

Abstract Submitted  
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**Search for Kilonovae in Dark Energy Survey Supernova Fields**

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— The Dark Energy Camera on the Blanco 4-m Telescope is an ideal instrument for identifying rapid optical transients with its large field of view and four optical filters. We utilize two seasons of data from the Dark Energy Survey to search for kilonovae, an optical counterpart to gravitational waves from binary neutron star mergers. Kilonova lightcurves from Barnes and Kasen inform our analysis for removing background signals such as supernovae. We simulate DES observations of kilonovae with the SNANA software package to estimate our search efficiency and optimize cuts. Finally, we report rate limits for binary neutron star mergers and compare to existing rate estimates.

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