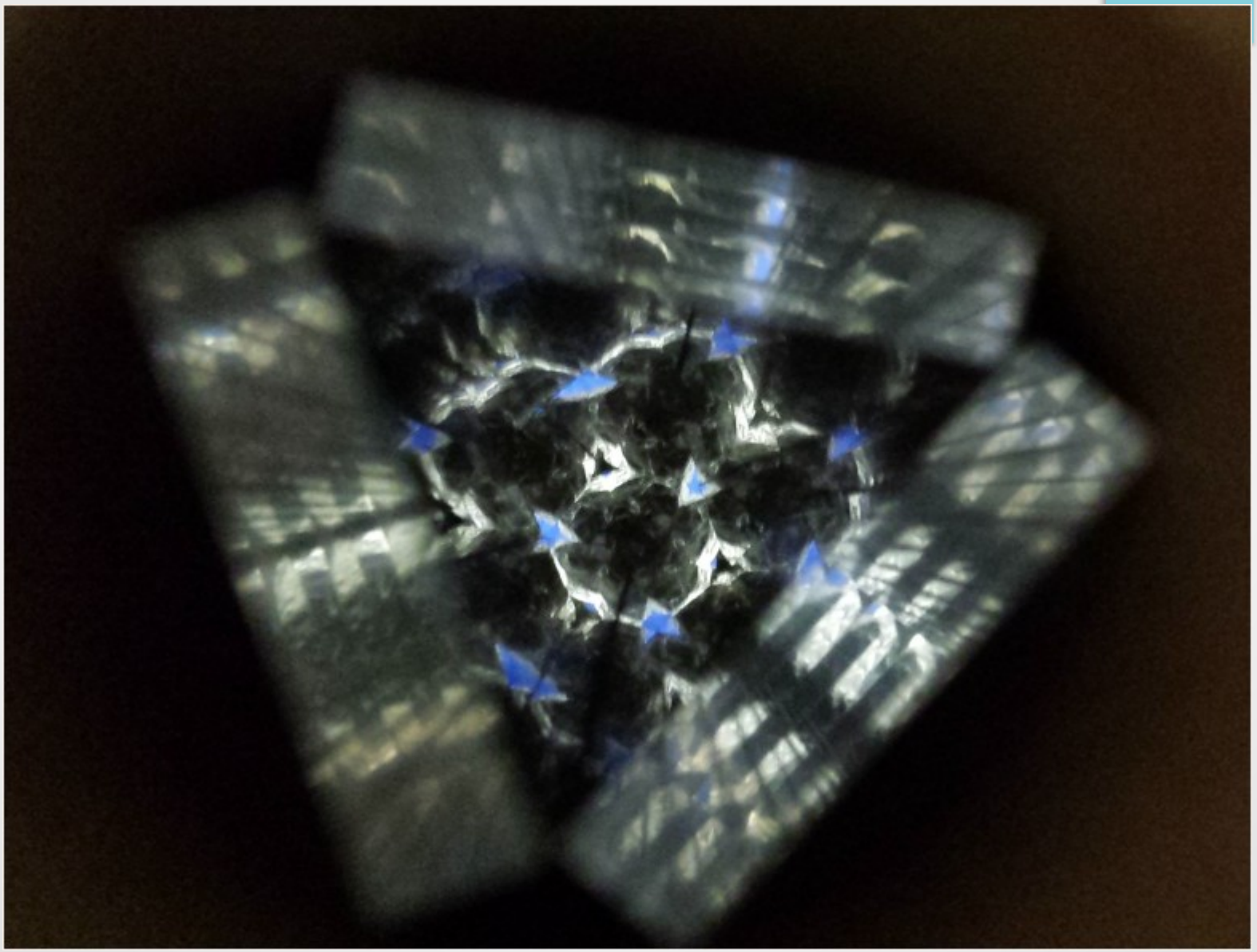
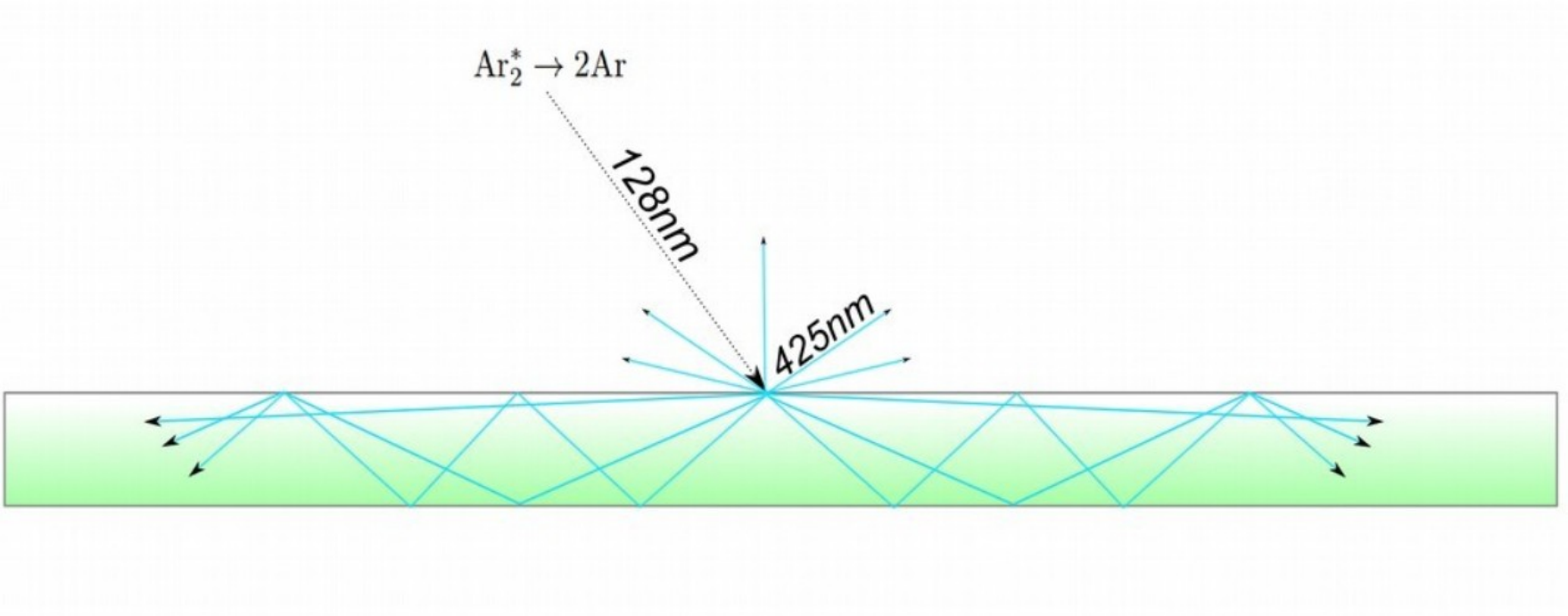
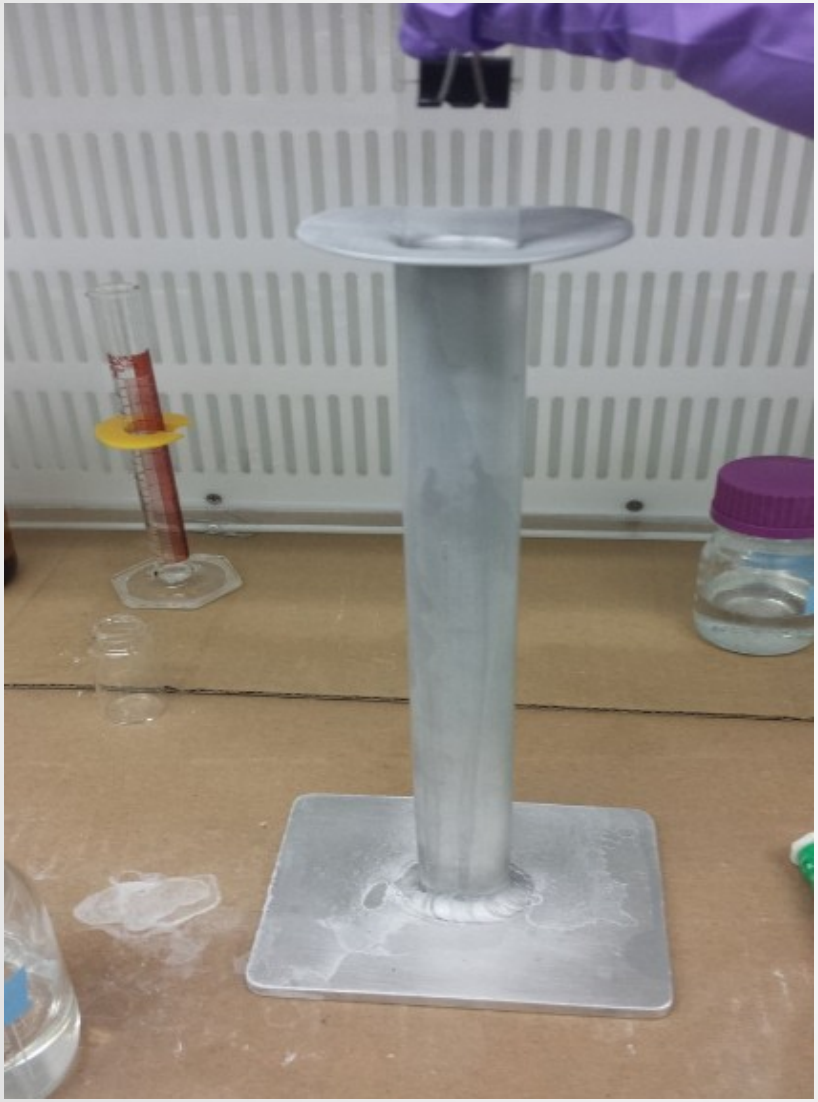
Attenuation Length at TallBo

