

2010-10-18 Monday Morning Notes

Sunday, October 17, 2010
10:52 AM

On-call

- Monday and Tuesday: Tony Leveling
- Wednesday and Thursday: Jim Morgan

Stacking

- Stacking Numbers (overall)
 - <stacking rate>=26.9mA/hr
 - <production>= 24.4 pbars/Mp
 - <POT>= 8.31 Tp
- Stacking Numbers (\$29s-only)
 - <stacking rate>=27.6mA/hr
 - <production>=24.1 pbars/Mp
 - <POT>=8.27 Tp
- Stacking Numbers (SY120)
 - <stacking rate>=25.3mA/hr
 - <production>=24.7 pbar/Mp
 - <POT>=8.22 Tp
- Stacking with SY120 in the TLG is 8% lower!!!!
- Friday we made a spot size change.
- Cycle Time Study: <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=272&scroll=false&load=>
 - \$29-only TLG: Noticeable gains going to 2.6 seconds. Slight gains going to 2.4 seconds
 - 2.8 seconds - 27.1mA/hr
 - 2.6 seconds: 27.8 mA/hr
 - 2.4 sec onds: 27.9 mA/hr
 - TLG with SY120: Noticeable gains to 2.4 seconds.
 - 2.8 seconds: 25.0mA/hr
 - 2.6 seconds: 25.5mA/hr
 - 2.4 seconds: 26.2mA/hr
- DRF1-5 continues to have periodic trips, despite being turned down. Sum fanback voltage is 4.95 MV. Keep an eye on this.
- ARF1 vacuum held steady over the weekend

Transfers

- Unstacking numbers:
 - Unstacked 1808.9e10 in 229 transfers over 75 sets
 - Averaged 602e10 in 76 transfers over 25 sets per day
 - Overall efficiency = 96.5%.
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- Transfer on during third transfer in set 21279.
 - Looks like PLC03 starting having communication problems prior to transfers.
 - 10-2 Stub: Debuncher stochastic cooling band 3 and 4 systems (A10-2 stub room medium level RF).
 - Command to turn off the stacktail failed to go out until after the transfer was complete

Requests

- 2.6 second cycle time

The Numbers

- Stacking
 - Pbars stacked: 1796.13 E10
 - Time stacking: 71.20 Hr
 - Average stacking rate: 25.23 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 91841
 - Number of pulses with beam: 88853
 - Fraction of up pulses was: 96.75%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 68.89 Hr
 - Possible average stacking rate: 26.07 E10/Hr
 - Could have stacked: 1856.53 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 1796.27 E10
 - Number of transfers : 228
 - Number of transfer sets: 75
 - Average Number of transfer per set: 3.04
 - Time taken to shoot including reverse proton tuneup: 00.80 Hr
 - Transfer efficiency: 96.64%
- Other Info
 - Average POT : 8.31 E12
 - Average production: 24.33 pbars/E6 protons

Elog Notes

-- Sat Oct 16 09:20:28 comment by...fish -- The third Pbar transfer did not get out of the accumulator again. All of the stacktail twts tripped off. The image on the left is the third unsuccessful transfer plotted with A:SPPSUM. The second is a successful transfer plotted with A:SPPSUM. It seems that the Stacktail cooling is still on when the extracted beam arrives as indicated here by ARF4 thus causing the stacktail to trip off. This process was described in an earlier note. It should be noted that the Pbar sequencer was still waiting on the \$94.

-- Sat Oct 16 09:34:17 comment by...jdc -- As a side note, Debuncher horizontal and vertical cooling bands 3 and 4 were reporting back in error during this time as well.

-- Sat Oct 16 09:57:36 comment by...fish -- In an effort to fix our transfer problem we have CNS ran console 1 and also added R|SPAM09 to the datalogger.

