Caltech Solar Power Generation

Caltech"s SSPD-1 [shown here in an artist"s conception] has been testing the feasibility of beaming solar energy from space to Earth"s surface.

Our space power station employs a "sandwich" architecture where solar energy is collected on one side of a plate and coherent RF is transmitted out the other, eliminating the need for ...

A space solar power prototype that was launched into orbit in January is operational and has demonstrated its ability to wirelessly transmit power in space and to beam detectable power to ...

Our research effort in photovoltaics aims to develop a new generation of flexible, ultralight, low-cost solar cells, which take advantage of fundamental insights about photovoltaic efficiency, material synthesis, ...

Trajectory design of a spacecraft formation for space-based solar power using sequential convex programming. 9th International Workshop on Satellite Constellations and Formation Flying (IWSCFF).

We focus on various strategies and techniques for ultralight-weight mid- and long-range wireless power transfer, including using flexible phased arrays systems at various frequencies that can convert, ...

Our research solves the fundamental challenges associated with implementing space solar by integrating ultralight and shape accurate structures with high efficiency photovoltaics and large scale ...

Caltech"s SSPD-1 is a new idea for space-based solar Ali Hajimiri on boosting an energy-beaming system from the lab to orbit. Read about it [HERE].

Purpose of the Study This study evaluates the potential benefits, challenges, and options for NASA to engage with growing global interest in space-based solar power (SBSP). Utilizing SBSP entails in ...

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