
CDF Luminosity Preliminary Analysis

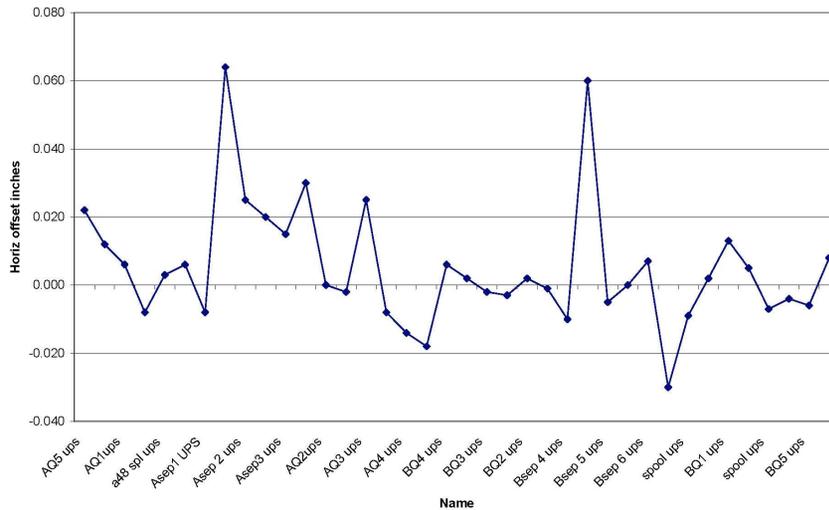
Carl Bromberg and Rob Roser

Accelerator PMG: April 15, 2004
Additional plots here: April 20, 2004

Low Beta Alignment Work

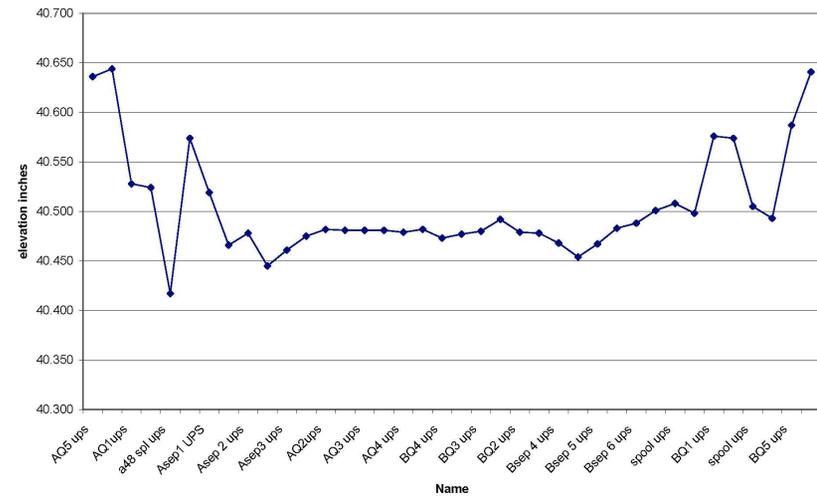
