ABSTRACT

TITLE:	Application of the Transit Method for Exoplanet Detection
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ABSTRACT: Data was collected on the star WASP-43 in order to verify the presence of an expected orbiting planet, WASP-43 b, using the Photometric Transit Method. SuperWASP data was used to predict the transit time of the exoplanet, which was observed several times throughout the course of 5 months. Due to time and equipment constraints, only verification of the differential change in magnitude was possible. To accomplish this project, the coordinates for a star in the SuperWASP field of view that was predicted to dim in brightness at a time and date between November 2013 and March 2014 was acquired. The star was observed at the time and date predicted by the SuperWASP data using the telescope at the Fort Lewis College Observatory. The transit was recorded with a series of images that were taken with a CCD camera through the telescope as the planet traversed the star. The images were processed and the relative brightness of the star was recorded for each image during the transit. From these values for relative brightness, a light curve was created to visually show the starting and ending times of the transit and the magnitude of the change in brightness during the transit. The observed average change in brightness of the transit matches the data predicted by the SuperWASP program within a margin of uncertainty.