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Construction of low current 30 keV proton accelerator for detection efficiency studies AMERICO SALAS BACCI, STEFAN BAESSLER, AARON ROSS, NICHOLAS ROANE, C.J. WHITAKER, University of Virginia — We have constructed a small ion source and proton accelerator at UVA. This accelerator is needed for the characterization of the detection efficiency of a large area, thick, 127-hexagonal segmented Silicon detector for the neutron beta decay "Nab" experiment that will be carried out at SNS, Oak Ridge National Laboratory in search of physics beyond the standard model. We will present the design, simulations, operation, and detection of 30 keV H^+ and $H_2{}^+$, as well as our efforts to stabilize and correlate both ion currents.

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