X Position

B0 March 2004



Y Position

B0 March 2004



- Horizontal

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

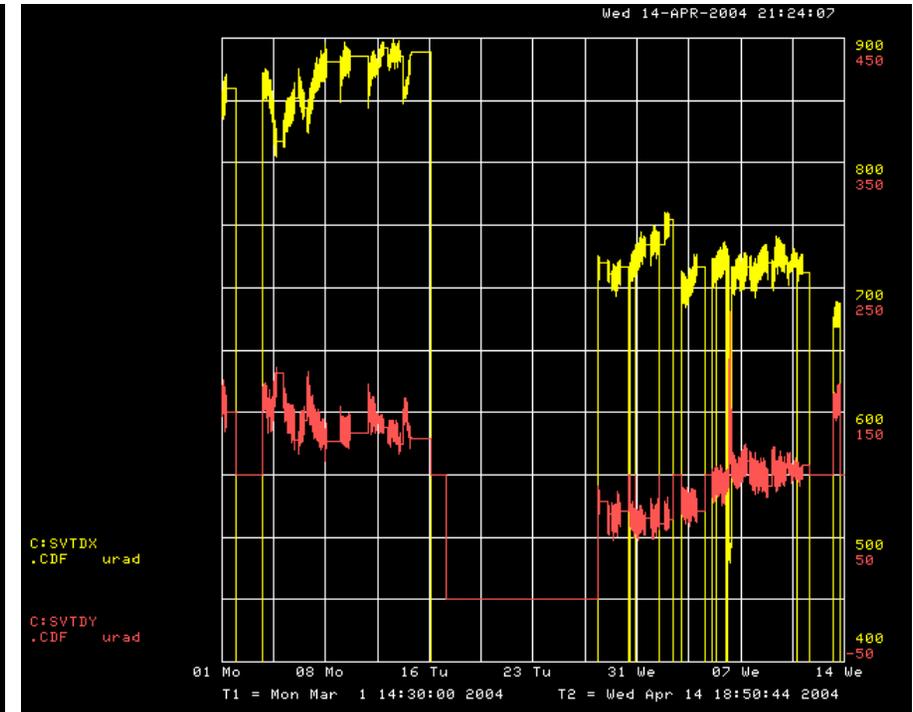
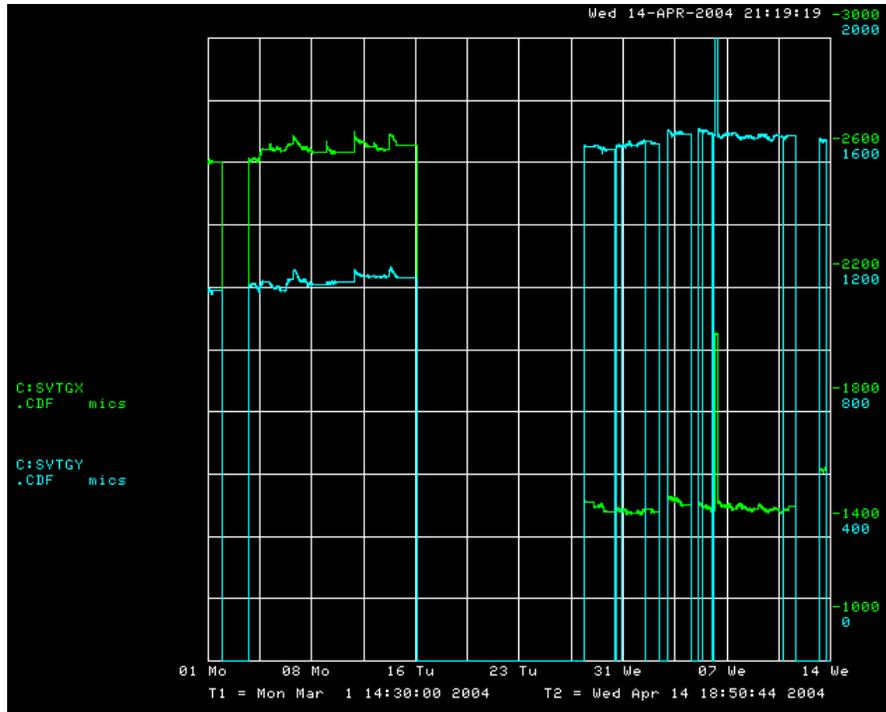
- Vertical

