

2011-02-15 Tuesday Morning Notes

Tuesday, February 15, 2011
7:21 AM

Stacking and Transfers

- Stacked 21.7mA/hr with a production of 20.7 pbars/Mp with 7.92 Tp on target.
 - Numbers lower due to large stack size.
- Unstacked 124E10 in 15 transfers over 5 sets.

Interesting Happenings

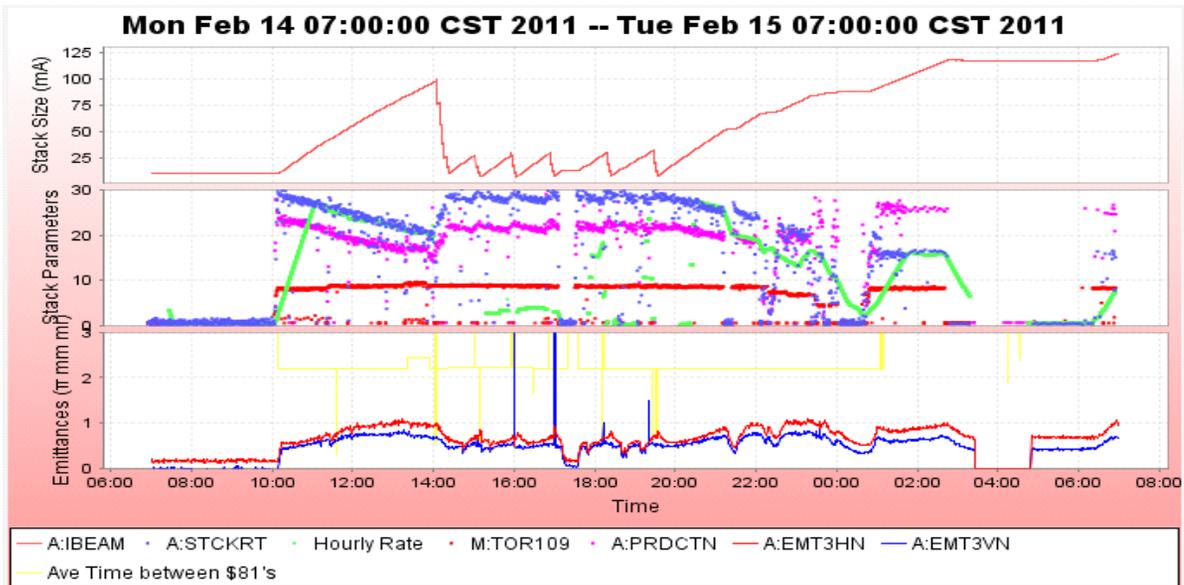
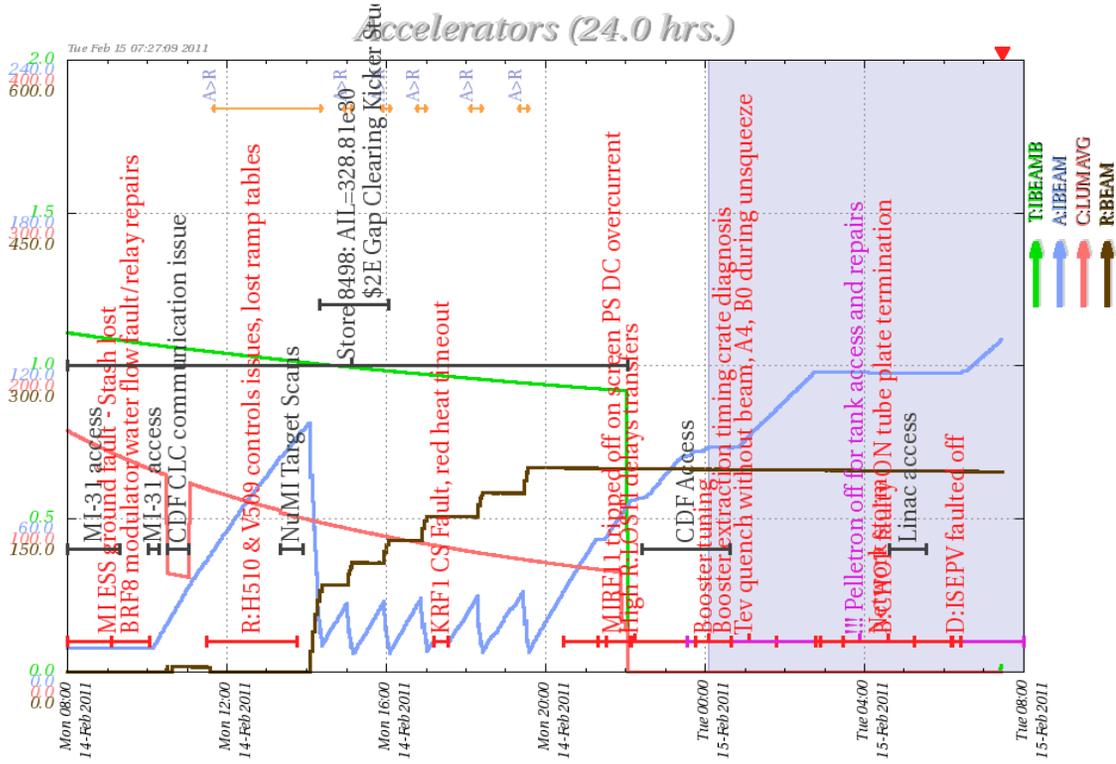
- We are occasionally seeing Network Storms that impact all of the Accelerators. For pbar, the VSA's and SEM806 always stop working after the storm. Here is my recipe for getting Pbar back online.
 - Check the Rabbit processor at AP10 in rack B14R06. The front panel has a heartbeat. The processor controls the VSA local oscillators D:VSAOSC and A:VSAOSC.
 - Power cycle the Rabbit if it is not updating.
 - Get the D/A VSA running.
 - First attempt resending the Stacking Configuration from P148. If that does not work,
 - ◻ Power Cycle the VSA (D:VSB10R)
 - ◻ Restart AP1001
 - ◻ Resend the Mux Switch Parameters on P36 MISC_HRDWR <14>
 - ◻ Resend the stacking configuration from P148
 - Get the Stacking VSA running
 - Do a kill and restart from P142
 - Get SEM806 online
 - From P58, go to MISC_CONTROLS and turn on the sequence
 - Restart DCE11 (required because of earlier AP1001 reboot)
 - Verify DCE11 parameters are updating from P38 MISC <6>

