

(C^ONFER EN^{CE}) + SCHED^DULE

*Conference schedule is subject to change

+ MONDAY, AUGUST 10, 2009

11:00 A.M.	Registration—Exhibits Open
1:00 P.M.	Conference Welcome
1:15–2:15 P.M.	Keynote Address: LTG Kevin T. Campbell—Commanding General USASMDC/ARSTRAT; Commander, Joint Functional Component Command—Integrated Missile Defense
2:15 P.M.	Break
2:30 P.M.	Conference Announcements
2:45–4:00 P.M.	Session I: New Elements
4:00 P.M.	Exhibit Viewing
4:30–5:30 P.M.	Session II: Liquid to Gas
6:00–9:00 P.M.	Opening Social

+ TUESDAY, AUGUST 11, 2009

7:30–8:30 A.M.	Breakfast
8:30 A.M.	Conference Announcements
8:45–10:15 A.M.	Session III: Mission Payloads
10:15 A.M.	Break
10:45 A.M.–12:45 P.M.	Session IV: Recent & Future Missions
12:45 P.M.	Munch & Mingle Luncheon
1:45 P.M.	Exhibit Viewing
2:30–3:45 P.M.	Session V: Advanced Technologies 1
3:45 P.M.	Break
4:15–5:30 P.M.	Session VI: Advanced Technologies 2
————	Free Evening/Industry Sponsored Events





CONFERENCE SCHEDULE:

+ WEDNESDAY, AUGUST 12, 2009

7:30–8:30 A.M.	Breakfast
8:30–10:00 A.M.	Session VII: Spacecraft Systems
10:00 A.M.	Break
10:30 A.M.–12:15 P.M.	Session VIII: Student Competition
12:15 P.M.	Munch & Mingle Luncheon
1:15 P.M.	Exhibit Viewing
1:45–3:15 P.M.	Session IX: Earth to Orbit
3:15 P.M.	Break
3:45–5:30 P.M.	Session X: The Smaller Elements
5:30–6:00 P.M.	Student Scholarship Awards
6:45–8:15 P.M.	Go Local Wednesday! Maps & details at Conference headquarters

+ THURSDAY, AUGUST 13, 2009

7:30–8:30 A.M.	Breakfast
8:30–10:30 A.M.	Session XI: Advanced Technologies 3
10:30 A.M.	Break
10:45 A.M.–12:45 P.M.	Session XII: The Next Generation
12:45 P.M.	Munch & Mingle Luncheon

EXHIBIT HOURS

<input type="checkbox"/> Monday, August 10	11:00 A.M. to 5:00 P.M.
<input type="checkbox"/> Tuesday, August 11	9:00 A.M. to 5:00 P.M.
<input type="checkbox"/> Wednesday, August 12	9:00 A.M. to 4:30 P.M.
<input type="checkbox"/> Thursday, August 13	Exhibits Closed



1**Sn****Session I****MON. AUGUST 10****NEW ELEMENTS :**

Fresh ideas and intellectually challenging concepts on the potential mission applications.

CHAIR: KENT MILLER, AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

+2:45 P.M.**Fractionated Space Architectures: Tracing the Path to Reality**

Owen Brown, Paul Eremenko—Defense Advanced Research Projects Agency; Matt Bille—Booz Allen Hamilton

+3:00 P.M.**When Quantity Matters...**

Luca Maresi—European Space Agency (ESA); Thomas Walati—Astrium GMBH Satellites

+3:15 P.M.**Enabling International Collaboration on ORS**

Robert Pugh—Think Strategically, LLC.; Jeffrey Welsh—Operationally Responsive Space Office; James Lyke—Air Force Research Laboratory, Space Vehicles Directorate

+3:30 P.M.**Incorporating a Test Flight into the Standard Development Cycle**

Steve Wichman, Mike Pratt, Spencer Winters—Redefine Technologies, Inc.

+3:45 P.M.**What Goes Around, Comes Around: New Solutions to Old Problems**

Craig Clark—Clyde Space Ltd

☐ WE VALUE YOUR OPINION!

Help us make 2010 even better! Fill out the post-conference evaluation form located in the back of your pocket program. Your feedback assists us in improving future Small Satellite Conferences.

