

2011-01-18 Tuesday Morning Notes

Tuesday, January 18, 2011
7:23 AM

Stacking and Transfers

- Stacked 24.2mA/hr with an average production of 19.8 pbars/Mp and 7.88 Tp on target.
- Unstacked 1694E10 (423.4E10/day) in 212 transfers (53/day) over 70 sets (18/day) with an average efficiency of 94.6%

Interesting Happenings

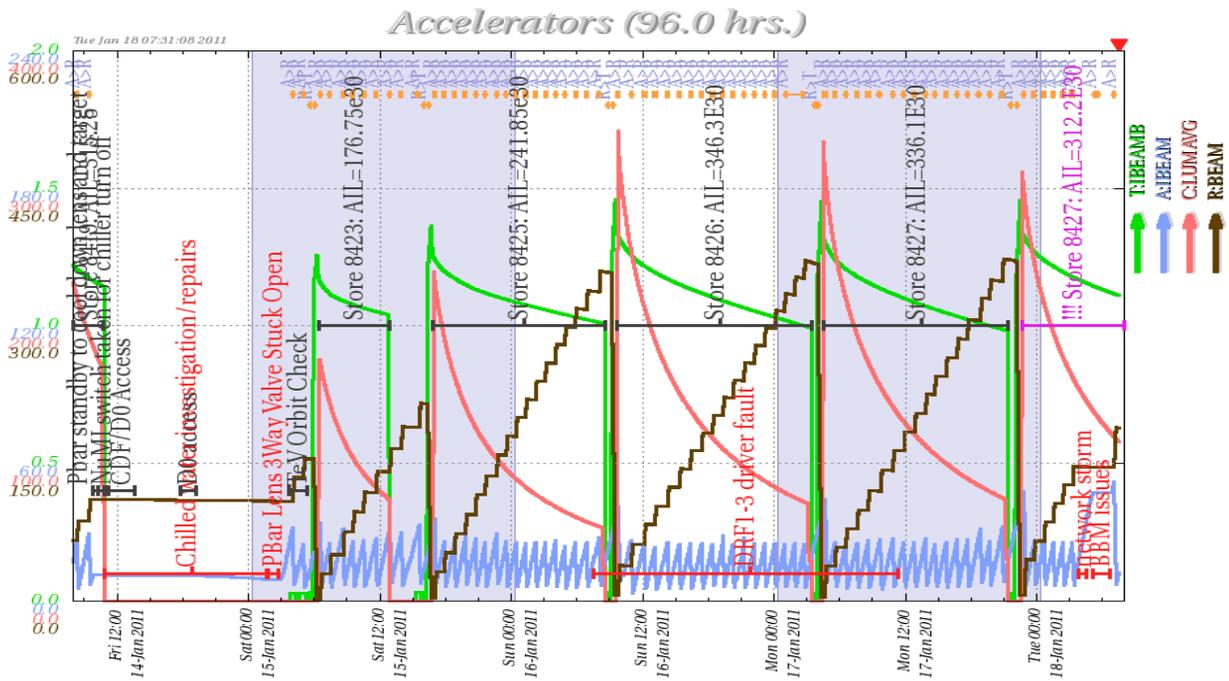
- Cables were swapped on the Accumulator emittance monitors.
- Process Chilled Water taken offline for repairs
 - Stacking was halted at 9:49am on Friday for a one hour cooldown preceding chilled water repairs.
 - A blockage was found in an air handling unit.
 - Had to cut at 1.5 square foot hole in the plate to restore flow.
 - The aerator is now not functional. FESS will be looking for a period of downtime (March?) where they can replace the aerator.
 - 23:26 they started to fill the system
 - 01:44 Saturday: Almost ready for stacking, but collection lens temp regulation was not working.
 - DRF1 had to tune back in
 - Normal stacking around 03:40am Saturday
- The collection lens temperatures were below the low alarm limit and prevented the collection lens power supply from turning on. Interlocks had been made up briefly after the the pump skid was restarted following the process chill water outage, but the skid water temperature was very cold and lens temperature was driven downward resulting in power supply interlock trips. I isolated chill water from the collection lens water skid to warm it up. After interlocks could be made up, turned the chill water back on and started the lens pulsing at 1200 volts. Gradually raised lens voltage to nominal and resumed stacking. At this time, it is not clear if the chill water regulation valve is in regulation. If it is stuck open, we could have a recurrence when pbar goes into standby
- DRF1-3 was off.