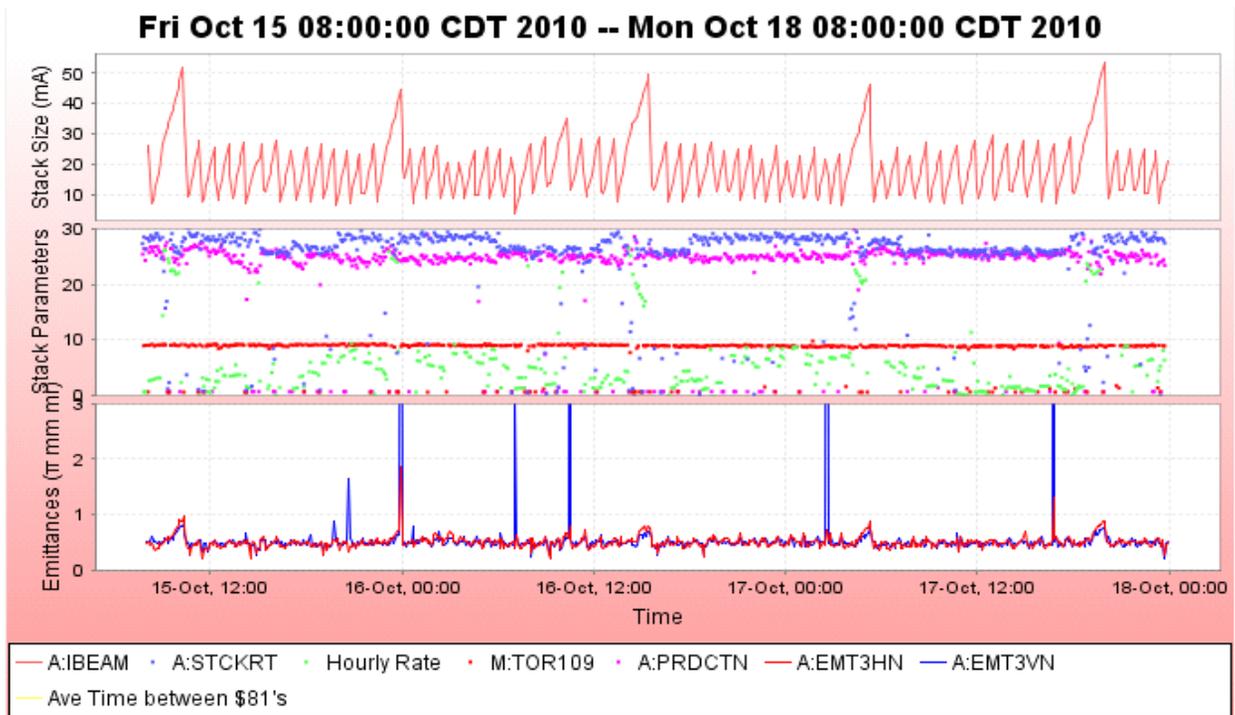
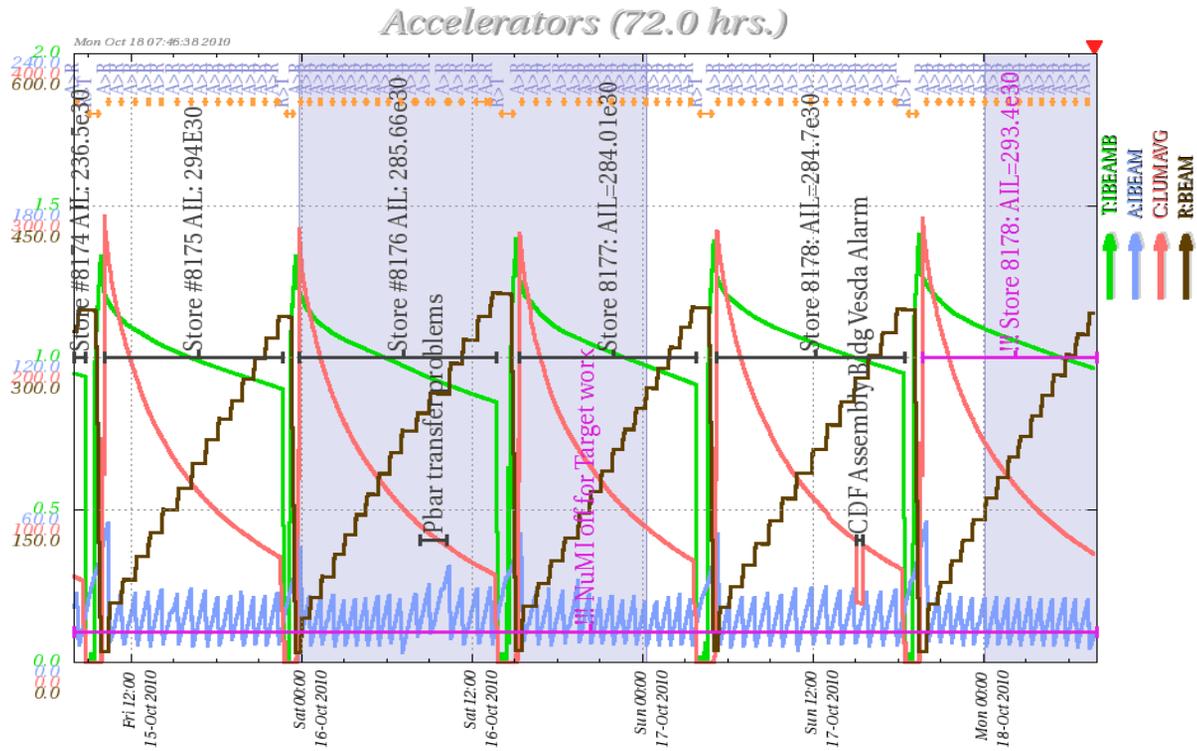
-- Sat Oct 16 10:03:28 comment by...fish -- All of the debuncher cooling pin switches stayed open after the CNS run. This obviously did bad things to the beam.

