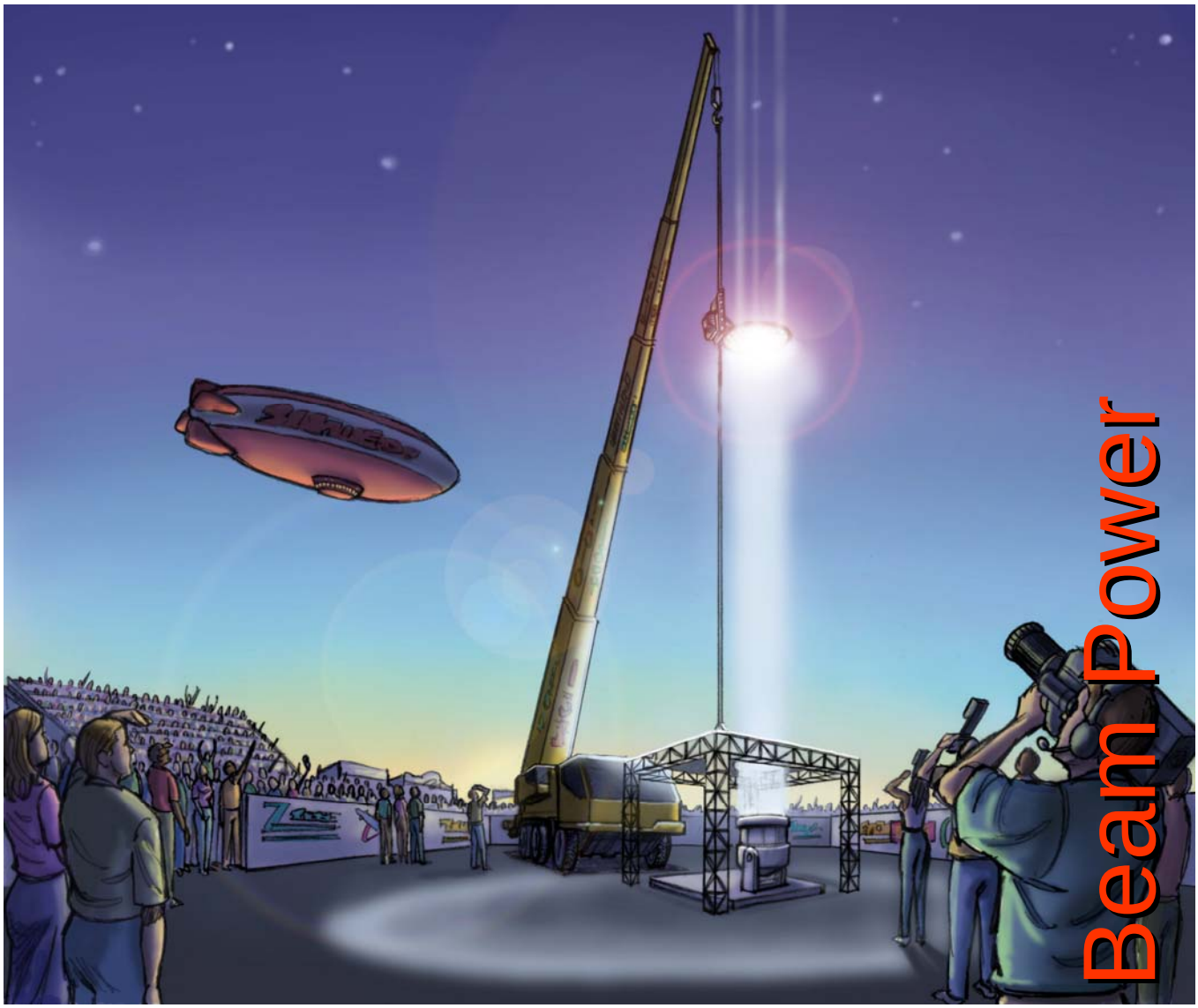
National Aeronautics and Space Administration

Beam Power Challenge

The Beam Power Challenge is designed to promote the development of new power distribution technologies that have applications to many aspects of space exploration including surface based or space based, point to point power transmission or delivery for robotic and/or human expeditions to planetary surfaces. This Challenge may also be support for the development of far term space infrastructure concepts, such as space elevators and solar power satellites.



$200,000

Beam Power Challenge Overview

The Beam Power Challenge will be conducted by the Spaceward Foundation and is structured such that each team will design a climber (a machine that can climb and descend a tether ribbon) while carrying a payload. Power will be beamed from a transmitter to a receiver on the climber. There will be no physical connection between the transmitter and the receiver. Each team will have three opportunities to maximize the amount of payload its climber can carry a height of 50 meters within a certain time limit. The team with the highest score (the product of average velocity and payload mass) will win the competition.

2005 Beam Power Challenge

- Teams must deliver climber and receiver. Power source provided.
- Mass of climber and receiver constrained to 25 kilograms.
- Climber must ascend 50 meter ribbon carrying payload in at least 50 seconds.
- For each climb, team receives a score that is the product of payload mass and average climber velocity.
- The team with the highest single climb score will win the $50,000 prize.

2006 Beam Power Challenge

- Identical to the 2005 Beam Power Challenge, except…
- Teams must deliver climber, receiver, and transmitter.
- $100,000 first prize.
- $40,000 second prize.
- $10,000 third prize.

The Spaceward Foundation

The Spaceward Foundation (www.spaceward.org) is a non-profit corporation dedicated to furthering space science and technology through education and engineering “Challenges” resulting in prizes to successful contestants.

NASA Centennial Challenges was established to conduct prize competitions in support of the Vision for Space Exploration and ongoing NASA programs. Centennial Challenges is modeled on past and ongoing prize competitions. By making awards based on actual achievements instead of proposals, Centennial Challenges seeks novel and lower-cost solutions to engineering obstacles in civil space and aeronautics from new sources of innovation in industry, academia, and the public.