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## New measurements of the $^{17}\text{O}(\alpha,\gamma)^{21}\text{Ne}$ reaction

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s-process nucleosynthesis can be influenced by so-called 'light element neutron poisons', which absorb free neutrons before they can capture onto iron-peak seed nuclei. The  $^{16}\text{O}(n,\gamma)$  reaction is one such neutron poison reaction. However, free neutrons can then be released back into the star via  $^{17}\text{O}(\alpha,n)^{20}\text{Ne}$ . The ratio of the neutron and gamma outgoing channels in  $^{17}\text{O} + \alpha$  reactions is therefore important in determining the effectiveness of  $^{16}\text{O}$  as a light element neutron poison, since the  $^{17}\text{O}(\alpha,\gamma)^{21}\text{Ne}$  channel would 'lock-up' neutrons in light elements. In this talk, two studies performed at TRIUMF targeting resonances in the  $^{17}\text{O}(\alpha,\gamma)^{21}\text{Ne}$  reaction will be presented: a direct measurement with DRAGON and a transfer measurement with EMMA+TIGRESS. The latter experiment is aimed at determining the properties of low-energy resonances, which would be otherwise inaccessible using direct methods.

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