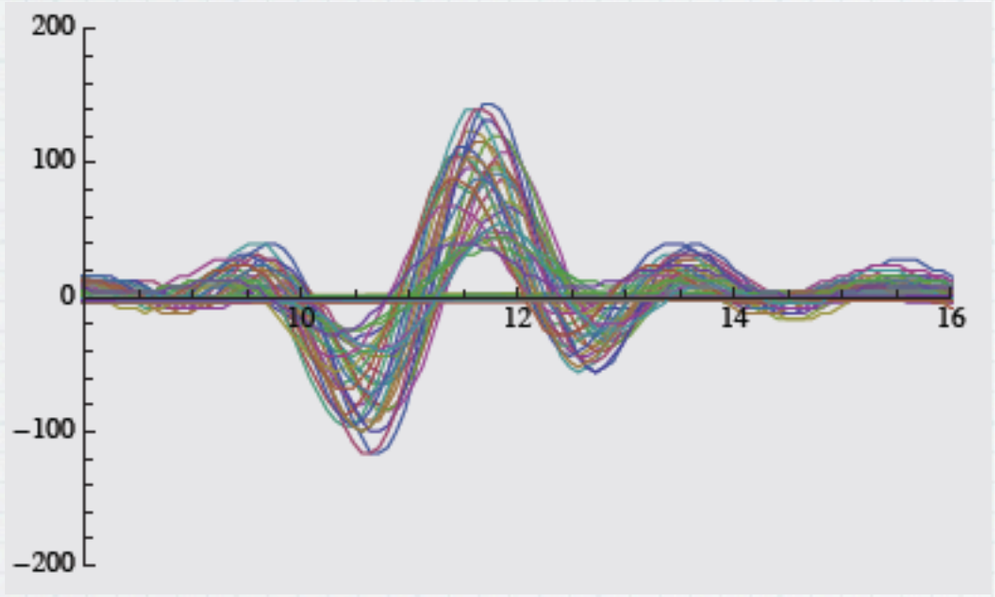
Beryllium ATF data

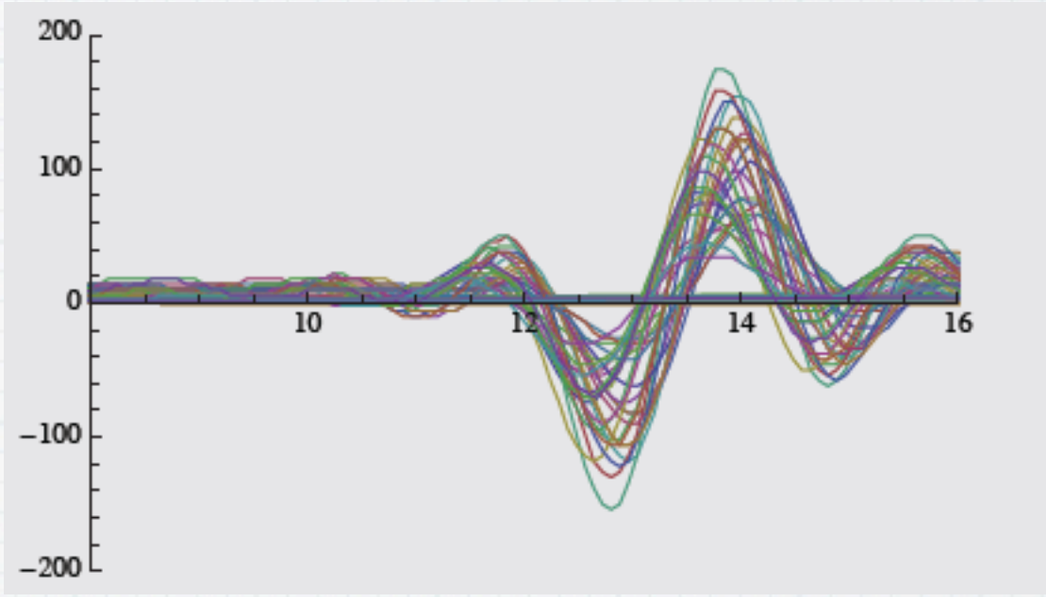
* we took data on Apr 8&29 with
  * 10^9 e/pulse @ 62 MeV
  * 0.6mm Be target tilted 45 deg
  * distances of 20,40,80cm from APD

Apr 29

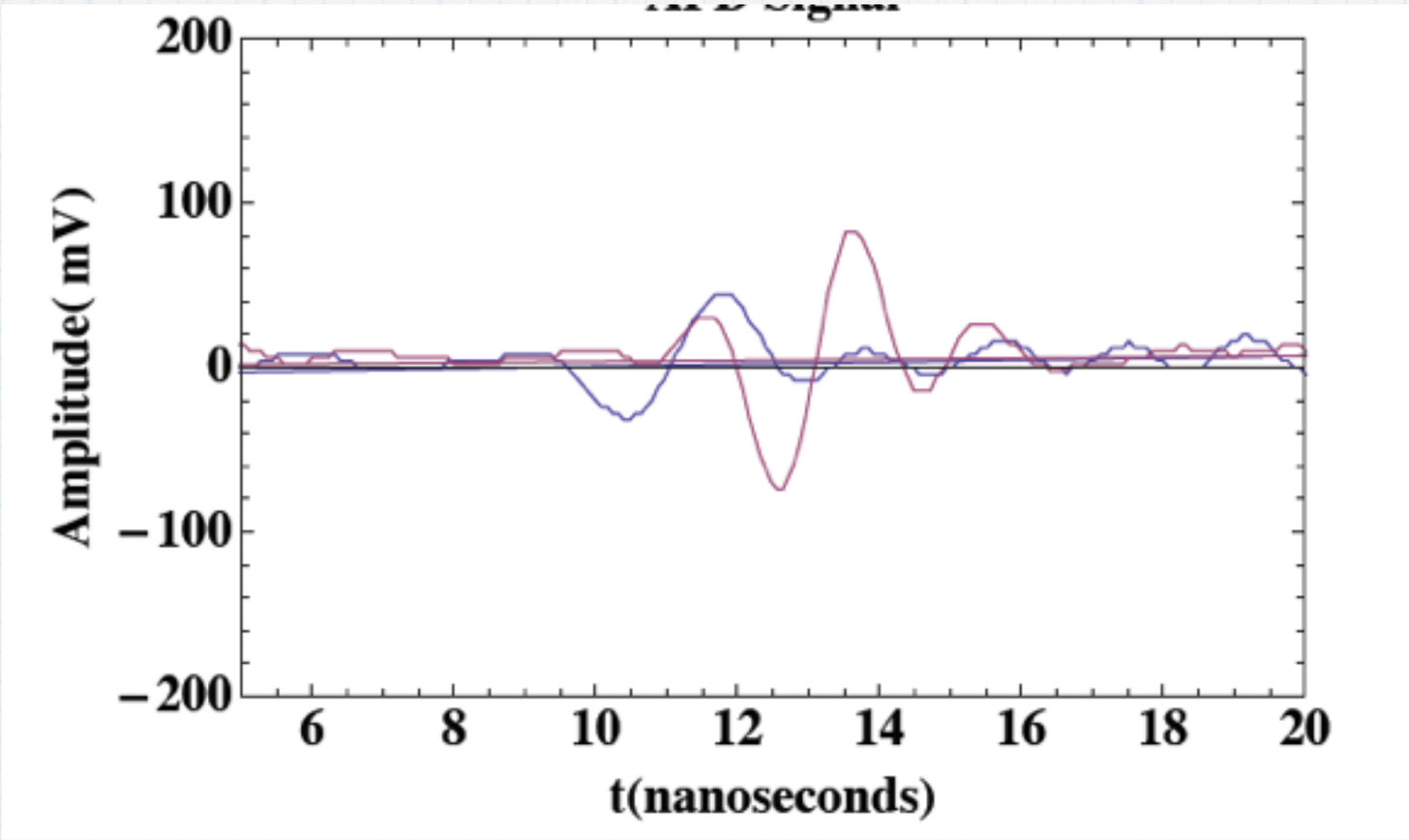
* Vitaly prefers these because more controlled beam conditions
* there is a DAQ problem-> events randomly repeat @30% chance. These are removed by hand
* stripline traces don't look like they were triggering (there's no sign of stable point)
* large spread in stripline amplitude
* no target out background

