

Simulating the Rapid Neutron Capture Process

Dakota Bowser

TTU Physics

The origin of heavy elements is still shrouded in mystery. However, it is theorized that neutron capture processes are the source of these elements. The rapid neutron capture process requires unique astrophysical environments to occur, so where it occurs is still a mystery to us. Using a nuclear reaction network called SkyNet, I simulated rare astronomical events to observe the rapid neutron capture process and how different variables can affect the final abundances.