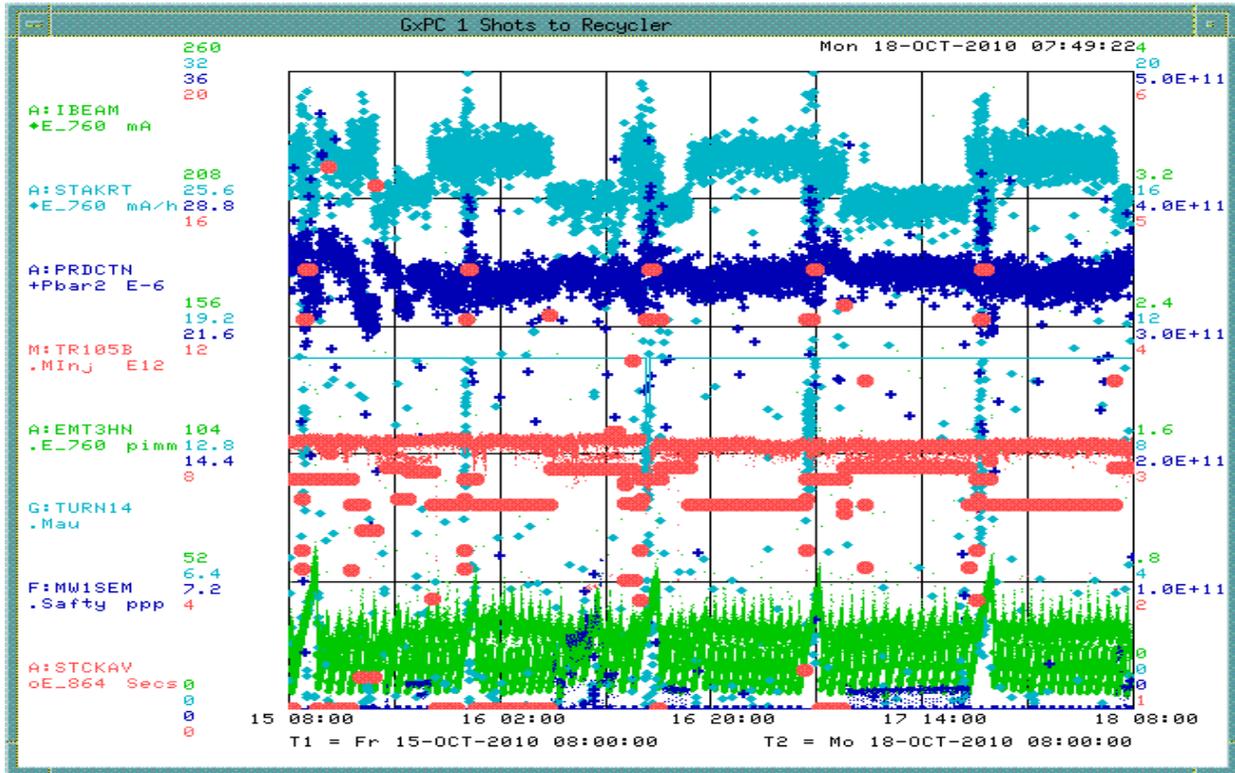
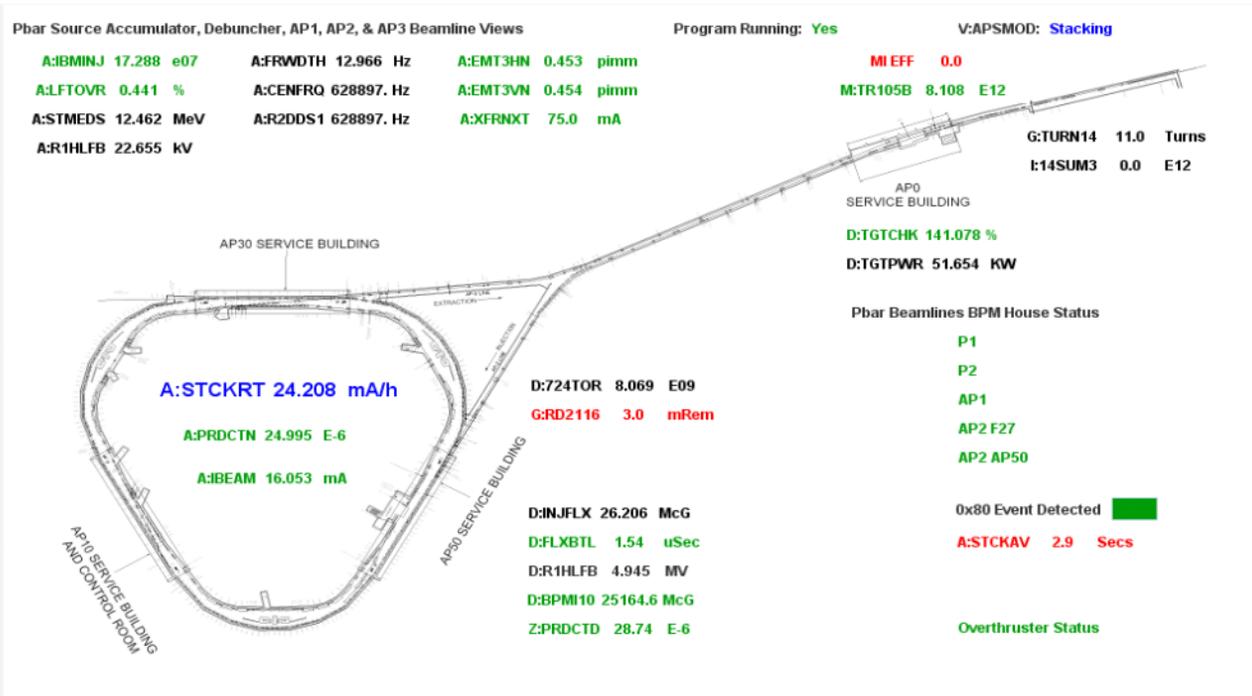
-- Sat Oct 16 10:12:03 comment by...jdc -- Stan Johnson called in and recommended that we reboot PBCOOL. We will reboot it after the current transfers are finished.