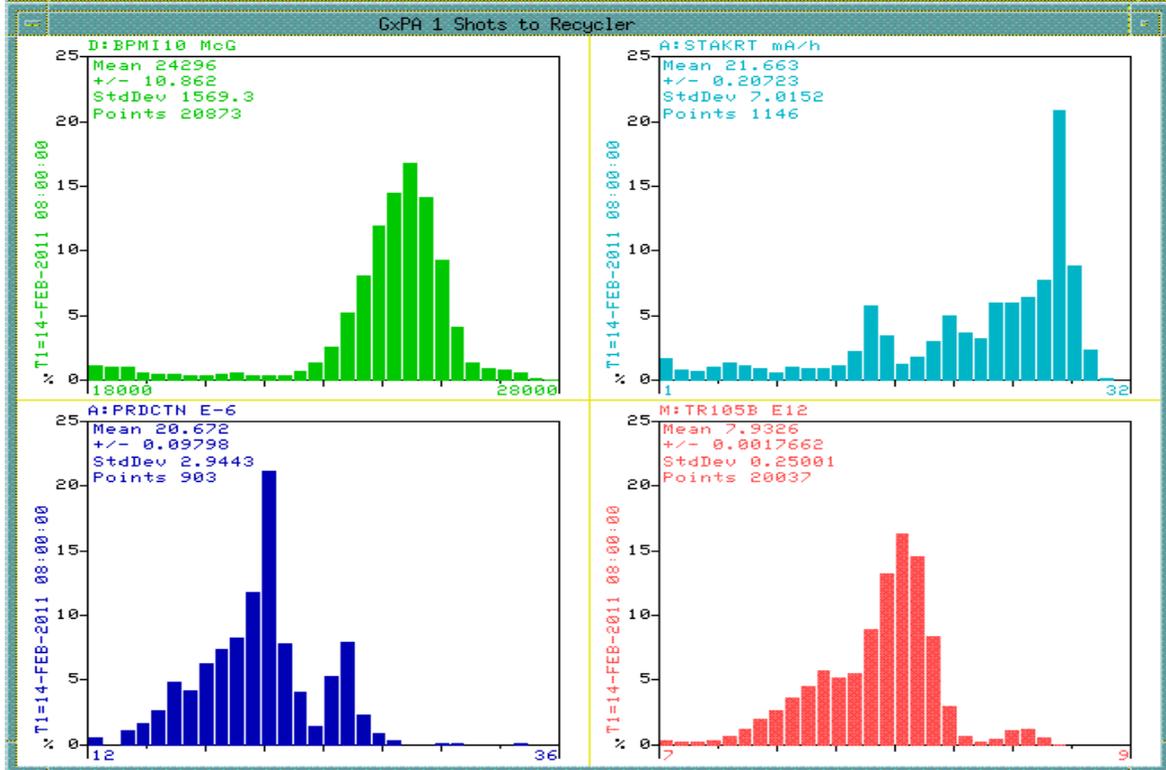
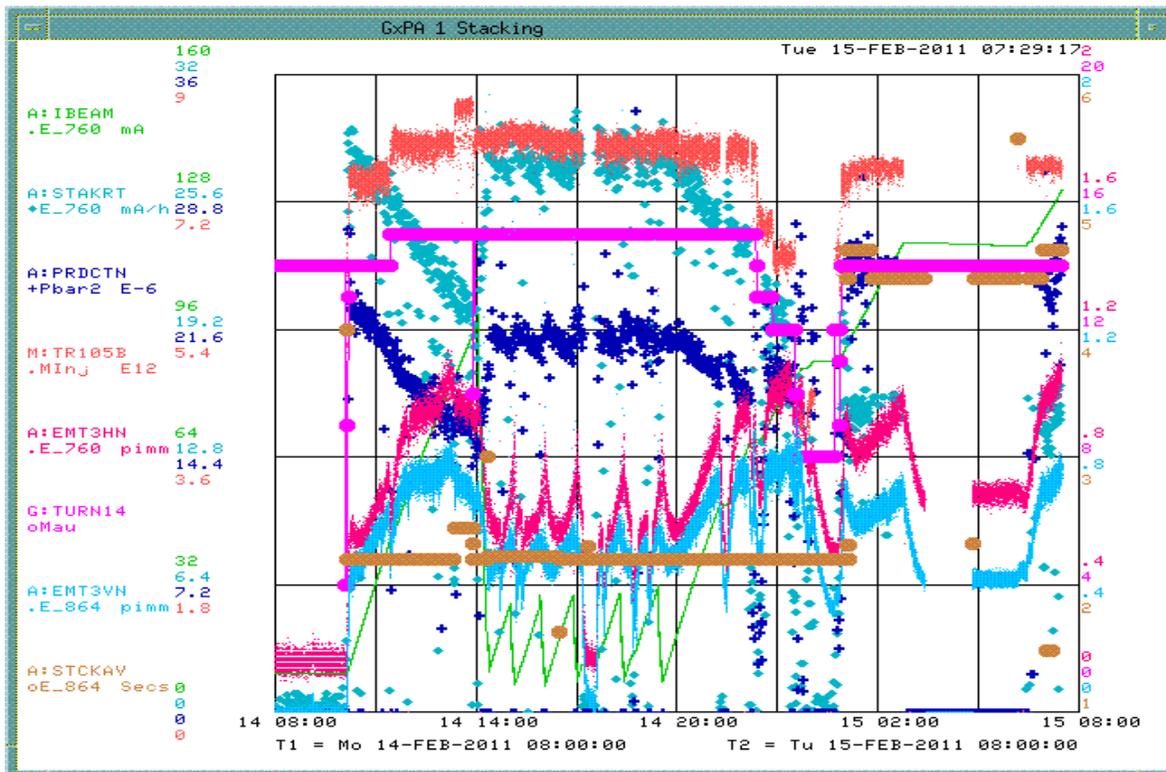
Numbers