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Session II
MON. AUGUST 10



LIQUID TO GAS:

Propulsion systems and technologies developed to provide greater capability to small satellite missions.

CHAIR: AARON ROGERS, JOHNS HOPKINS UNIVERSITY/APPLIED PHYSICS LABORATORY

+ 4:30 P.M.

CubeSat Propulsion Using Electro spray Thrusters

Tom Roy, Vlad Hruby, Nathan Rosenblad, Peter Rostler and Douglas Spence—Busek Co. Inc.

+ 4:45 P.M.

Expanding the ADN-Based Monopropellant Thruster Family

K. Anflo—ECAPS; S. Moore—ATK, Tactical Propulsion & Controls; P. King—Moog Inc.

+ 5:00 P.M.

Micro RF Ion Engine for Small Satellite Applications

Michael Tsay, Kurt Hohman, Lynn Olson—Busek Co., Inc.

+ 5:15 P.M.

Monopropellant Micro Propulsion System for CubeSats

Chris Bidy, Tomas Svitek—Stellar Exploration

□ CALENDAR OF EVENTS

+ UNIVERSITY NANOSAT PROGRAM

Location: USU Engineering Building—Rooms 101

Thursday, August 13 and Friday, August 14

+ DOD/ORS MEETING

Location: USU Engineering Building—Room 103

Thursday, August 13



3**Sn****Session III**
TUES. AUGUST 11**MISSION PAYLOADS :**

Advanced, cutting-edge, mission related technologies and sensors (not bus sensors) designed specifically with small satellite missions in mind.

SESSION CHAIR: HALLIE WALDEN, BALL AEROSPACE

+8:45 A.M.

**STEIN (SupraThermal Electrons, Ions and Neutrals),
A New Particle Detection Instrument for Space
Weather Research with CubeSats**

D.L. Glaser, J.S. Halekas, P. Turin, D.W. Curtis, D.E. Larson, S.E. McBride,
R. P. Lin—Space Sciences Laboratory, University of California at Berkeley

+9:00 A.M.

A GPS Bistatic Radar for Small Satellite Applications

James Pogemiller, Chen-Chi Chu, Demoz Gebre-Egziabher—University of
Minnesota

+9:15 A.M.

**Affordable SAR Constellations to Support Homeland
Security**

Adam Baker, Rachel Bird, Stuart Eves—Surrey Satellite Technology Ltd./
Surrey Space Centre; Brent Abbott—Surrey Satellite Technology US LLC

+9:30 A.M.

**Big Astrophysics in a Small Package—The Gravity &
Extreme Magnetism SMEX (GEMS) Mission**

Erin Walter, Carlos Niederstrasser—Orbital Sciences Corporation USA;
Jean Swank, Keith Jahoda—NASA Goddard Space Flight Center

+9:45 A.M.

**Compact Dual Field-of-View Telescope for Small
Satellite Payloads**

James Peterson, Trent Newswander—Space Dynamics Laboratory

+10:00 A.M.

The Cibola Flight Experiment

Michael Caffrey, Kim Katko, Anthony Nelson, Joseph Palmer, Scott
Robinson, Diane Roussel-Dupre, Anthony Salazar—Los Alamos National
Laboratory; Michael Wirthlin, William Howes, Daniel Richins—Brigham
Young University

ALTERNATES :

**Operational Class Smallsat System for Sub-Metre
Resolution Imaging**

Maarten Meerman, George Tyc, Tim Butlin, Wade Larson—MDA; Nick
Waltham, Nigel Morris—Rutherford Appleton Laboratory

**Compact Optical Payload for Daily Survey of
Vegetation from Small Satellites**

Luca Maresi, Matteo Taccola—European Space Agency; Wouter Moelans—
OIP Sensor Systems; Vincent Moreau—AMOS; JanVermeiren—XenICs

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Session IV
TUES. AUGUST 11

RECENT & FUTURE MISSIONS:

Highlights & lessons learned from missions flown over the last 18 months as well as a preview of future scheduled missions.

