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Phase II of the HAYSTAC Experiment DANIELLE SPELLER, Yale University, HAYSTAC COLLABORATION — The Haloscope At Yale Sensitive To Axion CDM (HAYSTAC) is a tunable microwave cavity axion search experiment sensitive to significant regions of the cosmologically relevant mass range for an axion dark matter candidate. In 2017, the HAYSTAC experiment reached sensitivities of order $2 \times 10^{-14}\text{GeV}^{-1}$ in the mass range 23.15 ¡ m_a ¡ 24.0 μeV. This mass range is an order of magnitude higher than reached by previously existing limits. HAYSTAC is now entering the second phase of operation, incorporating the improvements from the 2017 run with a new squeezed-state receiver system and significant upgrades to the cryogenics system. We discuss the current status of the HAYSTAC experiment and the expectations for Phase II.

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