Sps solar system

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This annual contest is for all students at up to 12th grade from anywhere in the world. Individuals, small teams of two to five, and large teams of six to twelve are judged separately. Read More>>

The National Space Society"s "Live in a Healthy Space" Design Competition challenges middle and high school students (ages 12-18) to design one specific component of a space settlement - an Agricultural Module (or area). Deadline is November 30. Read More>>

The National Space Society presents the case for space solar power, the future of clean, safe, limitless energy for everyone. Space solar power will harness the power of the sun in orbit and beam energy where it is most needed on Earth, eventually replacing fossil fuels and allowing our planet to once again become the pristine home we deserve. For more information and to donate, click here.

During 2011-2012, NASA’s Innovative Advanced Concepts (NIAC) program supported a preliminary Phase 1 project to investigate a transformational new approach to the concept of space solar power: SPS-ALPHA (Solar Power Satellite by means of Arbitrarily Large Phased Array). The SPS-ALPHA concept represents a radically different approach. SPS-ALPHA is a biologically inspired architecture, analogous to a hive of bees or a colony of ants-in this case a very large number of mass-produced “small-satellite” class modules will be assembled to form a single enormous platform.

To deliver energy to Earth, SPS-ALPHA would typically be based in a geostationary Earth orbit, where it would intercept sunlight using a collection of individually pointed thin-film mirrors, convert that sunlight across a large radio frequency (RF) aperture into a coherent microwave beam, and transmit the power to markets on Earth or in space.

The recently completed NIAC study market assessment found that there are both primary markets and several important secondary markets that could support the future development and deployment of SPS-ALPHA: in particular, that the SPS-ALPHA architecture has the potential not only to make possible the vision of continuously delivering almost limitless solar energy to markets on Earth, but also to transform a range of future space mission applications.

A broad range of technical challenges must be addressed in order to establish the economic feasibility of SPSALPHA, and, if appropriate, to subsequently proceed with development. However, the hyper-modular architectural approach to space systems embodied by the SPSALPHA concept appears to be technically feasible and may be broadly important for future space missions.

During the past 40 years, space solar power for Earth has remained little more than a vision. Power for space missions has remained both scarce and expensive: Most satellites operate on less power than what is needed to

run a typical home in the U.S., many on considerably less. The SPS-ALPHA concept represents a very different architecture for space solar power, involving a hypermodular approach in which all platform elements can be mass produced, and none are larger than a “small sat.”

If SPS-ALPHA can be developed, solar power from hundreds of megawatts to hundreds of gigawatts could be harvested in space and delivered efficiently and affordably to markets on Earth, and could enable energyrich operations throughout the inner solar system--transforming all aspects of government and commercial space activities.