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^{20}Ne(p,γ)^{22}Na and ^{22}Ne(p,γ)^{23}Na Reaction Study with 5U-4 St. Ana Accelerator STEPHANIE LYONS, JOACHIM GOERRES, HYO SOON JUNG, DAN ROBERTSON, KIANA SETOODEHNIA, ED STECH, MICHAEL WIESCHER, University of Notre Dame, ANTONIOS KONTOS, National Superconducting Cyclotron Laboratory — Hydrogen burning can proceed via the NeNa cycle in stars whose stellar temperature is greater than 0.05GK. The NeNa cycle is important for the nucleosynthesis of Ne, Na, and Mg isotopes. Direct capture and the high energy tail of a subthreshold resonance dominate the stellar reaction rate for ^{20}Ne(p,γ)^{21}Na. The strength of the non-resonant contributions were measured[1] relative to the resonance at 1.17MeV. Due to conflicting results,[2] we have remeasured the strength of this resonance relative to the 1.28 MeV resonance in ^{22}Ne(p,γ)^{23}Na using implanted neon targets. Study of this reaction has continued using the newly commissioned 5U-4 St. Ana Accelerator and re-furbished Rhinoceros Gas Target.[3]

[1]C. Rolfs et al., **Nuclear Physics A**241, 480 (1975)
[2]J. Keinonen et al., **Phys. Rev. C**15, 579 (1977)
[3]C. Rolfs et al., **NIM** 157, 19 (1978)

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