

Online Journal of Space Communication

Volume 9
Issue 16 *Solar Power Satellites (Winter 2010)*

Article 33

Issue 16: Contributors

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Recommended Citation

Flournoy, Don and Nansen, Ralph () "Issue 16: Contributors," *Online Journal of Space Communication*: Vol. 9 : Iss. 16 , Article 33.

Available at: <https://ohioopen.library.ohio.edu/spacejournal/vol9/iss16/33>

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Issue 16: Contributors



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Education:

- 1980 - B. S., Mechanical Engineering, Virginia Polytechnic Institute and State University
- 1986 - M. S., Engineering and Applied Science, George Washington University
- 1989 - Ph. D., Aerospace Engineering, University of Colorado at Boulder

Current Interests:

Space vehicle structures and mechanisms design, large space apertures, deployable structures, structural dynamics and impact, flexible structure control, and advanced material systems.

Experience: 1980 to Present - NASA Langley Research Center, Aerospace Engineer

- Current Positions Senior Researcher for Advanced Structural/Thermal Systems and Chief Engineer for Structures and Materials, NASA Langley Research and Technology Directorate.
- NASA, Lunar Lander Structures and Mechanisms Subsystem Technical Team Lead.
- NASA Engineering and Safety Center, Crew Exploration Vehicle (CEV) Integrated Structures and Mechanisms Technical Team Lead.
- NASA LaRC, Principal Research Manager for Advanced Structures and Materials Concepts.
- NASA, Large Space Systems (LSS) Technology Project Lead.



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Kiantar Betancourt is a third-year student at the University of Maryland School of Law, specializing in environmental and international law. He has a Bachelors degree in Political Science, with a minor in International Affairs, and graduated Phi Beta Kappa from the University of Maryland, College Park. In Summer 2010, he worked for Voulga & Olmedo, the largest commercial law firm in Asuncion, Paraguay. He is currently working at Enhesa, Inc., an international EHS consulting group.



Philip Chapman is a geophysicist and astronautical engineer, born in Melbourne, Australia. His doctorate is in physics, from M.I.T. He was one of the second intake of NASA scientist astronauts during Apollo; after completing jet pilot training with the USAF, he served as Mission Scientist for Apollo 14. Since then, his research interests have included energy and environmental policy, space-based solar power, lunar transportation systems, and economical launch vehicles. In particular, he worked for Dr. Peter Glaser, inventor of the Solar Power Satellite, during the original NASA/DoE study of the subject in the late 1970s. He may be contacted for technical details of this analysis at: phil.chapman@alum.mit.edu.



Joleroy Gauger received a PhD at UCLA in 1956 after doing cosmic ray studies. Then began a professional life in the aerospace industry: Lockheed, Boeing, and Douglas companies. Published several papers and co-edited two books: "Recent Advances in Cosmic Ray Studies," 1966, and "Laser Applications in the Geosciences," 1968. In 1967/68 he spent a year on a sabbatical divided between the Imperial College in London and the University of Melbourne.

Joleroy says, "I am delighted to help perpetuate the important work being furthered in this series about Solar Power Satellites." "After thirty years of working in the aerospace industry I retired in late 1986. Today, I believe that the most important problem in our country's future is the alleviation of global planetary warming and the problems associated with obtaining sufficient energy to accommodate continued growth in the economy."



Al Globus is the chairman of the Space Settlement Committee of the National Space Society. He has published articles on space solar power, space settlement design, lunar teleoperation, nanotechnology, and a variety of computer science topics while working for contractors at NASA Ames Research Center. See space.alglobus.net.



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Born on 20 June 1936, Raghavan Gopaldaswami, a mechanical engineer, received a Master of Science (M.S) Degree in Rocket Technology from the Cranfield University Institute of Technology, U.K. in 1970, and completed the Advanced Management Program of the Harvard Business School, U.S.A in 1984. He pioneered research, design and development of liquid propellant rocket propulsion systems in India all through 1960's and 1970's. He was twice recipient of Awards from the President of India for innovative contributions to rocket propulsion development.

He retired in 1994 as CEO of an aerospace industry. His focus since 1987 even after retirement has been on research and conceptual design of a new class of fully reusable spaceplanes using innovative "aerocryogenic" technologies and propulsion systems that create a multiplier effect on space vehicle mass ratios, enabling safe, affordable and direct ascent from earth to orbit in a single stage. These spaceplane designs, specifically intended for space solar power missions, were well ahead of time. He strongly believes that the time has now arrived for an integrated, international space solar power and spaceplane mission for resolving India's crippling energy crisis, and other nations as well, while helping mitigate global warming.



