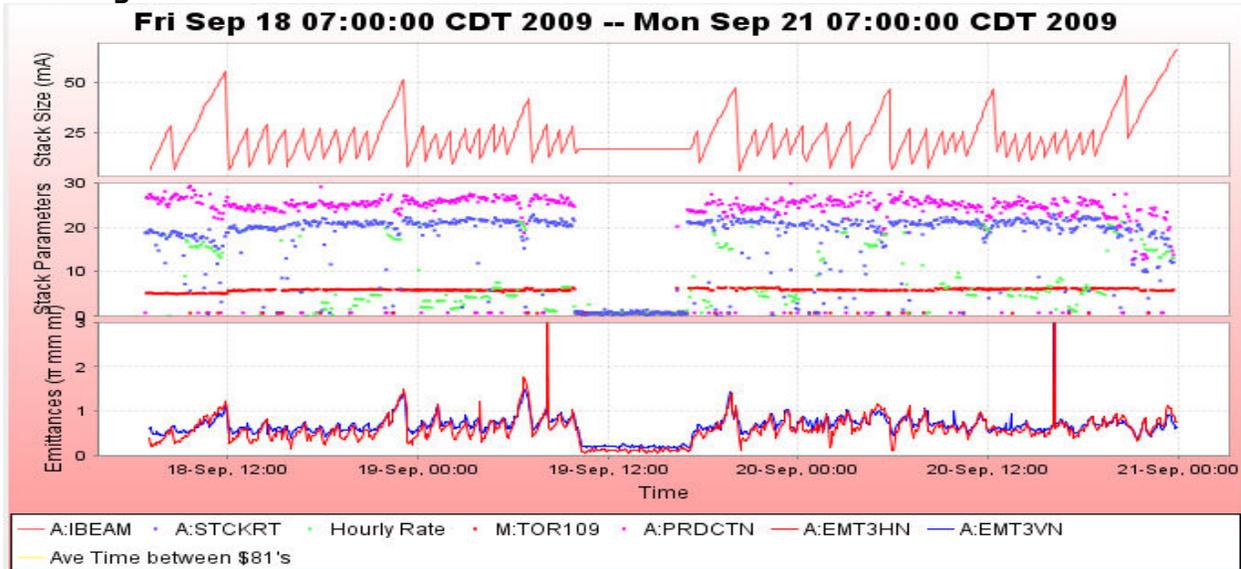
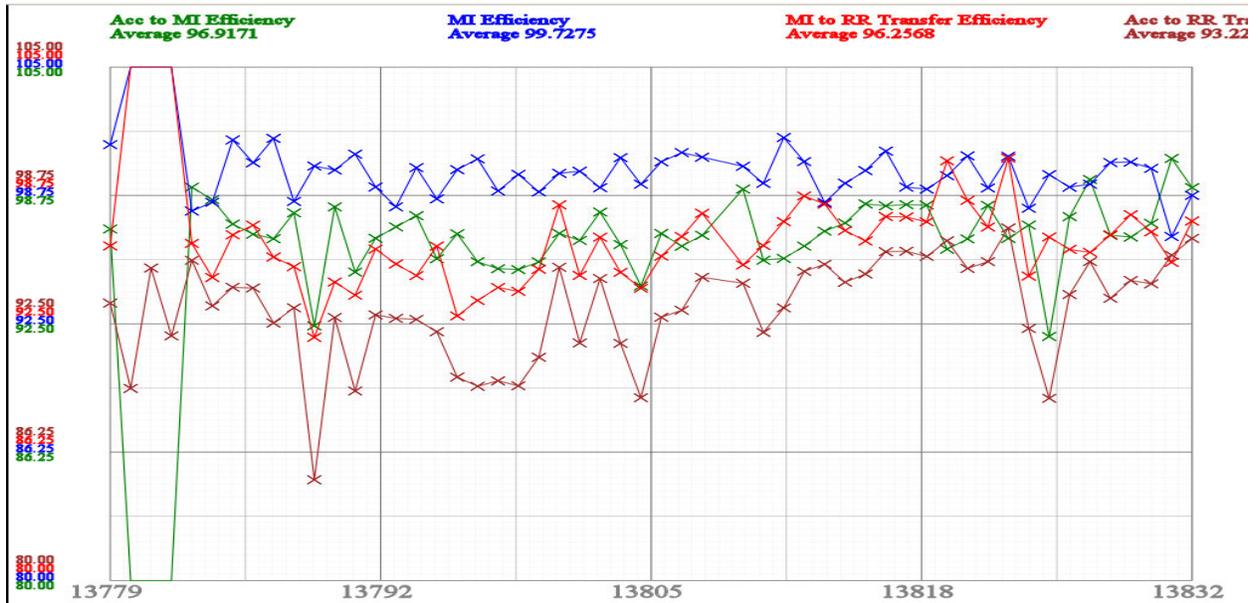


