MeV]	324.5	310.9	300.6	293.1	
Counts FOIL		731	340	359	168	
Counts FOIR		730	309	362	148	
Counts FOIL (10mm gap)		435	225	244	121	
Counts FOIR (10mm gap)		410	189	238	96	
Total Counts (10mm gap)		64658	46232	125899	120147	
1-D FOI Counts (10mm gap)		844	409	483	218	
1-D FOI Counts (50mm gap)		1446	634	692	304	
Beam Intensity 1	[enA]	38.3	13.8	13.1	2.85	
FP_SCI_N rate	[Hz]	850	690	1370	570	
Error Beam int.	[enA]					
Live Time		0.940	0.940	0.910	0.960	
Total FP_SCI_N rate		384508	263800	592063	485284	
Rate FP 10 mm gap	[pps/pnA]	9.43E-01	1.52E+00	1.76E+00	1.75E+00	
Err. Rate FP 10 mm gap	[pps/pnA]	3.16E-02	7.60E-02	8.32E-02	1.25E-01	
FOI ratio 10mm-to-50mm gap	[%]	58.4%	64.5%	69.8%	71.7%	
Purity	[%]	1.3%	0.9%	0.4%	0.2%	
Rate at FP	[pps/pnA]	1.61E+00	2.36E+00	2.52E+00	2.44E+00	
Err. Rate FP	[pps/pnA]	4.22E-02	9.25E-02	9.38E-02	1.37E-01	

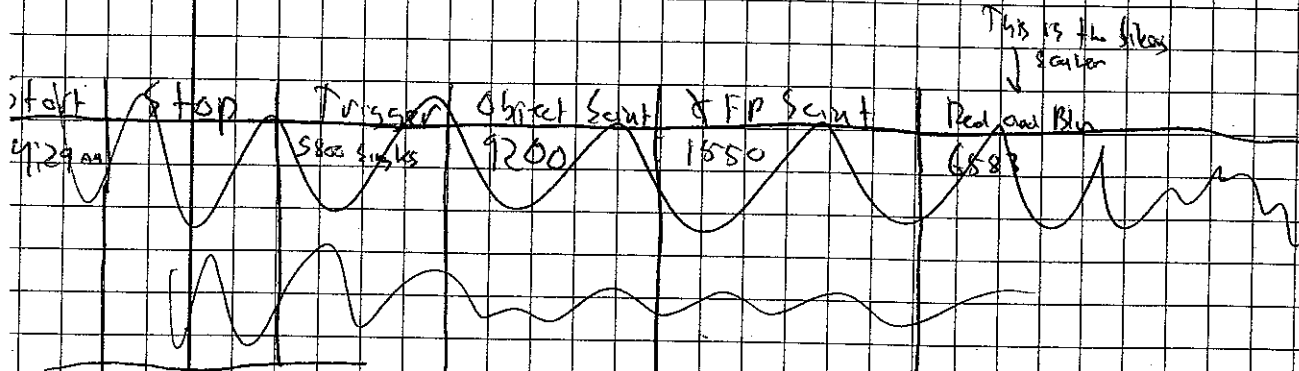


leakage current

Monday	15th	23:45	110 V	2.58	μA
Tues	16	4:20	110	2.61	μA
Tues	18	13:30	110	2.68	μA
Tues.	18	17:45		2.69	μA
wed	17	10:00	110	2.80	μA
Thurs	18	8:00		2.09	μA
Friday	19	9:00		3.02	μA
Saturday	20	12:00		3.17	μA
Sunday	21	13:30		3.34	μA
Monday	22	15:30		3.37	μA
Wed	24	12:00	110	3.62	μA

Run 30 CsI trigger only

Start Times 2:05



Beam 31 Ar 70 MeV/u

Run Num	Start	Stop	Trigger	Object Scout	AFP Scout	Dead and Blue
Run 32	4:29 am	4:58	S800 Singles DS1	7200	1550	6583
Run 33	4:58	5:27	S800 Singles DS1	8580	1420	6720
Run 34	5:28	5:59	S800 Singles DS1	9000	1500	6400
Run 35	5:59	6:28	S800 Singles DS1	9400	1850	6500
Run 36	6:29	6:57	S800 Singles DS1	8600	1470	6200
Run 37	6:58	7:31	S800 Singles DS1	9200	1530	6550
Run 38	7:36	8:02	S800 Singles DS1	7600	1325	5400
Run 39	8:03	8:31	S800 Singles Secondary DS1 for both	7500	1300	5200
Run 40	8:31	09:00	S800 Singles and Secondary DS1 for both	6400	1100	4520
Run 41	09:01	09:36	S800 Singles and Secondary DS1	7189	1200 x	5232
Run 42	09:37	10:06	S800 Singles and Secondary DS1	6664	1121 /	4678
Run 43	10:06	10:40	S800 Singles and Secondary DS1	6380	1090 x	4603
Run 44	10:41	10:50	S800 Singles and Secondary DS1	6038	1033 /	4353

Kyle restarted the chips & VME @ 11:03 AM.

Run No.	Start	Stop	Trigger	Object Scint	XFP Scint	Red and Bl
Run 45	11:03 am	Stop 5800 singles and secondary DSI 11:09 am	→	6855	11386	4946
Run 46	11:13	11:26	Coincidence	4600	10500	4548
Run 47	11:27	12:01	Coincidence	6200	10500	4520
Run 48	12:01	12:30	Coincidence	6042	10217	4435
Run 49	12:30	12:46	Coincidence	6300	10500	4623
Run 50	13:19	13:28	Coincidence	6800 320 Torr	13000	5520

Dropped SFA voltage from 1000 V to 920 Volts

Run 51	13:42	14:17	Coincidence
Run 52	14:18	14:21	Coincidence
Run 53	14:22	14:47	5800 singles

- a) TDC time windows stretch - 1 to LMS
- b) SFA voltage dropped to 920 Volts
- c) RF now in TDC
- d) CST gains changed to 255
- e) DAQ busy was unplugged, now in.

