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Detection of Exoplanet as a Binary Source of Microlensing Events in WFIRST Survey FATEMEH BAGHERI, University of Texas at Arlington, SEDIGHE SAJADIAN, Isfahan University of Technology, SOHRAB RAHVAR, Sharif University of Technology — We investigate the possibility of exoplanet detection orbiting source stars in microlensing events through WFIRST observations. We perform a Monte Carlo simulation on the detection rate of exoplanets via microlensing, assuming that each source star has at least one exoplanet. The exoplanet can reflect part of the light from the parent star or emit internal thermal radiation. In this new detection channel, we use microlensing as an amplifier to magnify the reflection light from the planet. In the literature, this mode of detecting exoplanets has been investigated much less than the usual mode in which the exoplanets are considered as one companion in binary lens events. Assuming 72 days of observation per season with the cadence of 15 minutes, we find the probability of rocky planet detection with this method to be virtually zero. However, there is non-zero probability, for the detection of Jovian planets. We estimate the detection rates of the exoplanets by this method, using WFIRST observation to be 0.012

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