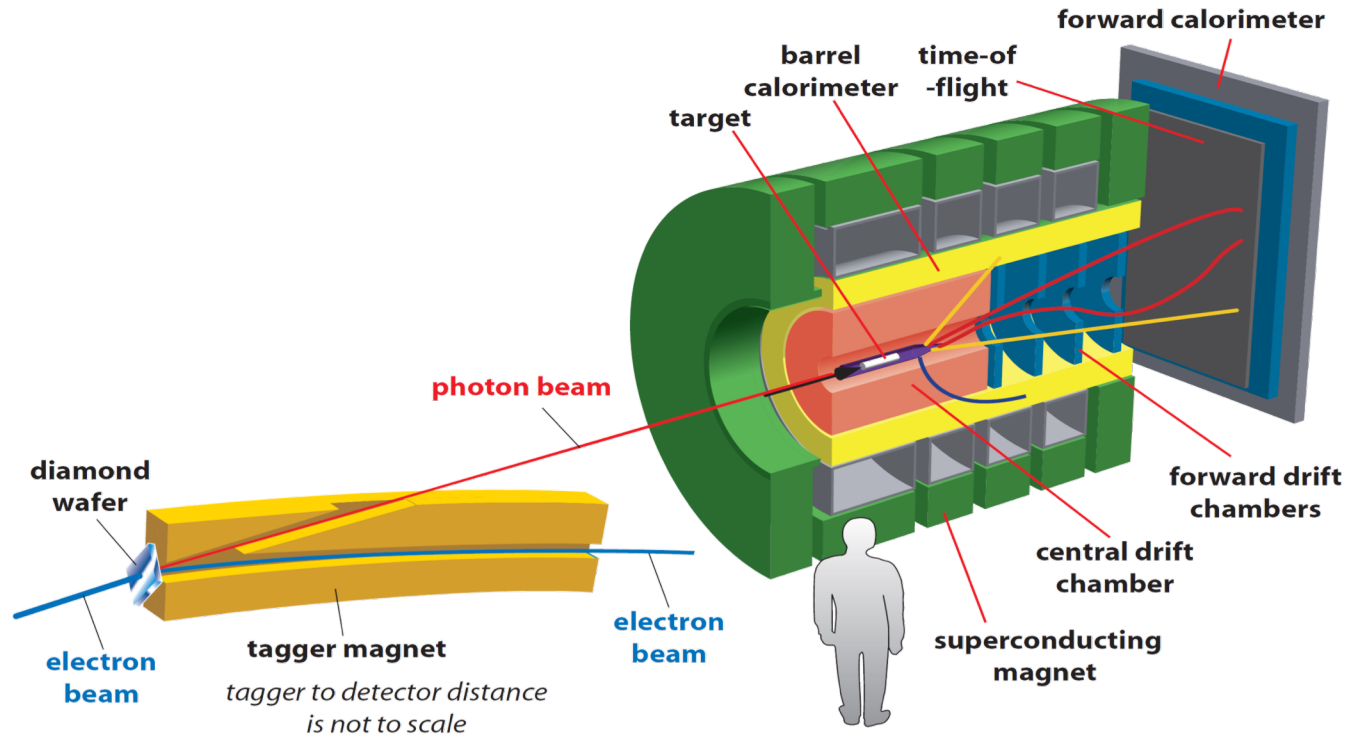


GlueX SRC Experiment Update - 18Feb20

Charge posted to wiki: [https://halldweb.jlab.org/wiki/index.php/Short-Range Correlations and CT](https://halldweb.jlab.org/wiki/index.php/Short-Range_Correlations_and_CT)

ERR on 31 March

Run plan

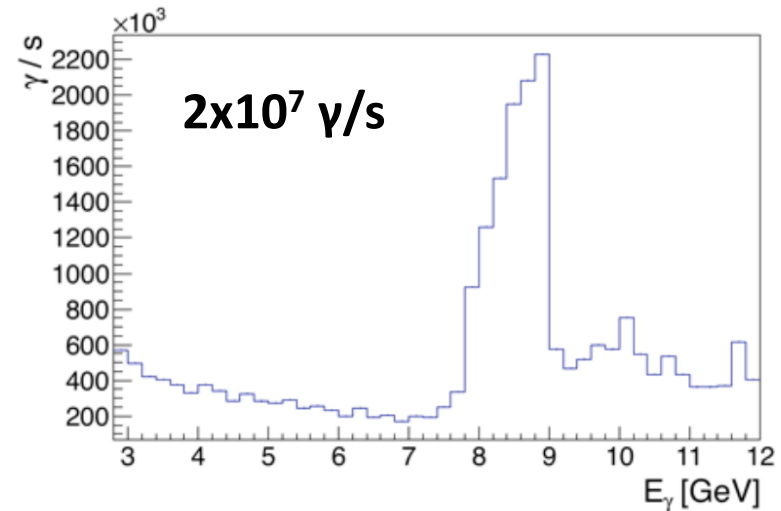


Proposed 30 days on H, D, ^4He , ^{12}C

Proton Reactions	Neutron Reactions
$\gamma + p \rightarrow \pi^0 + p$	$\gamma + n \rightarrow \pi^- + p$
$\gamma + p \rightarrow \pi^- + \Delta^{++}$	$\gamma + n \rightarrow \pi^- + \Delta^+$
$\gamma + p \rightarrow \rho^0 + p$	$\gamma + n \rightarrow \rho^- + p$
$\gamma + p \rightarrow K^+ + \Lambda^0$	$\gamma + n \rightarrow K^- + \Lambda^0$
$\gamma + p \rightarrow K^+ + \Sigma^0$	$\gamma + n \rightarrow K^0 + \Sigma^0$
$\gamma + p \rightarrow \omega + p$	—
$\gamma + p \rightarrow \phi + p$	—

Target	Thickness [cm] / % X_0	Atoms/cm ² for the given target thickness	EM bkg. rel. to GlueX	Neutron bkg. rel. to GlueX
D	30 / 4.1	1.51×10^{24}	0.5	1.3
^4He	30 / 4	5.68×10^{23}	0.5	1
^{12}C	1.9 / 7	1.45×10^{23}	1	0.8
LH	30 / 3.4	1.28×10^{24}	1	1*

Target	$\gamma + n \rightarrow \pi^- p$		$\gamma + n \rightarrow \rho^- p$		PAC Days
	MF	SRC	MF	SRC	
D	13,600	750	57,000	3,000	5
^4He	16,000	840	68,000	3,500	10
^{12}C	8,900	2,800	37,000	11,000	12
Calibration, commissioning, and overhead:					3
Total PAC Days:					30



Approved for 15 days

How do we want to use the 15 days?

- What physics do we hope to accomplish (target-dependent)?
- Deuterium is useful for all calibrations, normalizations, etc
- Carbon is good for exploring nuclear targets (for future experiments)
- ^4He has some overall density normalization issues-maybe not a problem for us?
 - **More detail on calibration?**

Target	Low XS		High XS		PAC Days
	MF	SRC	MF	SRC	
D	13,600	750	57,000	3,000	5
^4He	16,000	840	68,000	3,500	10
^{12}C	8,900	2,800	37,000	11,000	12
Calibration, commissioning, and overhead:					3
Total PAC Days:					30

Possibility:

- 5 days on D (incl empty target)
- 2 shifts for target change to ^4He
- 1 days ^4He including Compton calibration(*?)
- 1 day to change to ^{12}C
- Rest of days on ^{12}C