

2010-06-02 Wednesday Meeting Notes

Wednesday, June 02, 2010

7:00 AM

Stacking

- Took extra time during the day shift to investigate our Debuncher Momentum cooling issues
 - Trouble with PB4. With the upper 1/2 band off, I could not keep the TWTs on (this is just our diode problem) until I removed about 6dB of gain. However, we cool the beam thinner with only the lower 1/2 band on than with only the upper 1/2 band or both 1/2 bands on. Further, with either one of the upper 1/2 band low-level amps off, the beam gets thinner.
 - We are set up to run with D:PV4AU2 off. I have also modified the screen image for P34 to warn Operators not to lower the PB4 attenuator below 14.0 dB. I will fill out a work order to investigate the problems with PB4.
 - After work, beam with was narrower longitudinally coming out of the Debuncher, as evidenced by having to lower ARF1.
- D:IP202 is off.
 - Phil replaced the power supply
 - Can only keep the ion pump on if the control cable from the CIA crate is disconnected.
 - Controls experts will need to take down the CIA crate to fix this.
- DRF1-6
 - Started tripping.
 - Checked out DRF1-6, PA current was very low (less than 5mA instead of the normal 10mA). This could have been the main cause for the trips. To give it a little rest, the output was turned down to 827kV (from 850kV). If it remains stable for a day or two, we can turn it back up. The sum is now 5.12MV.
- After owl shift glitch, lost 4ma
 - Coincidentally happened with stacktail TWT #14 was turned on. That was not the cause
 - Pbars were lost when D:ELAM was turned back on. There is a large tune excursion when D:ELAM is turned back on (field free region is not actually field free). This can be avoided by knobbing up the output.
- The Stacking Numbers
 - <stacking rate> = 25.1ma/hr
 - <production> = 19.5 pbar/Mp
 - <beam on target> = 7.9 Tp

Transfers

- Unstacked 500mA in 60 transfers over 20 sets with an average efficiency of 95.7%.

Studies

- Further work on Debuncher momentum cooling
- Stacktail Phasing with 30e10 - looking for opportunistic non-stacking time
- Stacktail tank moving - parasitic
- Jim Morgan would like to change beamline C204 limits based on calculations using the model. We will be doing one plane of one beamline at a time.

The Numbers

- Stacking
 - Pbars stacked: 506.58 E10
 - Time stacking: 23.79 Hr
 - Average stacking rate: 21.29 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 36209
 - Number of pulses with beam: 33917
 - Fraction of up pulses was: 93.67%
- The uptime's effect on the stacking numbers

- Corrected time stacking: 22.28 Hr
- Possible average stacking rate: 22.73 E10/Hr
- Could have stacked: 540.81 E10/Hr

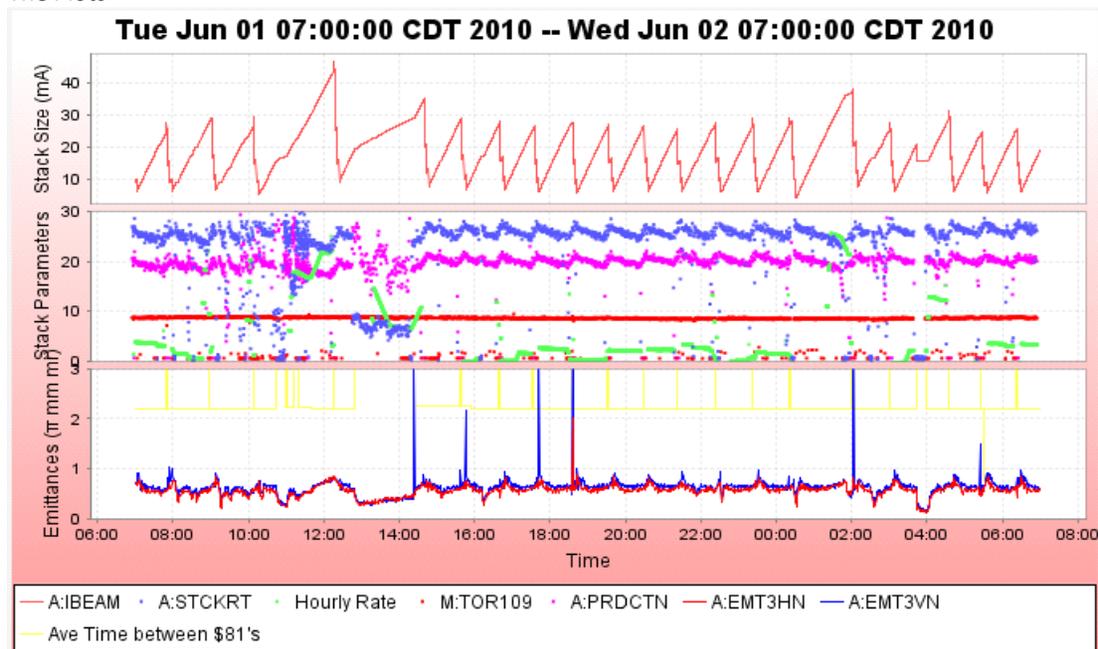
- Recycler Transfers
 - Pbars sent to the Recycler: 490.73 E10
 - Number of transfers : 60
 - Number of transfer sets: 20
 - Average Number of transfer per set: 3.00
 - Time taken to shoot including reverse proton tuneup: 00.21 Hr
 - Transfer efficiency: 95.57%

