



Can We Find an Exomoon?

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Over the past two decades, planet-hunting has become a highly successful enterprise with numerous detection techniques yielding fascinating discoveries. Despite these successes, an ocean of challenges and questions remain within this young field. In our own Solar System, we observe that most planetary bodies harbour one or more satellites and we may speculate that extrasolar moons ('exomoons') are common throughout the Galaxy. Could such exomoons be detected in the coming years? To achieve such a formidable challenge, novel and cunning techniques are required to eek out the whisper of an exomoon's presence. Through coupling transit timing and duration measurements, we propose a solution to this detection challenge. The method is capable of detecting habitable zone exomoons down to one fifth of the Earth's mass with the Kepler class photometry and is robust against false positives. We provide an outline of this unique detection method and discuss the implications, limitations and future potential.