

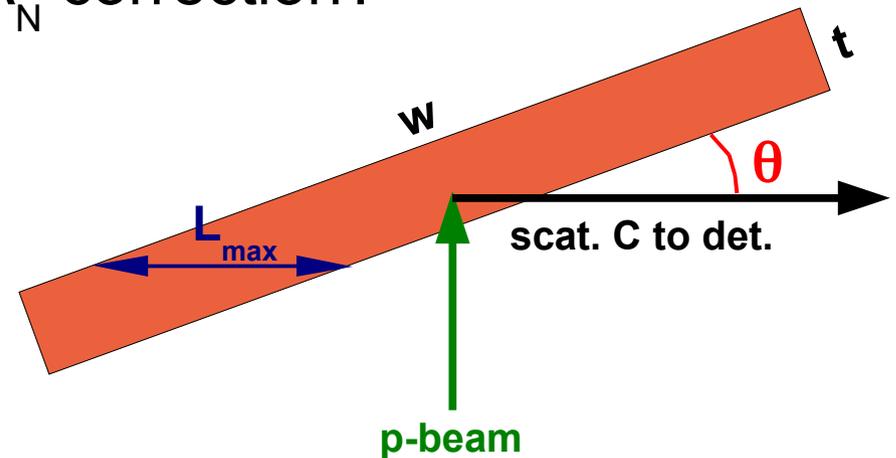
Rotated detector rates; Run12 issues

polar. mtg.
12.10.11

- Last week: rotated (longitudinally segmented) BNL detector

$N_{\text{evt peak, RMS}} \Rightarrow Z_{\text{target}}, L_{\text{max}} \Rightarrow A_N$ correction?

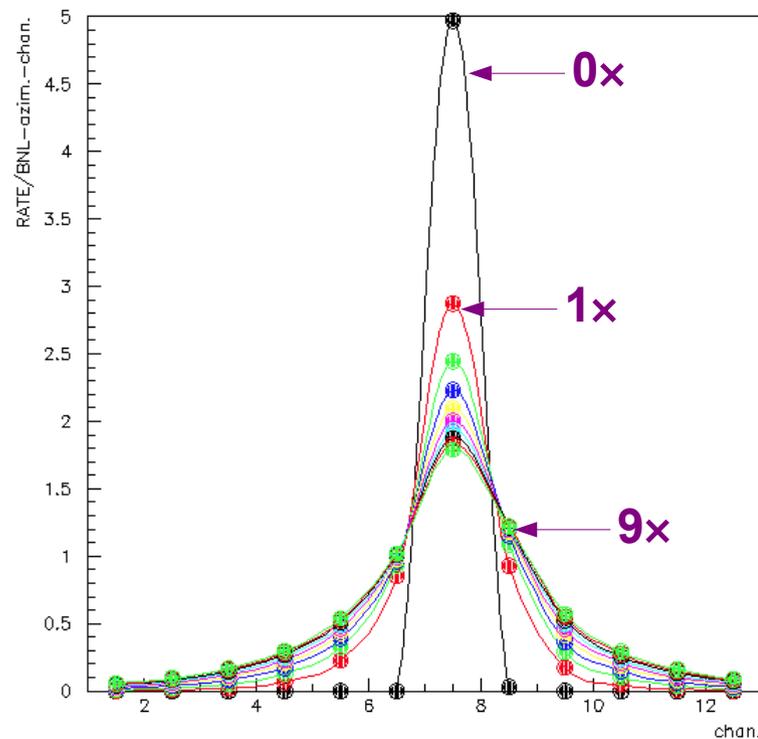
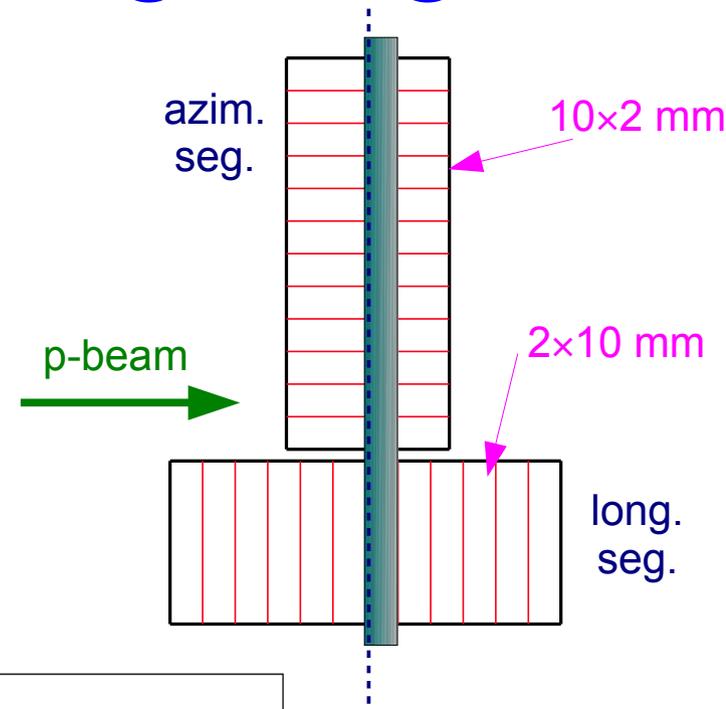
L_{max} = max. C flight path
in target \perp beam:



- Question: rates compared to usual (azimutally segmented) detector?

