The browser you are currently using does not support Discover's photo galleries. Supported browsers include recent versions of Mozilla Firefox, Microsoft Internet Explorer (version 7 or later), Google Chrome, and Apple Safari.

If you have any questions or feedback, please email webmaster@discovermagazine.com. Thank you for reading Discover, and we apologize for the inconvenience.

Lizzie Buchen; published February 25, 2008

Image courtesy of National Oceanic and Atmospheric Administration

DEPLOY A PLANETARY PARASOL

How it works: This idea dates back to the 1980s, when scientists pondered how to make Venus (pictured) habitable for humans. Now the plan for creating the luxury real estate of the future may be necessary just to keep ourselves alive on Earth. To deflect the sun's rays, shields would be deployed to a point referred to as L1, where an object can remain balanced between the gravity of Earth and that of the Sun (about 1.5 million kilometers from Earth). In order to deflect enough sunlight, the shields would need to cover just under two million square miles, an area about the size of Greenland. Two options are being considered: single giant shield, 1,100 miles in diameter and 10 microns thick (about 1/30 the thickness of a sheet of paper), or a fleet of 16 trillion lenses or mirrors, each weighing about a gram and covering about three square feet. Estimated cost: $1 trillion to $10 trillion.

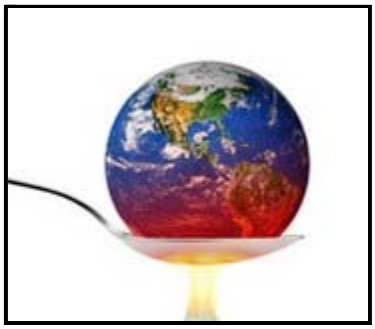
Pros: The easiest plan to understand and visualize, it looks awesome in speculative diagrams.

Cons: Exorbitantly expensive, complicated, and impractical in every way. Sending a nearly million-square-mile structure--weighing about 100 megatons on Earth--out to L1 is not a small feat. The alternative of 16 trillion small lenses is no more feasible; in order to mitigate the effects of excess atmospheric CO_2, 20 launchers would each need to propel 800,000 lenses every five minutes for 10 years.

More Galleries

The 100 Top Science Stories of 2010

Every year DISCOVER sorts through the scientific accomplishments of the past 12 months, and assembles a list of the coolest experiments, most brilliant discoveries, and most world-changing events. As you page through the countdown to the #1 science story, we think you'll come to the same conclusion we did: 2010 was quite a year.



7 Visions of Our Hot, Awful Future

A bounty of 2010 books predict the future in a globally warmed world. Among the forecasts: boom town Detroit, abandoned Miami, an Arctic black gold rush, and a weirdly strong dried fruit market.

8 Keys to Deciphering Ancient Climates

Our lives extend only decades, so how do scientists study climate going back thousands and millions of years? Ancient pollen, clam shells, columns of sheer ice, and more.