7.8: Mission Report 7 - The Galilean Moons of Jupiter

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7.8.1: D. Questions to be graded for accuracy. Show your work!

The James Webb Space Telescope (JWST) is the successor to the Hubble Space Telescope (HST). JWST is currently being developed by NASA scientists and engineers with a goal for a launch date in 2018. JWST will observe the sky in infrared wavelengths, using a much bigger mirror than HST. Unlike HST, which orbits fairly close to Earth (559 km away), JWST will be sent into orbit quite a bit further from Earth, at a distance of about 1.5 million km away from Earth. In fact, it is more helpful to think about JWST orbiting the Sun than orbiting the Earth. While in orbit, JWST will remain farther away from the Sun than the Earth is. JWST will “keep up” with the Earth as it orbits the Sun, so that the Earth will always lie between JWST and the Sun, as in the Figure below.

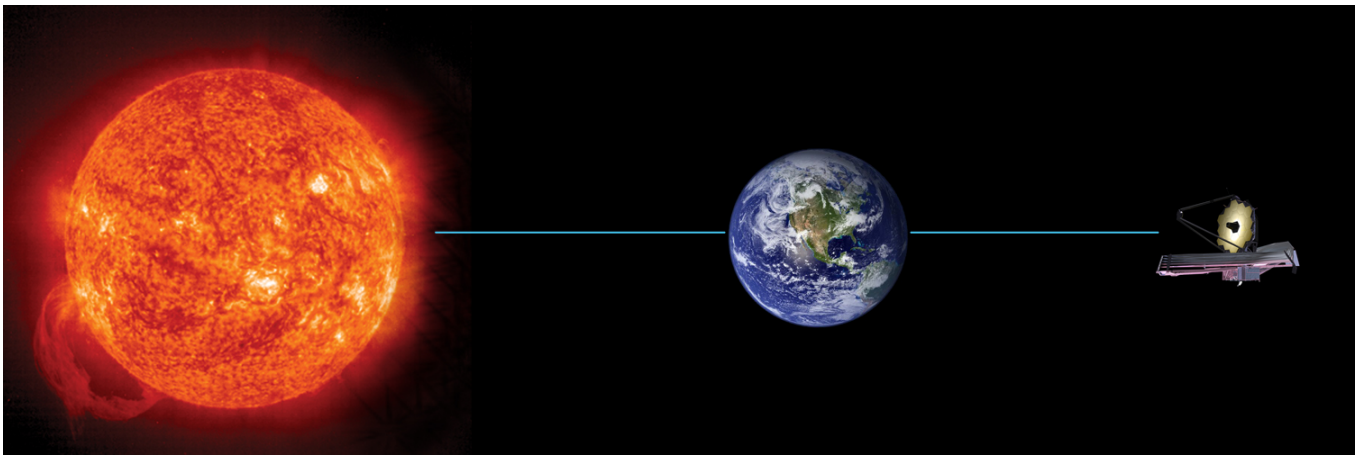

Figure 7.8.1 JWST will orbit the Sun, keeping up with the Earth. Drawing is not to scale. Credit: NASA/SSU/Aurore Simonnet

For a more detailed description of JWST's planned orbit, and a figure showing the Sun, Earth, and JWST, you can visit this website.

1. Force due to gravity.

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4. Total Energy

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