



**2010 International Space Development Conference
Special Symposium on Space Solar Power
Preliminary Program**

DAY 1 (THURSDAY) – PLENARY SESSION

TITLE: Global Progress Toward Solar Power Satellites

Session 1-1 / SPS Introduction

Title: *Overview of Recent Developments in Space Solar Power*

Author: John C. Mankins (Artemis Innovation)

Title: *Background for SPS: Studies in the 1970s*

Author: Gordon Woodcock (retired)

Session 1-2 / SPS and Related Government Efforts – 1

Title: *SSP Concepts and Activities at the Japan Aerospace Exploration Agency*

Author: Prof. Susumu Sasaki (ISAS/JAXA)

Title: *Recent Technology Developments at the US Naval Research Laboratory*

Author: Paul Jaffe (NRL)

Session 1-3 / SPS Commercial Ventures

Title: *Prospects for SSP Technology Flight Experiments at EADS Astrium*

Author: Frank Steinsiek (EADS Astrium)

Title: *Space Solar Power and the Space Energy Group*

Author: Feng Hsu (Space Energy Group)

Session 1-4 / SPS and Related Government Efforts - 2

Title: *Policy Considerations for Space Solar Power*

Author: Eva-Jane Lark (BMO Nesbitt Burns)

Title: *International Collaboration in Space Solar Power: "The Sun, The Ancients and The Modern World."*

Author: Janet Verrill

Session 1-5 / SPS Systems Studies and Concepts

Title: *Systems Comparison of Ground and Space Solar Power*

Author: John Strickland (NSS)

Session 1-6 / International Studies of Space Solar Power

Title: *Results of the Recently Completed International Academy of Astronautics Space Solar Power Study*

Author: John C. Mankins (Artemis Innovation) and Prof. Nobuyuki Kaya (Kobe University)

DAY 2 (FRIDAY) – TRACK A / SPS Concepts: Technologies, Systems & Applications

Session 2A-1 / Wireless Power Transmission - 1

Title: *Prospects for Microwave Wireless Power Transmission*

Author: Prof. Nobuyuki Kaya (Kobe University)

Title: *Recent US Activities in Wireless Power Transmission*

Author: Frank Little (TAMU) - *Invited*

Session 2A -2 / Wireless Power Transmission - 2

Title: *Delivering Solar Energy to Earth by Reflection*

Author: Stan Rosen (The Boeing Company, Retired)

Title: *Wireless Power Transmission Demonstrations in Japan*

Author: Shoichiro Mihara (USEF)

DAY 2 (FRIDAY) – TRACK A / SPS Concepts: Technologies, Systems & Applications (continued)

Session 2A -3 / Wireless Power Transmission - 3

Title: *Fundamental Physics of WPT: Investigation Of General Maxwell's Equation Of Attenuation, Inhomogeneity And Anisotropy, And The Environment Influences on Wireless Energy Transmission From SPS To The Earth Surface*

Author: Dr. Dao Khac An and Dr. Tran Manh Tuan

Session 2A -4 / Ground Energy Integration

Title: *Bringing Space Based Solar Power Home to the Earth*

Author: Wayne Finger (RS&H)

Title: *Strategies for Solar and SSP Radiant Energy Thermal-Chemical Fuel Production*

Author: Robert Wegeng (PNNL)

Session 2A -5 / Technology Demonstrations & Space Experiments

Title: *Microwave Wireless Power Transmission Prototype for Space Solar Power Station*

Author: Femi Ishola (University of Lagos, Nigeria)

Title: *Wireless Power Transmission Field Experiments – Recent Demos and Future Plans*

Author: Prof. Nobuyuki Kaya (Kobe University)

Session 2A -7 / Space Applications of Space Solar Power and Related Technologies

Title: *Orbital Power Beaming for Extraterrestrial Exploration*

Author: Seth Potter (The Boeing Company)

Title: *Server Sky - Data Centers in Orbit*

Author: Keith Lofstrom (Oregon IEEE Consultant's Network)

DAY 2 (FRIDAY) – TRACK B / SPS Implementation: Supporting Systems & Issues

Session 2B-1 / Supporting Technologies & Systems – Robotics and Autonomy

Title: *Systems Autonomy and Space Solar Power*

Author: Anthony R. Gross (NASA ARC)

Title: *The Role of Intelligent Modular Systems in Space Solar Power*

Author: John C. Mankins (Artemis Innovation Management Solutions LLC)

Session 2B -2 / Supporting Technologies & Systems – Structures and Materials

Title: *The Application of Expandable Material/Structural Systems to Large-Area Solar Collectors and Apertures*

Author: John Dorsey (NASA LaRC), et al.

Title: *Carbon Nanotube-Based Space Systems and Launch Vehicles*

Author: Ivan Bekey (Bekey Designs, Inc.)

Session 2B -3 / Supporting Technologies & Systems – Lunar Resources & SSP

Title: *The Use of Lunar Resources in Developing Space Solar Power*

Author: Dr. Alex Ignatiev (University of Houston)

Title: *Novel Strategies for Lunar Networks and Development*

Author: Robert Wegeng (PNNL)

Session 2B -4 / Supporting Technologies & Systems – Transportation 1

Title: *Launch Concepts for SPS: Reusable Heavy Lift Launch Vehicles*

Author: Ralph Nansen (Rockwell, Retired)

Title: *Architectures to Enable Affordable Space Solar Power Space Transportation*

Author: Joe Howell (NASA MSFC, Retired)

**DAY 2 (FRIDAY) – TRACK B / SPS Implementation: Supporting Systems & Issues
(continued)**

Session 2B-5 / Supporting Technologies & Systems – Transportation 3

Title: *Potential In-Space Infrastructure and Refueling*

Author: Dallas G. Bienhoff (The Boeing Company)

Session 2B-6 / Supporting Technologies & Systems – Transportation 2

Title: *The StarTram Concept – Achieving Earth to Orbit Transportation for SSP at less than \$100 per Kilogram*

Author: James R. Powell (MagLev 2000)

Title: *The Launch Loop: a Low Cost Earth-To-High-Orbit Launch System*

Author: Lofstrom (Oregon IEEE Consultant's Network)

DAY 2 (FRIDAY) – PLENARY SESSION / Symposium Wrap-Up Session

Session 2C-1 / Symposium Wrap-Up Session

Title: *Future Directions for Space Solar Power*

Author: John C. Mankins (Artemis Innovation)

Plus...Individual Session Reports

SATURDAY – SPS PANEL DISCUSSION

Robert MacDonald (CBC)

Feng Hsu (Space Energy)

John C. Mankins (Artemis Innovation)

Others, TBD...