28 May 2010 Friday.

Cut beam ~ 500 enA.

Run # 374	Beam: 84Se	Date: 28 May 2010
Avg. Rates	Beam Energy: 45 MeV	Bρ: 2.375 (Seg. 8)
MCP0: out	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: 167 k	Drives [mm]	Attenuation: 1
XFP: 218 k	I250X-R: 0 MCP0	OnShift: Dan Meredith Brett Remi
Live Time: 99%	I250Y-R: 165mm MCP1 ✓	
Live Trigger:	I251Y-R: 100 mm Target	Welding ended (~5min in)
Comments: (Run 8 started with beam stop in (~1 min))		

↑BACK to production mode

CRAD 04 0.4 − 0.5 = ~~400~~ 0.4 k

CRAD 06 2.2 = 220 k

Run # 377	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger: Coin	Target:
MCP1:	Drives [mm]	Attenuation: 10
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: C target. 1		

Run # 378	Beam: 84Se	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800	Target: 47mg
MCP1:	Drives [mm]	Attenuation: 10
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: 239.4 Target	
Comments: No readout for HiRA		

Put FP Slits back to [4.20] & Coin-trigger.

Run # 379	Beam: 84Se	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: Coin (S800+HiRA)	Target: 25 um Ni
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: CRDC4 ~ 0.4-0.5, CRDC6 ~ 1.9		

Run #380 Background shake
No beam, coinc.

Run # 382	Beam:	Date: 28 May 2010 Fri
Avg. Rates	Beam Energy:	B ρ: 2.30525 (Seg. 8) ✗
MCP0:	Trigger:	Target: 17mg C
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift:
Live Time: 99%	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: CRADNA 8:04 : CRADO6 : 1.7		

Run 383 Is this ^{84}Se HiRA singles (30 min)

No HiRA read out within run.

RUN# ATTN.

1 min { 384 x3
385 x10
386 x30

2 mins { 387 x100

388 background

3:13pm Welding started ; 3:40pm Welding Stopped

Runs 388 → 390

Background runs without beam. ~5 mins each

391 Corrupted

392 - 394 RUNS =? Zb & Bill .4 vault to "test" from there. MY onshift.

RUN 395 Dephased RF. 86Kr beam degraded ATT = 1000. C target.

RUN 396 Same as 395 but w/ ATT = 100k. XFP eff = 100% per Jorge Pereira - Cnca

RUN 397 Same as 396. Periodic outages.

Run 398 — ^{86}Kr degraded 36^+ & 35^+ C.S. in S800 Focal Plane 25 μm Target

399 — 35^+ & 34^+ same otherwise as Run 398

400 — 10μm Target, 86 Kr beam 36^+ and 35^+ charge state Ratio

401 — 10μm Target 86 Kr beam 35^+ and 34^+ charge state

402 ^{86}Kr : changed order of clear functions in XLM. Tweeking 10 μm CH_2 target. Magnets do not appear to be matched.

403 - 404 No change in setup. Tweaks to electronics. Quasi JUNK.

405 $\frac{CRADC4}{CRADC6}$ = ratio dropped from Beginning of Run 402. Looked like transient magnet drifting. Moved slits from 4.38 to 4.58 in 2 steps. Just see tail of scattered ^{84}Kr behind beam blocker.

Run # 406	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy: ?	B ρ: ? (Seg. 8)
MCP0:	Trigger: S800 HiRA	Target: 10μm CH2
MCP1:	Drives [mm]	Attenuation: 1000
XFP:	I250X-R: 0 MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	I251Y-R was enabled since 5pm.
Live Trigger:	I251Y-R: Target	
Comments: Ended w/ VME crate crash.		

I251Y-R drive was enabled.

Daniel Bazin started to match Spectrograph Dipoles, which were ~ 0.1% and 0.4% off by NMR gui.