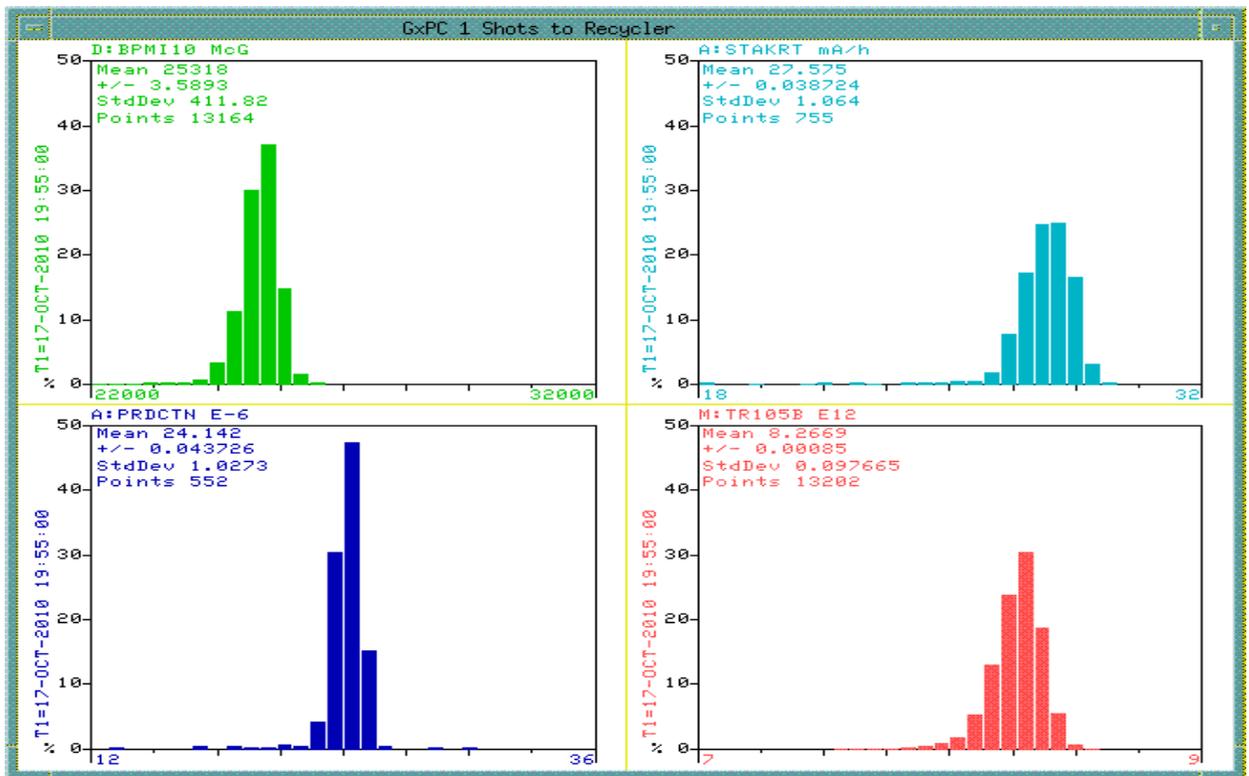
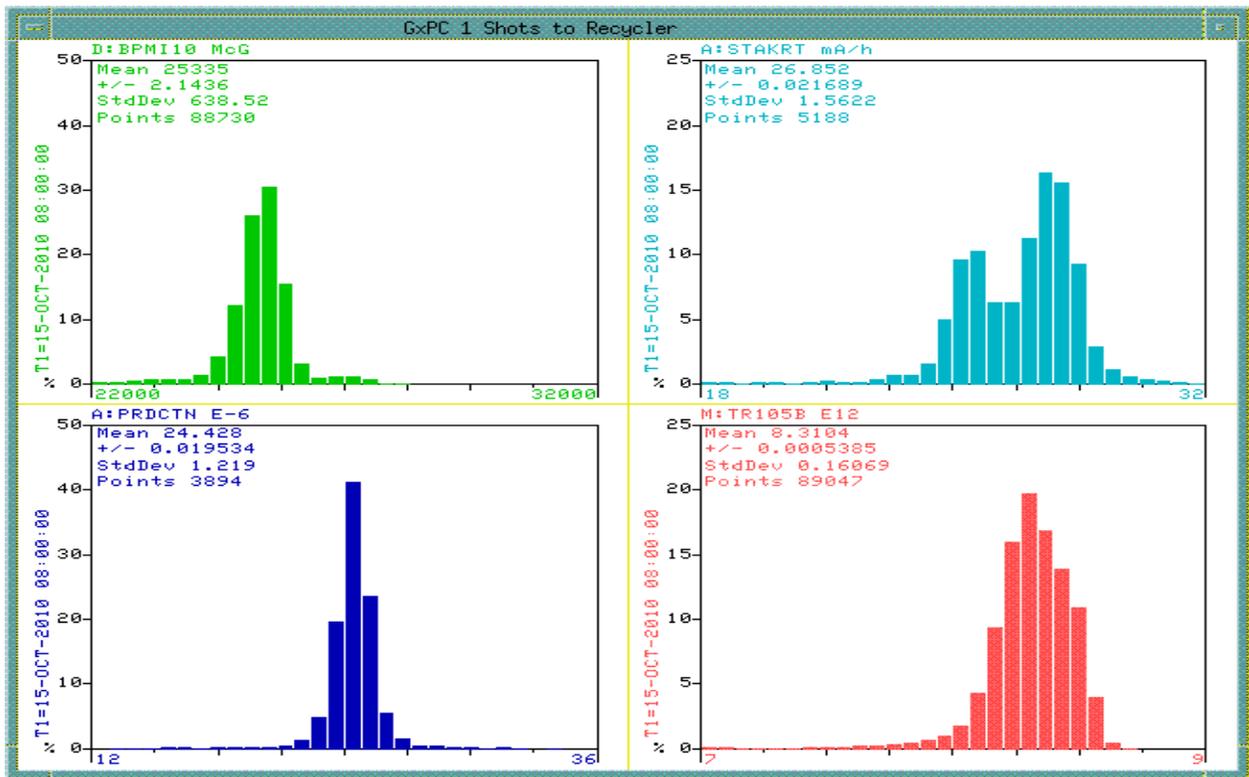
-- Sat Oct 16 19:42:48 comment by...fish -- We only rebooted PLC03. We did not reboot Pbcool. Our problem went away after this.

