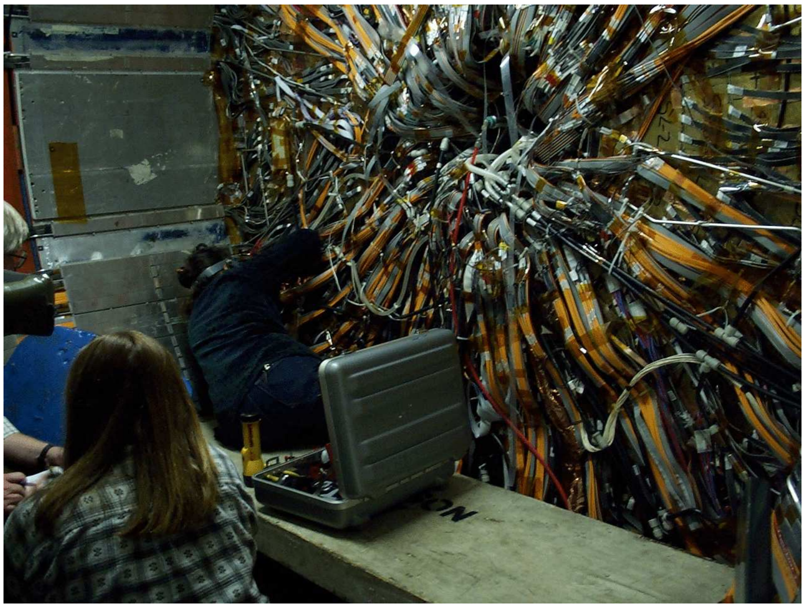
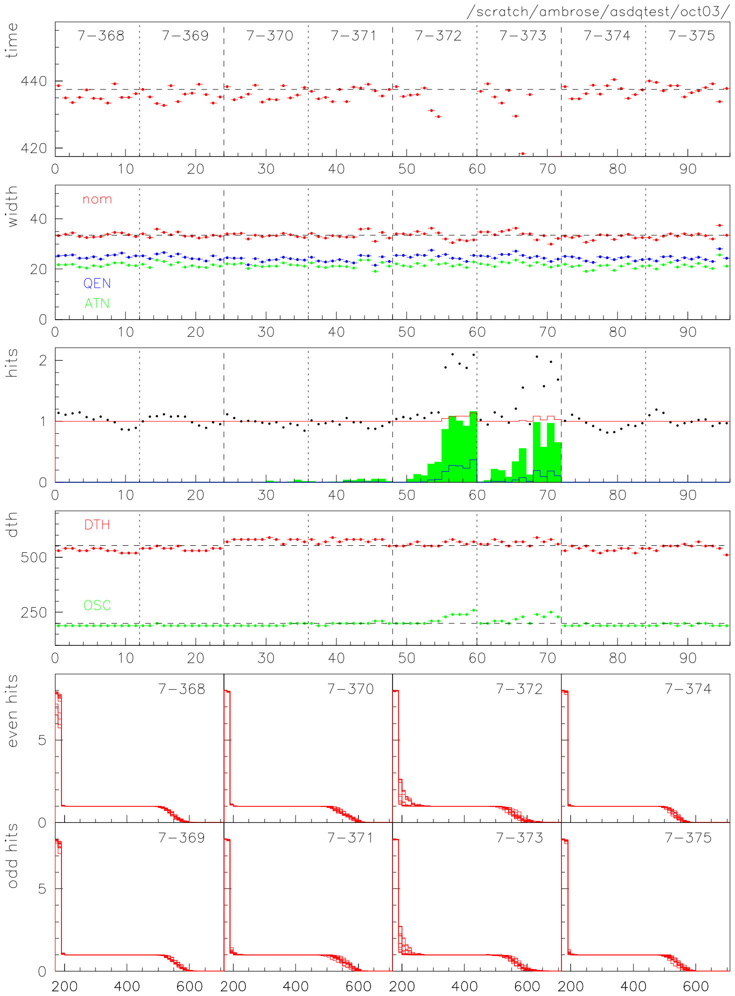