Run # 407	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: (Seg. 8)
MCP0:	Trigger: S800 single	Target: Mask 264.5mm
MCP1:	Drives [mm]	Attenuation: 10,000
XFP:	I250X-R: out MCP0	OnShift: Seg7 = 2.34690
Live Time:	I250Y-R: in MCP1	Seg8 = 2.30265
Live Trigger: ~40%	I251Y-R: 264.5 Target	
Comments:		

Run # 408	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger: S800 singles	Target: 10 μm CH_2
MCP1:	Drives [mm]	Attenuation: 1 M
XFP:	I250X-R: 0 MCP0	OnShift: MA
Live Time:	I250Y-R: 241 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: MCP mask run, Swept mask.		

↑Bρ was swept in Seg. 7 to illuminate much larger area than beam spot. ~~Analysis line~~

Now preparing for 86Kr (p,d) HiRA singles trigger mode to get good lines for deuteron ~~rep~~ relative to p, t, ^{3}He, etc.

Run # 409	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger: S800 + HiRA Coin	Target: 10 μm CH_2
MCP1:	Drives [mm]	Attenuation: 1,000.
XFP:	I250X-R: 0 MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments:		

Run # 410	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation:
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: SAME AS 409		

Run # 411	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger: Conc.	Target:
MCP1:	Drives [mm]	Attenuation:
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: Opened FP Slit to see 86Kr tail		

Switching to HiRA singles.

Run # 412	Beam: 86Kr	Date: 28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: off	Trigger: HiRA singles	Target: 10 μm CH2
MCP1: off	Drives [mm]	Attenuation:
XFP: 800	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: FP GV in.		

Run #	Beam:	Date: May 2010

RUN 413 Same as 412.

RUN414 SAME as 412.

Run # 415	Beam: 86 Kr	Date: 28 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.3026 (Seg. 8)
MCP0: —	Trigger: HiRA Singles	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~630 KHz	I250X-R: 0 MCP0	OnShift: Brett Zibi Meredith Micha Betty Jack
Live Time: ~94%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Should be going to coincidence soon.		

12:15 AM

Run # 416	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.3026 (Seg. 8)
MCP0: —	Trigger: HiRA Singles	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~650 KHz	I250X-R: 0 MCP0	OnShift: Brett Zibi Meredith Micha Betty Jack
Live Time: ~94%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: MCP still off (Run ended when operators asked for beam back)		

12:25 AM

Zibi is switching the trigger back to the S800 & HiRA singles.

Turning the MCP bias voltage on.

MCP1 bias voltage = 2.3 KV

12:33 AM

Run # 417	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 μm CH2
MCP1: ~260 KHz	Drives [mm]	Attenuation: 1000
XFP: ~210 KHz	I250X-R: 0 MCP0	OnShift: Brett, Meredith, Zibi, Micha
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Crad 06/Crad 04 ≈ 2.0/2.5 = 0.8		

We will use this ratio as a baseline.

$$\frac{\text{Crad 06}}{\text{Crad 04}} \approx 0.8$$

1:13 AM

Run # 418	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 μm CH2
MCP1: ~250 KHz	Drives [mm]	Attenuation: 1000
XFP: ~190 KHz	I250X-R: 0 MCP0	OnShift: Micha, Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: We do not Know why MCP1 > XFP		

$$\frac{\text{Crad 06}}{\text{Crad 04}} \approx \frac{1.7}{2.3} \approx 0.74$$

* Bill has noticed that the "Clear" scaler is counting roughly twice what it should.

  Looking at the oscilloscope we see that this is an issue with the scaler, and in practice the electronics are working correctly.

* The MCP is running at low efficiencies, which Bill suggests is causing MCP1 > XFP

* Bill has approximated the ~~MCP1~~ XFP efficiency as ~ 50%

* We noticed the XFP rate was nearly 50% (down from > 90% just hours earlier). We turned off the MCP and turned the beam up by a factor of 2. We will call Jorge at 6:00 AM.