Stacking



- Stacking Numbers
 - <stack rate> = 19.5 mA
 - <production> = 24.4 -6/p
 - <protons on target> = 5.22 e12
- Problems
 - Core Vertical Cooling
 - VB1
 - Core 4-8GHz Momentum
 - Problems with the Core 4-8GHz momentum system tripping worsened over the weekend.
 - Trips becoming more frequent
 - Two types of trips seen
 - ◆ Just an off
 - ◆ All digital status shows bad, and takes time to reset.
 - System trips and still reads back that there is power on the system.
 - System did not want to run over 10watts

Transfers



- Unstacked 1152e10 in 116 transfers over 53 sets.
 - <Acc to RR Efficiency> = 92.4%

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 xfer E10	Column 24 Number_23_R: BEAM (R:BEA ME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Trans fers	Set s	Column 5 Number_4_Acc Horizontal Emittanc e	Column 6 Number_5_Acc Vertical Emittanc e	Column 8 Number_7_Acc Longitudi nal Emittanc e	
Totals =>				1152.27			1064.97	92.42%	93.69%	96.34%	116	53	6.613	6.9291	1.9094	
13832	Monday, September 21, 2009	6:32	27.20	9.21	18.93	141.61	159.78	18.28	96.58%	99.22%	98.08%	2	1	4.479	4.787	1.861
13831	Monday, September 21, 2009	5:28	28.49	9.99	19.52	123.26	141.91	18.72	95.88%	99.52%	96.67%	2	1	5.099	5.82	1.894
13830	Monday, September 21, 2009	4:29	29.38	11.19	19.23	105.24	123.42	18.18	94.59%	97.58%	97.72%	2	1	6.111	6.177	1.898
13829	Monday, September 21, 2009	3:21	29.81	12.94	17.90	88.59	105.53	16.93	94.62%	96.69%	96.94%	2	1	6.913	6.684	1.967
13828	Monday, September 21, 2009	2:27	29.37	12.88	17.52	72.32	88.66	16.43	93.73%	96.79%	97.17%	2	1	6.867	6.616	1.931
13827	Monday, September 21, 2009	1:08	27.67	8.37	20.25	53.11	72.41	19.33	95.42%	99.43%	99.04%	2	1	5.612	5.745	1.808
13826	Monday, September 21, 2009	0:09	68.19	17.80	52.98	4.07	53.19	49.48	93.40%	97.42%	97.06%	5	1	5.625	4.978	1.892
13825	Sunday, September 20, 2009	20:41	49.39	20.63	29.70	258.99	285.20	26.38	88.82%	91.81%	91.62%	2	1	7.453	6.455	1.874
13824	Sunday, September 20, 2009	18:37	27.13	12.41	15.99	248.03	262.65	14.72	92.06%	97.12%	95.16%	2	1	7.653	7.242	2.002
13823	Sunday, September 20, 2009	17:54	26.58	13.16	14.46	235.24	249.09	14.05	97.19%	96.91%	97.53%	2	1	5.593	5.902	1.996
13822	Sunday, September 20, 2009	16:55	26.44	9.82	17.58	219.97	236.68	16.80	95.61%	98.18%	97.52%	2	1	5.692	6.135	1.904