Rates: BNL azimuth. ↔ long. seg.

- Using simple simulation, compare #events hitting strips both orientations:
simulate $L_{\max} = (0-9) \times 25 \text{ nm}$
- Plot: (rate long. seg. strip) / (rate 1 azimuth. strip)
- $L_{\max} = 0$, no mult. scat., all C hit 1 strip;
 $5 \times \text{rate} = (10\text{mm}) / (2\text{mm})$
- For realistic $L_{\max} = 1-9$, rate 2-3x usual
- Should be tolerable
- If rate this chan. problem, would only lose the two 45° det. planned to rotate
- Worth the added info



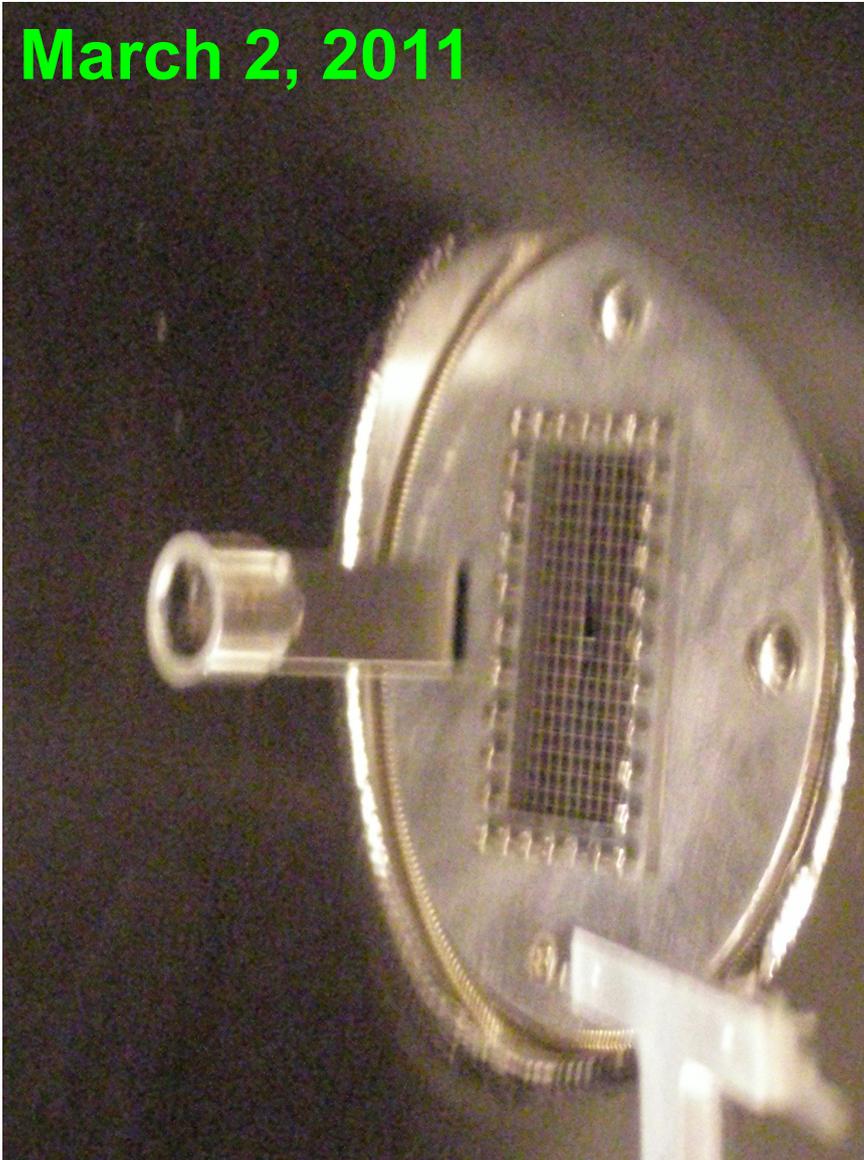
Detectors Run12

- Original plan: all same detectors as Run11, except change hi I_{bias} B2D-4
- Proposal A: rotate 1 pair of BNL 45° detectors discussed last week, here
- Proposal B: install one full plane of 6 Hamamatsu detectors
one problem:
present bias supply SRS PS325
models only 1 kV range
need alternative ~20 V range, GPIB bus, programming; who?
- Proposal C: install some 1mm BNL detectors
motivation? what can we learn?
- We can do any combination A,B,C; need decision soon...