~~2:18 AM~~

~ 2:00 AM

Run # 419	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026 5 (Seg. 8)
MCP0: ~~—~~	Trigger: S800 & HiRA	Target: 10um CH2
MCP1: ~ 240 KHz	Drives [mm]	Attenuation: 1000
XFP: ~190 KHz	I250X-R: 0 MCP0	OnShift: Brett Micha Betty Bill
Live Time: ~ 98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: XFP efficiency is about 50%		

* Upon turning off the MCP we abruptly ended the run.

2:18 AM

Run # 420	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800&HiRA	Target: 10 um CH2
MCP1: ~	Drives [mm]	Attenuation: 1000
XFP: ~400 KHz	I250X-R: 0 MCP0	OnShift: Brett, Micha, Betty, Bill
Live Time: ~98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Beam turned up by factor of 2, MCP turned off.		

(Note the change in beam intensity and MCP 1 was turned off)

$\frac{\text{Crad 06}}{\text{crad 04}} \approx 1.9$ (prior to intensity change)

$\frac{\text{CRAD 06}}{\text{CRAD 04}} \approx \frac{4.0}{5.2} \approx 0.76$

* Ended run to check current effiency. Using the method recommended by Jorge:

$\Rightarrow$ efficiency $\approx$ 38% (Run 420)

2:48 AM

Run # 421	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~340 KHz	I250X-R: 0 MCP0	OnShift: Brett, Micha
Live Time: ~98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Efficiency of XFP is very low!		

$\frac{\text{CRAD 06}}{\text{CRAD 04}} \approx \frac{3.1}{4.2} \approx 0.76$

3:15 AM

P.T. #1 (Pressure)	+400.5	Torr
P.T. #2 (Pressure)	+39.7	Torr
M.F.C. #1 (Flow)	40.87	sccm
M.F.C. #2 (Flow)	8.21	sccm
M.F.C. #3 (Flow)	30.62	sccm

Tower Si0	3.8	uA	BACK BIAS
Tower Si1	15.2	uA	+150 Volts
Tower Si2	12.2	uA	
Tower Si3	5.1	uA	
Tower Si4	7.92	uA	

Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow0Cart15	140.00 V	4.00 uA	139.75 V	0.56 uA	On		00.0000
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.24 uA	On		00.0001
Tow0Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0002
Tow0Card6	160.00 V	4.00 uA	160.00 V	0.66 uA	On		00.0003
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On		00.0004
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.94 uA	On		00.0005
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On		00.0006
Tow1Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0007
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.82 uA	On		00.0008
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.62 uA	On		00.0009
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.44 uA	Off		00.0010
Tow2Card12	150.00 V	6.00 uA	150.25 V	4.64 uA	On		00.0011
Tow2Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0012
Tow2Card6	200.00 V	4.00 uA	200.25 V	1.38 uA	On		00.0013
Tow2Card3	115.00 V	4.00 uA	115.25 V	1.68 uA	On		00.0014
Tow3Card15	150.00 V	4.00 uA	150.00 V	1.38 uA	On		00.0015
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On		00.0016
Tow3Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0017
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.18 uA	On		00.0018

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Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.46 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.10 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.00 V	1.84 uA	On		00.0021
Tow4Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0022
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.50 uA	On		00.0023
Tow4Card3	210.00 V	4.00 uA	210.25 V	3.48 uA	On		00.0024
Tow0Card1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0025
1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0026
Tow2Card1*	0.00 V	0.10 uA	0.25 V	0.00 uA	Off		00.0027
PA14	8.00 V	2.0 uA	8.10 V	0.0 uA	On		03.0000
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On		03.0001
PA13	7.00 V	2.0 uA	6.75 V	0.0 uA	On		03.0002
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	3.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009