 - Sunday morning DRf1-3 tripped. Ops repalce 10K Glassman, but did not work. Ran without the station.
 - Dave Peterson and Wes Mueller came in to repair it. They turned the driver HV up to the nominal 4.5 to 5 kV

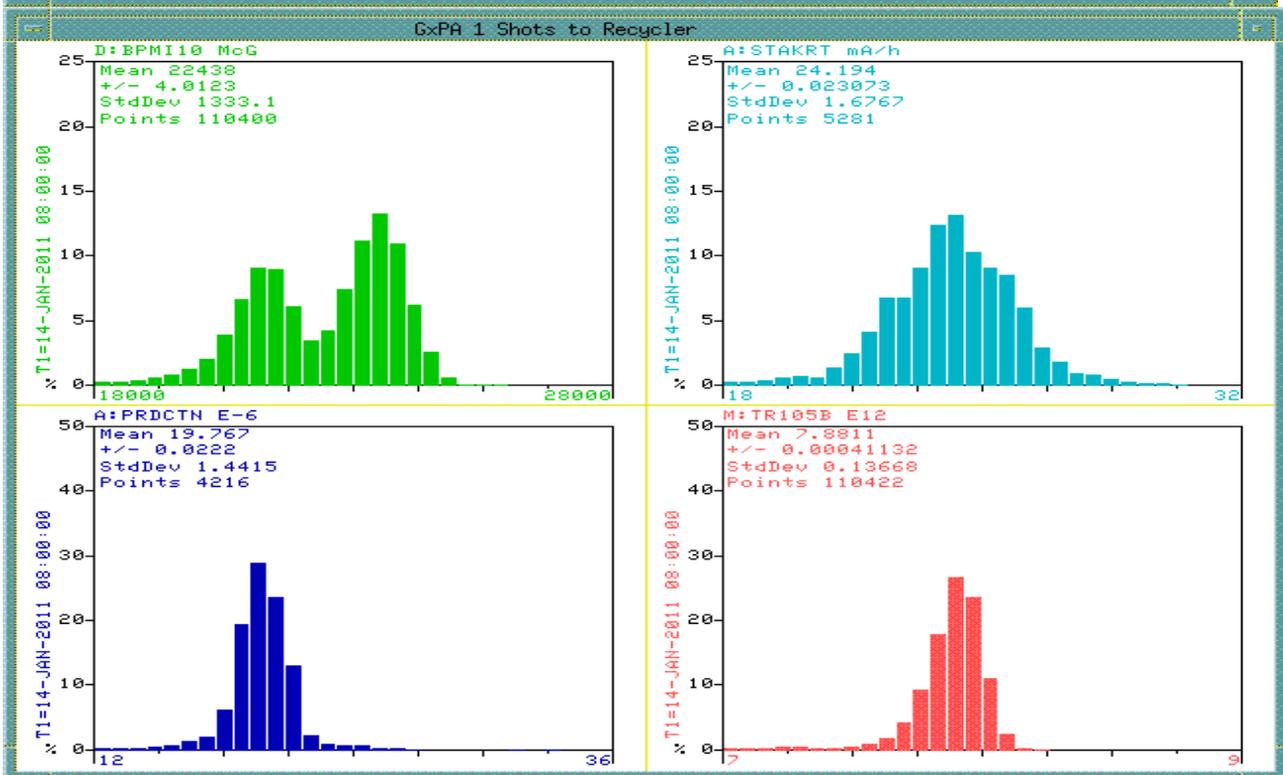
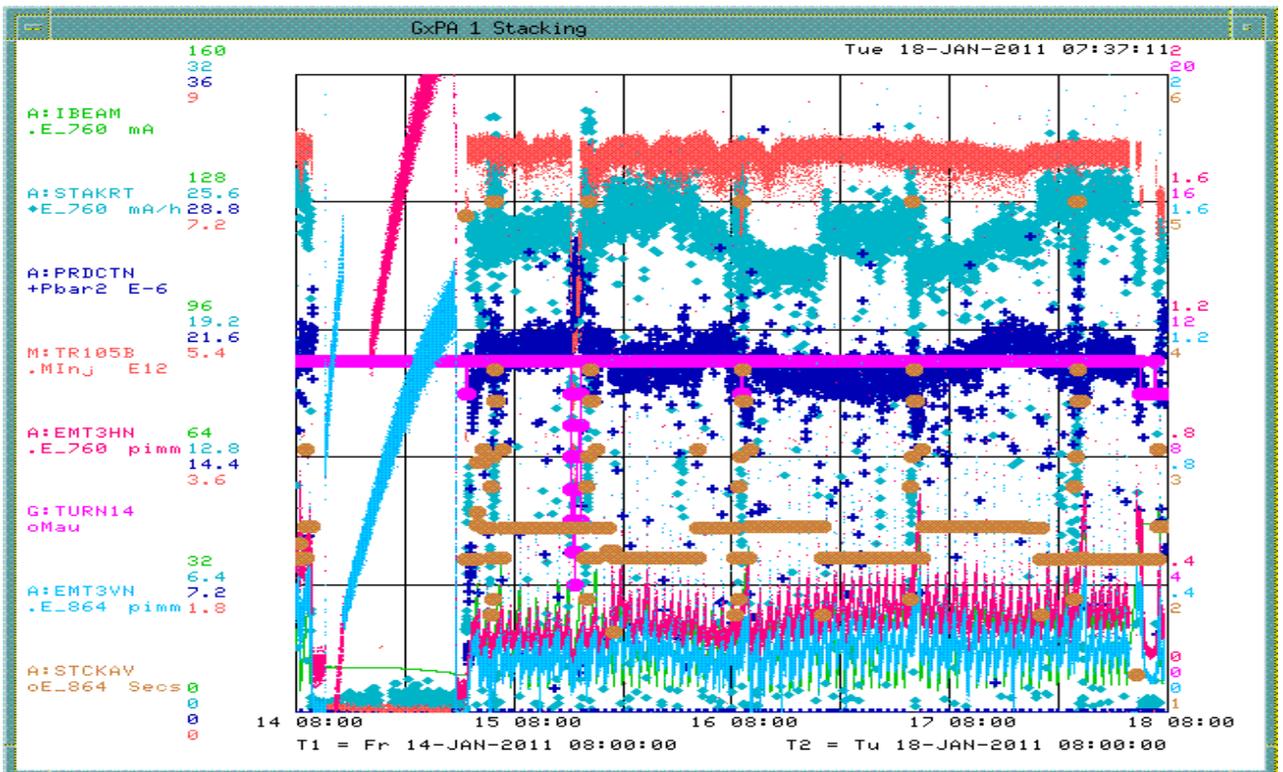
Numbers

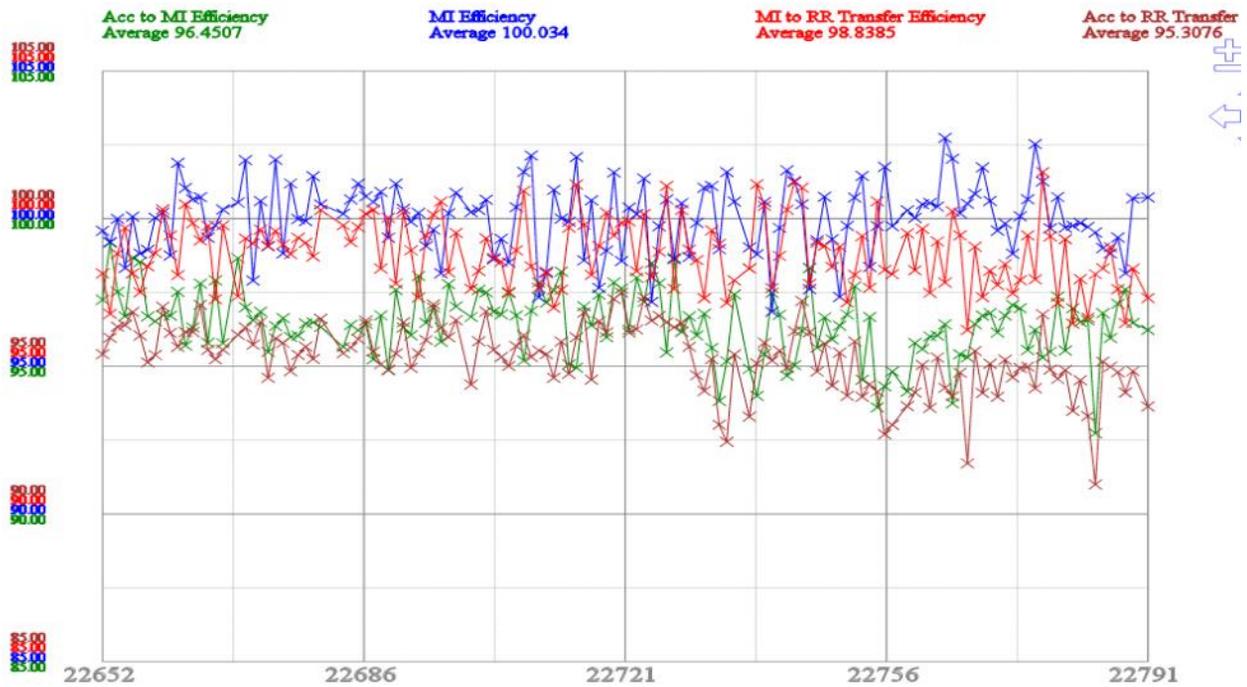
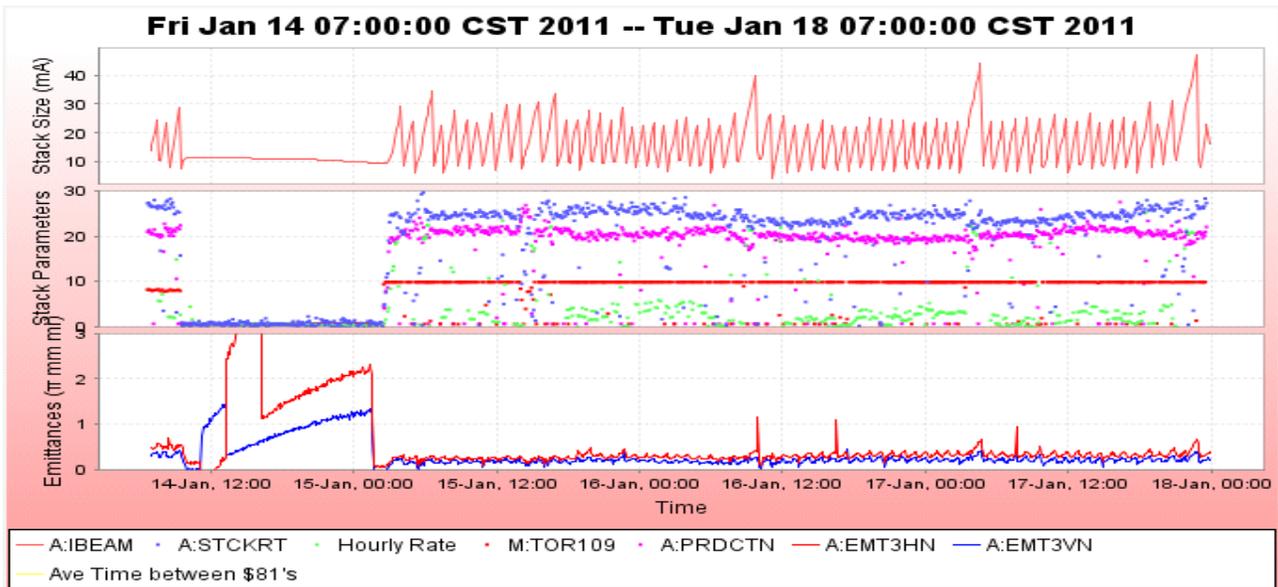
- Stacking
 - Pbars stacked: 1739.77 E10
 - Time stacking: 77.55 Hr
 - Average stacking rate: 22.43 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 116197
 - Number of pulses with beam: 111913
 - Fraction of up pulses was: 96.31%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 74.69 Hr

- Possible average stacking rate: 23.29 E10/Hr
- Could have stacked: 1806.37 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 1710.90 E10
 - Number of transfers : 216
 - Number of transfer sets: 72
 - Average Number of transfer per set: 3.00
 - Time taken to shoot including reverse proton tuneup: 00.76 Hr
 - Transfer efficiency: 94.09%
- Other Info
 - Average POT : 7.84 E12
 - Average production: 19.82 pbars/E6 protons

Plots







| Column 1 Number 0_Pbar Transfer Shot # | Column 4 Number_3_Transfer Time | Column 21 Number _20_A-I BEAMB sampled on #91 (A-BEA M7), E10 | Column 22 Number _21_A-I BEAMB sampled on #94 (A-BEA M9), E10 | Unstacked (mA) | Column 23 Number _22_R- BEAMS (R-BEA ME0(I)) pre fer E10 | Column 24 Number _23_R- BEAM (R-BEA ME0(I)) post fer, E10 | Stacked | Acc to RR Eff | Acc to MI Eff | Acc to MI2 Eff | Acc to MI * Acc to MI2 Efficiency | Trans fers | Sets | Column 5 Number _4_Acc Horizont al Emittanc e | Column 6 Number _5_Acc Vertical Emittanc e | Column 8 Number _7_Acc Longitu dinal Emittanc e | |