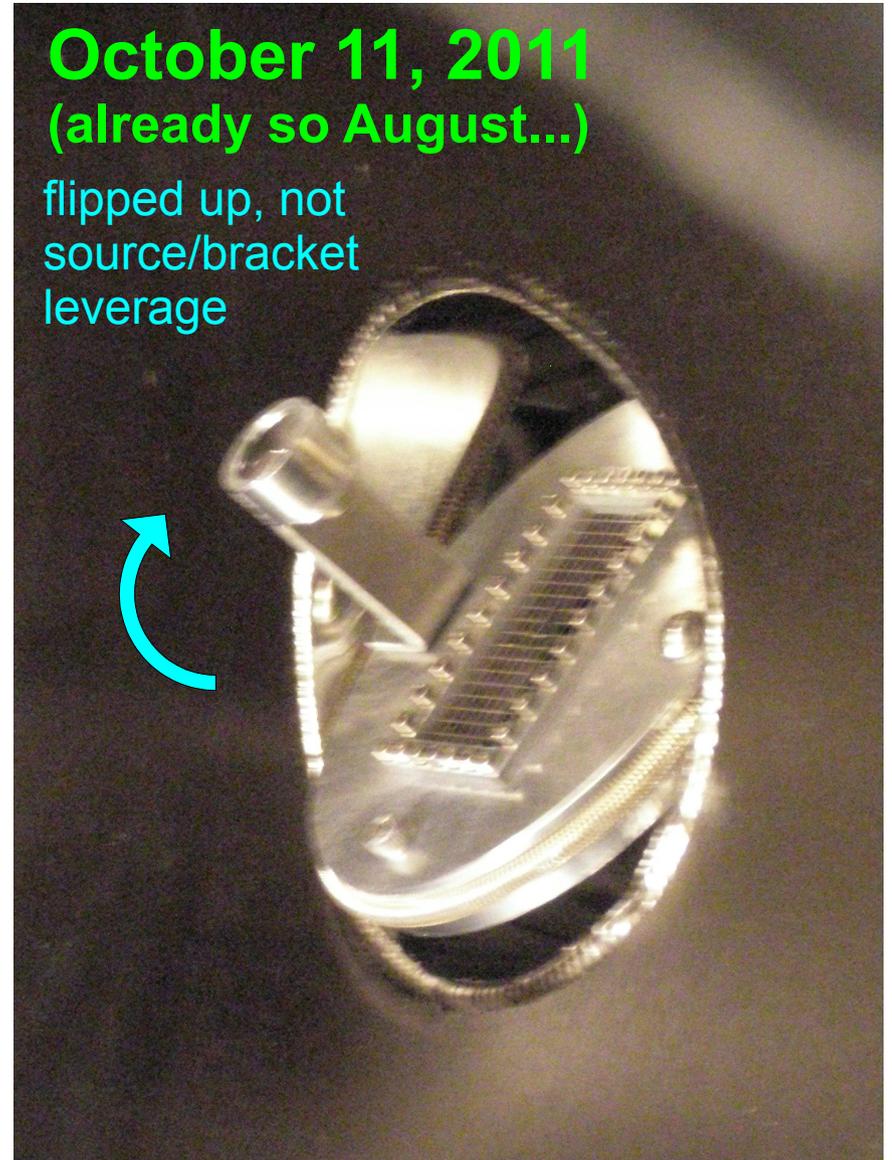
'Flipped disk': Y1D det. 5 (Ham.)

March 2, 2011



October 11, 2011
(already so August...)

flipped up, not
source/bracket
leverage



- Did this happen when target, step motor work done?
- Troubling; would be bad if disks flip spontaneously...

DAQ work

hopefully priority for
Igor/Dima, coming soon...

Modifications:

- Change back to one DAQ Blue, one DAQ Yellow
more robust, logic simplified; need recabling @ MUX
- Add to one crate WFD for 4 scint. chan.
(other crate WFD already there)
- Send pulser pulse back to WFDs: **a bit to flag pulser events!**
 - 2 spare WFD chan., no longer need both blu/yel steps each crate
 - spare signal cables available (next slide)
 - will need some software work to make use, worthwhile,
maybe untangle weird pulser problems e.g. 'echo' pulse

Investigate/debug problems here what I recall:

- bad/lost Bunch-0 signal, time info ill defined; maybe OK after switch
back, no more Blu/Yel clock switching within crate
- double banana/time glitches (B2D); Bunch-0 problem?
- single WFD t_0 jumps
- 'scallop': jump in TDC at fixed Amp in banana

t_0 scintillators

- Still need to order PMTs...
- Mechanical assembly: 2 PMTs/scintillators ?
- Best placed on top ports;
 upstream polarimeters bottom port used for vacuum gauge
- Plenty of spare signals cables tunnel↔hut:
 - 20 in nice patch panels, already used
 - 8 from tunnel-DAQ control
- Need ~10 HV cables tunnel↔hut; Tony?
- Need 8 chan. HV?