Solar power generation on Voyager 1

OverviewInterstellar mediumMission backgroundMission profileExit from the heliosphereCommunication issuesFuture of the probeGolden recordIn March 2013, it was announced that Voyager 1 might have become the first spacecraft to enter interstellar space, having detected a marked change in the plasma environment on August 25, 2012. However, until September 12, 2013, it was still an open question as to whether the new region was interstellar space or an unknown region of the Solar System. At that time, the former alternative was officially confirmed.

By 2025, there will not be enough power to operate the onboard scientific equipment and thus ending the scientific operation of the Voyager probes. RTGs provide probes going to the outer ...

The primary power source for the Voyager missions is the radioisotope thermoelectric generator (RTG). These devices convert heat released by the decay of radioactive isotopes into ...

Radioisotope power systems (RPS) provide heat and electricity in space applications like Voyager where solar, chemical batteries and fuel cells are not practicable.

Voyager 1 was the first spacecraft to cross the heliosphere, the boundary where the influences from outside our solar system are stronger than those from our Sun.

Voyager 1, shown in this illustration, has operated for decades thanks to a radioisotope power system. Credit: NASA. Powering spacecraft with solar energy may not seem like a challenge, ...

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In this extreme environment where spacecraft must withstand intense solar flares, radiation and temperature swings from hundreds of degrees below zero to hundreds of degrees ...

Unlike satellites and spacecraft that rely on solar panels, Voyager 1 needed a power source that could function

far from the Sun, where solar energy was too weak to be useful. To achieve this, NASA ...

When Voyager 1 finally ceases transmitting, it will continue coasting through space for millions, even billions of years. It carries the iconic Golden Record, a message from humanity to the ...

This reliable power source has enabled Voyager 1 to operate continuously for over four decades, even in the distant reaches of interstellar space where solar power is impractical.

In October 2020, astronomers reported a significant unexpected increase in density in the space beyond the Solar System as detected by the Voyager 1 and Voyager 2 space probes.

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