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Photodisintegration of Deuterium at Low Energies: Measurements of Cross Section and Fore-Aft Asymmetries Between E_γ of 2.44 and 4 MeV at the High Intensity γ-Ray Source (HIγS) M.W. AHMED, Duke University and TUNL, S.S. HENSHAW, B.A. PERDUE, S. STAVE, H.R. WELLER, Duke University and TUNL, J. LI, S. MIKHAILOV, Y. WU, Duke U. and DFELL — Data were taken recently at HIγS to obtain cross section and fore-aft asymmetry measurements in photodisintegration of the deuteron in the energy region of astrophysical importance. Linearly polarized γ-rays ($\Delta E/E \sim 3\%$) were incident on a thin D_2O target and the outgoing neutrons were detected using three Li-glass detectors placed in the plane of polarization at center-of-mass scattering angles (θ) of 54°, 88°, and 125°. A preliminary analysis indicates small, but non-zero, asymmetries. An outline of the analysis to extract asymmetry and cross sections within an error of $\sim$ 10 % will be presented. The acquisition and analysis of data used to extract the efficiency of the Li-glass detectors will also be presented. The significance of the asymmetry and cross section measurements will be discussed.

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