Mercury forced landing solar power generation

Overview

This paper presents the mission design for a Mercury Lander concept in support of NASA's 2020 Planetary Science Decadal Survey. We evaluated both chemical and solar electric propulsion trajectory options for the interplanetary and orbital phases. Like previous missions, our solution uses a series. Abstract:Launched in October 2018, the ESA/JAXA BepiColombo mission is set to arrive at Mercury in late 2025. The modular S/C consists of two scientific Mercury orbiters and a cruise module. Because of Mercury' s proximity to the Sun, surface temperatures. The Industrial Power Generation (IPG) Program is a joint Program between the U. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy's Office of Industrial Technologies (OIT) and the Office of Fossil Energy's Federal Energy Technology Center (FETC). Based on assessed cell efficiencies at Saturn,a solar-powered spacecraft would need an array with about 100 m 2 of active area ch of its member cooperatives.

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[Solar Mercury 50 Gas Turbine]

This unique design offers significant advantages in terms of cost, performance, and maintainability. The Solar concept takes advantage of their primary-surface recuperator, which has an effectiveness exceeding 90 ...

[BepiColombo - Solar Electric Propulsion System Operations for the]

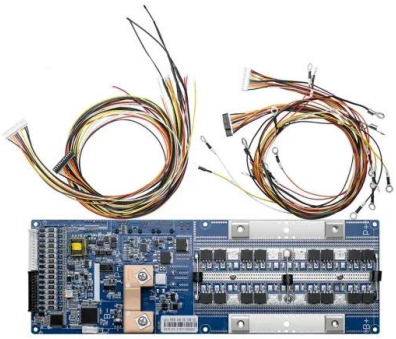
The BepiColombo mission consists of two scientific spacecraft, ESA's Mercury Planetary Orbiter (MPO) and JAXA's Mercury Magnetospheric Orbiter (MMO), launched together as a single composite including a ...

[Solar Mercury Power Generation]

Solar power arrays for Mercury are designed to guarantee a severe operational environment,mainly characterized by high temperatures and high light intensity (up to 11 solar constants,or 15 kW/m 2),due to the vicinity of ...

[NASA Designs Giant, Solar-Powered Sail That Can Travel Forever; ...]

In a recent astronomical feat, NASA has developed a solution, called solar sail, which utilizes the radiation pressure from the Sun to power the propulsion system.

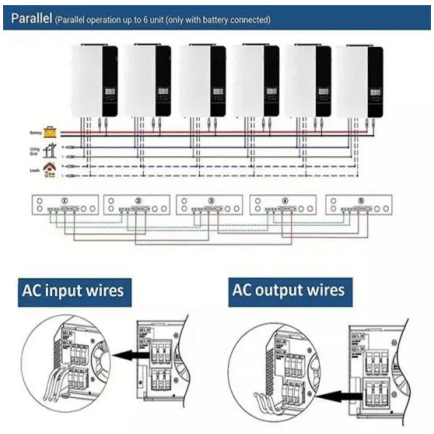


[A Mission That Could Reach Mercury on Solar Sails Alone]

It can take missions several years and planetary flybys before capture and arrival in orbit around Mercury or Venus. Now, a new proposal would see a mission make the trip, using innovative ...

[Environments, needs and opportunities for future space photovoltaic]

Solar power arrays for Mercury are designed to guarantee a severe operational environment, mainly characterized by high temperatures and high light intensity (up to 11 solar constants, or 15 kW/m2), ...



[Mercury Lander: A Planetary Mission Concept Study for the 2023 ...]

ght system uses a solar-electric propulsion cruise stage to reach Mercury in 2045. The orbital stage brings the spacecraft i. to a thermally safe orbit, then performs orbital maneuvers to prepare for descent. During the ...

[A PV power generation system for missions to Mercury]

PDF , A special architecture for photovoltaic generation of electricity has been studied for a mission to Mercury.

[Mission Design for the 2020 Mercury Lander Decadal Survey]

This paper describes the mission design associated with this concept. The spacecraft has four stages: cruise, orbit, descent, and landing. We evaluated chemical and solar electric propulsion (SEP) ...

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