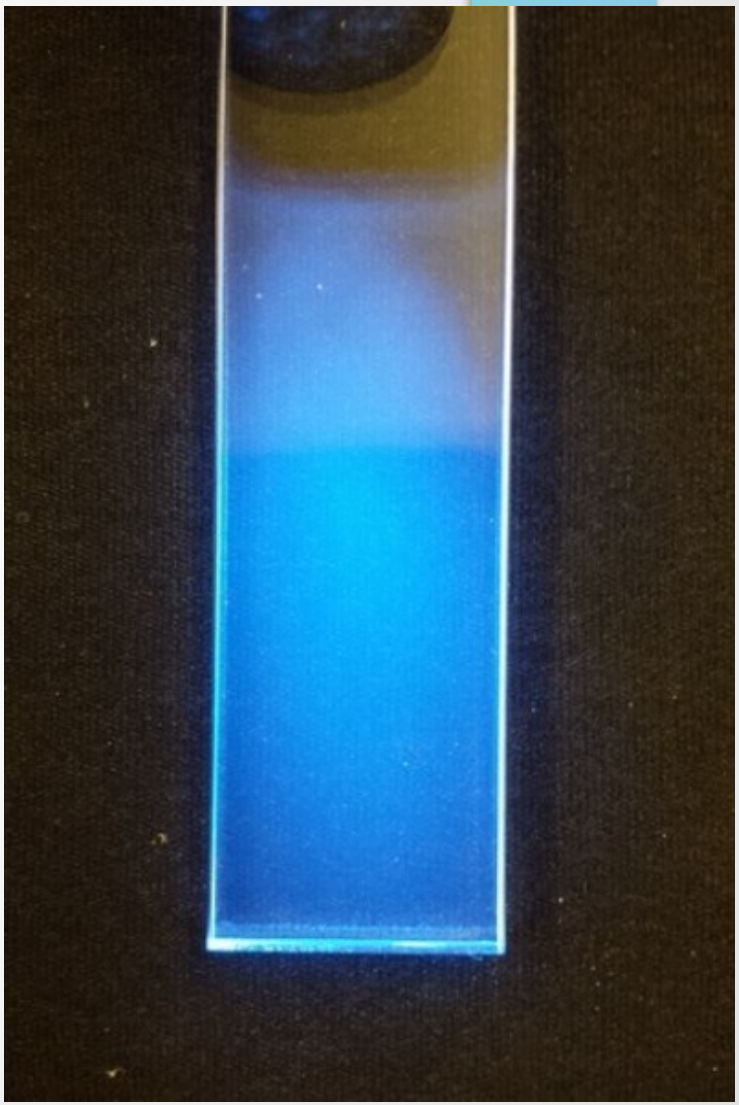


The Bars

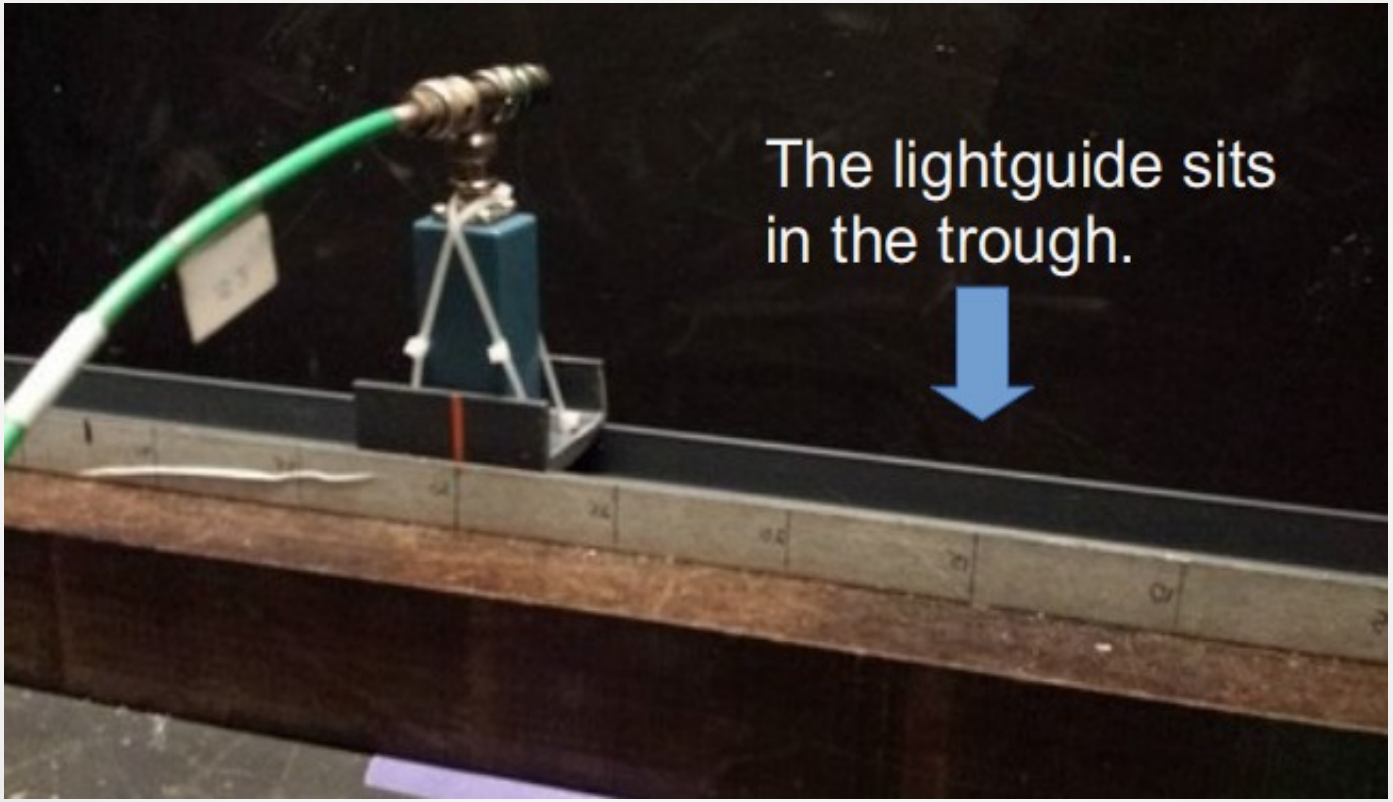


The Bars

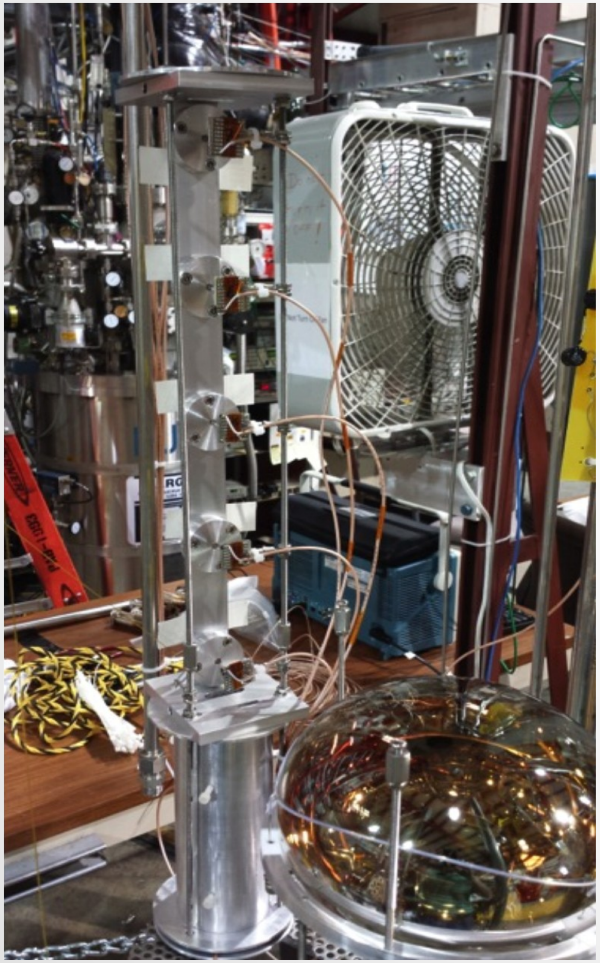


