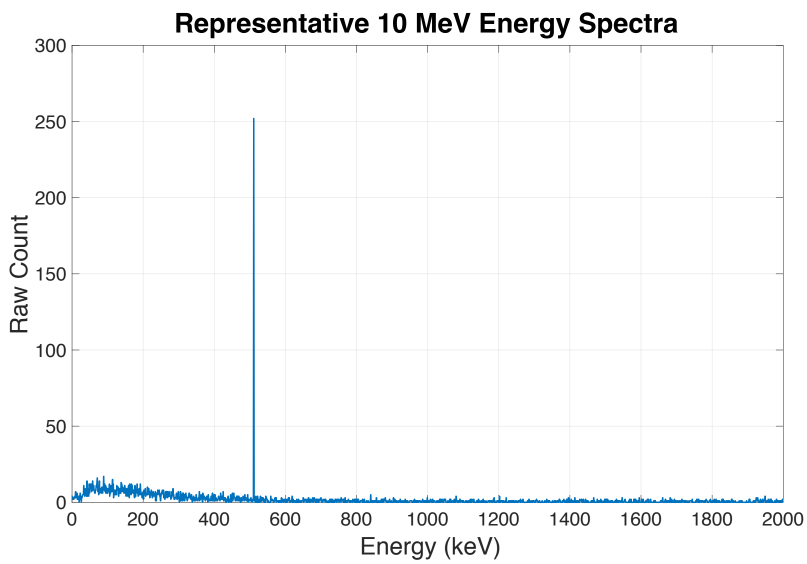
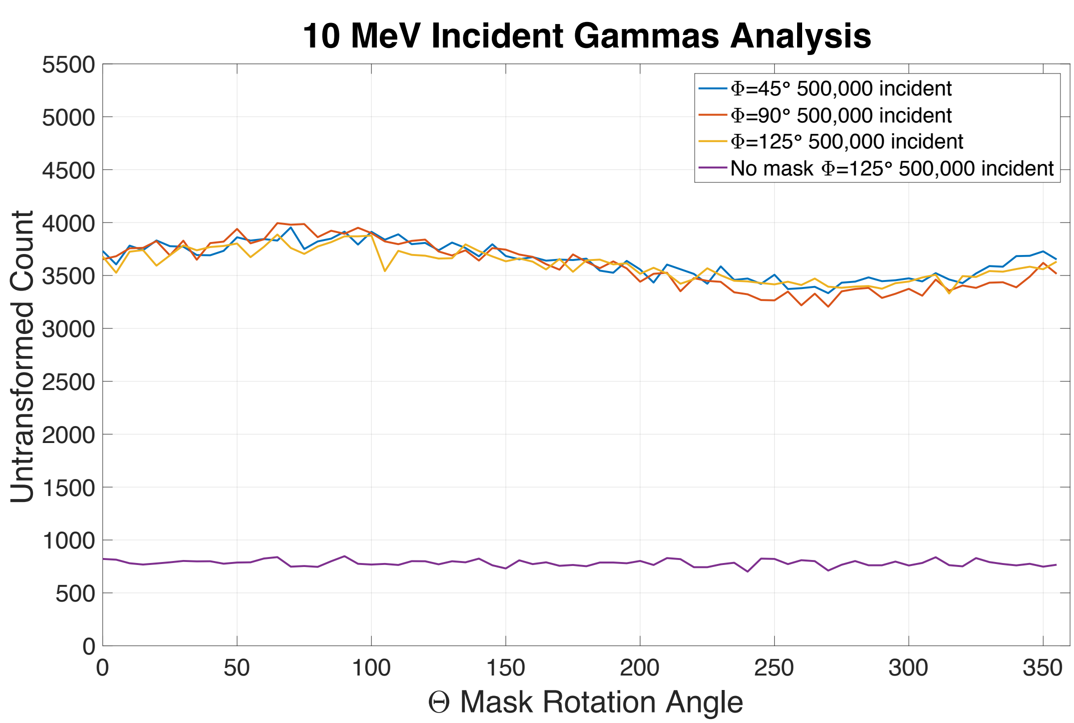
ADDITIONAL ANALYSIS

Question 1: Would the current system work for gammas of significantly higher energy?
Answer 1: No. The DRCs become indistinguishable and no longer depend on mask thickness between source and detector. DRCs follow the same trends for all Φ, which just depends on the orientation of the source with respect to the detector as the pair produced e^-/e^+ are produced, resulting in annihilation gammas.

