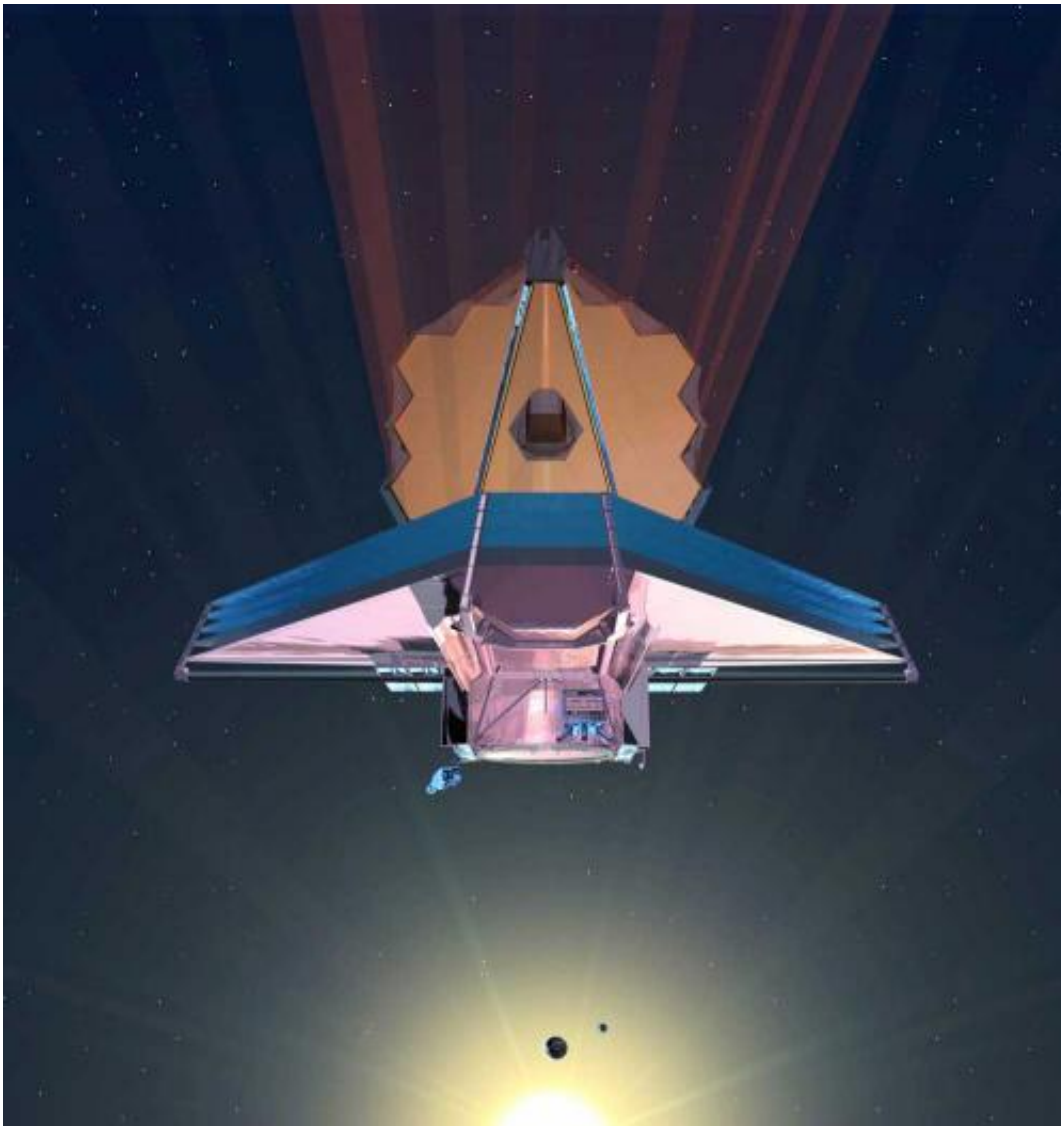


James Webb Space Telescope to offer better view of Near Earth Objects

February 9 2016



Artist's concept of the James Webb Space Telescope in orbit. Credit: NASA

NASA's James Webb Space Telescope will allow scientists to better study and understand Near Earth Objects (NEOs), a new paper by a Planetary Science Institute researcher said.

NEOs, asteroids and comets whose orbits bring them close to the Earth's orbit, are tracked to determine potentially destructive collisions with Earth. NEOs are also seen as a possible source of water and other materials needed to allow human-tended space missions to distant worlds.

From its orbital position, JWST could have access to observe nearly three-fourths of NEOs, and nearly all asteroids and comets beyond Mars could be observed.

"JWST will have unprecedented sensitivity which will enable photometric observations of smaller, meter-sized NEOs," said PSI Research Scientist Cristina A. Thomas, lead author of "Observing Near-Earth Objects with the James Webb Space Telescope" that appears in a special issue of the Publications of the Astronomical Society of the Pacific.

"JWST has strict requirements on pointing which could be problematic for the fastest moving NEOs, but our study found that approximately 75 percent of known NEOs would meet the observability requirements during a given year," Thomas said. "JWST's sensitivity in infrared wavelengths will greatly enhance our understanding of the compositions of all asteroids and their thermal properties."

JWST is scheduled for launch in late 2018 and is designed for a five-year prime science mission that could potentially be stretched to 10 years.

"Near-Earth Objects are potential space resources and the James Webb

Space Telescope will be one of the best tools to identify these resources that will help humanity expand beyond the Earth into our Solar System," said PSI Research Scientist Vishnu Reddy, a co-author on the paper.

More information: Cristina A. Thomas et al. Observing Near-Earth Objects with the , *Publications of the Astronomical Society of the Pacific* (2016). [DOI: 10.1088/1538-3873/128/959/018002](https://doi.org/10.1088/1538-3873/128/959/018002) , On Arxiv: arxiv.org/abs/1510.05637

Provided by Planetary Science Institute

Citation: James Webb Space Telescope to offer better view of Near Earth Objects (2016, February 9) retrieved 16 June 2024 from <https://phys.org/news/2016-02-james-webb-space-telescope-view.html>

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