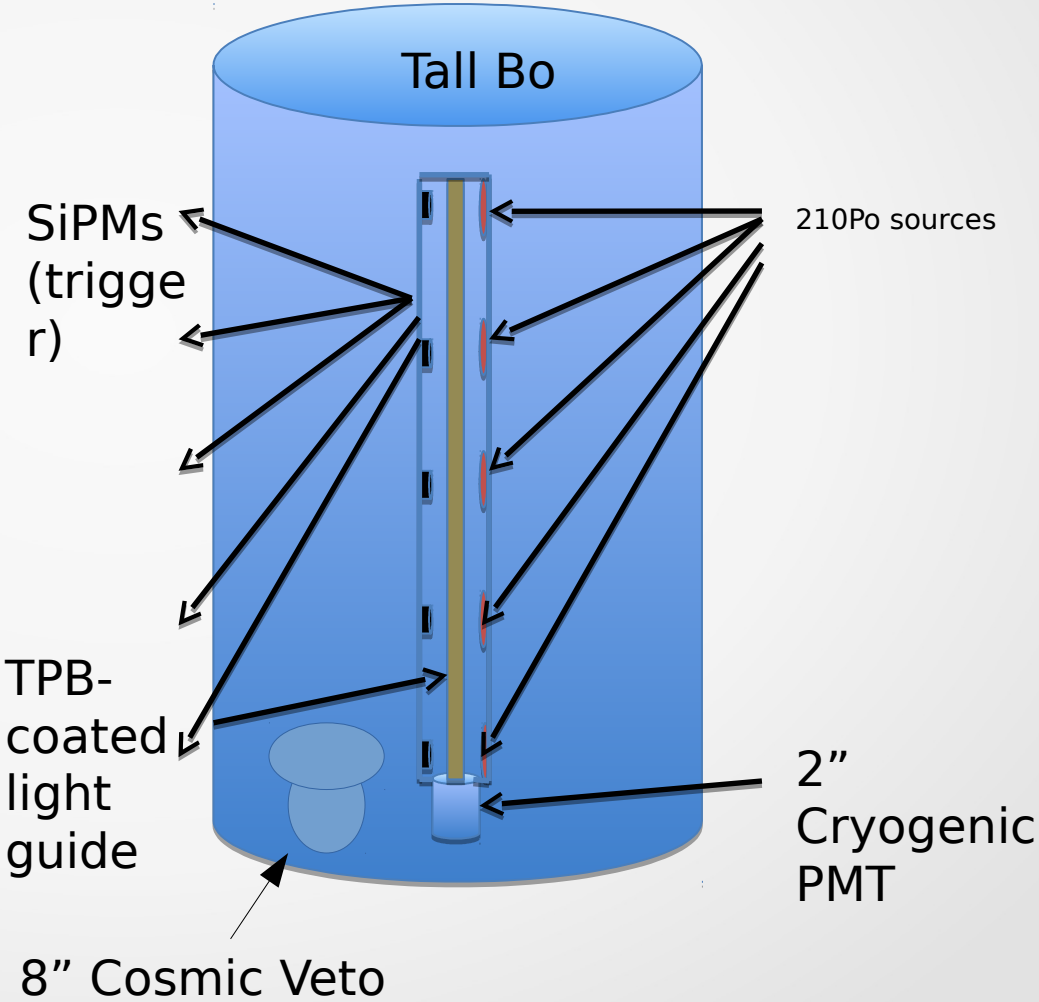


Attenuation Length

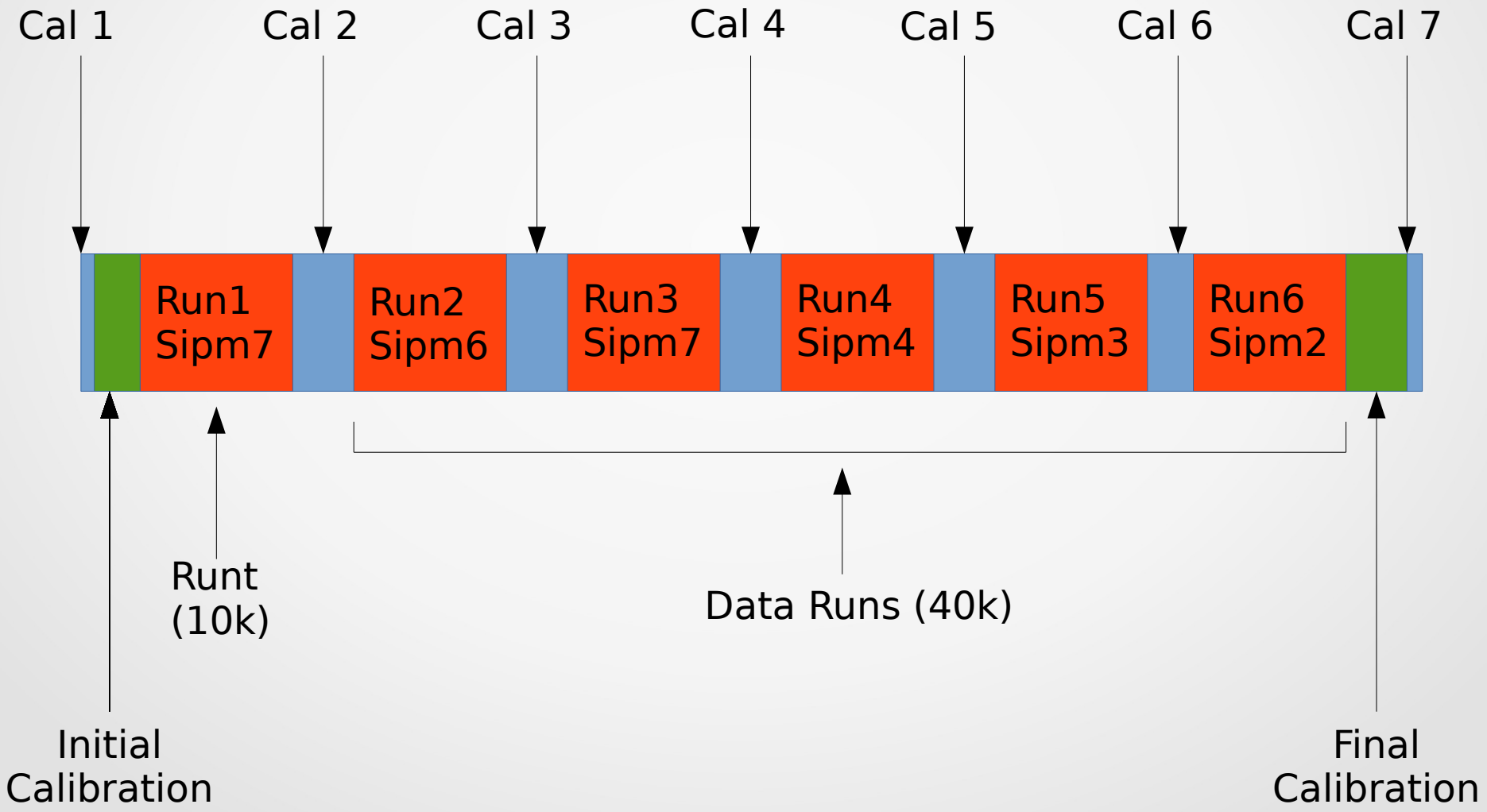


The Setup

