Abstract Submitted
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Software Improvement In Differential Photometry[1] KEVYN WRIGHT, Ohio State — Until about 15 years ago, there were no planets known besides those orbiting our own sun. Since then, advances in technology have made it possible to detect many more planets and has changed our notions of how planets form and evolve. Most of them have been detected using the radial-velocity method, watching the star wobble due to the gravitational effect of the planet. This, however, requires a large telescope, and is thus limited. The KELT (Kilodegree Extremely Little Telescope) project uses the transit method to detect planets. It entails watching a star for an extended period of time to record the slight dip in magnitude that occurs when the planet moves in front of the star. It can be done with much smaller telescopes, meaning there is a possibility for a lot more observation. While useful, a problem is that this dip can be less than 1%, meaning that the software used to process the data must be very specialized, making maintenance of the code a job all its own. At Brigham Young, we followed up on some of the more interesting KELT targets. So far, the code used for the process has been modified to specialize it to this task and made more accessible to further modifications. The decentralized nature and the wealth of information of the KELT project means that this code is important to make sure the data can be processed in an efficient manner, but can also be adapted by others and further improved.

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