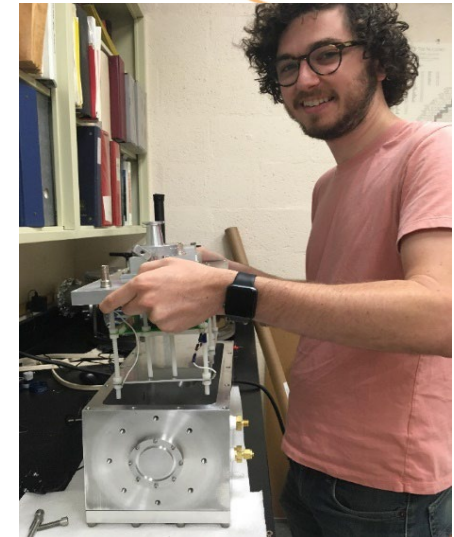
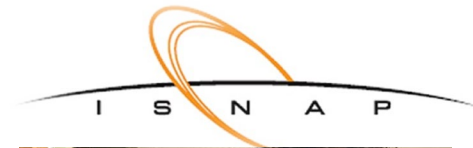


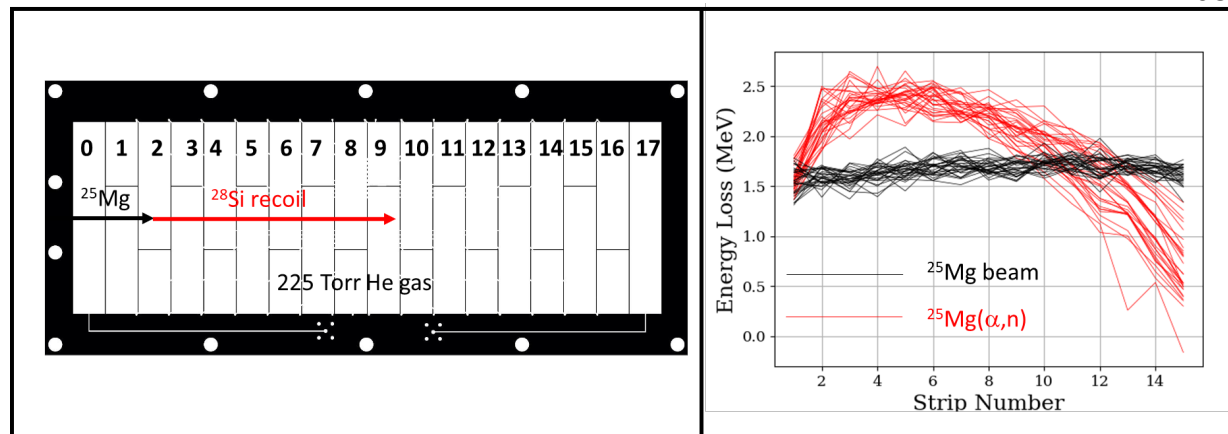
# ATHENA used in first experiments

ATHENA (the Active Target High Efficiency detector for Nuclear Astrophysics) was recently commissioned and used for a  $^{12}\text{C}+^{12}\text{C}$  fusion experiment. The detector uses the sudden change in ionization to determine the total cross section of a nuclear reaction as the beam slows down and eventually stops in the gas target. ATHENA will be used with TriSol radioactive ion beam experiments at the NSL to study explosive nucleosynthesis processes.

The first science campaign involved measurements of the  $^{25,26}\text{Mg}(\alpha,n)^{28,29}\text{Si}$  cross sections that impact estimates of  $^{26}\text{Al}$  production in various astrophysical sites.



Drew Blankstein showing the assembly of ATHENA.



D. Blankstein et al., Nucl. Instrum. Methods A **1047**, 167777 (2023).