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Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	0.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009
PA17	6.00 V	2.0 uA	5.80 V	0.0 uA	On		03.0010
CsI2	40.00 V	3.0 uA	39.95 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On		05.0003
PA2	9.00 V	2.0 uA	9.15 V	0.2 uA	On		05.0004
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On		05.0005
PA9	8.00 V	2.0 uA	7.65 V	0.4 uA	On		05.0006
PA6	11.00 V	2.0 uA	10.75 V	0.0 uA	On		05.0007
PA8	7.00 V	2.0 uA	6.85 V	0.0 uA	On		05.0008
PA5	7.00 V	2.0 uA	6.65 V	0.0 uA	On		05.0009
PA7	0.00 V	3.0 uA	0.00 V	0.0 uA	Off		05.0010
CsI4	40.00 V	10.0 uA	39.85 V	0.2 uA	On		05.0011

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

efficiency of XFP ≈ 38% (Run 421)

3:29 AM

Run # 422	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~300 KHz	I250X-R: 0 MCP0	OnShift: Brett, Micha
Live Time: ~98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: CRAD 06/CRAD 04 ≈ 2.9/4.8 ≈ 60%		

XFP efficiency ≈ 33% (Run 422)

4:17 AM

Run # 423	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~260 KHz	I250X-R: 0 MCP0	OnShift: Brett, Micha
Live Time: ~98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: CRAD 06/CRAD 04 ≈ 2.5/4.5 ≈ 56%		

XFP efficiency ≈ 32% (Run 423)
(The beam was really sporadic near the end of this run.)

5:01 AM

Run # 424	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~350 KHz	I250X-R: 0 MCP0	OnShift: Brett, Micha
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: CRAD 06/CRAD 04 ≈ 3.0/3.9 = 77%		

XFP efficiency ≈ 33% (Run 424)

* About 5:30 AM we decided to call Jorge for a shim.

5:46 AM

Run # 425	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Brooy Micha
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: CRAD 06/CRAD 04 ≈ 2.0/3.5 = 57%		

* Run was ended after ~12 minutes when Jorge showed up to shim the beam. (About 6:00 AM)

6:37 AM

Run # 426	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1: —	Drives [mm]	Attenuation: 1x10^6
XFP:	I250X-R: 0 MCP0	OnShift: Brooy Micha
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: During the start of this run Jorge was adjusting the slits and optimizing the beam.		

I255 → I2~~00~~55 - CT
4.66 → 4.62
(From 4.66 to 4.62) Change in slits.

XFP efficiency ≈ 96%

(Jorge had measured the efficiency at 100%)

7:08 AM

Run # 427	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800&HiRA	Target: 10 CH2
MCP1: —	Drives [mm]	Attenuation: 1000
XFP: ~215 KHz	I250X-R: 0 MCP0	OnShift: Brett
Live Time: ~99%	I250Y-R: 165 MCP1	Micha
Live Trigger:	I251Y-R: 100 Target	
Comments: Fresh data run.		

Currently: $\frac{CRAD\ 06}{CRAD\ 04} \simeq \frac{2.3}{3.0} = 0.77$

7:46 AM

Run # 428	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 10 CH2
MCP1: —	Drives [mm]	Attenuation: 10000
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Brett
Live Time: ~97%	I250Y-R: 165 MCP1	Micha
Live Trigger:	I251Y-R: 100 Target	Mike
Comments:		

$\frac{CRAD\ 06}{CRAD\ 04} \simeq \frac{2.0}{2.4} = 0.83$

XFP efficiency ≃ 95%

Run # 429	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.30265 (Seg. 8)
MCP0:	Trigger: S800 + HiRA	Target: 10 CH_2
MCP1:	Drives [mm]	Attenuation: 10,000
XFP: ~203 KHz	I250X-R: 0 MCP0	OnShift: Mike
Live Time: ~97%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