SL1, 2

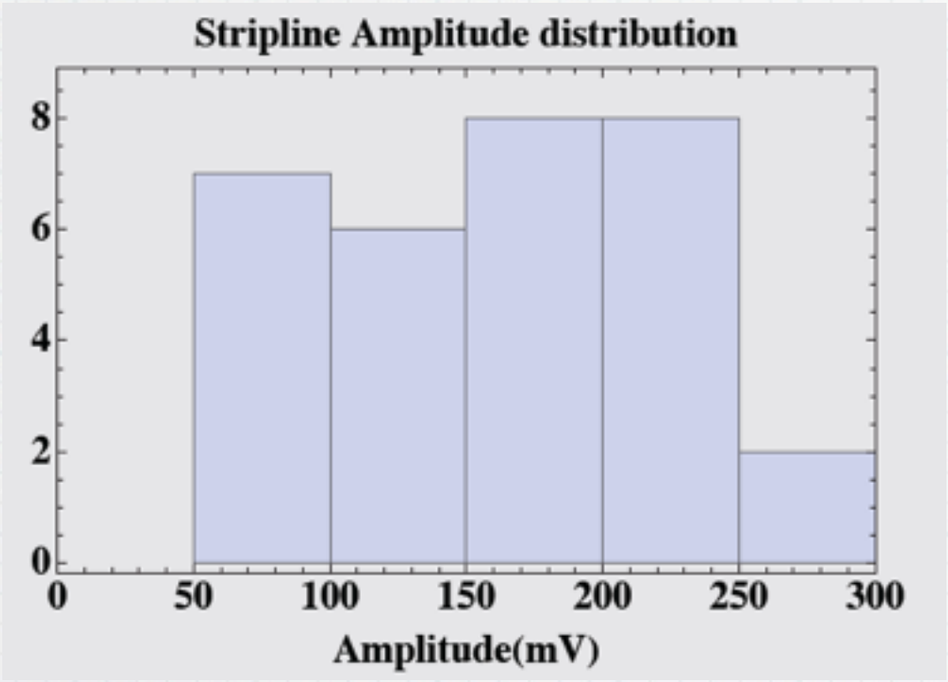




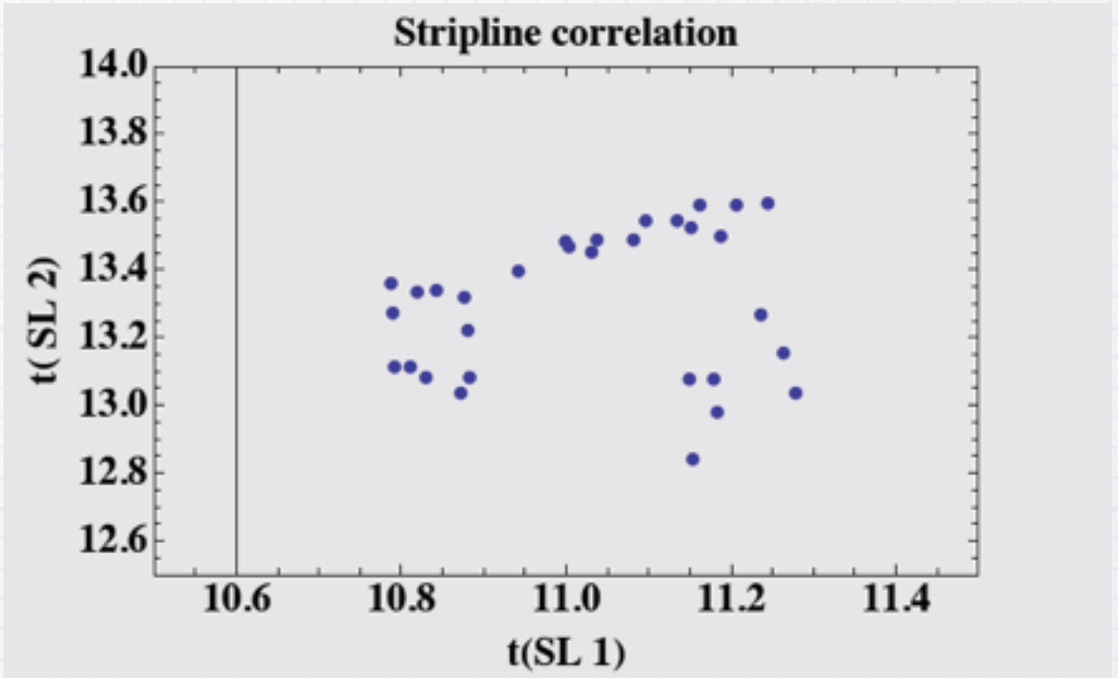
SL1&2, 1 event



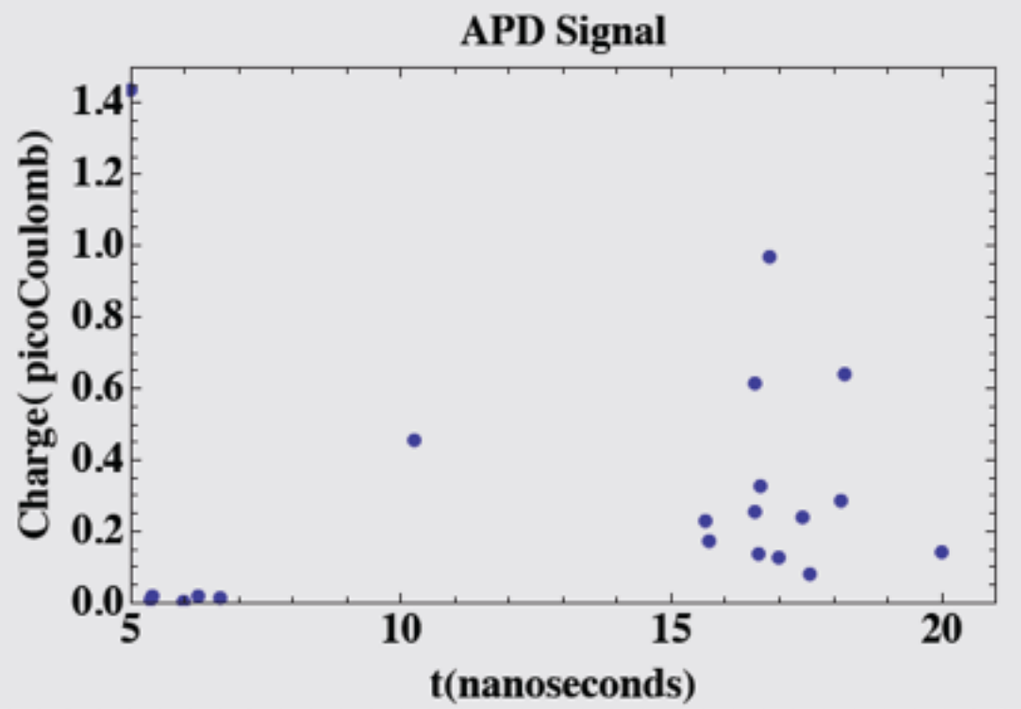