- Looks fine

CDF Beam Position

X, Y Position

dX, dY Position



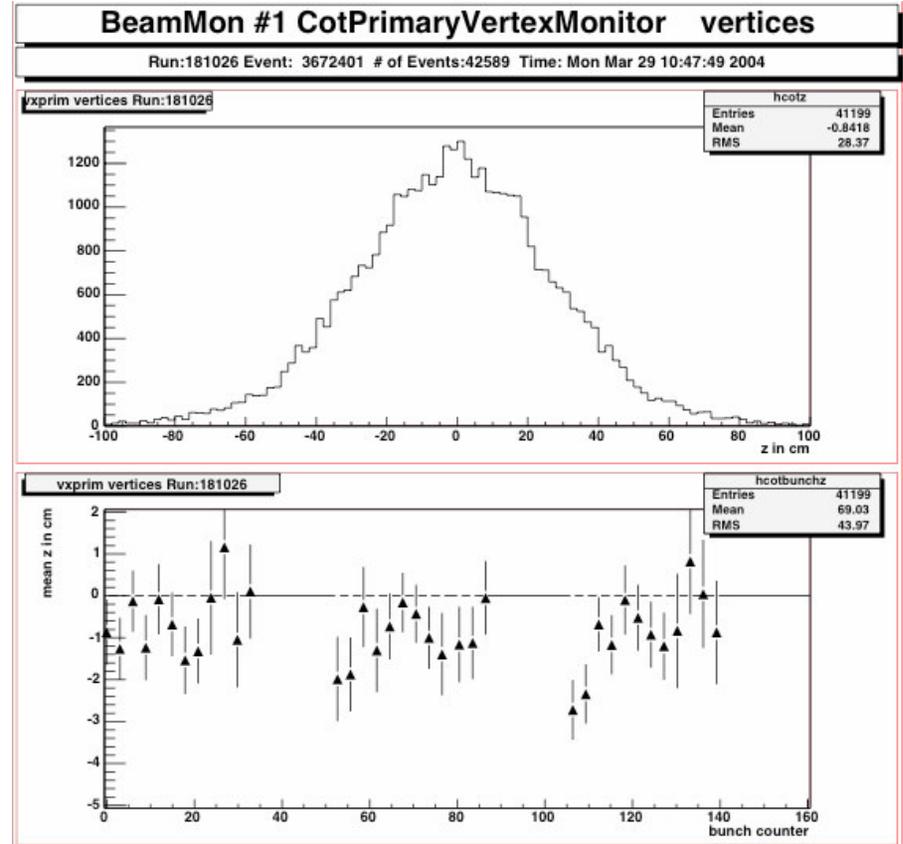
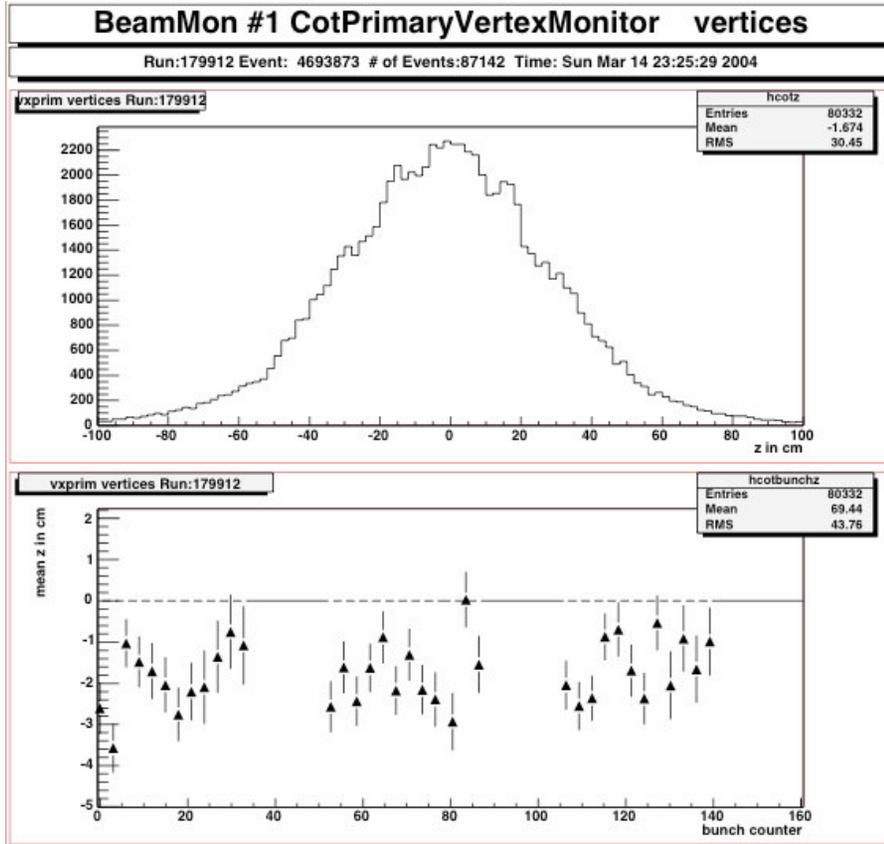
X position moved by -1.2mm, Y moved by 0.4mm by design