Run 54	15:54		Secondary			
Run 55	16:03	16:33	Coincidence + secondary dSI	320 Torr	11186	18360
						7139

Run No.	Start	Stop	Trigger	P-10 Gas Pressure	Obj. Scint.	XFD. Scint.	Red and Blue
Run 56	16:34	17:04	coincidence + secondary DS 10	319.3 Torr	9895	14963	6407
Run 57	17:04	17:34	coincidence + secondary DS 10	319.3 Torr	10270	14842	6614
Run 58	17:35	17:56	coincidence + secondary DS 10	319.3 Torr	10105	14708	6525

* 18:05 Defusion Pump

were tripped off

then we went to the vault
and turned on

Run 59	18:08	18:40	coincidence + secondary DS 10	319.3 Torr	11762	19589	7712
Run 60	18:41	19:09	coincidence + secondary DS 10	319.5 Torr	10200	17100	6600
Run 61	19:10	19:39	coincidence + secondary DS 10	319.3 Torr	10150	17119	6536
Run 62	19:39	20:11	coincidence + secondary DS 10	319.3 Torr	10500	17500	6660
Run 63	20:12	20:43	coincidence + secondary DS 10	319.4 Torr	10226	17487	6829
Run 64	20:43	21:14	coincidence + secondary DS 10	319.4 Torr	11692	19065	7430
Run 65	21:15	21:45	coincidence + secondary DS 10	319.5 Torr	12156	19488	7559
Run 66	21:45	22:09	coincidence + secondary DS 10	319.4 Torr	11996	19640	7505

Run No.	St
Run 67	22
Run 68	2
Run 69	2
Run 70	00
Run 71	1:01
Run 72	1:13
Run 73	2:1
Run 74	2:1
Run 75	4:1
Run 76	4:14
Run 77	5:1
Run 78	5:1
Run 79	6:1
Run 80	6:1
Run 81	6:1
	A
	-A
	-A
	-A
	A

Run No.	Start	Stop	Trisster	P ₁₀ Gas Pressure	obj. start	X.F.P. start	Red and blue
407 614 525 Run 67	22:52	23:28	Concentration + Secondary DS 10	319.5 Torr	10400	17300	6500
Run 68	23:28	23:59	Concentration + Secondary DS 10	319.4 Torr	10400	17000	6500
Run 69	23:59	00:30	Concentration + Secondary DS 10	319.5 Torr	10300	17000	6500
Run 70	00:30	1:00	Concentration + Secondary DS 10	319.5 Torr	11000	19300	6900
Run 71	1:01	1:29	Concentration + Secondary DS 10	319.5 Torr	11000	18000	7100
Run 72	1:30	2:02	Concentration + Secondary DS 10	319.6 Torr	11500	18500	7000
Run 73	2:02	2:27	Concentration + Secondary DS 10	319.6 Torr	11300	18700	7100
Run 74	2:40	3:10	Concentration + Secondary DS 10	319.5 Torr	7000 8000	12000	4400
Run 75	4:13	4:43	Concentration + Secondary DS 10	319.4 Torr	12700	20000	7700
Run 76	4:43	5:09	Concentration + Secondary DS 10	319.4 Torr	10500	17000	6300
Run 77	5:09	5:37	Concentration + Secondary DS 10	319.5 Torr	11700	19500	7000
Run 78	5:37	6:05	Concentration + Secondary DS 10	319.3 Torr	10800	17000	6200
Run 79	6:05	6:32	Concentration + Secondary DS 10	319.2 Torr	10000	16700	6000
Run 80	6:32	6:51	Concentration + Secondary DS 10	319.2 Torr	10000	16000	6700
Run 81	6:59	7:29	Concentration + Secondary DS 10	319.2 Torr	9800	16000	6500

Operators

* At 2:27 ~~stop~~ took the key because pump tripped

* At 2:40 Received key back

* At 3:10 took for calibration on reflector at 10200

* Got key at 4:13

* At 4:46 noticed a shift in \uparrow vs \uparrow Diff spectra on a bin

Run Num	Start	Stop	Trigger	PIG Gas Press	6bi Count	4FP Count	Net Rate
Run 82	7:29	8:01	Coincidence + secondary DS10	31.2 Torr	10000	16000	6200
Run 83	8:02	8:02 8:34	Coincidence + secondary DS10	31.2 Torr	10000	17000	6200
Run 84	8:35	8:44	Coincidence + secondary DS10	31.2 Torr	9300	15000	5500
Run 85	9:26	9:54	Coincidence + secondary DS10	31.2 Torr	9000	15000	5500
Run 86	9:55	9:56	Coincidence + secondary DS10	31.2 Torr	—	—	—
Run 87	10:00	10:16	Unreacted beam				
Run 88	10:17	10:23	CRDC Mask 1 in				
Run 89	10:25	10:31	CRDC Mask 2 in				
Run 90	10:43	11:20	Caesar background				
Run 91	14:12	14:17	Unreacted beam, no Si. timed run (5 min)				
Run 92	16:02	16:07	Unreacted beam, w/ Si. timed run (5 min) → the beam chopper was left on during this run effectively lowering the rate by a factor of 10.				
Run 93			Trash (went down to set bias)				

- At 8:44 operators took key because pump tripped

- 9:26 Key was returned

- 11:20 Vacuum people are flushing diffusion pump detectors were removed to expose beam viewer for further tuning

- 14:00 Beam tuning done, checking

Run 94

Run 95

Run 96

Run 96

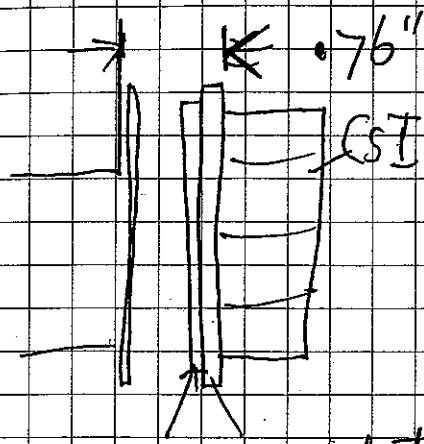
Run 97

Run 98

Run 99

Run 100

Ring Counter moved as far 21
 forward as possible.