CHAIR: CARLOS NEIDERSTRASSER, ORBITAL SCIENCES CORPORATION

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|---------------------|--|
| + 10:45 A.M. | Blue Marble: Remote Characterization of Habitable Planets
Neville Woolf—University of Arizona; Brian Lewis—The Aerospace Corporation; James Chartres, Anthony Genova—NASA Ames Research Center |
| + 11:00 A.M. | System Outline of Small Standard Bus and ASNARO Spacecraft
Toshiaki Ogawa—NEC Corporation; Keita Miyazaki—Institute for Unmanned Space Experiment Free Flyer (USEF); Osamu Itoh—New Energy and Industrial Technology Development Organization (NEDO) |
| + 11:15 A.M. | Small Satellite Rendezvous and Characterization of Asteroid 99942 Apophis
James Chartres—Carnegie Mellon University/NASA Ames Research Center; David Dunham, Bobby Williams—KinetX, Inc.; Anthony Genova, Anthony Colaprete, Ronald Johnson, Belgacem Jaroux—NASA Ames Research Center |
| + 11:30 A.M. | BX-1: The Companion Microsatellite in Shenzhou-7 Mission
Zhencai Zhu, Hongyu Chen, Wen Chen, Yilin Zhou, Yong Yu, Caixia Cao—Chinese Academy of Sciences |
| + 11:45 A.M. | Spin Dynamics of the Pico Satellite Solar Cell Testbed Spacecraft
Siegfried Janson, David Hinkley—The Aerospace Corporation |
| + 12:00 P.M. | Canadian Advanced Nanospace Experiment 2 Orbit Operations: One Year of Pushing the Nanosatellite Performance Envelope
Karan Sarda, Cordell Grant, Stuart Eagleson, Daniel Kekez, Ameer Shah, Robert Zee—Space Flight Laboratory/University of Toronto |
| + 12:15 P.M. | Delfi-C³ Preliminary Mission Results
Robbert Hamann, Jasper Bouwmeester, Geert Brouwer—Delft University of Technology |
| + 12:30 P.M. | RapidEye System Commissioning and On-Orbit Performance
Daniel Schulten, George Tyc, Yolanda Brown, Joe Steyn, Norman Hannaford, Wade Larson—MDA |

ALTERNATES:

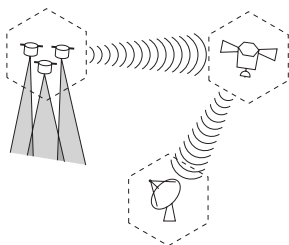
Initial Flight Results from the PharmaSat Biological Microsatellite Mission

Christopher Kitts, Karolyn Ronzano, Richard Rasay, Ignacio Mas, Jose Acain, Michael Neumann, Laura Bica, Paul Mahacek, Giovanni Minelli, Erin Beck, Steve Li, Brian Gamp, Seamus Agnew, John Shepard—Robotic Systems Laboratory/Santa Clara University; John Hines, Elwood Agasid, Charlie Friedericks, Matthew Piccini, Macarena Parra, Linda Timucin, C. Beasley, Mike Henschke, Ed Luzzi, Nghia Mai, Mike McIntyre, Robert Ricks, Antonio Ricco, David Squires, Bruce Yost, Greg Defouw, Aaron Schooley, Diana Ly, Millan Diaz-Aguado, Eric Stackpole, Orlando Diaz, Tammy Doukas—NASA Ames Research Center; David Niesel, Michael McGinnis—The University of Texas Medical Branch

Nanosatellite Tracking Ships: From Concept to Launch in Seven Months

Freddy Pranajaya, Robert Zee—Space Flight Laboratory/University of Toronto; Jeff Cain, Richard Kolacz—COM DEV Limited



**5****Sn****Session V**
TUES. AUGUST 11**ADVANCED TECHNOLOGIES 1:**

Innovative, proven or unproven approaches to small satellite technology (components or subsystems) that may offer quantum benefits in next generation small spacecraft.