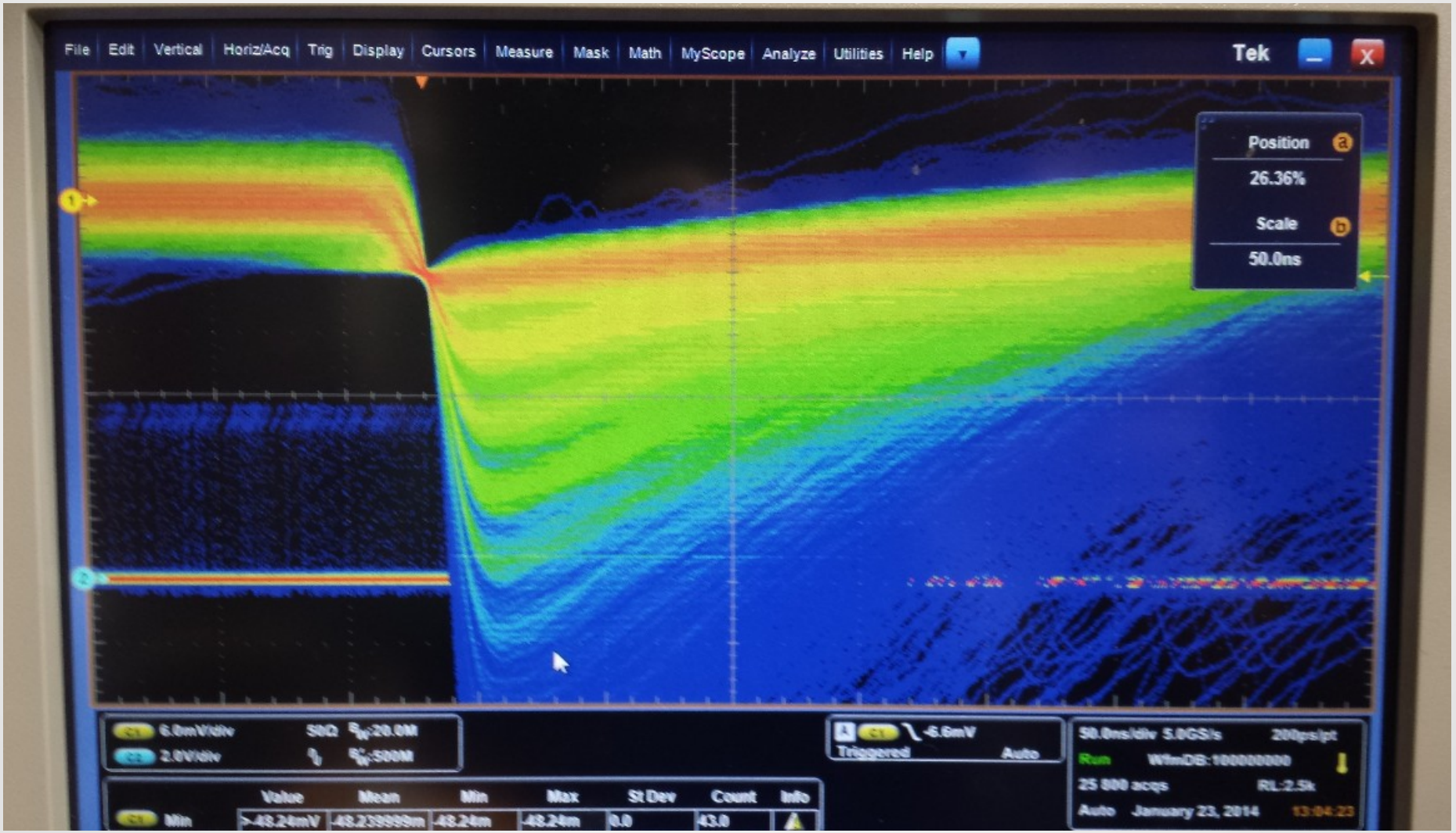



Tall Bo
SiPMs (trigge r)
210Po sources
TPB-coated light guide
2” Cryogenic PMT
8” Cosmic Veto

