

Abstract Submitted
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CASPAR - Nuclear Astrophysics Underground¹ CHAMAKA SENARATH, South Dakota Sch Mines Tech, CASPAR COLLABORATION — The CASPAR mainly focuses on Stellar Nucleosynthesis, its impact on the production of heavy elements and study the strength of stellar neutron sources that propels the s-process, $^{13}\text{C}(\alpha,n)^{16}\text{O}$ and $^{22}\text{Ne}(\alpha,n)^{25}\text{Mg}$. Currently, implementation of a 1MV fully refurbished Van de Graaff accelerator that can provide a high intensity beam, is being done at the Sanford Underground Research Facility (SURF). The accelerator is built among a collaboration of South Dakota School of Mines and Technology, University of Notre Dame and Colorado School of Mines. It is understood that cosmic ray neutron background radiation hampers experimental Nucleosynthesis studies, hence the need to go underground in search for a neutron free environment, to study these reactions at low energies is evident. The first beam was produced in the middle of summer 2017. The entire accelerator will be run before the end of this year. A detailed overview of goals of CASPAR will be presented.

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