

Structure of $A=35$ nuclei following ^{35}Mg decay

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An experiment was conducted at TRIUMF laboratory using the GRIFFIN spectrometer to study the decay of ^{35}Mg . Isotopes in its decay chain include $^{35,34,33}\text{Al}$, $^{35,34,33}\text{Si}$, and $^{35,34,33}\text{P}$, which are populated via beta decay, beta-delayed neutron emission, and beta-delayed two neutron emission. Analysis was done on the full data set, including tagging neutrons with a new Organic Glass Scintillator (OGS) detector to cleanly separate out the beta-delayed neutron emission daughters as well as extracting the beam intensity, branching ratios, and half-lives of ^{35}Mg , ^{35}Al , and ^{35}Si .

From the analysis, gamma-gamma coincidence spectra revealed new energy level transitions for both ^{35}Al and ^{35}P . Fitting the decay data using the Bateman Equations allowed us to extract the beam intensity which provides an absolute decay rate to help determine the absolute intensity for the branching ratios and quantify the ground state feeding. The current state of the analysis will be presented.