	New	5800	Sl ⁴ Reaction	Al plate	Ar 30	***	Oct 17
	Start	Stop	Trigger	P10 Press	Obj Sent	XFP Sent	Red Blue
Run 94	18:19	18:49	Coincidence +downscaler 10	317.3 farr	9300	15000	5500
Run 95	18:50	19:20	Coincidence +downscaler 10	317.2 farr	10300	17000	6200
Run 96	19:20		Coincidence +downscaler 10	317.2 farr	11000	18000	6000
Run 96	Beam not centered. Key taken for beam stop. -Farrus.						
Run 97	19:32	20:03	Coincidence +downscaler 10	317.1 farr	11000	17000	6500
Run 98	20:03	20:12	Coincidence + DS secondary DS10	317.0	9202	15007	5415
2008 DS is not reaching it's current. Operators are investigating							
Run 99	20:44	21:14	Coincidence Secondary DS10	317.0	11661	17076	6592
Run 100	21:14	21:38	Coincidence Secondary DS10	316.8	10457	18072	5904

Run No. Start Stop Trigger P10 Gas Pres Obj Scint XFP Scint Red and blue

~~Run 101~~

~~CAESAR~~ don't work

Run 101 22:01 22:14 coincidence + secondary DS10 316.7 Torr 10988 1708 6289

CAESAR working - (~~CAESAR~~ CAESAR/16001.../16001 [HV])

modified CAESAR QDC gate enable. narrow CAESAR delayed by 200 ns, readjusted QDC gate to original position relative to signals.

⇒ Readout Shell restarted

run	Start	Stop	Trigger	(Torr)	Obj	XFP	Red	Blue
run 103	22:53	23:22	coincidence + secondary DS10	316.5	9000	15000	5000	
run 104	23:23	00:02	coincidence + secondary DS10	316.5	8000	13000	4600	

Scan New on Shift 23:55

#	Start	Stop	Trigger	Pressure	Obj	XFP	Red	Blue
Run 105	00:02	00:29	coincidence + secondary DS10	316.2	6300	13700	4800	
Run 106	00:30	1:00	coincidence + secondary DS10	316.2	6300	13700	4800	
Run 107	1:00	1:30	coincidence + secondary DS10	316.1	6700	11000	3800	
Run 108	1:30	1:56	coincidence + secondary DS10	316.0	8500	14300	5100	
Run 109	1:59	2:31	coincidence + secondary DS10	315.9	8000	13700	4800	
Run 110	2:31	3:00	coincidence + secondary DS10	315.7	7400	12400	4300	

Run No 5
Run 11 3
Run 12 3
Run 13 4
Run 14 4
Run 15 4
Run 16 5
Run 17 5
Run 18 6
Run 19 6
Run 20 7
At 4:32
At 7:4
After re

blue

IF CAESAR stop

Reload HV

in Directory e16001/CAESAR/e16001-kylebrown

Run script e16001-HV.sh.

If this does not work - recycle power on ^{in HV vault} console

(Vish)

At 00:04 noticed that since the course of a day the pressure recorded of the PIO has dropped by about 3 torr

Run No	Start	Stop	Trigger	Pio Press	Obj	XFP	Red/Blue
Run 11	3:09	3:30	Conductivity Secondary DS16	318.6			
Run 12	3:30	4:02	Conductivity Secondary DS16	318.5	7300	12000	4200
Run 13	4:02	4:27	Conductivity Secondary DS16	318.4	6400	9700	3600
Run 14	4:27	4:32	Conductivity Secondary DS16	318.3			
Run 15	4:48	5:26	Conductivity Secondary DS16	318.4	12800	18000	7400
Run 16	5:26	5:57	Conductivity Secondary DS16	318.2	11800	14500	6700
Run 17	5:57	6:27	Conductivity Secondary DS16	318.0	11400	14000	6300
Run 18	6:28	6:59	Conductivity Secondary DS16	317.6	11000	13500	6400
Run 19	6:59	7:29	Conductivity Secondary DS16	317.8	11000	13000	6500 No Cause?
Run 20	7:30	7:46	Conductivity Secondary DS16	317.8	11300	10400	6400 No Cause

At 4:32 Ken was taken to change stopper foils

At 7:46 noticed nothing coming on scan console

After re-drawing CAESAR HV code it's still not working

Run No	Start	Stop	Trigger	Pressure	Obj	XFP	Red/Blue
Run 121	7:49	8:16	Coincidence + Secondary DS 10	314.7	6900	18000	6800 No Car Sol

CAESAR Camaz crate had lost power, turned on & off. Not sure how to reload thresholds.

plugged in CSE OR of ORS to CSE TDC.

Run #	Start	Stop	Trigger	Pressure	Obj	XFP	Red and Blue
Run 122	8:39	8:54	Coincidence + secondary DS 10	314.6	11300	18600	beam dead
Run 123	9:00	9:30	Coincidence + secondary DS 10	314.6	11400	19500	6400
Run 124	9:31	10:02	Coincidence + secondary DS 10	314.5	10800	17700	5900

Beam stopped at 8:55

Mark is adjusting thresholds at home. (8:58)

9:20 Threshold values are fine even after crate power failure

Run 125	10:04	10:34	Coincidence + secondary DS 10	314.3	10200	11150	5600
Run 126	10:50	10:53	5800 singles	314.3	9800	16400	5800 CRDC
Run 127	10:54	10:57	5800 singles	314.3	9800	16400	5200 CRDC
Run 128	11:08	11:13	unreacted beam		1300	2400	750 Old beam
Run 129	11:16	11:21	unreacted beam		1500	2500	900 New beam
Run 130	5 min		Reactive scotchy				
Run B1	12:37	13:07	Coincidence + secondary DS 10	314.1	8200	14000	5800

CFD Server for Caesar is running on
3rd screen J6pc2 machine.

CFD server should be running at all times (little
grey window → CFD SERVER)

• To start (if not running), type
./cfcl-server &

in terminal (~~edit~~ @ galag48).

• To check if settings are still present, start
GUI in same terminal . /gui.tcl

~~./gui.tcl~~ @ /etc/CAESAR/

& select log-file (/usr/~~edit~~/at-cfd/pool/et6001-Ryle/
et6001.log)

→ if stuck, contact Mark
(number on white board)

