Capability of Modern Technology to Detect Exoplanets Orbiting Black Holes

Mills, Brian

Toll, Spencer

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We explore the possibility of detecting exoplanets that orbit black holes with current technological limits. We used Python to create mathematical models of two common detection methods, the transit method and the radial velocity method. A Monte Carlo analysis was used to test the effectiveness of each method on randomly generated black hole-planet systems. We found that it was possible to detect exoplanets that orbit black holes using both methods, the transit method being more successful. The data we obtained provides good insight into the nature of black hole-planet systems.

Awards Won:

Third Award of $1,000