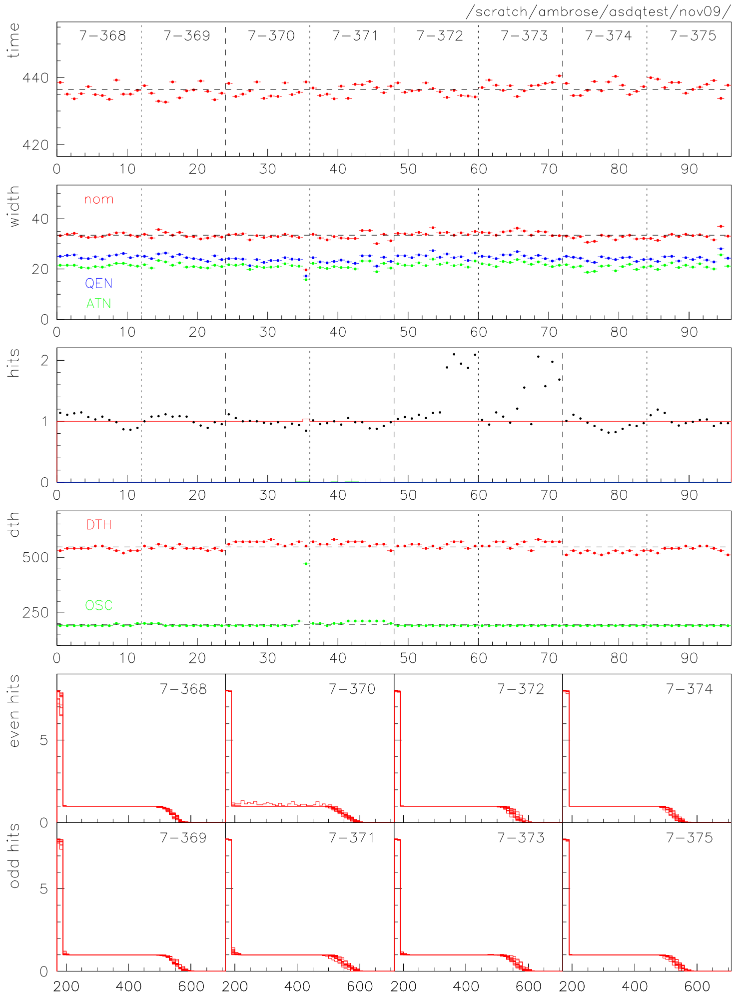
# COT Shutdown Summary

