

The Voyager 1 spacecraft sent signals to Earth for the first time in 5 months

NASA received decoded data from Voyager 1 after humanity's most distant spacecraft in the universe experienced a communications loss five months ago.

Voyager 1 is currently about 24 billion km away from Earth and is 46 years old. This probe has shown many problems and signs of aging in recent years.



The latest problem encountered by Voyager 1 first occurred in November 2023, when the flight data system's telemetry modulation unit began sending an indecipherable repeating code pattern.

However, NASA's mission team received the first coherent data on the status of Voyager 1's technical systems on April 20. Everything they have seen so far suggests that Voyager 1 is healthy and strong. operates normally.

'Today is a great day for Voyager 1,' Linda Spilker, Voyager project scientist at JPL, said in a statement Saturday. 'We have regained contact with the spacecraft. And we look forward to receiving scientific data.'

After discovering the problem, the mission team attempted to send commands to reboot the spacecraft's computer system and learn more about the underlying cause of the problem.

The team sent a special command to Voyager 1 on March 1 and discovered the cause of the error in a chip. The loss of the chip's code rendered Voyager 1's scientific and technical data unusable.

Although the cause of the chip's failure is unknown, it could have been worn out or struck by an energetic particle from space, the team said.

Since there was no way to repair the chip, the team chose to store the affected code from the chip elsewhere in the system's memory. After determining the code needed to package technical data for Voyager 1, engineers sent radio signals to the spacecraft.

Given Voyager 1's great distance from Earth, it took the radio signal about 22.5 hours to reach the probe and another 22.5 hours for the return signal from the spacecraft to reach Earth.

On April 20, the team received a response from Voyager 1 indicating that the smart code modification had worked and that they could finally receive readable technical data from the probe again. .

Voyager 1 and its twin, Voyager 2, were launched in 1977. These are the longest operating spacecraft in human history. Voyager 2, operating normally, has traveled more than 20.3 billion kilometers from our planet.

Both spacecraft provided additional insights into our Solar System and beyond, after achieving their initial goals of flybys of Jupiter, Saturn, Uranus and Neptune decades ago.

The probes are currently flying through the unexplored outer space of the Solar System. Both are in interstellar space and are the only spacecraft to ever operate beyond the heliosphere.

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