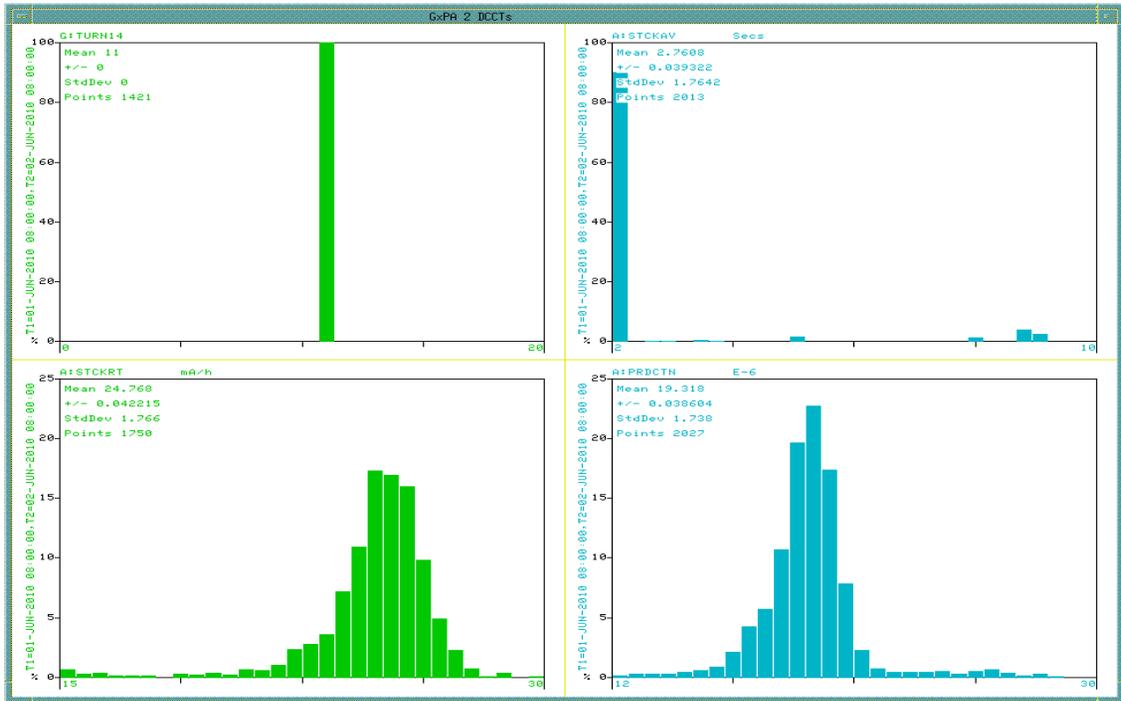
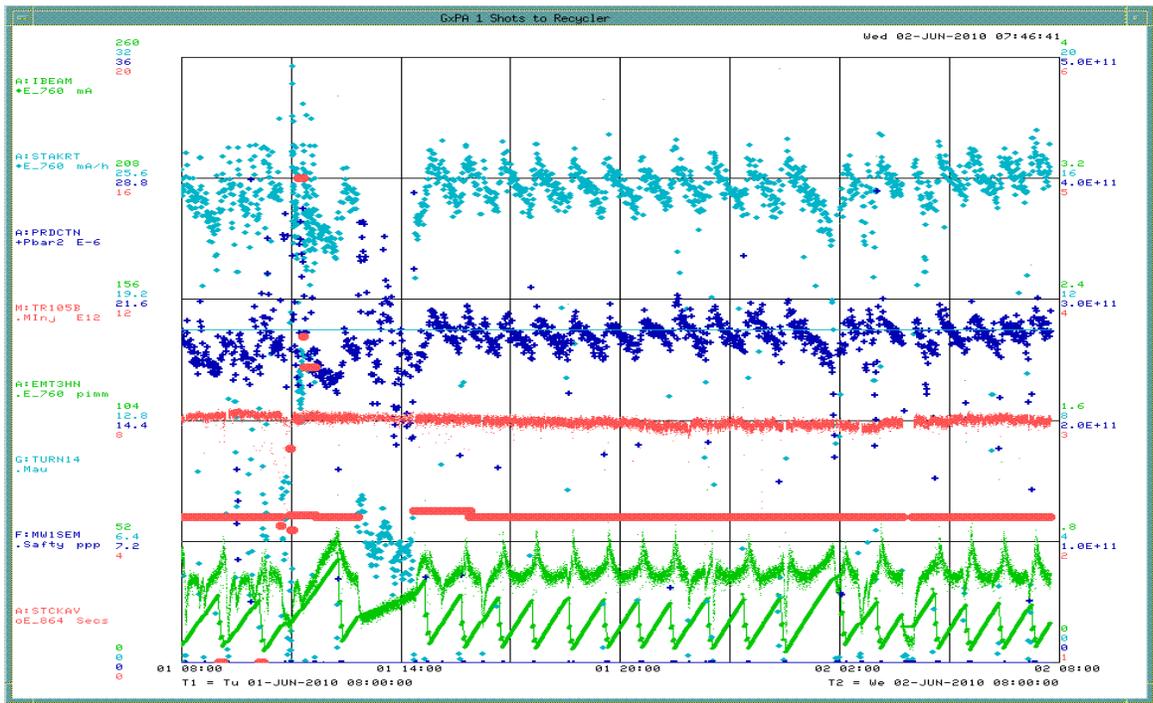
- Other Info
 - Average POT : 7.98 E12
 - Average production: 18.73 pbars/E6 protons