big spread in peak-to-peak amplitude within a run



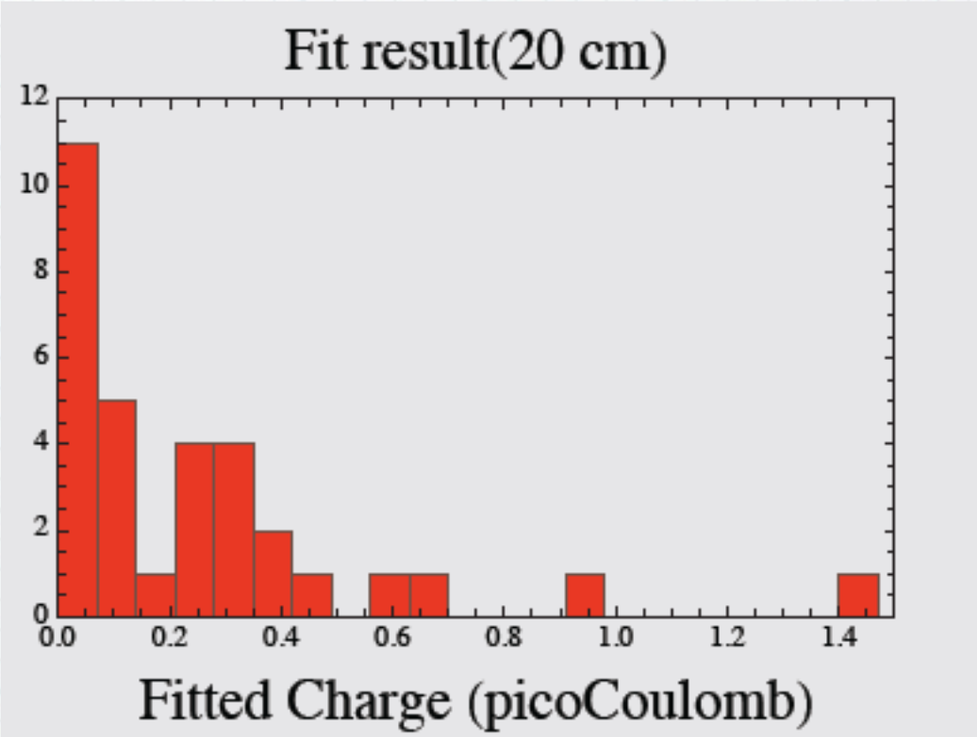
0-cross not well correlated



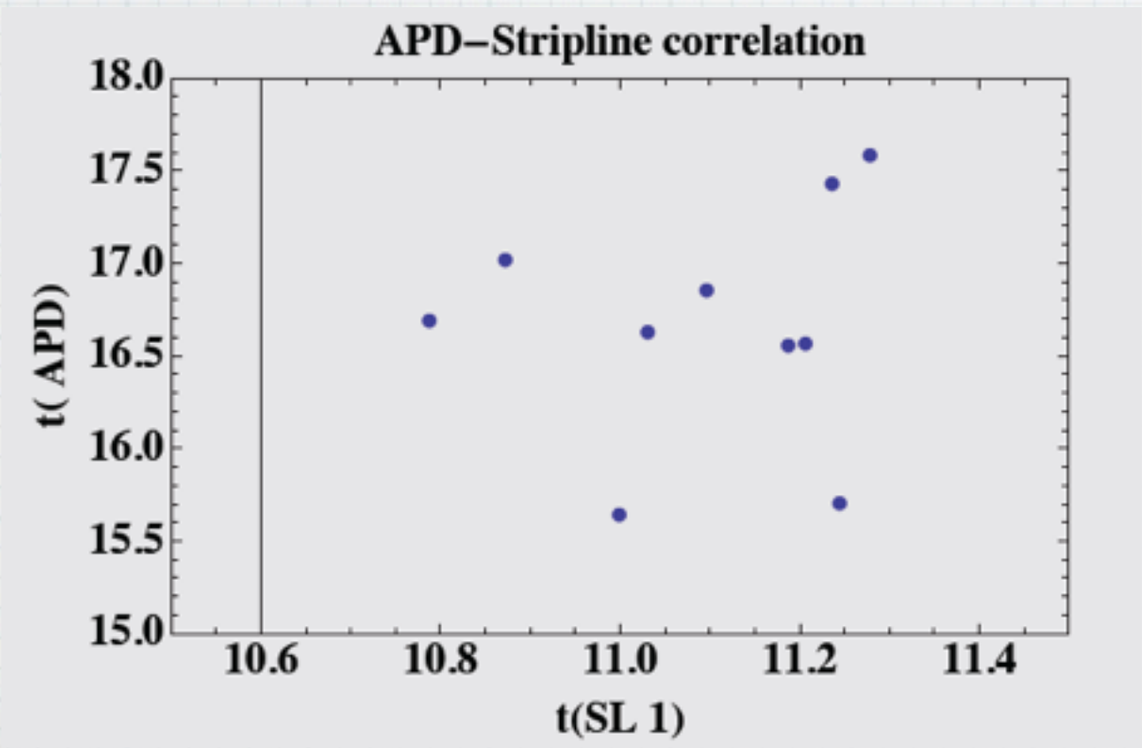
pulse fit area, time (40cm)



