
CDF Luminosity Work in Progress

Carl Bromberg, Nigel Lockyer,
Luciano Ristori, and Rob Roser

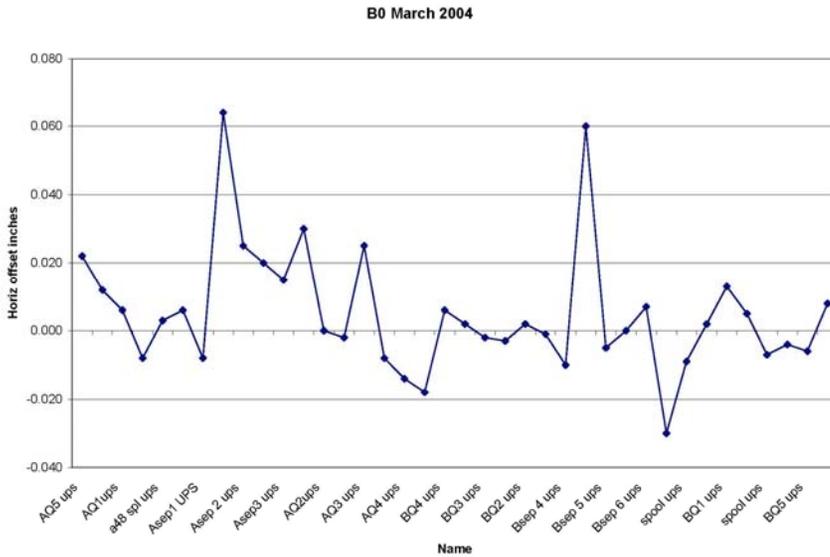
April 15, 2004

Work Done at CDF During the March 15 Shutdown

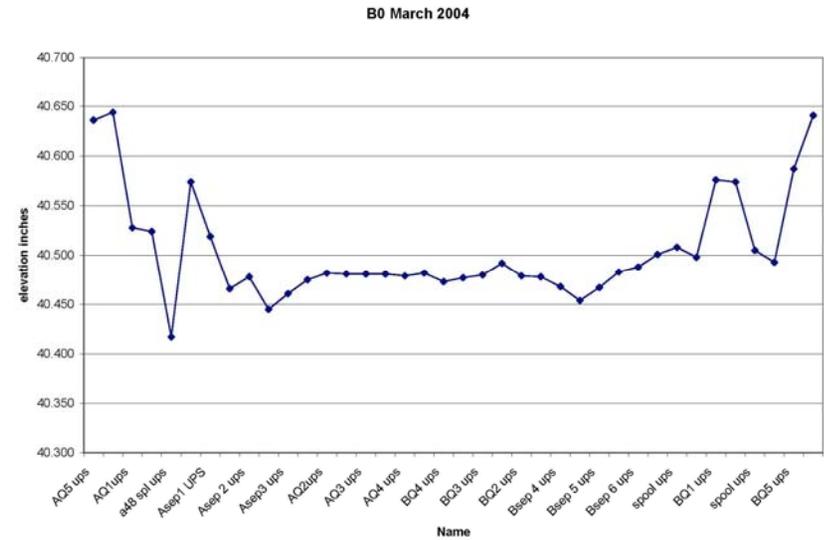
- **CDF Crews**
 - Opened CDF detector and removed several wire planes from the COT
 - Performed a variety of maintenance work on the detector
 - **AD Crews**
 - Worked on 12hz oscillations of low beta quad magnets.
 - Increased the tension in the horizontal invar bars on the A-side only
 - Realigned low beta quad magnets in the horizontal plane
 - A side once
 - B side twice
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Low Beta Alignment Work

