NASA recovers prized Kepler space telescope after emergency

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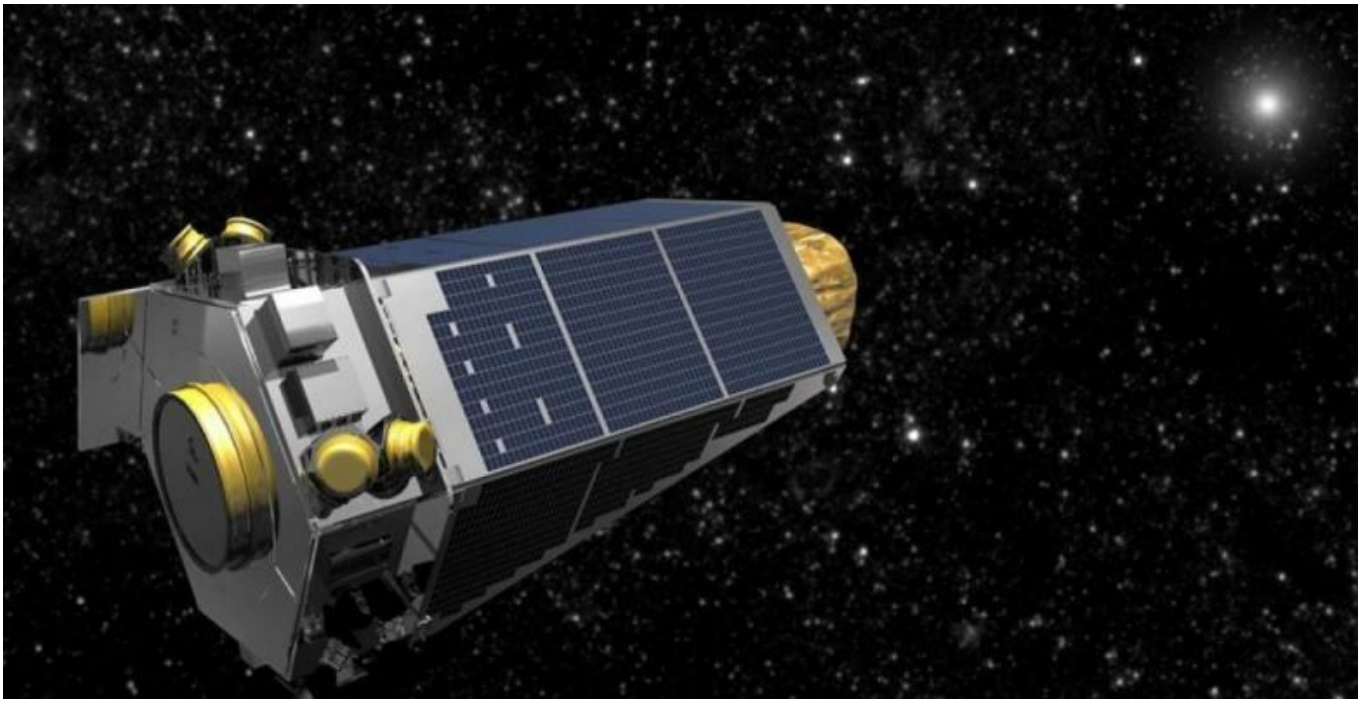

Original article, published 11 April:

Our primary planet-hunter may have bagged its last world.

Over the weekend, NASA reported that its Kepler space telescope, which is responsible for discovering nearly half of the 2000 or so known exoplanets, is in "emergency mode", and mission managers are fighting to fix it.

Kepler was launched in 2009 and operated successfully for four years. An issue with the spacecraft's reaction wheels, which keep it pointing steady at potential planet-hosting stars, brought its main mission to an end in 2013, but a clever fix using radiation pressure from the sun saw it reborn as K2 in 2014, allowing the spacecraft to continue its mission to find an Earth-like planet elsewhere in the cosmos.

Kepler in emergency mode

K2 was due to start a new job just this week, using the warping effects of gravity to aid the search for exoplanets. This requires a reorientation of the spacecraft, pointing it towards Earth, but when mission managers contacted the telescope last Thursday to begin the manoeuvre, they found it had entered an emergency mode around 36 hours earlier.

This condition is the lowest operational mode of the craft, and uses more of Kepler's precious fuel, making it a priority to get it fixed. Kepler is orbiting the sun 120 million kilometres from Earth, meaning manual repair is impossible.

Instead, the NASA team must attempt to upload commands for a remote fix, but even radio waves travelling at light speed take 13 minutes to make the round trip, meaning it is slow and painstaking work.