How to Cool a Planet (Maybe)

In the past few decades, a handful of scientists have come up with big, futuristic ways to fight global warming: Build sunshades in orbit to cool the planet. Tinker with clouds to make them reflect more sunlight back into space. Trick oceans into soaking up more heat-trapping greenhouse gases.

Their proposals were relegated to the fringes of climate science. Few journals would publish them. Few government agencies would pay for feasibility studies. Environmentalists and mainstream scientists said the focus should be on reducing greenhouse gases and preventing global warming in the first place.

But now, in a major reversal, some of the world's most prominent scientists say the proposals deserve a serious look because of growing concerns about global warming. Worried about a potential planetary crisis, these leaders are calling on governments and scientific groups to study exotic ways to reduce global warming, seeing them as possible fallback positions if the planet eventually needs a dose of emergency cooling.

"We should treat these ideas like any other research and get into the mind-set of taking them seriously," said Ralph J. Cicerone, president of the National Academy of Sciences in Washington.

The plans and proposed studies are part of a controversial field known as geoengineering, which means rearranging the earth's environment on a large scale to suit human needs and promote habitability. Dr. Cicerone, an atmospheric chemist, will detail his arguments.