Run #	Start	Stop	Trigger Pressure	Pressure	Obj	XFP	Red and Blue	Run
Run 132	13:08	13:39	Coincidence + Secondary DS 10	314.0	8800	14600	5080	Run 146
Run 133	13:39	14:10	Coincidence + Secondary DS 10	313.7	8500	14600	5000	147
Run 134	14:10	14:42	Coincidence + Secondary DS 10	313.7	8180	13600	4770	
Run 135	14:42	15:13	Coincidence + Secondary DS 10	313.6	8130	13900	4740	
			Coincidence trigger - of 8800 enable from		increased width 300ns → 350ns -			151
Run 136	15:15	15:45	Coincidence + Secondary DS 10	313.4	7400	12600	4300	152
Run 137	15:45	16:20	Coincidence + Secondary DS 10	313.3	7200	12600	4300	
Run 138	16:21	17:01	Coincidence + Secondary DS 10	313.2	9500	15300	5500	Run 153
Run 139	17:01	17:36	Coincidence + Secondary DS 10	313.2	9300	15000	5000	Run 154
Run 140	17:37	18:07	Coincidence + Secondary DS 10	312.9	8458	14077	5002	
			25 ns added to triggers					
Run 141	18:08	18:38	Coincidence + Secondary DS 10	312.8	8365	14161	5013	
Run 142	18:39	19:08	Coincidence + Secondary DS 10	312.8	8337	13746	4963	10/1 Run 155
Run 143	19:08	19:39	Coincidence + Secondary DS 10	312.7	7990	13500	4883	
Run 144	19:39	20:13	Coincidence + Secondary DS 10	312.6	7534	12700	4625	Run 156
Run 145	20:14	20:46	Coincidence + Secondary DS 10	312.7	6930	1150	4210	Run 157

Beam Tuning

DAQ crashed at the end

Run #	Start	Stop	Trigger	Pressure (Torr)	Obj	XFP	Red and Blue
146	21:07	21:37	Coincidence + Secondary DS10	312.3	6500	11300	3900
147	21:44		Trigger Coincidence	312.3	5700	9700	3400

X Run 147 - Run 150

Ring Buffer Conflication

150 151	22:18	22:49	Coincidence + Secondary DS10	312.2	5300	9900	3540
152	22:50	23:20	Coincidence + Secondary DS10	312.1	6090	11500	3810
Run 153	23:20	23:50	Coincidence + Secondary DS10	312.0	7600	13200	4680
Run 154	23:50	00:12	Coincidence + Secondary DS10	311.9	7200	13100	4260

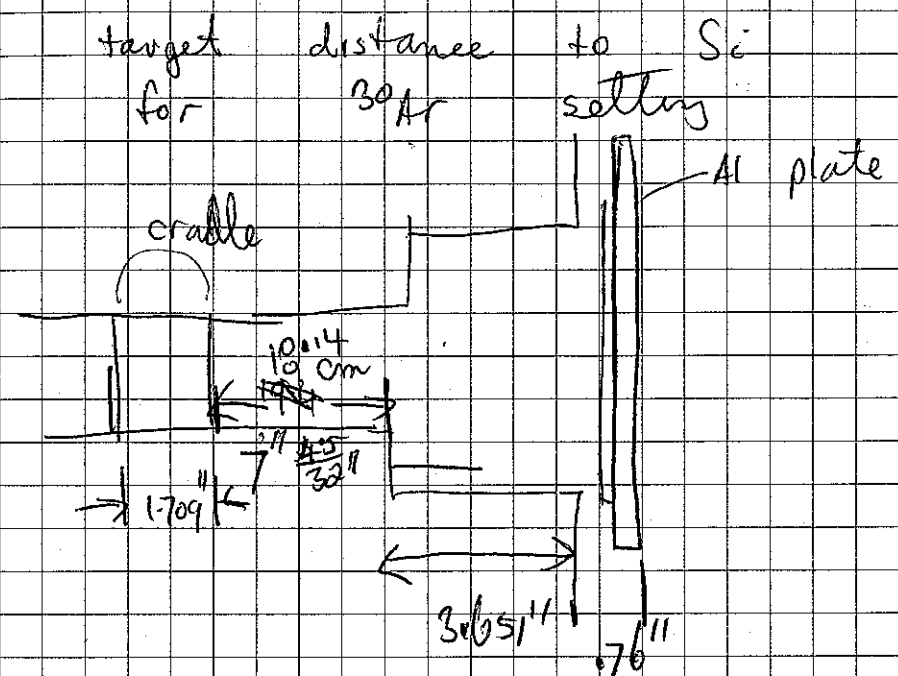
L₁₀₀.clock = 0 rescan DAQ

10/19/2018

Run 155	00:21	00:51	Coincidence + Secondary DS10	311.7	7020	11656	4126
Run 156	00:52	01:22	Coincidence + Secondary DS10	311.6	6821	11710	4098
Run 157	01:23	01:54	Coincidence + Secondary DS10	311.6	6381	11068	3898

Run No.	Start	stop	Trigger	P10 Pressure	obj. count	XF count	Red and blue
Run 158	01:54	02:28	Coincidence + secondary DS10	311.6	6278	10617	3847
Run 159	02:28	02:59	Coincidence + secondary DS10	311.5	5808	9498	3615
Run 160	02:59	03:30	Coincidence + secondary DS10	311.4	6235	10344	3761
Run 161	03:38	04:07	Yes last DATA Coincidence + secondary DS10	311.3	5879	9803	3529
Below beam test. DIC requested we do a K1200 foil change. <i>fbp</i>							
Run 162	03:57	04:27	Coincidence + secondary DS10	311.1	9681	16489	5889
Run 163	04:27	05:05	Coincidence + secondary DS10	311.	9763	16333	5767
Run 164	05:06	05:37	Coincidence + secondary DS10	310.9	8924	15399	5351
Run 165	05:37	06:00	Coincidence + secondary DS10	310.9	8918	15746	5326
Run 166	06:00	06:39	Coincidence + secondary DS10	310.8	8875	15433	5424
Run 167	06:39	07:08	Coincidence + secondary DS10	310.7	9040	15735	5405

Run No.	Start	Stop	Trigger	P10 Pressure	obj. sent	XPP sent	Red and Blue
Run 168	07:08	07:38	Coincidence + Secondary DS10	310.5	8872	14768	5211
Run 169	07:38	08:04	Coincidence + Secondary DS10	310.4	8300	14000	5140
Run 70	07:58	12:16					



$$\text{dist} = \frac{1.709''}{2} + \frac{7'' \cdot 4.5}{32} + 3.651'' + 0.76'' -$$

plate thickness - 0.5 mm
Si thickness.