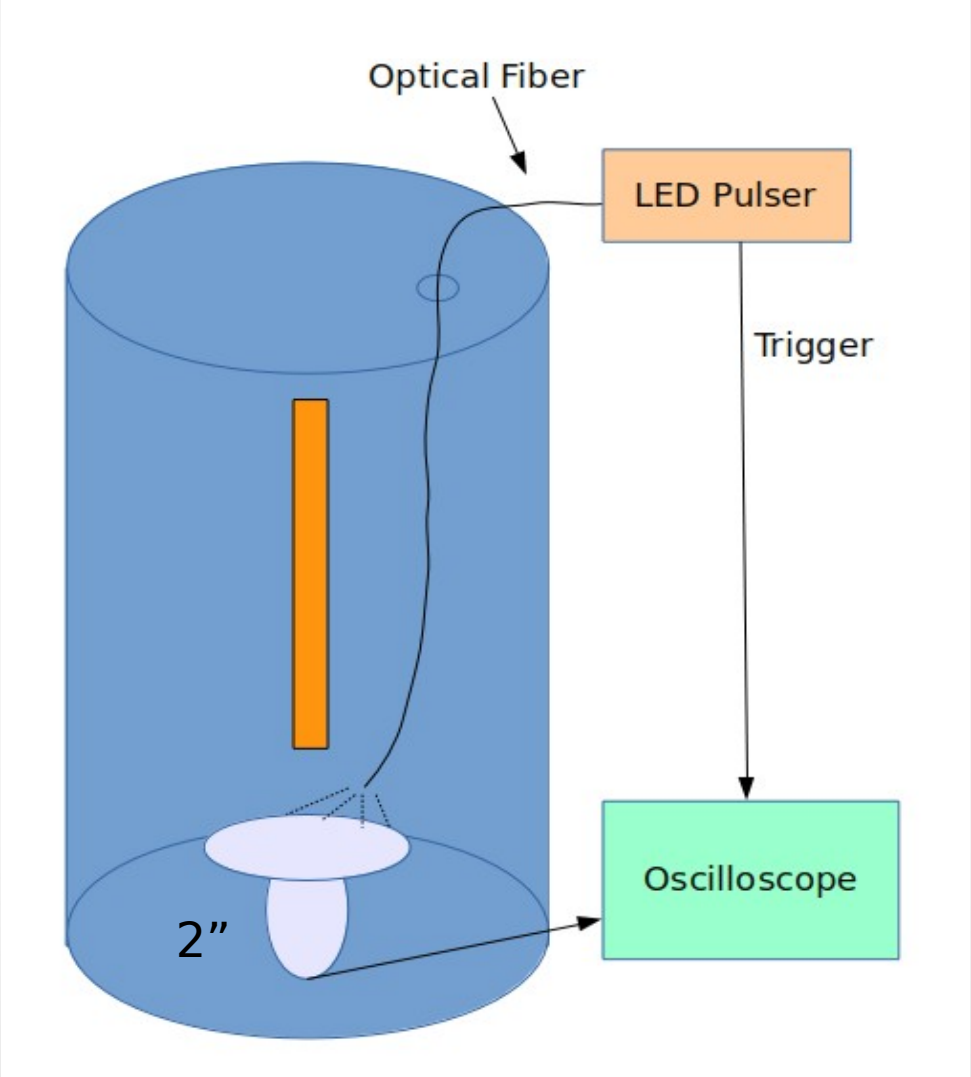
Run Schedule



SiPM Calibration



LED Flasher



2” PMT Calibration

Noise

$$N \cdot e^{-\mu} \cdot (1-\beta) \cdot Gaus(x, \mu_{noise}, \sigma_{noise})$$

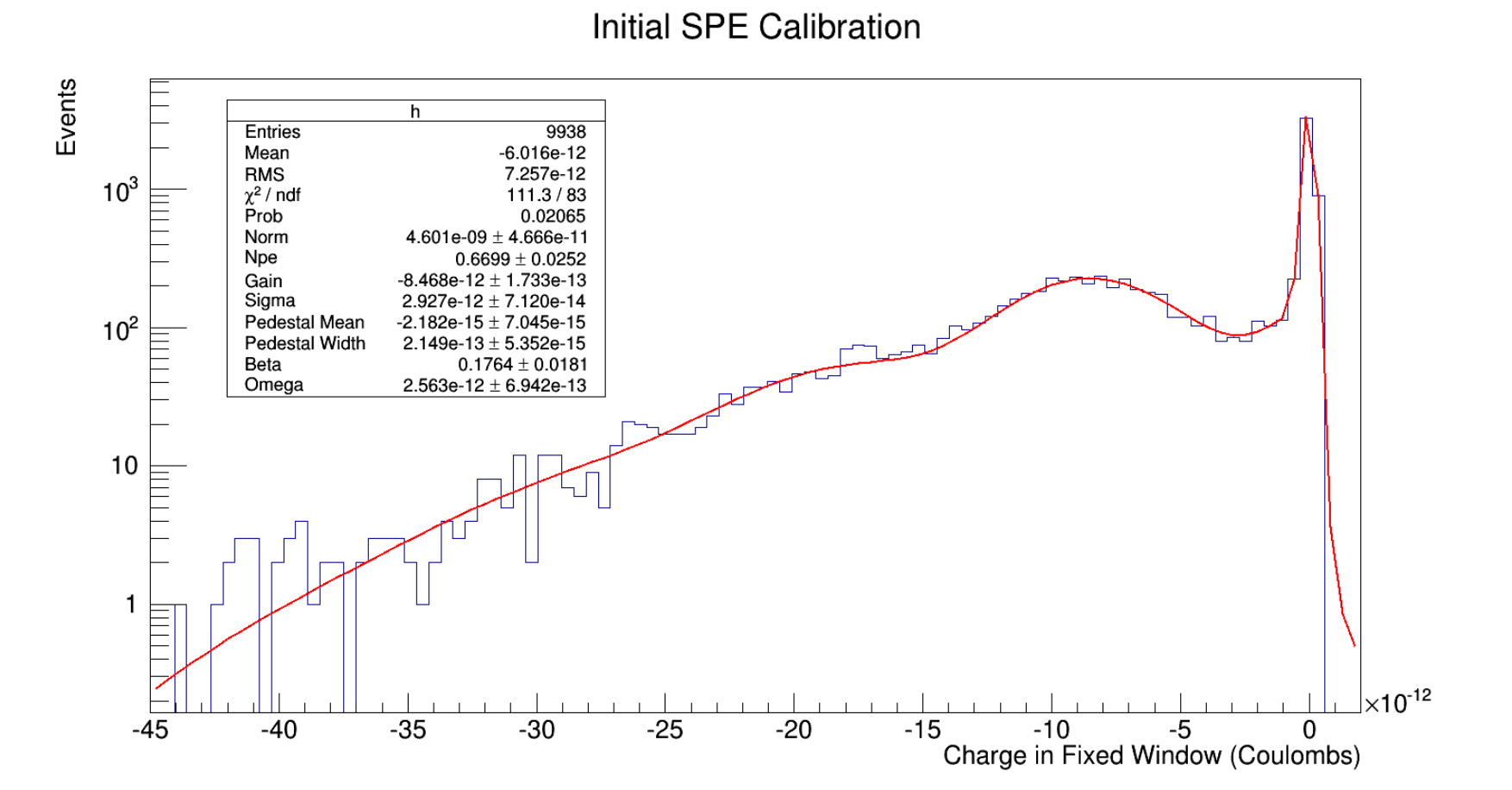
Thermionic