$\frac{CRAD\ 06}{CRAD\ 04} \simeq \frac{1.8}{2.3} \simeq 0.78$

XFP efficiency ≃ 94%

Run # 430	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026 (Seg. 8)
MCP0:	Trigger: S800 + HiRA	Target: 10 CH_2
MCP1:	Drives [mm]	Attenuation: 10000
XFP: ~195 KHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~98%	I250Y-R: 165 MCP1	Mike
Live Trigger:	I251Y-R: 100 Target	
Comments:		

$$\frac{CRAD\,0C}{CRAD\,0F} \simeq \frac{2.0}{3.0} \simeq 0.67$$

XFP efficiency ~95%

Run # 431	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026 (Seg. 8)
MCP0:	Trigger: S800 + HiRA	Target: 10 CH_2
MCP1:	Drives [mm]	Attenuation: 10000
XFP: ~192 KHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~96%	I250Y-R: 165 MCP1	Mike
Live Trigger:	I251Y-R: 100 Target	
Comments:		

$$\frac{CRAD\,0G}{CRAD\,0F} \simeq \frac{1.8}{2.8} \simeq 0.64$$

XFP Efficiency ~ 95%

Run # 432	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026 (Seg. 8)
MCP0:	Trigger: S800 + HiRA	Target: 10 CH_2
MCP1:	Drives [mm]	Attenuation: 10,000
XFP: ~190 KHz	I250X-R: 6 MCP0	OnShift:
Live Time: ~96%	I250Y-R: 165 MCP1	Mike: Enrique
Live Trigger:	I251Y-R: 100 Target	
Comments:		

$$\frac{CRAD\,0G}{CRAD\,0F} \simeq \frac{2.0}{3.0} \simeq 0.66$$

XFP efficiency ~96%

Beam tune @ 11:20 ~~after~~ after a sudden drop in beam.

Run # 433	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026S (Seg. 8)
MCP0:	Trigger: S800+HiRA	Target:
MCP1:	Drives [mm]	Attenuation: 10,000
XFP: 135 kHz	I250X-R: 0 MCP0	OnShift: Mike Meredith Milan Enrique
Live Time: 96%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: MCP1 B.20 back on		

$$\frac{CRADO6}{CRADO4} \approx \frac{1.6}{1.8} \approx 0.89$$

XFP efficiency ~93%

Run 434 Daq locked up + ~~does~~ required a reboot.

Run # 435	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.3026S (Seg. 8)
MCP0:	Trigger: S800+HiRA	Target: 10 CH_2
MCP1:	Drives [mm]	Attenuation: 10,000
XFP: ~~280~~ 1k Hz	I250X-R: 0 MCP0	OnShift: Bill Milan Mike Betty Enrique Tilak
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Post DAQ lock up		

$$\frac{CRADO6}{CRADO4} \approx \frac{2.3}{2.9} \approx 0.88$$

XFP efficiency ~93%

MCP efficiency calebration runs.

Run # 436	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: 2.30265 (Seg. 8)
MCP0: 0	Trigger: S800+HiRA	Target: 10 μm CH2
MCP1: 120 K	Drives [mm]	Attenuation: 10 K
XFP: 237 K	I250X-R: 0 MCP0	OnShift: Bill, Betty, Mike, Milan, Tilak Enrique
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Short run.		