- Stacking
 - Pbars stacked: 324.30 E10
 - Time stacking: 17.24 Hr
 - Average stacking rate: 18.81 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 25446
 - Number of pulses with beam: 22179
 - Fraction of up pulses was: 87.16%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 15.02 Hr
 - Possible average stacking rate: 21.59 E10/Hr
 - Could have stacked: 372.07 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 195.48 E10
 - Number of transfers : 18
 - Number of transfer sets: 6

- Average Number of transfer per set: 3.00
- Time taken to shoot including reverse proton tuneup: 00.06 Hr
- Transfer efficiency: 93.92%
- Other Info
 - Average POT : 7.73 E12
 - Average production: 18.91 pbars/E6 protons

Plots





Column 1 Number _0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time	Column 21 Number _20_A:1 BEAMB sampled on \$31 (A-BEA M7), E10	Column 22 Number _21_A:1 BEAMB sampled on \$34 (A-BEA M9), E10	Unstacked (mA)	Column 23 Number _22_R: BEAMS (R:BEA ME0(0)) pre E10	Column 24 Number _23_R: BEAM (R:BEA ME0(1)) post 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 =>				124.18			119.07	95.88%	97.63%	96.59%	94.30%	15	5	6.1972	4.9098	1.9468	
Daily Average =>				124.18			119.07					15	5				
23341	Monday, February 14, 2011	19:27	31.81	7.46	27.06	175.28	200.58	25.71	95.03%	96.57%	97.59%	94.25%	3	1	6.174	4.978	1.912
23340	Monday, February 14, 2011	18:17	29.73	7.38	25.13	152.05	175.77	24.16	96.13%	98.46%	96.08%	94.60%	3	1	6.287	5.168	1.949
23339	Monday, February 14, 2011	16:53	29.28	7.32	24.75	129.18	152.59	23.67	95.63%	97.95%	96.57%	94.58%	3	1	6.146	4.955	1.967
23338	Monday, February 14, 2011	15:56	27.63	6.58	23.78	106.85	129.43	23.08	97.09%	96.50%	95.15%	91.82%	3	1	6.19	4.553	1.968
23337	Monday, February 14, 2011	15:01	27.21	6.55	23.47	84.96	107.17	22.44	95.62%	98.75%	97.47%	96.25%	3	1	6.189	4.895	1.938

```

PC P38 DIAGNOSTICS PARAMS
P38 RABBITS IN PBAR          SET      D/A      A/D      Com-U  *PTools*
-<FTP>+ *SA+ X-D/A  X=B:VIMAX  Y=B:CHG1  ,B:CHG2  ,B:BLMS01,B:BLMINJ
COMMAND ...X Eng-U  I= 951.392 I= 3      , 3      , 0      , 0
-<16>+ r_19 AUTO  F= 992.352 F= 6      , 6      , 1      , .2
dampers emitmon mux_sw  plcs  java  ibeam  MISC  mcginni

! THIS ONE IS IN AP50

-A:R1FSF1  ARF1 Pickup Frequency  52.815521  52.815521  MHz
-A:R1FSFS  ARF1 Freq Slew Rate    30000     30000     Hz/S
-A:R1FSTM  ARF1 Synth  98808178  98808183  98808187  secs

! THIS ONE IS IN AP30 NEAR DRF3

-D:R3LLAM  DRF3 Amplitude           0           0           BITS
-D:R3LLAS  DRF3 Amplitude Slew R  10          10          nS/B
-D:R3LLFR  DRF3 Frequency          2360072     2360072     Hz
-D:R3LLFS  DRF3 Frequency Slew R  1           1           Hz/S

! THIS ONE IS IN B14R06 IN AP10

-D:VSAOSC  AP10 VSA Deb 79 MHz D  74.91729   74.91729   MHz
-A:VSAOSC  AP10 VSA Acc 79 MHz D  79.20826   79.20826   MHz
-A:VSAOHB  AP10 VSA D  810683732  810683738  810683742  Sec

! BTW-107 TEST UNIT
-A:IKIKLE  ACC-IKIK last errors  DPM_Pend   DPM_Pend
-A:IKIKEC  ACC-IKIK error count  DPM_Pend   DPM_Pend
-A:IKIKSC  ACC-IKIK seconds coun  DPM_Pend   DPM_Pend