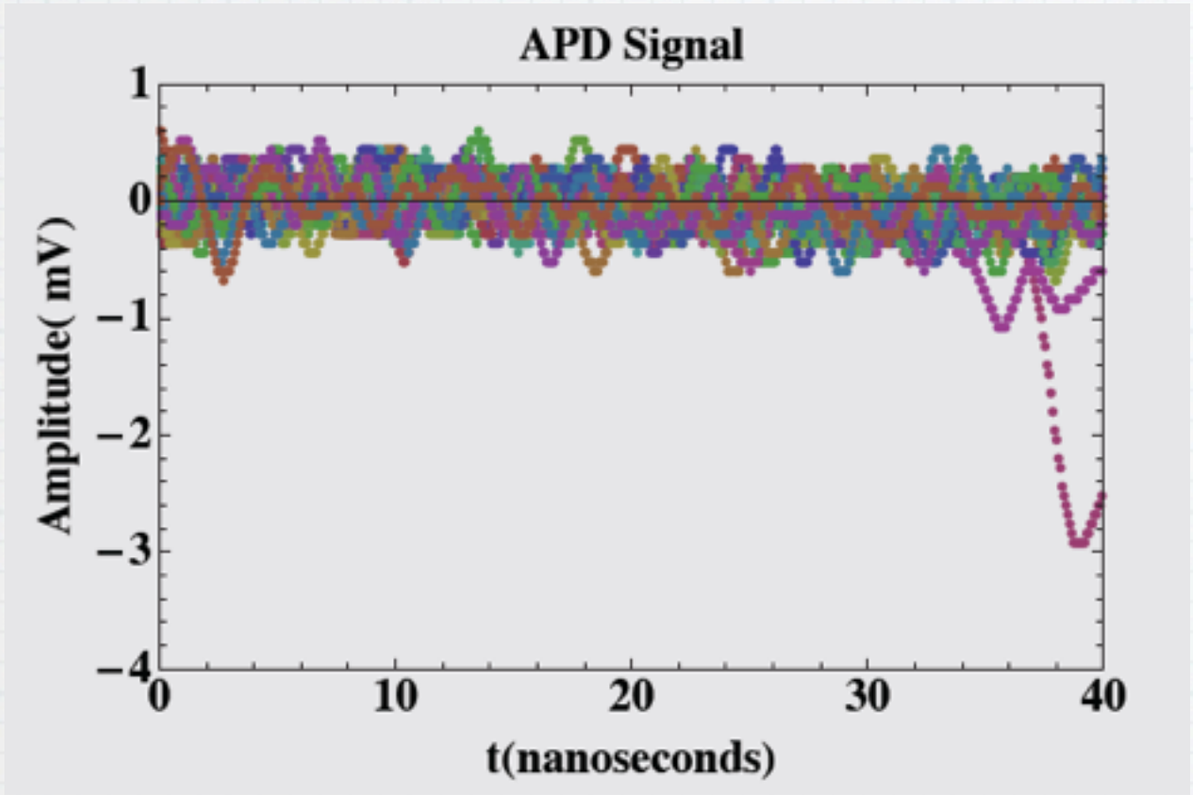
possible signal @ 0.2 pC expected mean



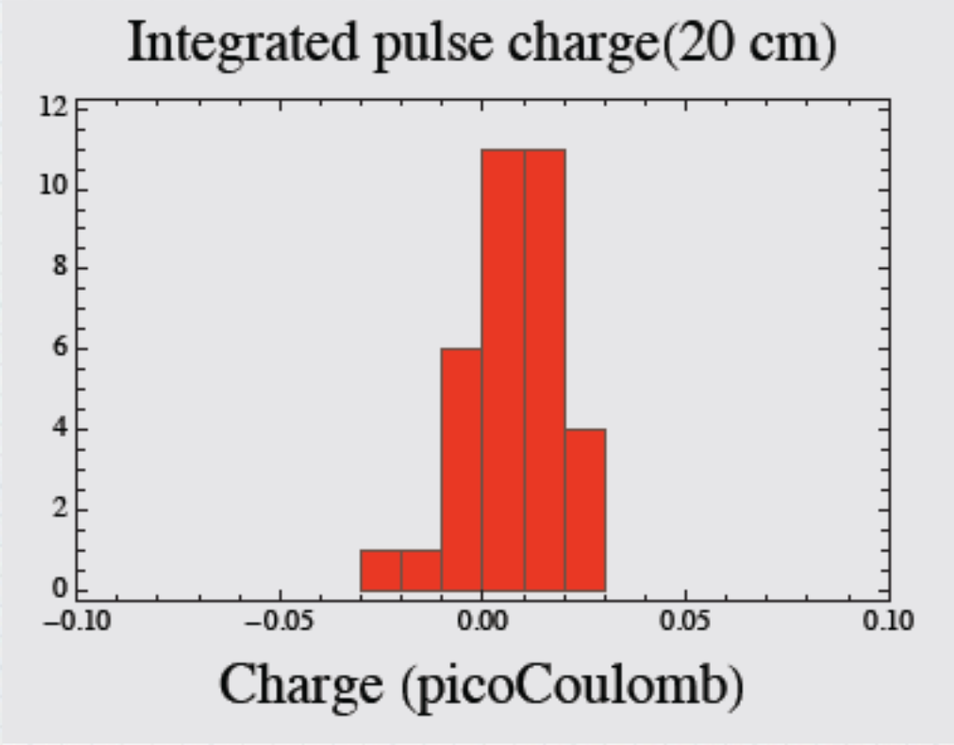
stripline not correlated



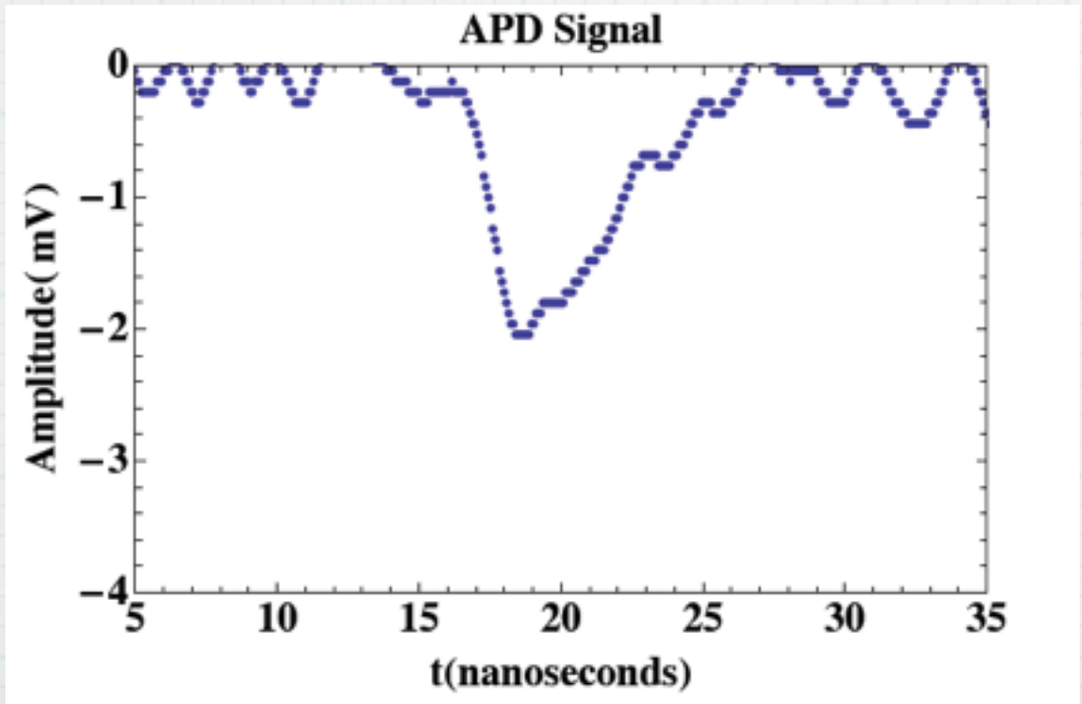
target out at 20,40cm consistent w. apd noise