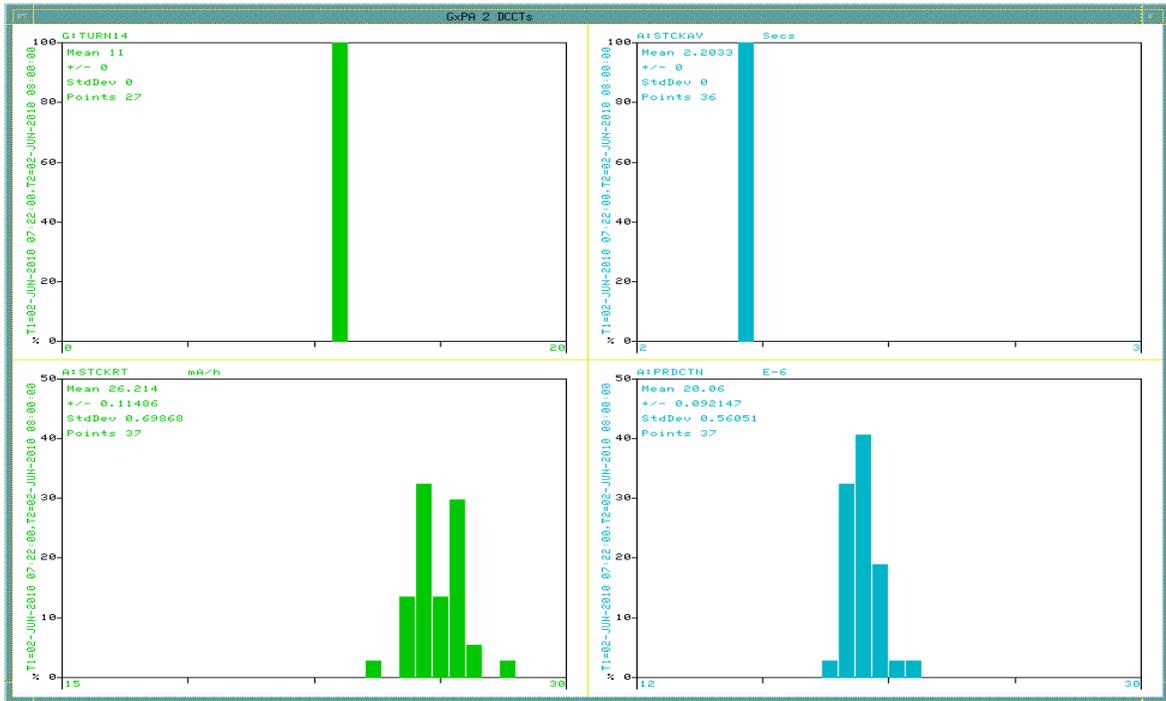
