

Literature Review

Exoplanets are planets that orbit star systems other than our own. Exoplanets can be detected in a variety of ways, one of which is via photometric transits. Transits occur when a star system is aligned with Earth such that a planet orbiting will appear to pass in front of, or transit, the host star. In this way, the planet blocks some of the light from the host star, causing a distinctive dip in the light curve (Schneider, J.; Dedieu, C.; Le Sidaner, P.; Savalle, R.; Zolotukhin, I., 2011). The planets that can be detected with this method are occasionally quite different from Earth (Marcy, G.; Butler, R. P.; Fischer, D.; Vogt, S.; Wright, J. T.; Tinney, C. G.; Jones, H. R. A., 2005), which makes our own star system seem atypical by comparison (Udry, Stéphane; Santos, Nuno C., 2007).

Research in exoplanets can help further understanding of the underlying mechanisms of planet formation (Schneider, J.; Dedieu, C.; Le Sidaner, P.; Savalle, R.; Zolotukhin, I., 2011). To fully understand how planets form, it's useful to know how similar planets in other star systems are to our own Earth. By analyzing the light curve produced when an exoplanet transits its host star, the mass and radius of the planet can be deduced (Weiss, Lauren M.; Marcy, Geoffrey W., 2014). The mass and radius of an exoplanet can be used to determine many more properties about the planet itself such as its composition (Seager, S.; Kuchner, M.; Hier-Majumder, C. A.; Militzer, B., 2007). Knowing more about the properties of planets outside our solar system can help to better understand the planets within it.

References

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