

Abstract for an Invited Paper  
for the NWS06 Meeting of  
The American Physical Society

### **Radiative Capture Rates from DRAGON: Nova and Supernova Diagnostics**

CHRIS RUIZ, TRIUMF

The DRAGON recoil separator facility at TRIUMF measures radiative alpha and proton capture reactions of astrophysical importance in inverse kinematics. This is done using radioactive and stable ion beams produced and accelerated using the ISAC (Isotope Separator and ACcelerator) facility. Over the last few years, the DRAGON collaboration has embarked on a program to measure a variety of reactions considered vital to the understanding of various astrophysical scenarios. In particular, we have tried to focus partly on those reactions involved in the creation and destruction of important astrophysical gamma-emitters such as  $^{22}\text{Na}$ ,  $^{26}\text{Al}$  and  $^{44}\text{Ti}$ . Such radionuclides are crucial to the understanding of novae and supernovae through their potential for detection with space-based gamma-ray observatories enabling the validation of stellar models. With particular emphasis on the recent  $^{26g}\text{Al}(p,\gamma)^{27}\text{Si}$  measurement, we will outline the methodology behind making such measurements with DRAGON, discuss the results obtained in recent experiments, and put forward the interpretations for the possible implications these results have on the understanding of certain astrophysical scenarios.