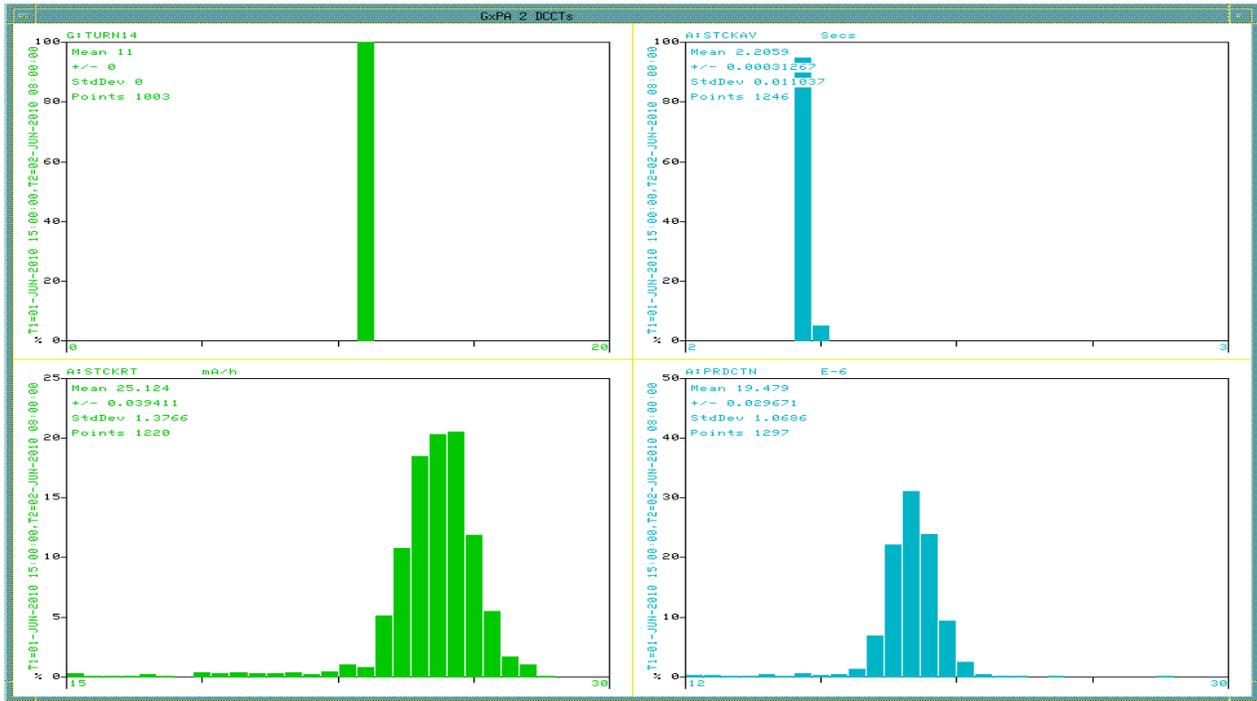
-