CHAIR: CHARLES SCOTT MACGILLIVRAY, THE BOEING COMPANY

+2:30 P.M.**Exploiting Link Dynamics in LEO-to-Ground Communications**

Joseph Palmer, Michael Caffrey—Los Alamos National Laboratory

+2:45 P.M.**Electrochromic Thermal Manager for Mini, Micro and Nano Satellites**

Hulya Demiryont, Kenneth Shannon—Eclipse Energy Systems, Inc.; Elwood Agasid—NASA Ames Research Center

+3:00 P.M.**Calibration Techniques for Low-Cost Star Trackers**

Tom Dzamba, John Enright—Ryerson University

+3:15 P.M.**The ADPMS Ready for Flight: An Advanced Data & Power Management System for Small Satellites and Missions**

Koen Puimège, Jo Bermyn—Verhaert Space

+3:30 P.M.**Rapid Assembly of Spacecraft Structures for Responsive Space**

Shazad Sadick, Roopnarine, Irene Yachbes—Honeybee Robotics Spacecraft Mechanisms Corporation

+3:45 P.M.**Follow that Ground Station! And Double the Data Throughput Using Polarization Diversity**

Peter Garner, Nigel Phillips, Andrew Cawthorne, Alex da Silva Curiel, Phil Davies, Lee Boland—Surrey Satellite Technology Ltd./Surrey Space Centre

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Session VI
TUES. AUGUST 11

ADVANCED TECHNOLOGIES 2:

Innovative, proven or unproven approaches to small satellite technology (components or subsystems) that may offer quantum benefits in next generation small spacecraft.

CHAIR: JANA SCHWARTZ, THE CHARLES STARK DRAPER LABORATORY

+ 4:15 P.M.	<p>3Dwheel: 3-Axis Low Noise, High-Bandwidth Attitude Actuation from a Single Momentum Wheel Using Magnetic Bearings Jon Seddon, Alexandre Pechev—Surrey Space Centre</p>
+ 4:30 P.M.	<p>Plug-and-Play (PnP) Micro-Electro-Mechanical System (MEMS) Inertial Measurement Unit (IMU) an Enabling Technology for Small Satellites Jon Pollack, Jane Hansen—HRP Systems, Inc; Dan Cardarelli—MilliSensor Systems and Actuators, Inc. (MSSA); Paul Graven—Microcosm, Inc.</p>
+ 4:45 P.M.	<p>Improving Angles-Only Navigation Performance by Selecting Sufficiently Accurate Accelerometers Jason Schmidt, David Geller—Utah State University; Frank Chavez—Air Force Research Laboratory/SVD</p>
+ 5:00 P.M.	<p>Plug and Play Spacecraft Evolution Don Fronterhouse—PnP Innovations, Inc</p>
+ 5:15 P.M.	<p>Self Deploying Nitinol LHP Radiator for Small Spacecraft Alfred Phillips—Thermacore, Inc.; Jentung Ku—NASA Goddard Space Flight Center</p>
ALTERNATE :	<p>Collision Probability Estimation Michael Phillips, David Geller, Frank Chavez—Utah State University</p>

☐ GO LOCAL WEDNESDAY NIGHT!

Kick off your evening with us & then explore Cache Valley. Need some ideas? We can help. Map and details at Conference headquarters.



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Session VII
WED. AUGUST 12

SPACECRAFT SYSTEMS :

A session looking at the emerging spacecraft systems engineering of small satellites.

CHAIR: QUINN YOUNG, SPACE DYNAMICS LABORATORY

+8:30 A.M.

Advanced System of Micro Satellite for Hyperspectral Remote Sensing Mission

Yoshihide Aoyanagi, Shin Satori, Ryuichi Mitsuhashi—Hokkaido Institute of Technology; Tsuyoshi Totani—Hokkaido University; Toshihiko Yasunaka—Uematsu Electric Co, Ltd.; Akihiro Nakamura—AIDMA, Inc.; Yusuke Takeuchi—Hokkaido Satellite, Inc.

+8:45 A.M.

Autonomous Pose Estimations for In-Orbit Self-Assembly of Intelligent Self-Powered Modules

Samia Smail—Surrey Space Centre; David Wokes, Craig Underwood and Phil Palmer—Surrey Satellite Technology Ltd./Surrey Space Centre

+9:00 A.M.

Multi-Mission Suitability of the NASA Ames Modular Common Bus

Sascha Tietz—Stinger Ghaffarian Technologies Inc.; James Bell, Butler Hine—NASA Ames Research Center

+9:15 A.M.