13821	Sunday, September 20, 2009	16:12	25.53	13.44	13.07	208.40	220.77	12.45	95.21%	96.62%	97.44%	2	1	6.129	6.21	1.997
13820	Sunday, September 20, 2009	15:28	25.46	12.08	14.42	195.23	209.11	13.93	96.61%	96.26%	96.05%	2	1	4.328	5.004	1.965
13819	Sunday, September 20, 2009	14:38	25.87	10.31	16.61	180.05	195.93	15.92	95.86%	98.10%	97.53%	2	1	5.274	5.528	1.945
13818	Sunday, September 20, 2009	13:48	25.66	10.26	16.41	164.89	180.58	15.78	96.13%	98.56%	97.93%	2	1	5.006	5.898	1.944
13817	Sunday, September 20, 2009	13:01	26.24	10.99	16.25	149.75	165.33	15.61	96.02%	98.20%	98.81%	2	1	5.473	5.64	1.952
13816	Sunday, September 20, 2009	12:23	47.43	14.48	33.86	117.93	150.03	32.16	94.96%	98.46%	98.32%	2	1	6.185	5.865	1.851
13815	Sunday, September 20, 2009	10:27	26.76	12.41	15.32	103.90	118.29	14.46	94.36%	97.19%	96.55%	2	1	6.556	6.652	1.952
13814	Sunday, September 20, 2009	9:50	26.59	15.16	12.41	92.22	104.00	11.85	95.51%	97.07%	96.36%	2	1	6.352	6.56	2.034
13813	Sunday, September 20, 2009	9:06	26.24	12.58	14.64	78.47	92.32	13.90	94.99%	96.28%	96.61%	2	1	6.692	6.549	1.855
13812	Sunday, September 20, 2009	8:06	27.25	7.41	20.78	59.36	78.62	19.32	92.97%	95.63%	97.05%	2	1	8.11	8.008	1.86
13811	Sunday, September 20, 2009	7:02	27.89	8.59	20.24	41.05	59.54	18.55	91.65%	95.47%	94.57%	2	1	9.069	8.916	1.868
13810	Sunday, September 20, 2009	5:46	46.76	7.31	40.69	3.16	41.15	38.06	93.52%	98.18%	98.10%	3	1	6.132	5.983	1.79
13808	Sunday, September 20, 2009	3:21	32.22	7.64	25.42	195.26	219.08	23.99	94.37%	96.55%	97.12%	2	1	6.66	6.72	1.737
13807	Sunday, September 20, 2009	1:53	30.38	7.29	23.26	174.77	196.21	21.59	92.82%	96.11%	96.50%	2	1	6.206	7.211	1.77
13806	Sunday, September 20, 2009	0:18	29.33	8.35	21.94	155.43	175.69	20.33	92.70%	96.61%	96.75%	2	1	6.617	7.71	1.836
13805	Saturday, September 19, 2009	23:22	28.42	13.90	15.42	142.33	155.93	13.67	88.62%	94.10%	93.89%	2	1	8.662	8.898	1.997
13804	Saturday, September 19, 2009	22:20	30.76	11.12	20.63	123.84	142.72	18.88	91.54%	96.32%	96.80%	2	1	7.567	8.674	1.924
13803	Saturday, September 19, 2009	21:20	27.23	12.86	15.36	109.97	124.44	14.54	94.65%	97.51%	96.63%	2	1	6.174	6.545	1.973
13802	Saturday, September 19, 2009	20:05	48.02	6.49	44.34	71.17	110.62	39.89	89.97%	94.89%	95.33%	4	1	7.433	8.118	1.921
13801	Saturday, September 19, 2009	17:43	27.55	10.06	18.54	280.57	298.21	17.68	95.36%	97.03%	96.95%	2	1	5.671	6.249	1.934