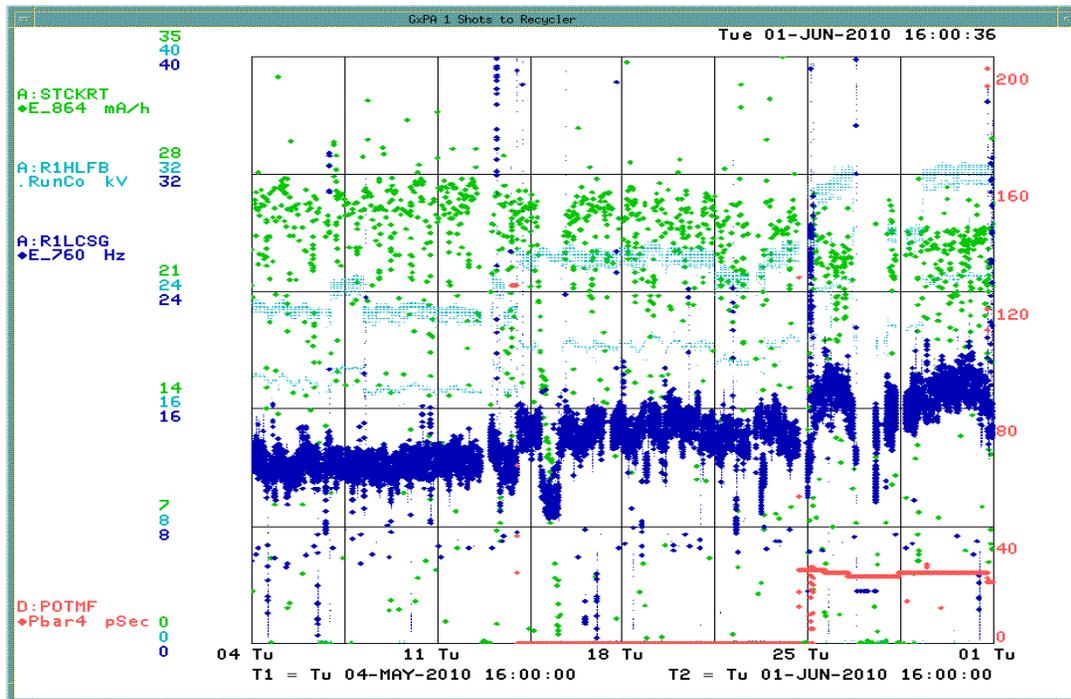
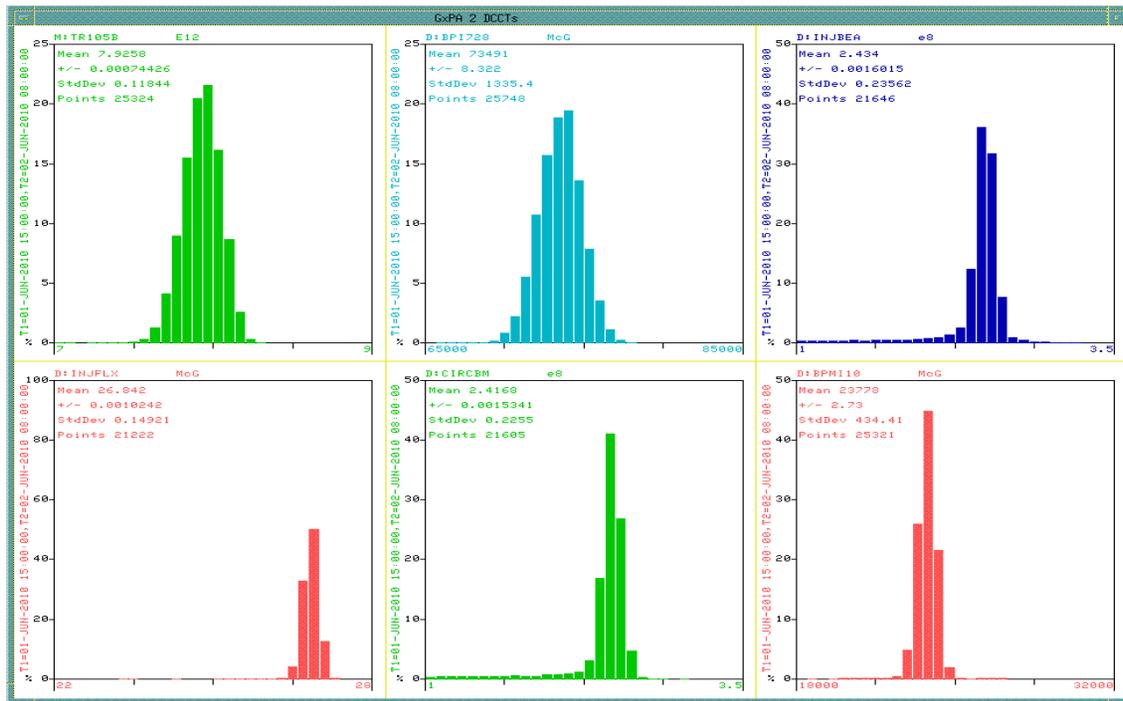
Elog Notes