Dr. Feng Hsu is a well respected world expert; former research fellow of Brookhaven National Laboratory in the fields of risk assessment, risk-based decision making, safety & reliability and mission assurances for nuclear power, space launch, energy infrastructure and other high integrity social and engineering systems. He has most recently left NASA and is taking on greater challenges as Sr. VP of the Space Energy Group.

Dr. Hsu was until recently head of the NASA GSFC risk management function, and was the GSFC lead on the NASA-MIT joint project for risk-informed decision-making support on key NASA programs, as GPM, LSS and the CxP etc. He was also a leading engineer/scientist in the Shuttle and Exploration Analysis Department at JSC in Houston, and led key projects such as the Shuttle PRA modeling & integration, SLEP and Shuttle upgrade trade studies. Dr. Hsu served on many agency and center expert panels supporting challenging SMA issues, including his key roles in the STS-107 (Space Shuttle Columbia) investigation team, the Return to Flight team, and ECO expert team for the Discovery mission.

Dr. Hsu has over 90 publications and is coauthor of two books and co-chair of several technical committees. He is frequently invited as a keynote speaker on many international forums, and is increasingly dedicated to frontier research ranging from human space exploration; solar energy to global collective intelligence and risk based policy-making on emerging environmental and energy security issues. Hsu holds a bachelors degree in Applied Math, masters degree in Operations Research and Statistics and a doctoral degree in Engineering Science.

As senior advisory of Aerospace Technology Working Group (ATWG) and a co-founder of Space Development Steering Committee, Dr. Hsu has been a strong advocate for SBSP for years and was instrumental in instigating the 2007 NSSO study on space solar energy and has contributed whole-heartedly to the great human endeavor of harnessing solar energy for sustainable human development.



Gao Ji

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Gao is engineer of Deep Space Exploration & Space Science Technology Research Division, CAST R&D Center. He used to be an engineer in ESA advanced concept projects in UK. His main technical capabilities and academic research interests include: Space Mission Analysis and Design, System Engineering and Structural Design and Analysis. Currently, he is responsible for definition of Mars Exploration and preliminary analysis of SPS.



Royce Jones is a Space Technology entrepreneur, venture manager, IP developer and investor, injecting both start-up capital and IP into new space related ventures. He holds degrees in Construction Management and Computer Programming and Computer Aided Design. Mr. Jones is a former Marine Corps NCO with eight years of active military service and three years reserve service. He is a published author of innovative approaches to space development in the area of launch vehicle design, heavy-lift vehicles and space based solar power (SBSP). Mr. Jones has fifteen years experience in commercial property construction and is a known innovator in the field of difficult project finance. He has participated in structuring financing on numerous commercial properties and is experienced in innovative commercial financing, asset backed financing, TIF financing, tax credits and government backed financings.



Dr. Wang Li
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Wang is the director of Deep Space Exploration & Space Science Technology Research Division, CAST R&D Center. He has serviced for CAST over 20 years. As one of the national "Master Mind" for deep space mission he is renowned for space radiation environment.

Wang is now focus on advanced studies (Pre-Phase A) and preliminary analysis (Phase A) including Mars Mission and Solar Power Satellite Project in CAST R&D Center.



Keith Lofstrom
<http://www.keithl.com/>

Keith is a 56 year old mixed-signal integrated circuit designer in Beaverton, Oregon. Keith is CEO of SiidTech, which licenses silicon identification technology to semiconductor manufacturers. Keith is also an integrated circuit design consultant. Keith designed crossbar routing chips for Icube Design Systems, which were used by Cisco and others to route much of the internet in the mid 1990s. Keith helped write the IEEE 1149.4 mixed signal scan test standard, and received an award for a related presentation at the International Test Conference.

Keith has designed thin-film light valves for computer projectors. He deploys low power computer systems with high performance per watt. He is inspired by the nearby Solar World silicon solar cell factory (largest in North America), and nearby Intel's "DC bus data center" initiatives, aiming to increase data center efficiency. He is concerned that large data center projects in Oregon use prime greenfield industrial land and large amounts of power, while failing to alleviate high local unemployment. These interests and concerns led to server sky.

Keith is webmaster for Orcnet, the Oregon IEEE Consultant's Network. Keith is active in open source and the Portland Linux Unix Group. Keith's server hosts the dirvish disk-to-disk backup program, based on rsync and written in Perl.