Advanced Middleware for Space Plug-and-Play Avionics (SPA) Architecture Standardization and Rapid Systems Integration

Grant Holcomb—ATK Launch Systems

+9:30 A.M.

RISTRETTO: A French Space Agency Initiative for Student Satellite in Open Source and International Cooperation

M. Saleman, C. Lambert—CNES; D. Hernandez—Devil-Hop

+9:45 A.M.

SatTherm: A Thermal Analysis and Design Tool for Small Spacecraft

Cassandra Allison—Universities Space Research Association/NASA Ames Research Center; Millan Diaz-Aguado—ASRC Research and Technology Solutions/NASA Ames Research Center; Belgacem Jaroux—NASA Ames Research Center

ALTERNATE :

Simulation-Based Testing of Embedded Attitude Control Algorithms of an FPGA Based Micro Satellite
Muhammad Yasir, Toshinori Kuwahara, Claas Ziemke, Michael Fritz, Hans-Peter Roeser—Institute of Space Systems

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Session VIII
WED. AUGUST 12

STUDENT COMPETITION:

17TH Frank J. Redd Student
Scholarship Competition

TECHNICAL CHAIR: STANLEY KENNEDY, AEROASTRO, INC.

SCHOLARSHIP CHAIR: GWYNNE SHOTWELL, SPACE EXPLORATION TECHNOLOGIES

+ 10:45 A.M.

Online Dynamic Modeling and Localization for Small-Spacecraft Proximity Operations

Forrest Rogers-Marcovitz—Carnegie Mellon University, Robotics Institute

+ 11:00 A.M.

Integrated Solar Panel Antennas for Small Satellites

Mahmoud Mahmoud—Utah State University

+ 11:15 A.M.

An Innovative Method for Measuring Drag on Small Satellites

Marcin Pilinski—University of Colorado, Boulder

+ 11:30 A.M.

Cryogenic Experimentation on the Magneto-hydrodynamics of Liquid Oxygen

Jeffrey Boulware—Utah State University

+ 11:45 A.M.

The Design and Development of a Separation System for a Low-Cost Spherical Nanosatellite

Bruce Davis—University of Colorado, Boulder

+ 12:00 P.M.

Thin Wire Nucleate Boiling of Water in Sustained Microgravity

Justin Koeln—Utah State University

COMPETITION JUDGES:

TECHNICAL CHAIR

Stanley Kennedy, AeroAstro, Inc.

ASSOCIATE TECHNICAL CHAIR

Aaron Rogers—Johns Hopkins University/
Applied Physics Laboratory

NASA

Alan Weston—NASA Ames Research Center

ACADEMIA

Raymond Sedwick—University of Maryland

INDUSTRY

Greg Finney—Digital Fusion, Inc.

INTERNATIONAL

Craig Clark—Clyde Space

DEPARTMENT OF DEFENSE

Col Robert Newberry—National Reconnaissance Office, Advanced Systems & Technology



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Session IX
WED. AUGUST 12

FROM EARTH TO ORBIT:

Launch systems or launch opportunities that are specifically designed to provide access to space for the smallest satellites.

CHAIR: MIKE BENDER, SPACE EXPLORATION TECHNOLOGIES

+ 1:45 P.M.

Falcon 1 Flight Results and Multiple Payload Integration

Aaron Dinardi, Brian Bjelde—Space Exploration Technologies

+ 2:00 P.M.

Rapid Coupled Loads Analysis and Spacecraft Load Reduction Using SoftRide

Raman Johal, Paul Wilke, Conor Johnson—CSA Engineering

+ 2:15 P.M.

A Concept of International Nano-Launcher

Kazuhiro Yagi, Seiji Matsuda, Jun Yokote—IHI Aerospace Co., Ltd. (IA); Takayoshi Fuji, Kenji Sasaki—Institute for Unmanned Space Experiment Free Flyer (USEF); Mitsuteru Kaneoka—CSP Japan Inc.; Shinichiro Tokudome, Yohsuke Nambu—Institute of Space and Astronautical Science (ISAS); Masaaki Sugimoto—The University of Tokyo

+ 2:30 P.M.

ASAP and VESPA: The Access to Space for Small Satellites

Jérôme Thiery—Arianespace

+ 2:45 P.M.