Run # 437	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: 0	Trigger: S800+HiRA	Target: 10 μm CH2
MCP1: 51 K	Drives [mm]	Attenuation: 30 K
XFP: 57 K	I250X-R: 0 MCP0	OnShift: Mike, Milan, Bill, Betty, Tilak, Enrique
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 438	Beam: 86 Kr.	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: None	Trigger:	Target: 10 μm CH2
MCP1: 15 K	Drives [mm]	Attenuation: 100 K
XFP: 11 K	I250X-R: 0 MCP0	OnShift: Bill, Mike, Milan Tilak, Enrique
Live Time: 100%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 439	Beam: 86 Kr.	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30265 (Seg. 8)
MCP0: none	Trigger:	Target: 10 um CH_2
MCP1: 31 K	Drives [mm]	Attenuation: 300 K
XFP: 1200 Counts	I250X-R: 0 MCP0	OnShift: Bill, Mike, Jilac, Milan, Betty, Enrique.
Live Time: 100%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 440	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30265 (Seg. 8)
MCP0:	Trigger:	Target: 10 um CH_2
MCP1: 27 K	Drives [mm]	Attenuation: 1 M
XFP: 2000 Counts	I250X-R: 0 MCP0	OnShift: Bill, Mike, Jilac, Milan, Betty, Enrique.
Live Time: 100%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 441	Beam: NO beam	Date: 29 May 2010
Avg. Rates	Beam Energy:	B ρ: 2.30265 (Seg. 8)
MCP0: none.	Trigger:	Target: 10 um CH_2
MCP1: 19 K	Drives [mm]	Attenuation: 10 K - beam stop in
XFP: 0	I250X-R: 0 MCP0	OnShift: Bill, Mike, Jilac, Milan, Betty, Enrique.
Live Time: 100%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Background run		

BACK to production run.

Run # 442	Beam: 86 Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30265 (Seg. 8)
MCP0:	Trigger:	Target: 10 um CH_2
MCP1: 150 K	Drives [mm]	Attenuation: 101
XFP: 233 K	I250X-R: 0 MCP0	OnShift: Meredith, Mike, Enrique, Gilar
Live Time: 98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

2:15 PM SAT 29 MAY 2010

Tow0Cart15	140.00 V	4.00 uA	139.75 V	0.56 uA	On
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.24 uA	On
Tow0Card6	160.00 V	4.00 uA	160.25 V	0.66 uA	On
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.94 uA	On
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.84 uA	On
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.62 uA	On
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.50 uA	Off
Tow2Card12	150.00 V	6.00 uA	150.25 V	4.64 uA	On
Tow2Card6	200.00 V	4.00 uA	200.25 V	1.38 uA	On
Tow2Card3	115.00 V	4.00 uA	115.25 V	1.66 uA	On
Tow3Card15	150.00 V	4.00 uA	150.00 V	1.38 uA	On
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.18 uA	On
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.46 uA	On
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.10 uA	Off
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.52 uA	On
Tow4Card3	210.00 V	4.00 uA	210.25 V	3.48 uA	On
PA14	8.00 V	2.0 uA	8.10 V	0.0 uA	On
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On
PA13	7.00 V	2.0 uA	6.75 V	0.0 uA	On
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On
PA17	6.00 V	2.0 uA	5.80 V	0.1 uA	On
CsI2	40.00 V	3.0 uA	39.95 V	0.3 uA	On
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On
PA2	9.00 V	2.0 uA	9.15 V	0.2 uA	On
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.90 uA	On
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.78 uA	On
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.62 uA	On
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.42 uA	Off

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0527

area/experiment/run310/run310-4096.evt

10	11.00 V	2.0 uA	10.85 V	0.0 uA	On
12	9.00 V	2.0 uA	8.80 V	0.0 uA	On
I1	40.00 V	3.0 uA	39.95 V	0.0 uA	On
19	6.00 V	2.0 uA	5.45 V	0.0 uA	On
16	7.00 V	2.0 uA	7.05 V	0.0 uA	On
18	7.00 V	2.0 uA	7.25 V	0.0 uA	On
17	6.00 V	2.0 uA	5.80 V	0.1 uA	On
I2	40.00 V	3.0 uA	39.95 V	0.3 uA	On
4	7.00 V	2.0 uA	6.90 V	0.0 uA	On
1	8.00 V	2.0 uA	7.90 V	0.1 uA	On
3	7.00 V	2.0 uA	7.05 V	0.3 uA	On
0	8.00 V	2.0 uA	8.05 V	0.3 uA	On
2	9.00 V	2.0 uA	9.15 V	0.2 uA	On
I3	40.00 V	3.0 uA	39.80 V	0.2 uA	On
9	8.00 V	2.0 uA	7.65 V	0.4 uA	On
6	11.00 V	2.0 uA	10.75 V	0.0 uA	On
8	7.00 V	2.0 uA	6.85 V	0.0 uA	On
5	7.00 V	2.0 uA	6.65 V	0.0 uA	On
I4	40.00 V	10.0 uA	39.85 V	0.2 uA	On
w0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On
w1Card15	410.00 V	4.00 uA	409.75 V	1.90 uA	On