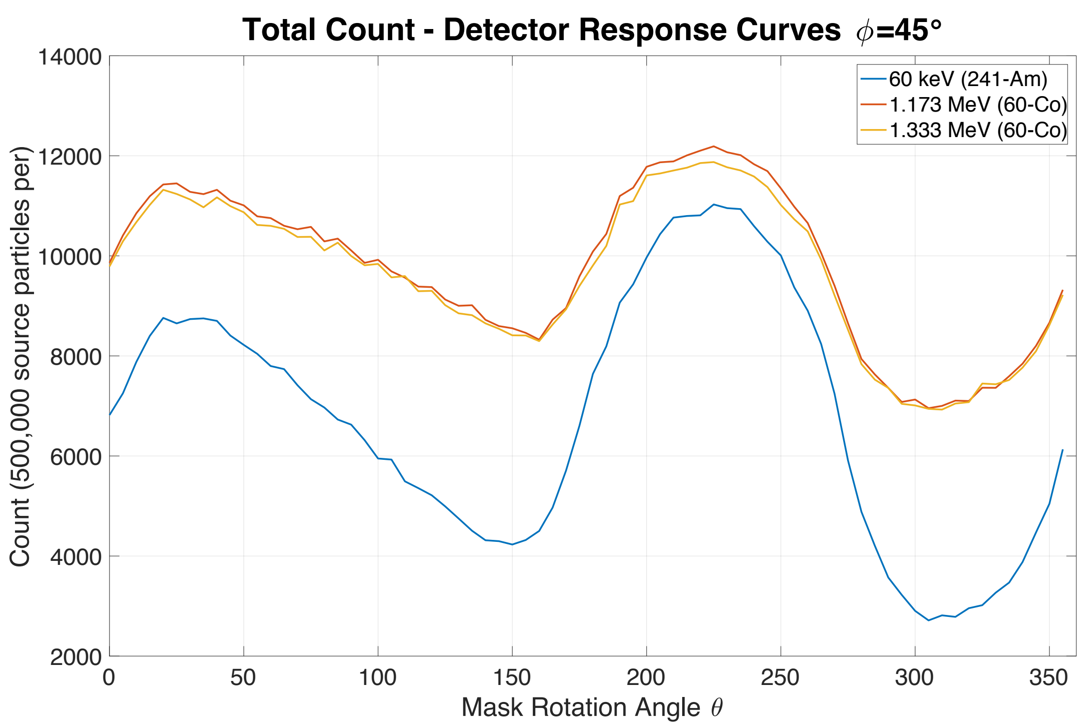




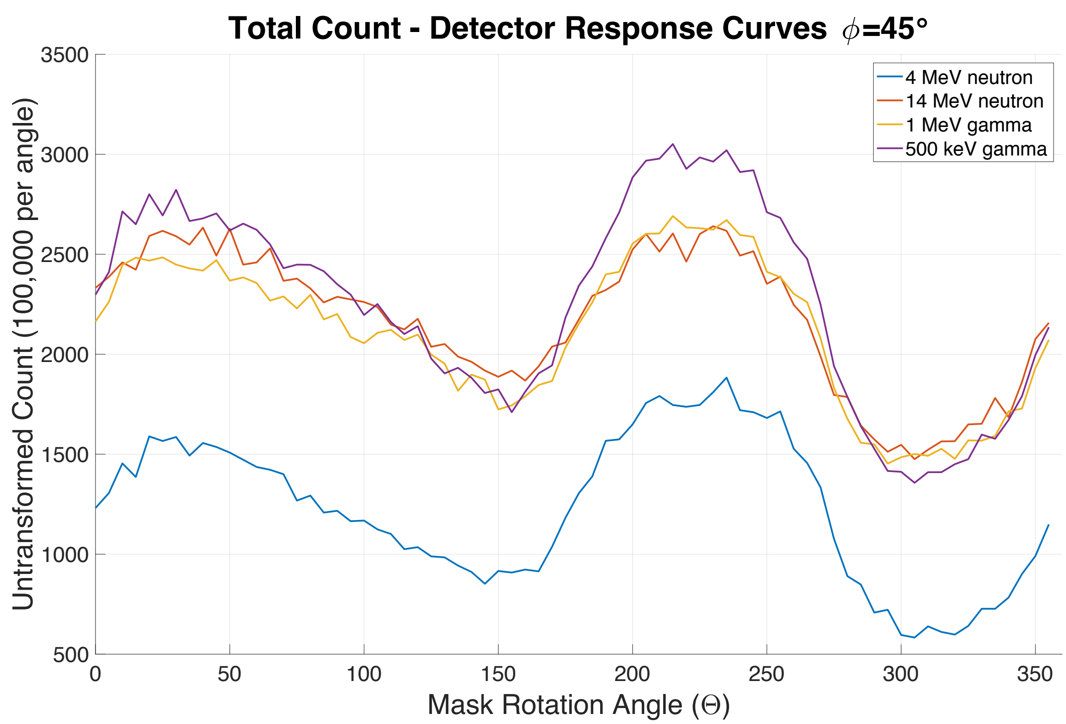
Question 2: What is the overall efficiency of the system?
Answer 2: Of those that impinge on the scatter mask, below are the percentages of those that deposit some amount of energy in the mask.

Incident Particle	Efficiency Average
60 keV Gamma	1.9%
662 keV Gamma	3.3%
1333 keV Gamma	3.0%
4 MeV Neutron	2.2%
14 MeV Neutron	3.8%

Question 3: Do you get distinguishable DRCs for moderately higher and lower gamma energies?
Answer 3: Yes, the below chart uses any deposition in the detector as a count (rather than a FEP count). It maintains the current mask and detector composition and dimensions. Distinguishable DRCs are obtained.



Question 4: Do you get distinguishable DRCs for neutrons?
Answer 4: Yes, the below chart uses any deposition in the detector as a count (rather than a FEP count). It maintains the current mask and detector composition and dimensions, but replaces the NaI detector material with $Cs_2LiLaBr_6$. Distinguishable DRCs are produced.



Question 5: Why does the RSM system work for neutrons?
Answer 5: It works very much like it does for gammas in that the amount of material impacts scatter of incident radiation into or out of the line of sight of the detector. Below is a histogram for the angle of scatter for neutrons in the system as a function of mask rotation angle for different neutron energies.