Note stability of beam in periods w/o orbit smoothing

CDF Interaction Z Position

Before Shutdown

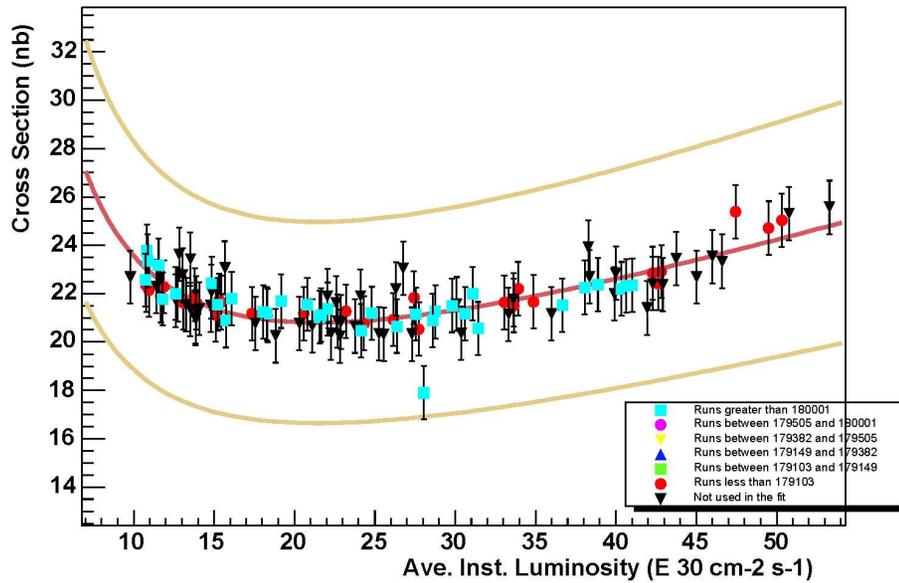
After Shutdown



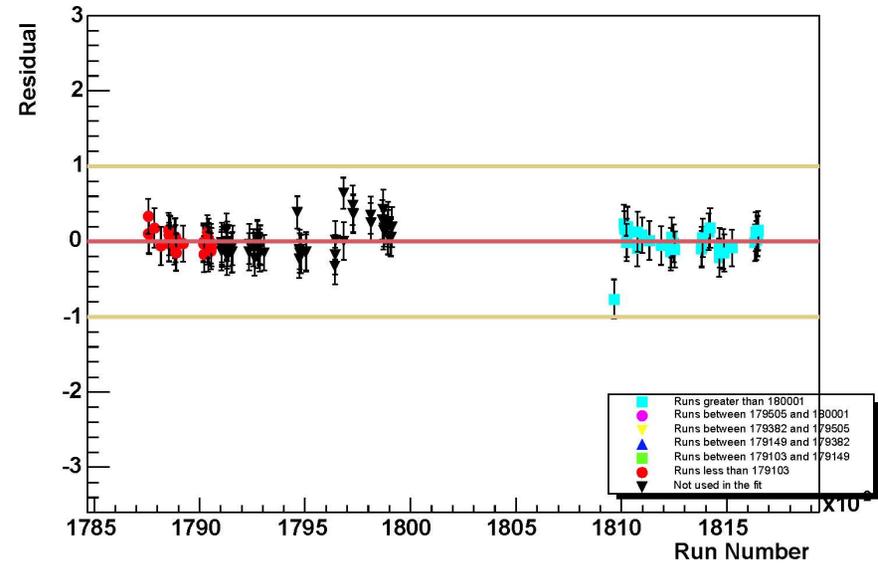
Z position moved +0.8 cm
RMS changed 30.5 --> 28.4 cm