13800	Saturday, September 19, 2009	9:48	29.74	12.15	18.59	270.49	287.17	16.87	90.75%	95.80%	94.78%	2	1	8.609	8.83	1.951
13799	Saturday, September 19, 2009	8:58	27.16	14.19	14.03	259.81	272.22	12.54	89.39%	94.84%	94.69%	2	1	8.872	9.557	1.983
13798	Saturday, September 19, 2009	8:06	29.48	10.97	19.49	244.14	261.42	17.46	89.59%	95.12%	94.14%	2	1	9.578	9.298	1.902
13797	Saturday, September 19, 2009	7:03	42.60	10.21	34.32	215.86	245.84	30.36	88.46%	95.07%	95.04%	3	1	8.16	8.339	1.816
13796	Saturday, September 19, 2009	5:26	28.20	12.62	16.64	202.56	217.45	15.01	90.19%	96.10%	96.71%	2	1	7.24	7.648	1.949
13795	Saturday, September 19, 2009	4:46	29.25	15.77	14.52	189.96	203.22	13.35	91.95%	95.61%	94.17%	2	1	6.507	7.34	1.989
13794	Saturday, September 19, 2009	3:51	27.47	12.07	16.42	175.58	190.74	15.21	92.58%	97.30%	97.48%	2	1	6.729	7.093	1.929
13793	Saturday, September 19, 2009	3:02	27.61	12.04	16.61	160.76	176.13	15.43	92.91%	97.46%	96.06%	2	1	6.766	7.745	1.959
13792	Saturday, September 19, 2009	2:04	26.95	8.88	19.09	143.76	161.40	17.72	92.82%	96.55%	95.90%	2	1	6.861	7.061	1.888
13791	Saturday, September 19, 2009	1:15	27.78	11.80	17.00	129.07	144.13	15.15	89.12%	94.98%	95.69%	2	1	9.258	9.625	1.995
13790	Saturday, September 19, 2009	0:20	28.52	10.98	18.57	112.17	129.36	17.24	92.83%	97.84%	98.09%	2	1	6.071	6.642	1.923
13789	Friday, September 18, 2009	23:09	52.50	7.82	47.63	73.74	112.61	39.21	82.31%	90.37%	90.26%	4	1	9.041	9.475	1.878
13788	Friday, September 18, 2009	20:48	26.92	10.45	17.53	265.81	282.04	16.32	93.12%	97.61%	96.56%	2	1	5.457	6.576	1.907
13787	Friday, September 18, 2009	19:56	27.87	10.49	18.39	250.38	267.25	17.01	92.48%	96.57%	97.63%	2	1	5.558	6.55	1.918
13786	Friday, September 18, 2009	18:58	28.78	9.46	20.30	232.72	251.66	19.09	94.07%	97.09%	97.51%	2	1	5.364	6.161	1.861
13785	Friday, September 18, 2009	17:50	27.16	10.15	18.02	217.06	233.90	16.93	93.99%	97.16%	98.17%	2	1	5.555	5.893	1.954
13784	Friday, September 18, 2009	16:54	29.77	9.48	21.29	198.16	217.91	19.85	93.24%	98.76%	97.19%	2	1	6.124	6.915	1.866
13783	Friday, September 18, 2009	15:35	26.30	7.87	19.21	180.87	199.12	18.33	95.43%	99.31%	97.36%	2	1	4.95	5.749	1.853
13782	Friday, September 18, 2009	14:30	30.80	9.38	22.40	161.71	182.03	20.47	91.38%	82.46%	97.13%	2	1	7.13	7.775	1.956
13781	Friday, September 18, 2009	13:11	27.25	7.18	21.07	142.73	162.60	19.99	94.89%	32.83%	98.67%	2	1	5.247	5.871	1.842
13780	Friday, September 18, 2009	11:53	55.80	5.48	51.96	98.22	143.45	45.69	87.93%	65.60%	95.03%	3	1	8.812	7.813	1.842
13779	Friday, September 18, 2009	8:28	30.55	5.93	25.55	275.71	299.49	23.91	93.59%	96.86%	98.06%	2	1	5.197	5.679	1.906

Problems

The Numbers 7am Friday - 7am Monday

- Stacking
 - Pbars stacked: 1164.14 E10
 - Time stacking: 64.79 Hr
 - Average stacking rate: 17.97 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 103444
 - Number of pulses with beam: 98320
 - Fraction of up pulses was: 95.05%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 61.58 Hr
 - Possible average stacking rate: 18.90 E10/Hr
 - Could have stacked: 1224.81 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 1159.93 E10
 - Number of transfers : 117
 - Number of transfer sets: 53
 - Average Number of transfer per set: 2.21
 - Time taken to shoot including reverse proton tuneup: 00.43 Hr
 - Transfer efficiency: 93.29%
- Other Info
 - Average POT : 5.21 E12
 - Average production: 22.73 pbars/E6 protons
- * Missed one or more A:IBeam7 events somewhere in the middle of the user selected time span. Calculated time shot using 13 secs per transfer.
-

Plots

