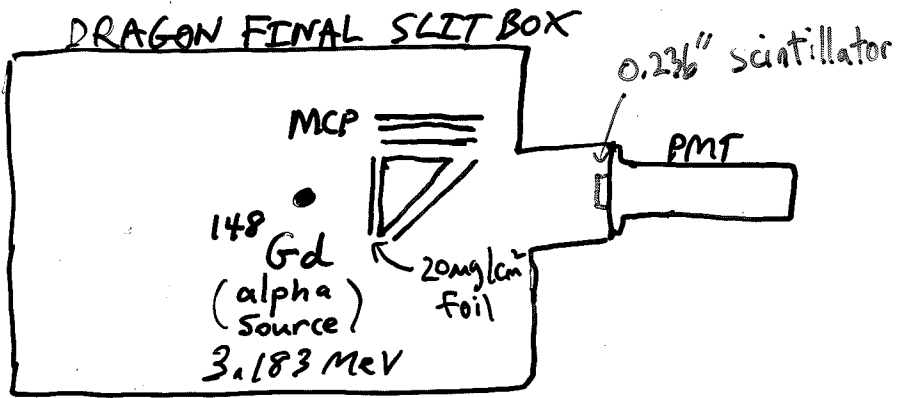


# Setup



— Red: Single Gaussian gives:

