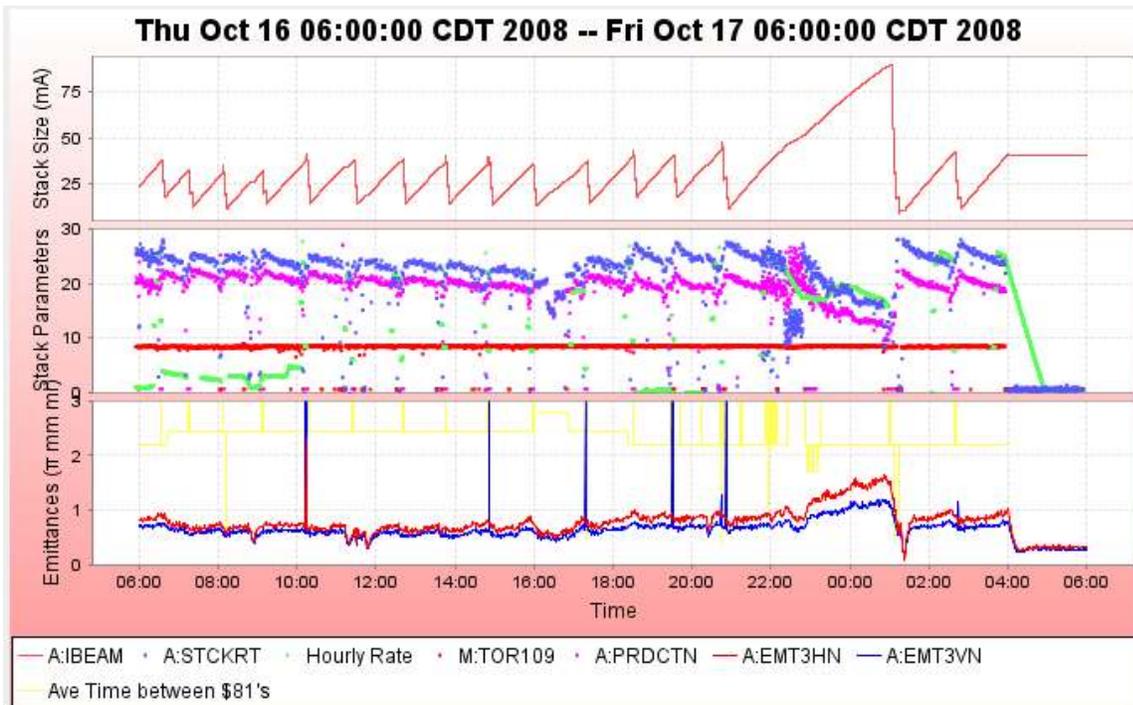


## Stacking

- Performance
  - Pbars stacked: 424.25 E10
  - Best Stacking Hour: 25.13 mA
  - Production: 15.70 e-6/proton
  - Largest Stack: 89.6mA
- Shutoff at 4am as planned to cooldown for the Target Hall access to collect JASMIN samples.
- Work appears to be on schedule.
- At 7am started core vertical cooling measurements.
- Our access items are not high enough priority to turn off and go in.
- We will sit on the remaining stack and be ready to return to iterations of stack and transfer.



## Transfers

- Unstacked 428mA in 34 transfers over 15 sets.
  - Accumulator to MI efficiency was 97%
  - Accumulator to RR efficiency was 94.3%
- The numbers are down about 1/2 of a percent due to one large set of transfers from 89mA.