|--|---------------------------------------|---|---|-------------------|--|--|----------------|------------------|------------------|-------------------|--|---------------|-----------|--|--|--|-------|
| Totals => | | | | 1693.57 | | | 1602.27 | 94.61% | 96.13% | 96.14% | 92.42% | 212 | 70 | 3.2066 | 2.0301 | 1.942 | |
| Daily Average => | | | | 423.39 | | | 400.57 | | | | | 53 | 18 | | | | |
| 22791 | Tuesday, January 18, 2011 | 7:05 | 52.05 | 7.12 | 48.30 | 145.85 | 189.43 | 44.93 | 93.02% | 95.69% | 95.91% | 91.78% | 4 | 1 | 3.785 | 2.426 | 1.889 |
| 22789 | Tuesday, January 18, 2011 | 3:17 | 25.78 | 6.66 | 21.71 | 126.39 | 146.66 | 20.65 | 95.12% | 96.31% | 97.39% | 93.60% | 3 | 1 | 3.342 | 2.094 | 1.974 |
| 22788 | Tuesday, January 18, 2011 | 2:25 | 25.95 | 6.67 | 21.82 | 106.48 | 126.70 | 20.45 | 93.73% | 96.92% | 95.24% | 92.31% | 3 | 1 | 3.383 | 2.086 | 1.972 |
| 22787 | Tuesday, January 18, 2011 | 1:32 | 25.96 | 6.63 | 21.93 | 86.12 | 106.70 | 20.79 | 94.80% | 97.19% | 97.05% | 94.32% | 3 | 1 | 3.326 | 1.96 | 1.993 |
| 22786 | Tuesday, January 18, 2011 | 0:41 | 26.38 | 6.81 | 22.21 | 65.53 | 86.35 | 21.07 | 94.87% | 95.67% | 95.09% | 90.97% | 3 | 1 | 3.254 | 2.051 | 2.007 |
| 22785 | Monday, January 17, 2011 | 23:48 | 26.31 | 6.80 | 22.12 | 45.16 | 65.81 | 21.04 | 95.09% | 96.75% | 95.47% | 92.36% | 3 | 1 | 3.352 | 2.027 | 1.966 |
| 22784 | Monday, January 17, 2011 | 22:53 | 48.24 | 6.93 | 44.83 | 6.61 | 45.46 | 40.17 | 89.61% | 92.63% | 92.11% | 85.32% | 4 | 1 | 4.498 | 2.861 | 1.895 |