$$+N \cdot \beta \cdot e^{-\mu} \cdot \theta(-(x-\mu_{noise})) \cdot \left[Expo((x-\mu_{noise}), \omega)\right]$$

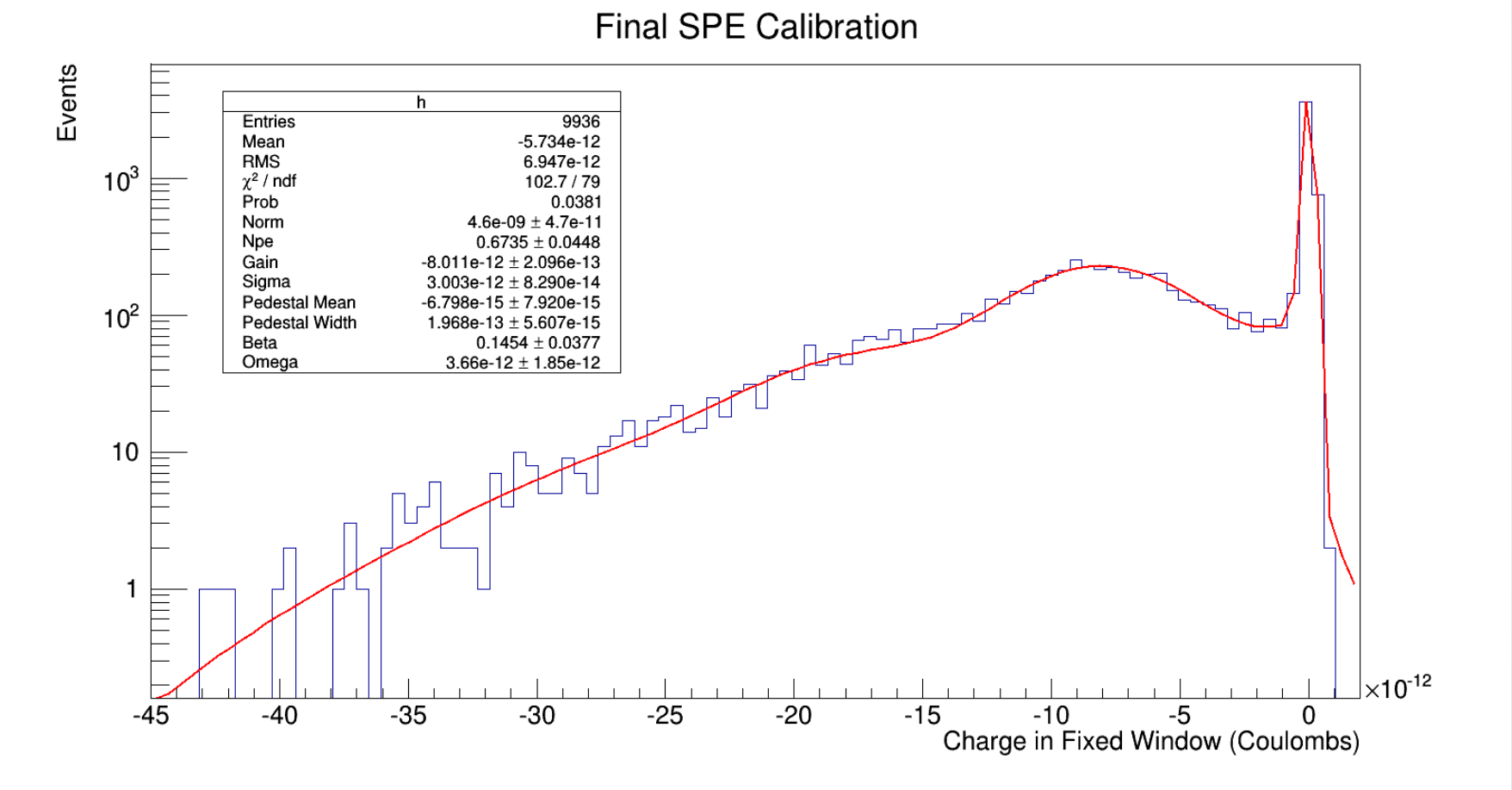
$$+N \cdot \sum_{n=1}^{4} \left[\frac{e^{-\mu} \cdot \mu^n}{n!}\right] \cdot Gaus(x, n \cdot \mu_{spe} + \mu_{noise}, \sqrt{n \cdot \sigma_{spe}^2 + \sigma_{noise}^2})$$

