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Title: Do Large Planets with Short Orbital Periods Affect the Rotational Velocity of a Star?  
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Abstract: The KEPLER space mission was designed to determine the frequency of Earth-size planets orbiting in the habitable zone of Sun-like stars. KEPLER has collected data on over 150,000 stars. The purpose of the present study was to determine whether close-in, large (massive) planets can effect the host star's rotational velocity. A total of 339 stars, with 592 orbiting planets, were identified for this study based on the availability of ground-based spectroscopy providing stellar properties. Using the IRAF, the spectra were analyzed to determine the rotational velocity of the sample stars that were then compared to the properties of their orbiting planets. A relatively strong relationship between rotational velocity and, say, close-in large planet orbital period could indicate that the mass of a planet and it's orbital distance do affect the rotational velocity of the host star. No such relationship was found. Additionally, we examined the relationship between a planet's radius and the planet's orbital period. This work was used to search for a correlation between the size of a planet and its orbital location. A tendency for smaller planets to possess shorter orbits and larger planets to possess larger orbits was supported by the data.

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