X Position



Y Position



- Horizontal

- A side Q3 and Q4 have offsets as large as 0.5mm

- Vertical

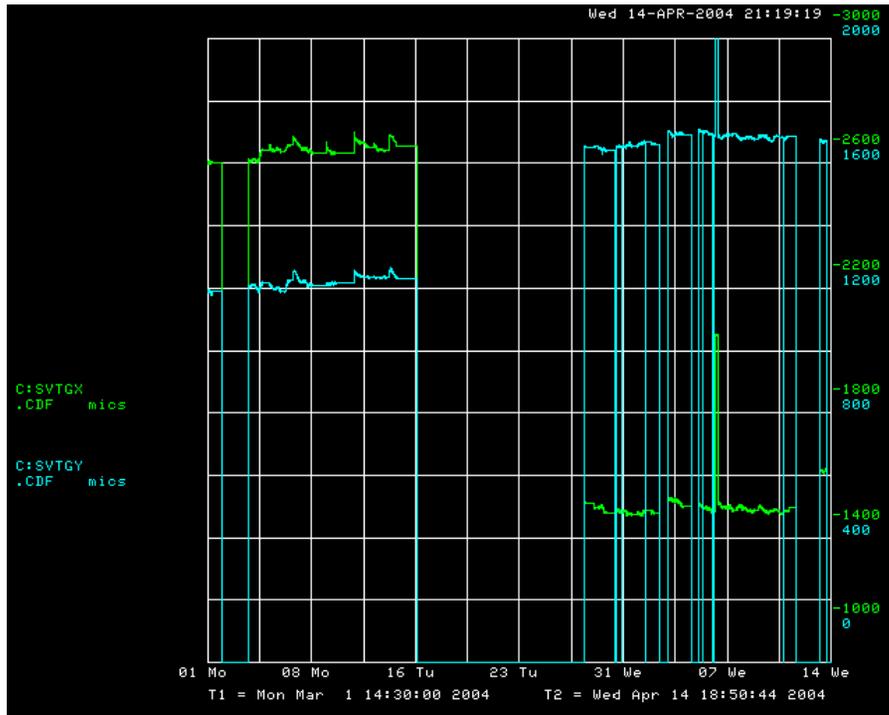
- Looks fine

More on Low Beta's

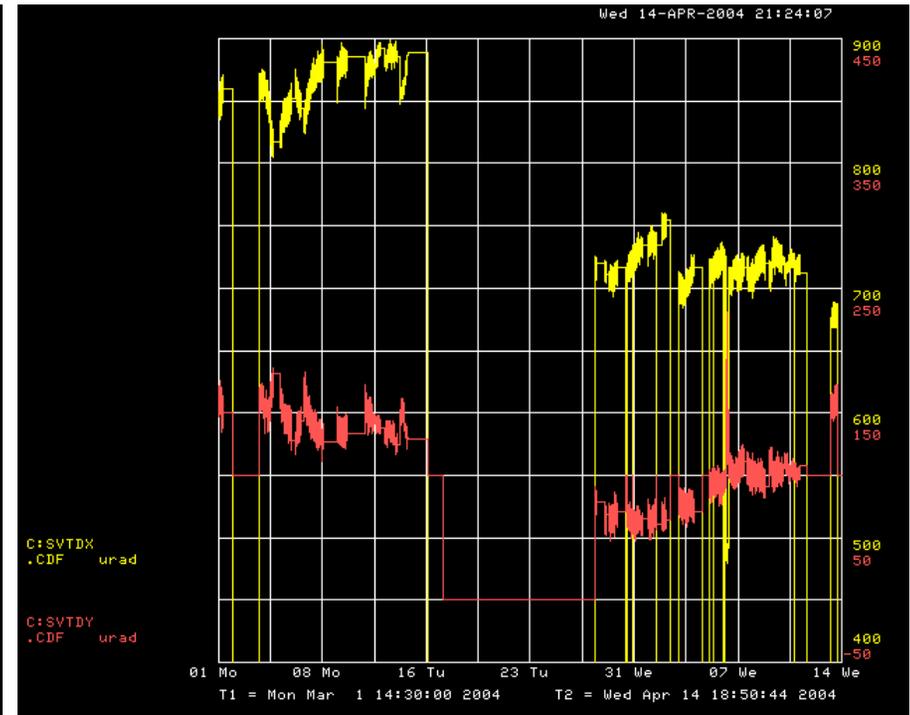
- Mike McGee spent a substantial amount of time characterizing the 12hz oscillation seen in the CDF collision hall.
 - Accelerometers mounted on the invar bars of the low beta quad cradle see this motion
 - Trucks driving by CDF on inner ring road exacerbate this problem
 - A side horizontal invar bars were tightened to increase their tension. Helped in building motion but not little impact on truck traffic
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CDF Beam Position