1 to 4 PEs

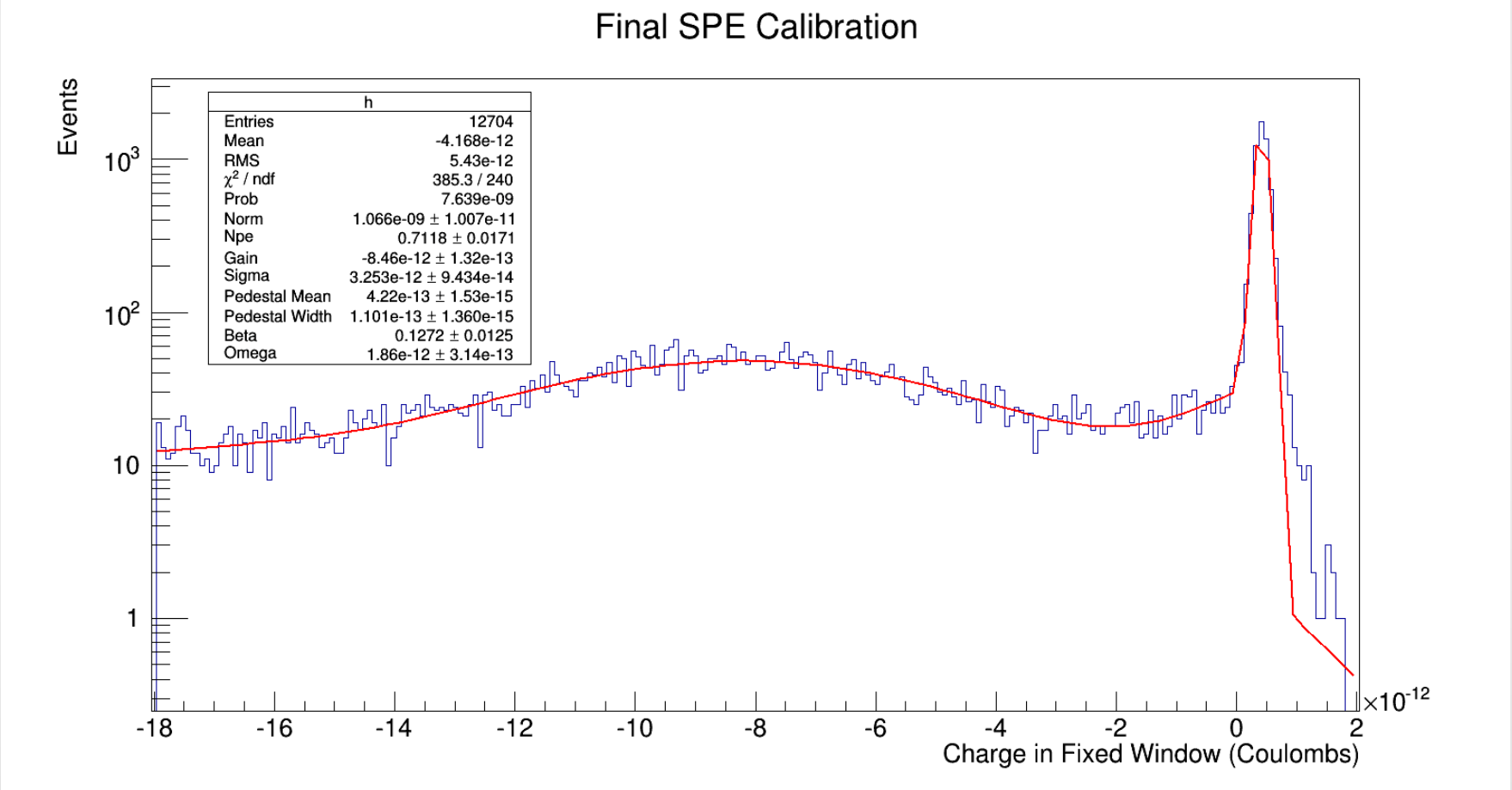
Initial Waveform Calibration



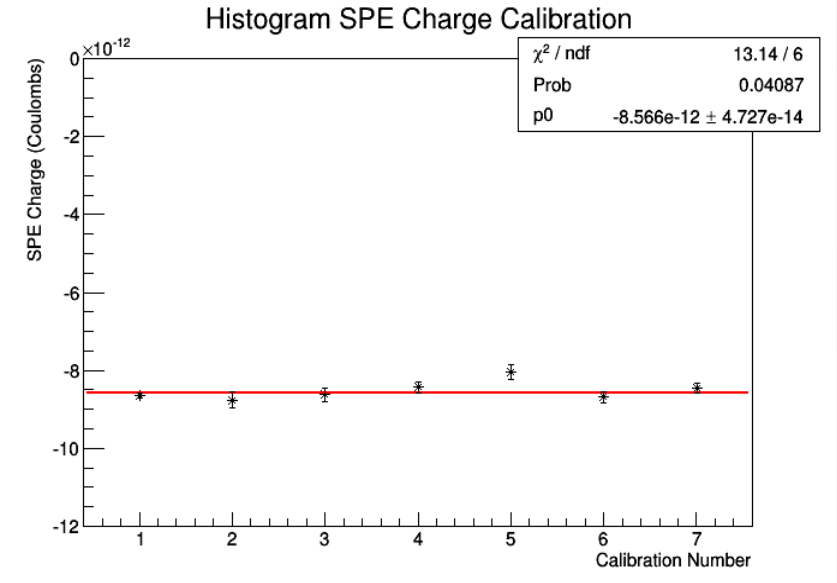
Final Waveform Calibration

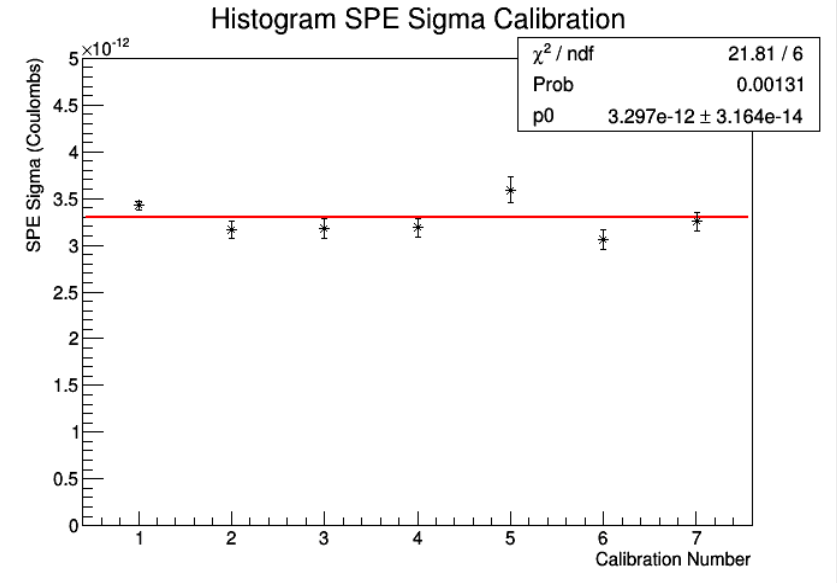