| 22783 | Monday, January 17, 2011 | 20:53 | 32.53 | 8.34 | 26.73 | 348.99 | 373.27 | 24.95 | 93.34% | 96.31% | 96.14% | 92.60% | 3 | 1 | 4.016 | 2.414 | 1.974 |
| 22782 | Monday, January 17, 2011 | 19:43 | 26.32 | 6.85 | 22.01 | 329.81 | 350.20 | 20.86 | 94.74% | 96.48% | 96.85% | 93.45% | 3 | 1 | 3.182 | 1.914 | 1.979 |
| 22781 | Monday, January 17, 2011 | 18:53 | 31.96 | 7.82 | 26.76 | 306.24 | 330.70 | 25.01 | 93.46% | 96.59% | 96.65% | 93.36% | 3 | 1 | 3.759 | 2.303 | 1.948 |
| 22780 | Monday, January 17, 2011 | 17:42 | 26.92 | 6.17 | 23.27 | 285.56 | 307.12 | 22.06 | 94.80% | 95.50% | 95.20% | 90.92% | 3 | 1 | 3.162 | 2.09 | 1.966 |
| 22779 | Monday, January 17, 2011 | 16:43 | 26.86 | 6.42 | 22.94 | 265.06 | 286.32 | 21.68 | 94.49% | 96.97% | 97.82% | 94.86% | 3 | 1 | 3.411 | 2.228 | 1.973 |
| 22778 | Monday, January 17, 2011 | 15:43 | 25.53 | 5.73 | 22.26 | 245.03 | 265.76 | 21.08 | 94.73% | 96.00% | 96.04% | 92.20% | 3 | 1 | 3.158 | 1.956 | 1.969 |
| 22777 | Monday, January 17, 2011 | 14:44 | 25.03 | 5.95 | 21.60 | 225.42 | 245.64 | 20.79 | 96.25% | 95.80% | 96.62% | 92.56% | 3 | 1 | 3.255 | 2.037 | 1.968 |
| 22776 | Monday, January 17, 2011 | 13:51 | 27.17 | 6.58 | 23.15 | 204.53 | 225.86 | 21.83 | 94.29% | 96.26% | 96.33% | 94.66% | 3 | 1 | 3.397 | 2.099 | 1.985 |
| 22775 | Monday, January 17, 2011 | 12:51 | 26.04 | 6.17 | 22.35 | 184.23 | 205.03 | 21.12 | 94.50% | 95.84% | 96.06% | 92.07% | 3 | 1 | 3.391 | 2.143 | 1.958 |
| 22774 | Monday, January 17, 2011 | 11:52 | 26.05 | 6.13 | 22.43 | 163.80 | 184.53 | 21.21 | 94.53% | 96.70% | 96.35% | 93.17% | 3 | 1 | 3.468 | 2.121 | 1.965 |
