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A potential of the microlensing exoplanet observation including free-floating planets by JASMINE telescope collaborating with Roman

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JASMINE is an infrared space-based telescope mission being planned in Japan. The telescope is expected to orbit around the Earth and to observe microlensing events in parallax with other space-based telescopes located away from the Earth, such as *Roman*. As of now, the proposed *JASMINE*'s target regime can support one of the *Roman*'s observation fields close to the Galactic center, and its cadence and exposure time for the microlensing event observation are subject to change. Here, we test and propose a reasonable combination of the cadence and exposure time, particularly with the aim of exoplanet detection. We find two reasonable combinations: 15-minute cadence for 100-second exposure, and 25-minute cadence for 30-second exposure. These settings of the cadence and exposure time are expected to detect $\sim$ 120 bound exoplanets and a few thousand free-floating planets during the simultaneous operation with *Roman* and *JASMINE*. Because the observation close to the Galactic center is difficult due to a strong extinction, *JASMINE*'s follow-up is worth accepting. It will support an increase in the number of examples for the study of exoplanet demographics.

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