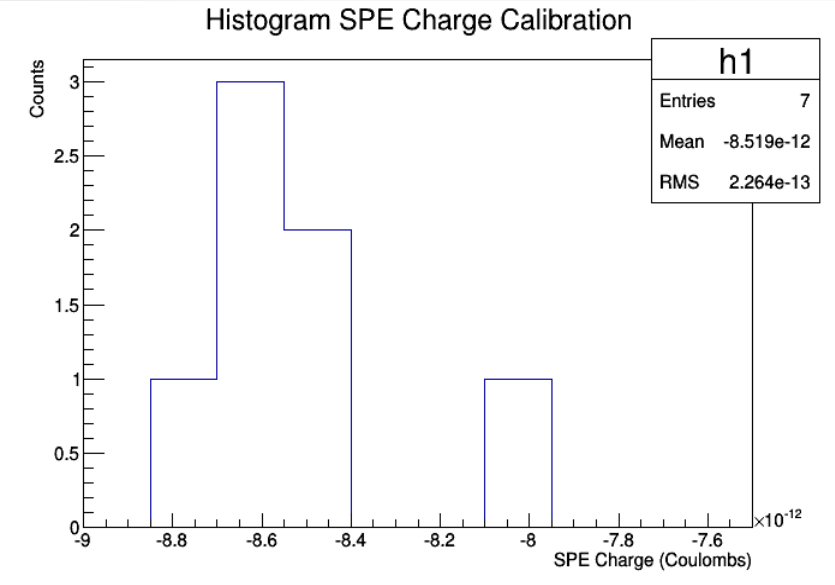
Histogram Calibrations

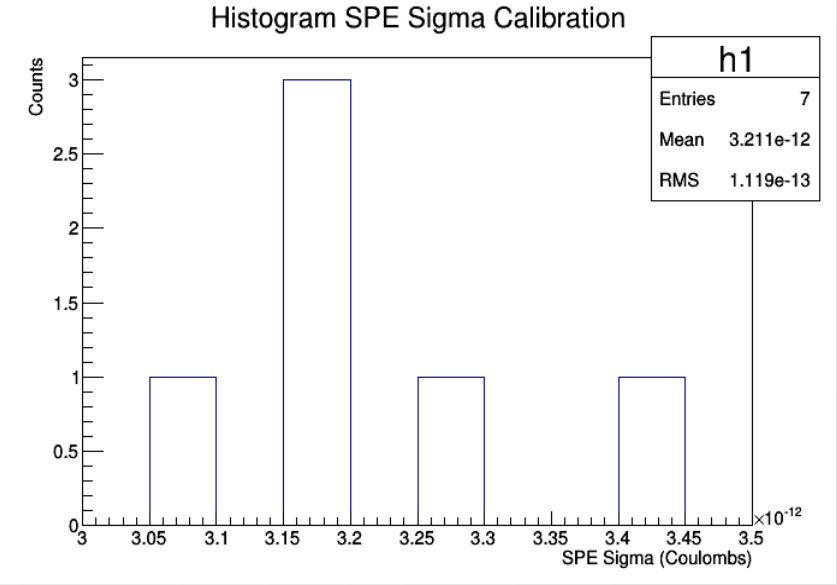


Histogram Calibrations

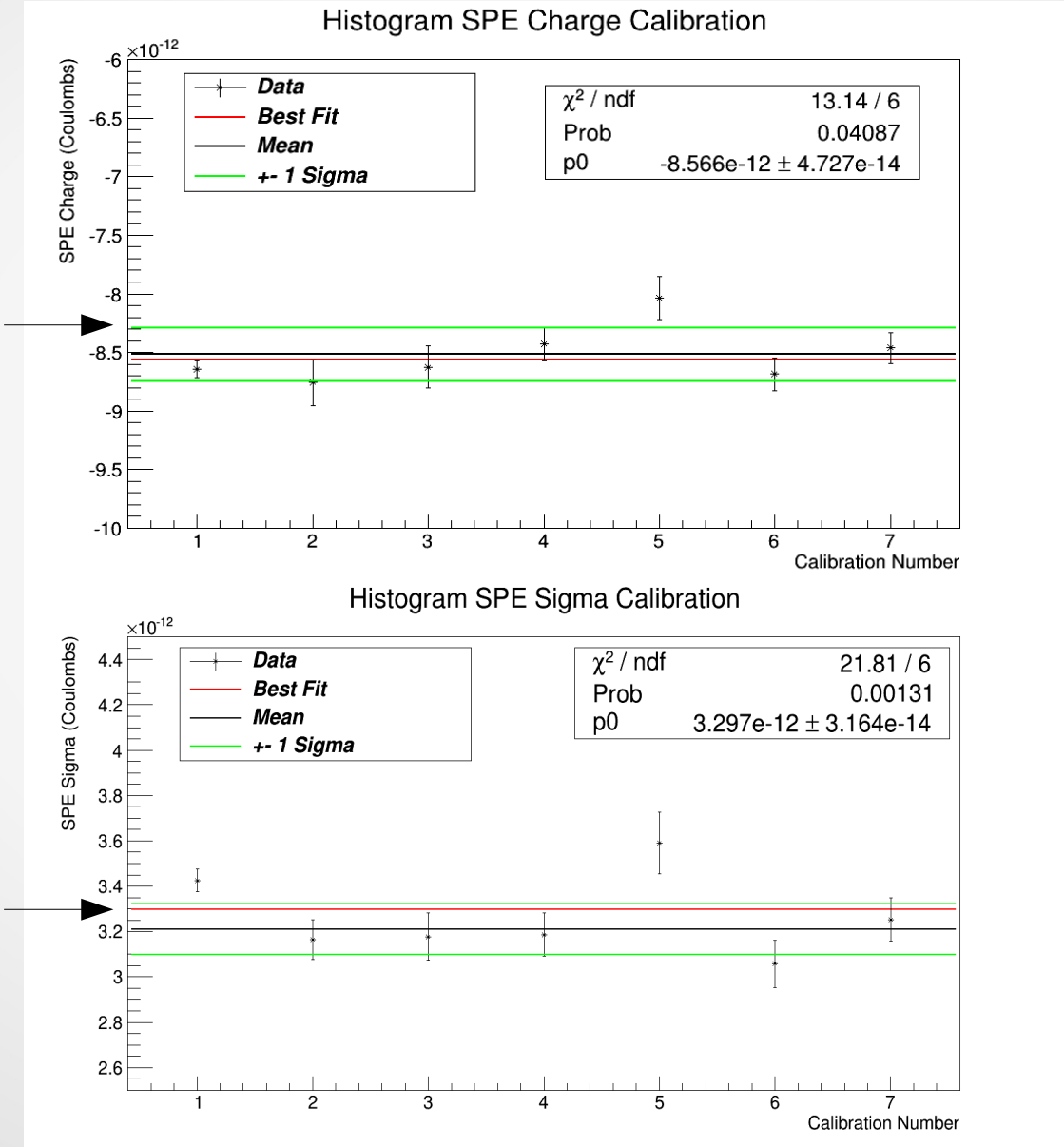








Histogram Calibrations



2.7%

3.5%