$$= 2.170 \text{ cm} + \frac{18.14}{2} \text{ cm} + 9.273 \text{ cm} + 1.93 \text{ cm} + \text{plate thickness} - 0.05 \text{ cm}$$

$$= \frac{30.17}{31.46} \text{ cm} - \text{plate thickness} - 0.55 \text{ cm}$$

$$= 30.91 \text{ cm}$$

10/19/13

We have inserted the ^(1mm) 188 mg/cm Be target

Si - Target distance

$$\frac{1.709''}{2} + \frac{10.11 \text{ cm}}{1.91 \text{ cm}} + 15 \frac{3''}{8}$$

$$= \text{~~6.11 cm~~ } 59.36 \text{ cm} = 23.37''$$

unwedged "α" beam $E/A = 80$

10% α's

Rate After	1mm Be		78.67 MeV/A
	4.89 mm Al		70.757 MeV/A
	9.65 mm		60.81 MeV/A

175
Jan B
out

176

177

17

178

179

180

181

182

183

184

Title: Alpha Calibration Beam 80 MeV/A, 1mm Be target

Run	Start	Stop	Target	Beam pressure	Obj. Scint	XFP Scint	Red and Blue
170	13:19	13:32	Be	Alpha			19700
171	13:32	13:42	Be	Alpha			
172	13:42	13:52	Be	Alpha			
173	13:52		Be	Alpha			
174	15:10	15:25	9.65mm Al	Alpha.			
175	15:25	15:34	9.65mm Al	Alpha.			
Jan B on shift	80 MeV/A		Proton	beam			
176	16:47	16:52	9.65mm Al	proton			
177	16:53	16:57	9.65mm Al	proton			
178	17:31		target change!				
178	17:31	17:48	1mm Be	Proton			
179	17:52	18:02	1mm Be	proton			

Back to 30Ar setting.
0.5mm Be target.

Run	Start	Stop	Trigger	Pressure	Obj. Scint	XFP Scint	Red & Blue
180	18:42	18:52	5800 singles	30 Ar			
181	18:52	18:55	CRDC Mask 1	30 Ar			
182	18:55	19:00	CRDC Mask 2	308.6 Torr			
183	19:41	20:11	Coincidence + Secondary D10	308.5	10800	18000	5600
184	20:11	20:42	Coincidence + Secondary D10	308.4	9600	15400	4900

note: production target changed, should be almost the same thickness

Oct 20 (Sat)

red and blue	Rm	Start	Stop	Trigger	P10 pressure	obj. cnt	XFP cnt.	Red and Blue
4-7-10	201	05:00	05:30	Coincidence + secondary DS10	307.1	8200	13500	4200
4-8-9A	202	05:31	06:00	Coincidence + secondary DS10	307.0	7800	13500	4200
4-4-78	203	06:00	06:30	Coincidence + secondary DS10	306.9	7800	13000	4200
500	204	06:30	07:00	Coincidence + secondary DS10	306.9	8800	14500	4750
4-9-54	205	07:00	07:30	Coincidence + secondary DS10	306.7	8500	14500	4400
4-7-63	206	07:30	07:59	Coincidence + secondary DS10	306.7	8200	14000	4300
4-6-61	207	07:59 08	8:29	Coincidence + secondary DS10	306.6	8200 7700	13061	4073
4-8-00	208	08:29	09:00	Coincidence + secondary DS10	306.6	7800	13500	4000
	209	09:01	09:31	Coincidence + secondary DS10	306.3	8000	13800	4100
5-7	210	09:31	10:02	Coincidence + secondary DS10	306.3	9000	15716	4619.50
3-9	211	10:02	10:29	Coincidence + secondary DS10	306.1	8273	14296	4168
	212	10:29	11:00	Coincidence + secondary DS10	306.0	8201	14052	4015
5-7	213	11:02	11:29	Coincidence + secondary DS10	305.9	7165	12500	3571.5
	214	11:30	12:00	Coincidence + secondary DS10	305.9	8187.5	14077	4232
	215	12:11	12:35	Coincidence + secondary DS10	305.8	11000	14600	5700
	216	12:36	13:06	Coincidence + secondary DS10	305.7	11000	18000	5500
	217	13:06	13:35	Coincidence + secondary DS10	305.5	10781	18136	5527
10	218	13:35	14:05	Coincidence + secondary DS10	305.5	10300 10408	17307	5227
0	219	14:06	14:36	Coincidence + secondary DS10	305.3	10268	17215	5054

- 12:00 went into vault to refill chiller.
Leak current was 317

Run	Start	Stop	Trigger	P10 Pressure	Obj. Scint	XEP scint	Red and Blue	Run
220	14:37	15:06	Coincidence + Secondary DS10	305.3	10629	17806	4384	230
221	15:07	15:39	Coincidence + Secondary DS10	305.2	10475	17572	4544	231
222	15:40	16:07	Coincidence + Secondary DS10	305.2	10473	17416	5022	232
223	16:08	16:42	Coincidence + Secondary DS10	305.1	9520	15530	4780	233
224	16:43	17:14 17:14	Coincidence + Secondary DS10	305.0	9450	15700	4780	234
225	17:15 17:15	17:47	Coincidence + Secondary DS10	304.9	10340	16500	5035	235
226	17:47	18:20	Coincidence + Secondary DS10	304.9	9500	16230	4900	236
227	18:20	18:54 18:54	Coincidence + Secondary DS10	304.9	9650	15900	4750	237
228	18:54	19:26	Coincidence + Secondary DS10	304.5	8600	14500	4788	238

~~229 230 231 232 233 234 235 236 237 238 239~~

Run stopped for stripping foil replacement.
15-20 min stop.

Readout ~~is~~ crashed \Rightarrow restored.

229 JUNK RUN

~~230~~

240
241
242
243
244
245

Run	Start	Stop	Trigger	DP Pressure	Obj. Sinto	XFD. Sinto.	Red and Blue
384 544	20:05	20:36	Coincidence + Secondary DS10	304.4	10320	17800	5634
222	20:37	21:07	Coincidence + secondary DS10	304.4	10800	17900	5180
180	21:07	21:42	//	304.2	10900	18400	5000
	21:42	22:15	Coincidence + Secondary DS10	304.2	11012	19000	5242
780	22:15	22:48	Coincidence + secondary DS10	304.2	10626	18051	5148
	22:48	23:20	Coincidence + Secondary DS10	304.2	10084	17060	4761
235	23:20	23:50	Coincidence + Secondary DS10	304.0	10766	18003	5119
'00	23:50	00:21	Coincidence + secondary DS10	303.9	9411	16356	4985
30	00:22	00:53	Coincidence + secondary DS10	303.9	10242	17418	5069
88	00:53	01:26	Coincidence + Secondary DS10	304.0	9525	16805	4956
	01:26	01:58	Coincidence + Secondary DS10	303.8	9305	15654	4540
	01:58	02:25	Coincidence + Secondary DS10	303.9	9186	15521	4411
	02:26	02:56	Coincidence + Secondary DS10	303.9	8630	14660	4310
	02:56	03:27	Coincidence + Secondary DS10	303.9	9576	16630	5083
	03:28	03:58	Coincidence + Secondary DS10	304.0	9731	16449	4696
	03:59	04:29	Coincidence + Secondary DS10	303.9	9944	16779	4260