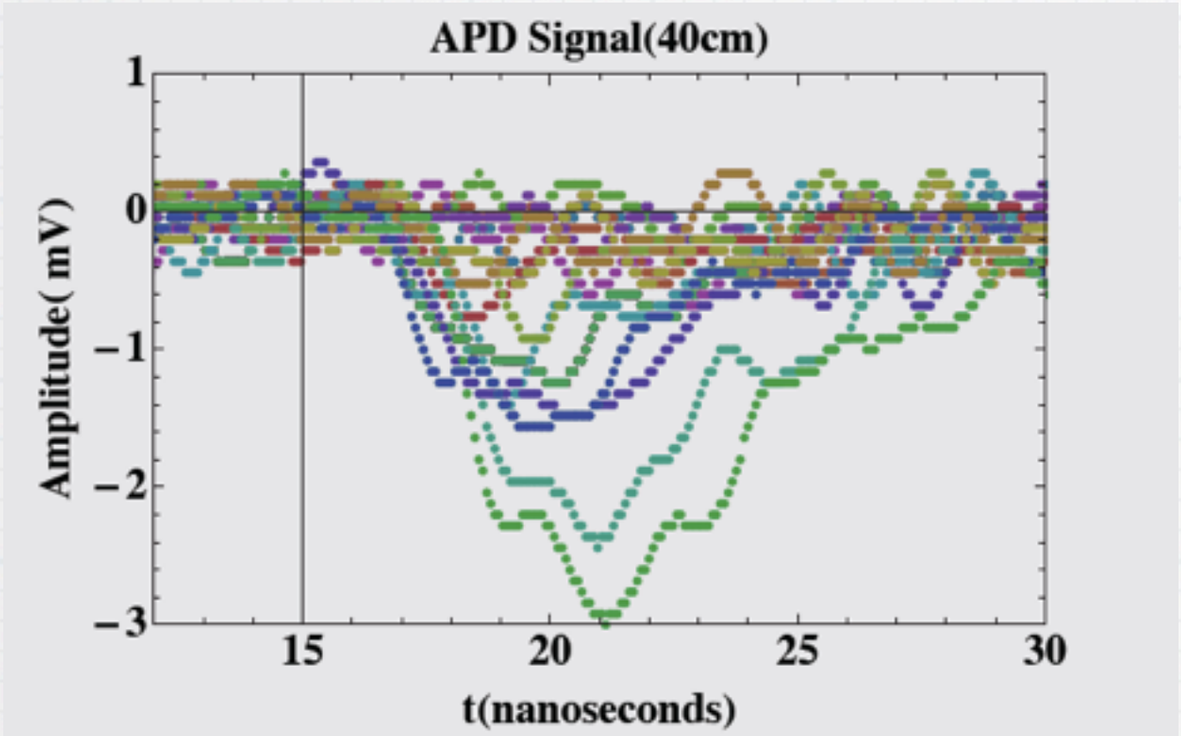
pedestal=5%*signal



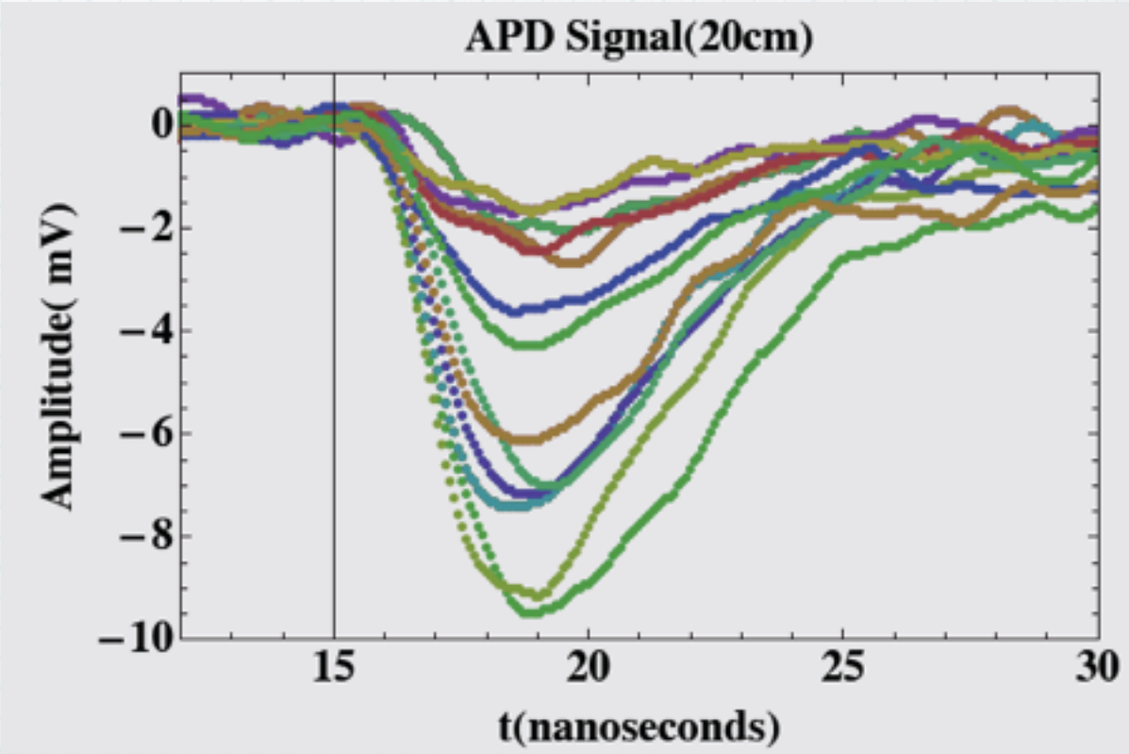
typical e⁻ candidate

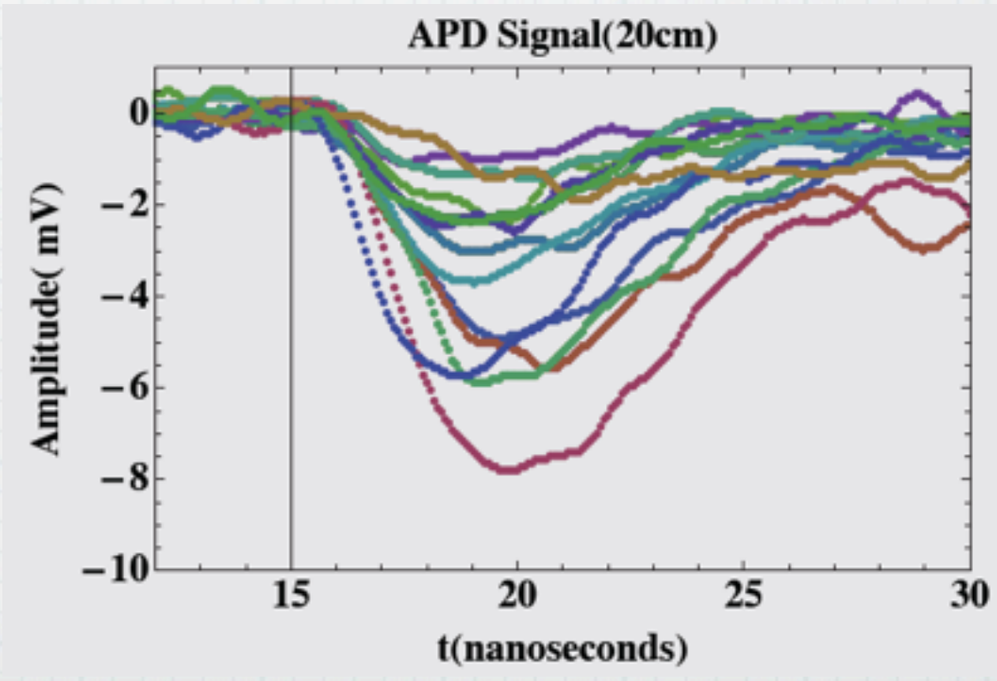


another 40 pulses @ 40cm

