Tutorial on folding solar panels with paper

Can a solar panel fold up like origami?
Researchers at NASA's Jet Propulsion Laboratory,Pasadena,California,and Brigham Young University,Provo,Utah,collaborated to construct a prototype of a solar panel array that folds up in the style of origami,to make for easier deployment. Image copyright BYU Photo

How do you fold a sheet of paper for a spacecraft?
To fold a sheet of paper for a Miura origami spacecraft,simply grasp the corners and pull. The folded sheet looks a bit like a folded map and can be folded up to the size of a matchbook. The simplicity of this fold is crucial when designing a spacecraft.

How do solar panels open & close?
The origami technique the team used for the prototype allows the panel to open and close with a single push or pull on the corner. Koryo Miura,the astrophysicist who the Miura origami fold is named for,first worked on solar panels with origami designs in 1995.

How do you fold up a sheet of paper?
To fold a sheet of paper using the Miura fold,follow these steps: (You can follow along with a sheet of paper by watching this youtube videoor the steps here). Brian Trease,an engineer at NASA's Jet Propulsion Laboratory,explains this method. The Miura fold is named after its inventor,Japanese astrophysicist Koryo Miura.

How is origami paper folded?
Origami paper is folded using a simple process. To fold origami paper,you just need to grasp the corners and pull. This is crucial when designing a spacecraft. With the Miura origami fold,a piece of paper can be folded up to the size of a matchbook. Then,it can be unfolded again in a single motion.

Can NASA use origami-based solar panels on satellites?
Since 2012,NASA has been looking into using origami-based solar arrays on their satellites. Satellites need to be solar-powered,but the solar panels need to start folded along the body of the satellite during the launch through the Earth's atmosphere,only to have the solar panels deploy to their full size once the satellite reached space.

designing ways to fold up solar panels into more efficient origami-like packages. As larger solar panels are needed for newer kinds of spacecraft, accordion-style deployment can become ...

packages. As larger solar panels are needed for newer kinds of spacecraft, accordion-style deployment can become riskier, and more liable to fail with each layer of expansion. Creating ...

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It"s simple -- and simplicity is key when designing a spacecraft. With the Miura origami fold, a piece of paper can be folded up to the size of a matchbook. Then, when needed, it can be unfolded...

By folding the solar panels, the size of the panels is reduced, thus saving the energy required for the launch of the satellite, and by unfolding a large area after the launch into the intended ...

This paper focuses on designing a foldable solar panel that can be folded both circumferentially and radially simultaneously. Most of the existing foldable solar panels have ...

Japanese art of folding paper called origami. Solar panels used in space already were designed to fold up, but Brian believes that by folding solar panels like paper is folded in origami, it"s easier ...

Miura intended this fold for solar arrays, and in 1995 a solar panel with this design was unfolded on the Space Flyer Unit, a Japanese satellite. Despite this test, the technology is still in its early stages. But now, with an ...

Image by Huffington Post. Origami is the art of paper folding, and its name derives from the Japanese words ori (folding) and kami (paper).. Traditionally, origami involves folding a single sheet of square paper (often ...

Origami is the centuries-old art of folding paper into intricate decorative shapes and figures. The word "origami" comes from two Japanese words..."oru" which means to fold, and "kami" which means paper. ... Sego ...

Residential Applications for Origami-Based Solar Panels Since 2012, NASA has been looking into using origami-based solar arrays on their satellites. Satellites need to be solar-powered, but the solar panels need to start folded along the ...

Origami, derived from the Japanese words "ori" (folding) and "kami" (paper), is the art of transforming a flat sheet of paper into a three-dimensional object through folding techniques. ...

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