

As of 5-22-18

**Thursday, May 24**

**Registration**

8:00 am - 7:00 pm

**Century Prefunction**

**Student Registration**

9:00 am - 6:00 pm

**Grand ABC**

**Exhibit Hall**

10:00 am - 7:00 pm

**Gateway & Century Prefunction**

**Morning Plenary**

8:30 am - 9:45 am

**Grand Ballroom**

Welcome & MC: John C. Mankins, ISDC 2018 Conference Chair, President, Mankins Space Technology, National Space Society Board of Directors  
 Opening Remarks: Mark Hopkins, Chairman of the Executive Committee, National Space Society Board of Directors  
 Felicitation Ceremony with Avinash Shirode, President, NSS Nashik India Chapter "Development of the Merlin Rocket Engine"  
 Keynote Speaker: Thomas Mueller, Propulsion Chief Technology Officer, SpaceX Presenting of NSS Space Pioneer Award to Thomas Mueller

**Student Plenary**

10:00 am - 10:45 am

**Grand Ballroom**

"Running The Risk: Notes From An Adventurous Life"  
 Keynote Speaker: Geoff Notkin, CEO, Aerolite Meteorites, Inc., President, Desert Owl Productions, Inc., and National Space Society Board of Governors

**10:00 am - 12:00 noon**

**Living In Space**

10:00 am

10:30 am

10:50 am

11:10 am

11:20 am

11:40 am

**Morning Sessions & Symposia**

**Salon 210 (2nd floor)**

Your Home on Mars. Vera Mulyani (Mars City Design LLC)

Designing Aesthetics into Space Environments. Ayse Oren

Building A Lunar Base as the Foundation for a Future Mars Settlement. Joshua Castro (InstarZ Technologies)

NSS/NASA Ames Student Space Settlement Contest Presentation

Next Generation Ionizing Radiation Characterization from Aviation Altitude to Deep Space. Dr. Lika Guhathakuta (NASA Ames Research Center)

The Mt. Everest Colony: Testing a Mars Colony Prototype. Greg Manos (Filmmakers Turned Technologists)

**Moon Development**

10:00 am

10:00 am

10:15 am

10:30 am

11:00 am

11:15 am

11:30 am

11:45 am

**Laguna Room**

**Lunar Development & Settlement**

Opening Remarks. Madhu Thangavelu (University of Southern California)

We Choose to go to the Moon: Looking Beyond "Settlement." Tim Hanlon (For All Moonkind)

Moon Village Precursor Activities. Dr. James D. Burke (NASA Jet Propulsion Laboratory, retired)

ESA Studies: Moon Village Concept & Future Directions for the Moon. Dr. Bernard Foing (European Space Agency)

**Enabling Capabilities for Lunar Exploration & Development**

Exploration and Potential Uses of Lunar Lava Tubes. Madhu Thangavelu (University of Southern California)

TRIDENT: The Regolith and Ice Drill. Dr. Kris Zacny (Honeybee Robotics)

The Next-Generation RTG Power System Study: Recommendations and Potential Use of the Technology for Lunar Development. Dr. Knut I. Oxnevad (NASA Jet Propulsion Laboratory)

Optical Communications Advances: An Overview. Dr. Abhijit Biswas (NASA Jet Propulsion Laboratory)