The Stellar-J: A Partially Reusable Horizontal Take-Off Launch System Designed for Small Satellite and Low Startup Cost

Wes Kelly, Paul Royall—Triton Systems, LLC; Charles George—MSI Limited

+ 3:00 P.M.

Is it Really That Hard to Get Your Hardware Into Space?

Gerry Webb—Commercial Space Technology Ltd (CST); Alex da Silva Curiel—Surrey Satellite Technology Ltd./Surrey Space Centre

□ THURSDAY IS LOGO DAY!

Participate by wearing your company's logo. Enjoy the last day of the Conference by dressing casually in your company attire.

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Session X
WED. AUGUST 12



THE SMALLER ELEMENTS:

A session on CubeSat/NanoSat initiatives that enable future missions.

CHAIR: JAMIE CUTLER, UNIVERSITY OF MICHIGAN

+ 3:45 P.M.

The IRIS Nanosatellite for Autonomous Multi-System Responsive Space Operations and High Spectral Resolution Earth Imaging

Erin Beck, Christopher Kitts, Jose Alberto Rosales Cruz, Alexander Fischer, Steven Li, and Anthony Young—Robotic Systems Laboratory/Santa Clara University

+ 4:00 P.M.

Enabling Flexible Secondary Launches with the CubeSat Standard

Jordi Puig-Suari, Roland Coelho—Cal Poly; Kyle Leveque, Victor Aguero, Scott Williams—SRI International

+ 4:15 P.M.

SMDC-ONE: An Army Nanosatellite Technology Demonstration

David Weeks—COLSA, Inc.; Brent Marley—Cobham Analytical Services, Inc.; John London—US Army Space and Missile Defense Command

+ 4:30 P.M.

Pointing Control for Low Altitude Triple Cubesat Space Darts

James Armstrong, Craig Casey, Glenn Creamer, Gilbert Dutchover—US Naval Research Laboratory

+ 4:45 P.M.

“Coach Class to Orbit:” the NPS CubeSat Launcher

Christina Hicks, Adam DeJesus, Anthony Harris, Matt Crook, Felix Rossberg, Daniel Sakoda, Rudolf Panholzer, James Newman—Naval Postgraduate School

+ 5:00 P.M.

Boeing’s CubeSat TestBed 1 Attitude Determination Design and On-Orbit Experience

Michael Taraba, Christian Rayburn, Albert Tsuda, Scott MacGillivray—The Boeing Company

+ 5:15 P.M.

Increasing the Accuracy of Orbital Position Information from NORAD SGP4 Using Intermittent GPS Readings

Michael Greene, Robert Zee—Space Flight Laboratory/University of Toronto

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11**Sn****Session XI**
THU. AUGUST 13**ADVANCED TECHNOLOGIES 3 :**

Innovative, proven or unproven approaches to small satellite technology (components or subsystems) that may offer quantum benefits in next generation small spacecraft.

CHAIR: CHUCK FINLEY, OPERATIONALLY RESPONSIVE SPACE OFFICE

+ 8:30 A.M.**Integrated After-Market Solar Panel Antennas for Small Satellites**

Timothy Turpin, Mahmoud Mahmoud, Reyhan Baktur—Utah State University; Cynthia Furse—University of Utah

+ 8:45 A.M.**Multi-Aperture Miniaturized Star Sensors, Modular Building Blocks for Small Satellite AOCS Systems**

Jeroen Rotteveel, Anita Le Mair—Innovative Solutions In Space (ISIS)

+ 9:00 A.M.**Frequency Reconfiguration of a Small Array Enabled by Functionalized Dispersions of Colloidal Material**

Sean Goldberger, Frank Drummond, Rachel Anderson, Joel Barrera, Amy Bolon, Stephen Davis, Jamie Edelen, Justin Marshall, Cameron Peters, David Umana, Gregory Huff—Texas A&M University

+ 9:15 A.M.**Rapid Development of Experimental LEON 3FT Controller Board**

Sam Stratton, Dave Stevenson—Aeroflex; Michael Johnson—NASA Goddard Space Flight Center

+ 9:30 A.M.**Lithium-Ion Technology: Balancing Increased System Capability with the Potential for Explosion**

