

Abstract Submitted  
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**Low Energy  $^{20}\text{Ne}(p,\gamma)^{21}\text{Na}$  Direct Capture Cross-Section Measurement** STEPHANIE LYONS, RICHARD DEBOER, JOACHIM GOERRES, University of Notre Dame, ANTONIOS KONTOS, MIT Kavli Institute, EDWARD STECH, MICHAEL WIESCHER, University of Notre Dame — In stars whose stellar temperatures is greater than 0.05GK, hydrogen burning can proceed via the NeNa cycle. This cycle contributes to the synthesis of Ne, Na, and Mg isotopes. Direct capture and the high energy tail of a subthreshold resonance dominate the stellar reaction rate for  $^{20}\text{Ne}(p,\gamma)^{21}\text{Na}$ , which is the first reaction in the NeNa cycle[1]. A recent study of the low-energy direct capture cross-section was performed at the University of Notre Dame using the 5MV accelerator and the newly refurbished Rhinoceros extended gas target [2]. Preliminary results from this campaign will be presented and discussed. [1] C. Rolfs et al., Nuclear Physics A241, 480 (1975). [2] C. Rolfs et al., NIM 157, 19 (1978).

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