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**Thursday, May 24**

<p><b>Space Exploration</b></p> <p>10:00 am</p> <p>10:30 am</p> <p>11:00 am</p> <p>11:10 am</p> <p>11:35 am</p>	<p><b>Redondo Room</b></p> <p><b>Solar System Exploration</b></p> <p>Cislunar Explorer To the Moon Dr. Dean Larson (National Space Society)</p> <p>Molecular Composition Analysis of Distant Targets. Dr. Gary Hughes (California Polytechnic State University)</p> <p>NSS/NASA Ames Student Space Settlement Contest Presentation</p> <p>Venus Interior Probe Using In-Situ Power and Propulsion (VIP-INSPR). Dr. Ratnakumar Bugga (NASA Jet Propulsion Laboratory)</p> <p>Automaton Rover for Extreme Environments (AREE). Jonathan Sauder (NASA Jet Propulsion Laboratory)</p>
<p><b>Space Operations</b></p> <p>10:00 am</p> <p>10:30 am</p> <p>11:00 am</p> <p>11:30 am</p>	<p><b>Malibu Room</b></p> <p><b>Advanced In-Space Operations</b></p> <p>On-Orbit Servicing: Paving the Legal (and Economic) Path for These Invasive but Necessary Missions. Michelle Hanlon (ABH Aerospace, LLC)</p> <p>Successful Handling of Space Debris – Don't Depend on Space Treaties! Tanya Sienko (Prairie Nanotechnology, LLC)</p> <p>Lightsheet Sensor for the Detection of Orbital Debris or Meteoroids in Interplanetary Space. Andrew Nicholas (Naval Research Laboratory)</p> <p>Can Orbital Debris Crowding Lead to Prohibitive Satellite Costs? Dr. Brendan Cunningham (Eastern Connecticut State University)</p>
<p><b>Space Settlements</b></p> <p>10:00 am</p> <p>10:30 am</p> <p>11:00 am</p> <p>11:30 am</p>	<p><b>Hermosa Room</b></p> <p>ELEO Settlement: Progress and Setbacks. Al Globus (San Jose State University)</p> <p>Lighting Requirements for Agriculture in Space. Stephen D. Covey (Deep Space Industries)</p> <p>Soil for Space Habitats from Environmental Control and Life Support System (ECLSS) Bi-Products Combined with Regolith. Richard Soilleux (British Interplanetary Society)</p> <p>What's My Dinner? Space Farms and Menus for a Space Settlement. Bryce Meyer (Cyan React)</p>
<p><b>Space Solar Power</b></p> <p>10:00 am</p> <p>10:15 am</p> <p>10:30 am</p> <p>10:45 am</p> <p>11:15 am</p> <p>11:30 am</p>	<p><b>Seminar Room (2nd floor)</b></p> <p><b>Commemoration: 50 Years of SPS</b></p> <p>Stepping Stones to Space Solar Power. Richard Dickinson (NASA Jet Propulsion Laboratory, retired)</p> <p>Remembering Peter Glaser (by video). Gregg Maryniak (XPRIIZE Foundation)</p> <p>Remembering Peter Glaser. Hal Walker, Jr. (A-MAN, Inc.)</p> <p>50 Years of Space Solar Power: A Retrospective. Guy Pignolet (CNES, retired)</p> <p>50 Years of Space Solar Power: A Retrospective. John C. Mankins (Mankins Space Technology)</p> <p>Panel: 50 Years of SPS. Richard Dickinson (NASA Jet Propulsion Laboratory, retired), Hal Walker, Jr. (A-MAN, Inc.), Guy Pignolet (CNES, retired) and John C. Mankins (Mankins Space Institute). Moderator: Gary Barnhard (Xtraordinary Innovative Space Partnerships, Inc.)</p>
<p><b>Student Event</b></p> <p>11:00 am - 12:00 noon</p>	<p><b>Gateway Ballroom</b></p> <p>"The Century of Universalization: The World Within the Universe"</p> <p>Speaker: Dr. Lorna Jean Edmonds, Vice Provost for Global Affairs and International Studies, Professor, College of Health Sciences and Professions, Ohio University</p>
<p><b>Lunch</b></p> <p>12:00 noon - 1:50 pm</p>	<p><b>Grand Ballroom</b></p> <p>"A Celebration of Voyager's 40-Year Journey: Beyond the Solar System"</p> <p>Keynote Speaker: Dr. Michael Watkins, Director, NASA Jet Propulsion Laboratory</p> <p>Presenting of NSS Space Pioneer Award to Voyager Team, NASA Jet Propulsion Laboratory</p> <p>MC: Mat Kaplan, Host and Producer of The Planetary Society's <i>Planetary Radio</i></p>
<p><b>Student Poster Session</b></p> <p>1:30 pm - 3:30 pm</p>	<p><b>Grand ABC</b></p> <p>NSS/NASA Ames Space Settlement Contest posters on display with the student presenters.</p>
<p><b>Student Event</b></p> <p>2:00 pm - 3:30 pm</p>	<p><b>Grand ABC</b></p> <p>Students Meet &amp; Greet with Dr. Kathryn Sullivan, Space Shuttle Astronaut</p>

As of 5-22-18

**Thursday, May 24**

**Student Program**

2:00 pm - 3:00 pm

**Gateway Ballroom**

Universalization Debate Orientation

**2:00 pm - 5:00 pm**

**Living In Space**

2:00 pm

2:30 pm

2:50 pm

3:10 pm

3:30 pm

3:50 pm

4:10 pm

4:30 pm

**Mars Exploration**

2:00 pm

2:30 pm

3:00 pm

3:10 pm

4:00 pm

4:20 pm

4:40 pm

**Space Exploration**

2:00 pm

2:30 pm

3:00 pm

3:30 pm

3:40 pm

4:15 pm

**Afternoon Sessions & Symposia**

**Salon 210 (2nd floor)**

Overcoming the Health Barriers to Space-New Advances - Genetic Engineering for Improved Human Physiological Response to Spaceflight. Dr. Karolina Chwalek (Harvard Medical School)

NASA's Efforts to Manage Health Risks for Space Exploration and Risk Mitigation Research. Bill Gardiner (Analytech Division of Laboratory Consulting Sources, Inc.)