Column 1 Number_0_Pbar	Column 4 Number_3_Transfer Time	Column 21 Number_20_A:IB	Column 22 Number_21_A:IB	Unstacked (mA)	Column 23 Number_22_R:BE	Column 24 Number_23_R:BE	Stashed	Acc to RR Eff	Column 27 Number_26_MI_DCCT	Column 28 Number_27_MI_Befor	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets	
<b>Totals =&gt;</b>		<b>7:00:00 AM</b>		<b>428.43</b>			<b>403.98</b>	<b>94.29%</b>	<b>416.27</b>	<b>414.44</b>	<b>97.16%</b>	<b>96.74%</b>	<b>34</b>	<b>15</b>	
9620	Friday, October 17, 2008	2:41:23 AM	42.21	11.13	33.53	85.70	117.44	31.83	94.91%	32.73	32.70	97.61%	97.50%	3	1
9619	Friday, October 17, 2008	1:03:35 AM	88.95	9.12	82.21	13.23	86.17	73.73	89.69%	78.50	77.77	95.49%	94.61%	4	1
9618	Thursday, October 16, 2008	8:48:20 PM	43.95	10.99	35.29	342.06	375.05	33.28	94.32%	34.39	34.25	97.46%	97.07%	3	1
9617	Thursday, October 16, 2008	7:33:58 PM	40.19	17.38	24.11	320.99	343.59	22.81	94.58%	23.51	23.29	97.49%	96.60%	2	1
9616	Thursday, October 16, 2008	6:33:06 PM	40.36	17.96	23.69	299.91	322.08	22.23	93.83%	23.15	23.04	97.70%	97.26%	2	1
9615	Thursday, October 16, 2008	5:20:53 PM	36.98	14.23	23.86	278.46	301.03	22.76	95.40%	23.23	23.10	97.36%	96.82%	2	1
9614	Thursday, October 16, 2008	3:59:12 PM	35.07	13.11	23.09	257.80	279.62	21.87	94.72%	22.34	22.29	96.76%	96.55%	2	1
9613	Thursday, October 16, 2008	2:53:45 PM	36.17	13.65	23.65	235.68	258.26	22.72	96.08%	23.06	23.17	97.51%	97.95%	2	1
9612	Thursday, October 16, 2008	1:47:13 PM	36.66	13.98	23.82	213.26	236.05	22.85	95.90%	23.19	23.26	97.33%	97.63%	2	1
9611	Thursday, October 16, 2008	12:41:58 PM	37.97	14.44	24.68	189.96	213.64	23.74	96.21%	24.03	24.07	97.38%	97.53%	2	1
9610	Thursday, October 16, 2008	11:26:51 AM	37.32	14.00	24.55	166.62	190.31	23.75	96.73%	24.24	24.09	98.72%	98.12%	2	1
9609	Thursday, October 16, 2008	10:15:56 AM	37.72	14.35	24.59	143.60	166.96	23.45	95.39%	23.92	23.90	97.28%	97.21%	2	1
9608	Thursday, October 16, 2008	9:09:13 AM	31.70	13.74	19.33	125.38	143.83	18.50	95.73%	18.85	18.83	97.52%	97.42%	2	1
9607	Thursday, October 16, 2008	8:09:14 AM	30.94	11.50	20.68	105.58	125.56	20.02	96.79%	20.25	19.85	97.90%	95.96%	2	1
9606	Thursday, October 16, 2008	7:17:07 AM	32.43	12.26	21.36	85.29	105.73	20.44	95.71%	20.90	20.84	97.85%	97.57%	2	1

## Studies

- Jim Morgan doing Core cooling studies this morning (<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=441&scroll=false&load=>).
- Will report the result on Monday.

## Requests

### Next Week

#### a. Static Stacktail Measurements.

- Conditions:
  - This study should be started directly before a set of transfers to Recycler. We want a 30mA stack.
  - Prior to the start of this study, we would like five supercycles of stacking without SY120 or Studies events in the TLG. This will allow setup the stacktail in a known condition for the study.
- The Study:
  - A Numi-only TLG is loaded
  - The studier is Dave Vander Meulen
  - The estimated study time is 20 minutes.
- After the study is complete, we can transfer to the Recycler.
- Leave > 10mA of beam behind for the next study.