Run No	start	stop	Trigger	P10 Pressure	Obj. scnt	XFP. scnt	Red and	Run No
36								
266	04:24	04:39	Coincidence + Secondary DS10	303.9	9284	16105	4773	264 ↑ CI Mask
267	05:00	05:32	Coincidence + Secondary DS10	303.8	8736	15102	4412	265
268	05:32	06:03	Coincidence + Secondary DS10	303.8	11248	18153	5483	266
269	06:04	06:34	Coincidence + Secondary DS10	303.8	9436	16474	5026	Pulse 267
270	06:35	07:05	Coincidence + Secondary DS10	303.7	10642	18094	5106	268
271	07:06	07:35	Coincidence + Secondary DS10	303.8	9940	16286	4906	269
272	07:35	8:05	Coincidence + Secondary DS10	303.8	9504	16051	4703	270
273	08:05	8:34	Coincidence + Secondary DS10	303.9	9845	16918	4889	271
274	8:35	09:04	Coincidence + Secondary DS10	304.0	9456	16237	4564	272
275	09:							273
Run paused. Received errors and readout shell unresponsive at 09:05.								
Run resumed at 9:35								
276	9:35	10:03	Coincidence + Secondary DS10	304.0	10505	17668	5065	274
277	10:03	10:32	Coincidence + Secondary DS10	304.0	10556	17931	5055	275
278	10:33	11:03	Coincidence + Secondary DS10	304.0	10249	17240	4911	
279	11:03	11:33	Coincidence + Secondary DS10	304.0	10480	17637.5	4817	276
280	11:33	12:05	Coincidence + Secondary DS10	304.0	9355	16026	4556	
281	12:05	12:34	Coincidence + Secondary DS10	304.0	9410	15079	4227	277
282	12:35	13:01	Coincidence + Secondary DS10	304.1	11899	16022	5130	278
Started Mask runs CRDC								
283	13:08	13:09	Coincidence + Secondary DS10					279
262 is garbage as Trigger is not changed as intended.								
↓ CRDC Mask								
284	13:09	13:13	5800 singles		10966	18793	5395	

Run NO	Start	Stop	Trigger	P10 Pressure	Obj Scint	XFD scint	Red and BLUE
273	13:16	13:19	S800 Singles		10925	18573	5315
	↑ CRDC Mask Z						
	Mask runs ended						
265	13:32	14:03	Coincidence + Secondary DS10	304.1	10651	18348	5241
266	14:03	14:32	Coincidence + Secondary DS10	304.1	10735	18480	5500
	Pulser script is tested during Run 266. It's not connected to any electronics just a test of GUL						
267	14:33	15:00	Coincidence + Secondary DS10	304.2	10752	18008	5050
268	15:01	15:33	Coincidence + Secondary DS10	304.1	11785	19648	5315
269	15:34	16:03	Coincidence + Secondary DS10	304.2	11520	19678	5418
270	16:04	16:32	Coincidence + Secondary DS10	304.2	11653	19571	5450
271	16:33	17:03	Coincidence + Secondary DS10	304.3	11689	20026	5482
272	17:03	17:32	Coincidence + Secondary DS10	304.3	13573	22409	6119
273	17:32	18:00	Coincidence + Secondary DS10	304.2	11705	19692	5382
274	18:01	18:31	Coincidence + Secondary DS10	304.3	11458	18955	5123
275	18:33	18:34	Coincidence + Secondary DS10				
	↑ DS S800 x5						
276	18:35	19:07	Coincidence + secondary DS10 + DS S800 x5	304.4	11211	18605	5073
277	19:08	19:43	Coincidence + secondary DS10 + S800 DS5	304.3	10400	17500	5070
278	19:43	20:16	Coincidence + secondary DS10 + S800 DS5	304.3	11183.5	19042	5112
279	20:17	20:49	Coincidence + secondary DS10 + S800 DS5	304.4	10333	17771	5067

BLVE

Run No	Start	Stop	Trigger	P10 Pressure	Obj scint	KFP scint	Red and blue
296	05:36	06:07	Coincidence + secondary DS10 + S800 DS5	304.1	8805	15196	4292
297	06:09	06:39	Coincidence + secondary DS10 + S800 DS5	304.0	10822	16222	5180
298	06:49	07:07	Coincidence + secondary DS10 + S800 DS5	304.0	98023	16568	4781
299	07:10	07:41	Coincidence + secondary DS10 + S800 DS5	304.0	9582	16576	4637
300	07:41	8:10	Coincidence + secondary DS10 + S800 DS5	304.1	9391	15771	4654
301	8:10	8:40	Coincidence + secondary DS10 + S800 DS5	304.0	4100	15602	4400
302	8:40	9:11	Coincidence + secondary DS10 + S800 DS5	304.0	9000	15000	41300
303	9:11	9:41	Coincidence + secondary DS10 + S800 DS5	304.1	9200	15000	4000
304	9:41	10:10	Coincidence + secondary DS10 + S800 DS5	304.1	9100	15000	4400
305	10:11	10:44	Coincidence + secondary DS10 + S800 DS5	304.7	9000	15306	4400
306	10:44	11:18	Coincidence + secondary DS10 + S800 DS5	304.1	9000	15200	4300
307	11:18	11:47	Coincidence + secondary DS10 + S800 DS5	304.2	8500	14400	4200
308	11:47	12:17	Coincidence + secondary DS10 + S800 DS5	304.1	9100	15000	4300
309	12:17	12:45	Coincidence + secondary DS10 + S800 DS5	304.2	8700	14700	4200
310	12:47	13:17	Coincidence + secondary DS10 + S800 DS5	304.1	9000	15500	4500
311	13:25	13:31	Coincidence + secondary DS10 + S800 DS5 S800 singles	304.1	9000	15800	3400
312	13:32	13:36	CRDC MASK2 S800 singles	304.1	9000	15500	4300
313	13:38	13:41	No mask S800 singles	304.1	1400	2900	700
314	13:56	14:26	Coincidence + secondary DS10 + S800 DS5	304.2	9400	16000	4400