Destination Mars: A New Approach to Selecting Astronauts for LDEMs. Katsiaryna Snytkova

NSS/NASA Ames Student Space Settlement Contest Presentation

Training for Astronautics and life on Mars. Dr. Susan Jewell (Mars Academy USA)

Opening Up Space to the Common Person. Rachel Lyons (Space for Humanity)

How to Be a Better Pro-Space Advocate. Art Harman (The Coalition to Save Manned Space Exploration)

Panel: Overcoming the Health Barriers to Spaceflight for All - In Space and Here on Earth. Bill Gardiner, Dr. Karolina Chwalek, Katsiaryna Snytkova, Rachel Lyons, and Art Harman.

**Laguna Room**

**Mars Exploration & Settlement**

Noctis Landing: A Landing and Base Site for Humans on Mars. Dr. Pascal Lee (Mars Institute)

3-D Printing a Mars Habitat Using Indigenous Materials. Helen Wexler (Caltech Bubble-Base)

NSS/NASA Ames Student Space Settlement Contest Presentation

The Mars Suit Project. Dr. Larry Kuznetz (University of California, Berkeley)

To G or Not to G - Artificial Gravity Reconsidered. Dr. Larry Kuznetz (University of California, Berkeley)

Regolith Processing Via ERUPT: the Exhaust Recovery Utilization Processing Tool.

Patrick Anselmo Donovan (Space Cooperative)

Radiation Blanket Concepts for Shielding a Crewed Mars Transit Vehicle. Dr. Kristina Rojdev (NASA)

**Redondo Room**

**Solar System Exploration**

Commercially Enabled Science. Bruce Pittman (National Space Society)

The Importance of Asteroid, Martian, and Lunar Regolith Simulants for Deep Space Mission Planning. Stephen D. Covey (Deep Space Industries), Dr. John S. Lewis (Deep Space Industries), Dr. Daniel Britt (University of Central Florida), Dr. Kevin Cannon (University of Central Florida)

Developing the Robotic Workforce That Will Enable The Next Generation of Space Exploration and Development. Mark Nall (OffWorld)

NSS/NASA Ames Student Space Settlement Contest Presentation

Economical Design of a 1U-Sized Cube Satellite Docking Module. Samuel Y.W. Low (Singapore University of Technology and Design)

Panel: Exploration & Development of Moon and Beyond. Dr. Allison Zuniga (NASA Ames Space Portal Office), Dr. Greg Autry (University of Southern California Marshall School of Business) and Dr. John Cumbers (SynBioBeta). Moderator: Bruce Pittman (National Space Society)

