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Characterizing deuteron breakup on thin targets at 20  $MeV^1$ KRISTEN BROWN, Lamar High School, Arlington, Tx and LBNL, M.A. MCMA-HAN, DARREN BLEUEL, LAWRENCE HEILBRONN, LARRY PHAIR, LBNL, JOHN KEITH III, LBNL and UC Berkeley, L.A. BERNSTEIN, LARRY AHLE, JA-SON BURKE, JENNIFER CHURCH, LLNL, BETHANY LYLES, LLNL and UC Berkeley, IAN THOMPSON, University of Surrey — The breakup of a deuteron in the Coulomb field of a larger nucleus is a well-known phenomenon that has been studied for many decades. Deuteron breakup also has the potential of generating a forward-focused, relatively monoenergetic neutron beam at fluxes which are useful for many applications, including reactions on radioactive targets. However, most previous studies of this process have taken place at higher energies (Ed > 56 MeV) and using thick targets. In order to evaluate the efficacy of deuteron breakup as a neutron source, we have studied the break-up process by measuring proton energy spectra – with and without neutron coincidence – from 2 - 9 $^{\circ}$  in the laboratory using STARS (Silicon Telescope Array for Reaction Studies), on thin targets of Ti and Ta. Proton energy spectra and cross sections will be presented.

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