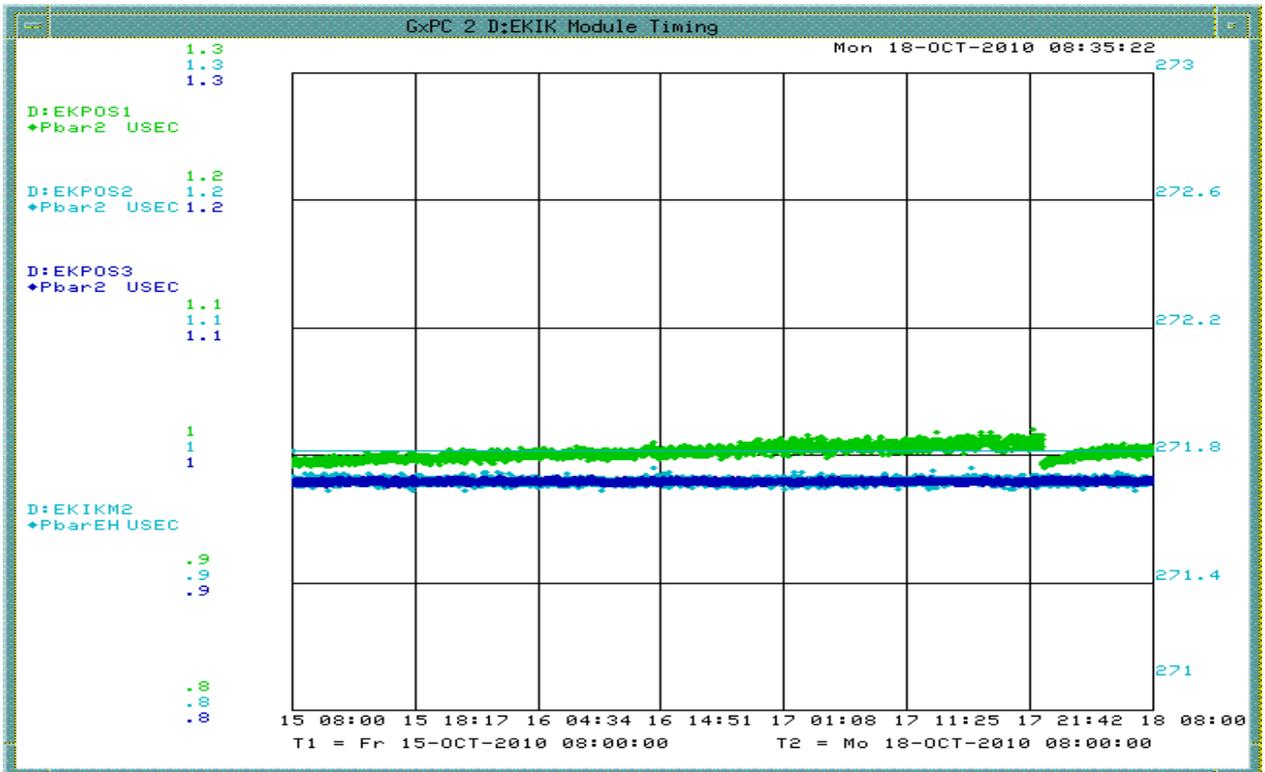
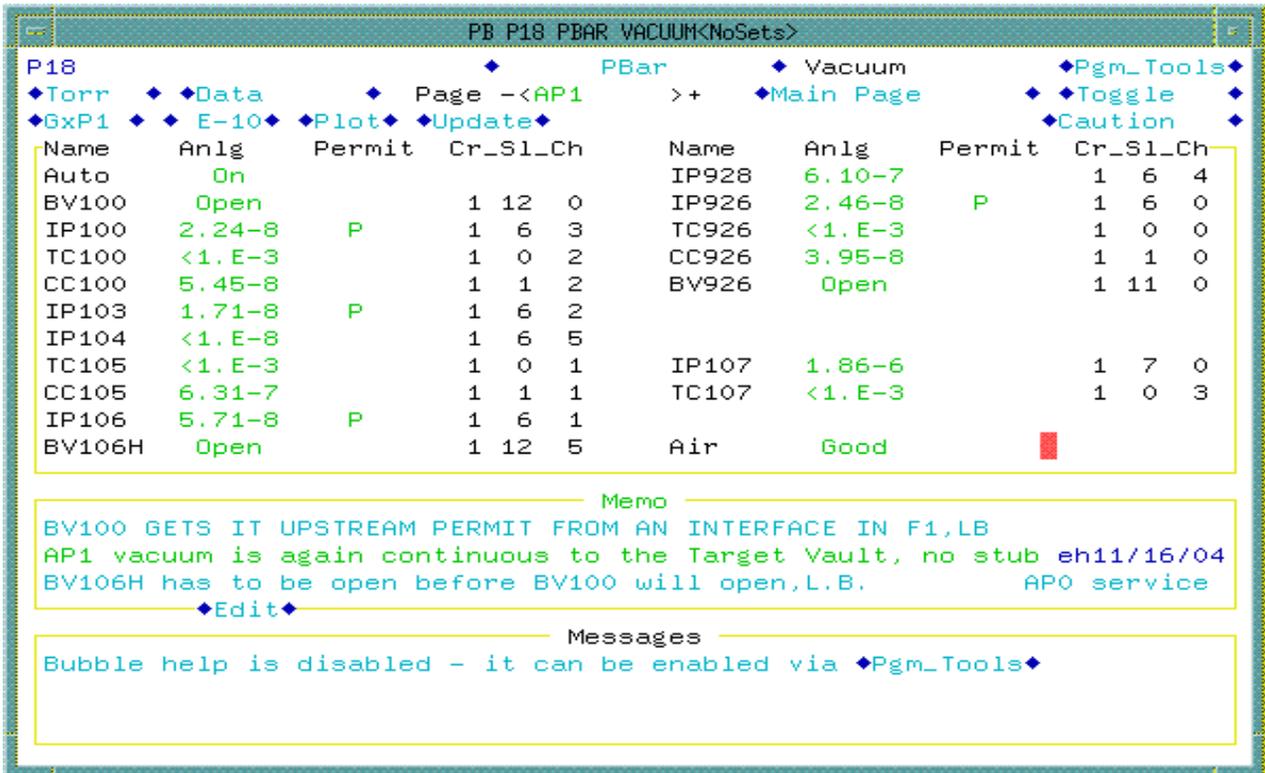
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