| 22773 | Monday, January 17, 2011 | 10:53 | 27.65 | 6.22 | 23.79 | 142.43 | 164.16 | 22.35 | 93.98% | 96.49% | 95.85% | 92.48% | 3 | 1 | 3.758 | 2.245 | 1.982 |
| 22772 | Monday, January 17, 2011 | 9:44 | 27.36 | 4.88 | 24.41 | 119.94 | 142.75 | 23.22 | 95.12% | 96.85% | 96.36% | 93.32% | 3 | 1 | 3.217 | 1.786 | 1.948 |
| 22771 | Monday, January 17, 2011 | 8:37 | 26.52 | 6.09 | 22.81 | 99.24 | 120.33 | 21.39 | 93.79% | 96.35% | 96.16% | 92.65% | 3 | 1 | 3.584 | 2.229 | 1.955 |
| 22770 | Monday, January 17, 2011 | 7:36 | 25.51 | 6.10 | 21.84 | 78.94 | 99.36 | 20.76 | 95.03% | 96.88% | 97.67% | 94.63% | 3 | 1 | 3.433 | 2.309 | 1.997 |
| 22769 | Monday, January 17, 2011 | 6:34 | 25.56 | 5.46 | 22.29 | 58.37 | 79.13 | 20.99 | 94.15% | 96.07% | 97.02% | 93.20% | 3 | 1 | 3.433 | 2.056 | 1.957 |
| 22768 | Monday, January 17, 2011 | 5:34 | 25.48 | 6.03 | 21.81 | 38.13 | 58.46 | 20.79 | 95.32% | 96.20% | 97.04% | 93.36% | 3 | 1 | 3.535 | 2.197 | 1.989 |
| 22767 | Monday, January 17, 2011 | 4:41 | 44.40 | 7.97 | 38.22 | 4.68 | 38.44 | 34.77 | 90.97% | 95.10% | 95.42% | 90.75% | 3 | 1 | 4.646 | 2.656 | 1.855 |
| 22766 | Monday, January 17, 2011 | 2:47 | 24.82 | 5.97 | 21.28 | 352.05 | 371.60 | 20.11 | 94.52% | 95.70% | 95.93% | 91.80% | 3 | 1 | 3.568 | 2.024 | 1.975 |
| 22765 | Monday, January 17, 2011 | 1:54 | 25.22 | 6.06 | 21.61 | 334.06 | 353.77 | 20.35 | 94.14% | 93.77% | 95.03% | 89.10% | 3 | 1 | 3.492 | 2.029 | 1.959 |
| 22764 | Monday, January 17, 2011 | 1:00 | 25.09 | 6.31 | 21.26 | 315.98 | 335.56 | 20.01 | 94.12% | 96.15% | 96.33% | 94.54% | 3 | 1 | 3.59 | 2.177 | 1.978 |
