

Abstract Submitted
for the OSF15 Meeting of
The American Physical Society

Searching for Trans-Neptunian Objects using the Dark Energy Survey ZACHARY ELLEDGE, Wayne State University — Trans-Neptunian objects are objects that reside between these two structures. They come from the Kuiper Belt and have a semi major axis that is greater than the orbit of Neptune (30 AU). To find these object I used the Dark Energy survey observations. The Dark Energy Survey is a five year survey started August 2013 and goes from August to February. It is located in Cerro Tololo observatory in Chile and uses the Blanco 4 meter telescope. It uses the imager DECam which contains 62 science CCDs with 520 megapixels and images 3 square degrees. The Dark Energy Survey is made of the Wide Survey which is a survey of 5000 square degrees of the sky and a supernova survey which is 10 3 square degree fields that are surveyed weekly. I used the never before used data from the wide field survey to find 16 Trans-Neptunian objects that had not been observed in more than 10 years. This made sure that they did not disappear due to a large positional uncertainty. I did this by writing a code that searched for objects that would fall the observations made by the Dark Energy Survey and then checked to see if they were there. After it pulled up another night that contained the same position and checked to see if the Trans-Neptunian object candidate was gone.

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Date submitted: 03 Sep 2015

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