

Abstract Submitted
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The Heavy Photon Search Experiment CAMERON BRAVO, SLAC, HEAVY PHOTON SEARCH (HPS) COLLABORATION — The Heavy Photon Search (HPS) experiment searches for an electro-produced dark photon using an electron beam provided by the CEBAF accelerator at the Thomas Jefferson National Accelerator Facility. HPS has successfully completed two engineering runs. In 2015 using a 1.056 GeV, 50 nA electron beam, 1.7 days (10 mC) of data was obtained and 5.4 days (92.5 mC) of data was collected in 2016 using a 2.3 GeV, 200 nA electron beam. In addition, HPS has completed its first physics run in the summer of 2019. HPS looks for dark photons through two distinct methods, a resonance search in the e^+e^- invariant mass distribution above the large QED background and a displaced vertex search for long-lived dark photons. HPS employs a compact spectrometer, matched to the forward kinematic characteristics of A' electro-production. The detector consists of a silicon tracker for momentum analysis and vertexing and a lead tungstate (PbWO_4) electromagnetic calorimeter for particle ID and triggering. Both analyses are complete for the 2015 engineering run and demonstrate the full functionality of the experiment that will probe unexplored parameter space with more luminosity. Results from the 2015 dataset will be presented as well as an update on 2016 analysis and the 2019 physics run.

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