03.0003
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03.0005
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03.0007
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03.0010
03.0011
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05.0001
05.0002
05.0003
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05.0006
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05.0011
00.0004
00.0005

Si

Tower 0 3.8 μA
1 15.3 μA
2 12.3 μA
3 5.1 μA
4 7.77 μA

MCP Foil → 1 kV
det → 2.3 kV

Run 446 ~~No beam on~~ 10

~~447 beam on~~ junk

448 ~~out of time~~ beam on 10k. 1:02

449 beam off 10k 1:04

450 beam on 10 k 1:01

451 beam on 30k 1:02

452 beam off 30k 1:02

453 beam on 30k 1:00

454 beam off 30k 1:01

455 beam on 100k 1:02

456 beam off 100k 1:01

457 beam on 100k 1:03

458 beam off 100k 1:01

459 beam on 10k 1:01

460 beam off 10k 1:00 ~2k

461 beam on 10k 1:01

462 beam off 10k 1:01

463 beam off 100k 1:00

464 beam on 100k 1:01

465 beam off 100k 1:01

466 beam on 30k 1:01

Run # 468	Beam: 86Kr	Date: 29 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger:	Target: _____
MCP1: 15K	Drives [mm]	Attenuation: 100K
XFP: 1.8M	I250X-R: 0 MCP0	OnShift:
Live Time: 99	I250Y-R: 89 MCP1	
Live Trigger: _____	I251Y-R: 150 Target	
Comments:		

Beam on Al foil in MCP1

10μm CH_2 target

Run # 469	Beam: ~~86Kr~~ no beam!	Date: _____ May 2010
Avg. Rates	Beam Energy: _____	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger:	Target: _____
MCP1: _____	Drives [mm]	Attenuation: _____
XFP: _____	I250X-R: _____ MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	
Live Trigger: _____	I251Y-R: _____ Target	
Comments: junk, detectors unbiased		

End of experiment

chamber pressure: 2.8×10^{-6} torr

Si voltages & currents 5/29/10 3:30pm

Si	Voltage(V)	Current (μA)	Status
0	150	3.3	on
1	13.6	4.4	off
2	150	11.00	on
3	150	4.2	on
4	90	4.2	on

5/29/10 ~~/~~ Test: after mounting MCP's in chamber

	MCP0	MCP1
HV	110	51
Anode	88	40.6
Back	72	33.4
Middle	29	[redacted] 12.9
(input:	~+110V	~+50V)

Open chamber at 4 pm. Sat 5/29/10

1. Andy Thelin regenerate Cryo
2. Venting as normal & C-foil blown off.
3. Fix connection problem of MCP0 (outside cable problem)
4. ~~Install MCP1~~ Replace MCP1 with spare
5. Fix cable problem ~~on~~ for P12, P8, E cables as well as ~~as~~ power cable
6. Replace thermo-couple distribution box
7. Install camera to watch ~~@~~ MCP1 foil position to check if C foil will ~~be~~ be damaged during pump down
8. Install ^{228}Th α source
10. ~~Sunday~~ Replace thin $(CH_2)_n$ targets with $(CD_2)_n$ target.

Sunday 5/30/10

8. check ΔE, E's α calib. & bias o.k.
9. Replace C-foil (45 μg/cm²)
10. Install pin sources