

Abstract Submitted
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LENA II: A New Facility for Nuclear Astrophysics¹ A.E. CHAMPAGNE, C. ILIADIS, R.V.F. JANSSENS, T.B. CLEGG, Univ of NC - Chapel Hill, C. WESTERFELDT, T. CHAPPELOW, Duke Univ., TUNL — The dual-accelerator, Laboratory for Experimental Nuclear Astrophysics (LENA) was built to allow direct measurements of astrophysically-interesting cross sections and has been used to study nucleosynthesis and stellar evolution in a variety of scenarios. A unique feature of LENA has been its high-current, 230-kV ECR accelerator, which when combined with a γ -ray coincidence spectrometer, permits measurements at sensitivities that rival what can be achieved at existing underground facilities. We are in the process of designing and building a new facility that replaces the current one, LENA II. LENA II will also feature two accelerators: An upgraded ECR accelerator and a 2-MV Singletron accelerator. The ECR upgrade is intended to produce H beams with DC currents of up to 20 mA and with the ability to produce pulsed beams that will allow for further reductions in detected room and cosmic-ray backgrounds. The Singletron accelerator (currently under construction at High Voltage - Europa) is an entirely new design, combining high beam intensities with ns pulsing. This talk will describe the capabilities of LENA II and give an example of experiments that will be made possible by this new facility.

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