The Search and Discovery of CoRoT 29: Photometry of Transiting Exoplanets Using the CoRoT and Faulkes Telescopes

With the first confirmed discovery of an exoplanet in 1992, searches for planets revolving around stars outside our solar system increased dramatically due to the success of new detection and observing techniques. The CoRoT (Convection Rotation and planetary Transits) space telescope as well as the Faulkes land-based telescopes are used to detect and confirm discovery of exoplanets using the transit method and photometry of star images taken from space and on Earth. Over the past year multiple sets of images of different star fields were recorded. Each set of images was analyzed using Mirametrics photometry software to measure the light intensity of the individual stars in each large field. Scatter plot graphs of photometry data over time were studied in great detail. Dips in light intensity indicating a possible planetary transit in front of a star were studied, analyzed, and compared. After nearly a thousand images of many different stars were studied, possible extrasolar planet candidates were detected. One of the primary exoplanet candidate stars (CoRoT29) in the Ophiuchus constellation was further targeted and photographed by the Faulkes Telescope South on two dates. Photometry was performed on CoRoT29 and many other nearby stars in these many images. A few months ago scientists supervising the CoRoT project confirmed the existence of exoplanet CoRoT29 and recognized this project's contributions towards its discovery and verification. These data were used to make a significant increase in the precision of the CoRoT29's transit ephemeris (timing), and confirm the asymmetry of the transit.

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