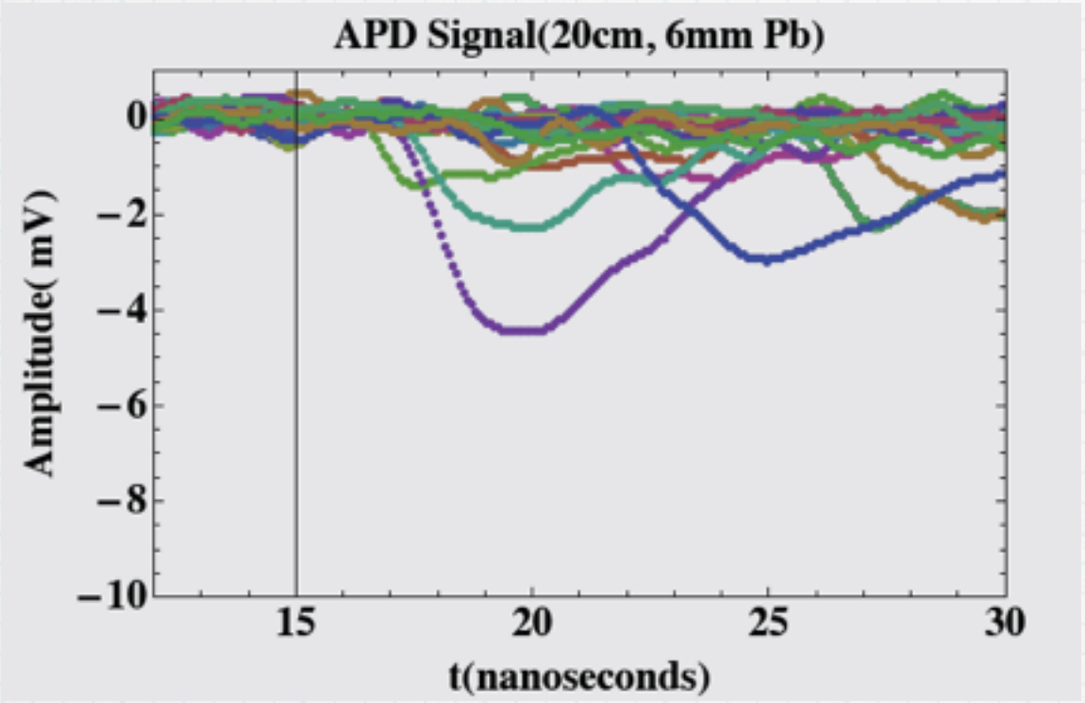


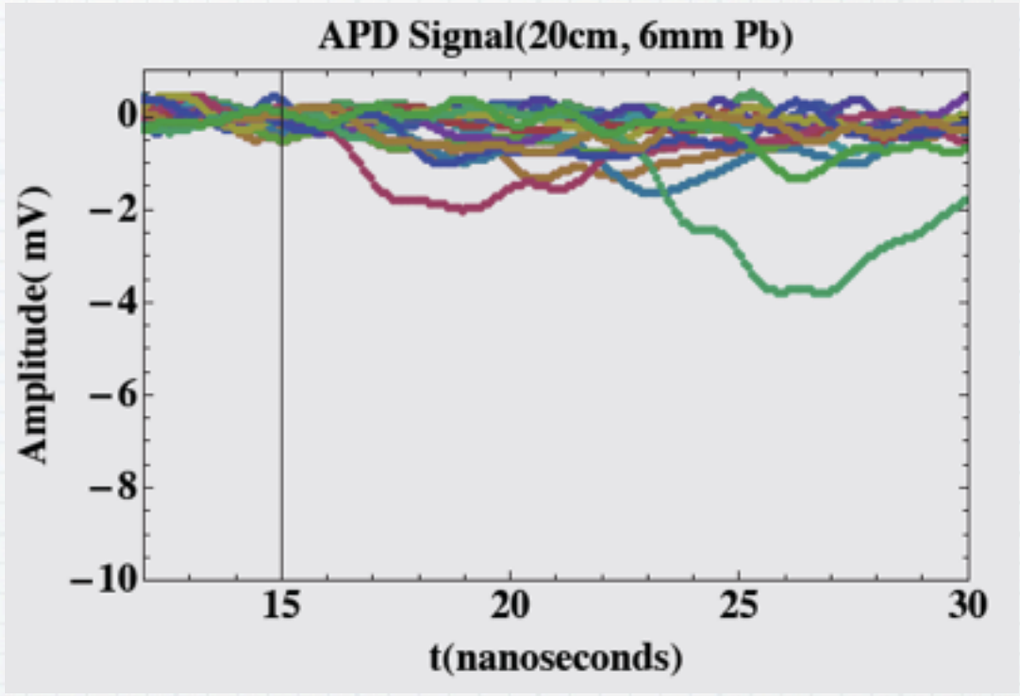
and @ 20 cm



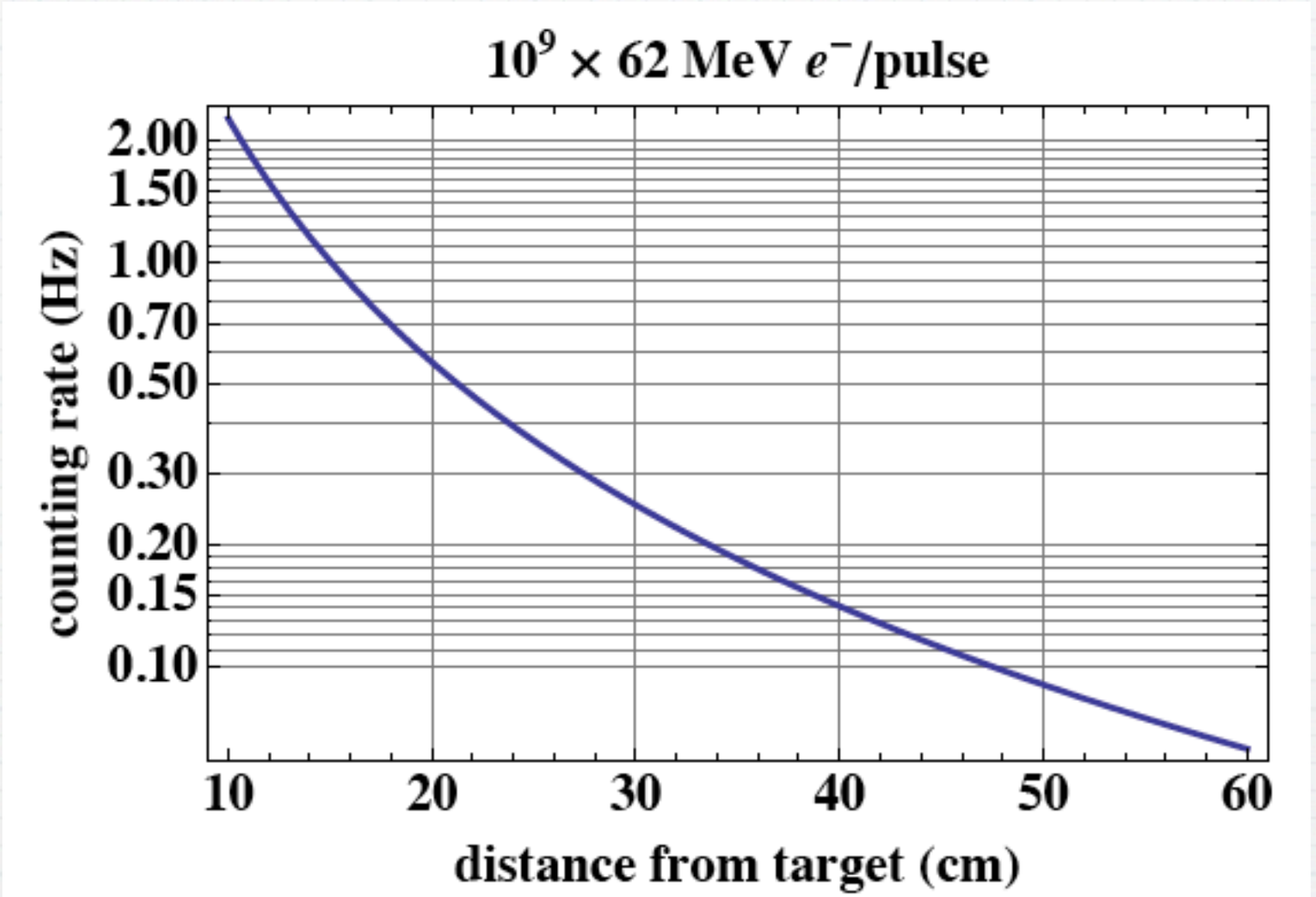


big reduction from 1 x0 of Pb

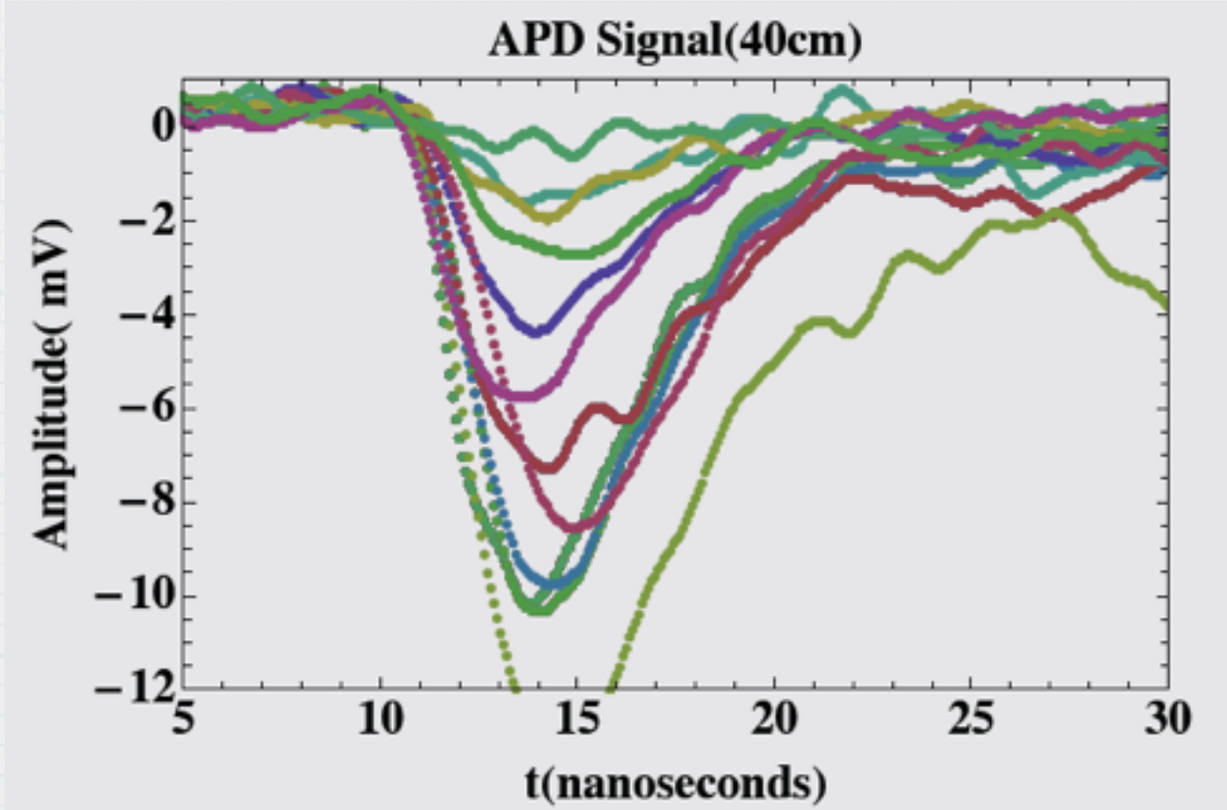