- ▷ HV trip prevention:
  - ⇒ disabled 4 more sense wires with frequent trips
  - ⇒ now have 22/30240 (0.07%) HV-disabled
- ▷ front-end electronics work:
  - ⇒ found/removed loose washer causing control voltage short (48 cells)
  - ⇒ resoldered 2 ASDQ ground brackets for noisy cells
  - ⇒ repaired $\mu$-coax calibration line
  - ⇒ noisy cells: 48 $\rightarrow$ 30 (out of 2520)
  - ⇒ dead channels: 44 $\rightarrow$ 33 (0.1%), from TDC replacement
- ▷ installed thermal insulation to inner diameter Silicon cooling lines
- ▷ completed $\sim$75% of $CF_4$ gas system prep-work (6-week job)

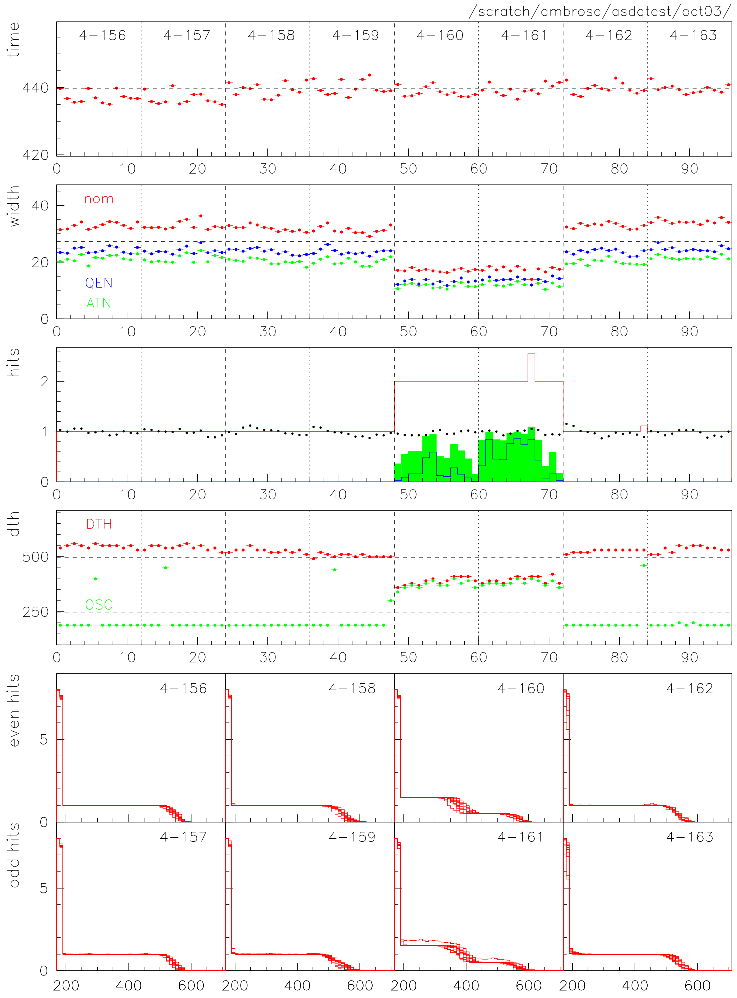


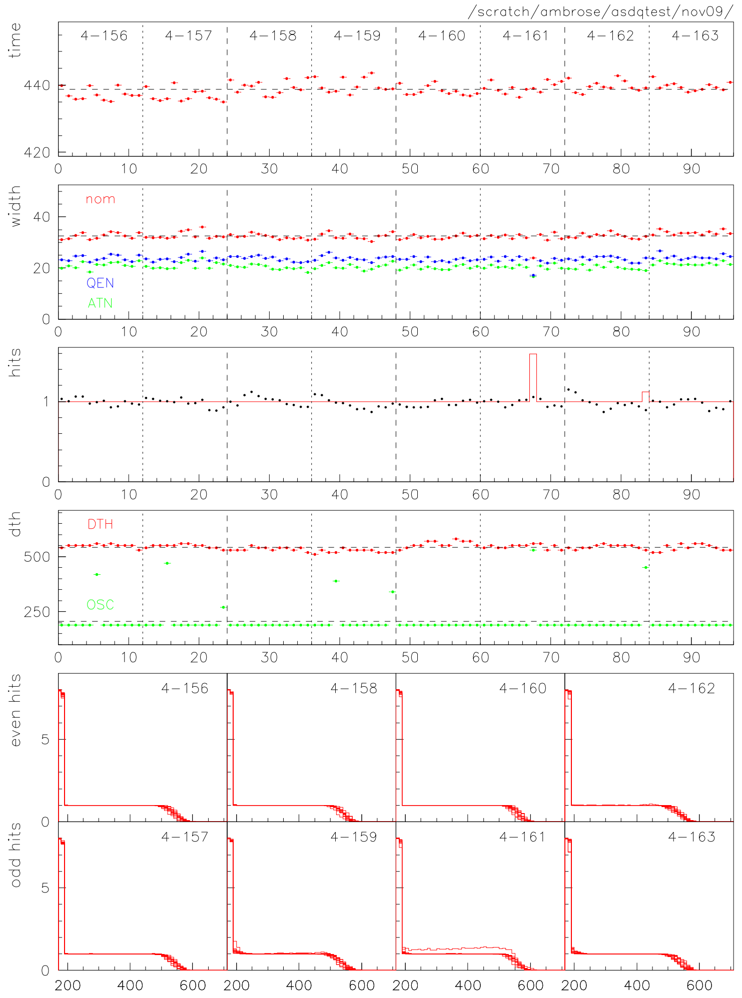
# COT ASDQ grounding fix



# COT calibration line fix



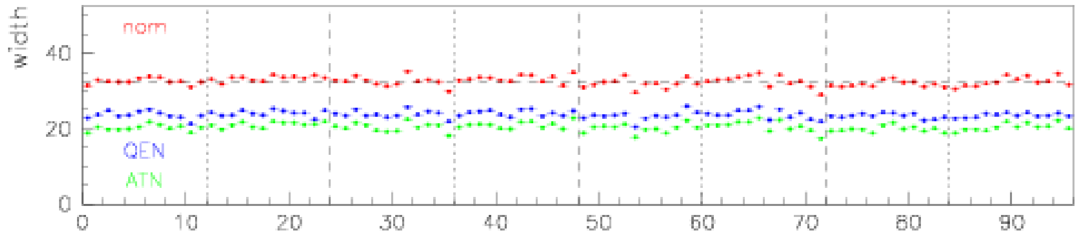
# COT broken wire

▷ initial HV tests on Sunday (Nov 11) indicated broken wire:

