

WALL-E and EVE on their way to Mars with InSight

This illustration made available by NASA on March 29, 2018 shows the twin Mars Cube One spacecraft flying over Mars with Earth and the sun in the distance. | Photo Credit: [AP](#)

Named after the characters in the 2008 animated movie, two small satellites WALL-E and EVE hitched a ride on the Atlas V rocket that launched early Saturday from California with the Mars InSight lander. Similar in size to a briefcase or large cereal box, the satellites popped out from the rocket's upper stage after liftoff and are hightailing it to Mars, right behind InSight.

This is the first time little cube-shaped satellites, CubeSats as they're known, have set sail for deep space. The journey will span 6 1/2 months and 485 million kilometers.

Miniature satellites, or CubeSats, have been piggybacking on big-ticket space missions for well over a decade, providing relatively cheap and fast access to orbit for students and other out-of-the-mainstream experimenters. Until now, hundreds of CubeSats have been confined to Earth orbit. That is changing with NASA's Mars Cube One project, or MarCO.

The European Space Agency, meanwhile, has its CubeSat sights on the moon. A recent competition yielded two winning proposals – a CubeSat to explore the moon's far side from lunar orbit, and another to probe a permanently shadowed crater near the moon's south pole, also from lunar orbit. NASA is also looking to send CubeSats to the moon, as well as an asteroid.

It turns out that these twin cubes are equipped with the same type of cold gas propulsion system used in fire extinguishers to spray foam. In the movie WALL-E, the title character uses a fire extinguisher to propel through space. Team members couldn't resist the connection, thus the names WALL-E and EVE, after WALL-E's love interest, for the two mini-spacecraft.

WALL-E and EVE will trail a few thousand kilometers behind InSight en route to Mars. The two mini-spacecraft will also be a few thousand kilometers apart from one another. That's to prevent any collisions or even close calls. While that may seem far apart, it's actually fairly close by space standards, according to Brian Clement, an engineer on the project at NASA's Jet Propulsion Laboratory in Pasadena, California. While InSight will be stopping at Mars on Nov. 26, WALL-E and EVE will zoom past the planet from about 3,500 kilometers out.

Besides testing the cubes' maneuvering system, NASA wants to see if WALL-E and EVE can transmit data to Earth from InSight during its descent to Mars. If the experiment succeeds, it should take just several minutes for flight controllers to hear from the cubes. NASA will rely on the Mars Reconnaissance Orbiter already circling the planet as the main communication link with InSight during descent and touchdown. It will take a lot longer, though, to get confirmation. The beauty of a CubeSat relay system is that it could provide descent information at planets and other cosmic stop-offs lacking established communications.

Once past Mars, WALL-E and EVE will remain in an elliptical orbit around the sun, together for years to come. But they won't work for long. Once they run out of fuel, they won't be able to point their solar wings toward the sun for recharging.

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