

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Laser Driven Neutron Generation at the Texas Petawatt ISHAY POMERANTZ, EDDIE MCCARY, ALEXANDER R. MEADOWS, ARANTXA CEPEDA LESTRADE, CLAY CHESTER, JOSE CORTEZ, GILLISS DYER, ERHARD GAUL, The University of Texas, Austin, Texas 78712, USA, DONALD C. GAUTIER, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, DAVID HAMILTON, The University of Texas, Austin, Texas 78712, USA, DANIEL JUNG, RAHUL SHAH, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, CHUNHUA WANG, The University of Texas, Austin, Texas 78712, USA, JUAN C. FERNANDEZ, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, TODD DITMIRE, MANUEL BJORN HEGELICH, The University of Texas, Austin, Texas 78712, USA — We realized a bright laser-driven neutron source at the Texas Petawatt laser facility. We investigated the interplay between ion- and x-ray- driven neutron production regimes, by scanning a large range of target thicknesses, converter materials and laser parameters. We employed a large suite of electron, ion, gamma and neutron diagnostics to obtain a complete characterization of the interaction energetics. Neutron yields in excess of 10^9 neutrons/shot with a fairly isotropic distribution were measured.

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Date submitted: 12 Jul 2013

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