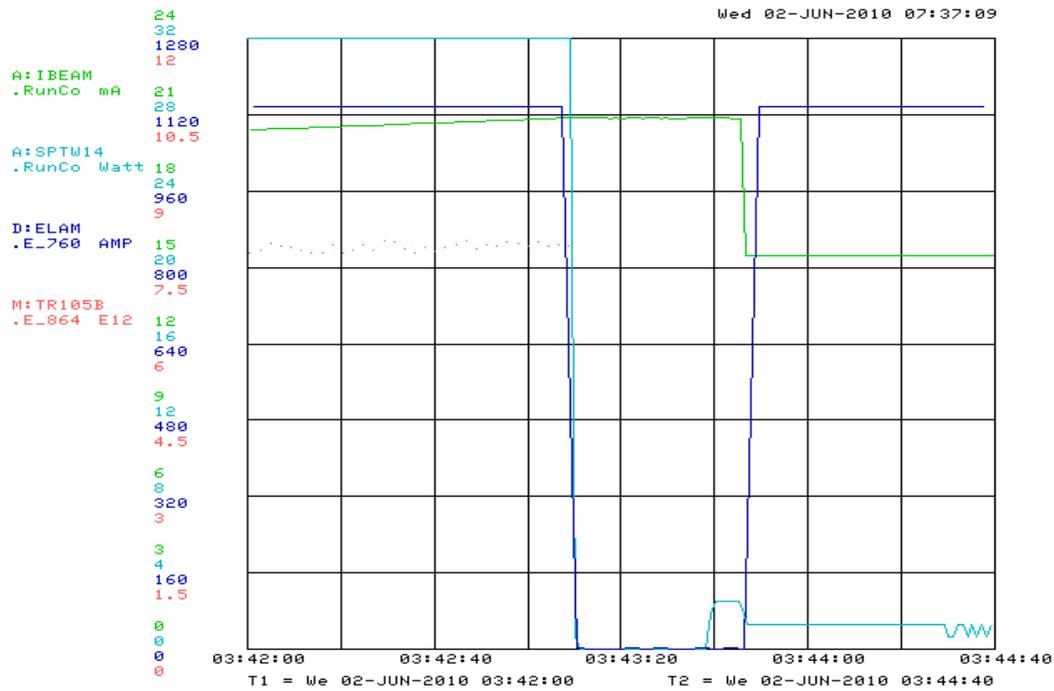
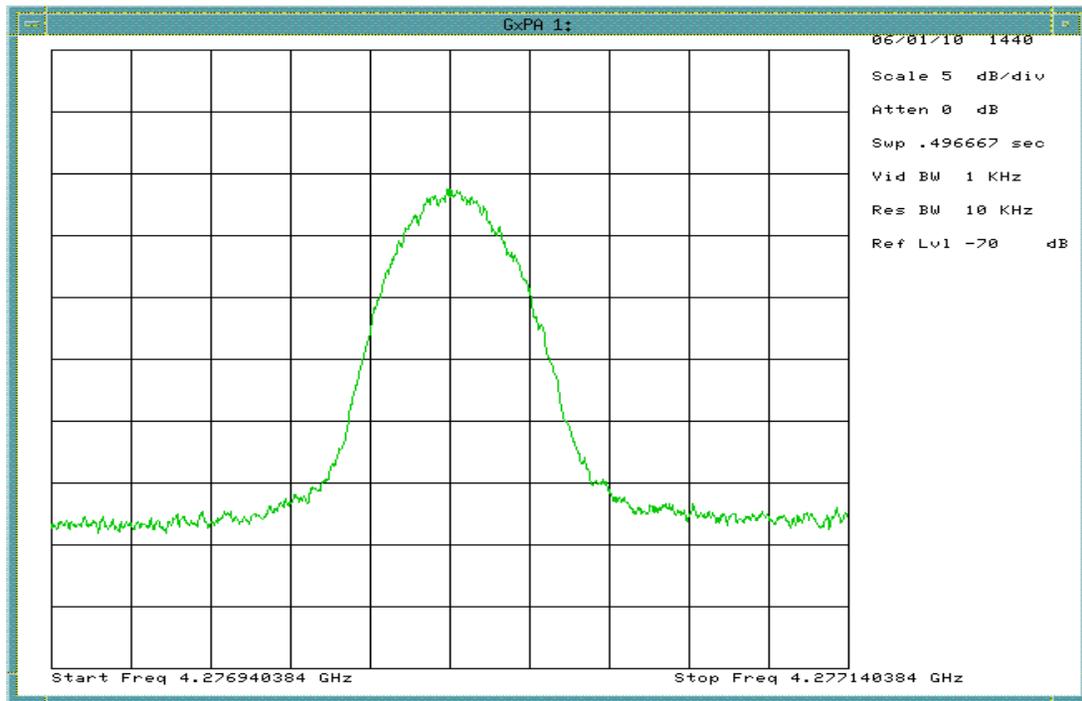
The Plots