$$\frac{\chi^2}{\text{d.o.f}} = 25.24$$

$$\sigma \approx 209 \text{ ps} \approx 490 \text{ ps (FWHM)}$$

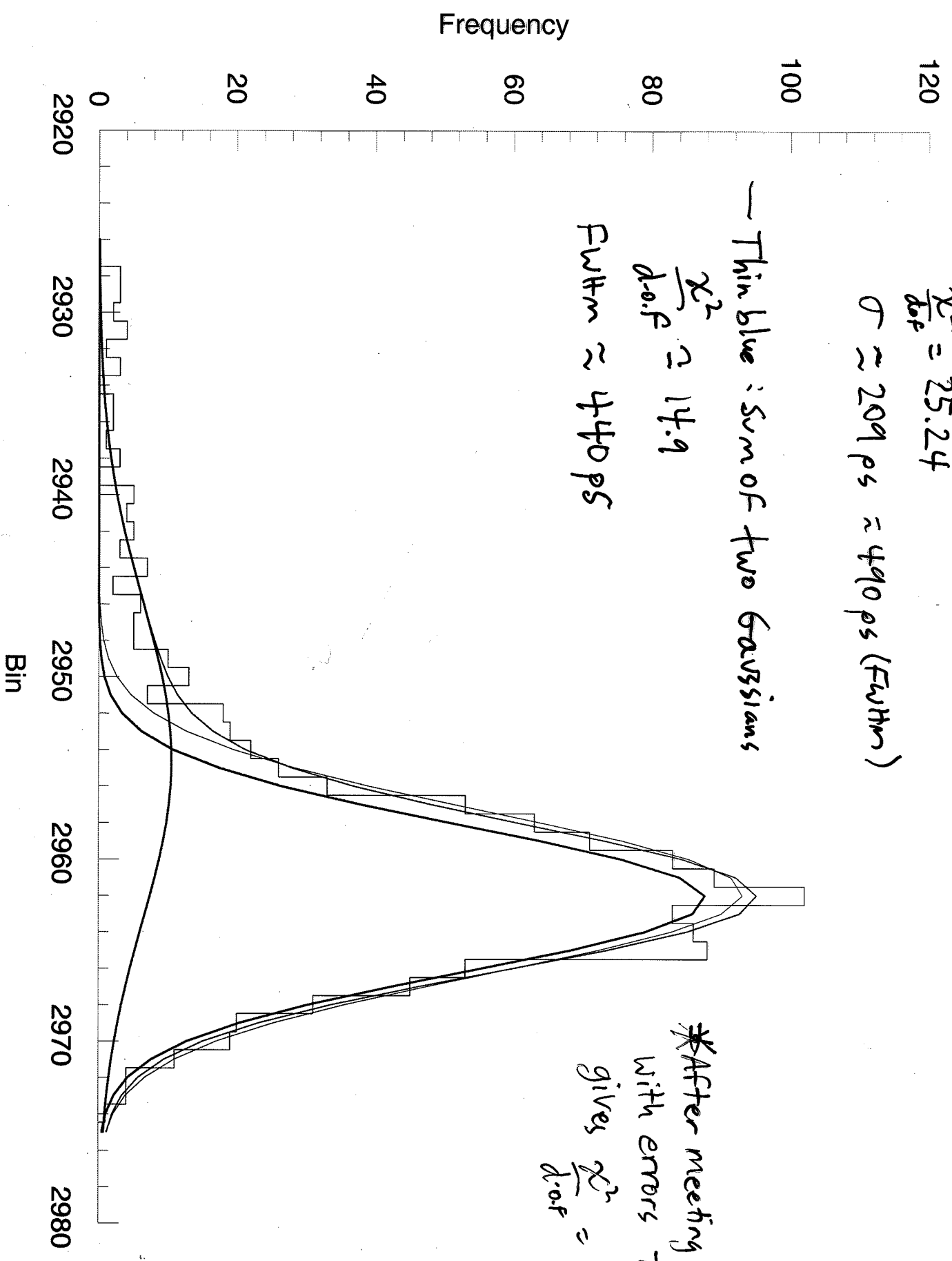
— Thin blue: Sum of two Gaussians

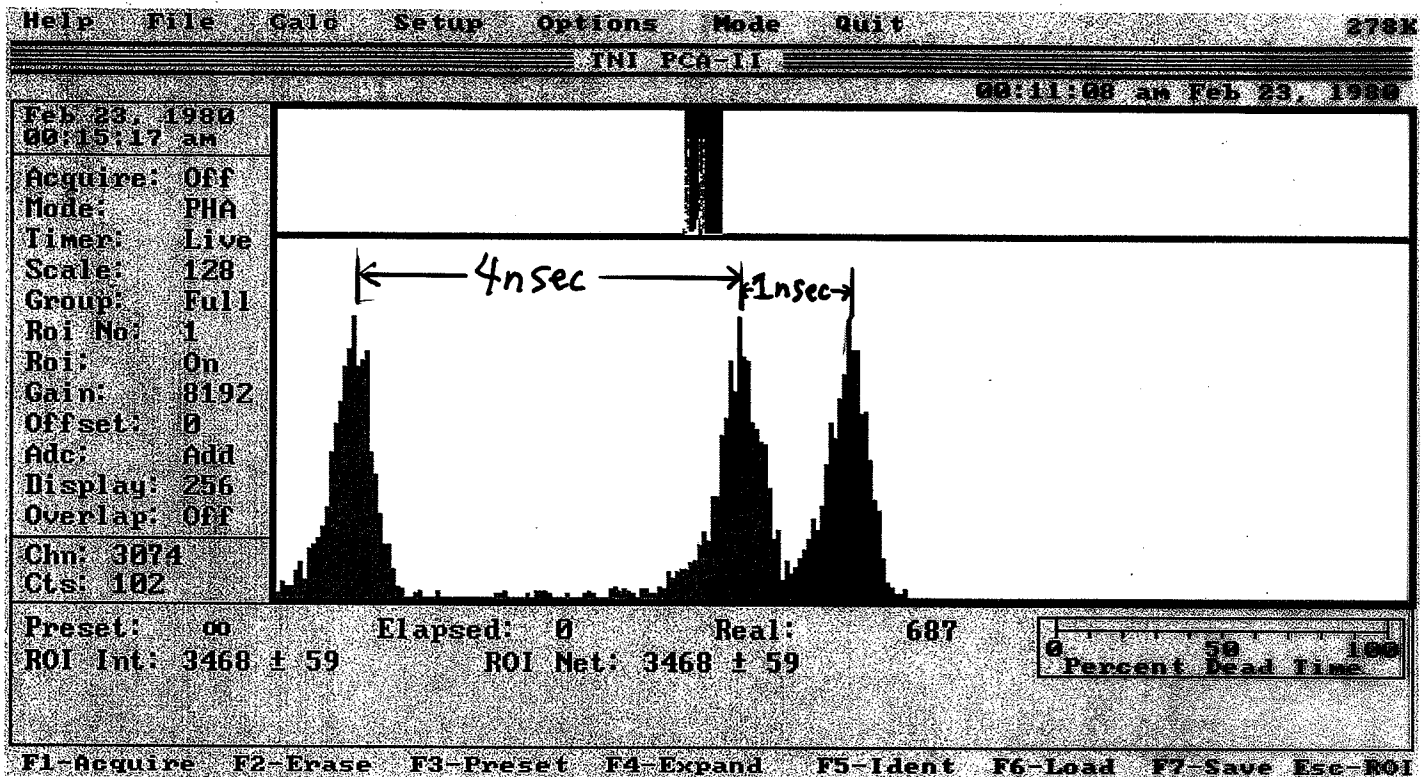
$$\frac{\chi^2}{\text{d.o.f}} \approx 14.9$$

$$\text{FWHM} \approx 440 \text{ ps}$$

\*After meeting fit \*

with errors fed in  
gives  $\frac{\chi^2}{\text{d.o.f}} = 0.88$





- $$\Delta t \approx \sqrt{\frac{d^2 M_B}{2 E_B}} \left( \frac{M_R}{M_B} - 1 \right)$$

- neglecting kick from  $\delta$
- at high  $E_B$  this should be a small effect

- for  $M_B \sim 20$   
 $M_R \sim 21$        $E_B = 30$   
 $d \sim 0.5m$

$\Rightarrow \Delta t \sim 1.4 nsec$

- for  $d = 40cm$   
 $\Rightarrow \Delta t \sim 1 nsec$

$d$  = distance b/w detectors  
 $E_B$  = Beam Energy  
 $M_B$  = Beam mass  
 $M_R$  = Recoil mass