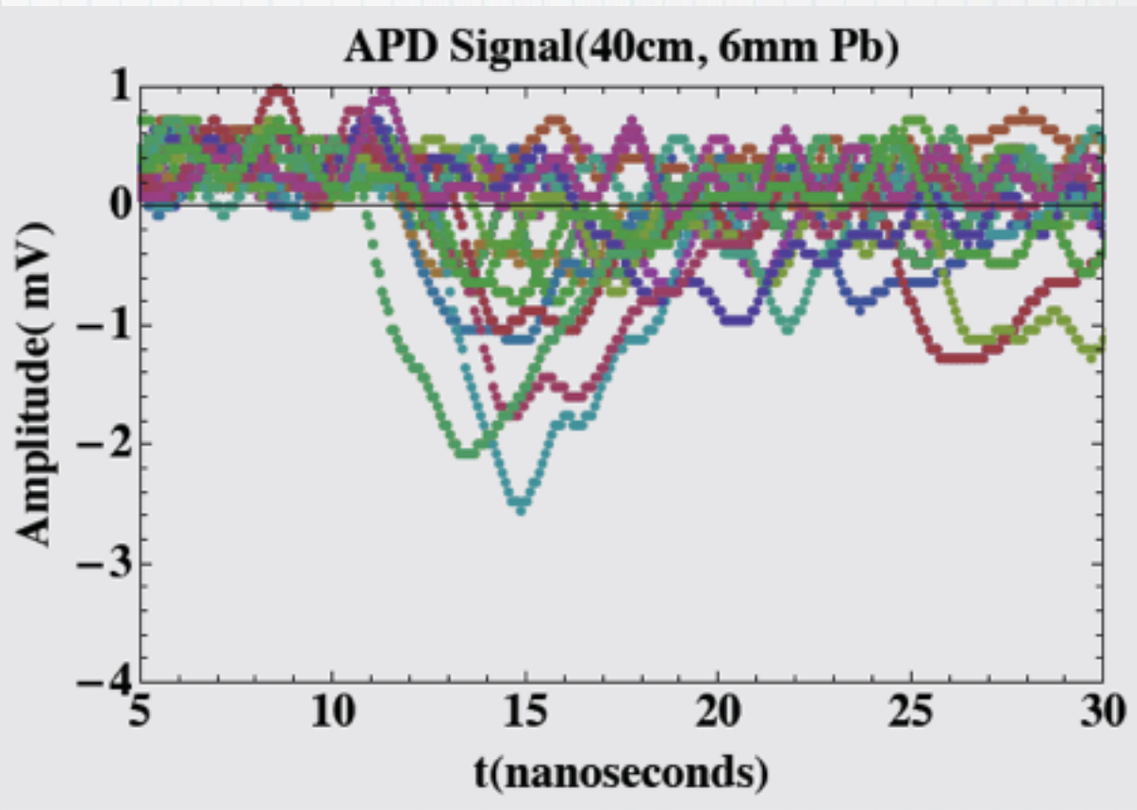


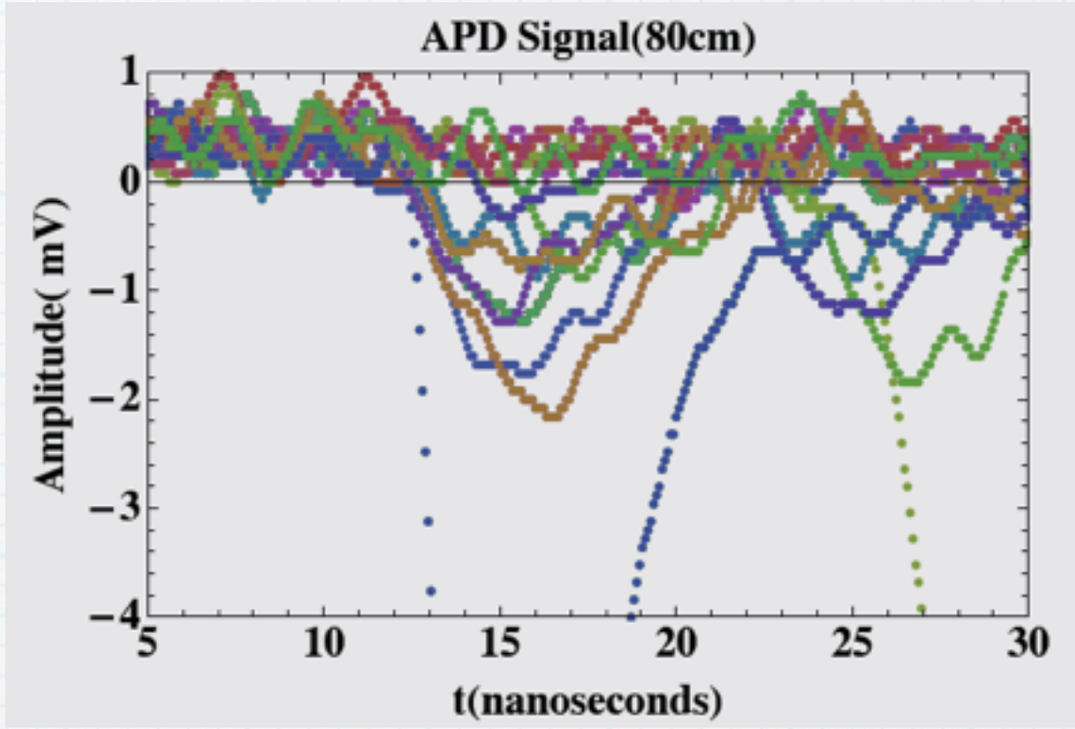
Rates


$10^9 \times 62$ MeV e^-/pulse
counting rate (Hz)
2.00
1.50
1.00
0.70
0.50
0.30
0.20
0.15
0.10
10
20
30
40
50
60
distance from target (cm)

Now look at Apr. 8 data






APD Signal(80cm)
Amplitude(mV)
t(nanoseconds)
1
0
−1
−2
−3
−4
5
10
15
20
25
30

Stripline signals larger and better timing