Preliminary results from the PrimEx-*eta* Experiment in Hall D at Jefferson Lab

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The η meson is an interesting probe of fundamental symmetries in low-energy QCD. In particular, its radiative decay, $\eta \to \gamma\gamma$, proceeds primarily through the chiral anomaly and can be calculated in the framework of chiral perturbation theory. A precision measurement of this decay width will test our understanding not only of the chiral anomaly in QCD, but will also provide critical input into extracting the η-η' mixing angle and light quark mass ratio. The decay width has been measured in the past in both fixed-target experiments utilizing the Primakoff effect, as well as e^+e^- collider experiments, however the results from the two classes of experiments are in tension. To address this discrepancy and improve the overall precision of the decay width, the PrimEx-*eta* experiment has been conducted in Hall D at Jefferson Lab over the course of three phases between 2019 and 2022. In this talk we will present preliminary results for the η photoproduction cross section from a ^{4}He target at forward angles, and discuss a preliminary extraction of the radiative decay width.