As of 5-22-18

**Thursday, May 24**

<p><b>Space Operations</b></p> <p>2:00 pm</p> <p>2:30 pm</p> <p>2:45 pm</p> <p>3:00 pm</p> <p>3:30 pm</p> <p>4:00 pm</p> <p>4:30 pm</p> <p><b>Space Settlements</b></p> <p>2:00 pm</p> <p>2:10 pm</p> <p>3:20 pm</p> <p>3:30 pm</p> <p>4:00 pm</p> <p>4:30 pm</p> <p><b>Space Solar Power</b></p> <p>2:00 pm</p> <p>2:15 pm</p> <p>2:30 pm</p> <p>2:45 pm</p> <p>3:00 pm</p> <p>3:15 pm</p> <p>3:30 pm</p> <p>4:00 pm</p> <p>4:15 pm</p> <p>4:55 pm</p>	<p><b>Malibu Room</b></p> <p>Advanced In-Space Operations</p> <p>Space Debris Removal for Fun and Profit! Marshall Kaplan (Launchspace Technologies Corporation)</p> <p>NSS/NASA Ames Student Space Settlement Contest Presentation</p> <p>NSS/NASA Ames Student Space Settlement Contest Presentation</p> <p>NanoRacks: The First Commercial Space Station Company with Customers. Sam Wald (NanoRacks)</p> <p>On-Orbit Refueling: Extending Spacecraft Life by Refueling On-orbit. Dallas Bienhoff (Cis-lunar Space Development Company, LLC)</p> <p>The Restore-L Servicing Mission. Brent Robertson (NASA, Goddard Space Flight Center)</p> <p>20,000 New Satellites: What, Me Worry? Alfred Anzaldua (National Space Society)</p> <p><b>Hermosa Room</b></p> <p>NSS/NASA Ames Student Space Settlement Contest Presentation</p> <p>Panel: Space Farming. Bryce Meyer (Cyan React), Stephen Covey (Deep Space Industries), and Richard Soilleux (British Interplanetary Society). Moderator: Al Globus (San Jose State University)</p> <p>NSS/NASA Ames Student Space Settlement Contest Presentation</p> <p>Living Beyond Earth, in Partial Gravity. Joe Carroll (Tether Applications)</p> <p>Dental Healthcare in Space – Current Review and Next Steps. Linda Dao (International Space University)</p> <p>Seeing is Believing: How Visualization Adds Value to the Space Settlement Design Process. Bryan Versteeg (Spacehabs.com)</p> <p><b>Seminar Room (2nd floor)</b></p> <p><b>Recent Developments in SPS - Concepts and Programs</b></p> <p>Space Solar Power Concept: CASSIOPeiA. Ian Cash (International Electric )</p> <p>Space Solar Power Concept: SSP Initiative. Dr. Michael Kelzenberg (California Institute of Technology)</p> <p>Space Solar Power Japanese Activities. Koji Tanaka (Japan Aerospace Exploration Agency)</p> <p>Space Solar Power Concept: SPS-ALPHA. John C. Mankins (Mankins Space Technology)</p> <p>Improved OMEGA Project of Solar Power Satellite (SSPS). Prof. Baoyan Duan (Xidian University)</p> <p>Propulsion Power Satellite. Keith Henson (Independent Researcher)</p> <p>Panel: Space Solar Power Concept Alternatives. Moderator: Dr. Paul Jaffe (Naval Research Laboratory)</p> <p><b>Recent Developments in SPS - Demos</b></p> <p>Criteria for Comparison of Power Beaming Demos. Dr. Paul Jaffe (Naval Research Laboratory)</p> <p>Panel: Space-to-Space Power Beaming Missions. Dr. Paul Jaffe (Naval Research Laboratory), David Dunlop, Brad Blair (NewSpace Analytics) and Joe Rauscher. Moderator: Gary Barnhard (Xtraordinary Innovative Space Partnerships, Inc.)</p> <p>R&amp;D in Japan (by video) Dr. Naoki Shinohara (Kyoto University)</p> <p><b>Grand Ballroom</b></p> <p>Workshop: Planetary Defense from Asteroids and Comets</p> <p>Dr. Nahum Melamed, Project Leader, The Aerospace Corporation</p> <p><b>Boardroom (2nd floor)</b></p> <p>Gerard O'Neill Voyagers Circle members private reception with NSS Leadership</p> <p><b>Redondo Room</b></p> <p>NSS Chapters Assembly</p> <p><b>Salon 210 (2nd floor)</b></p> <p>NSS Chapters Assembly</p> <p><b>Century Prefunction</b></p> <p><b>Gateway Ballroom</b></p>
<p><b>Student Program</b></p> <p>3:30 pm - 5:00 pm</p> <p><b>NSS Meeting</b></p> <p>5:00 pm - 6:00 pm</p> <p><b>NSS Meeting</b></p> <p>5:00 pm - 7:00 pm</p> <p><b>NSS Meeting</b></p> <p>5:30 pm - 6:00 pm</p> <p><b>Cocktail Reception</b></p> <p>6:00 pm - 7:00 pm</p> <p><b>Movie Screening</b></p>	

As of 5-22-18

7:00 pm - 8:30 pm

**Dinner**

7:00 pm - 9:30 pm

**NSS Meeting**

10:00 pm

**NSS Meeting**

10:00 pm - Till

**Thursday, May 24**

"Chesley Bonestell: A Brush with the Future" (feature-length documentary)

**Grand Ballroom**

"Looking at Earth After Being in Space"

Keynote Speaker: Dr. Kathryn Sullivan, Former Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator and Space Shuttle Astronaut

Presenting of NSS Space Pioneer Award to Dr. Kathryn Sullivan

NSS Chapter Awards

Recognition of the Donors in the Gerard O'Neill Voyagers Circle

MC: Karlton Johnson, Director, Information Risk Management, Arconic, Colonel, USAF (retired) and National Space Society Board of Governors

**Redondo Room**

ISDC 2019 planning meeting

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