| 22763 | Monday, January 17, 2011 | 0:04 | 25.30 | 6.05 | 21.69 | 297.28 | 317.32 | 20.62 | 95.06% | 95.87% | 96.22% | 92.52% | 3 | 1 | 3.536 | 2.11 | 1.978 |
| 22762 | Sunday, January 16, 2011 | 23:09 | 25.30 | 6.08 | 21.68 | 278.46 | 298.36 | 20.29 | 93.62% | 96.34% | 96.62% | 93.08% | 3 | 1 | 3.484 | 2.184 | 1.981 |
| 22761 | Sunday, January 16, 2011 | 22:13 | 25.47 | 5.76 | 22.13 | 259.28 | 279.61 | 20.78 | 93.94% | 96.19% | 96.65% | 92.96% | 3 | 1 | 3.471 | 2.24 | 1.954 |
| 22760 | Sunday, January 16, 2011 | 21:16 | 24.98 | 5.78 | 21.65 | 240.35 | 260.17 | 20.35 | 93.99% | 95.55% | 95.93% | 91.66% | 3 | 1 | 3.344 | 2.087 | 1.939 |
| 22759 | Sunday, January 16, 2011 | 20:15 | 25.03 | 5.95 | 21.54 | 221.58 | 241.20 | 20.09 | 93.29% | 93.96% | 94.18% | 88.49% | 3 | 1 | 3.363 | 2.243 | 1.905 |
| 22757 | Sunday, January 16, 2011 | 18:24 | 25.35 | 6.33 | 21.53 | 183.07 | 202.62 | 19.96 | 92.69% | 95.14% | 94.52% | 89.53% | 3 | 1 | 3.526 | 2.237 | 1.904 |
| 22756 | Sunday, January 16, 2011 | 17:23 | 25.07 | 5.46 | 21.98 | 163.78 | 183.65 | 20.25 | 92.13% | 94.02% | 95.60% | 89.88% | 3 | 1 | 3.212 | 2.025 | 1.884 |
| 22755 | Sunday, January 16, 2011 | 16:23 | 25.28 | 5.40 | 22.17 | 144.07 | 164.31 | 20.74 | 93.55% | 93.74% | 94.02% | 88.14% | 3 | 1 | 3.421 | 2.262 | 1.906 |
| 22754 | Sunday, January 16, 2011 | 15:21 | 25.01 | 5.18 | 22.03 | 124.19 | 144.45 | 20.73 | 94.07% | 96.04% | 95.20% | 91.43% | 3 | 1 | 3.188 | 1.952 | 1.897 |
| 22753 | Sunday, January 16, 2011 | 14:18 | 26.11 | 5.38 | 23.05 | 103.19 | 124.50 | 21.66 | 93.97% | 94.98% | 96.11% | 91.29% | 3 | 1 | 3.206 | 2.147 | 1.897 |
