Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Using Rutherford Backscattering Spectroscopy to Characterize Targets for MTW[1] GUNNAR BROWN, BARAK STOCKLER, RYAN WARD, CHARLIE FREEMAN, STEPHEN PADALINO, SUNY Geneseo, COLLIN STILLMAN, STEVEN IVANCIC, S.P. REAGAN, T.C. SANGSTER, Laboratory for Laser Energetics — A study is underway to determine the composition and thickness of targets used at the Multiterawatt (MTW) laser facility at the Laboratory for Laser Energetics (LLE) using Rutherford backscattering spectroscopy (RBS). In RBS, an ion beam is incident on a sample and the scattered ions are detected with a surface barrier detector. The resulting energy spectra of the scattered ions can be analyzed to determine important parameters of the target including elemental composition and thickness. Proton, helium and deuterium beams from the 1.7 MV Pelletron accelerator at SUNY Geneseo have been used to characterize several different targets for MTW, including CH and aluminum foils of varying thickness. RBS spectra were also obtained for a cylindrical iron buried-layer target with aluminum dopant which was mounted on a silicon carbide stalk. The computer program SIMNRA is used to analyze the spectra.

[1]This work was funded in part by a grant from the DOE through the Laboratory for Laser Energetics.

Barak Stockler
SUNY Geneseo

Date submitted: 14 Jul 2017 Electronic form version 1.4