Jet Trigger

L2_JET60_PS8_v3 Cross Section vs. Inst. Lum



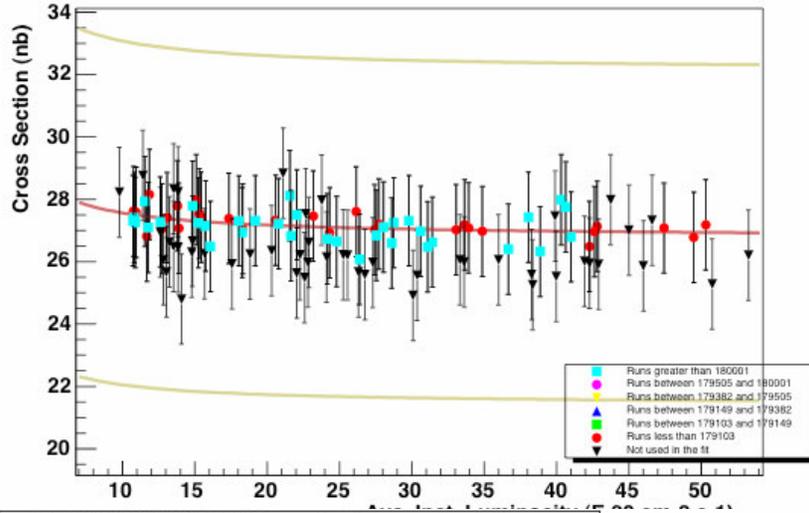
L2_JET60_PS8_v3 Residual vs. Run Number



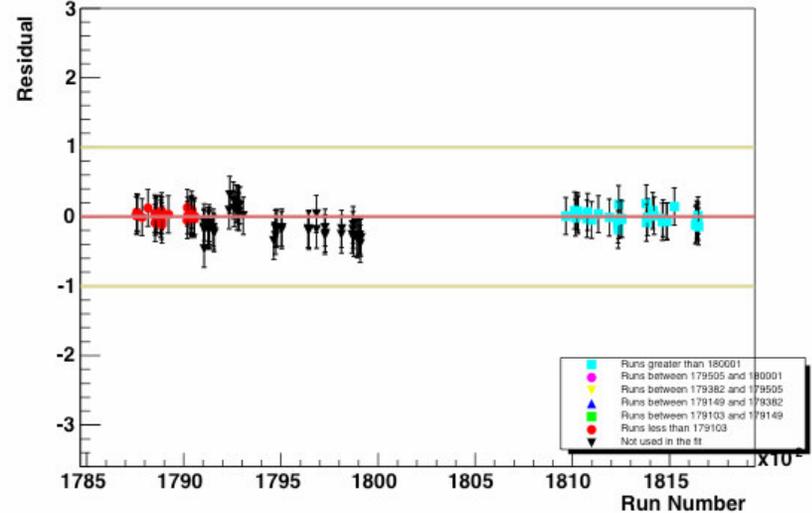
This is an example of one of many triggers which show a consistent XS before and after the shutdown

Central Electron & Isolated Photon

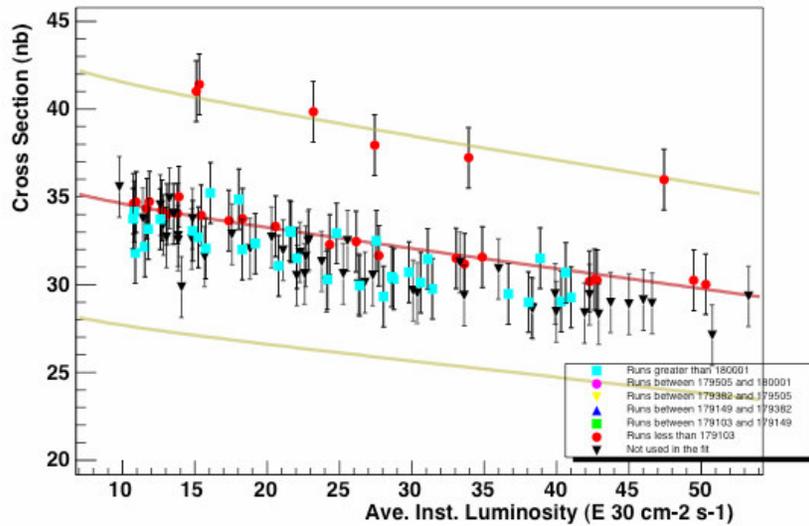
ELECTRON_CENTRAL_18:8 Cross Section vs. Inst. Lum



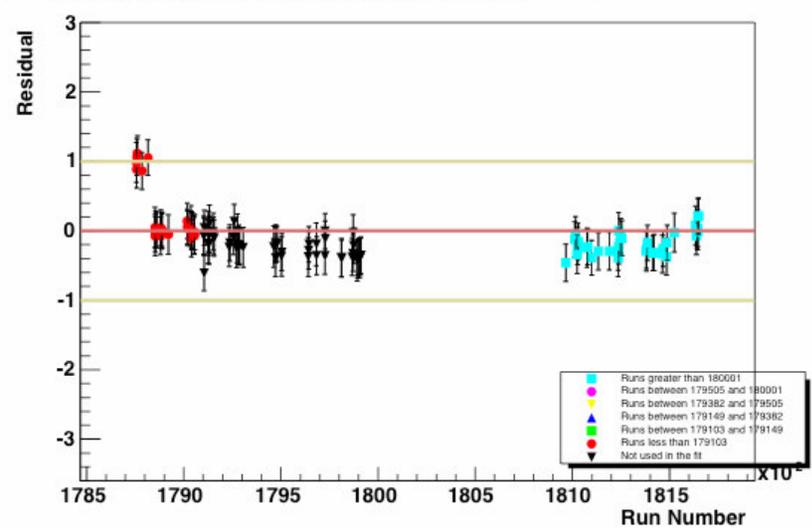
ELECTRON_CENTRAL_18:8 Residual vs. Run Number



PHOTON_25_ISO:9 Cross Section vs. Inst. Lum



PHOTON_25_ISO:9 Residual vs. Run Number



Bottom Line

- At this moment, we do not see a smoking gun at CDF wrt our measured luminosity.
 - Sasha will provide supporting CLC calibration data.
 - More information to follow when we look at our reconstructed data.
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