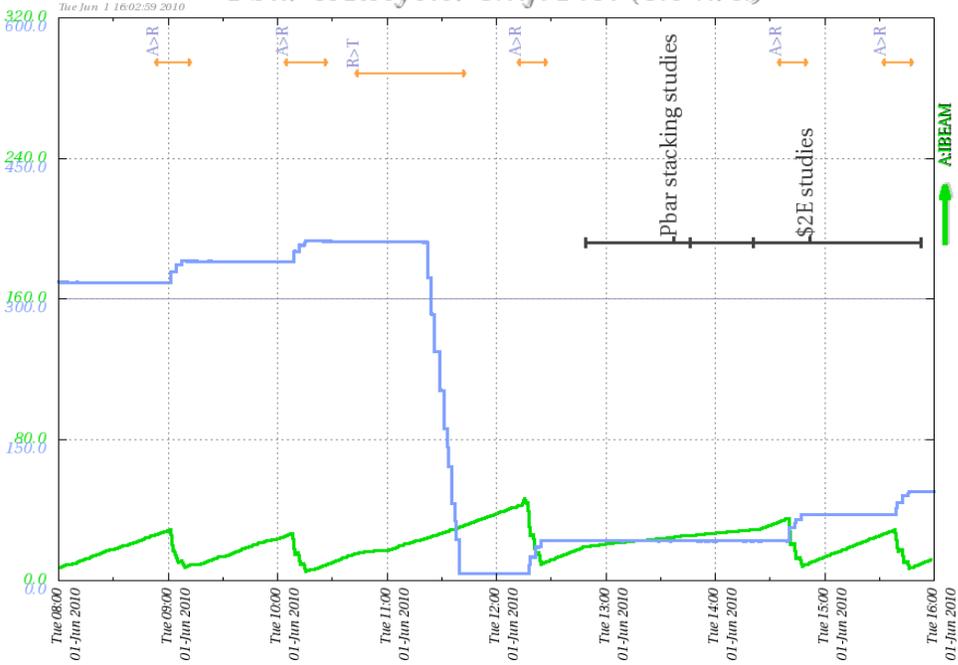






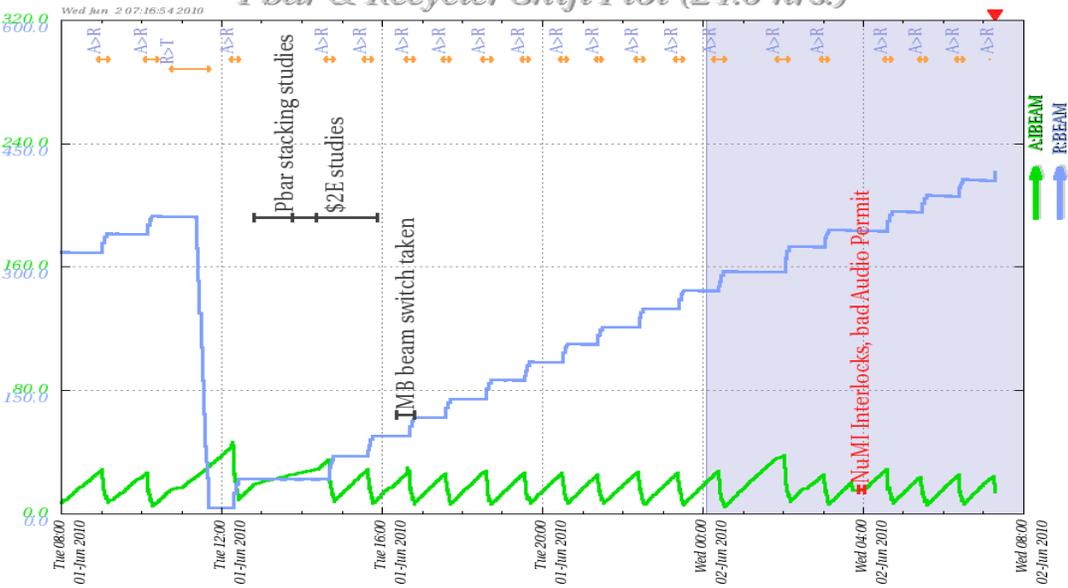


Pbar & Recycler Shift Plot (8.0 hrs.)



Tuesday Dayshift

Pbar & Recycler Shift Plot (24.0 hrs.)