DAQ crash
reset

} MASK
} RMJ
} no mask
} unneeded beam

Run No	Start time	stop	Trigger	PIP Pressure (atm)	obj scint	XFP scint	Red & Blue	Run No	
315	14:26	14:56	coincidence + secondary DS10 S800 DS5	304.1	8500	14800	4100	331	
316	14:56	15:25	coincidence + secondary DS10 S800 DS5	304.1	8500	14500	4100	332	
317	15:33	16:03	coincidence + secondary DS10 S800 DS5	304.1	8500	14500	4100		
318	16:03	16:32	coincidence + secondary DS10 S800 DS5	304.1	8400	14500	4300		
319	16:32	17:02	coincidence + secondary DS10 S800 DS5	304.1	8500	14500	4200	Run	
320	17:03	17:33	coincidence + secondary DS10 S800 DS5	304.0	8500	14500	4200	333	
321	17:34	18:02	coincidence + secondary DS10 S800 DS5	303.9	8500	14500	4200	334	
322	18:03	18:23	coincidence + secondary DS10 S800 DS5	303.9	7800	13400	3900	335	
	Went down to S83.			Randall wants to inspect S800.					336
323	18:37	19:04	coincidence + secondary DS10 S800 DS5	303.9	8500	14500	4200	336 337	
	Went down to S83			Randall wants to inspect S800.					338
324	19:18	19:50	coincidence + secondary DS10 S800 DS5	303.8	8500	14500	4200	339	
325	19:50	20:22	coincidence + secondary DS10 S800 DS5	303.8	8500	14000	4300		
326	20:22	20:54	coincidence + secondary DS10 S800 DS5	303.8	7800	13000	4000	340	
327	20:54	21:24	coincidence + secondary DS10 S800 DS5	303.8	7100	12300	3600		
328	21:24	21:54	coincidence + secondary DS10 S800 DS5	303.8	7200	12200	3700		
329	21:55	22:16	coincidence + secondary DS10 S800 DS5	303.7	7300	12400	3700	341	
	beam gone								
330	7:45		S800 singles γ-ray background					342	

Run No	Start	Stop	Trigger	Pl6	Obj scint	XFP scint
331	7:51	8:23	Secondary DS1		NO BEAM	
332	8:23	8:58	Secondary DS 1		Locking at Caesar background	

Caesar Calibrations

Run	Start	Stop	Source	
333	9:08	9:28	88Y	weak source used. will retry with strong source
334	9:35		¹³⁷ Cs	Top of beam pipe. Good calibration.
335	9:57	10:04	¹³⁷ Cs	Bottom of beam pipe Good Calibration.
336	10:07	10:11	¹³⁷ Cs	Top of beam pipe moved to upstream Bad calib tried to get counts in weak channels in Run 334 did NOT work
337				
337	10:15	10:32	¹³³ Ba	Top of beam pipe
338	10:44	11:02	88Y	Good calibration
339	11:08	11:21	¹³³ Ba	

Obj XFP Red Blue

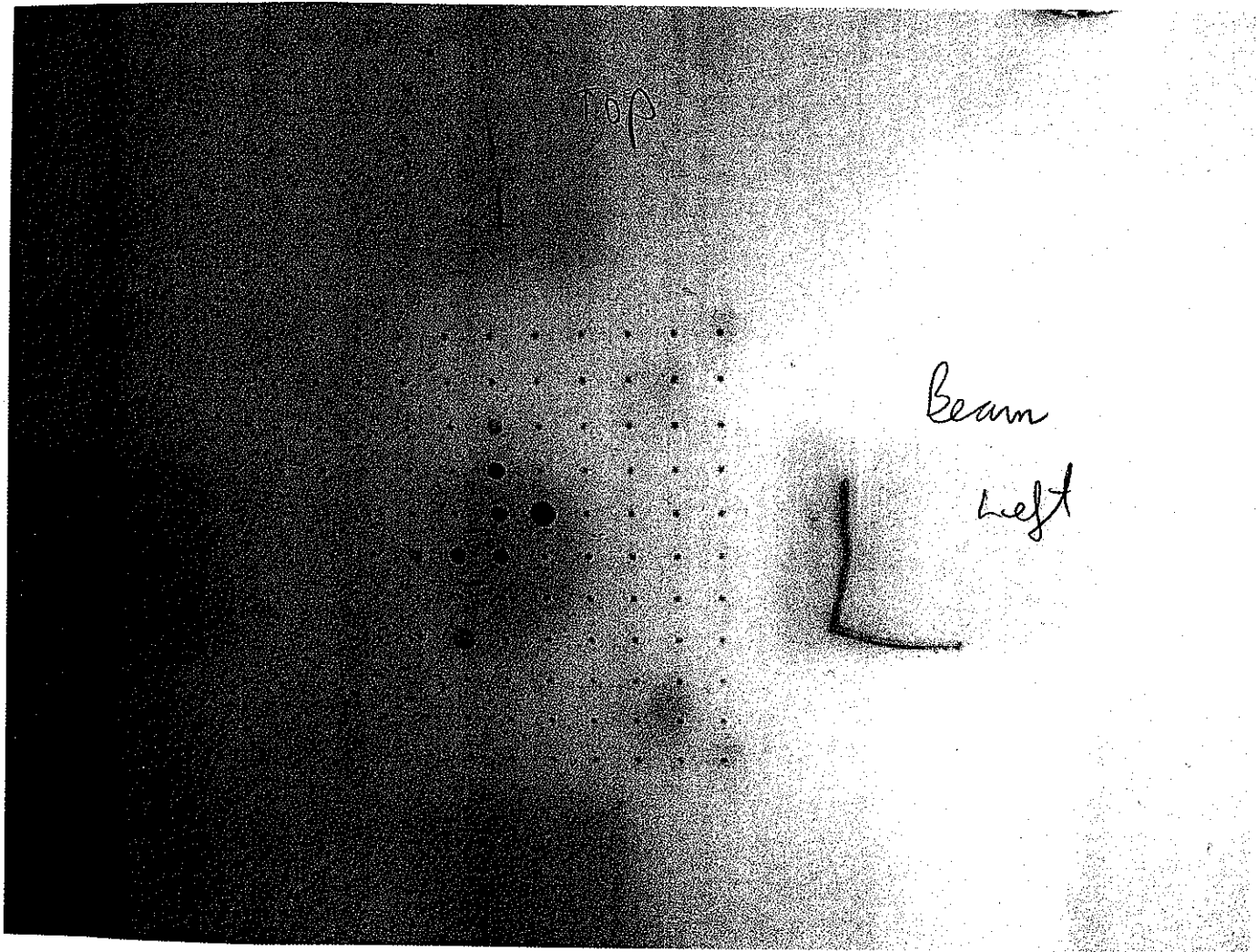
	Data	Trigger	Pl6				
340	11:32	12:02	Combinations + Secondary DS10	302.5	8300	13400	4500