#### b. Stacktail Transfer Function Measurements:

- Conditions:
  - This study will start with 10mA leftover after a set of transfers.
- The Study
  - The studiers are Steve Werkema and Ralph Pasquinelli.
  - The estimated study time is 4 hours.
  - If beam is lost during any of the measurements, we need to be able to stack for short periods of time to replace the beam for the next set of measurements.

## The Numbers

- Paul's Numbers

- Most in an hour: 25.13 mA at Fri Oct 17 02:23:08 CDT 2008
  - Best: 27.01 mA on 03-Jun-08
  - Average Production 15.70 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 7.56 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack 89.66 mA Best: 313.58 mA on 02/18/2008
- AI's Numbers
    - Stacking
      - Pbars stacked: 424.25 E10
      - Time stacking: 20.77 Hr
      - Average stacking rate: 20.43 E10/Hr
    - Uptime
      - Number of pulses while in stacking mode: 31505
      - Number of pulses with beam: 30542
      - Fraction of up pulses was: 96.94%
    - The uptime's effect on the stacking numbers
      - Corrected time stacking: 20.13 Hr
      - Possible average stacking rate: 21.07 E10/Hr
      - Could have stacked: 437.63 E10/Hr
    - Recycler Transfers
      - Pbars sent to the Recycler: 428.43 E10
      - Number of transfers : 34
      - Number of transfer sets: 15
      - Average Number of transfer per set: 2.27
      - Time taken to shoot including reverse proton tuneup: 00.22 Hr
      - Transfer efficiency: 94.83%
    - Other Info
      - Average POT : 7.78 E12
      - Average production: 17.85 pbars/E6 protons
    - \* Red indicates a problem during data retrieval. See the message window for details.

## **JASMIN sample extraction plan:**

From Tony:

Here is our plan to remove subject samples:

1. Beam off at 0400 (exact time is TBD).
2. Three hours later, begin block removal.
3. Set up two lens coffins as shown in attached gif file. Exact placement is to be determined considering safe crane operation parameters.

### **After 4 hours of cooldown time:**

4. Per target replacement procedure, remove two 1/2" filler plates.
5. Per target replacement procedure, remove thick filler plate and position as shown in attached sketch. The filler plate will remain on the crane hook and rest on the floor at the position shown.
6. Working through the 4 inch slot between coffins, remove samples from each of the 5 holders. Samples are to be given to G. Lauten, RCT, and T972 collaborators for repackaging.
7. Place T972 thick filler plate in storage rack for long term storage.
8. Per target replacement procedure, remove the target module and position as shown in the attached sketch. The target module will remain on the crane hook.
9. Working through the 4 inch slot between coffins, lift target sample holder off of target assembly. Samples are to be given to G. Lauten, RCT, and T972 collaborators for repackaging.
- 9a. Photograph target. We plan to get photos of the exterior cover and of the bottom plate to look for evidence of deterioration. Remote camera (for example, camera on a stick) operation will be used.
10. Return target module to target vault in the high gradient position. Use spotter and crane operator to replace the module and prevent damage to target assembly.

to replace the module and prevent damage to target assembly.

11. Install the original (not the T972) thick filler plate.

12. Install two 1/2" thick filler plates.

13. Remove 3 cardboard T972 extraction tubes from the lower vault.

14. Install two pull ropes through the remaining T972 extraction tubes and attach to gold foil sample packs already in place in the target vault.

15. Remove horizontal run of duct attenuation experiment from lower vault. Samples are to be given to G. Lauten, RCT, and T972 collaborators for repackaging.

16. Check out target motion controls.

17. Return upper vault shielding blocks.

18. Make up interlocks and return to stacking.

It will be important to have 2 RCTs and G. Lauten available Friday morning. We need to put the target station back together while sample repackaging is being done in order to minimize stacking down time.

All target removal and replacement work procedure steps are governed by the nominal target replacement procedure.