Inspired by Arthur C. Clarke's novel Fountains of Paradise (but not his engineering or materials science), Keith invented the Launch Loop in 1981. This speculative space launch system can be built with existing technologies and launch thousands of tons into orbit per day at costs below \$5/kg. No market yet

exists for that much launch capability. The Launch Loop (<http://launchloop.com>) is attracting renewed attention from a new generation of space enthusiasts.

Space launch is risky and expensive, and the risks and costs must be reduced before large-scale passenger operations or complex construction projects become practical. Keith believes that the expansion into the universe will be funded by broadly- and strongly-felt near-term economic needs, driving the demand for millions of tons of automated cargo into orbit per year. Self-deployed arrays of tiny, interchangeable, mass-produced satellites is one way to accomplish large scale missions without orbital construction, eventually leading to the market demand that will pay for high volume, low cost launch systems. When these systems are well tested and inexpensive, we can start launching people with them.



Darel Preble

Darel Preble's degrees are B.A., Physics, Vanderbilt University; M.S., Theoretical Physics, Georgia State University; and M.S., Systems Management, George Washington University. His employment experience includes scientific programming and supercomputing manager at Georgia State University. He has also held consulting positions with Booz Allen Hamilton, Digicon and the United States Forces Command; he has done advanced systems development and strategic planning for The Southern Company. He authored a series of electric power and aerospace industry white papers on Space Solar Power in 1994, 1995 and 1996. He chartered the Space Solar Power Institute and Workshop in 1997, a 501(c)(3) (<http://www.sspi.gatech.edu/>).

Preble has been a frequent speaker and writer on space and Space Solar Power. He chaired the business case analysis section of the National Security Space Office's landmark 2007 Space Solar Power study ([http://www.acq.osd.mil/nssso/solar/SBSPInterim Assesment0.1.pdf](http://www.acq.osd.mil/nssso/solar/SBSPInterimAssesment0.1.pdf)). He also chaired and hosted "The Great Debate - Moon or Mars?" at the ASCE Space and Robotics 2000 conference (DVD video available from Glenn Research Center; GRC-401).



Peter J. Schubert

Peter J. Schubert received his doctorate in electrical and computer engineering from Purdue University on a GM Fellowship, and worked for 21 years at Delphi Electronics & Safety. While at Delphi he worked in integrated circuits, and in automotive safety electronics, being promoted to Technical Fellow, and serving as the Chairman of the Technology Council.

Since 2006, Dr. Schubert has been with Packer Engineering in Naperville, IL working as a consultant and researcher.

Schubert is the principal investigator for over three million dollars in grants from several federal and state agencies in areas of renewable energy and space-based manufacturing.

He holds 30 US patents, 8 foreign patents, and has published over 60 technical papers and book chapters.

Peter is an Instructor with the Society of Automotive Engineers, and has taught model-based development to over 1000 engineers in 17 countries.

Schubert is a member of IEEE, AIAA, ASEE, and ASME.



Karen Cramer Shea

Karen Cramer Shea has Master of Arts in Science Technology and Public Policy with Specialty in Space Policy from the George Washington University. Attended the International Space University Summer Session in Cleveland, Ohio. Has a Bachelors degree in Psychology, with minor in Political Science from Seattle University. Tracked the satellite and launch industries at the Futron Corporation. Karen lives in Washington DC.



John K. Strickland, Jr.

John Strickland was born on Manhattan Island, (New York City) in 1943, and lived for 30 years in western New York state near Niagara Falls before moving to Austin, Texas in 1976. He received a B.A. in Anthropology with a minor in Biology from S.U.N.Y. at Buffalo in 1967, and a second B.A. in Computer Science from St. Edward's University in Austin in 1986. He also earned graduate credits in both Anthropology and Biology. He has been a professional programmer and analyst since 1980, and was employed by the State of Texas in Austin from July, 1989 to June 2009, retiring as a senior Analyst / Programmer. He lives, along with his two brothers and his middle brother's family, on a 13 acre tract west of Austin.

Mr. Strickland has been an active member of space and science related organizations from 1961 (when he joined the American Rocket Society as a student member) to the present. In 1975-6 he joined both the National Space Institute and the L-5 Society: the "parents" of the NSS. He was the founder and has been the chairman for the Austin Space Frontier Society from 1981 to the present. He created the Robert A. Heinlein Memorial Award for the National Space Society in 1988, (shortly after that author's death), and has managed the award from then to the present. He also worked on the designs and supervises production of both the Von Braun and the O'Neill Awards. He is the chairman of the NSS Awards Committee. In 1988, he was a founder of the NSS Chapters Assembly, and served as one of its officers. He was a past NSS director representing Region 3: the Southwestern states from 2004 -2006, and has run space transportation tracks for NSS conventions in 2004 and 2007. and is also a director of the Sunsat Energy Council (now Space Power Association). He is an Advocate in good standing with the Space Frontier Foundation and a member of the Mars Society.