Jeremy Neubauer, Chris Pearson, Ka Lok Ng—ABSL Space Products

+ 9:45 A.M.**Advanced Hardware-In-the-Loop RF Testing Assures Communication System Mission Success**

Steve Williams—RT Logic

+ 10:00 A.M.**Peak Power Tracking on a Nanosatellite Scale: The Design and Implementation of Digital Power Electronics on the SFL Generic Nanosatellite Bus**

Grant Bonin, Robert Zee—Space Flight Laboratory/University of Toronto; Doug Sinclair—Sinclair Interplanetary

+ 10:15 A.M.**FPGA-Based MSK DS-SS Modulator for Digital Satellite Communications**

Ahmed Maghawry Ibrahim—National Authority for Remote Sensing & Space Science (NARSS); Esam Eldiwan—Electronics Research Institute (ERI)

ALTERNATES:**MEMS in Space—A New Technology Advancing from Flight Experiment to Proven COTS Product**

Andrew Carrel—Surrey Satellite Technology Ltd./Surrey Space Centre; Paul Alderton—Atlantic Inertial Systems

A Common Ground Experiment Testbed for Synthetic Mission Demonstration of Small Satellites

Xiaoqian Chen, Wen Yao, Yiyong Huang, Yong Zhao—National University of Defense Technology

12**Sn**Session XII
THU. AUGUST 13**THE NEXT GENERATION:**

Recent and planned educational small satellite programs that train a new generation of engineers while benefiting the small satellite community.

CHAIR: RON FEVIG, UNIVERSITY OF NORTH DAKOTA

+ 10:45 A.M.	ROBUSTA, a Student Satellite to Serve the Radiation Effects Community S. Perez, S. Jarrix, N. J-H. Roche, J. Boch, J-R. Vaillé, A. Pénarier, L. Dusseau—Institut d'Electronique du Sud; M. Saleman—Centre National d'Etudes Spatiales
+ 11:00 A.M.	Army Space Education: Closing the Gap with Operational Space MAJ Thomas Pugsley—US Army
+ 11:15 A.M.	The Promise of Innovation from University Space Systems: Are We Meeting It? Michael Swartwout—St. Louis University
+ 11:30 A.M.	The Naval Postgraduate School SCAT++ CubeSat Program Christopher Ortiona, Robert Jenkins, Christopher Malone, Lawrence Dorn, Matthew Schroer, Alexander Schulenburg, Paul Oppenheimer, William Crane, Daniel Sakoda, Marcello Romano, Rudolf Panholzer, James Newman—Naval Postgraduate School
+ 11:45 A.M.	TJ³Sat—The First Satellite Developed and Operated by High School Students Carlos Niederstrasser—Orbital Sciences Corporation; Alishan Hassan, Jake Hermle, Adam Kemp, Alexander McGlothlin, Devan Samant, Joel Stein—Thomas Jefferson High School for Science and Technology
+ 12:00 P.M.	Kentucky Space: A Multi-University Small Satellite Enterprise Daniel Erb, Twyman Clements, James Lump—University of Kentucky; Benjamin Malphrus—Morehead State University
+ 12:15 P.M.	Big Potential for Small-Satellite Students Wayne Shiroma, Justin Akagi, Byron Wolfe, Jason Akagi, Zachary Lee-Ho, Aaron Ohta—University of Hawaii
+ 12:30 P.M.	Lessons Learned from the First Swiss Pico-Satellite: SwissCube Muriel Noca, Fabien Jordan, Nicolas Steiner, Ted Choueiri, Florian George, Guillaume Roethlisberger, Noémy Scheidegger, Hervé Peter-Contesse, Maurice Borgeaud, Renato Krpoun, Herbert Shea—Federal Institute of Technology of Lausanne (EPFL)
ALTERNATES:	The Oculus: A Nanosatellite for Space Situational Awareness Lyon King, Philip Hohnstadt, Jeffrey Katalenich, Peter Radecki, Thomas Venturino—Michigan Technological University From the Delfi-C³ Nano-Satellite Towards the Delfi-n3Xt Nano-Satellite G.F. Brouwer, J. Bouwmeester—Delft University of Technology