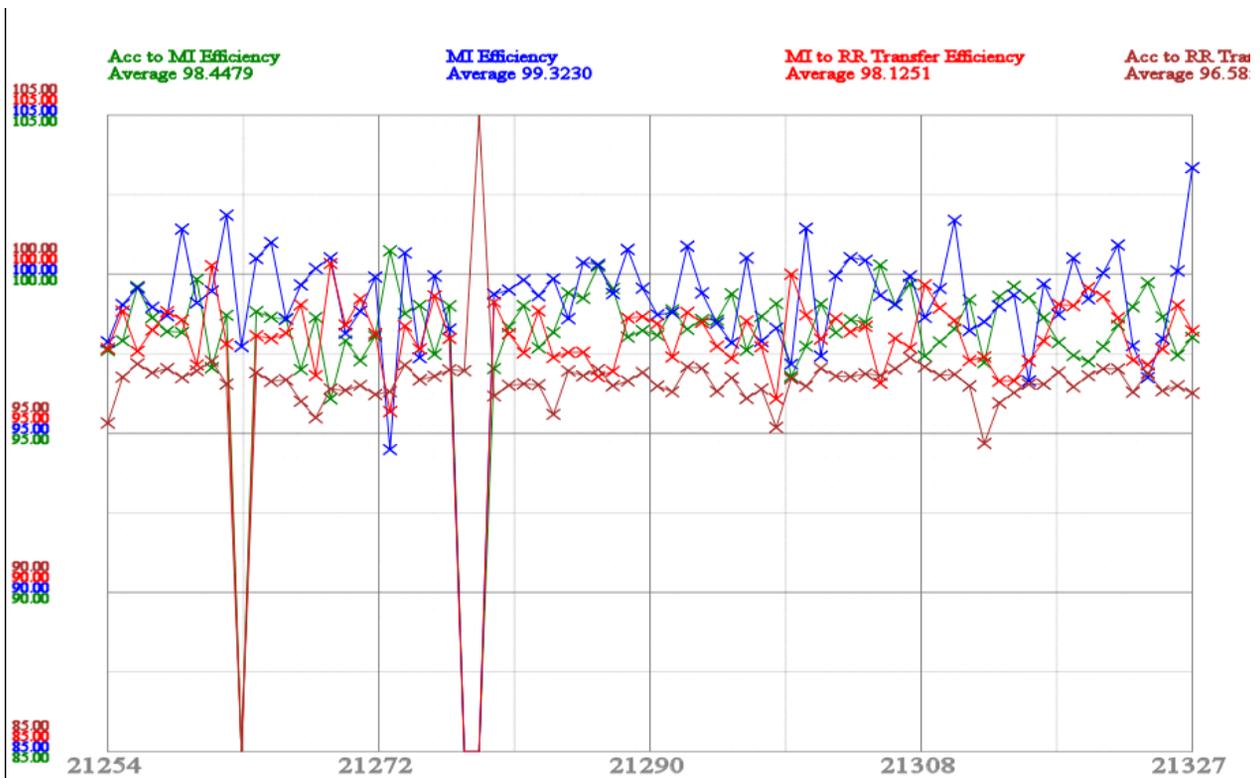
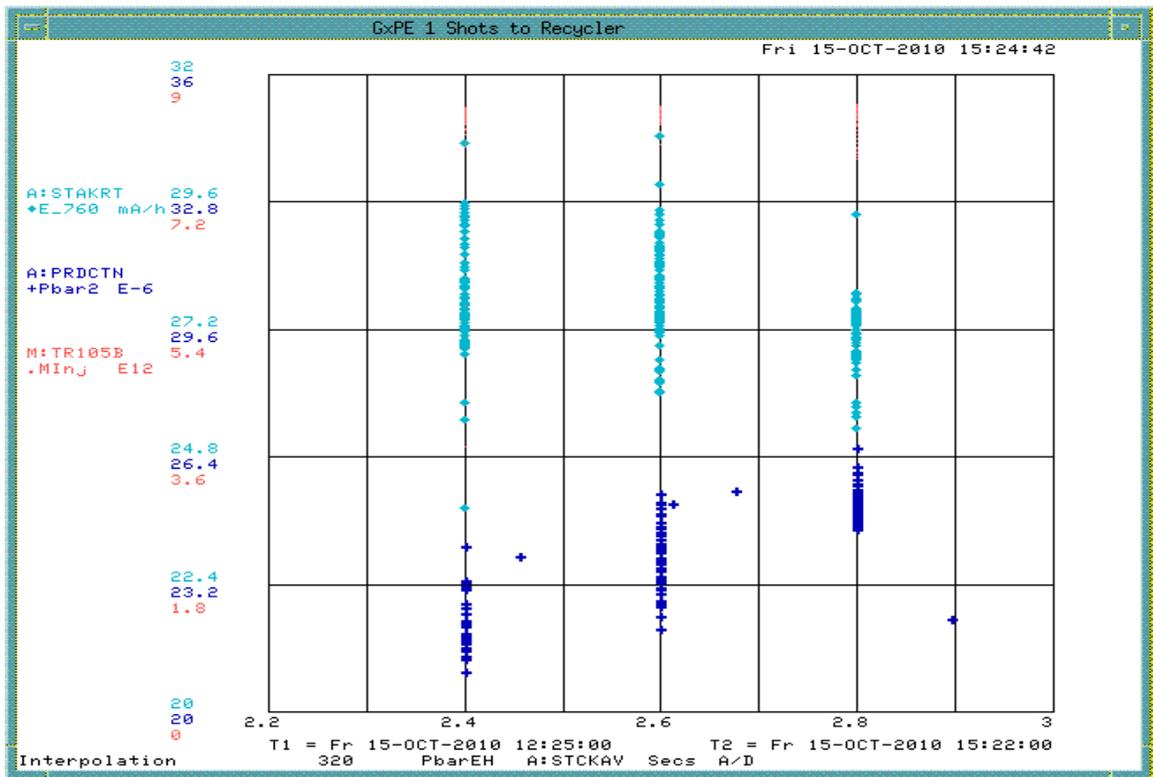
The Plots