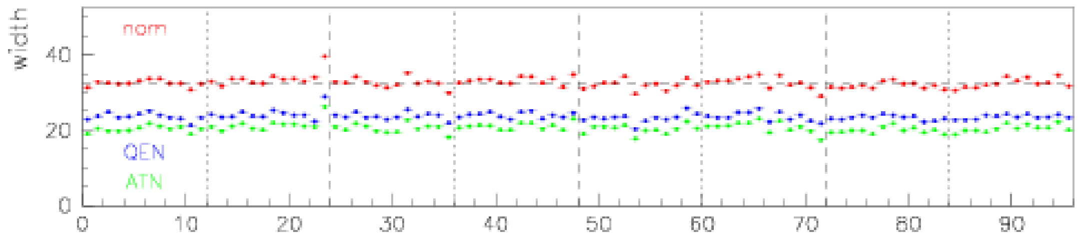
⇒ SL5-B P11,S11,P12 and SL6-B P0 had low trip

▷ calibration information pointed to SL5-161:

⇒ October 27:

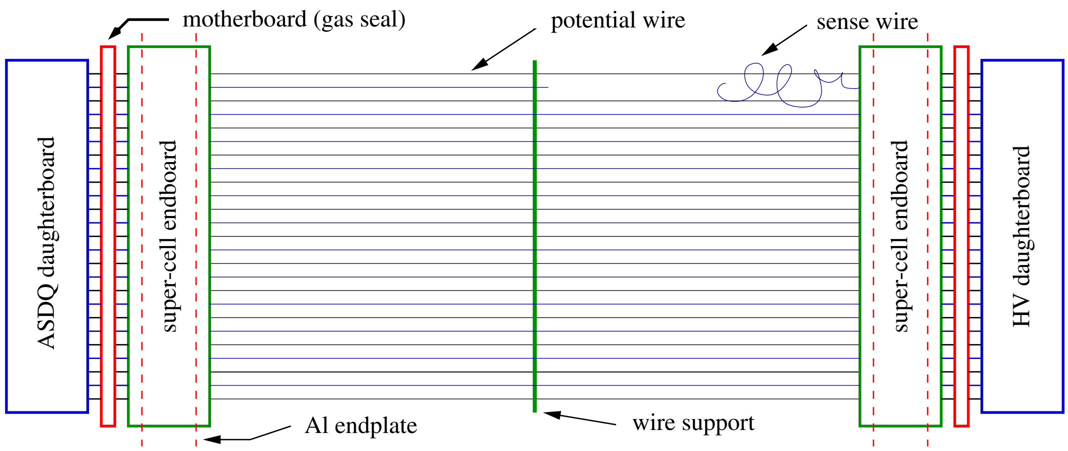



⇒ November 9:




▷ resistance and capacitance measurements indicate SL5-161-S11 broken at HV-end of support, shorting to P11,P12 and SL6-P0:

COT super-cell (12 channels):



# COT broken wire

- ▷ on Monday (Nov 12), presented FNAL with 2 options:
  - ⇒ continue running by disabling 8 nearby cells ($\sim$2% coverage in $\phi$)
  - ⇒ attempt to remove broken wire ($\sim$4 days)
- ▷ removal procedure:
  - ⇒ lock-out HV/LV, drain SUVA, and remove blocking line
  - ⇒ remove HV/ASDQ daughter and mother boards (break gas seal)
  - ⇒ install survey I-beams, mount pulley system
  - ⇒ extract wire plane enough to remove broken wire
  - ⇒ tie half-wire to neighboring potential wire