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Education:

- 1986-88 Ph.D., Aerospace Engineering Sciences, University of Colorado
- 1982-85 M.S., Aerospace Engineering Sciences, University of Colorado
- 1973-74 Colorado Secondary Teacher Certificate, University of Colorado
- 1967-72 B.A., Inter-American Social Relations, University of Colorado

Highlighted Scientific Background:

- 2009-14 Director, USU Center for Space Weather
- 2009-11 Principal Investigator, USAF USGS Realtime Dst SBIR
- 2001-10 Chief Scientist, Space Environment Technologies/SWD
- 2001-10 U.S. Lead Delegate, ISO TC20/SC14/WG4 (Space Environment)
- 2009-10 Principal Investigator, USAF Dst SBIR
- 1998-10 U.S. Project Lead, ISO Solar irradiance standard (IS 21348:2007)
- 1993-10 Co-Investigator, NASA TIMED/Solar EUV Experiment
- 2004-09 Part-time lecturer, University of Southern California, Space Environment
- 2001-08 Principal Investigator, NASA LWS Program
- 2000-06 Principal Investigator, NOAA/SEC-SET CRADA
- 2003-04 Principal Investigator, USAF Operational Ionospheric Forecast System SBIR
- 1995-03 Co-Investigator, NASA Galileo Ultraviolet Spectrometer
- 2000-02 Program Director and Senior Scientist, Logicon-FDC/SpaceWx
- 1999-02 Principal Investigator, NATO Collaborative Research Grant
- 1998-02 Principal Investigator, NASA JSDAP
- 1998-01 Principal Investigator, NASA SOHO Guest Investigator Program
- 1994-97 Principal Investigator, NASA UARS Guest Investigator Program
- 1991-93 Principal Investigator, NATO Collaborative Research Grant

Active Association Memberships:

- AGU, COSPAR, AIAA, AMS, US TAG (ISO)

Highlighted Awards, Honors, and Service:

- 2004-12 COSPAR C1 Sub-Commission Chair
- 2002-10 COSPAR International Reference Atmosphere (CIRA) Vice-Chair

- 2006, 2003, 2000, 1998, 1997, 1996, 1994, 1993, 1983 NASA Group Achievement Awards
- 2001-04 AIAA Distinguished Lecturer



Mark Wallach is a Partner at Calfee, Halter & Griswold LLP, where he serves as Co-Chair of the Litigation Group of more than 40 attorneys. The firm represents a broad spectrum of businesses, organizations and individuals, including publicly and privately traded corporations, on matters ranging from business issues to intellectual property matters, and is a member of Lex Mundi, a network of law firms located in 155 countries.

His practice includes litigation and trial of complex business disputes, concentrating on corporate, business tort, utilities and public law litigation, with in-depth focus on consultant and accountant liability litigation, contract disputes, trade secrets and non-competition covenants. Mr. Wallach also works with clients to resolve zoning and other issues involving local and state governments. He regularly appears in state and federal courts throughout the country on behalf of both plaintiffs and defendants.

Mr. Wallach is Chair of The Sculpture Center, a non-profit organization that promotes the careers of young sculptors, and a member of the Executive Committee of the Cleveland Chapter of the American Constitution Society. He is listed in Who's Who in America and The Best Lawyers in America, as well as Chambers' Leading U.S. Lawyers.

For several years, Mr. Wallach has been an active advocate for Space Based Solar Power, becoming General Counsel of the NewSpace Alliance in 2008. He was a contributor to the October 2007 Report on Space Based Solar Power issued by the National Space Security Office, and has written and spoken widely on SBSP to a variety of audiences. In addition, Mr. Wallach is an active member of the National Space Society and the Space Frontier Foundation, and has participated in multiple meetings with Congressional offices about SBSP and space issues, generally. In 2009, Mr. Wallach became a member of the Advisory Board of Space Energy, Inc.



Dr. Hou Xinbin

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Hou is the deputy director of Deep Space Exploration & Space Science Technology Research Division, CAST R&D Center and the team leader of Solar Power Satellite Project in CAST R&D Center. His major professional strengths are focus on thermal design of satellites, space science, and has participated several national key projects, such as ChangE-1.