

18th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and
Development (1)

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SPACE RESOURCES TO STOP GLOBAL WARMING: A PLANETARY SUNSHADE

Abstract

Global warming is the defining problem of our time. Soon the atmosphere will hold more industrial carbon than natural, and solutions to anthropogenic climate change will become one of the largest economic sectors in the coming decades. Climate engineering in the form of solar radiation management will be necessary to bridge the gap between the unendurable consequences of climate change and the eventual removal of anthropogenic carbon from our atmosphere. Rather than pollute our skies with sulphur dioxide or drastically change land use patterns, space technology offers an ideal form of solar radiation management with a Planetary Sunshade at Sun-Earth Lagrange 1 (SEL1). The Planetary Sunshade will stop global warming by uniformly reducing solar radiation on Earth by less than 2