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 sfer E10	Column 24 Number_23_R: BEAM (R:BEA ME0(1)) post sfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Acc to MI * Acc to MI2 Efficiency	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance	
Totals =>				1808.90			1745.09	96.47%	98.40%	97.65%	96.09%	229	75	4.9449	4.6884	1.9384	
Daily Average =>				602.97			581.70					76	25				
21327	Monday, October 18, 2010	7:22	25.18	5.25	22.19	323.15	344.36	21.38	96.33%	97.77%	100.10%	97.86%	3	1	5.068	4.408	1.942
21326	Monday, October 18, 2010	6:30	24.90	5.83	21.61	302.96	323.66	20.88	96.65%	97.67%	97.41%	95.14%	3	1	4.804	4.491	1.97
21325	Monday, October 18, 2010	5:43	25.25	6.65	21.35	282.96	303.36	20.56	96.30%	98.66%	96.66%	95.37%	3	1	4.793	4.673	2.003
21324	Monday, October 18, 2010	4:51	24.86	6.67	20.96	263.10	283.28	20.32	96.95%	99.79%	97.13%	96.93%	3	1	4.853	4.738	1.96
21323	Monday, October 18, 2010	4:04	25.00	6.60	21.14	243.13	263.41	20.40	96.46%	98.71%	97.45%	96.20%	3	1	4.949	4.59	1.963
21322	Monday, October 18, 2010	3:18	25.60	6.68	21.67	222.54	243.43	21.03	97.05%	98.63%	98.92%	97.57%	3	1	4.674	4.746	1.967
21321	Monday, October 18, 2010	2:29	24.82	6.43	21.12	202.47	222.82	20.48	97.00%	97.93%	97.47%	95.44%	3	1	4.813	4.582	1.976
21320	Monday, October 18, 2010	1:42	25.20	6.64	21.28	182.20	202.68	20.59	96.76%	97.68%	96.62%	94.38%	3	1	4.807	4.529	1.958
21319	Monday, October 18, 2010	0:55	25.63	6.83	21.55	161.68	182.38	20.80	96.53%	97.74%	97.61%	95.40%	3	1	4.67	4.473	1.967
21318	Monday, October 18, 2010	0:06	25.53	6.30	21.96	140.70	161.87	21.26	96.80%	98.03%	96.27%	94.37%	3	1	4.876	4.525	1.937
21317	Sunday, October 17, 2010	23:12	25.03	6.70	21.10	120.52	140.85	20.41	96.73%	98.88%	98.97%	97.85%	3	1	4.672	4.651	1.976
21316	Sunday, October 17, 2010	22:26	25.72	6.90	21.60	99.88	120.66	20.86	96.58%	99.20%	96.51%	95.74%	3	1	5.181	4.695	1.974
21315	Sunday, October 17, 2010	21:39	27.00	7.56	22.22	78.72	99.99	21.38	96.22%	99.77%	98.38%	98.15%	3	1	4.795	4.939	1.996
21314	Sunday, October 17, 2010	20:50	26.63	7.46	21.96	57.76	78.82	21.11	96.10%	99.16%	98.11%	97.29%	3	1	4.979	4.839	1.996
21313	Sunday, October 17, 2010	19:59	55.54	8.42	50.52	10.57	57.89	47.60	94.21%	97.05%	95.43%	92.61%	4	1	6.411	5.592	1.864
21312	Sunday, October 17, 2010	17:49	29.09	6.73	24.87	324.61	348.41	23.97	96.39%	99.06%	97.24%	96.33%	3	1	4.987	4.657	1.934
21311	Sunday, October 17, 2010	16:47	27.94	6.84	23.65	302.45	325.18	22.92	96.90%	98.34%	99.50%	97.85%	3	1	5.126	4.725	1.966
21310	Sunday, October 17, 2010	15:50	27.82	6.50	23.86	279.97	302.95	23.12	96.92%	98.13%	97.46%	95.63%	3	1	5.189	4.77	1.949
21309	Sunday, October 17, 2010	14:53	29.02	6.89	24.70	256.69	280.46	23.96	97.01%	97.54%	96.36%	94.00%	3	1	4.947	4.654	1.934
21308	Sunday, October 17, 2010	13:53	28.26	6.79	24.05	233.85	257.08	23.38	97.23%	99.75%	99.16%	98.91%	3	1	5.065	4.618	1.959
21307	Sunday, October 17, 2010	12:56	29.80	6.98	25.40	209.73	234.20	24.63	96.98%	98.43%	97.73%	96.20%	3	1	5.154	4.598	1.929
21306	Sunday, October 17, 2010	11:54	29.45	7.23	24.77	186.24	210.05	23.98	96.80%	99.93%	98.81%	98.74%	3	1	5.092	5.028	1.949
21305	Sunday, October 17, 2010	10:47	29.24	4.45	26.05	161.43	186.53	25.24	96.86%	98.25%	98.17%	96.45%	3	1	4.116	4.021	1.848
21304	Sunday, October 17, 2010	9:45	26.60	6.19	23.02	139.48	161.65	22.27	96.75%	98.54%	98.50%	97.06%	3	1	4.914	4.508	1.955
21303	Sunday, October 17, 2010	8:51	27.84	6.58	23.84	116.71	139.68	23.08	96.82%	98.23%	97.92%	96.18%	3	1	4.997	4.532	1.948
21302	Sunday, October 17, 2010	7:52	25.57	6.00	22.15	95.49	116.87	21.47	96.96%	98.98%	96.99%	96.01%	3	1	4.449	4.608	1.934
21301	Sunday, October 17, 2010	7:01	26.10	6.50	22.08	74.35	95.60	21.31	96.53%	98.02%	99.36%	97.39%	3	1	4.576	4.901	1.931
21300	Sunday, October 17, 2010	6:07	24.58	5.93	21.16	54.03	74.43	20.48	96.75%	97.35%	94.68%	92.17%	3	1	4.653	4.412	1.977
21299	Sunday, October 17, 2010	5:19	48.26	7.29	44.57	12.13	54.13	42.24	94.76%	98.49%	97.15%	95.68%	4	1	5.836	5.576	1.861
21298	Sunday, October 17, 2010	3:22	24.50	6.43	20.98	330.18	350.22	20.23	96.41%	98.84%	96.77%	95.65%	3	1	4.793	4.501	1.982

