Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Nucleosynthesis in Type II Supernova Explosions[1] CARRIE ELLIOTT, W. RAPHAEL HIX, A. HARRIS, A. MANNESCHMIDT, University of Tennessee, Knoxville — Type II are the most common class of the core collapse" supernova, involving the destruction of a high mass star ($> 8M_{\odot}$). Their death is a result of a self-gravitational force becoming unbalanced as fusion ceases in the stellar core, leading to the collapse of the core to form a neutron star. The propagation of the shock ignites fusion into heavier elements as it progress through the star. This process is the origin of most elements present in the universe. In recent years, the complex nature of the explosion (its hydrodynamics, transport of energy, and the created isotopes) have been studied with increasing physical fidelity. Detailed nucleosynthesis from models of these core collapse supernovae is calculated in a post-processing step, using thermodynamic trajectories. My work on the project has been to develop the tools to visualize the results of post-processing calculations in the 2D grid.

[1]National Science Foundation (NSF)

Carrie Elliott
University of Tennessee, Knoxville

Date submitted: 25 Jul 2016 Electronic form version 1.4