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Using Two-Proton Transfer to Study H and He Burning Reactions of Type-1 X-Ray Bursts[1] DOUGLAS SOLTESZ, THOMAS N. MASSEY, ALEXANDER VOINOV, ZACH MEISEL, Ohio Univ — The reaction rate of the ^{59}Cu(p,γ)^{60}Zn has been identified to have a significant impact on the light curve of X-ray bursts, controlling the reaction flow out of the Ni-Cu cycle impacting the late-time light curve. Using two proton transfer, ^{58}Ni(^{3}He,n)^{60}Zn can be used to study the ^{59}Cu(p,γ)^{60}Zn reaction. We are currently using the neutron evaporation spectrum from ^{58}Ni(^{3}He,n)^{60}Zn in order to extract the level density of ^{60}Zn and constrain ^{59}Cu(p,γ)^{60}Zn. To augment the (^{3}He,n) technique for lower level-density compound nuclides, a silicon detector array is currently being developed for use in determining charged-particle decay branching ratios from discrete states. The present status of data analysis and detector development will be discussed, as well as future plans.

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