21297	Sunday, October 17, 2010	2:37	25.03	6.63	21.33	310.31	330.60	20.50	96.12%	98.01%	98.31%	96.35%	3	1	4.926	4.365	1.988
21296	Sunday, October 17, 2010	1:50	25.58	6.66	21.82	289.73	310.70	21.11	96.75%	99.55%	97.92%	97.48%	3	1	4.732	4.518	1.959
21295	Sunday, October 17, 2010	1:01	24.23	6.33	20.80	270.12	290.10	20.05	96.39%	98.57%	97.13%	95.74%	3	1	4.275	4.479	1.946
21294	Sunday, October 17, 2010	0:12	24.16	6.39	20.67	250.53	270.44	20.07	97.08%	98.23%	97.80%	96.07%	3	1	5.325	4.315	1.983
21293	Saturday, October 16, 2010	23:26	26.10	6.97	22.07	229.54	250.81	21.42	97.09%	98.35%	98.84%	97.21%	3	1	4.985	4.693	1.993
21292	Saturday, October 16, 2010	22:37	24.83	6.79	21.03	209.64	229.80	20.26	96.38%	98.76%	97.37%	96.17%	3	1	5.095	4.583	1.981
21291	Saturday, October 16, 2010	21:50	26.33	7.07	22.18	188.53	209.83	21.42	96.59%	98.59%	97.23%	95.85%	3	1	4.798	4.531	1.959
21290	Saturday, October 16, 2010	21:01	25.14	7.01	21.07	168.41	188.72	20.43	96.98%	98.52%	98.62%	97.17%	3	1	4.684	4.577	1.971
21289	Saturday, October 16, 2010	20:16	26.80	7.28	22.42	147.05	168.59	21.66	96.61%	98.33%	98.93%	97.28%	3	1	5.068	4.733	1.948
21288	Saturday, October 16, 2010	19:28	30.63	8.09	25.47	122.70	147.19	24.60	96.60%	99.49%	98.94%	98.43%	3	1	4.99	4.618	1.972
21287	Saturday, October 16, 2010	18:24	28.51	7.43	23.93	99.77	122.89	23.22	97.05%	100.05%	99.69%	99.74%	3	1	4.949	4.545	1.988
21286	Saturday, October 16, 2010	17:26	26.86	6.52	22.91	77.77	99.89	22.18	96.81%	98.99%	99.53%	98.52%	3	1	4.886	4.701	1.972
21285	Saturday, October 16, 2010	16:32	27.76	6.86	23.45	55.20	77.86	22.73	96.95%	99.25%	98.23%	97.48%	3	1	4.834	4.648	1.905
21284	Saturday, October 16, 2010	15:28	50.94	8.20	46.43	11.24	55.35	44.30	95.42%	98.24%	97.95%	96.22%	4	1	6.562	5.59	1.844
21283	Saturday, October 16, 2010	13:18	29.57	7.36	24.71	340.76	364.43	23.86	96.55%	98.02%	97.09%	95.17%	3	1	4.826	4.913	1.956
21282	Saturday, October 16, 2010	12:21	29.26	7.14	24.70	317.65	341.32	23.86	96.58%	98.71%	98.05%	96.79%	3	1	4.717	4.613	1.937
21281	Saturday, October 16, 2010	11:18	29.18	7.07	24.81	294.50	318.22	23.93	96.45%	98.44%	98.19%	96.66%	3	1	5.009	4.82	1.966
21280	Saturday, October 16, 2010	10:23	38.15	9.08	31.75	264.66	294.99	30.52	96.10%	97.30%	96.56%	93.96%	3	1	5.911	5.343	1.926
21279	Saturday, October 16, 2010	8:59	30.70	13.37	20.51	245.51	265.20	19.81	96.57%	99.22%	98.26%	97.50%	3	1	5.002	4.681	1.951
21278	Saturday, October 16, 2010	8:00	26.67	9.75	18.30	228.28	245.80	17.65	96.42%	96.25%	96.44%	92.83%	3	1	3.773	3.584	1.284
21277	Saturday, October 16, 2010	6:58	25.26	3.90	22.75	206.64	228.57	22.06	96.97%	98.87%	97.29%	96.19%	3	1	4.008	4.002	1.893
21276	Saturday, October 16, 2010	6:10	26.65	7.20	21.85	185.90	206.89	21.14	96.74%	98.04%	97.92%	96.00%	3	1	4.844	4.904	1.976
21275	Saturday, October 16, 2010	5:21	25.94	7.03	21.39	165.56	186.11	20.66	96.59%	98.83%	96.80%	95.67%	3	1	4.784	4.52	1.98
21274	Saturday, October 16, 2010	4:32	25.13	6.14	21.07	145.39	165.73	20.46	97.11%	98.68%	98.95%	97.64%	3	1	4.869	4.585	1.941
21273	Saturday, October 16, 2010	3:45	24.75	6.76	20.42	125.93	145.53	19.69	96.42%	100.21%	95.79%	95.98%	3	1	5.115	4.512	1.954
21272	Saturday, October 16, 2010	3:00	24.74	6.58	20.58	106.31	126.02	19.83	96.35%	98.19%	98.54%	96.76%	3	1	5.474	5.165	1.973
21271	Saturday, October 16, 2010	2:13	26.38	5.95	22.70	84.57	106.41	21.93	96.63%	97.73%	96.17%	93.98%	3	1	4.886	4.403	1.912
21270	Saturday, October 16, 2010	1:21	25.86	7.00	21.28	64.25	84.66	20.50	96.33%	97.96%	96.83%	94.86%	3	1	4.838	4.729	1.975
21269	Saturday, October 16, 2010	0:34	26.10	6.83	21.74	43.43	64.35	20.98	96.52%	96.15%	96.74%	93.02%	3	1	4.94	4.569	1.953
21268	Friday, October 15, 2010	23:57	45.31	12.01	35.66	9.63	43.51	34.01	95.37%	98.68%	98.71%	97.40%	3	1	6.37	5.832	1.848
21267	Friday, October 15, 2010	22:18	27.62	6.95	23.09	319.60	341.55	22.18	96.06%	97.30%	96.92%	94.30%	3	1	5.232	4.501	1.939
21266	Friday, October 15, 2010	21:26	26.31	6.83	21.89	299.12	320.12	21.17	96.72%	98.32%	96.76%	95.14%	3	1	4.662	4.85	1.975
21265	Friday, October 15, 2010	20:37	25.57	6.66	21.33	279.03	299.50	20.61	96.60%	98.88%	99.04%	97.93%	3	1	5.306	4.767	1.996
21264	Friday, October 15, 2010	19:47	26.25	6.26	22.59	257.62	279.40	21.91	97.03%	98.92%	99.01%	97.94%	3	1	5.03	4.6	1.941
21263	Friday, October 15, 2010	19:00	26.57	9.43	18.70	239.98	257.93	18.08	96.72%	97.89%	94.71%	92.71%	3	1	4.003	4.179	1.88
21262	Friday, October 15, 2010	18:05	25.79	6.40	22.06	219.11	240.28	21.33	96.67%	98.88%	99.25%	98.14%	3	1	4.425	4.779	1.918
21261	Friday, October 15, 2010	17:14	28.23	6.34	24.31	195.87	219.37	23.65	97.29%	96.99%	96.53%	93.62%	3	1	5.054	4.545	1.931
21260	Friday, October 15, 2010	16:15	29.45	6.35	25.60	171.49	196.15	24.80	96.87%	99.48%	99.00%	98.49%	3	1	4.772	4.836	1.936
21259	Friday, October 15, 2010	15:15	26.98	7.27	21.96	150.51	171.73	21.27	96.86%	98.11%	99.67%	97.78%	3	1	5.197	4.83	1.97
21258	Friday, October 15, 2010	14:08	28.71	6.88	24.18	127.41	150.77	23.47	97.06%	98.13%	97.41%	95.59%	3	1	4.729	4.949	1.96
21257	Friday, October 15, 2010	13:13	27.92	6.37	24.13	104.36	127.60	23.37	96.84%	98.41%	97.63%	96.08%	3	1	4.64	4.521	1.931
21256	Friday, October 15, 2010	12:19	27.67	6.40	23.81	81.42	104.45	23.18	97.35%	99.85%	99.25%	99.10%	3	1	4.326	4.587	1.925
21255	Friday, October 15, 2010	11:20	28.24	6.73	24.14	58.31	81.58	23.36	96.76%	97.67%	97.08%	94.82%	3	1	4.618	4.558	1.937
21254	Friday, October 15, 2010	10:22	54.90	8.02	50.61	10.75	58.53	48.05	94.94%	97.54%	95.70%	93.35%	4	1	6.656	5.729	1.856
21253	Friday, October 15, 2010	8:13	27.38	6.63	23.35	325.75	348.06	22.50	96.37%	97.67%	95.81%	93.58%	3	1	4.504	4.745	1.949