GRDC Mask Calibration

341	12:11		5800 Singles DS1				Beam died
			beam gone.				
			Mask on SFA in chamber				
342	13:40	14:07	5800 singles no SD				

Run #	Start	Stop	Trigger					
343	14:08	14:39	Spec Singles	Mask in Chamber				
344	14:39	18:09	Spec Singles	Mask in Chamber				
Removed mask from chamber								
345	15:46	16:15	Coincidence Secondary DS 10	PRC 1020	Obj 9600	XFD 15800	Red Blue 5000	
346	16:17	16:21	CRX mask 1 S800 singles	302.3	1100	1800	5300	
347	16:21	16:26	CRX mask 2 S800 singles	302.3	11000	18000	5400	
348	16:28	16:31	no mask 10x atten S800 singles	302.3	1700	2900	900	close
349	16:32	16:38	no mask - closed by pass S800 sigs	302.3	1800	3000	900	by-pass valve on CORS
Robo no mask (make sure things settle in equilibrium)								
350	16:39	16:44	no mask S800 singles	302.3	1900	3100	900	
351	16:45	16:48	CRX mask 1 S800 singles	302.3	10000	18000	5100	
352	16:49	16:52	CRX mask 2 S800 singles	302.3	10600	17000	5200	
353	17:03	17:31	Coincidence Secondary DS 10 S800 DS 5	302.2	4900	16000	5000	
354	17:31	18:01	Coincidence Secondary DS 10 S800 DS 5	302.2	4200	15500	4500	
355	18:01	18:30	Coincidence Secondary DS 10 S800 DS 5	302.1	4100	14000	4500	
356	18:30	19:00	Coincidence Secondary DS 10 S800 DS 5	302.2	4500	16000	4500	
357	19:00	19:30	Coincidence Secondary DS 10 S800 DS 5	302.2	910584	17480	5284	

Between 348 & 349 By-pass valve on CRXs was closed. It was left open on previous runs



TOP

Beam

left

Close to
 X-pass
 valve on
 ORS

Run #	Start	Stop	Trigger	PIO	Obj	X FP	Red & Blue	Run #
358	19:31	20:01	Coincidence secondary DS10 S800 DS5	302.2	10000	16000	4800	379 C
359	20:01	20:31	Coincidence secondary DS10 S800 DS5	302.2	9965	15783	4640	380 0
360	20:31	21:00	Coincidence secondary DS10 S800 DS5	302.2	10169	16732	4987	381 0
361	21:00	21:30	Coincidence secondary DS10 S800 DS5	302.3	11000	18000	5300	382 C
362	21:30	22:00	Coincidence secondary DS10 S800 DS5	302.2	11098	18402	4883	383 0
363	22:01	22:30	Coincidence secondary DS10 S800 DS5	302.4	11046	18246	5337.6	384 C
364	22:30	23:00	Coincidence secondary DS10 S800 DS5	302.4	11300	18500	5500	385 C
365	23:00	23:30	Coincidence secondary DS10 S800 DS5	302.4	11273	18567	5661	
366	23:30	00:00	Coincidence secondary DS10 S800 DS5	302.4	10400	17000	5300	
367	00:00	00:31	Coincidence secondary DS10 S800 DS5	302.4	10517	16970	5121	386 1
368	00:31	01:02	Coincidence secondary DS10 S800 DS5	302.4	10138	16781	4964	387 1
369	01:02	01:33	Coincidence secondary DS10 S800 DS5	302.4	10138	16781	4964	388 1
370	01:33	02:09	Coincidence secondary DS10 S800 DS5	302.5	9441	15770	4691	389 1
371	02:09	02:42	Coincidence secondary DS10 S800 DS5	302.6	9320	15616	4522	390 1
372	02:42	03:13	Coincidence secondary DS10 S800 DS5	302.4	8982	14802	4550	391 1
373	03:13	03:45	Coincidence secondary DS10 S800 DS5	302.4	9810	16107	4662	392 1
374	03:46	04:19	Coincidence secondary DS10 S800 DS5	302.4	8963	14848	4510	393 1
375	04:19	04:54	Coincidence secondary DS10 S800 DS5	302.6	8376	13949	4287	394 1
376	04:54	05:26	Coincidence secondary DS10 S800 DS5	302.6	8305	13572	4106	
377	05:26	05:57	Coincidence secondary DS10 S800 DS5	302.6	7858	12806	3743	
378	05:57	06:27	Coincidence secondary DS10 S800 DS5	302.6	8939	15006	4471	

RUN#	start	stop	trigger	P10	@BS	XFP	Red & Blue
379	06:27	06:57	Coincidence Secondary DS10 S800 DS5	302.6	8498	14262	4265
380	06:58	07:28	Coincidence Secondary DS10 S800 DS5	302.8	7983	13917	4208
381	07:28	07:58	Coincidence Secondary DS10 S800 DS5	302.8	8753	15103	4328
382	07:58	08:28	Coincidence Secondary DS10 S800 DS5	302.8	9451	15718	4204
383	08:29	08:59	Coincidence secondary DS10 S800 DS5	302.8	9000	14800	4600
384	09:00	09:30	Coincidence + secondary DS10 S800 DS5	302.8	9000	15000	4700
385	09:30	10:00	Coincidence + secondary DS10 S800 DS5	302.8	9500	16000	5000

END OF BEAM

386	10:13	10:29	88Y secondary trigger				
387	10:42	10:57	137Cs secondary trigger				
388	11:05	11:16	133Ba secondary trigger				
389	11:22	11:37	133Ba secondary trigger				
390	11:43		Background				
391	13:03	13:32	232U α source for S4 calibration				
392	13:32	13:59	232U α source for S4 S1 calibration				
393			CoT order from 0.25 to 0.9 2 points.				
394							

DAQ restarted Junk run