| 22752 | Sunday, January 16, 2011 | 13:09 | 23.83 | 4.94 | 21.15 | 83.51 | 103.47 | 20.20 | 95.50% | 97.34% | 97.35% | 94.76% | 3 | 1 | 3.041 | 1.935 | 1.941 |
| 22751 | Sunday, January 16, 2011 | 12:10 | 25.99 | 5.09 | 23.20 | 61.95 | 83.74 | 21.91 | 94.42% | 96.47% | 96.56% | 93.15% | 3 | 1 | 2.912 | 1.827 | 1.9 |
| 22750 | Sunday, January 16, 2011 | 11:00 | 26.38 | 3.44 | 24.49 | 38.70 | 62.10 | 23.49 | 95.91% | 96.66% | 95.29% | 92.11% | 3 | 1 | 2.179 | 1.13 | 1.864 |
| 22749 | Sunday, January 16, 2011 | 9:48 | 41.27 | 7.93 | 35.57 | 6.14 | 38.97 | 33.38 | 93.85% | 95.68% | 94.92% | 90.82% | 3 | 1 | 3.514 | 2.148 | 1.84 |
| 22748 | Sunday, January 16, 2011 | 8:03 | 28.03 | 6.11 | 24.29 | 337.26 | 359.93 | 23.20 | 95.51% | 96.71% | 96.86% | 93.67% | 3 | 1 | 2.72 | 1.719 | 1.905 |
| 22747 | Sunday, January 16, 2011 | 6:53 | 25.79 | 6.17 | 22.14 | 317.98 | 338.75 | 21.04 | 95.02% | 96.18% | 95.97% | 92.31% | 3 | 1 | 2.515 | 1.642 | 1.93 |
| 22746 | Sunday, January 16, 2011 | 5:52 | 25.49 | 5.93 | 22.06 | 298.27 | 319.22 | 21.25 | 96.35% | 98.19% | 96.18% | 94.44% | 3 | 1 | 2.577 | 1.571 | 1.954 |
| 22745 | Sunday, January 16, 2011 | 4:55 | 24.17 | 5.65 | 21.02 | 279.35 | 299.38 | 20.42 | 97.15% | 96.38% | 96.78% | 93.28% | 3 | 1 | 2.597 | 1.42 | 1.95 |
| 22744 | Sunday, January 16, 2011 | 4:03 | 26.43 | 6.47 | 22.58 | 259.06 | 280.29 | 21.70 | 96.09% | 95.58% | 96.25% | 92.00% | 3 | 1 | 2.889 | 1.86 | 1.977 |
| 22743 | Sunday, January 16, 2011 | 3:08 | 25.60 | 6.39 | 21.81 | 239.57 | 259.92 | 20.65 | 94.70% | 94.96% | 95.74% | 90.92% | 3 | 1 | 3.002 | 1.817 | 1.947 |