Column 1 Number _0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time	Column 21 Number _20_A:1 BEAMB sampled on \$91 (A:BEA M7), E10	Column 22 Number _21_A:1 BEAMB sampled on \$94 (A:BEA M9), E10	Unstacked (mA)	Column 23 Number _22_R: BEAMS (R:BEA ME0(0)) pre fer E10	Column 24 Number _23_R: BEAM (R:BEA ME0(1)) post fer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Transfers	Set s	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance	
Totals =>				500.05			478.64	95.72%	96.80%	97.02%	60	20	5.7777	6.1421	1.9493	
19369	Wednesday, June 02, 2010	6:22	25.41	5.80	22.17	385.86	406.75	21.14	95.34%	96.64%	95.90%	3	1	5.824	6.288	1.96
19368	Wednesday, June 02, 2010	5:28	24.60	5.27	21.83	366.66	387.42	20.93	95.91%	96.99%	98.10%	3	1	5.594	5.913	1.934
19367	Wednesday, June 02, 2010	4:36	29.34	6.01	25.75	343.57	367.89	24.48	95.06%	97.11%	98.61%	3	1	5.927	6.118	1.937
19366	Wednesday, June 02, 2010	3:01	25.81	6.00	22.34	324.42	345.51	21.29	95.28%	96.22%	98.25%	3	1	5.966	6.28	1.978
19365	Wednesday, June 02, 2010	2:02	38.01	7.41	32.95	293.83	325.26	31.59	95.88%	97.44%	96.87%	3	1	5.82	5.997	1.917
19364	Wednesday, June 02, 2010	0:23	27.88	4.32	24.89	271.07	294.87	23.95	96.22%	97.33%	97.71%	3	1	4.868	5.446	1.904
19363	Tuesday, June 01, 2010	23:23	27.11	5.84	23.61	249.15	271.61	22.62	95.80%	96.97%	96.18%	3	1	5.774	6.265	1.962
19362	Tuesday, June 01, 2010	22:24	27.38	6.07	23.76	226.86	249.66	22.85	96.16%	96.40%	97.29%	3	1	5.62	6.065	1.981
19361	Tuesday, June 01, 2010	21:22	25.55	5.96	22.09	206.19	227.26	21.25	96.20%	96.16%	95.98%	3	1	5.726	6.403	1.957
19360	Tuesday, June 01, 2010	20:29	26.76	6.20	23.06	184.47	206.55	22.20	96.24%	97.40%	97.45%	3	1	6.092	6.495	1.974
19359	Tuesday, June 01, 2010	19:33	27.01	6.19	23.34	162.55	184.76	22.39	95.94%	96.98%	96.46%	3	1	5.864	6.605	1.97
19358	Tuesday, June 01, 2010	18:35	27.62	5.58	24.51	139.24	162.80	23.55	96.05%	97.67%	97.35%	3	1	5.406	5.849	1.962
19357	Tuesday, June 01, 2010	17:35	26.44	5.87	23.06	117.38	139.45	22.10	95.85%	96.34%	96.76%	3	1	5.824	6.316	1.949
19356	Tuesday, June 01, 2010	16:40	27.78	6.36	23.96	94.69	117.59	23.03	96.12%	95.88%	96.50%	3	1	5.856	6.424	1.935
19355	Tuesday, June 01, 2010	15:39	29.01	6.37	25.20	70.59	94.85	24.36	96.64%	96.50%	97.22%	3	1	5.725	6.168	1.944
19354	Tuesday, June 01, 2010	14:40	35.19	7.60	30.10	42.16	70.71	28.66	95.22%	96.08%	96.00%	3	1	5.953	6.085	1.939
19353	Tuesday, June 01, 2010	12:17	44.25	9.05	37.49	7.22	42.36	35.13	93.69%	96.55%	96.84%	3	1	7.094	7.005	1.917
19352	Tuesday, June 01, 2010	10:08	26.79	4.81	23.60	339.57	362.16	22.76	96.44%	97.72%	96.00%	3	1	5.042	5.354	1.911
19351	Tuesday, June 01, 2010	9:01	28.94	6.63	24.56	317.30	340.71	23.54	95.82%	96.69%	96.44%	3	1	5.909	5.796	1.966
19350	Tuesday, June 01, 2010	7:51	25.44	5.95	21.77	297.56	318.26	20.84	95.73%	96.86%	98.88%	3	1	5.669	5.969	1.989