X, Y Position



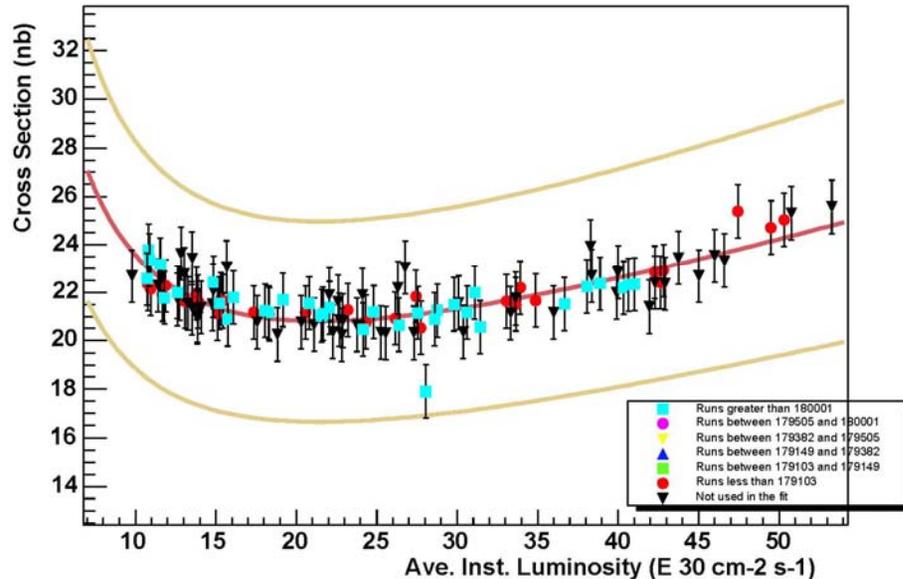
dX, dY Position



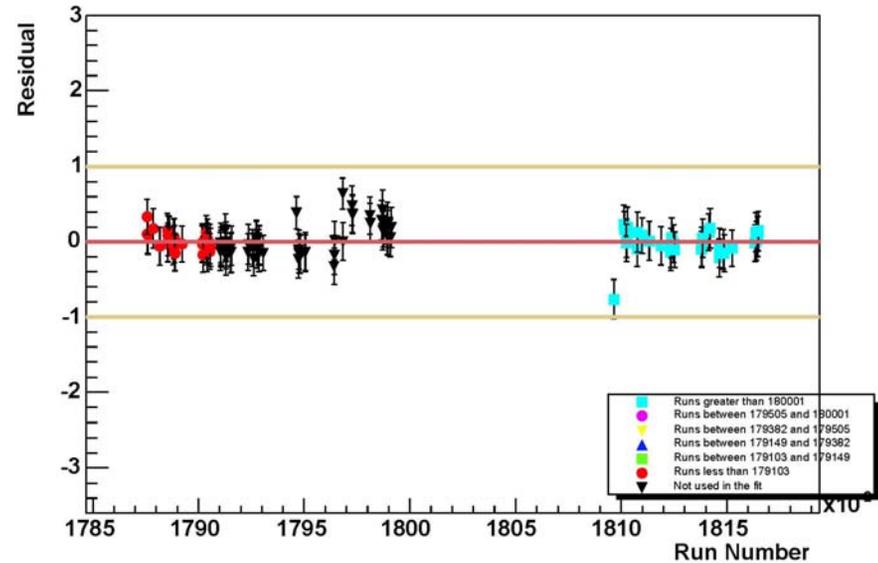
X position moved by -1.2mm, Y moved by 0.4mm by design
Note stability of beam in periods w/o orbit smoothing

Triggers

L2_JET60_PS8_v3 Cross Section vs. Inst. Lum



L2_JET60_PS8_v3 Residual vs. Run Number



This is an example of one of many triggers which show a consistent XS before and after the shutdown

CLC

- We did not do any explicit work on this system.
 - We did not flush or change the gas
 - We measured the phototube response after the shutdown and it looks very close to pre March 15th numbers.
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Bottom Line

- At this moment, we do not see a smoking gun at CDF wrt our measured luminosity
 - We are not 100% self consistent so we need to keep looking
 - We need to look at our reconstructed data. This is just now becoming available to us
 - We still have work to do....
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