| 22742 | Sunday, January 16, 2011 | 2:13 | 25.70 | 6.21 | 22.08 | 219.58 | 240.25 | 21.10 | 95.56% | 96.72% | 96.84% | 93.66% | 3 | 1 | 2.977 | 1.757 | 1.917 |
| 22741 | Sunday, January 16, 2011 | 1:19 | 25.27 | 6.27 | 21.55 | 199.92 | 220.14 | 20.54 | 95.34% | 97.44% | 95.02% | 92.59% | 3 | 1 | 2.963 | 1.749 | 1.925 |
| 22740 | Sunday, January 16, 2011 | 0:27 | 25.68 | 6.24 | 22.01 | 179.61 | 200.38 | 21.02 | 95.53% | 95.76% | 96.40% | 92.31% | 3 | 1 | 2.669 | 1.843 | 1.944 |
| 22739 | Saturday, January 15, 2011 | 23:34 | 26.04 | 6.37 | 22.26 | 159.16 | 180.00 | 21.19 | 95.17% | 94.19% | 93.35% | 87.93% | 3 | 1 | 2.928 | 2.116 | 1.927 |
| 22738 | Saturday, January 15, 2011 | 22:42 | 29.48 | 6.94 | 25.11 | 136.55 | 159.56 | 23.34 | 92.94% | 95.30% | 94.56% | 90.12% | 3 | 1 | 3.558 | 2.332 | 1.949 |
| 22736 | Saturday, January 15, 2011 | 20:46 | 27.05 | 6.43 | 23.15 | 94.35 | 116.17 | 21.97 | 94.91% | 97.02% | 97.41% | 94.50% | 3 | 1 | 3.031 | 2.043 | 1.945 |
| 22735 | Saturday, January 15, 2011 | 19:50 | 27.89 | 6.86 | 23.55 | 73.22 | 94.54 | 21.66 | 91.94% | 95.23% | 95.58% | 91.02% | 3 | 1 | 3.702 | 2.369 | 1.915 |
| 22734 | Saturday, January 15, 2011 | 18:51 | 26.78 | 6.48 | 22.76 | 52.73 | 73.45 | 21.13 | 92.84% | 93.81% | 93.39% | 87.61% | 3 | 1 | 3.453 | 2.181 | 1.922 |
| 22733 | Saturday, January 15, 2011 | 17:54 | 26.05 | 6.18 | 22.34 | 31.79 | 52.90 | 21.29 | 95.26% | 95.70% | 96.76% | 92.59% | 3 | 1 | 2.421 | 1.615 | 1.915 |
| 22732 | Saturday, January 15, 2011 | 17:01 | 35.85 | 7.55 | 30.67 | 3.03 | 31.89 | 28.94 | 94.37% | 96.87% | 97.06% | | | | | | |