```

```

PC P36 STOCHASTIC PARAM'S
P36 DIAGNOSTIC MUX SWITCHES      SET      D/A  A/D  Com-U  ♦PTools♦
-<FTP>+ *SA* X-D/A  X=B:VIMAX  Y=B:CHG1  ,B:CHG2  ,B:BLMS01,B:BLMINJ
COMMAND ...X Eng-U  I= 951.392 I= 3      , 3      , 0      , 0
-<14>+ r_19 AUTO  F= 992.352 F= 6      , 6      , 1      , .2
stack_t_mo stack_t_be core_m_&.b debun_cool MISC_HRDWR  lab-4

-A:MX8T01*.001SwTree 8-Throw Switch      1      1      Pole  .
-A:MX8T02*.001SwTree 8-Throw Switch      1      1      Pole  .
-A:MX8T03*.001SwTree 8-Throw Switch      1      1      Pole  .
-A:MX8T04*.001SwTree 8-Throw Switch      5      5      Pole  .
-A:MX8T05*.001SwTree 8-Throw Switch      3      0      Pole  L
-A:MX8T06*.001SwTree 8-Throw Switch      5      0      Pole  L
-A:MX8T07*.001SwTree 8-Throw Switch      2      0      Pole  L
-A:MX8T08*.001SwTree 8-Throw Switch      1      0      Pole  L

! SWITCHES READ 18 -59 WHEN THEY ARE IN LOCAL

! THESE ARE THE AD8116 MUX SWITCH IN AP10

-A:MXAD00  optilogic 22 MUX chan 0      11     11     Sw
-A:MXAD01  AD8115 MUX chan 1           3      3      Sw
-A:MXAD02  AD8115 MUX chan 2           4      4      Sw
-A:MXAD03  AD8115 MUX chan 3           6      6      Sw
-A:MXAD04  AD8115 MUX chan 4          12     12     Sw
-A:MXAD05  AD8115 MUX chan 5           3      3      Sw
-A:MXAD06  AD8115 MUX chan 6          14     14     Sw
-A:MXAD07  AD8115 MUX chan 7          15     15     Sw
-A:MXAD08  AD8115 MUX chan 8          10     10     Sw
-A:MXAD09  AD8115 MUX chan 9           2      2      Sw
-A:MXAD0A  AD8115 MUX chan A           2      2      Sw
-A:MXAD0B  AD8115 MUX chan B           0      0      Sw
-A:MXAD0C  AD8115 MUX chan C           9      9      Sw
-A:MXAD0D  AD8115 MUX chan D           1      1      Sw
-A:MXAD0E  AD8115 MUX chan E           2      2      Sw
-A:MXAD0F  AD8115 MUX chan F          15     15     Sw

```

```

PC P38 DIAGNOSTICS PARAMS
P38 DCE11 Parameters      SET      D/A  A/D  Com-U  *PTools*
-<FTP>+ *SA* X-D/A  X=B:VIMAX  Y=B:CHG1  ,B:CHG2  ,B:BLMS01,B:BLMINJ
COMMAND ...X Eng-U  I= 951.392 I= 3      , 3      , 0      , 0
-< 6>+ r_19 AUTO  F= 992.352 F= 6      , 6      , 1      , .2
dampers emitnon mux_sw plcs  java  ibeam  MISC  mcginni
! Parameters on this page come back through DCE11
!
! 724Tor Scope at AP50
! http://ap30-bpm-scope.fnal.gov
D:724TOR  TOR724 value from sco  *-.99920041 *E09
M:TR105B  AP1 PBV2 Big Beam Tor  7.605625  E12
! Flux Capacitor Scope (stacking mode) at AP10
! CATV Pbar Channel 18
! http://ap10-flux-scope.fnal.gov
! D:SCP10R power cycles scope
-D:INJFLX  Debuncher Injection  25.88  25.74  * 25.74  McG
-D:FLXBBK  Deb Inj Flux BTL Buckets  81.78  * 81.78  Bcks
-D:FLXBTL  Deb Inj Flx Bnch Trn Lgn  1.54  * 1.54  uSec
D:SCP10R  AP10 Deb Scope Reboot

! Debuncher Injection Kicker scope at AP50
! http://deb-ikik-scope.fnal.gov
! D:IKIKSR power cycles scope
-D:IKPOS1  Deb Inj Kick 1 OAC Ti  .59039998  .59039998  USEC
-D:IKPOS2  Deb Inj Ki  .59359998  .59280002  .59280002  USEC
-D:IKPOS3  Deb Inj Kick 2 OAC Ti  .58920002  .58920002  USEC
D:IKIKSR  D:IKIK Scope Reset

! Debuncher Extraction Kicker Scope at AP10
! http://deb-ekik-scope.fnal.gov
! D:EKIKSR power cycles scope
-D:EKPOS1  Deb Ext Ki  .98760003  .98720002  .98720002  USEC
-D:EKPOS2  Deb Ext Ki  .98320001  .97960001  .97960001  USEC
-D:EKPOS3  Deb Ext Ki  .97960001  .98000002  .98000002  USEC
D:EKIKSR  D:EKIK Scope Reset

! SEM806 at AP10
! Normally left in the beam
-D:806HA  SEM806 Hor  11.984313  11.744438  11.744438  Int
-D:806VA  SEM806 Ver  11.987671  11.778008  11.778008  Int
-D:806HS  SEM806 Hor  1.9545959  1.9677389  1.9677389  mm
-D:806VS  SEM806 Ver  1.5903349  1.5966454  1.5966454  mm

! DCE11 is rebooted via VNC from insdie firewall
! http://dce11.fnal.gov:5801/
! Avoid reboot during transfers or 7-7:30am

```