

Voyager instrument cooling after heater turned off

January 18 2012



Artist's concept of NASA's Voyager spacecraft. Image credit: NASA/JPL-Caltech

(PhysOrg.com) -- In order to reduce power consumption, mission managers have turned off a heater on part of NASA's Voyager 1 spacecraft, dropping the temperature of its ultraviolet spectrometer instrument more than 23 degrees Celsius (41 degrees Fahrenheit). It is now operating at a temperature below minus 79 degrees Celsius (minus 110 degrees Fahrenheit), the coldest temperature that the instrument has ever endured.

This heater shut-off is a step in the careful management of the diminishing [electrical power](#) so that the [Voyager spacecraft](#) can continue to collect and transmit data through 2025.

At the moment, the spectrometer continues to collect and return data. It was originally designed to operate at temperatures as low as minus 35 degrees Celsius (minus 31 degrees Fahrenheit), but it has continued to operate in ever chillier temperatures as heaters around it have been turned off over the last 17 years. It was not known if the spectrometer would continue working, but since 2005, it has been operating at minus 56 degrees Celsius (69 degrees Fahrenheit.) So engineers are encouraged that the instrument has continued to operate, even after the nearby heater was turned off in December. (The spectrometer is likely operating at a temperature somewhat lower than minus 79 degrees Celsius, or minus 110 degrees Fahrenheit, but the temperature detector does not go any lower.)

Scientists and mission managers will continue to monitor the spectrometer's performance. It was very active during Voyager 1's encounters with Jupiter and Saturn, and since then an international team led by scientists in France has been analyzing the spectrometer's data.

This latest heater shut-off was actually part of the nearby [infrared spectrometer](#), which itself has not been operational on Voyager 1 since 1998.

Provided by JPL/NASA

Citation: Voyager instrument cooling after heater turned off (2012, January 18) retrieved 27 April 2024 from <https://phys.org/news/2012-01-voyager-instrument-cooling-heater.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.