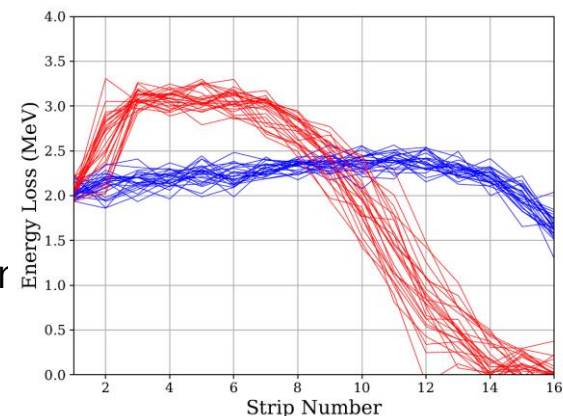


First Measurement of $^{25,26}\text{Mg}(\alpha, n)$ via Direct Recoil Detection

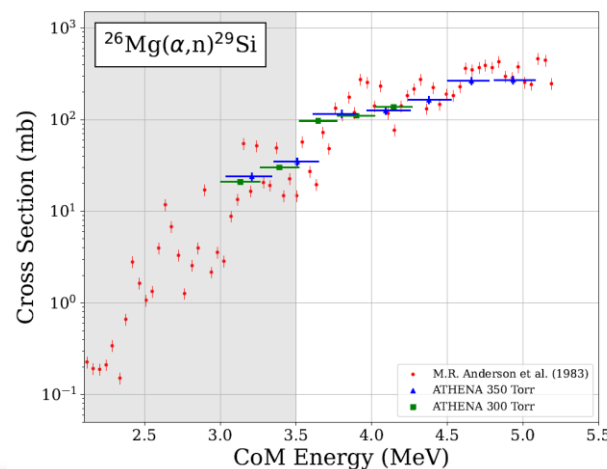
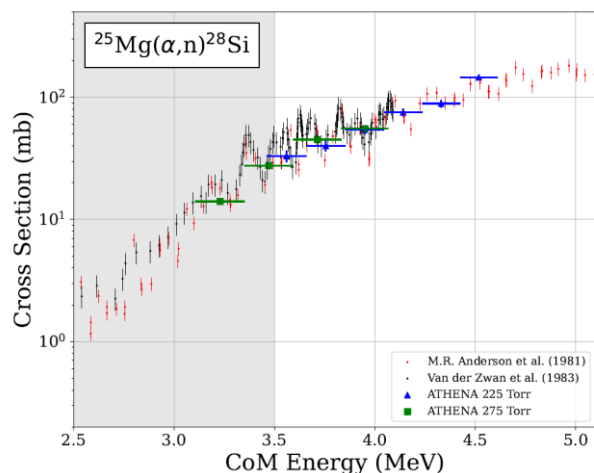


The $^{25,26}\text{Mg}(\alpha, n)^{28,29}\text{Si}$ reactions strongly affect ^{26}Al production in massive stars. However, previous results showed large disagreements with each other. All previous studies had relied on neutron detection and inherently contained uncertainties resulting from the unknown neutron angular distributions, neutron detector efficiencies, and the undiagnosed contributions of the contaminants in Mg targets.

We have made the first direct recoil detection measurement of these cross-sections at the NSL taking advantage of the **ATHENA** active target detector.



Energy loss as a function of strip in ATHENA. The beam is shown as a blue trace while reaction events are shown in red.



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