The Periodic Effect of a Star's Change in Magnitude Due to a Planet's Transit: A Search for Habitable Planets

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The original question that was addressed was is an amateur astronomer able to locate and confirm an exoplanet of sufficient quality? If so, based on the calculations of the planet's radius in ratio to the sun, determining the planet's size, is the planet habitable? The original hypothesis is similar to the question asked, if if based on accurate calculations and proper procedures of confirming a recently discovered exoplanet, then can an amateur astronomer find a new exoplanet using the same procedure? A brief description of the tedious procedures include, setting up the equipment, polar aligning the telescope, setting up auto-guider, syncing the camera, the computer used and the equatorial mount on the telescope together. After the set-up was complete with all the software being used, the coordinates of HAT-54-P was entered so that the telescope could slew to the coordinates, then 226 images were taken and 20 reference stars were selected and calculated. Then data analysis was performed to create a light curve of HAT-54-Pb. The data analysis was then sent in to be submitted into the ETD (Exoplanet Transit Database), to be the first light curve for HAT-54-Pb in the database. The principal results were that the exoplanet was able to be confirmed, however, due to the astronomical pressure from its size (being roughly the size of Jupiter). Concluding that HAT-54-P has been confirmed, however, it not habitable.

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